fortum

Join the change

CEO letter

2017

Dear stakeholders,

2017 was a significant year for Fortum. During the year we took many important steps in our strategy implementation. We invested in solar and wind power production, restructured our ownership in Hafslund, and towards the end of the year, announced our investment in Uniper. The impacts of our previous investments in renewables, in circular economy, and in Russia can be seen in our strengthened financial results. Our performance was supported by the improving market conditions which had a positive effect on our 2017 results.

Significant strategic milestones reached

Driving the change for a cleaner world is at the heart of Fortum's strategy and our role is to accelerate this change by reshaping the energy system, improving resource efficiency, and providing smart solutions. CO_2-free power generation and deep knowledge about how to operate generation assets is in the very core of Fortum's DNA. It is complemented by our thorough understanding of power markets and trading as well as our deep expertise in combined heat and power production. This is the solid foundation that we build our future on.

Our strategy is based on four cornerstones with a clear priority order. Our first priority and most important cornerstone is to drive productivity and industry transformation. Cornerstone number two and our second priority is to offer solutions for sustainable cities. Through cornerstones three and four – growing in solar and wind and building new energy ventures – we target to secure our long-term competitiveness in the future energy system.

Following the earlier successful Ekokem and Hafslund transactions, we announced the bid for Uniper towards the end of 2017. By investing in Uniper, Fortum continues the strategy implementation and capital redeployment to enable a more efficient use of our balance sheet. Together Fortum and Uniper have a good strategic mix of assets – both clean and secure – as well as the expertise required to successfully and affordably drive Europe's transition towards a low-carbon energy system. At the end of the acceptance period in February 2018, 47.12% of Uniper's shares had been tendered to our offer, including Uniper's largest shareholder E.ON's 46.65% shareholding.

The Hafslund restructuring was concluded in the fourth quarter and the new business structure is now in place. Together with our new colleagues from Hafslund, we have updated the strategies for both our Consumer Solutions and City Solutions divisions. We have now set the path forward and will be working together on implementing the strategy. We target annual synergies of EUR 15–20 million by the end of 2020.

In line with our strategy, we are also investing in new renewable generation and targeting a gigawatt-scale portfolio of wind and solar power. In January 2018, we commissioned Russia's first industrial wind power site with a capacity of 35 MW. During 2017, we also started the implementation of other wind power plants in the Nordics and in Russia, invested in solar power in Russia, and commissioned our largest solar power plant in India.

The operating environment improved in 2017

Following several years of decline power prices reached their lowest levels in February 2016. After that prices rebounded and the upward trend continued through most of 2017. The price of coal, which is one of the main drivers for European power prices, continued slightly upward throughout 2017. However, the mild and wet weather resulting in higher hydro reservoirs and higher hydro production volumes, depressed the Nordic power price for the fourth quarter of 2017.

During 2017, the hydrological situation in the Nordic area strengthened due to clearly higher than normal precipitation. At the beginning of 2017, the Nordic water reservoirs were at 75 TWh and by the end of the year the reservoir level increased to 86 TWh.

Prices for CO_2 emission allowances declined during the first half of the year, but rebounded and ended the year clearly above the 2017 level, which added to the volatility in the Nordic power prices. In December 2017, the EU took a very welcome decision to strengthen the EU emission trading scheme. Although the new legislation will increase the emission reduction target and strengthen

the Market Stability Reserve, it still falls short of meeting the targets of the Paris Climate Agreement.

Strong financial, but disappointing safety performance

Our performance improvement in 2017 was broad-based, with comparable operating profit increasing in most segments. The Generation, City Solutions, and Russia segments continued to perform well, while the Consumer Solutions segment continues to be under pressure due to the tight competitive situation. The acquisitions of Ekokem and Hafslund are already impacting our results positively, further strengthened by our continued Fortum-wide focus on cost and overall efficiency. We have now reached the targeted EUR 100 million savings in fixed costs announced in 2016. The cost savings have enabled us to invest in new ventures for the future.

Going forward we will continue to focus on cost efficiency and investment prioritisation. Sustainability and safety continue to be very important for us at Fortum. 2017 was a challenging year in terms of occupational safety. We did not reach our targets for lost workday injury frequency, especially for contractors. This was a clear disappointment, even though we succeeded in reducing the number of severe accidents to only one. We continue to be committed to keeping our promise to provide a safe workplace for all.

In 2017, our CO_2 emissions decreased slightly. Our specific emissions remained at the same level as the previous year and continue to be at a low level compared to other European power producers.

Accelerating the energy transition with our Uniper investment

The investment in Uniper is a large investment for Fortum and is in line with our strategic goal to drive productivity and industry transformation in Europe. We are also convinced that the investment will accelerate Europe's energy transition in line with our vision "For a cleaner world".

Out of Uniper's 38 GW generation capacity approximately 50% is based on gas, 30% based on coal, and 20% is hydro and nuclear power, all of which will have an important role to play during the transition towards a low-carbon energy system. While coal-fired generation must be phased out over time, we have a responsibility to ensure security of supply and affordable energy for Europeans during the transition. Uniper's declared role as a provider of security of supply is an excellent match with Fortum's ambition to accelerate the energy transition with increasing renewable generation and innovative solutions.

We aim to take an active role in driving European energy transition. We see plenty of opportunities for co-operation with Uniper to add value for all stakeholders, and we have entered into talks with Uniper to formalise the relationship between our companies after the transaction is finalised. Going forward, Fortum will focus on being an active, supportive, and reliable shareholder of Uniper and a constructive strategic partner to the company, its employees, and other stakeholders. We truly see our investment as a win-win for all involved.

Strategy execution continues with disciplined capital allocation

Fortum has been and will continue to be committed to a cleaner Europe and a controlled transition to a low-carbon energy system. Fortum's CO_2-free production capacity has grown substantially over the last few decades and we will continue to focus on increasing it.

To the extent we have fossil production, our goal and strategy is, of course, to make it as efficient as possible. Our specific CO_2 emissions from power generation, measured as grams of CO_2 per kilowatt hour produced (gCO_2/kWh), makes us one of the lowest emitters of all utilities in Europe. In 2017, 96% of our power generation in the European Union was CO_2-free. Including the Russian power generation, which is mainly gas-based, and our Indian solar power we are still in the category of one of the cleanest utilities with 61% CO_2-free and specific CO_2 emissions of 173 gCO_2/kWh.

The energy sector is among the key sectors that can contribute to mitigating climate change, but the focus should not be solely on electricity generation that accounts for only 20% of energy consumption in the EU. At Fortum, we have decided to take an active role in tackling the challenge also by creating solutions for sustainable cities, by developing new products and services to help our customers reduce their carbon footprint, and by building new energy ventures that we believe will play an important role in the future sustainable energy system.

As the strategy implementation and capital redeployment continues, our dividend payment capability will be further strengthened. Fortum's Board of Directors is proposing an unchanged dividend of EUR 1.10 per share for the calendar year 2017. Our ambition is to pay a stable, sustainable, and over time increasing dividend now and in the future, and given the prevailing market conditions, our goal is to avoid a temporary dividend cut.

I would like to thank all our employees for the excellent work and true commitment during the year and our customers and all other stakeholders for the continued trust in us.

Pekka Lundmark
President and CEO

Megatrends and the energy industry

The world we live in is changing at an ever-increasing pace. Staying competitive requires companies to be very aware of the underlying megatrends and to take an active role in driving the change for a better future.

This is especially true for the energy industry, as decarbonisation of the energy system plays an essential role in meeting the environmental targets of society. Only by working actively to decarbonise the energy system, significantly expand the share of renewable energy, reduce the emissions, increase the efficiency of older assets, and increase the amount of flexibility in the system can we mitigate climate change.

There are four megatrends that shape the energy sector: climate change and resource efficiency, urbanisation, digitalisation & new technologies, and active customers. These megatrends will bring profound changes not only to how energy is produced and sold to customers, but also to how it is consumed. The megatrends will also push to maximise the value of resources, such as waste and biomass.

Climate change and resource efficiency

Climate change and global warming is one of the largest challenges facing mankind. The problem is global, and global efforts and commitment are required in order to solve it. Discussions about climate change have been ongoing for decades, but actions have not been sufficient, due to lack of commitment, although positive developments have been seen in some regions.

With the adoption of the Paris Agreement in December 2015, mitigation of climate change rose to the top of the agenda all over the world. The commitment to mitigate climate change in order to limit global warming is now so widely spread that it affects every industry. The effects can be seen everywhere, e.g. the increase in low- or zero-emission housing, better fuel efficiency, the increase in the number of electric vehicles, the rapid growth in solar and wind power production, fuel switches to more environmentally friendly fuels, increased resource efficiency, and waste recycling.

The whole energy industry is very heavily affected by this megatrend. This can be seen in the transition to low-carbon and renewable generation, which increases the share of intermittent power production and the need for demand response and flexible generation capacity. The increased need for resource efficiency paves the way for circular economy solutions.

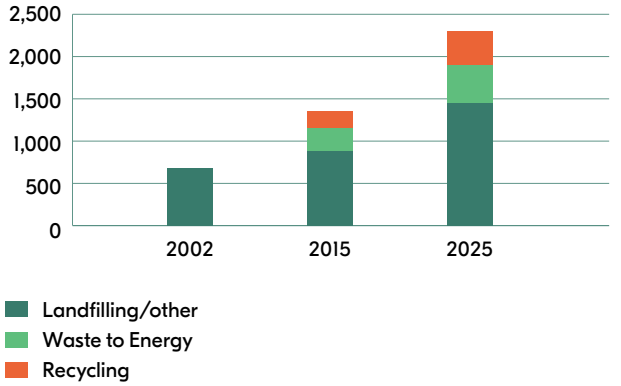
Urbanisation

The second megatrend is urbanisation. Over the last decades an ever-increasing share of the world's population has moved to urban areas and the trend is continuing. This megatrend is very evident in the emerging markets of Asia, where an increasing share of the global GDP growth comes from the growing urban areas.

For many people in developing countries urbanisation might also mean electrification as 1.2 billion people still lack access to electricity. Increased urbanisation creates a demand for sustainable, efficient, and reliable utility services. In many areas of the world the current heating, cooling and energy production is based on old technologies with high emissions and low efficiency. The increasing urbanisation creates a demand for utilities with efficient solutions for heating, cooling, and electricity production.

New solutions are also needed for transportation and waste management. The amount of waste is expected to nearly double between 2015 and 2025. Even with the increase in recycling and waste-to-energy solutions, the global municipal solid waste going to landfills is projected to grow over the coming years.

Global Municipal Solid Waste Development (MSW), mtpa



Source: World Bank Global Review of Solid Waste Management, March 2012; Fortum view

Fortum co-operates with the large Nordic cities of Stockholm, Espoo and Oslo on energy solutions for growing urban areas.

Digitalisation & new technologies

Technology development has always been a driver for change. Digitalisation as a megatrend is further fuelled by the accelerated pace of commercialisation and adoption of new technologies. The processing power of devices is increasing and the amount of connected devices is growing exponentially. This in combination with an ever-increasing amount of data readily available for consumers and businesses creates the perfect breeding ground for innovation.

This megatrend affects all companies and businesses. Rapid technological development and high adoption rates quickly drive down the costs for new technologies.

In the energy sector the cost of wind and solar power is decreasing. In the next 25 years the amount of solar power is expected to grow 12-fold and wind power more than 3-fold. This development leads to an increasing share of intermittent power production and fewer running hours for traditional baseload power. This challenges the way the energy system has been functioning, where production has been able to adapt to the changing power demand of customers.

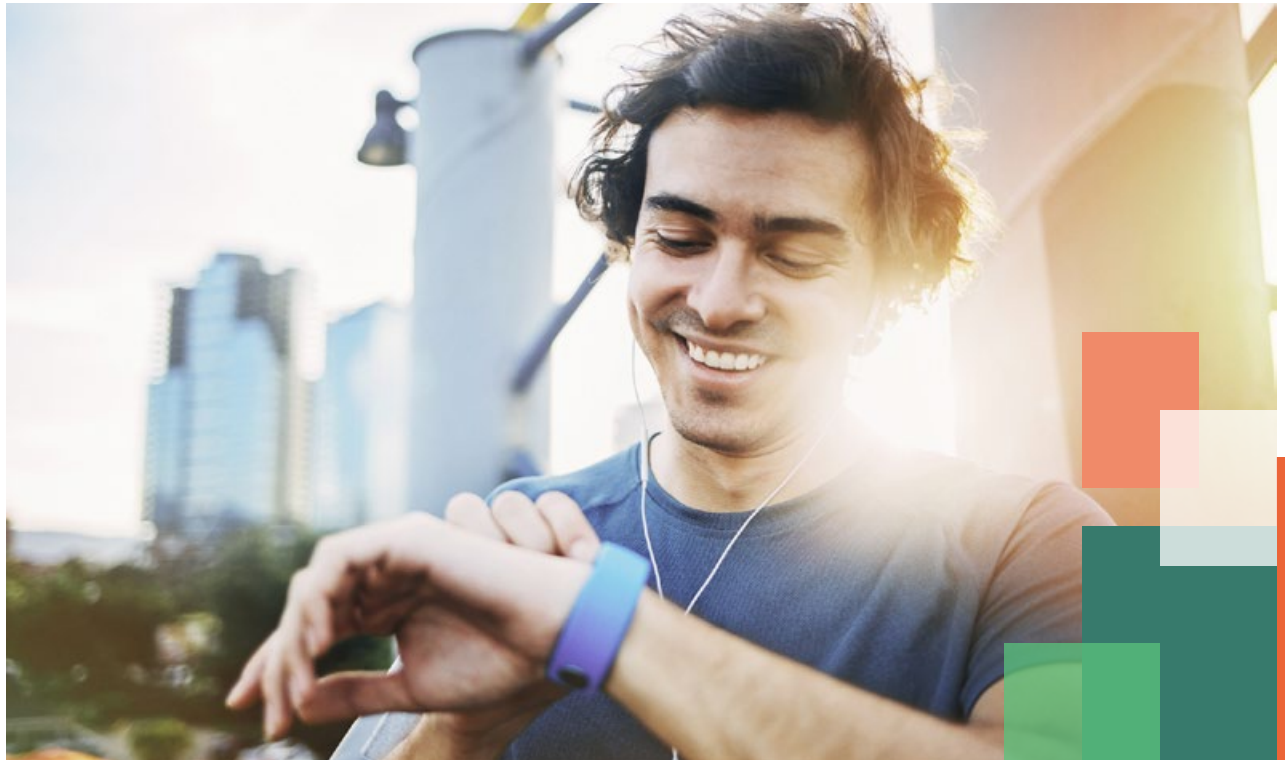
Digitalisation opens up for new storage and demand response solutions, which will change the way the customer interacts with the market. There will be new ways to produce, market, sell, and deliver products and services offered by utilities, start-ups, and new market entrants. Through these services, customers can take an active part in balancing a future power system that is heavily dependent on intermittent power production.

Active customers

As new technologies are creating a market for new products, there is another megatrend driving the change: active customers. Customers are becoming more conscious about their choices and how they affect society. Customers are more willing to participate in the energy markets, they are aware of what the new technologies enable, and they are demanding services and solutions for that, e.g. home automation, electrical vehicles with smart charging solutions, local power production and storage, as well as demand response solutions.

The market for prosumers (consumers who produce some of their own energy) is growing rapidly. They require solutions for storage and two-way power flows to/from their house, as they act both as consumers and producers of energy. This challenges how the energy markets traditionally have worked and offers great potential for innovation and growth.

The large majority of customers are not yet demanding these types of services, but as the services emerge, they can be expanded to the masses on a large scale, which will have profound effects on the whole market.



By utilising demand response, Fortum's Spring venture has built a one-megawatt virtual battery with the help of one thousand of its consumer customers. The growing virtual battery will play an increasingly important role in maintaining energy system balance.

Market Development

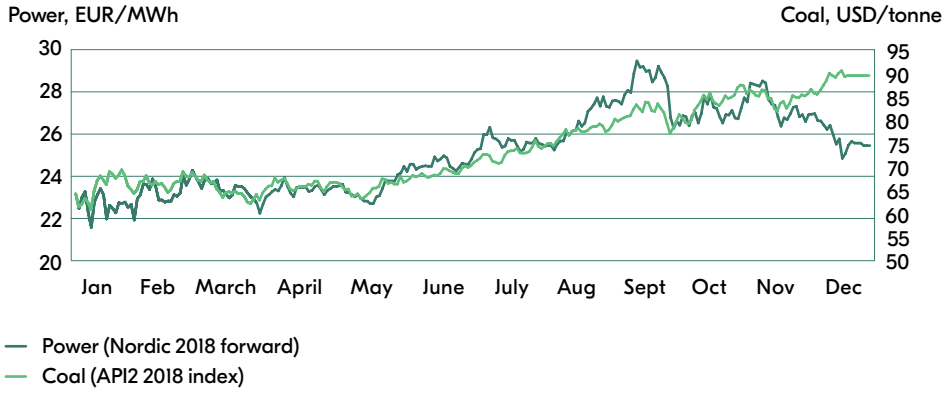
Following several years of declining power prices long-term low levels were reached in February 2016. After that prices rebounded and the upward trend continued until September 2017. The price of coal (one of the main drivers for European power prices) continued slightly upward throughout 2017. However, the mild and wet weather resulting in higher hydro reservoirs and higher hydro production volumes depressed the Nordic power price for the fourth quarter of 2017.

Prices for CO_2 emission allowances (EUA) started at EUR 6.5 per tonne in the beginning of 2017 and declined to only EUR 4.5 in May. Thereafter CO_2-prices increased steadily to EUR 8.2 per tonne at the end of 2017. This added to the price volatility on the Nordic power market.

In 2017 the hydrological situation strengthened due to clearly higher than normal precipitation in the Nordic area. At the beginning of 2017, the Nordic water reservoirs were at 75 TWh,

Following several years of declining power prices the long-term low levels were reached in February 2016. After that prices rebounded and the upward trend continued until September 2017.

Power and coal prices 2017



Source: Bloomberg

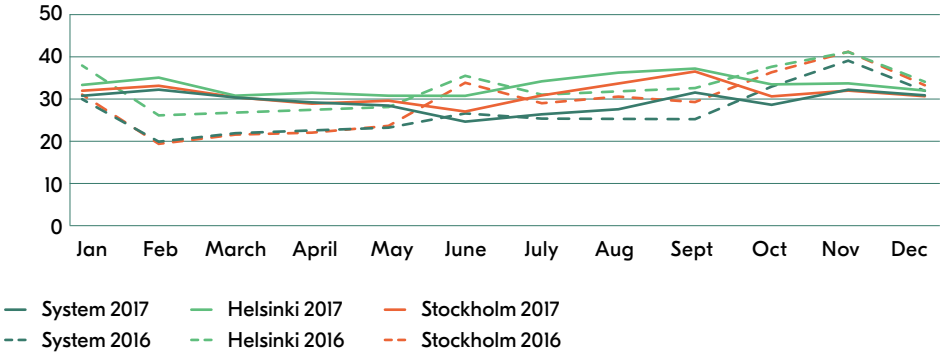
which is 8 TWh below the long-term average and 23 TWh lower than a year earlier. By the end of the year, reservoirs were 3 TWh above the long-term average and 11 TWh higher than at the end of 2016.

During the first five month of 2017 the Nordic spot power prices were higher than in 2016, mainly due to the very low prices in the beginning of 2016. During the end of the year spot prices were around the same levels as the previous year.

The average system spot price in Nord Pool for the year 2017 was EUR 29.4 per MWh, and the average area price in Finland was EUR 33.2 per MWh and EUR 31.2 per MWh in Sweden SE3 (Stockholm). The main driver for the price increase was the clearly higher marginal cost of coal condensing power, which has contributed to stronger continental prices and increased exports from the Nordics.

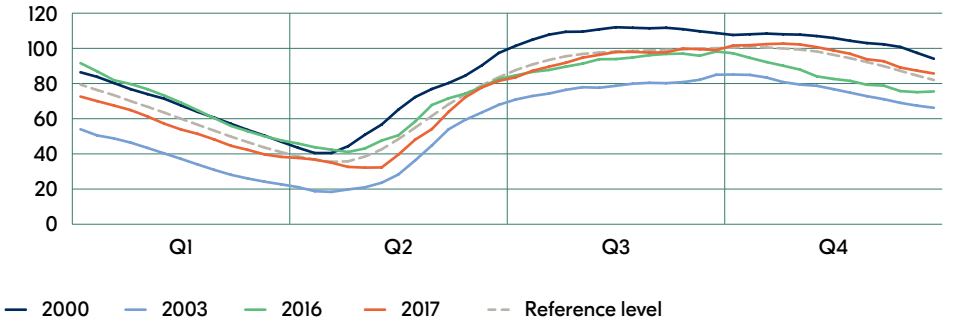
Nordic electricity consumption in 2017 increased only marginally by 2 TWh to 392 TWh compared to 2016. A modest basic demand growth seen in the Nordic countries contributed to the increase in consumption.

Spot price development 2016 & 2017, EUR/MWh



Source: Nord Pool, Fortum

Nordic water reservoirs, energy content, TWh



Source: Nord Pool

Strategy

The transition towards a cleaner world

The entire energy sector is undergoing a transformation.

Our vision is "For a cleaner world" and reflects our ambition to drive the transformation towards a low-emissions energy system and optimal resource efficiency.

Our mission is to engage our customers and society to drive the change towards a cleaner world. Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. This way we deliver excellent shareholder value.

Sustainability is an integral part of Fortum's strategy in answering to these challenges. Business and responsibility are interconnected, underlining the role of sustainable solutions as a competitive advantage. In our operations, we give balanced consideration to economic, social and environmental responsibility. We assess our impacts and address sustainability throughout the value chain.

Our values – curiosity, responsibility, integrity, and respect – form the foundation for all our activities.

Fortum's strategy

Fortum's strategy has four cornerstones:

- Drive productivity and industry transformation
- Create solutions for sustainable cities
- Grow in solar and wind
- Build new energy ventures

Drive productivity and industry transformation

As the entire energy sector is transforming, our first priority is to participate in the consolidation of the generation business in Europe.

Fortum wants to drive the change towards a cleaner world. However, the change will not happen overnight. Also during the transition we need an energy system that is secure, flexible, and clean. In addition to wind and solar power we need stable and reliable production, such as flexible hydro and gas power, that secures the functioning of the society at all times, also when there is no wind and the sun does not shine.

In our strategy implementation, one of our goals has been to take a leading role in the consolidation of the European generation business, also through sizable acquisitions. In September 2017, we announced that we have agreed with E.ON to acquire their stake in Uniper and after the offer period ended in February 2018, 47.12% of the shares had been tendered, including E.ON's 46.65% shareholding. Uniper's stated role as the provider of security of supply will be an excellent match with our ambition to accelerate the energy transition with increasing renewable generation and innovative solutions. Both are needed to make the change happen and each play a crucial part as Europe transitions from a conventional to a cleaner and more secure energy future.

Megatrends

Climate change and resource efficiency
Urbanisation
Active customers
Digitalisation, new technologies

Vision

For a cleaner world

Mission

We engage our customers and society to drive the change towards a cleaner world. Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. This way we deliver excellent shareholder value.

Strategy

Drive productivity and industry transformation

Create solutions for sustainable cities

Grow in solar and wind

Build new energy ventures

Create solutions for sustainable cities

We are utilising our know-how and experience to create scalable, sustainable solutions that improve the quality of urban life.

Growing cities and urban areas are facing multiple challenges, such as high emissions from inefficient heating, cooling, and electricity production, increasing amounts of waste, as well as high traffic pollution and noise. We offer today's digitalised active customers, businesses, and communities heating, cooling, waste management, recycling, and energy-related solutions. This way we

help the cities and its inhabitants solve the challenges sustainably and support building a circular economy.

We have successful partnerships in several cities, and joint ventures with Stockholm and Oslo, to jointly develop solutions for greener cities.

With the acquisitions of Ekokem and Turebergs in 2016, we broadened the scope of our City Solutions to include efficient resource management within the circular economy, which complement our competences in the energy sector well.

For us circular economy means that materials are recycled and utilised as efficiently as possible. At the same time, hazardous substances are removed from circulation. We believe that a phased migration to a circular economy offers a positive perspective and invaluable solutions to today's problems.

Our goal is to develop our recycling and waste management business and launch new solutions on the market for utilising waste as a raw material. We support industries and social actors to find solutions in which someone's waste is another's raw material.

Grow in solar and wind

Solar and wind power have huge growth potential.

Increasing the generation of carbon-neutral energy is one important way to control climate change. Therefore, renewable energy sources play a key role in the change towards a cleaner world. By investing in solar and wind power we are also securing our long-term competitiveness.

We target a gigawatt-scale solar and wind portfolio. These technologies are rapidly maturing. At the same time, utility competences are becoming increasingly important as subsidy schemes are gradually being phased out and renewable energy production is becoming more market-based.

We have started the transition and have 295 MW of solar and wind capacity in the Nordics, Russia, and India as well as several on-going projects. We have also announced plans to further expand our wind power production in Russia.

Build new energy ventures

Technological and digital disruption accelerate energy sector transformation. Our goal is to be in the forefront of energy technology and application development.

Digitalisation is enabling us to create new customer offerings and improve the productivity of our businesses. Our focus areas include development of smart home solutions, electric transportation, demand response, and energy storage. Breaktrough's in these areas can transform the way we use energy.

In addition to our own R&D, we are investing in funds and cooperating with start-ups – jointly innovating both new technologies and business models in the changing energy industry landscape.

Fortum's wind and solar power capacity grew from 58 MW to
295 MW
during 2017.

The Fortum transformation

Sustainability and CO_2-free power generation have been part of Fortum's strategy for several decades. We believe that the energy system needs to transform to a system with substantially lower emissions, higher resource efficiency, and a higher share of power generation based on renewables. The transformation will not happen overnight and we must provide customers with a secure energy supply at a competitive price during the transition towards lower emissions. In implementing our strategy we have worked to increase our CO_2-free power generation.

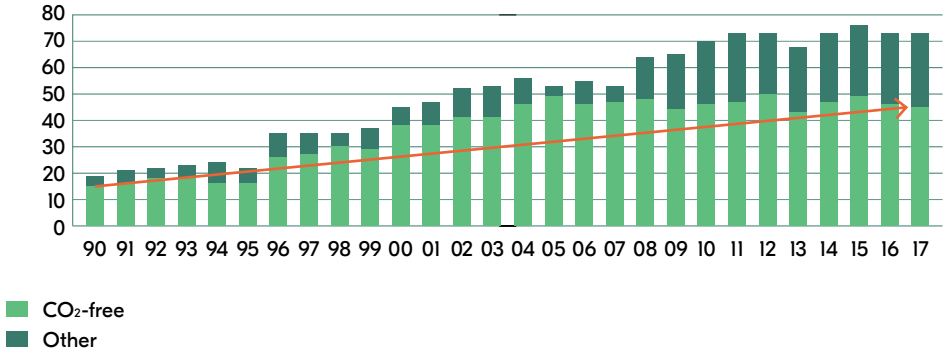
We also have generation capacity based on fossil fuels, located mainly in Russia, and we have worked to increase its efficiency and reduce its specific emissions. We continue to focus on increasing our solar and wind power capacity over the coming years, and we are targeting a gigawatt-scale portfolio in solar and wind power.

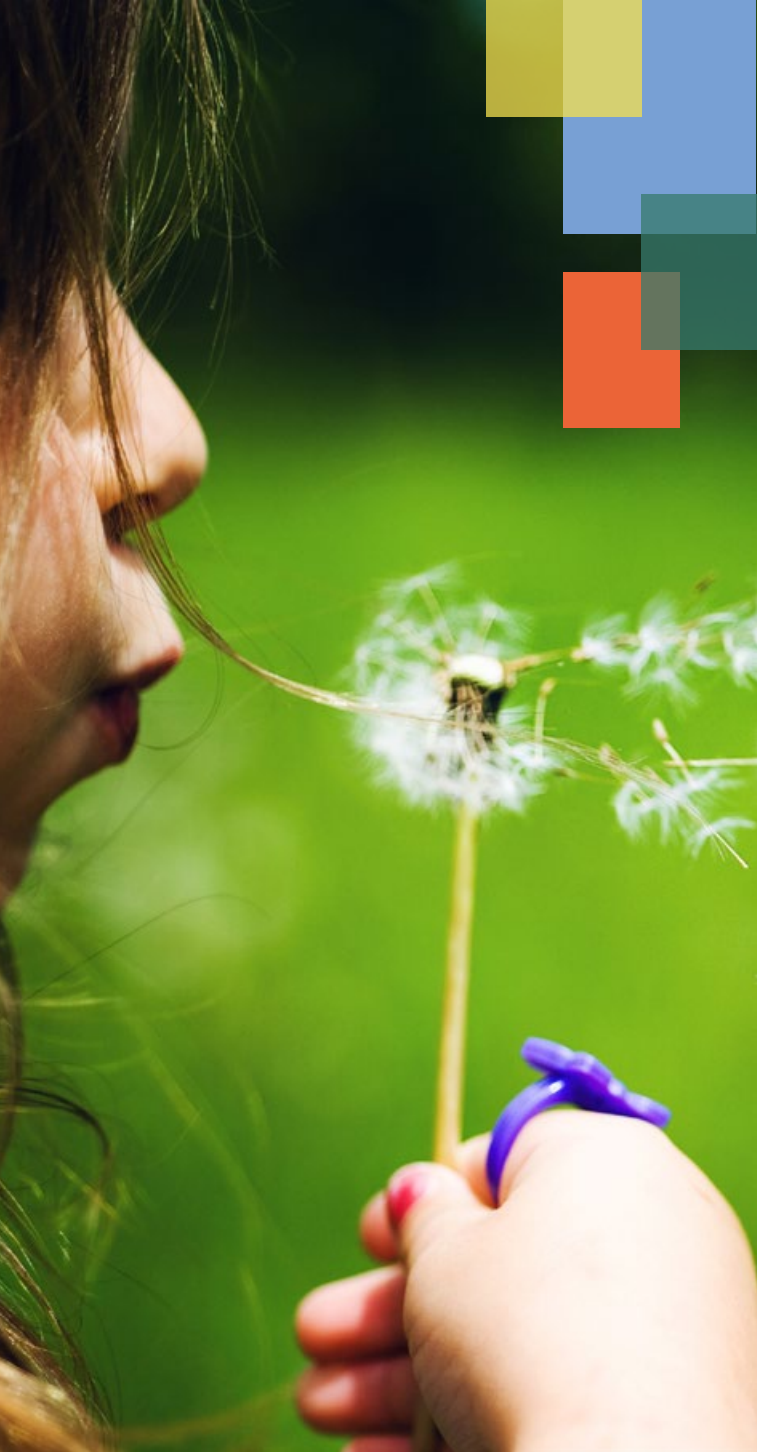
Long-term focus on increasing CO_2-free power generation

Over the past decades Fortum has been working for a more sustainable world. We have increased our annual CO_2-free power generation from around 15 TWh in 1990 to 45 TWh in 2017. The development has not always been linear, as annual variations in hydropower production have a significant impact.

We were among the early proponents for a market-based price on CO_2. We are advocating for market-based solutions and a strengthening of the EU ETS to drive the necessary change in the energy system. In our own operations we have invested in CO_2-free power generation, and the carbon exposure of our production in Europe is among the lowest in Europe at 28 gCO_2/kWh in 2017. The respective figure for Fortum overall was 173 gCO_2/kWh in 2017.

Fortum's power generation, TWh





Increase efficiency and reduce specific emissions

When Fortum acquired the Russian power and heat generation company TGC-10 (currently PAO Fortum) in 2008, we committed to a substantial capacity investment program. In 2016, the investment programme was finalised. Thereby our Russian power and heat generation capacity has increased substantially. By investing in high-efficiency combined power and heat plants, we have increased the power and heat output and at the same time substantially decreased the specific CO_2 emissions from our Russian power and heat production.

Fortum is now operating a fleet of power and heat plants with efficiency and emissions ranking among the best of our peers in Russia.

Grow in solar and wind

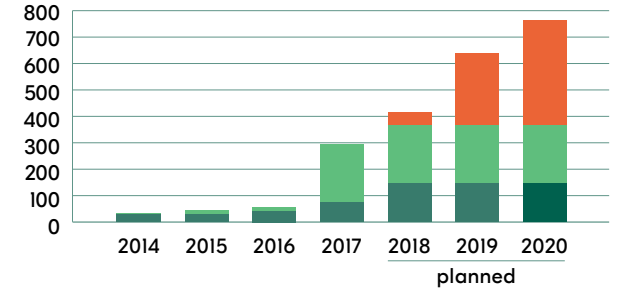
In addition to CO_2-free hydro and nuclear power production, we believe that solar and wind power will play an essential role in the future. Solar power is becoming one of the most competitive forms of new power generation in many parts of the world, and we are targeting investments totalling EUR 200–400 million in solar power in India.

The market conditions in the Nord Pool area and in Russia are more suitable for wind power, and Fortum is increasing its investments heavily. In January 2018, Fortum commissioned the country's largest wind farm in Russia. In Sweden, Fortum is participating in the Blaiken wind park that is already operational and in the Solberg wind farm, which is due to be commissioned in 2018. In Norway, Fortum recently acquired the operational Nygårdsfjellet wind farm and the Ånstadblåheia and Sørfjord wind farms that are to be commissioned in 2018 and 2019 respectively.

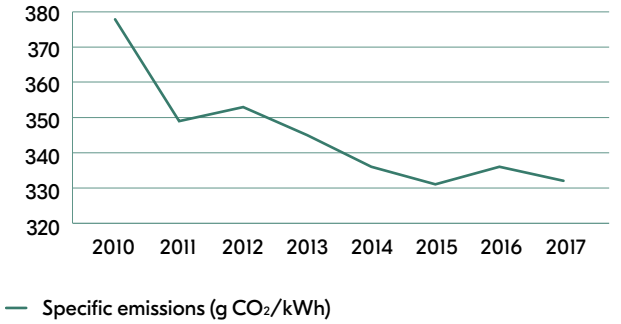
Our target in wind power is up to 1,000 MW in the Nord Pool area and up to 500 MW in Russia.

Although the solar and wind capacity is still small compared to Fortum's current total power generation capacity of close to 14,000 MW, the growth in 2017 was substantial and the capacity increased from 58 MW to 295 MW.

Fortum's wind and solar power generation capacity, MW



Russian specific CO_2 emissions from power and heat production



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Join the change

Financials

2017

Financials 2017 – Reader's guide

This report consists of the operating and financial review and the consolidated financial statements of Fortum Group, including the parent company financial statements. Other parts of Fortum's reporting entity include CEO letter, corporate governance statement, remuneration statement as well as tax footprint, which are published on Fortum's webpage. Sustainability reporting is an integrated part of Fortum's annual reporting and additional information on sustainability operations can be found on Forum's website in sustainability section.

Operating and financial review
This section includes description of Fortum's financial performance during 2017. Here you will also find a description of the risk management as well as information on sustainability and Fortum share performance.

Consolidated financial statements
Primary statements include Fortum's consolidated income statement, statement of comprehensive income, balance sheet, statement of changes in total equity and cash flow statement.

Notes
The notes to the consolidated financial statements are grouped to six sections based on their nature. Use the note number list on the right side of the notes pages to navigate in the financial statements.

Key figures 2008–2017
Key figures consist of financial key figures, share key figures and operational key figures for 2008–2017. The financial key figures derive mainly from the primary statements. Segment key figures include information on segments.

Parent company financial statements
Here you can read the parent company financial statements including the primary statements, cash flow and notes to the financial statements.

Proposal for the use of profit shown on the balance sheet
The Board of Directors proposal for the dividend in 2017 is disclosed in this section.

Auditor's report
This section includes the audit report issued by Fortum Oyj's auditor, Deloitte Oy.

Operational key figures and quarterly financial information
Look here for volume related key figures for 2008–2017 and quarterly financial information for the years 2016 and 2017.

Investor information
Here you will find information on Fortum's Annual General Meeting, dividend payment, basic share information as well as details of the financial information available to shareholders in 2018.

Notes are grouped to the following sections:

1–2 Basis of preparation
These notes describe the basis of preparing the consolidated financial statements and consist of the accounting policies and critical accounting estimates and judgements.

3–4 Risks
In the Risks section you will find notes that disclose how Fortum manages financial risks and capital risks.

5–13 Income statement
These notes provide supporting information for the income statement.

14–32 Balance sheet
These notes provide supporting information for the balance sheet.

33–36 Off balance sheet items
The notes in this section provide information on items that are not included in the balance sheet.

37–40 Group structure and related parties
This section includes information on events after balance sheet date, acquisitions and disposals, related party transactions and the subsidiaries of Fortum group.

The following symbols show which amounts in the notes reconcile to the items in income statement, balance sheet and cash flow statement.

IS = Income statement
BS = Balance sheet
CF = Cash flow

Financials 2017

Financial performance and position

Strong results and efficient strategy implementation.

Key financial ratios [1)]

	2017	2016	2015
Return on capital employed, %	7.1	4.0	22.7
Comparable net debt/EBITDA	0.8	0.0	-1.7

1) Key financial ratios are based on total Fortum, including discontinued operations. See ▸ Definitions of key figures.

Key figures

EUR million	2017	2016	2015	Change 17/16
Sales				
IS Continuing operations	4,520	3,632	3,459	24%
Discontinued operations	-	-	274	
Total Fortum	4,520	3,632	3,702	24%
Comparable EBITDA				
IS Continuing operations	1,275	1,015	1,102	26%
Discontinued operations	-	-	163	
Total Fortum	1,275	1,015	1,265	26%
Comparable operating profit				
IS Continuing operations	811	644	808	26%
Discontinued operations	-	-	114	
Total Fortum	811	644	922	26%
Operating Profit				
IS Continuing operations	1,158	633	-150	83%
- of sales %	25.6	17.4	-4.3	
Discontinued operations	-	-	4,395	
Total Fortum	1,158	633	4,245	83%
- of sales %	25.6	17.4	114.7	
Share of profits from associates and joint ventures				
IS Continuing operations	148	131	20	13%
Discontinued operations	-	-	0	
Total Fortum	148	131	20	13%
Profit before income tax				
IS Continuing operations	1,111	595	-305	87%
- of sales %	24.6	16.4	-8.8	
Discontinued operations	-	-	4,393	
Total Fortum	1,111	595	4,088	87%
- of sales %	24.6	16.4	110.4	
Earnings per share, EUR				
IS Continuing operations	0.98	0.56	-0.26	75%
Discontinued operations	-	-	4.92	
Total Fortum	0.98	0.56	4.66	75%
CF Net cash from operating activities, continuing operations	993	621	1,228	60%
Shareholders' equity per share, EUR	14.69	15.15	15.53	-3%
Interest-bearing net debt (at end of period) *	988	-48	-2,195	2,158%
Return on shareholders' equity total Fortum, %	6.6	3.7	33.4	
Equity-to-assets ratio, %	61	62	61	

* Net cash in 2015 and 2016

We are satisfied with the progress of our strategy implementation during the year. Following the earlier Ekokem and Hafslund transactions, we announced the bid for Uniper towards the end of 2017. By investing in Uniper, Fortum continues the capital redeployment to enable a more efficient use of our balance sheet. The offer period commenced in November. At the end of the initial acceptance period in mid-January 2018, 46.93% of Uniper's shares had been tendered to our offer, including E.ON's 46.65% shareholding. Uniper shareholders who have not yet accepted our offer still have a chance to do so within the additional acceptance period.

Uniper's and Fortum's businesses complement each other well. Together Fortum and Uniper have a good strategic mix of assets – both clean and secure – as well as the expertise required to successfully and affordably drive Europe's transition towards a low-carbon energy system. We aim to take an active role in driving European energy transition. We see plenty of opportunities for co-operation with Uniper to add value for all stakeholders, and we have entered into talks with Uniper to formalise the relationship between our companies after the transaction is finalised. We truly see our investment as a win-win for all involved.

The Hafslund restructuring was concluded in the fourth quarter and the new business structure is in place. Together with our new colleagues from Hafslund, we have updated the strategies for both our Consumer Solutions and City Solutions divisions. We have now set the path forward and will be working together on implementing the strategy. We target annual synergies of EUR 15–20 million by the end of 2020.

In line with our strategy, we are not only focusing on taking part in the European power sector consolidation, we are also investing in new renewable generation and targeting a gigawatt-scale portfolio of wind and solar power. In January 2018 we commissioned Russia's first industrial wind power site with a capacity of 35 MW. In addition, we have recently started the implementation of other wind power plants in the Nordics and Russia and invested in solar power in Russia, and commissioned our largest solar power plant in India.

In the fourth quarter our performance improvement was broad-based, with comparable operating profit increasing in all operative segments. The Generation, City Solutions and Russia segments continued to perform well, while the Consumer Solutions segment continues to be under pressure due to the tight competitive situation. The acquisitions of Ekokem and Hafslund are already impacting our results positively, further strengthened by our continued Fortum-wide focus on efficiency. We have now reached the targeted EUR 100 million savings in fixed costs announced in 2016. The cost savings have enabled us to invest in new ventures for the future. Going forward we will continue to focus on cost efficiency and investment prioritisation.

Sustainability and safety continue to be very important for us at Fortum. 2017 was a challenging year in terms of occupational safety. We did not reach our targets for lost workday injury frequency, especially for contractors. This was a clear disappointment, even though we succeeded in reducing the number of severe accidents to only one. We continue to be committed to keeping our promise to provide a safe workplace for all. In 2017, our CO_2 emissions decreased slightly. Our specific emissions remained at the same level as the previous year and continue to be at a low level compared to other European power producers.

As the strategy implementation and capital redeployment continues, our dividend payment capability will be further strengthened. Fortum's Board of Directors is proposing an unchanged dividend of EUR 1.10 per share for the calendar year 2017. Our ambition is to pay a stable, sustainable and over time increasing dividend now and in the future, and given the prevailing market conditions, our goal is to avoid a temporary dividend cut.

Uniper investment

In September 2017, Fortum announced it had signed a transaction agreement with E.ON under which E.ON had the right to decide to tender its 46.65% shareholding in Uniper SE into Fortum's public takeover offer. In November, Fortum launched a voluntary public takeover offer to all Uniper shareholders at a total value of EUR 22 per share implying a premium of 36% to the price prior to intense market speculation on a potential transaction at the end of May. The offer is subject to competition and regulatory approvals. Already in October 2017, Fortum received approval from the US competition authorities. Fortum expects to finalise the transaction in mid-2018.

The investment in Uniper delivers on Fortum's previously announced capital redeployment strategy and investment criteria. Uniper's businesses are well aligned with Fortum's core competencies, are close to Fortum's home markets and are highly cash generative. Fortum expects the investment to deliver an attractive return that will support the company in accelerating the development and implementation of sustainable energy technologies, without sacrificing a competitive dividend.

The offer will be financed with existing cash resources and committed credit facilities, with Barclays Bank PLC originally underwriting 100% of the credit facilities, including ongoing liquidity requirements. In October the credit facilities were syndicated to selected relationship banks of Fortum. Dividends received from the stake in Uniper will contribute to a stable and sustainable dividend for Fortum's shareholders. Fortum will account for Uniper as an associated company unless control according to IFRS is attained; as such, EBITDA and cash flow contribution, as well as the EPS effect on Fortum's results, will depend on the final outcome of the offer. As a result of this transaction, Fortum's leverage will rise above our given guidance for net debt/EBITDA level of around 2.5x. Over time however, Fortum expects its cash generation in combination with the dividend from Uniper to reduce this level towards the stated target.

In January 2018, Fortum announced that shareholders representing 46.93% of the shares in Uniper had accepted the offer during the initial acceptance period, including E.ON. Uniper shareholders who have not tendered their shares to the offer within the initial acceptance period can still tender during the additional acceptance period that began on 20 January 2018 and ending on 2 February 2018. Fortum expects to publish the total amount of shares tendered on 7 February 2018.

Hafslund transaction

On 26 April 2017, Fortum and the City of Oslo entered into an agreement to restructure their ownership in Hafslund ASA, one of the largest listed power groups in the Nordic region. On 4 August 2017, Fortum concluded the restructuring of the ownership in Hafslund. Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo, acquired 100% of Hafslund Markets AS and 50.0% of Hafslund Varme AS (renamed as Fortum Oslo Varme AS) including the City of Oslo's waste-to-energy company Klemetsrudanlegget AS (renamed as Fortum Oslo Varme KEA AS), and 10% of Hafslund Produksjon Holding AS.

The total debt-free price of the acquisitions was EUR 940 million. The combined net cash investment of the transactions, including the dividend received in May 2017, was EUR 230 million. Fortum booked a one-time tax-free sales gain in its 2017 results, totalling EUR 324 million, which corresponds to EUR 0.36 earnings per share. Transaction costs of EUR 4 million for the acquisitions were included in Items affecting comparability. The acquired businesses were consolidated into Fortum Group from 1 August 2017.

Reorganisation of operations

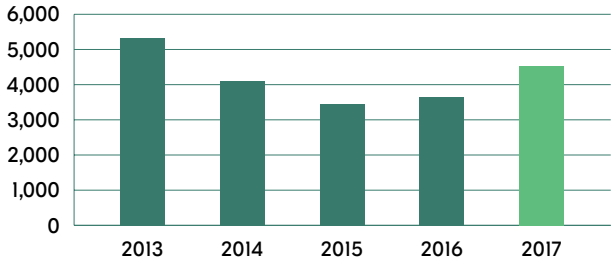
As of 1 March 2017, the City Solutions division was divided into two separate divisions: City Solutions and Consumer Solutions, reported as separate segments. City Solutions comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. Consumer Solutions comprises electricity and gas retail businesses in the Nordics and in Poland, including the customer service, invoicing and collection business. (Nordic customer services previously reported under the Other segment). Comparison figures in accordance with the new organisational structure were published on 11 April 2017.

Comparability of information presented in tables

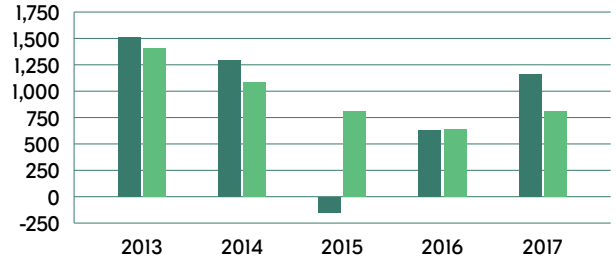
Following the divestment of the Swedish distribution business, Distribution segment is treated as discontinued operations in 2015. Financial results discussed in this operating and financial review are for the continuing operations of Fortum Group unless otherwise stated.

In addition, as of 2014, presented figures have been rounded and consequently the sum of individual figures may deviate from the sum presented. Figures in brackets refer to the comparison period unless otherwise stated.

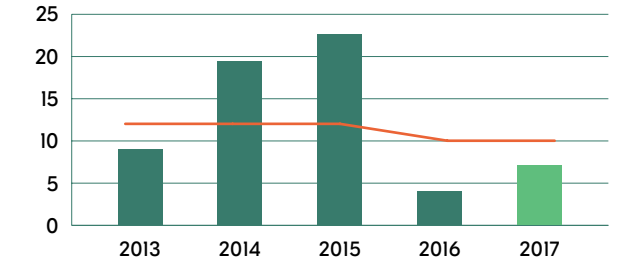
Sales, EUR million



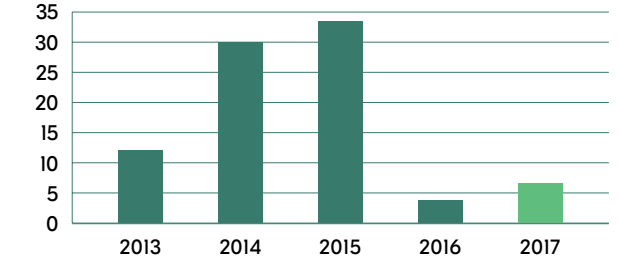
Operating profit and comparable operating profit, EUR million



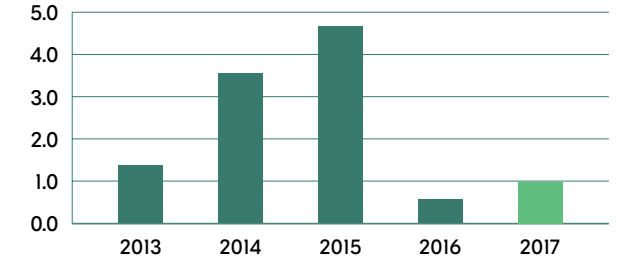
Return on capital employed total Fortum, %



Return on shareholders' equity total Fortum, %



Earnings per share total Fortum, EUR



Financial results

Sales by segment

EUR million	2017	2016	Change 17/16
Generation	1,677	1,657	1%
City Solutions	1,015	782	30%
Consumer Solutions	1,097	668	64%
Russia	1,101	896	23%
Other	102	92	11%
Netting of Nord Pool transactions [1)]	-367	-384	
Eliminations	-103	-79	
IS Total	**4,520**	**3,632**	**24%**

1) Sales and purchases with Nord Pool are netted at the Group level on an hourly basis and posted either as revenue or cost depending on whether Fortum is a net seller or net buyer during any particular hour.

Comparable EBITDA by segment

EUR million	2017	2016	Change 17/16
Generation	603	527	14%
City Solutions	262	186	41%
Consumer Solutions	57	55	4%
Russia	438	312	40%
Other	-83	-64	-30%
IS Total	**1,275**	**1,015**	**26%**

Comparable operating profit by segment

EUR million	2017	2016	Change 17/16
Generation	478	417	15%
City Solutions	98	64	53%
Consumer Solutions	41	48	-15%
Russia	296	191	55%
Other	-102	-77	-32%
IS Total	**811**	**644**	**26%**

Operating profit by segment

EUR million	2017	2016	Change 17/16
Generation	501	338	48%
City Solutions	102	86	19%
Consumer Solutions	39	59	-34%
Russia	295	226	31%
Other	221	-77	387%
IS Total	**1,158**	**633**	**83%**

For further information see ▸Note 5 Segment reporting.

In 2017, sales were EUR 4,520 (3,632) million. The increase was mainly due to the strengthening Russian rouble and the consolidation of Ekokem, Hafslund and DUON. Comparable EBITDA totalled EUR 1,275 (1,015) million. Comparable operating profit totalled EUR 811 (644) million. Comparable operating profit was positively impacted by the consolidation of Hafslund, higher achieved power prices, lower real estate and capacity taxes in Swedish nuclear and hydro power plants and by improved result in the Russian operations. Operating profit totalled EUR 1,158 (633) million. Fortum's operating profit for the period was impacted by items affecting comparability of EUR 347 (-11) million, including updated provisions, sales gains, transaction costs and the IFRS accounting treatment (IAS 39) of derivatives mainly used for hedging, as well as nuclear fund adjustments (▸Note 5). The sales gains include a one-time tax-free sales gain of EUR 324 million from the divestment of the 34.1% stake in Hafslund ASA (▸Note 38).

In 2017, Fortum reached the targeted EUR 100 million savings in fixed costs announced in 2016. At the same time, the cost spend has been shifted to businesses under development and new ventures.

The share of profit from associates and joint ventures was EUR 148 (131) million, of which Hafslund represented EUR 39 (51) million, TGC-1 EUR 32 (38) million and Fortum Värme EUR 66 (66) million. The share of profit from Hafslund is based on the company's published fourth-quarter 2016 and January–June 2017 interim reports. The share of profit from TGC-1 is based on the company's published fourth-quarter 2016 and January-September 2017 interim reports (▸Note 18). Due to the restructuring of Hafslund and the divestment of Fortum's 34.1% share in the company, Fortum will no longer have share of profits from Hafslund ASA.

Net finance costs amounted to EUR 195 (169) million, including costs relating to financing arrangements for the Uniper transaction.

Profit before income taxes was EUR 1,111 (595) million.

Taxes for the period totalled EUR 229 (90) million. The effective income tax rate according to the income statement was 20.6% (15.2%). The comparable effective income tax rate, excluding the impact of the share of profit from associated companies and joint ventures as well as non-taxable capital gains and other major one-time income tax effects, was 18.8% (20.0%) (▸Note 12).

The profit for the period was EUR 882 (504) million. Earnings per share were EUR 0.98 (0.56), of which EUR -0.14 per share was related to a Swedish income tax case and EUR 0.38 (-0.02) per share was related to items affecting comparability (▸Note 6 and ▸Note 36).

Cash flow

In 2017, net cash from operating activities increased by EUR 372 million to EUR 993 (621) million, due to a EUR 260 million increase in comparable EBITDA, a EUR 193 million decrease in realised foreign exchange gains and losses, a EUR 133 million decrease in income taxes paid and a EUR 183 decrease in working capital compared to the previous year. The foreign exchange gains and losses of EUR -83 (110) million relate to the rollover of foreign exchange contract hedging loans to Russian and Swedish subsidiaries. In June 2016, Fortum paid income taxes in Sweden totalling EUR 127 million regarding an ongoing tax dispute. The change in working capital in 2017 was EUR 81 (-102) million. The biggest impact was the effect of the daily cash settlements for futures in Nasdaq OMX Commodities Europe (▸Additional cash flow information).

Investments excluding acquisitions increased by EUR 58 million to EUR 657 (599) million compared to the previous year. Acquisition of shares amounted to EUR 972 (695) million mainly

Financial position and cash flow

EUR million	2017	2016	Change 17/16
Interest expense	-164	-169	3%
Interest income	32	30	7%
Fair value gains and losses on financial instruments	-12	-2	-500%
Other financial expenses - net	-50	-29	-72%
IS Finance costs - net	**-195**	**-169**	**-15%**
Interest-bearing liabilities	4,885	5,107	-4%
Less: Liquid funds	3,897	5,155	-24%
Interest-bearing net debt	**988**	**-48**	**2,158%**

due to the Hafslund transaction in 2017 and the acquisitions of Ekokem and Polish DUON in 2016. Divestment of shares, mainly the Hafslund transaction, amounted to EUR 741 million (39). Net cash used in investing activities decreased to EUR 807 (1,701) million including the increase in cash collaterals of EUR -3 (-359) million given as trading collaterals to commodity exchanges.

Cash flow before financing activities was EUR 187 (-1,080) million, mainly impacted by the Hafslund transaction.

In 2017, Fortum paid dividends totalling EUR 977 (977) million. Payments of long-term liabilities totalled EUR 543 (934) million, including the repayment of bonds of EUR 343 million and other loan repayments of EUR 200 million. The net decrease in liquid funds was EUR 1,241 (3,064) million.

Assets and capital employed

At the end of the reporting period, total assets amounted to EUR 21,753 (21,964) million, a decrease of EUR 211 million. Liquid funds at the end of the period amounted to EUR 3,897 (5,155) million. Capital employed decreased by EUR 477 million and was EUR 18,172 (18,649) million.

Equity

Equity attributable to owners of the parent company totalled EUR 13,048 (13,459) million.

The decrease in equity attributable to owners of the parent company was EUR 411 million, mainly due to the net profit for the period of EUR 866 million, translation differences of EUR -369 million and the dividend payment of EUR 977 million.

Financing

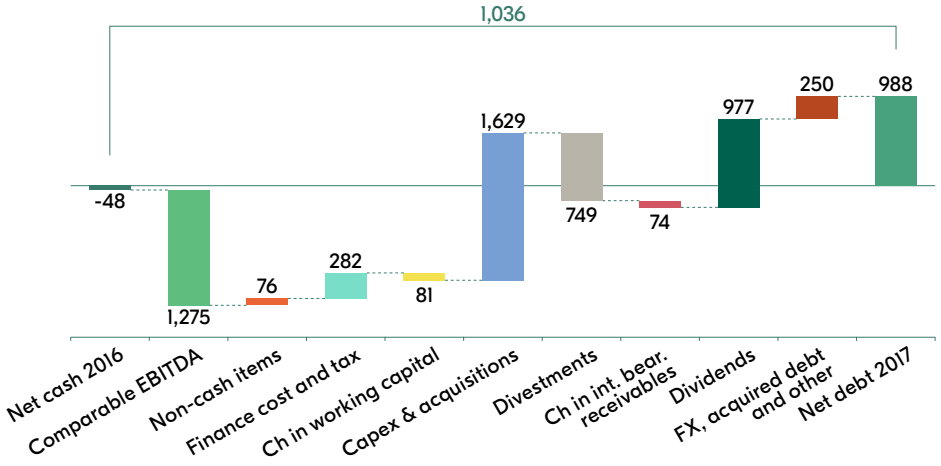
Net debt increased by EUR 1,036 million to EUR 988 (-48) million.

At the end of the reporting period, the Group's liquid funds totalled EUR 3,897 (5,155) million. Liquid funds include cash and bank deposits held by PAO Fortum amounting to EUR 246 (105) million. In addition to liquid funds, Fortum's undrawn committed credit facilities totalled EUR 1.8 billion (Note 23), excluding committed credit facilities of EUR 12.0 billion for Fortum's offer for Uniper shares.

Net financial expenses totalled EUR 195 (169) million, of which net interest expenses were EUR 132 (139) million. Net financial expenses include costs relating to financing arrangements of the Uniper transaction.

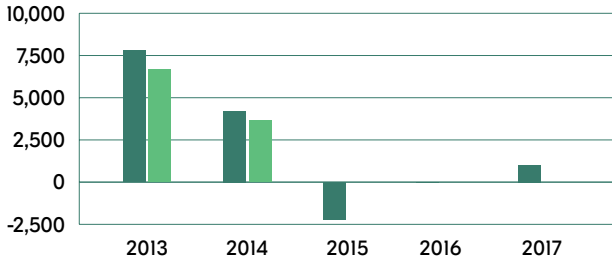
In September 2017, Standard & Poor's and Fitch Ratings placed both Fortum's long-term and short-term credit ratings on credit watch negative on possible adverse impacts of the planned Uniper investment. In January 2018, Standard & Poor's downgraded Fortum's long-term credit rating from BBB+ to BBB with a Negative Outlook due to the Uniper investment. The short-term rating was affirmed at level A-2. Fitch Ratings rates Fortum's long-term credit rating at level BBB+ and the short-term rating at level F2.

Change in net debt during 2017, EUR million

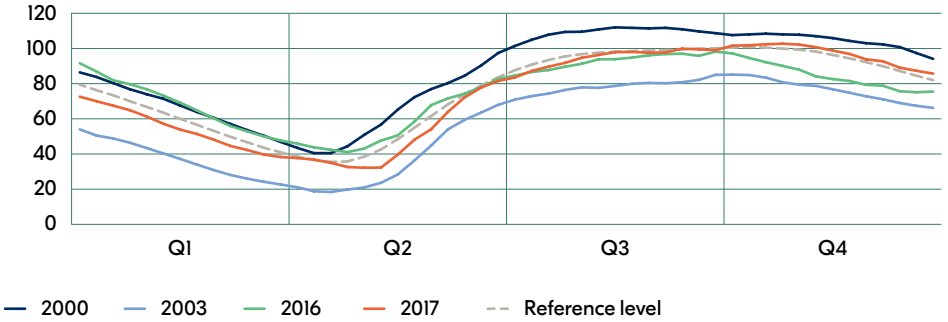


At the end of 2016 Fortum was in net cash position, see Financial position and cash flow table above.

Interest-bearing net debt, EUR million

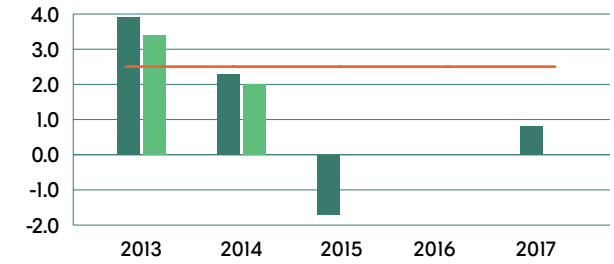


Nordic water reservoirs, energy content, TWh



Source: Nord Pool

Comparable net debt/EBITDA



Key figures

At the end of 2017, the comparable net debt to EBITDA ratio was 0.8 (0.0).

Gearing was 7% (0%) and the equity-to-assets ratio 61% (62%). Equity per share was EUR 14.69 (15.15). Return on capital employed improved to 7.1% (4.0%). Fortum targets a long-term Return on capital employed of at least 10%.

Market conditions

Nordic countries

According to preliminary statistics, electricity consumption in the Nordic countries was 392 (390) terawatt-hours (TWh) in 2017.

At the beginning of 2017, the Nordic water reservoirs were at 75 TWh, which is 8 TWh below the long-term average and 23 TWh lower compared to the previous year. At the end of 2017, the reservoirs were 86 TWh, which is 3 TWh above the long-term average and 11 TWh higher compared to the previous year. Precipitation in the Nordics, was clearly above the normal level both in the fourth quarter and during the full year 2017.

The average system spot price in Nord Pool for the year 2017 was EUR 29.4 (26.9) per MWh, and the average area price in Finland was EUR 33.2 (32.4) per MWh and EUR 31.2 (29.2) per MWh in Sweden (SE3, Stockholm). The main driver for the price increase was the clearly higher marginal cost of coal condensing power, which has contributed to stronger continental prices and increased exports from the Nordics.

In Germany, the average spot price in 2017 increased to EUR 34.2 (29.0) per MWh.

The market price of CO_2 emission allowances (EUA) increased from EUR 6.5 per tonne at the beginning of the year to EUR 8.2 per tonne at the end of 2017.

Russia

Fortum operates both in the Tyumen and Khanty-Mansiysk area of Western Siberia, where industrial production is dominated by the oil and gas industries, and in the Chelyabinsk area of the Urals, which is dominated by the metal industry. The Russian market is divided in two price zones and Fortum operates in the First Price Zone.

Russian electricity consumption in 2017 was 1,035 (1,027) TWh and the corresponding figure for the First Price Zone was 799 (787) TWh.

In 2017, the average electricity spot price, excluding capacity price, was unchanged at RUB 1,204 (1,204) per MWh in the First Price Zone.

Power consumption

TWh	2017	2016	2015
Nordic countries	392	390	381
Russia	1,035	1,027	1,007
Tyumen	95	94	93
Chelyabinsk	33	35	35
Russia Urals area	261	259	258

Average prices

TWh	2017	2016	2015
Spot price for power in Nord Pool power exchange, EUR/MWh	29.4	26.9	21.0
Spot price for power in Finland, EUR/MWh	33.2	32.4	29.7
Spot price for power in Sweden, SE3, Stockholm, EUR/MWh	31.2	29.2	22.0
Spot price for power in Sweden, SE2, Sundsvall, EUR/MWh	30.8	29.0	21.2
Spot price for power in European and Urals part of Russia, RUB/MWh [1)]	1,204	1,204	1,154
Average capacity price, tRUB/MW/month	535	481	359
Spot price for power in Germany, EUR/MWh	34.2	29.0	31.6
Average regulated gas price in Urals region, RUB/1,000 m^3	3,685	3,614	3,488
Average capacity price for old capacity, tRUB/MW/month [2)]	148	140	149
Average capacity price for new capacity, tRUB/MW/month [2)]	899	815	641
Spot price for power (market price), Urals hub, RUB/MWh [1)]	1,041	1,054	1,047
CO_2, (ETS EUA), EUR/tonne CO_2	6	5	8
Coal (ICE Rotterdam), USD/tonne	84	59	57
Oil (Brent Crude), USD/bbl	55	45	54

1) Excluding capacity tariff.

2) Capacity prices paid only for the capacity available at the time.

Water reservoirs

TWh	31 Dec 2017	31 Dec 2016	31 Dec 2015
Nordic water reservoirs level	86	75	98
Nordic water reservoirs level, long-term average	83	83	83

Export/import

TWh (+ = import to, - = export from Nordic area)	2017	2016	2015
Export/import between Nordic area and Continental Europe+Baltics	-15	-10	-18
Export/import between Nordic area and Russia	6	6	4
Export/import Nordic area, total	-9	-4	-14

European business environment and carbon market

Revision of the EU ETS approved

After two and a half years of legislative processing the revision of the EU Emissions Trading Scheme (ETS) for the period 2021–2030 was adopted in December. The new rules will increase the annual emission reduction target of the ETS from the current 1.74% to 2.2%. From the carbon market balance and pricing perspective the essential improvement is the strengthening of the Market Stability Reserve (MSR), including a temporary doubling of the intake rate from 12% to 24% during 2019–2023 and cancellation of allowances from the reserve from 2023 onwards. In addition, the new directive includes a provision for voluntary cancellation of allowances from the market.

However, the agreed setup is not yet in line with the Paris Climate Agreement and meets only the lower end of the EU 2050 goal to reduce emissions by 80–95% by 2050.

Swedish hydropower legislation

In June, the Swedish Government released a proposal on revision of hydro legislation including changes in the Environmental Act. This is a follow-up of the Swedish energy agreement done in summer 2016 and includes adjustments to meet requirements based on the EU Water Framework Directive. The aim is to mitigate environmental impacts and facilitate more efficient power production. According to the proposal, environmental permits for hydropower should be revised during a 20-year period in accordance with a national plan for prioritisation. The Ministry of Environment aims to have the revised legislation in place in March 2018.

Fortum emphasises the need to reform the Swedish system for hydro management. However, the proposal fails in ensuring a fair balance between environmental improvements and power production and a reasonable level of legal certainty.

The energy agreement requires hydro power companies to carry the full cost of environmental improvements. The largest hydro power companies are planning a joint fund in order to

secure financing for the improvements. The fund is expected to be in operation from July 2018 provided that the revision of hydro legislation has been completed.

Swedish nuclear waste fund fee approved

In December, the Swedish Government decided on the waste fund fees for the period 2018–2020. The fees are based on a new structure with a calculated lifetime of 50 years and on parts of the funds capital being invested in shares.

Swedish nuclear and hydro taxes adopted

In May, the Swedish Parliament adopted the proposed changes of nuclear and hydropower taxation in accordance with the energy agreement from June 2016. Starting from 1 July 2017, the tax on installed effect in nuclear reactors decreased by 90%, from SEK 14,770/MW/month to SEK 1,500/MW/month, and on 1 January 2018 the tax was abolished. The hydropower real-estate tax will be reduced from 2.8% to 0.5% in four steps by 2020.

Development of Nordic energy cooperation

Development of regional energy cooperation in the Nordic context moved forward in 2017. Following the June 2017 report by independent investigator Jorma Ollila, the Nordic energy ministers discussed the report in their annual meeting in November. They agreed on next-step actions to implement these proposals, including a proposal to establish a Nordic electricity market forum comprising various actors in the sector to discuss topics particularly related to development of the Nordic regional power market.

Segment reviews

Generation

The Generation segment comprises power production in the Nordics including nuclear, hydro and thermal power production, powerportfolio optimisation, trading and industrial intelligence, and nuclear services globally.

EUR million	2017	2016	Change 17/16
Sales	1,677	1,657	1%
- power sales	1,649	1,635	1%
of which Nordic power sales [1]	1,342	1,339	0%
- other sales	28	22	27%
Comparable EBITDA	603	527	14%
Comparable operating profit	478	417	15%
Operating profit	501	338	48%
Share of profits from associates and joint ventures [2]	-1	-34	97%
Comparable net assets (at period-end)	5,672	5,815	-2%
Comparable return on net assets, %	8.4	6.9	22%
Capital expenditure and gross investments in shares	264	203	30%
Number of employees	1,035	979	6%

1) The Nordic power sales income and volume includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

2) Power plants are often built jointly with other power producers, and owners purchase electricity at cost including interest cost and production taxes. The share of profit/loss is mainly IFRS adjustments (e.g. accounting for nuclear-related assets and liabilities) and depreciations on fair-value adjustments from historical acquisitions (▸ Note 18).

In 2017, the Generation segment's total power generation in the Nordic countries was 44.2 (45.3) TWh. CO_2-free production accounted for 99% (99%) of the total production.

Comparable EBITDA increased to EUR 603 (527) million. Comparable operating profit improved to EUR 478 (417) million. The increase was mainly related to the higher achieved power price, and lower real-estate and capacity taxes in Swedish hydro and nuclear power plants, and was partly offset by lower nuclear production volumes resulting from the closure of Oskarshamn 1 and lower nuclear availability.

Operating profit clearly increased to EUR 501 (338) million and was positively affected by EUR 23 (-79) million of the IFRS accounting treatment (IAS 39) of derivatives mainly used for hedging Fortum's power production, updated provisions, and by nuclear fund adjustments (▸ Note 5).

The share of profits from associated companies and joint ventures totalled EUR -1 (-34) million (▸ Note 18).

The Nordic power price achieved in the Generation segment was EUR 31.8 (31.0) per MWh, EUR 0.8 per MWh higher than in 2016. The average system spot price of electricity in Nord Pool was EUR 29.4 (26.9) per MWh. The average area price in Finland was EUR 33.2 (32.4) per MWh and in Sweden (SE3, Stockholm) EUR 31.2 (29.2) per MWh.

Power generation by source

TWh	2017	2016	Change 17/16
Hydro power, Nordic	20.7	20.7	0%
Nuclear power, Nordic	23.0	24.1	-5%
Thermal power, Nordic	0.5	0.5	0%
Total in the Nordic countries	**44.2**	**45.3**	**-2%**

Nordic sales volume

TWh	2017	2016	Change 17/16
Nordic sales volume	51.8	52.4	-1%
of which Nordic Power sales volume [1]	42.2	43.2	-2%

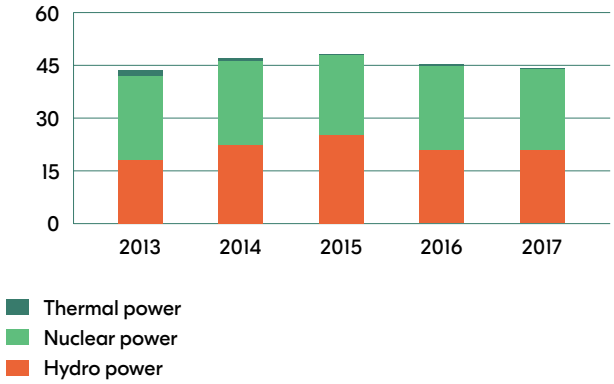
1) The Nordic power sales income and volume includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

Sales price

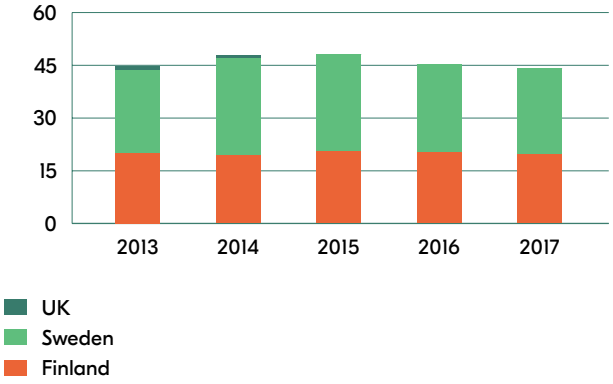
EUR/MWh	2017	2016	Change 17/16
Generation's Nordic power price [2]	31.8	31.0	3%

2) Generation's Nordic power price includes hydro and nuclear generation, excluding minorities. It does not include thermal generation, minorities, customer business or other purchases.

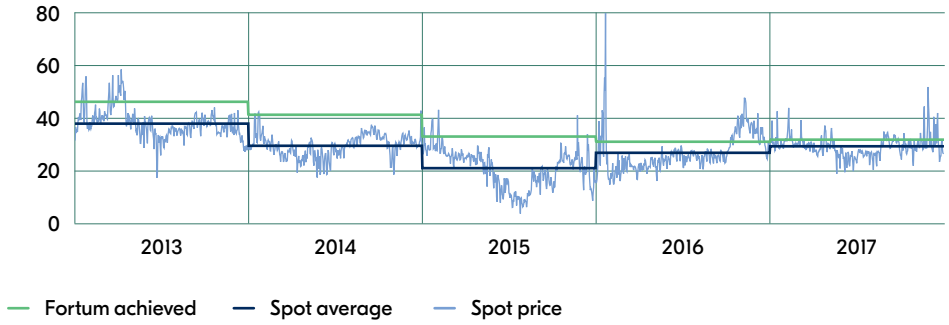
Generation segment's power generation in the Nordic area by source, TWh



Generation segment's power generation by area, TWh



Nord Pool, power price, 2013–2017, EUR/MWh



Source: Nord Pool, Fortum

City Solutions

City Solutions develops sustainable city solutions into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. The business operations are located in the Nordics, the Baltic countries and Poland. The segment also includes Fortum's 50% holding in Fortum Värme, which is a joint venture and is accounted for using the equity method.

EUR million	2017	2016	Change 17/16
Sales	1,015	782	30%
- heat sales	523	448	17%
- power sales	121	122	-1%
- other sales	370	212	75%
Comparable EBITDA	262	186	41%
Comparable operating profit	98	64	53%
Operating profit	102	86	19%
Share of profits from associates and joint ventures	80	76	5%
Comparable net assets (at period-end)	3,728	2,873	30%
Comparable return on net assets, %	5.5	5.9	-7%
Capital expenditure and gross investments in shares	556	807	-31%
Number of employees	1,907	1,701	12%

In April 2017, Ekokem was rebranded to Fortum. The rebranded Ekokem forms City Solutions' Recycling and Waste Solutions unit.

On 4 August 2017, Fortum concluded the restructuring of its ownership in Hafslund. Fortum's 50% ownership in Fortum Oslo Varme (the combined company of Hafslund's Heat business area and Fortum Oslo Varme KEA has been consolidated as a subsidiary to Fortum in the results of City Solutions as of 1 August 2017.

Heat sales volumes amounted to 10.0 (8.7) TWh. Power sales volumes from CHP production totalled 2.6 (2.8) TWh, of which Fortum Oslo Varme's share was 0.7 TWh.

Sales increased to EUR 1,015 (782) million, mainly as a consequence of the consolidation of Ekokem and Fortum Oslo Varme.

Comparable EBITDA increased and totalled EUR 262 (186) million. Comparable operating profit improved to EUR 98 (64) million. The consolidation of Fortum Oslo Varme had a positive effect of EUR 29 million on the comparable EBITDA and EUR 15 million on the comparable operating profit. In addition, the consolidation of Ekokem, improved power prices and fuel mix contributed positively to the results.

Operating profit totalled EUR 102 (86) million, including EUR 4 (22) of items affecting comparability (Note 5).

The share of profits from associated companies and joint ventures totalled EUR 80 (76) million, including the share of profit from Fortum Värme (Note 18).

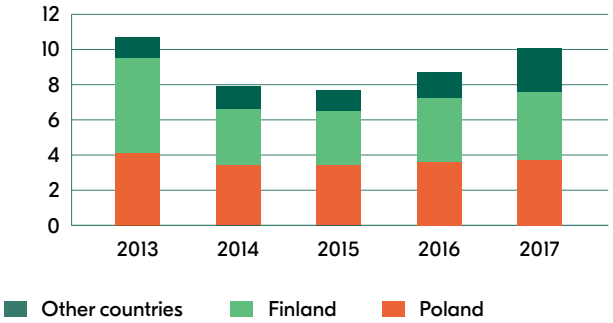
Heat sales by country

TWh	2017	2016	Change 17/16
Finland	3.9	3.6	8%
Poland	3.7	3.6	3%
Other countries	2.5	1.5	67%
Total	**10.0**	**8.7**	**15%**

Power sales by country

TWh	2017	2016	Change 17/16
Finland	1.5	1.5	0%
Poland	0.4	0.7	-43%
Other countries	0.7	0.6	17%
Total	**2.6**	**2.8**	**-7%**

Heat sales by country, TWh



Consumer Solutions

Consumer Solutions comprises electricity and gas retail businesses in the Nordics and Poland, including the customer service, invoicing and debt collection business. Fortum is the largest electricity retail business in the Nordics, with approximately 2.5 million customers across different brands in Finland, Sweden, Norway and Poland. The business provides electricity and related value-added products as well as new digital customer solutions.

EUR million	2017	2016	Change 17/16
Sales	1,097	668	64%
- power sales	862	528	63%
- other sales	235	139	69%
Comparable EBITDA	57	55	4%
Comparable operating profit	41	48	-15%
Operating profit	39	59	-34%
Comparable net assets (at period-end)	638	154	314%
Capital expenditure and gross investments in shares	493	120	311%
Number of employees	1,543	961	61%

On 4 August 2017, Fortum concluded the restructuring of its ownership in Hafslund. Hafslund Markets has been consolidated into the results of Consumer Solutions as of 1 August 2017

Electricity and gas sales volumes totalled 24.4 (14.8) TWh. The total customer base at the end of the period was 2.49 (1.36) million.

Sales increased to EUR 1,097 (668) million, mainly due to the consolidation of Polish DUON and Hafslund.

Comparable EBITDA amounted to EUR 57 (55) million and comparable operating profit was EUR 41 (48) million. The consolidation of Hafslund had a positive effect of EUR 22 million on the comparable EBITDA and EUR 13 million on the comparable operating profit. The result improvement was offset by the lower average margin in electricity and gas products and higher costs arising from the increased focus and spend on the development of new digital services. The renegotiated invoicing service agreements for external distribution companies also had a negative impact on the results.

Operating profit declined to EUR 39 (59) million affected by sales gains and the IFRS accounting treatment (IAS 39) of derivatives, mainly used for hedging, EUR -2 (11) million (Note 5).

Sales volumes

TWh	2017	2016	Change 17/16
Electricity	20.5	12.3	67%
Gas *	4.0	2.5	60%

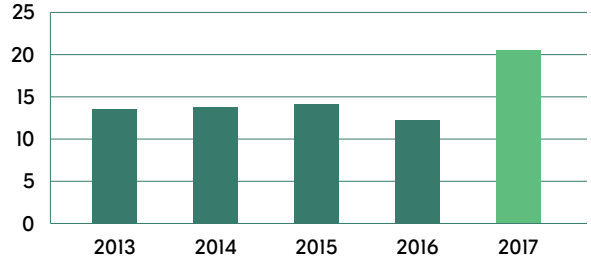
* Not including wholesale volumes.

Number of customers

Thousands *	2017	2016	Change 17/16
Electricity	2,470	1,350	83%
Gas	20	10	100%
Total	**2,490**	**1,360**	**83%**

* Rounded to the nearest 10,000.

Electricity sales, TWh



Russia

The Russia segment comprises power and heat generation and sales in Russia. The segment also includes Fortum's over 29% holding in TGC-1, which is an associated company and is accounted for using the equity method.

EUR million	2017	2016	Change 17/16
Sales	1,101	896	23%
- power sales	837	691	21%
- heat sales	258	199	30%
- other sales	6	6	0%
Comparable EBITDA	438	312	40%
Comparable operating profit	296	191	55%
Operating profit	295	226	31%
Share of profits from associates and joint ventures	31	38	-18%
Comparable net assets (at period-end)	3,161	3,284	-4%
Comparable return on net assets, %	10.1	8.0	26%
Capital expenditure and gross investments in shares	277	201	38%
Number of employees	3,495	3,745	-7%

After the completion of the multi-year investment programme in March 2016, Fortum's total capacity in Russia amounts to 4,794 MW, including 35 MW of solar power acquired at the end of 2017. The generation capacity built after the year 2007 amounts to 2,333 MW. Under the Russian Capacity Supply Agreement (CSA – "new capacity") this capacity entitles Fortum to guaranteed payments for approximately ten years after the commissioning of each new unit. The received capacity payments vary depending on age, location, type and size of the plant, as well as on seasonality and availability. The CSA payments can also vary somewhat on an annual basis, as they are linked to Russian Government long-term bonds with eight to ten years maturity.

In March 2017, the System Administrator of the wholesale market published its annual data which is the basis for the CSA payment calculation. These components comprise among others the weighted average cost of capital (WACC), the consumer price index (CPI) and re-examination of earnings from the electricity-only (spot) market (done every three and six years after commissioning of a unit). Fortum's CSA payment for 2017 was revised upwards to compensate for lower earnings from the electricity-only market. In addition, certain power plants were entitled to higher CSA payments when entering into the seven-to-ten year time period of generation. The increase of the CSA payment was somewhat offset by lower Government bond rates and consumer price index (CPI).

Fortum's Russian capacity generation, totalling 2,461 MW, was allowed to participate in the Competitive Capacity Selection (CCS – "old capacity") for 2017. All Fortum plants offered in the auction were selected. Fortum has obtained forced mode status for 195 MW of its capacity, i.e. it receives higher-rate capacity payments.

In 2017, the Russia segment's power sales volumes amounted to 30.5 (29.5) TWh and heat sales volumes totalled 19.8 (20.7) TWh. The power volumes increased due to commissioning of the Chelyabinsk GRES unit 3.

Sales increased to EUR 1,101 (896) million, mainly supported by the strengthening of the Russian rouble, higher received CSA payments, the change in the heat supply scheme in Tyumen and commissioning of the Chelyabinsk GRES unit 3.

The Russia segment's comparable EBITDA was EUR 438 (312) million and the comparable operating profit was EUR 296 (191) million. The Russian rouble had a positive effect of EUR 31 million. The commissioning of the new unit, higher received CSA payments, higher power volumes, as well as improved bad-debt collections also affected the results positively.

Operating profit was EUR 295 (226) million, including sales gains of EUR 0 (35) million (Note 5).

The share of profits from associated companies and joint ventures totalled EUR 31 (38) million (Note 18).

Key electricity, capacity and gas prices for Fortum Russia

	2017	2016	Change 17/16
Electricity spot price (market price), Urals hub, RUB/MWh	1,041	1,054	-1%
Average regulated gas price, Urals region, RUB/1,000 m^3	3,685	3,614	2%
Average capacity price for CCS "old capacity", tRUB/MW/month [1]	148	140	6%
Average capacity price for CSA "new capacity", tRUB/MW/month [1]	899	815	10%
Average capacity price, tRUB/MW/month	535	481	11%
Achieved power price for Fortum in Russia, RUB/MWh	1,813	1,734	5%
Achieved power price for Fortum in Russia, EUR/MWh [2]	27.5	23.5	17%

1) Capacity prices paid for the capacity volumes, excluding unplanned outages, repairs and own consumption.

2) Translated using average exchange rate.

Capital expenditure, divestments and investments in shares

EUR million	2017	2016
Capital expenditure		
Intangible assets	18	3
Property, plant and equipment	672	588
Total	**690**	**591**
Gross investments in shares		
Subsidiaries	982	813
Associated companies	135	17
Available for sale financial assets	8	14
Total	**1,125**	**844**

See also ▸ **Note 17.2** Capital expenditure.

Fortum expects to start the supply of power and heat from new power plants and to upgrade existing plants as follows:

	Type	Electricity capacity MW	Heat capacity MW	Supply starts
Generation				
Loviisa, Finland	Nuclear	6		2018
Hydro plants in Sweden and Finland	Hydro	~12		2018
City Solutions				
Zabrze, Poland	CHP	75	145	2018
Russia				
Ulyanovsk	Wind	35		1 Jan 2018
Ulyanovsk	Wind	50 [1)]		H1 2019
Other				
Solberg, Sweden	Wind	75 [2)]		Q1 2018
Åstadblåheia, Norway	Wind	50		2018
Sørfjord, Norway	Wind	97		2019
Karnataka, India	Solar	100		Q4 2017

1) Fortum-RUSNANO wind investment fund is a joint venture and Fortum's share is 50%.

2) Skellefteå Kraft AB (SKAB) is participating in the project with a 50% (37.5 MW) share.

Generation

Through its interest in Teollisuuden Voima Oyj (TVO), Fortum is participating in the building of Olkiluoto 3 (OL3), a 1,600-MW nuclear power plant unit in Finland. The plant's start of regular electricity production is expected to take place in May 2019, according to the plant supplier AREVA-Siemens Consortium.

Olkiluoto 3 is funded through external loans, share issues and shareholder loans according to shareholder agreements between the owners and TVO. As a 25% shareholder in Olkiluoto 3, Fortum has committed to funding of the project pro rata. At the end of December 2017, Fortum's shareholder loans to TVO amounted to EUR 145 million and the outstanding commitment for was EUR 88 million (▸ **Note 20**).

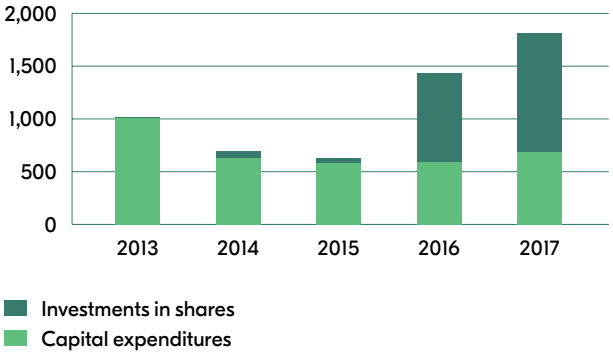
City Solutions

On 30 March 2017, the final decision regarding the minority redemption process of Ekokem Oyj shares was made by the arbitration court, bringing Fortum's ownership to 100%.

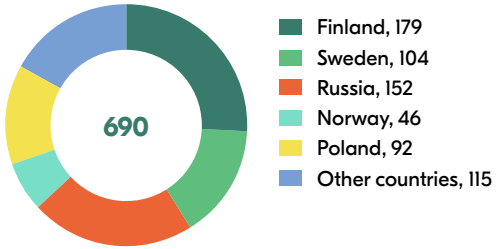
Consumer Solutions

In May 2017, Fortum agreed to sell 100% of its shares in the Polish gas infrastructure company DUON Dystrybucja S.A. to Infracapital, the infrastructure investment arm of M&G Investments. DUON Dystrybucja S.A. is transporting grid gas and LNG in Poland. The company was acquired as part of the acquisition of the electricity and gas sales company Grupa DUON S.A. (currently Fortum Markets Polska S.A.) in 2016. The divestment was concluded on 28 July 2017. The sale had a minor positive impact on Fortum's 2017 results.

Capital expenditure and gross investments in shares, EUR million



Capital expenditure by country, EUR million



Russia

On 27 April 2017, Fortum and RUSNANO, a Russian state-owned development company, signed a 50/50 investment partnership (joint venture) in order to secure the possibility of a Russian Capacity Supply Agreement (CSA) wind portfolio. In June, 1,000 MW of the bids of the Fortum-RUSNANO wind investment fund were selected in the Russian renewable energy auction. The bids were for projects to be commissioned during 2018–2022 with a price corresponding to approximately EUR 115–135 per MWh. The projects will be covered by CSA for a period of 15 years. The investment decisions will be made on a case-by-case basis within the total mandate of the wind investment fund. Fortum's equity stake in the wind investment fund totals a maximum of RUB 15 billion (currently approximately EUR 220 million). The amount is to be invested over time (approx. 5 years), subject to separate investment decisions. The investment fund has selected Vestas as the supplier of wind turbines in Russia. In October 2017,

the wind investment fund made an investment decision on the first 50-MW wind farm. The wind farm is expected to start production during the first half of 2019.

In November 2017, Fortum completed the replacement investment at the Chelyabinsk GRES power plant. The new combined-cycle gas turbine (CCGT) unit with 247.5 MW of electricity generation capacity and 174 MW of heat capacity started commercial operation. The new turbine replaces the previous eight turbine generators in the power plant. This unit is not within the scope of the previously completed larger investment programme and consequently receives Competitive Capacity Selection (CCS) payments. Fortum's Chelyabinsk GRES site has electricity generation capacity of 742 MW and heat production capacity of 988 MW.

On 30 November 2017, Fortum signed an agreement to acquire three solar power companies from Hevel Group, Russia's largest integrated solar power company. The transaction was closed in December 2017. All three power plants are operational with a total capacity of 35 MW. The plants will receive Capacity Supply Agreement (CSA) payments for approximately 15 years after commissioning at an average CSA price corresponding to approximately EUR 430/MWh. The plants were commissioned in 2016 and 2017. Hevel Group will provide operation and maintenance services for all three power plants.

Other

In January 2017, Fortum finalised the acquisition of three wind power projects from the Norwegian company Nordkraft. The transaction consists of the Nygårdsfjellet wind farm, which is already operational, as well as the fully-permitted Åstadblåheia and Sørfjord projects. The wind farms are expected to be commissioned in 2018 and 2019. When built, the total installed capacity of the three wind farms will be approximately 170 MW. On 29 September 2017, Fortum announced the decision to invest in the Sørfjord wind farm in northern Norway. The Sørfjord wind park will have 23 wind turbines with a total capacity of 97 megawatts. The wind turbines for Sørfjord will be delivered by Siemens Gamesa Renewable Energy.

In March 2017, Fortum commissioned the 70-MW solar plant at Bhadla solar park in Rajasthan, India and in December 2017 Fortum commissioned the 100-MW solar plant at Pavagada solar park in Karnataka, India. Fortum won a reverse auction for the projects in 2016. The power plants will operate based on a Power Purchase Agreement (PPA), with a fixed tariff for 25 years. The Power Purchase Agreements have been made with National Thermal Power Corporation Limited (NTPC), India's largest power utility.

Research and development

Sustainability is at the core of Fortum's strategy and, alongside Fortum's current businesses, the company is carefully exploring and developing new sources of growth within renewable energy production.

Fortum's goal is to be at the forefront of energy technology and application development. To accelerate innovation and the commercialisation of new offerings, Fortum is strengthening its in-house innovation and digitalisation efforts and building partnerships with leading global suppliers, promising technology and service companies, and research institutions. Fortum makes direct and indirect investments in start-ups that have promising new innovations focused on connectivity, have disruptive potential and accelerate the transition towards a circular economy. Fortum also invests in technologies that support better utilisation of the current asset base and that can create new markets and products for Fortum. The company is continuously looking for emerging clean energy solutions and for solutions that increase resource and system efficiency.

The Group reports its R&D expenditure on a yearly basis. In 2017, Fortum's R&D expenditure was EUR 53 (52) million, or 1.2% (1.4%) of sales.

EUR million	2017	2016	2015	Change 17/16
R&D expenditure, EUR million	53	52	47	2%
R&D expenditure, % of sales	1.2	1.4	1.4	

Changes in Fortum's Management

On 8 February 2017, Markus Rauramo, Executive Vice President, City Solutions, was appointed Chief Financial Officer of the company as of 1 March 2017 following Timo Karttinen's resignation from his CFO duties. At the same time, Per Langer, Senior Vice President, Technology and New Ventures, was appointed Executive Vice President, City Solutions, also as of 1 March 2017.

On 20 March 2017, Mikael Rönnblad, M.Sc. (Econ.), was appointed Executive Vice President, Consumer Solutions, and member of Fortum's Executive Management. Rönnblad started in his position on 15 May 2017.

On 31 October 2017, Matti Ruotsala, Deputy CEO, retired from the company.

On 9 November 2017, Fortum announced that Tapio Kuula, member of the Board of Directors and former President and CEO had passed away after a long illness. On 15 November 2017, Fortum's Shareholders' Nomination Board evaluated and confirmed the Board of Directors' ability to function with seven members until the Annual General Meeting 2018.

Annual General Meeting 2017

Fortum Corporation's Annual General Meeting, which was held in Helsinki on 4 April 2017, adopted the financial statements of the parent company and the Group for the financial period 1 January–31 December 2016, and discharged the members of Fortum's Board of Directors and the President and CEO from liability for the year 2016.

The Annual General Meeting decided to pay a dividend of EUR 1.10 per share for the financial year that ended on 31 December 2016. The record date for the dividend payment was 6 April 2017, and the dividend payment date was 13 April 2017.

The Annual General Meeting confirmed the remuneration of EUR 75,000 per year to the Chairman, EUR 57,000 per year to the Deputy Chairman, EUR 40,000 per year to each member of the Board, as well as EUR 57,000 per year to the Board member acting as the Chairman of the Audit and Risk Committee if he or she is not at the same time acting as Chairman or Deputy Chairman of the Board. In addition, a EUR 600 meeting fee is paid for Board meetings as well as for committee meetings. The meeting fee is doubled for Board members who live outside Finland in Europe and tripled for members living outside Europe. For Board members

living in Finland, the fee for each Board and Board Committee meeting is doubled for meetings held outside Finland and tripled for meetings outside Europe. For Board and Committee meetings held as a telephone conference, the basic meeting fee is paid to all members. No fee is paid for decisions made without a separate meeting.

The Annual General Meeting also confirmed the number of members in the Board of Directors to be eight. Ms Sari Baldauf was re-elected as Chairman, Mr Matti Lievonen was elected as a new member and Deputy Chairman, Mr Heinz-Werner Binzel, Ms Eva Hamilton, Mr Kim Ignatius, Mr Tapio Kuula and Mr Veli-Matti Reinikkala were re-elected as members, and Ms Anja McAlister was elected as a new member.

In addition, Authorised Public Accountant Deloitte & Touche Ltd (Deloitte Ltd as of 1 June 2017) was re-elected as auditor, with Authorised Public Accountant Ms Reeta Virolainen as the principal auditor. The auditor's fee is paid pursuant to an invoice approved by the company.

The Annual General Meeting authorised the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum number of 20,000,000 shares, which corresponds to approximately 2.25 per cent of all the shares in the company. It was also decided that own shares could be repurchased or disposed of in connection with acquisitions, investments or other business transactions, or be retained or cancelled. The repurchases or disposals could not be made for the purposes of the company's incentive and remuneration schemes. The authorisation cancelled the authorisation resolved by the Annual General Meeting of 2016 and it will be effective until the next Annual General Meeting and, in any event, for a period of no longer than 18 months.

At the meeting held after the Annual General Meeting, Fortum's Board of Directors elected from among its members to the Nomination and Remuneration Committee Matti Lievonen as Chairman and Sari Baldauf, Eva Hamilton, and Tapio Kuula as members. Furthermore, the Board elected to the Audit and Risk Committee Kim Ignatius as Chairman and Heinz-Werner Binzel, Anja McAlister and Veli-Matti Reinikkala as members.

Shareholders Nomination Board

On 9 October 2017, Pekka Timonen (Chairman), Director General of the Ministry of Economic Affairs and Employment, Timo Ritakallio, President and CEO, Ilmarinen Mutual Pension Insurance Company, and Elli Aaltonen, Director General, The Social Insurance Institution of Finland KELA, were appointed to Fortum's Shareholders' Nomination Board. In addition, Sari Baldauf, Chairman of Fortum's Board of Directors, is a member of the Shareholders' Nomination Board.

Other events during the reporting period

On 19 December 2017, Fortum announced that the Board of Directors has decided to commence the 2018–2020 long-term incentive (LTI) plan for key employees and executives. The 2018–2020 LTI plan is part of Fortum's ongoing LTI programme and follows the same principles as the previous plan. The performance measures applied to the 2018–2020 LTI plan will be based on cumulative Earnings Per Share over three years and Total Shareholder Return measured relative to the European Utilities Group, both with an equal weight of 50%. The 2018–2020 LTI plan will comprise approximately 110 participants, including the members of Fortum Executive Management. The maximum number of shares that may potentially be delivered as a reward under the 2018–2020 LTI plan, based on the currently prevailing price of Fortum's share, is expected not to exceed 700,000 shares.

Events after the balance sheet date

On 8 January 2018, E.ON SE announced that it had decided to tender its 170,720,340 Uniper SE shares (corresponding to 46.65% of shares and voting rights) into Fortum's public takeover offer.

On 19 January 2018, Fortum announced that 46.93% of the share capital and the voting rights in Uniper were tendered during the initial acceptance period of Fortum's voluntary public takeover offer for the outstanding shares of Uniper corresponding to 171,736,647 shares. The initial acceptance period ended on 16 January 2018 and the additional acceptance period resumed on 20 January 2018 and will end on 2 February 2018.

Key drivers and risks

Fortum's financial results are exposed to a number of economic, strategic, political, financial and operational risks.

One of the key factors influencing Fortum's business performance is the wholesale price of electricity in the Nordic region. The key drivers behind the wholesale price development in the Nordic region are the supply-demand balance, the prices of fuel and CO_2 emission allowances, and the hydrological situation.

The world economy has recently been growing at an increasing pace. The overall economic growth impacts commodity and CO_2 emission allowance prices, which has an effect on the Nordic wholesale price of electricity. In Fortum's Russian business, the key drivers are economic growth, the rouble exchange rate, regulation around the heat business, and the further development of the electricity and capacity markets. In all regions, fuel prices and power plant availability also impact profitability. In addition, increased volatility in exchange rates due to financial turbulence could have both translation and transaction effects on Fortum's financials, especially through the Russian rouble and Swedish krona.

In the Nordic countries, the regulatory and fiscal environment for the energy and environmental management sectors has also added risks for companies. The main strategic risk is that the regulatory and market environment develops in a way that we have not been able to foresee and prepare for. In response to these uncertainties, Fortum has analysed and assessed a number of future energy market and regulation scenarios, including the impact of these on different generation forms and technologies. As a result, Fortum's strategy was renewed in 2016 to include broadening the base of revenues and diversification into new businesses, technologies and markets. The environmental management business is based on the framework and opportunities created by environmental regulation. Being able to respond to customer needs created by the tightening regulation is a key success factor.

For further details on Fortum's risks and risk management, see the ▸ Risk management section of the Operating and financial review and ▸ Note 3 Financial risk management.

Outlook

Nordic market

Electricity is expected to continue to gain a higher share of total energy consumption. Electricity demand in the Nordic countries is expected to grow by approximately 0.5% on average, while the growth rate for the next few years will largely be determined by macroeconomic developments in Europe, and especially in the Nordic countries.

The price of oil and coal in 2017, was on a clearly higher level compared to the previous year. The price of CO_2 emission allowances (EUA) also increased during the fourth quarter of 2017. The price of electricity for the upcoming 12 months decreased in the Nordics due to a stronger hydrological balance but increased in Germany due to higher fuel prices.

Late in January 2018, the forward quotation for coal (ICE Rotterdam) for the remainder of 2018 was around USD 88 per tonne and the market price for CO_2 emission allowances for 2018 around EUR 8.90 per tonne. The Nordic system electricity forward price at Nasdaq Commodities for the remainder of 2018 was around EUR 27 per MWh and for 2019 around EUR 26 per MWh. In Germany, the electricity forward price for the remainder of 2018 and 2019 was around EUR 35 per MWh. Nordic water reservoirs were about 2 TWh below the long-term average, and were 7 TWh higher than a year earlier.

Generation

The Generation segment's achieved Nordic power price typically depends on such factors as hedge ratios, hedge prices, spot prices, availability and utilisation of Fortum's flexible production portfolio, and currency fluctuations. Excluding the potential effects from changes in the power generation mix, a 1 EUR/MWh change in the Generation segment's Nordic power sales achieved price will result in an approximately EUR 45 million change in Fortum's annual comparable operating profit. Achieved power price includes also the results of optimization of Fortum's hydro and nuclear production as well as operations in the physical and financial commodity markets.

As a result of the nuclear stress tests in the EU, the Swedish Radiation Safety Authority (SSM) has decided on new regulations for Swedish nuclear reactors. For the operators, this means that safety investments should be in place no later than 2020.

The process to review the Swedish nuclear waste fees is done in a three-year cycle. The Swedish Nuclear Fuel and Waste Management Co (SKB) has updated the new technical plan including earlier shut down of some nuclear plants for the SSM to review. The final decision on the new nuclear waste fees for years 2018–2020 was made by the Swedish Government in December 2017 and was in line with SSM's proposal to the Government. On 25 October 2017, the Swedish Parliament decided on changes in the legal framework impacting calculations of nuclear waste fees and the investment of the nuclear waste fund. In the revised legal framework the assumed operating time for calculating the waste fee is 50 years, as opposed to the previous assumption of 40 years. The fund is now also allowed to invest in other financial instruments in addition to bonds. Based on these changes the annual waste fees for Fortum will increase by approximately EUR 8 million.

On 3 July 2017, Fortum announced the decision by the Administrative Court in Stockholm, Sweden, related to Fortum Sverige AB's hydro production-related real-estate tax assessments for the years 2009–2014. The Court decided in Fortum's favour. The disputed amount for the five years was a total of SEK 508 million (EUR 52 million). Fortum will book the tax income (subject to income tax) only after the legal decision has entered into force. Hydropower plants have been subject to a real-estate tax rate that has resulted in an approximately 12 times higher real-estate tax per kWh compared to any other production, due to different tax rates and different valuation factors. The tax authority has appealed the decision.

In October 2016, the Swedish Energy Agency presented a concrete proposal on how to increase the production of renewable electricity by 18 TWh in 2020–2030 within the electricity certificate system, as part of the Energy Agreement. In April 2017, the Swedish Government decided that the increase will be carried out in a linear manner.

In September 2016, the Swedish Government presented the budget proposal for the coming years. One of the key elements was the proposal that the taxation of different energy production forms should be more equal, and the tax burden of nuclear and hydro should be taken to the level of other production technologies. The budget states that the nuclear capacity tax will be reduced to 1,500 SEK/MW per month from 1 July 2017 and abolished on 1 January 2018. As a result, the tax for Fortum decreased by EUR 32 million due to the tax decrease and by another EUR 5 million due to the premature closure of Oskarshamn 1 in the middle of the year. In 2017, the capacity tax was EUR 52 million. In 2018, there is no capacity tax. As stated in the Government's budget, the hydropower real-estate tax will decrease from 2.8% to 0.5%; the tax will be reduced in four steps: in January 2017 to 2.2%; in January 2018 to 1.6%; in January 2019 to 1.0%; and in January 2020 to 0.5%. In 2017, the tax for Fortum decreased by EUR 20 million to EUR 95 million. In addition to the decrease in the tax rate, the hydropower real-estate tax values, which are linked to electricity prices, will be updated in 2019. The real-estate tax values are updated every six years. With the current low electricity prices, the tax values in 2019 would be clearly lower than today. The process for renewing existing hydro permits will also be reformed.

In 2015, the Swedish OKG AB decided to permanently discontinue electricity production at Oskarshamn's nuclear plant units 1 and 2. Unit 1 was shut down on 17 June 2017, approximately 2 weeks earlier than planned, and unit 2 has been out of operation since June 2013. The closing processes for both units are estimated to take several years.

City Solutions

In City Solutions, stable growth, cash flow and earnings are achieved through investments in new plants and through acquisitions. Fuel cost, availability, flexibility and efficiency as well as gate fees are key drivers in profitability, but also the power supply/demand balance, electricity price and the weather affect profitability.

In May 2016, the Finnish Government decided to increase the tax on heating fuels by EUR 90 million annually from 2017 onwards. The negative impact on Fortum is estimated to be approximately EUR 5 million per year.

The development of acquired business operations of Fortum Oslo Varme is estimated to require integration-related one-time costs and increased investments over the coming years. The realisation of cost synergies are estimated to gradually start materialising from 2019 onwards with targeted annual synergies of EUR 5–10 million expected to be achieved by the end of 2020.

Consumer Solutions

After the acquisition of Hafslund Markets in August, a new business strategy for Consumer Solutions, was approved by the Fortum Board of Directors in December. The strategic objective is to establish Consumer Solutions as the leading consumer business in the Nordics, with a customer-centric multi-brand structure.

Competition in the Nordic electricity retail market is expected to remain challenging, with continued pressure on sales margins and increasing customer churn. To counter the market challenges and create a solid foundation for competitive operations, Consumer Solutions will increase its resources and cost spend on developing new digital services for consumers.

The combined Hafslund Markets and Fortum Markets business, while largely complementary, have identified synergy potential, in terms of both revenue and costs. The short-term priority will be on achieving identified revenue synergies by leveraging established best practices and providing additional products and services to the whole customer base. The realisation of cost synergies will start materialising once the integration of Hafslund Markets is completed, expected from 2019, with cost synergy realisation gradually increasing over the coming years, and targeted annual synergies of approximately EUR 10 million to be achieved by the end of 2020.

Russia

The Russia segment's new capacity generation built after 2007 under the Russian Capacity Supply Agreement (CSA) has been a key driver for earnings growth in Russia, as it receives considerably higher capacity payments than the old capacity. Fortum will receive guaranteed capacity payments for a period of approximately 10 years from the commissioning of a plant. The received CSA payment will vary depending on the age, location, size and type of the plants, as well as on seasonality and availability. CSA payments can vary somewhat annually because they are linked to Russian Government long-term bonds with 8 to 10 years maturity. In addition, the regulator will review the earnings from the electricity-only market three and six years after the commissioning of a unit and could revise the CSA payments accordingly. Furthermore, the level of the CSA payments increases starting from the seventh year of the 10-year period.

In June 2017, 1,000 MW of the bids of the 50/50-owned Fortum-RUSNANO wind investment fund were selected in the Russian wind auction. The bids are for projects to be commissioned during the years 2018–2022 with a price corresponding to approximately EUR 115–135 per MWh. The projects will be covered by CSA for a period of 15 years.

The long-term Competitive Capacity Selection (CCS) for the years 2017–2019 was held at the end of 2015, the CCS for the year 2020 in September 2016, and the CCS for the year 2021 in September 2017. All Fortum plants offered in the auction were selected. Fortum also obtained forced mode status, i.e. it receives payments for the capacity at a higher rate for some of the "old capacity". For the years 2017–2019, forced mode status was obtained for 195 MW; for the year 2020, 175 MW, and for the year 2021, 105 MW.

In December 2017, Fortum acquired three solar power companies from Hevel Group, Russia's largest integrated solar power company. All three power plants are operational and will receive CSA payments for approximately 15 years after commissioning at an average CSA price corresponding to approximately EUR 430/MWh. The plants were commissioned in 2016 and 2017.

Fortum's Ulyanovsk wind farm is listed in the registry of capacity as of January 2018. The 35 MW power plant is Russia's first industrial wind park. It will receive CSA payments for a guaranteed period of 15 years.

The Russian gas price increased by 3.9% in July 2017 and the increase of the annual average gas price for 2017 was 2.0%.

Capital expenditure and divestments

Fortum currently estimates its capital expenditure, including maintenance but excluding acquisitions, to be in the range of EUR 600–700 million in 2018 most of which is related to hydro and CHP capacity as well as new investments in renewables. The maintenance capital expenditure in 2018 is estimated at approximately EUR 300 million, well below the level of depreciation.

Taxation

The effective corporate income tax rate for Fortum in 2018 is estimated to be 19–21%, excluding the impact of the share of profits of associated companies and joint ventures, non-taxable capital gains, and a Swedish income tax case.

On 11 May 2017, the Administrative Court in Stockholm, Sweden, gave its decisions related to Fortum's income tax assessments for the year 2013. The Court's decisions were not in Fortum's favour. Fortum has appealed the decisions. If the decisions remain in force despite the appeal, the negative impact on the net profit would be approximately EUR 28 million (approximately SEK 273 million). Fortum has not made a provision for this, as, based on legal analysis, the EU Commission's view and supporting legal opinions, the cases should be ruled in Fortum's favour. The assessments concern the loans given in 2013 by Fortum's Dutch financing company to Fortum's subsidiaries in Sweden. The interest income for these loans was taxed in the Netherlands. The Swedish tax authority considers just over a half of the interest relating to each loan as deductible, i.e. deriving from business needs. The rest of the interest is seen as non-deductible. The decisions are based on the changes in the Swedish tax regulation in 2013.

On 30 June 2017, the Court of Appeal in Stockholm, Sweden, ruled against Fortum related to Fortum's income tax assessments in Sweden for the years 2009–2012. Due to the decision of the Court of Appeal, Fortum booked a tax cost of 1,175 MSEK (EUR 123 million) in the second-quarter 2017 results. The booking did not have any cash flow effect for Fortum, as the additional taxes and interest have already been paid in 2016. The case concerns Fortum's right to deduct intra-group interest expenses in Sweden in the years 2009–2012. Fortum restructured its operations and reallocated loans in 2004–2005 to secure future operations. Fortum does not agree with the Court's decision and had applied for the right to appeal from the Supreme Administrative Court.

Hedging

At the end of 2017, approximately 70% of Generation's estimated Nordic power sales volume was hedged at EUR 28 per MWh for 2018, and approximately 40% at EUR 25 per MWh for 2019.

The reported hedge ratios may vary significantly, depending on Fortum's actions on the electricity derivatives markets. Hedges are mainly financial contracts, most of them electricity derivatives quoted on Nasdaq Commodities.

Sustainability

Business model

Fortum's business activities cover the production and sales of electricity and heat, waste-to-energy and circular economy solutions as well as energy-sector expert services and various consumer solutions. Fortum is the third largest power generator and the largest electricity retailer in the Nordic countries. Globally, the company is one of the leading heat producers. As two thirds of Fortum's power production is hydro and nuclear, it is also among the lowest-emitting generators in Europe.

Fortum's ambition is to increase its CO_2-free power generation. The company also has generation capacity based on fossil fuels, located mainly in Russia, and it has worked to increase its efficiency and reduce its specific emissions. Fortum is focusing on increasing its solar and wind power capacity heavily over the coming years.

With core operations in 10 countries, Fortum employs a diverse team of close to 9,000 energy-sector professionals. Fortum has 128 hydro power plants as well as 26 CHP (combined heat and power), condensing and nuclear power plants. Globally, the company supplies heat in 22 cities and towns and has five main waste treatment facilities. Fortum's key markets are the Nordic and Baltic countries, Russia, Poland and India.

Sustainability approach

Fortum strives for balanced management of economic, social and environmental responsibility in the company's operations, emphasising the following focus areas:

Economic responsibility	Social responsibility	Environmental responsibility
Economic benefits to our stakeholders	Operational and occupational safety	Energy and resource efficiency
Long-term value and growth	Secure energy supply for customers	Reduction of environmental impacts
Sustainable supply chain	Personnel wellbeing	Climate-benign energy production and systems
Customer satisfaction	Business ethics and compliance	Solutions for sustainable cities

The Group-level sustainability targets are linked to the main sustainability focus areas and emphasise Fortum's role in society. They measure not only environmental and safety targets, but also Fortum's reputation, customer satisfaction, employee wellbeing, and the security of power and heat production. Targets are set annually and are based on continuous operational improvement.

The achievement of the sustainability targets is monitored in monthly, quarterly and annual reporting. Fortum publishes a yearly Sustainability Report with additional information on the company's sustainability performance.

Group sustainability targets and performance

	Target	2017	2016
Economic responsibility			
Reputation index, based on One Fortum Survey	70.7	72.3	72.5
Customer satisfaction index (CSI), based on One Fortum Survey	Level "good", 70–74	64–76	67–79
Environmental responsibility			
Specific CO_2 emissions from total energy production as a five-year average, g/kWh	<200	188	188
Energy-efficiency improvement by 2020, base-line year 2012, GWh/a	>1,400	1,502	1,372
Major EHS incidents, no.	≤21	20	22
Social responsibility			
Energy availability of CHP plants, %	>95.0	96.1	97.4
Total recordable injury frequency (TRIF), own personnel	≤2.5	1.8	1.9
Lost workday injury frequency (LWIF), own personnel	≤1.0	1.2	1.0
Lost workday injury frequency (LWIF), contractors	≤3.5	4.2	3.0
Severe occupational accidents, no.	≤5	1	5
Quality of investigation process of occupational accidents, major EHS incidents and near misses	Level 1.0	Level 0.75	-
Sickness-related absences, %	≤2.3	2.2 *	2.3 *

* Excluding DUON and Hafslund

Fortum is listed on the Nasdaq Helsinki exchange and is included in the STOXX Global ESG Leaders, OMX GES Sustainability Finland, ECPI® and Euronext Vigeo Eurozone 120 indices. Fortum is also ranked in category A- in the annual CDP (formerly the Carbon Disclosure Project) rating 2017, and it has received a Prime Status (B-) rating by the German oekom research AG.

Fortum's sustainability reporting covers all functions under Fortum's operational control, including subsidiaries in all countries of operation. Sustainability information relating to Hafslund Markets' and Fortum Oslo Varme's operations is included in Fortum's reporting as of August 2017. The figures for power and heat generation, capacities and investments include also figures from Fortum's share in associated companies and joint ventures that sell their production to the owners on cost basis. The Meri-Pori power plant is included fully in sustainability figures as Fortum has the environmental permit.

Sustainability risks

Fortum's operations are exposed to risks, which if materialised can have adverse effects on the environment and the safety and security of employees, contractors and neighbouring societies. Key sustainability risks are presented in the Risk management part in the Operating and financial review. Climate change and the need for decarbonisation and resource efficiency is changing energy industry in a profound way and these changes also create new business opportunities for Fortum.

Sustainability governance and policies

Sustainability management at Fortum is strategy-driven and is based on the company's Values, the Code of Conduct, the Supplier Code of Conduct, the Sustainability Policy and other Group policies and their specifying instructions. As sustainability is an integral part of Fortum's strategy, the highest decision making of these issues falls on the duties of the Board of Directors, who share joint responsibility on sustainability matters.

Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. Fortum's line management is responsible for the implementation of the Group's policies and instructions and for day-to-day sustainability management. Realisation of the safety targets is a part of Fortum's short-term incentive system.

Fortum is a participant of the UN Global Compact initiative and the UN Caring for Climate initiative. Fortum respects and supports the International Bill of Human Rights, the United Nations Convention on the Rights of the Child, and the core conventions of the International Labour Organisation (ILO). Additionally, Fortum recognises in its operations the UN Guiding Principles on Business and Human Rights, the statutes of the OECD Guidelines for Multinational Enterprises, the International Chamber of Commerce's anti-bribery and anti-corruption guidelines, and the Bettercoal initiative's Code on responsible coal mining.

Business ethics

The Fortum Code of Conduct and Fortum Supplier Code of Conduct define how we treat others, engage in business, safeguard corporate assets, and how Fortum expects suppliers and business partners to operate. Fortum's Board of Directors is responsible for the company's mission and Values and has approved the Fortum Code of Conduct. Fortum has zero tolerance for corruption and fraud and does not award donations to political parties or political activities, religious organisations, authorities, municipalities or local administrations.

In addition to internal reporting channels, Fortum employees and partners can report suspicions of misconduct confidentially to the Fortum Head of Internal Audit via the "raise-a-concern channel" on Fortum's internal and external web pages.

Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly reported to the Audit and Risk Committee.

No cases of suspected corruption or bribery related to Fortum's operations were reported in 2017.

Fortum's main internal policies and instructions guiding sustainability

			Social responsibility		
	Economic responsibility	Environmental responsibility	Social and employee matters	Human rights	Anti-corruption and bribery
Values	x	x	x	x	x
Code of Conduct	x	x	x	x	x
Supplier Code of Conduct	x	x	x	x	x
Disclosure Policy	x		x		
Group Risk Policy	x	x	x	x	x
Sustainability Policy (including environmental, and health and safety policies)	x	x	x	x	x
Minimum Requirements for EHS Management		x	x	x	
Biodiversity Manual		x			
Group Manual for Sustainability Assessment		x	x	x	x
Human Resources Policy			x	x	
Leadership Principles			x	x	
Accounting Manual	x	x	x		
Investment Manual	x	x	x		x
Group Instructions for Anti-Bribery	x		x		x
Group Instructions for Safeguarding Assets	x		x		x
Group Instructions for Conflicts of Interest	x		x		x
Anti-Money-Laundering Manual	x		x		x
Compliance Guidelines for Competition Law	x		x		x
Security Guidelines		x	x	x	
Policy for Sponsoring and Donations	x		x	x	x
Group Instructions for Compliance Management	x	x	x	x	x

Economic responsibility

Fortum's goal is to achieve excellent financial performance in strategically selected core areas through strong competence and responsible ways of operating. Fortum measures financial performance with return on capital employed (target: at least 10%) and capital structure (target: comparable net debt/EBITDA around 2.5).

Fortum is a significant economic actor in its operating countries. The most significant direct monetary flows of Fortum's operations come from revenue from customers, procurements of goods and services from suppliers, compensation to lenders, dividends to shareholders, growth and maintenance investments, employee wages and salaries, and taxes paid. In 2017, investments in CO_2-free production were EUR 375 (270) million.

Fortum supports social development and wellbeing in its operating countries by e.g. paying taxes. The tax benefits Fortum produces to society include not only corporate income taxes but also several other taxes. In 2017, Fortum's taxes borne were EUR 445 (365) million. Fortum publishes its tax footprint annually.

Targets for reputation and customer satisfaction are monitored annually. In the One Fortum Survey in 2017 company reputation among key stakeholders was 72.3 (72.5) points (on a scale of 1–100) and exceeded the target of 70.7 points. The stakeholder groups selected for the One Fortum Survey differ between the years 2016 and 2017. The reference value for the 2017 target-setting (70.7) is the reputation index (69.7) given by the same stakeholder groups in 2016. The Group target (70–74 points) for customer satisfaction was achieved among all business areas, but not in retail electricity sales. The Recycling and Waste Solutions unit was not part of the One Fortum survey in 2017.

Fortum's total purchasing volume in 2017 was EUR 3.2 (2.5) billion and Fortum had about 16,000 suppliers of goods and services. Fortum expects its business partners to act responsibly and to comply with the Fortum Code of Conduct and the Fortum Supplier Code of Conduct. Fortum assesses the performance of its business partners with supplier qualification and supplier audits. In 2017, Fortum audited a total of 11 (13) suppliers in China, India, Russia, Slovenia, Estonia and Finland. Most of the non-compliances identified in the audits in 2017 were related to occupational safety, working hours and remuneration.

Environmental responsibility

Fortum's Group-level environmental targets are related to CO_2 emissions, energy efficiency, and major environmental, health and safety (EHS) incidents.

The Group Sustainability Policy together with the Minimum Requirements for EHS Management steer Fortum's environmental management. Investments, acquisitions and divestments are assessed based on the sustainability assessment criteria defined in the Group's Investment Manual. Operational-level activities follow the requirements set forth in the ISO 14001 environmental management standard, and 99.8% (99.9%) of Fortum's power and heat production worldwide has ISO 14001 certification.

Circular economy

Fortum's aim is to promote resource efficiency improvements and the transition towards a more extensive circular economy. Resource efficiency and maximising the added value of waste and biomass are key priorities in the environmental approach, as defined in the Group Sustainability Policy.

In 2017, Fortum received a total of 1.2 million tonnes of non-hazardous waste and 640,000 tonnes of hazardous waste from customers. As much of the waste stream as possible is recycled, recovered or reused. Waste that is unsuitable for recycling or reuse as a material is incinerated in Fortum's waste-to-energy plants in the Nordic countries and Lithuania.

Sustainable energy production

Fortum's energy production is primarily based on carbon dioxide-free hydropower and nuclear power and on energy-efficient combined heat and power (CHP). In line with the strategy, Fortum is targeting a gigawatt-scale solar and wind portfolio.

In 2017, Fortum's power generation was 73.2 (73.1) TWh and heat production 28.6 (27.8) TWh. 61% (62%) of the total power generation was CO_2-free. In the EU area, 96% (96%) of the power generation was CO_2-free. In 2017, Fortum built and acquired 294 MW of renewable, carbon-free production.

The main fuels that Fortum uses to produce electricity and heat are natural gas, nuclear fuel, coal, waste-derived fuels and biomass fuels. The most significant fuel was natural gas, which accounted for 62% (62%) of the total fuel consumption. The next highest fuel use was uranium 21% (23%). Coal accounted for 10% (10%) of the total fuel use, and waste-derived fuels and biomass fuels 3% (2%) and 3% (3%), respectively. Russia accounted for 99% of the use of natural gas and 51% of the use of coal.

Climate change mitigation

Fortum expects the concern about climate change to increase the demand for low-carbon production and energy-efficient solutions and products. Fortum aims to mitigate climate change by investing in CO_2-free energy production and by improving energy and resource efficiency. Fortum is also adapting its operations to climate change in production planning and in the assessment of growth projects and investments.

In 2017, Fortum's direct CO_2 emissions were 18.3 (18.6) Mt. 84% (83%) of CO_2 emissions originated from Russian power plants. Direct CO_2 emissions decreased due to the reduction in condensing power production. Of the total CO_2 emissions, 2.3 (2.7) Mt were within the EU's emissions trading scheme (ETS). The estimate for Fortum's free emission allowances is 1.0 (1.0) Mt.

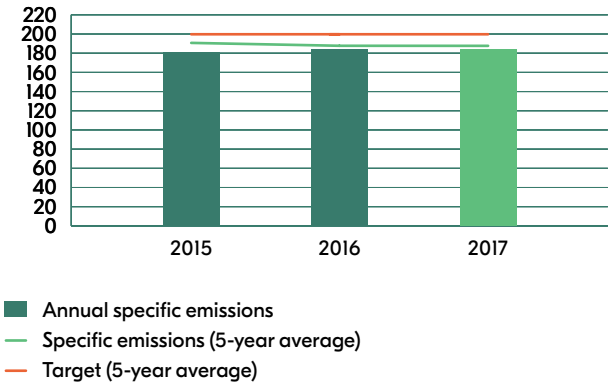
Fortum's direct CO_2 emissions

Fortum's total CO_2 emissions (million tonnes, Mt)	2017	2016	2015
Total emissions	18.3	18.6	19.2
Emissions subject to ETS	2.3	2.7	2.1
Free emissions allowances	1.0	1.0	1.3
Emissions in Russia	15.4	15.5	17.0

Fortum's specific carbon dioxide emissions from total energy production remained at the same level and were 184 (184) g/kWh. The specific CO_2 emissions from total energy production as a five-year average were at 188 (188) g/kWh, which is better than Fortum's Group target of 200 g/kWh.

Specific carbon dioxide emissions of total energy production in 2015–2017

g/kWh



Fortum has had a Group target to achieve annual energy improvements of more than 1,400 GWh by 2020 compared to 2012. This target was reached (1,502 GWh/a) by the end of 2017.

Decreasing environmental impact

Emissions into air

Fortum's activities cause various emissions to air. In addition to carbon dioxide (CO_2) emissions, these include flue-gas emissions such as sulphur dioxide (SO_2), nitrogen oxide (NO_x) and particle emissions. All power plants operate in compliance with their air emission limits.

Fortum's flue-gas emissions into air

1,000 tonnes	2017	2016	2015
Sulphur dioxide emissions	18.8	22.5	19.9
Nitrogen oxide emissions	27.5	26.0	26.8
Particle emissions	15.8	16.8	17.8

Water withdrawal

Fortum uses large volumes of water at various types of power plants and in district heat networks. In most cases, power plants do not consume water – the water is discharged back to the same water system from where it was withdrawn. Fortum withdrew a total of 2,100 (2,100) million m^3 of water in power and heat production; 94% of this amount was used as cooling water.

Radioactive waste

In 2017, 23.4 (19.6) tonnes of spent nuclear fuel was removed from Loviisa power plant's reactors in Finland. High-level radioactive spent fuel is stored in an interim storage at the Loviisa power plant site. The final disposal of the high-level radioactive waste is scheduled to begin at Olkiluoto in Eurajoki in the first half of the 2020s.

Biodiversity

Fortum's main impacts on biodiversity are related to hydropower production. Fuel procurement and flue-gas emissions may also have a negative impact on biodiversity. On the other hand, increasing CO_2-free production mitigates the biodiversity loss caused by climate change. Fortum's Biodiversity Manual, revised in 2017, defines the company's approach in biodiversity management.

Environmental incidents

Fortum's target is fewer than 21 major EHS incidents annually. Major EHS incidents are monitored, reported and investigated, and corrective actions are implemented. In 2017, there were 20 (22) major EHS (environmental, health and safety) incidents in Fortum's operations. There were 10 (11) environmental incidents, out of which eight were spills. Fortum paid fines totalling RUB 8,000 (EUR 121) for the permit violation involving exceeding the wastewater emission limit in Russia. The major EHS incidents did not have significant environmental impacts.

Social responsibility

Fortum's social responsibility targets are related to the secure supply of electricity and heat for customers, operational and occupational safety as well as employee wellbeing.

Employees

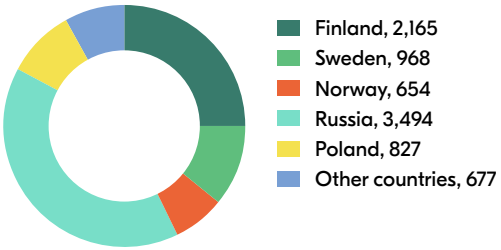
The Group Human Resources Policy is based on the company's Values, Leadership Principles and Code of Conduct. The HR Policy guides the daily work in the company, and the implementation of the policy is followed up regularly through the employee engagement survey, the annual performance and development discussions, as well as other feedback practices.

Fortum's operations are mainly based in the Nordic countries, Russia, Poland and the Baltic Rim area. The total number of employees at the end of 2017 was 8,785 (8,108). The number of employees increased mainly due to the acquisition of Hafslund.

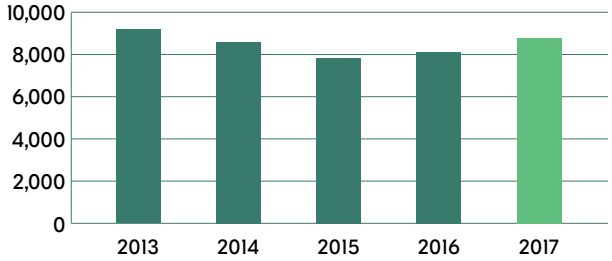
Group employee statistics

	2017	2016	2015
Number of employees, 31 December	8,785	8,108	7,835
Average number of employees	8,507	7,994	8,009
Total amount of employee benefits, EUR million	423	334	351
Departure turnover, %	10.5	13.0	8.6
Permanent employees, %	95.2	96.1	96.0
Full-time employees, % (of permanent employees)	98.1	98.5	98.3
Female employees, %	32	29	29
Females in management, %	29	25	33

Number of employees by country, 31 December 2017



Number of employees, 31 December



Occupational safety

For Fortum, excellence in safety is the foundation of the company's business and an absolute prerequisite for efficient and interruption-free production. Fortum strives to be a safe workplace for the employees and for the contractors and service providers who work for the company. The Group Sustainability Policy, the Minimum Requirements for EHS Management and more detailed Group-level EHS manuals steer the work. A certified OHSAS 18001 safety management system covers 98.4% (99.9%) of Fortum's power and heat production worldwide.

2017 was a challenging year in terms of occupational safety. Only the total recordable incident frequency (TRIF) for own employees and the number of severe accidents met the set target level.

The TRIF for Fortum employees was 1.8 (1.9) per one million working hours, which is better than the target (≤ 2.5). The lost-workday injury frequency (LWIF) for own personnel was 1.2 (1.0), which did not meet the set target level (≤1.0).

The lost workday injury frequency (LWIF) for contractors continues to be Fortum's main challenge. The LWIF for contractors per million working hours was 4.2 (3.0), and Fortum did not achieve the target of ≤3.5. The same challenge applies to the combined LWIF (own employees and contractors): the result was 2.4 (1.8), exceeding the target of 1.9.

In 2018, Fortum will implement new tools to assess contractor safety performance as part of the supplier qualification process and will also evaluate their safety practices in a more systematic manner during work. Fortum will also introduce external safety training for both the management level and key individuals leading safety work as well as the most challenging business areas.

In 2017, as in 2016, there were no accidents leading to a fatality in the company's operations.

Open leadership, personnel development and wellbeing

In late 2017, Fortum launched the company's revised Values and new Leadership Principles. The Open Leadership framework supports cooperation across units and aims to create an environment that fosters innovation, flexibility and agility.

ForCare, Fortum's programme for overall wellbeing at work, aims to promote health, safety, employee work capacity and work community functionality. As part of ForCare, the Energise Your Day wellbeing programme was launched in several new operating countries in 2017. The percentage of sickness-related absences excluding DUON and Hafslund was 2.2 (2.3), which is better than the target level of ≤2.3. The percentage of sickness-related absences for Hafslund was 3.0.

Respect for human rights

Fortum's goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights, and to apply these principles in own operations as well as in country and partner risk assessments and supplier audits.

A sustainability assessment, including a human rights evaluation, is carried out for investment projects – especially in new operating areas – and also for new countries where Fortum plans to expand the sales of products and services. In 2017, 15 (28) of these assessments were made.

In 2017, there were no grievances related to human rights filed through Fortum's formal grievance channels, nor were there any grievances carried over from the previous year.

Society

An uninterrupted and reliable energy supply is critical for society to function. With planned preventive maintenance and condition monitoring, Fortum ensures that the power plants operate reliably to produce the electricity and heat customers need. The energy availability of the company's CHP plants in 2017 was, on average, 96.1%; the target was above 95%.

Fortum's operations impact the local communities where the power plants are located, and the company engages in many kinds of collaboration with local stakeholders. Fortum's Policy for Sponsoring and Donations was revised in late 2017. According to the policy Fortum's sponsoring will focus on wellbeing of children and youth, renewable energy projects, R&D and innovations supporting Fortum's strategy, recycling, recovery and reutilization. The company also does significant collaboration with different research and development projects, particularly with Nordic universities. In 2017, Fortum's support for activities promoting the common good totalled about EUR 4.9 (2.9) million. The grants awarded by Fortum Foundation were about EUR 696,000 (675,000). Fortum Foundation is not part of Fortum Group.

Risk management

Risk management framework and objectives

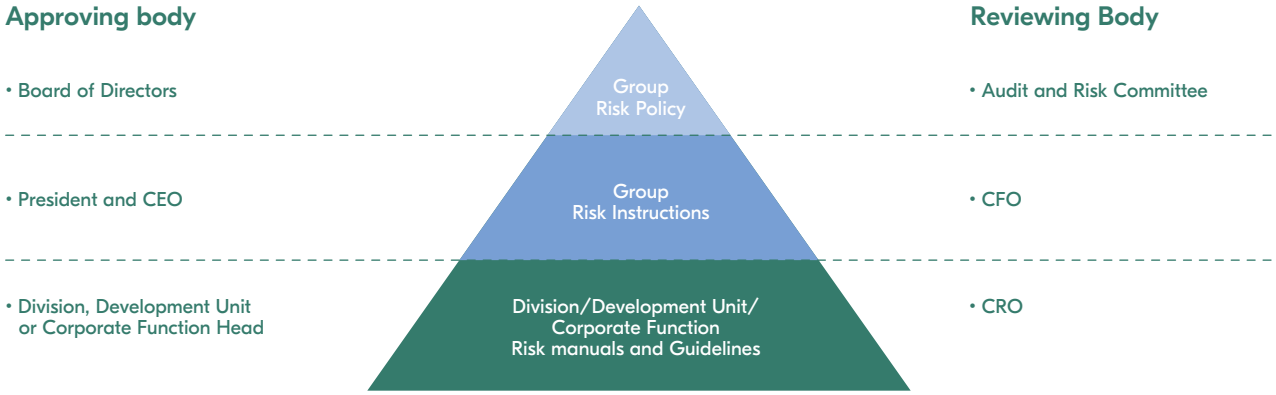
Fortum's Risk Management framework is comprised of the Group Risk Policy and supporting documents. The Group Risk Policy includes an overview of Fortum's risk management systems consisting of the general principles of risk management and the main features of the risk management process. The objective of the risk management systems are to;

- support the development of the Group strategy,
- support strategy execution,
- support the achievement of agreed targets within acceptable risk levels so that the Group's ability to meet financial commitments is not compromised,
- ensure the understanding of material risks and uncertainties affecting Fortum, and
- support the prevention of accidents that can have a severe effect on the health and safety of employees or third parties, and from incidents that can have a material impact on Fortum's assets, reputation or the environment.

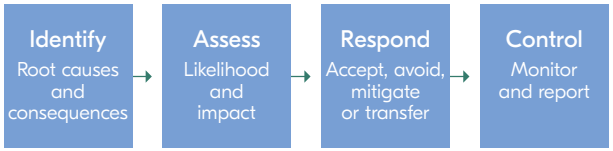
Risk management organisation

The main principle is that risks are managed at source meaning that each Division, Development Unit and Corporate Function Head is responsible for managing risks that arise within their business operations. However, in order to take advantage of synergies, certain risks are managed centrally. For example, Group Treasury is responsible for managing financial risks and cyber and information security risks are managed by Corporate Security. The Audit and Risk Committee (ARC) is responsible for monitoring the efficiency of the company's risk management systems and for annually reviewing the Group Risk Policy and the material risks and uncertainties. Corporate Risk Management, a function headed by the Chief Risk Officer (CRO) reporting to the CFO, provides instructions and tools which support the Group in running an efficient risk management process. Corporate Risk Management is responsible for assessing and reporting maturity of risk management in Divisions, Development Units and Corporate Functions and for providing independent monitoring and reporting of material risk exposures to Group Management, the ARC and the Board of Directors. Risk control functions and controllers in the business monitor and report risks to the CRO.

Corporate Risk Policy Structure



Risk management process



Fortum's risk management process is designed to support the achievement of agreed targets by ensuring that risk management activities are consistent with the general principles of risk management and that risks are monitored and followed-up in a prudent manner. The main features of risk management process consist of event identification, risk assessment, risk response and risk control. Identification is carried out according to a structured process and risks are assessed in terms of impact and likelihood according to a Group-common methodology. Impact is assessed not only in monetary terms, but also in terms of health and safety, the environment and reputation. Risk owners, responsible for implementing actions to respond to the risk, are defined by the business and operational management. Risk responses can be to avoid, mitigate, transfer or absorb the risk. Risk control processes, which include monitoring and reporting of risks, are designed to support compliance with approved instructions, manuals and guidelines and to ensure that risk exposures remain within approved limits and mandates.

Fortum's Board of Directors annually approves the Group Risk Policy and the CEO annually approves Group Risk Instruction

covering commodity market risks, counterparty credit risks, and operational risks. Fortum also has other Group policies and instructions covering e.g. compliance, sustainability, treasury and cyber and information security risks which are aligned with the Group Risk Policy. Risk mandates or limits are defined for commodity market risks, counterparty credit risks and financial risks.

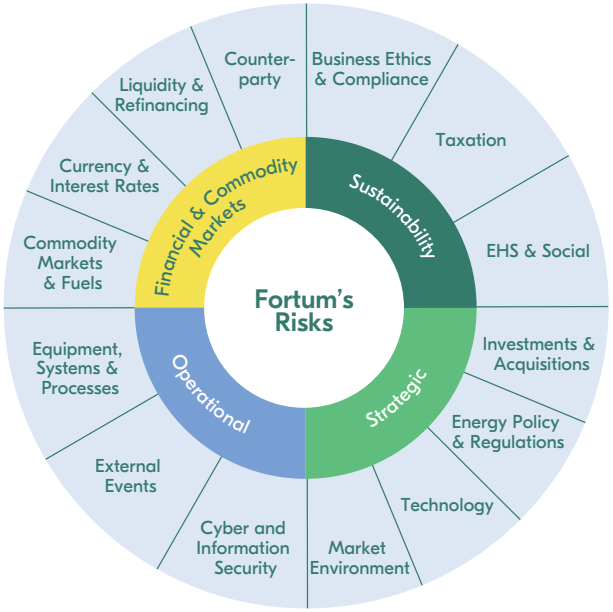
Risk factors

Strategic risks

The main strategic risk is that the regulatory and market environment develops in way that we have not been able to foresee and prepare for. Future energy market and regulation scenarios, including the impact of these to Fortum's business, are continuously assessed and analysed. It is part of Fortum's strategy to, in the long-term, broaden the base of revenues and diversify into new businesses, technologies and markets.

Risks which could hinder Fortum in executing this strategy are continuously assessed, monitored and reported as part of the strategy work. These risks include an inability to identify and carry out successful investments and acquisitions with the related project and integration risks, inability to manage and respond to changes in energy policy and the regulatory environment, and inability to manage and respond to changes in technology.

Fortum Risk Map



Investment and acquisition risks

Fortum's strategy includes growth of operations in new businesses, technologies and geographies, and any future investment or acquisition, including partnerships, entails risk such as:

- increased overall operating complexity and requirements for management, personnel and other resources,
- the need to understand the value drivers and their uncertainties in investments or potential acquisition targets,
- the need to understand and manage new markets with different cultural and compliance requirements,
- the need to understand and manage risks related to sustainability and safety issues.

These risks are managed as part of the investment process which includes requirements for risk identification and assessment and action plans before investment decisions are made, and also sets requirements to follow-up risks in projects and acquisitions.

Energy policy and regulation risks

The energy business is heavily influenced by national and EU-level energy policies and regulations, and Fortum's strategy has been developed based on scenarios of the future development of the regulatory environment in both existing and potential new businesses and market areas. The overall complexity and possible regulatory changes in Fortum's various operating countries pose a risk if we are not able to anticipate, identify and manage those changes efficiently.

Fortum maintains an active dialogue with the bodies involved in the development of laws and regulations in order to manage these risks and proactively contribute to the development of the energy policy and regulatory framework.

Nordic/EU

Fortum's strategy in the power sector is based on a market-driven development, which would mean more interconnections and competition supported by increasing policy harmonization. Even if the Nordic power market has a long tradition of harmonization, national policies vary considerably when it comes to e.g. taxation, permitting, subsidies and market model meaning that we have to manage risks related to both EU regulation and national regulation. Potential risks related to the future energy and climate policy framework include;

- The development towards integrated, flexible and dynamic power market hampered by increasing policy costs and uncoordinated national mechanisms,
- Overlapping national carbon policies diluting the EU ETS and carbon price despite the ETS reform,
- Increasing cost burden for hydro power in Finland, driven by fish obligations, grid costs and real estate taxation and unbalanced implementation of the EU Water Framework directive in Sweden, potentially leading to lower production volumes,
- Sustainability requirements for forest biomass leading to reduced availability and increasing costs,
- Implementation of national waste incineration taxes or other measures due to opposition to incineration hampers the competitiveness of waste-to-energy,
- Substantial retroactive changes and/or discontinuation of prevailing CHP support schemes in Baltic countries and Poland or deteriorating competitiveness of CHP due to fuel tax increases,
- Emergence of windfall tax discussions following possible positive electricity and carbon price development.

The inter-linkage of these issues as well as national measures such as taxation create uncertainty and changes in policies in one area could undermine the effects of policy changes in other areas.

Russia

Russia is exposed to political, economic and social uncertainties and risks resulting from changes in regulation, legislation, economic and social upheaval and other similar factors. The current economic sanctions may be enlarged and/or extended having direct and indirect impacts on the business environment. The main policy-related risks in Russia are linked to the development of the whole energy sector, part of which, like the wholesale power market, is liberalised while other parts, like gas, heat, and retail electricity, are not. The wholesale power market deregulation in Russia has been implemented to a large extent according to original plans. However, regulated sectors are inherently always exposed to a risk of regulatory changes which could affect Fortum's operations.

Technology risks

Fortum's strategy includes developing or acquiring new technologies, as well as digitalizing the business. Fortum's R&D and innovation activities focus on the development of the energy system towards a future solar economy. Fortum is, for example, developing circular economy, bio-economy and other renewable energy concepts as well as innovative solutions for its customers. New technologies expose Fortum to risks related to intellectual property rights, data privacy and viability of technologies. Technology risks are managed primarily through developing a diversified portfolio of projects consisting of different technologies.

Sustainability risks

Corporate social responsibility and sustainable development are integral parts of Fortum's strategy. Fortum gives balanced consideration to economic, environmental and social responsibility. Changes to laws, regulations and the business environment can pose a risk if not identified and managed effectively and the same applies to changes in views of our main stakeholders. In order to identify and manage these risks, Fortum endorses a number of international voluntary charters, standards and guidelines in the area of sustainability, conducts stakeholder surveys annually and has defined internal policies and instructions on how to conduct business. Corporate Functions, Divisions and Development units identify and assess sustainability risks related to their operations and define mitigation measures annually. Corporate Sustainability executes oversight as part of the Group's risk management process.

Environmental, health and safety and social risks

Operating power and heat generation plants, circular economy services and waste management involves use, storage and transportation of fuels and materials that can have adverse effects on the environment and expose personnel, contractors and third parties to safety risks. Assessment of environmental risks and preparedness to operate in exceptional and emergency situations follows legislative requirements as well as the requirements in the environmental management standard (ISO 14001). The same approach, based on the requirements in the operational health and safety standard (OHSAS 18001), applies to risks related to occupational health and safety and actions in emergency situations.

Environmental, health and safety (EHS) risks as well as social risks related to Fortum's supply chain are evaluated through supplier qualification, internal and external audits and risk assessments including partner and country risk assessment. Corrective and preventive actions are implemented when necessary. EHS related risks together with social risks arising in investments are evaluated in accordance with Fortum's Investment manual. Environmental risks and liabilities in relation to past actions have been assessed and provisions have been made for future remedial costs.

Fortum's operations are exposed to physical risks caused by climate change, including changes in weather patterns that could alter energy demand and, for instance, hydropower production volumes. Higher precipitation and temperatures may affect hydropower production, dam safety, and also bioenergy supply and availability. Fortum adapts its operations to the changing climate and takes it into consideration, for example, in production and maintenance planning and in evaluating growth and investment projects.

Tax risk

Fortum operates in a number of countries and is therefore exposed to changes in taxation and how tax authorities interpret tax laws. Changes in the international fiscal environment have created a tax environment that is leading to new or increased taxes and new interpretations of existing tax laws which has decreased the predictability and visibility around how our operations are taxed.

Fortum's tax policy aims to identify simple and cost-efficient solutions to manage taxes in a sustainable manner. Fortum's tax policy is based on a principle that tax is a consequence of business and that compliance with tax rules and legislation and transparency result in a correct tax contribution. This policy leaves no room for artificial or other aggressive solutions. Fortum is continuously following the development of tax related issues and their impact on the Group and maintains an active dialogue with tax authorities in unclear cases. Tax-related issues are communicated openly both internally and externally and Fortum's tax footprint is published annually.

Business ethics and compliance risks

Fortum's operations are subject to laws, rules and regulations set forth by the relevant authorities, exchanges, and other regulatory bodies in all markets in which Fortum operates. Fortum's ability to operate in certain countries may be affected by future changes to local laws and regulations.

Fortum Code of Conduct enhances the understanding of the importance of business ethics for all Fortum employees, contractors and partners. Prevention of corruption is one of the Code of Conduct's focus areas. Fortum has procedures for anti-corruption including prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. Fortum's supplier code of conduct sets

sustainability requirements for suppliers of goods and services. The Supplier Code of Conduct is based on the principles of the United Nations Global Compact and is divided into four sections: business principles including anti-corruption, human rights, labour standards and environment.

Fortum systematically identifies, assesses, mitigates and reports compliance risks including risks related to sustainability and business ethics. Internal controls are implemented to prevent the possibilities of unauthorised activities or non-compliance with Group policies and instructions.

Financial & commodity market risks

Commodity market and fuel risks

Fortum's business is exposed to fluctuations in prices and availability of commodities used in the production and sales of energy products. The main exposure is toward electricity prices and volumes, prices of emissions and prices and availability of fuels. Fortum hedges its exposure to commodity market risks in accordance with annually approved Hedging Guidelines, Strategies and Mandates. For further information on hedge ratios, exposures, sensitivities and outstanding derivatives contracts, see ▸Note 3 Financial risk management.

Electricity price and volume risks

In competitive markets, such as in the Nordic region, the wholesale price of electricity is determined as the balance between supply and demand. The short-term factors affecting electricity prices and volumes on the Nordic market include hydrological conditions, temperature, CO_2 allowance prices, fuel prices, economic development and the import/export situation.

Electricity price risks are hedged by entering into electricity derivatives contracts, primarily on the Nasdaq Commodities power exchange. Hedging strategies are continuously evaluated as electricity and other commodity market prices, the hydrological balance and other relevant parameters change. Hedging of the Generation segment's power sales is performed in EUR on a Nordic level covering both Finland and Sweden, and the currency component of these hedges in the Swedish entity is currently not hedged. In Russia, electricity prices and capacity sales are the main sources of market risk. The electricity price is highly correlated with the gas price and exposure is mitigated through the use of fixed-price bilateral agreements. In India, the electricity price received from solar production are fixed through long term power-purchasing agreements.

Emission and environmental value risks

The European Union has established an emissions trading scheme to reduce the amount of CO_2 emissions. In addition to the emissions trading scheme, there are other trading schemes in environmental values in place in Sweden, Norway and Poland. Part of Fortum's power and heat generation is subject to requirements of these schemes. There is currently no trading scheme in Russia for emissions or other environmental values.

The main factor influencing the prices of CO_2 allowances and other environmental values is the supply and demand balance. Fortum hedges its exposure to these prices and volumes through the use of CO_2 futures and environmental certificates.

Fuel price and volume risks

Power and heat generation requires use of fuels that are purchased on global or local markets. The main fuels used by Fortum are natural gas, uranium, coal, various biomass-based fuels and waste. The main risk factor for fuels that are traded on global markets such as coal and natural gas, is the uncertainty in price. Prices are largely affected by demand and supply imbalances that can be caused by, for example, increased demand growth in developing countries, natural disasters or supply constraints in countries experiencing political or social unrest. For fuels traded on local markets, such as bio-fuels, the volume risk in terms of availability of the raw material of appropriate quality is more significant as there may be a limited number of suppliers. Due to the sanctions and economic development in Russia, the risks related to imported fuels from Russia have increased.

In the Nordic market, exposure to fuel prices is limited due to Fortum's flexible generation capacity which allows for switching between different fuels according to prevailing market conditions. In some cases, the fuel price risk can be transferred to the customer. The remaining exposure to fuel price risk is mitigated through fixed-price physical delivery contracts or derivative contracts. The main fuel source for heat and power generation in Russia is natural gas. Natural gas prices are partially regulated, so the price risk exposure is limited.

Liquidity and refinancing risks

Fortum's business is capital intensive and there is a regular need to raise financing. Fortum maintains a diversified financing structure in terms of debt maturity profile, debt instruments and geographical markets. Liquidity and refinancing risks are managed through a combination of cash positions and committed credit facility agreements with its core banks. The credit risk of cash positions has been mitigated by diversifying the deposits to high-credit quality financial institutions and issuers of corporate debt. In relation to the offer for Uniper shares, Fortum has commitments from 10 relationship banks to provide credit facilities at the request of Fortum in an aggregate amount of up to EUR 12,000 million.

Currency and interest rate risks

Fortum's debt portfolio consists of interest-bearing liabilities and derivatives on a fixed- and floating-rate basis with differing maturity profiles. Fortum manages the duration of the debt portfolio through use of different types of financing contracts and interest rate derivative contracts such as interest rate swaps.

Fortum's currency exposures are divided into transaction exposures (foreign exchange exposures relating to contracted cash flows and balance sheet items where changes in exchange rates will have an impact on earnings and cash flows) and translation exposure (foreign exchange exposure that arises when profits and balance sheets in foreign entities are consolidated at the Group level). The main principle is that material transaction exposures should be hedged while translation exposures are not hedged, or are hedged selectively. An exception is the Generation segment's hedging of power sales in Sweden where the currency component is currently not hedged. The main translation exposures toward the

EUR/RUB, EUR/SEK and EUR/NOK are monitored continuously. Changes in these currency rates affect Fortum's profit level and equity when translating results and net assets to euros.

Counterparty risks

Fortum is exposed to counterparty risk whenever there is a contractual arrangement with an external counterparty including customers, suppliers, partners, banks, clearing houses and trading counterparties.

Credit risk exposures relating to financial derivative instruments are often volatile. The majority of commodity derivatives are cleared through exchanges such as Nasdaq OMX commodities. The trend toward more use of futures contracts instead of forward contracts is decreasing the credit exposure toward clearing houses. Derivatives contracts are also entered into directly with external counterparties and such contracts are limited to high-credit-quality counterparties active on the financial or commodity markets.

Due to the financing needs and management of liquidity, Fortum has counterparty credit exposure to a number of banks and financial institutions. The majority of the exposure is toward Fortum's key relationship banks, which are highly creditworthy institutions, but also includes exposure to the Russian financial sector in terms of deposits with financial institutions as well as to banks that provide guarantees for suppliers and contracting parties. Deposits in Russia have been concentrated to the most creditworthy state-owned or controlled banks.

Credit risk exposures relating to customers is spread across a wide range of industrial counterparties, small businesses and private individuals over a range of geographic regions. The majority of exposure is to the Nordic market, Poland and Russia. The risk of non-payment in the electricity and heat sales business in Russia is higher than in the Nordic market. In order to manage counterparty credit risk, Fortum has routines and processes to identify, assess and control exposure. Credit checks are performed before entering into commercial obligations and exposure limits are set for larger individual counterparties. Creditworthiness is monitored through the use of internal and external sources so that mitigating actions can be taken when needed. Mitigating actions include demanding collateral, such as guarantees, managing payment terms and contract length, and the use of netting agreements.

Operational risks

Operational risks are defined as the negative effects resulting from inadequate or failed internal processes, systems or equipment, or from external events. Process-related risks are assessed and controls for the most relevant risks are defined and implemented as part of the internal controls framework. Equipment and system risks are primarily managed through monitoring and maintenance planning. In addition, all Fortum's industrial assets are covered by a Group Master Policy covering property damage and business interruption risks which mitigates the impact of internal and external events.

Operational risks at production facilities

Combined heat and power (CHP) and recycling and waste

CHP production and the recycling and waste business involve the use, storage and transportation of fuels and waste (including hazardous waste). Leakage and contamination of the surrounding environment could lead to clean-up costs and third-party liabilities. An explosion or fire at a facility could cause damages to the plant or third-parties and lead to possible business interruption. These risks are mitigated by condition monitoring, preventive maintenance and other operational improvements as well as competence development of personnel operating the plants. Requirements for waste are clearly specified and samples are tested for selected incoming waste deliveries. Risks in large CHP projects are mitigated through contract structures and insurance coverage.

Hydro power

Operational events at hydro power generation facilities can lead to physical damages, business interruptions, and third- party liabilities. A long-term program is in place for improving the surveillance of the condition of dams and for securing the discharge capacity in extreme flood situations. In Sweden, third-party liabilities from dam failures are strictly the plant owner's responsibility. Together with other hydro power producers, Fortum has a shared dam liability insurance program in place that covers Swedish dam failure liabilities up to SEK 10,000 million.

Nuclear power

Fortum owns the Loviisa nuclear power plant, and has minority interests in two Finnish and two Swedish nuclear power companies. At the Loviisa power plant, the assessment and improvement of nuclear safety is a continuous process performed under the supervision of the Radiation and Nuclear Safety Authority of Finland (STUK).

Third-party liability relating to nuclear accidents is strictly the plant operator's responsibility and must be covered by insurance. As the operator of the Loviisa power plant, Fortum has a statutory liability insurance policy of 600M SDR (Special Drawing Right) and the same type of insurance policies are in place for the operators where Fortum has a minority interest.

Cyber and information security risks

Fortum's business operations are dependent on well-functioning IT and information management systems and processes. Due to the nature of the business, large amounts of data are processed, often in real-time, and used for decision-making and in internal and external communication and reporting. Securing information and availability of the systems are essential for Fortum. Cyber security risks, including risks related to information, industrial control systems (ICS), digitalization and privacy, are managed centrally by Corporate Security. Group instructions and procedures set requirements for managing and mitigating cyber security risks.

General Data Protection Regulation will become applicable on 25th of May 2018. The regulation contains a number of requirements related to processing personal data. Therefore, Fortum has established a Group-wide program to ensure the fulfilment of the requirements.

IT functions in the business, support functions and outsourcing partners are responsible for identifying and mitigating operational IT security related risks as well as managing IT security incidents. IT functions are also responsible for IT service continuity.

Fortum share and shareholders

Fortum Corporation's shares have been listed on Nasdaq Helsinki since 18 December 1998. The trading code is FORTUM (until 25 January 2017: FUM1V). Fortum Corporation's shares are in the Finnish book entry system maintained by Euroclear Finland Ltd which also maintains the official share register of Fortum Corporation.

Share key figures

EUR	2017	2016	2015
Earnings per share			
Continuing operations	0.98	0.56	-0.26
Discontinued operations	-	-	4.92
Total Fortum	0.98	0.56	4.66
Cash flow per share total Fortum	1.12	0.7	1.55
Cash flow per share, continuing operations	1.12	0.7	1.38
Equity per share	14.69	15.15	15.53
Dividend per share	1.10 [1)]	1.10	1.10
Extra dividend per share	-	-	-
Payout ratio, %	112.2 [1)]	196.4	23.6
Dividend yield, %	6.7 [1)]	7.5	7.9

1) Board of Directors' proposal for the Annual General Meeting 28 March 2018.

For full set of share Key figures 2008–2017, see the section ▸ Key figures in the Financial Statements.

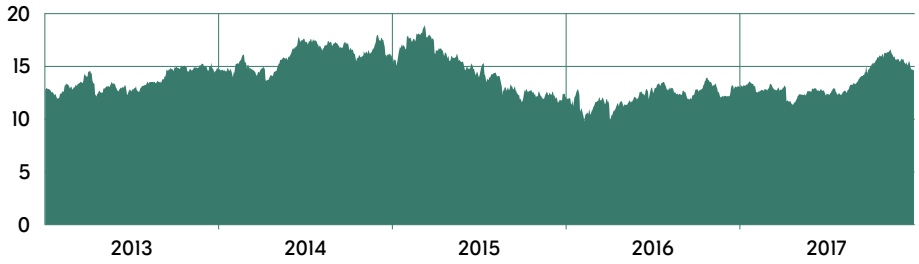
Shareholders value, share price performance and volumes

Fortum's mission is to deliver excellent value to its shareholders. Fortum's share price has appreciated approximately 15% during the last five years, while Dow Jones European Utility Index has increased 11%. During the same period Nasdaq Helsinki Cap index has increased 67%. During 2017 Fortum's share price appreciated approximately 13%, while Dow Jones European Utility index increased 7% and Nasdaq Helsinki Cap index increased 5%.

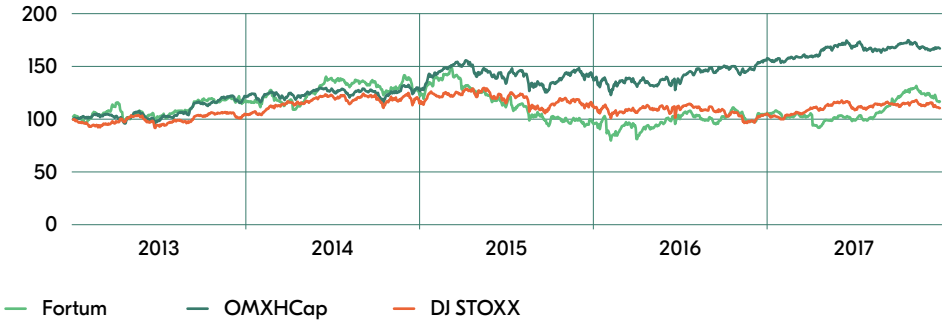
In 2017, a total of 582.9 million (2016: 611.6) Fortum Corporation shares, totalling EUR 8,906 million, were traded on the Nasdaq Helsinki. The highest quotation of Fortum Corporation shares during 2017 was EUR 18.94, the lowest EUR 12.69, and the volume-weighted average EUR 15.28. The closing quotation on the last trading day of the year 2017 was EUR 16.50 (2016: 14.57). Fortum's market capitalisation, calculated using the closing quotation of the last trading day of the year, was EUR 14,658 million (2016: 12,944).

In addition to the Nasdaq Helsinki, Fortum shares were traded on several alternative market places, for example at Boat, Cboe and Turquoise, and on the OTC market as well. In 2017, approximately 61% (2016: 63%) of Fortum's shares were traded on markets other than the Nasdaq Helsinki Ltd.

Market capitalisation, EUR billion



Share quotations, index 100 = quote on 2 January 2013



Share capital

Fortum has one class of shares. By the end of 2017 a total of 888,367,045 shares had been issued. Each share entitles the holder to one vote at the Annual General Meeting. All shares entitle holders to an equal dividend. At the end of 2017 Fortum Corporation's share capital, paid in its entirety and entered in the trade register, was EUR 3,046,185,953.00.

Shareholders

At the end of 2017, the Finnish State owned 50.76% of the company's shares. The Finnish Parliament has authorised the Government to reduce the Finnish State's holding in Fortum Corporation to no less than 50.1% of the share capital and voting rights.

The proportion of nominee registrations and direct foreign shareholders was 30.6 % (2016: 28.1%).

Shareholders, 31 December 2017

Shareholders	No. of shares	Holding %
Finnish State	450,932,988	50.76
The Finnish Social Insurance Institution	7,030,896	0.79
Ilmarinen Mutual Pension Insurance Company	6,220,000	0.70
Kurikan Kaupunki	6,203,500	0.70
The State Pension Fund	4,600,000	0.52
Elo Mutual Pension Insurance Company	4,000,000	0.45
Varma Mutual Pension Insurance Company	3,050,167	0.34
The Local Government Pensions Institution	2,568,955	0.29
Nordea Suomi Pro fund	2,545,929	0.29
Schweizerische Nationalbank	1,977,723	0.22
Danske Invest Suomi Osakeyhtiö fund	1,239,436	0.14
Society of Swedish Literature in Finland	1,156,375	0.13
Etera Mutual Pension Insurance Company	1,132,142	0.13
Seligson & Co OMX 25 fund	905,751	0.10
Nominee registrations and direct foreign ownership [1)]	269,923,008	30.38
Other shareholders in total	124,880,175	14.06
Total number of shares	**888,367,045**	**100.00**

1) Excluding Schweizerische Nationalbank.

By shareholder category	% of total amount of shares
Finnish shareholders	
Corporations	1.27
Financial and insurance institutions	1.19
General government	55.08
Non-profit organisations	1.42
Households	10.21
Non-Finnish shareholders	30.83
Total	**100.00**

Breakdown of share ownership, 31 December 2017

Number of shares owned	No. of shareholders	% of shareholders	No. of shares	% of total amount of shares
1—100	36,689	28.83	2,002,060	0.22
101—500	49,757	39.09	13,304,536	1.50
501—1,000	19,695	15.47	14,551,606	1.64
1,001—10,000	20,023	15.73	52,398,992	5.90
10,001—100,000	1,035	0.81	22,764,187	2.56
100,001—1,000,000	74	0.06	23,013,521	2.59
1,000,001—10,000,000	12	0.01	41,725,123	4.70
over 10,000,000	1	0.00	450,932,988	50.76
	127,286	**100.00**	**620,693,013**	**69.87**
In the joint book-entry account and in special accounts on 31 December			73,276	0.01
Nominee registrations			267,600,756	30.12
Total			**888,367,045**	**100.00**

Management interests 31 December 2017

At the end of 2017, the President and CEO and other members of the Fortum Management Team owned 200,667 shares (2016: 315,653) representing approximately 0.02% (2016: 0.04%) of the total shares in the company.

A full description of the shareholdings and interests in long-term incentive schemes of the President and CEO and other members of the Fortum Executive Management Team is shown in ▸ Note 10 Employee benefits.

Authorisations from the Annual General Meeting 2017

In 2017, the Annual General Meeting decided to authorise the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum number of 20,000,000 shares, which corresponds to approximately 2.25% of all the shares in the company. The authorisation is effective for a period of 18 months from the resolution of the General Meeting. The authorisation had not been used by the end of 2017.

Dividend policy

The dividend policy ensures that shareholders receive a fair remuneration for their entrusted capital, supported by the company's long-term strategy that aims at increasing earnings per share and thereby the dividend. When proposing the dividend, the Board of Directors looks at a range of factors, including the macro environment, balance sheet strength as well as future investment plans. Fortum Corporation's target is to pay a stable, sustainable and over time increasing dividend, in the range of 50–80% of earnings per share, excluding one-off items.

Dividend distribution proposal

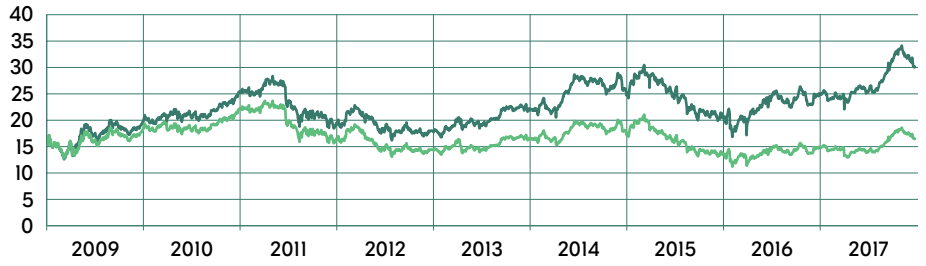
The distributable funds of Fortum Corporation as at 31 December 2017 amounted to EUR 5,170,240,554.04 including the profit of the financial period 2017 of EUR 932,525,770.24. The company's liquidity is good and the dividend proposed by the Board of Directors will not compromise the company's liquidity.

The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.10 per share be paid for 2017.

Based on the number of registered shares as at 1 February 2018 the total amount of dividend proposed to be paid is EUR 977,203,749.50. The Board of Directors proposes that the remaining part of the distributable funds will be retained in shareholders' equity.

The Annual General Meeting will be held on 28 March 2018 at 11:00 EET at Finlandia Hall in Helsinki.

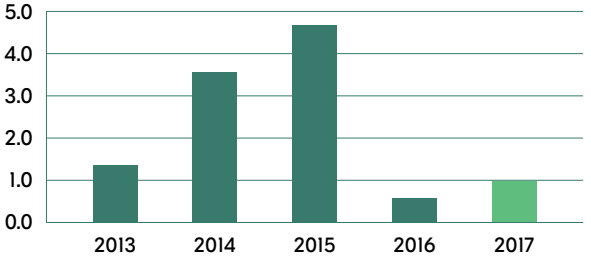
Total shareholder return, EUR



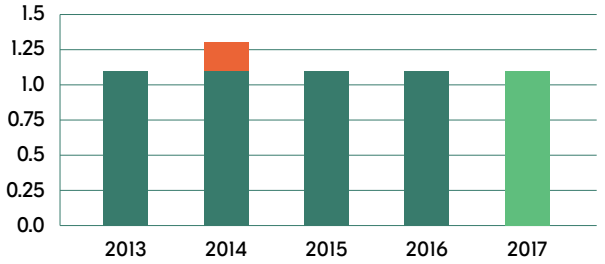
— Fortum's share price, (EUR 16.50)

— Fortum's total shareholder return, EUR 30.10 (dividends reinvested)

Earnings per share total Fortum, EUR



Dividend per share, EUR



The dividend for 2017 represents the Board of Directors' proposal for the Annual General Meeting in March 2018.
Fortum paid extra dividend of EUR 0.20 per share for the financial year that ended 31 Dec 2014.

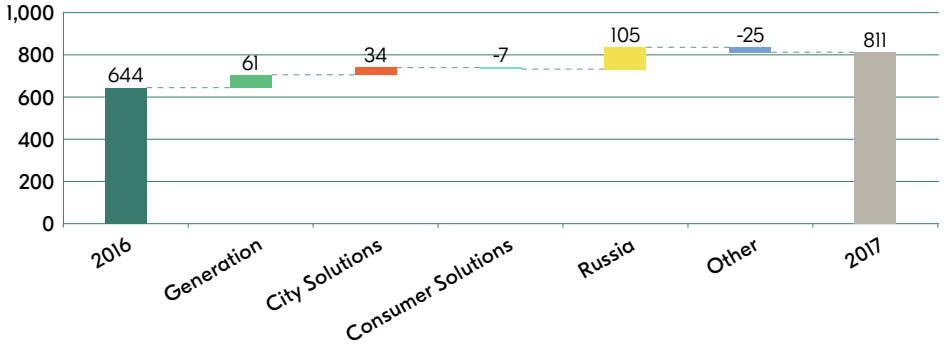
Consolidated income statement

EUR million	Note	2017	2016
Sales	5	4,520	3,632
Other income	8	55	34
Materials and services	9	-2,301	-1,830
Employee benefits	10	-423	-334
Depreciation and amortisation	5, 16, 17	-464	-373
Other expenses	8	-576	-485
Comparable operating profit	5	**811**	**644**
Items affecting comparability	6	347	-11
Operating profit	5	**1,158**	**633**
Share of profit of associates and joint ventures	5, 18	148	131
Interest expense		-164	-169
Interest income		32	30
Fair value gains and losses on financial instruments	7	-12	-2
Other financial expenses - net		-50	-29
Finance costs - net	11	**-195**	**-169**
Profit before income tax		**1,111**	**595**
Income tax expense	12	-229	-90
Profit for the period		**882**	**504**
Attributable to:			
Owners of the parent		866	496
Non-controlling interests		16	8
		882	**504**
Earnings per share for profit attributable to the equity owners of the company (EUR per share) [1]	13		
Basic		0.98	0.56

1) As Fortum currently has no dilutive instruments outstanding, diluted earnings per share is the same as basic earnings per share.

EUR million	Note	2017	2016
Comparable operating profit		**811**	**644**
Impairment charges		6	27
Capital gains and other		326	38
Changes in fair values of derivatives hedging future cash flow	7	14	-65
Nuclear fund adjustment	5	1	-11
Items affecting comparability	5, 6	**347**	**-11**
Operating profit		**1,158**	**633**

Comparable operating profit, EUR million



Consolidated statement of comprehensive income

EUR million	Note	2017	2016
Profit for the period		**882**	**504**
Other comprehensive income			
Items that may be reclassified to profit or loss in subsequent periods:			
Cash flow hedges			
Fair value gains/losses in the period		22	-142
Transfers to income statement		76	-85
Transfers to inventory/fixed assets		-4	-10
Deferred taxes		-19	51
Net investment hedges			
Fair value gains/losses in the period		23	-2
Deferred taxes		-5	0
Exchange differences on translating foreign operations	3.6	-372	342
Share of other comprehensive income of associates and joint ventures	18	-10	-9
Other changes		-2	0
		-291	**145**
Items that will not be reclassified to profit or loss in subsequent periods:			
Actuarial gains/losses on defined benefit plans	30	-13	-7
Actuarial gains/losses on defined benefit plans in associates and joint ventures	30	6	12
		-7	**5**
Other comprehensive income for the period, net of deferred taxes		-298	150
Total comprehensive income for the year		**584**	**654**
Total comprehensive income attributable to:			
Owners of the parent		**571**	**639**
Non-controlling interests		13	15
		584	**654**

Components of Consolidated statement of comprehensive income (OCI) are items of income and expense that are recognized in equity and not recognized in the consolidated income statement. They include unrealized items, such as fair value gains and losses on financial instruments hedging future cash flows. These items will be realized in the Consolidated income statement when the underlying hedged items is recognized. OCI also includes gains and losses on fair valuation on available for sale financial assets, actuarial gains and losses from defined benefit plans, items on comprehensive income in associated companies and translation differences.

Fair valuation of cash flow hedges mainly relates to electricity prices in future cash flows. When electricity price is higher (lower) than the hedging price, the impact on equity is negative (positive).

Translation differences from translation of foreign entities, mainly RUB and SEK.

Consolidated balance sheet

EUR million	Note	31 Dec 2017	31 Dec 2016
ASSETS			
Non-current assets			
Intangible assets	16	1,064	467
Property, plant and equipment	17	10,510	9,930
Participations in associates and joint ventures	18	1,900	2,112
Share in State Nuclear Waste Management Fund	28	858	830
Other non-current assets	19	140	113
Deferred tax assets	27	73	66
Derivative financial instruments	3	281	415
Long-term interest-bearing receivables	20	1,010	985
Total non-current assets		**15,835**	**14,918**
Current assets			
Inventories	21	216	233
Derivative financial instruments	3	240	130
Short-term interest-bearing receivables	20	395	395
Income tax receivables	27	172	290
Trade and other receivables	22	997	844
Deposits and securities (maturity over three months)		715	3,475
Cash and cash equivalents		3,182	1,679
Liquid funds	23	3,897	5,155
Total current assets		**5,918**	**7,046**
Total assets		**21,753**	**21,964**

EUR million	Note	31 Dec 2017	31 Dec 2016
EQUITY			
Equity attributable to owners of the parent			
Share capital	24	3,046	3,046
Share premium		73	73
Retained earnings		9,875	10,369
Other equity components		54	-29
Total		**13,048**	**13,459**
Non-controlling interests	25	239	84
Total equity		**13,287**	**13,542**
LIABILITIES			
Non-current liabilities			
Interest-bearing liabilities	26	4,119	4,468
Derivative financial instruments	3	214	262
Deferred tax liabilities	27	819	616
Nuclear provisions	28	858	830
Other provisions	29	100	116
Pension obligations	30	102	76
Other non-current liabilities	31	175	179
Total non-current liabilities		**6,388**	**6,546**
Current liabilities			
Interest-bearing liabilities	26	766	639
Derivative financial instruments	3	200	396
Trade and other payables	32	1,112	841
Total current liabilities		**2,078**	**1,876**
Total liabilities		**8,466**	**8,422**
Total equity and liabilities		**21,753**	**21,964**

Consolidated statement of changes in total equity

EUR million	Note	Share capital	Share premium	Retained earnings		Other equity components			Owners of the parent	Non-controlling interests	Total equity
				Retained earnings and other funds	Translation of foreign operations	Cash flow hedges	Other OCI items	OCI items associated companies and joint ventures			
BS Total equity 31 December 2016		**3,046**	**73**	**12,186**	**-1,817**	**-115**	**58**	**27**	**13,459**	**84**	**13,542**
Net profit for the period				866					866	16	882
Translation differences					-369	1	1	-1	-369	-3	-372
Other comprehensive income				-9		74	11	-2	73	0	74
Total comprehensive income for the period				857	-369	75	11	-3	571	13	584
Cash dividend	13			-977					-977	-2	-979
Other				-4					-4	145	141
BS Total equity 31 December 2017		**3,046**	**73**	**12,062**	**-2,187**	**-40**	**70**	**24**	**13,048**	**239**	**13,287**
Total equity 31 December 2015		**3,046**	**73**	**12,663**	**-2,156**	**74**	**67**	**27**	**13,794**	**69**	**13,863**
Net profit for the period				496					496	8	504
Translation differences					339	-2	1	-3	335	7	342
Other comprehensive income				1		-186	-10	3	-192		-192
Total comprehensive income for the period				497	339	-188	-9	0	639	15	654
Cash dividend	13			-977					-977		-977
Other				3					3	-1	2
BS Total equity 31 December 2016		**3,046**	**73**	**12,186**	**-1,817**	**-115**	**58**	**27**	**13,459**	**84**	**13,542**

Translation differences

Translation of financial information from subsidiaries in foreign currency is done using average rate for the income statement and end rate for the balance sheet. The exchange rate differences occurring from translation to EUR are booked to equity. Translation differences impacted equity attributable to owners of the parent company with EUR -369 million during 2017 (2016: 335). Translation differences are mainly related to RUB and SEK. Part of this translation exposure has been hedged and the foreign currency hedge result, amounting to EUR 28 million (2016: 5), is included in the other OCI items.

For information regarding exchange rates used, see ▸**Note 1** Accounting policies. For information about translation exposure see ▸**Note 3.6** Interest rate risk and currency risk.

Cash flow hedges

The impact on equity attributable to owners of the parent from fair valuation of cash flow hedges, EUR 75 million (2016: -188), mainly relates to cash flow hedges hedging electricity price for future transactions. When electricity price is lower/higher than the hedging price, the impact on equity is positive/negative.

Non-controlling interests

Non-controlling interests have increased with EUR 155 million during 2017 mainly due to the acquisition of Fortum Oslo Varme AS which is consolidated as a subsidiary with 50% non-controlling interest. See also ▸**Note 38** Acquisitions and disposals.

Consolidated cash flow statement

EUR million	Note	2017	2016
Cash flow from operating activities			
Profit for the period from continuing operations		**882**	**504**
Adjustments:			
Income tax expenses		229	90
Finance costs - net		195	169
Share of profit of associates and joint ventures		-148	-131
Depreciation and amortisation		464	373
Operating profit before depreciations (EBITDA)		**1,623**	**1,006**
Items affecting comparability		-347	11
Net release of CSA provision		0	-2
Comparable EBITDA		**1,275**	**1,015**
Non-cash flow items		-76	-49
Interest received		35	39
Interest paid		-187	-214
Dividends received		58	54
Realised foreign exchange gains and losses		-83	110
Income taxes paid		-83	-216
Other items		-28	-18
Funds from operations		**912**	**723**
Change in working capital		81	-102
Net cash from operating activities		**993**	**621**
Cash flow from investing activities			
Capital expenditures	5, 16, 17	-657	-599
Acquisitions of shares		-972	-695
Proceeds from sales of fixed assets		8	10
Divestments of shares		741	39
Shareholder loans to associated companies and joint ventures		43	-117
Change in cash collaterals		-3	-359
Change in other interest-bearing receivables		34	20
Net cash used in investing activities		**-807**	**-1,701**

EUR million	Note	2017	2016
Cash flow before financing activities		**187**	**-1,080**
Cash flow from financing activities			
Proceeds from long-term liabilities		35	32
Payments of long-term liabilities		-543	-934
Change in short-term liabilities		68	-97
Dividends paid to the owners of the parent	13	-977	-977
Other financing items		-12	-8
Net cash used in financing activities		**-1,428**	**-1,984**
Total net increase(+)/decrease(-) in liquid funds		**-1,241**	**-3,064**
Liquid funds at the beginning of the year		**5,155**	**8,202**
Foreign exchange differences in liquid funds		-16	18
Liquid funds at the end of the period	23	**3,897**	**5,155**

Realised foreign exchange gains and losses relate mainly to financing of Fortum's Russian and Swedish subsidiaries and the fact that the Group's main external financing currency is EUR. The foreign exchange gains and losses arise from rollover of foreign exchange contracts hedging these internal loans as major part of the forwards are entered into with short maturities i.e. less than twelve months.

Capital expenditures in cash flow do not include not yet paid investments. Capitalised borrowing costs are presented in interest paid.

Change in net debt

EUR million	2017	2016
Net debt 1 January	**-48**	**-2,195**
Foreign exchange rate differences	-15	-70
Comparable EBITDA	1,275	1,015
Non-cash flow items	-76	-49
Paid net financial costs	-199	-29
Income taxes paid	-83	-216
Change in working capital	81	-102
Capital expenditures	-657	-599
Acquisitions	-972	-695
Divestments	749	49
Shareholder loans to associated companies	43	-117
Change in other interest-bearing receivables	31	-340
Dividends	-977	-977
Other financing activities	-17	-8
Net cash flow (- increase in net debt)	-802	-2,065
Fair value change of bonds, amortised cost valuation, acquired debt and other	248	152
Net debt 31 December	**988**	**-48**

Additional cash flow information

Change in working capital

EUR million	2017	2016
Change in settlements for futures, decrease(+)/increase(-)	141	-138
Change in interest-free receivables, decrease(+)/increase(-)	-94	92
Change in inventories, decrease(+)/increase(-)	19	14
Change in interest-free liabilities, decrease(-)/increase(+)	15	-70
CF Total	**81**	**-102**

In Fortum's cash flow statement the daily cash settlements for futures are shown as change in working capital whereas the changes in cash collaterals for forwards are included in cash flow from investing activities. In the end of 2016 Nasdaq's market making for forwards ended and the trading moved from forwards with cash collaterals to futures with daily cash settlements. The cash collaterals are included in the short-term interest-bearing receivables, see ▸ **Note 20** Interest-bearing receivables.

Capital expenditure in cash flow

EUR million	Note	2017	2016
Capital expenditure	5, 16, 17	690	591
Change in not yet paid investments, decrease(+)/increase(-)		-17	24
Capitalised borrowing costs		-16	-16
CF Total		**657**	**599**

Capital expenditures for intangible assets and property, plant and equipment were in 2017 EUR 690 million (2016: 591). Capital expenditure in cash flow in 2017 EUR 657 million (2016: 599) is including payments related to capital expenditure made in previous year i.e. change in trade payables related to investments EUR -17 million (2016: 24) and excluding capitalised borrowing costs EUR -16 million (2016: -16), which are presented in interest paid.

See also information about the investments by segments and countries in ▸ **Note 5** Segment reporting and the investment projects by segment in ▸ **Note 17.2** Capital expenditure.

Acquisition of shares in cash flow

Acquisition of shares, net of cash acquired, amounted to EUR 972 million during 2017 (2016: 695). Acquisition of shares during 2017 include mainly the acquisition of subsidiary shares in Hafslund Markets AS and Hafslund Varme AS (renamed as Fortum Oslo Varme AS) including the City of Oslo's waste-to-energy company Klemetsrudanlegget AS (renamed as Fortum Oslo Varme KEA AS) as well as associated company shares in Hafslund Produksjon Holding AS. During 2017 Fortum also acquired 100% of the shares in three Norwegian wind park companies, Russian solar power companies and other smaller companies. Fortum also invested in the wind investment fund owned 50/50 by Fortum and RUSNANO. For further information see ▸ **Note 38** Acquisitions and disposals.

Divestment of shares in cash flow

EUR million	Note	2017	2016
Proceeds from sales of subsidiaries, net of cash disposed	38	54	6
Proceeds from sales of associates and joint ventures	18, 38	687	34
CF Total		**741**	**39**

Proceeds from sales of subsidiaries during 2017 include mainly the sale of the Polish gas infrastructure company DUON Dystrybucja S.A. that was acquired as part of the acquisition of the electricity and gas sales company Grupa DUON S.A. (currently Fortum Markets Polska S.A.) in 2016. Proceeds from sales of associated companies and joint ventures during 2017 include the sale of Fortum's 34.1% stake in Hafslund ASA. For further information see ▸ **Note 38** Acquisitions and disposals.

1 Accounting Policies

1.1 Basic information

Fortum Corporation (the Company) is a Finnish public limited liability company with its domicile in Espoo, Finland. Fortum's shares are traded on Nasdaq Helsinki.

The operations of Fortum Corporation and its subsidiaries (together the Fortum Group) focus on the Nordic and Baltic countries, Russia and Poland. Fortum's activities cover generation and sale of electricity, generation, distribution and sale of heat, and energy-related expert services.

These financial statements were approved by the Board of Directors on 1 February 2018.

1.2 Basis of preparation

The consolidated financial statements of the Fortum Group have been prepared in accordance with International Financial Reporting Standards (IFRS) and IFRIC Interpretations as adopted by the European Union. The financial statements also comply with Finnish accounting principles and corporate legislation.

The consolidated financial statements have been prepared under the historical cost convention, except for available-for-sale financial assets, financial assets and financial liabilities (including derivative instruments) at fair value through profit and loss and items hedged at fair value.

1.2.1 Income statement presentation

In the Consolidated income statement Comparable operating profit-key figure is presented to better reflect the Group's business performance when comparing results for the current period with previous periods.

Items affecting comparability are disclosed as a separate line item. The following items are included in "Items affecting comparability":

- impairment charges and related provisions (mainly dismantling);
- capital gains, transaction costs and other;
- effects from fair valuations of derivatives hedging future cash flows which do not obtain hedge accounting status according to IAS 39. The major part of Fortum's cash flow hedges obtain hedge accounting where fair value changes are recorded in equity;
- effects from accounting of Fortum's part of the State Nuclear Waste Management Fund where the assets cannot exceed the related liabilities according to IFRIC 5.

Comparable operating profit is used for financial target setting, follow up and allocation of resources in the Group's performance management.

1.2.2 Classification of current and non-current assets and liabilities

An asset or a liability is classified as current when it is expected to be realised in the normal operating cycle or within twelve months after the balance sheet date or it is classified as financial assets or liabilities held at fair value through profit or loss. Liquid funds are classified as current assets.

All other assets and liabilities are classified as non-current assets and liabilities.

1.3 Principles for consolidation

The consolidated financial statements comprise of the parent company, subsidiaries, joint ventures and associated companies.

The Fortum Group was formed in 1998 by using the pooling-of-interests method for consolidating Fortum Power and Heat Oy and Fortum Oil and Gas Oy (the latter demerged to Fortum Oil Oy and Fortum Heat and Gas Oy 1 May 2004). In 2005 Fortum Oil Oy (current Neste Oyj) was separated from Fortum by distributing 85% of its shares to Fortum's shareholders and by selling the remaining 15%. This means that the acquisition cost of Fortum Power and Heat Oy and Fortum Heat and Gas Oy has been eliminated against the share capital of the companies. The difference has been entered as a decrease in shareholders' equity.

1.3.1 Subsidiaries

Subsidiaries are defined as companies in which Fortum has control. Control exists when Fortum is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

The acquisition method of accounting is used to account for the acquisition of subsidiaries. The cost of an acquisition is measured as the aggregate of fair value of the assets given and liabilities incurred or assumed at the date of exchange, plus costs directly attributable to the acquisition. Identifiable assets acquired and liabilities assumed in a business combination are measured initially at their fair values at the acquisition date, irrespective of the extent of any minority interest. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill. If the cost of acquisition is less than the fair value of the net assets of the subsidiary acquired, the difference is recognised directly in the income statement.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group and are no longer consolidated from the date that control ceases.

Intercompany transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Where necessary, subsidiaries' accounting policies have been changed to ensure consistency with the policies the Group has adopted.

The Fortum Group subsidiaries are disclosed in ▸Note 40 Subsidiaries by segment on 31 December 2017.

1.3.2 Associates

Associated companies are entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. The Group's interests in associated companies are accounted for using the equity method of accounting.

1.3.3 Joint ventures

Joint ventures are arrangements in which the Group has joint control. Joint ventures are accounted for using the equity method of accounting.

1.3.4 Non-controlling interests

Non-controlling interests in subsidiaries are identified separately from the equity of the owners of the parent company. The non-controlling interests are initially measured at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests' share of subsequent changes in equity.

1.4 Foreign currency transactions and translation

1.4.1 Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The consolidated financial statements are presented in euros, which is the Company's functional and presentation currency.

1.4.2 Transactions and balances

Transactions denominated in foreign currencies are translated using the exchange rate at the date of the transaction. Receivables and liabilities denominated in foreign currencies outstanding on the closing date are translated using the exchange rate quoted on the closing date. Exchange rate differences have been entered in the income statement. Net conversion differences relating to financing are entered under financial income or expenses, except when deferred in equity as qualifying cash flow hedges. Translation differences on available-for-sale financial assets are included in Other equity components section of the equity.

1.4.3 Group companies

The income statements of subsidiaries, whose measurement and reporting currencies are not euros, are translated into the Group reporting currency using the average exchange rates for the year based on the month-end exchange rates, whereas the balance sheets of such subsidiaries are translated using the exchange rates on the balance sheet date. On consolidation, exchange differences arising from the translation of the net investment in foreign entities, and of borrowings and other currency instruments designated as hedges of such investments, are taken to equity. When a foreign operation is sold, such exchange differences are recognised in the income statement as part of the gain or loss on sale. Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate.

The balance sheet date rate is based on the exchange rate published by the European Central Bank for the closing date. The average exchange rate is calculated as an average of each month's ending rate from the European Central Bank during the year and the ending rate of the previous year.

The key exchange rates applied in the Fortum Group accounts

		Average rate		Balance sheet date rate	
	Currency	2017	2016	31 Dec 2017	31 Dec 2016
Sweden	SEK	9,6392	9.4496	9,8438	9.5525
Norway	NOK	9,3497	9.2888	9,8403	9.0863
Poland	PLN	4,2556	4.3659	4,1770	4.4103
Russia	RUB	66,0349	73.8756	69,3920	64.3000

1.4.4 Associates and joint ventures

The Group's interests in associated companies and joint ventures are accounted for by the equity method. Associates and joint ventures, whose measurement and reporting currencies are not euro, are translated into the Group reporting currency using the same principles as for subsidiaries, see ▸1.4.3 Group companies.

1.5 Other accounting policies

Fortum describes the other accounting principles in conjunction with the relevant note information. The table below lists the significant accounting policies and the note where they are presented as well as the relevant IFRS standard.

Accounting principle	Note		IFRS standard
Segment reporting	5	Segment reporting	IFRS 8
Revenue recognition	5 22	Segment reporting and Trade and other receivables	IAS 18
Government grants	17	Property, plant and equipment	IAS 20
Share-based payments	10	Employee benefits	IFRS 2
Income taxes	27	Income taxes in balance sheet	IAS 12
Joint arrangements	18	Participations in associated companies and joint ventures	IFRS 11, IAS 28, IFRS 12
Investments in associates	18	Participations in associated companies and joint ventures	IAS 28, IFRS 12
Other shares and participations	14	Financial assets and liabilities by categories	IAS 32, IAS 36, IAS 39
Intangible assets	16	Intangible assets	IAS 38
Tangible assets	17	Property, plant and equipment	IAS 16, IAS 36, IAS 40
Leases	33	Lease commitments	IAS 17
Inventories	21	Inventories	IAS 2
Earnings per share	13	Earnings and dividend per share	IAS 33
Pensions and similar obligations	30	Pension obligations	IAS 19
Decommissioning obligation	28	Nuclear related assets and liabilities	IFRIC 5
Provisions	29	Other provisions	IAS 37
Contingent liabilities	35	Pledged assets and contingent liabilities	IAS 37
Financial instruments	14 15	Financial assets and liabilities by categories and Financial assets and liabilities by fair value hierarchy	IAS 32, IAS 39, IFRS 7
Liquid funds	23	Liquid funds	IAS 7
Borrowings	26	Interest-bearing liabilities	IAS 39

1.6 New accounting principles

1.6.1 New IFRS standards adopted from 1 Jan 2017

Fortum has adopted the following new or amended standards on 1 January 2017:

Narrow-scope yearly amendments	
Nature of change	The amendments primarily remove inconsistencies, provide additional guidance and clarify wording of standards. There are separate transitional provisions for each standard.
Date of adoption	1 January 2017
Impact	In connection to the disclosure initiative project, IAS 7 was amended to require additional disclosures on the movement of liabilities. Fortum presents a reconciliation of liabilities arising from financing activities in ▸Note 26. Impacts of the other amendments are not material in Fortum's financial statements.

1.6.2 Adoption of new IFRS standards from 1 Jan 2018 or later

Fortum will apply the following new or amended standards and interpretations starting from 1 January 2018 or later:

IFRS 15 Revenue from Contracts with Customers	
Nature of change	New standard. The standard focuses on revenue recognition models and will replace IAS 11 and IAS 18.
Date of adoption	1 January 2018
Impact	Fortum has completed the analysis of the significant business areas and has not identified any material changes from IFRS 15 implementation. Analysis includes the following main steps: • Identification and assessment of the main revenue streams, • Determining key areas of potential differences between old and new revenue recognition principles and • Reviewing a sample of contracts. The conclusions requiring the greatest degree of management judgement are as follows: • Electricity sales to wholesale market: Physical electricity trades to Nord Pool or other wholesale markets are made either during the same day or day before the delivery and the duration of the contract is thus very short. The transaction price is the spot price and there are no variable elements. Electricity sales continue to be recognized upon delivery and hence there are no changes identified compared to the current recognition principles. • District heating: In many areas the district heating service covers both the distribution and sale of heat. Even if heat is produced by a third party, Fortum is usually responsible for delivering the whole service and is acting as a principal for the heat sales as well. Fortum has concluded that the distribution and sale of heat are not separate performance obligations and are both covered by the promise to stand-ready to supply heat to the customer. Also the fees charged for connecting the end customer to the district heat network are part of the same performance obligation. The fees charged from the customer generally comprise a fixed monthly charge and a variable component that is determined based on the volume of heat supplied. In accordance to the IFRS 15 principles, the fixed charge and the variable heat volume charge are allocated and recognised in line with the fees chargeable from the customer. In Russia, Baltics and Poland there are also areas, where Fortum operates only the heat production facilities while some third party is responsible for the distribution of heat. In these areas the performance obligation is to supply heat. There are no changes identified compared to the current revenue recognition principles. • Waste management services: Majority of the revenues from waste management services arises from the fees charged for receiving the waste from customers (i.e. gate fees). The fee is usually determined based on the volume of waste received and there are no variable elements in the pricing. Fortum is required to treat the waste and this performance obligation is satisfied when the treatment is performed. Transportation of the waste form another performance obligation, which is recognized once the service is performed. There are no changes identified to the current practices. • Electricity sales to retail customers: Fortum's contracts with the consumer and business customers cover the electricity sales, while the distribution service is delivered by the transmission company operating the local network. There is only one performance obligation, which is to stand-ready to supply electricity to the customer. The transaction price generally includes both a fixed monthly fee and a variable fee that depends on the volume of electricity supplied. As with the district heating business, the fixed and variable components are to be recognized as revenue based on the fees chargeable from the customer. IFRS 15 will change the treatment of sales commission costs for obtaining new customers, which are currently mostly expensed. In the future the sales commissions shall be capitalized as intangible assets and depreciated over the expected contract term. Implementation of IFRS 15 will thus impact the timing and classification of expenses, but the impact to Fortum Comparable operating profit is not expected to be material. Further details on the impact will be disclosed in the Q1/2018 interim report. Fortum will use the transition relief for not to restate the comparative information at the date of initial application.

IFRS 9 Financial instruments	
Nature of change	New standard. The standard has new requirements for the classification and measurement of financial assets and liabilities and hedge accounting and it will replace IAS 39. Additionally, it introduces a new impairment model for expected credit losses.
Date of adoption	1 January 2018
Impact	Fortum is finalising the implementation and testing phase including model validations, process and system updates and preparation of the new disclosures including possible opening balance sheet adjustments. The interpretations taken are: • Classification and measurement of financial assets - Most financial assets will be classified under "Held-to-Collect" business model and accounted for as amortised cost when they meet the SPPI criteria. TVO shareholder loan meets the criteria for equity investment and it will be reclassified. • Fortum's commodity derivative hedging will benefit from the possibility to apply hedge accounting for one or several risk components separately or in aggregation. In the Nordic area Fortum considers system and electricity price area differential (EPAD) products perfect hedges for corresponding electricity price risk components. This will reduce the volatility in Fortum's profit and loss currently recognized as items affecting comparability. Vast majority of the non-hedge accounted electricity derivatives in December will qualify for hedge accounting under IFRS 9. • Implementation of expected credit loss ("ECL") model is completed. Fortum has implemented counterparty specific ECL models to be used on individual contract basis for deposits, shareholder loans and trade receivables with large customers whereas portfolio models will be used for trade receivables with consumers and small business customers. Fortum has prepared analysis based on historical data, which indicates no material impacts. Actual impacts will fluctuate due to seasonality of the business. Further details on the impact will be disclosed in the Q1/2018 interim report. Fortum will use the transition relief for not to restate the comparative information at the date of initial application.

IFRS 16 Leases	
Nature of change	New standard regarding lease accounting that will replace IAS 17. The new lease standard will result in almost all leases being recognised on the balance sheet, as the distinction between operating and finance lease is removed.
Date of adoption	1 January 2019
Impact	Currently under IAS 17, lessees recognize leases either as operating leases or finance leases. The new standard no longer distinguishes between operating and finance leases from a lessees point of view, and most right-of-use assets are recognized in the balance sheet. For lessors, there are no significant changes. In brief, IFRS 16 requirements contain the following: • A lessee shall recognize all leases, except for short-term and low value leases, in the balance sheet. • For lessees, both the value of the right-of-use asset and the corresponding liability shall be recognized in the balance sheet. IFRS 16 is effective for financial periods starting on 1 January 2019 or later. The European Union endorsed the use of the standard on 31 October 2017. Currently, Fortum has mainly operating leases with varying lease terms and prolongation rights. The majority of the operating leases are for the use of land and office buildings. Total future lease obligations amounted to EUR 160 million at the end of the reporting period (Dec 31 2016: 74). Hence, the impacts of the standard to the consolidated financial statements are not expected to be material. The IFRS 16 analysis is on-going and will be completed during 2018. Analysis include: • Reviewing current lease contracts reported as operating lease commitments • Going through supplier lists and identifying potential lease arrangements • Determining incremental borrowing rates • Calculation of accounting impacts. No major issues have been identified so far. Fortum plans to apply the modified retrospective method, which means the comparative figures will not be restated.

2 Critical accounting estimates and judgements

The preparation of IFRS consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities existing at the balance sheet date as well as the reported amounts of revenues and expenses during the reporting period.

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results and timing may differ from these estimates.

The table below is listing the areas where management's accounting estimates and judgements are most critical to reported results and financial position. The table is also showing where to find more information about above-mentioned estimates and judgements.

Critical accounting estimates and judgements	Note	
Assigned values and useful lives determined for intangible assets and property, plant and equipment acquired in a business combination	16	Intangible assets
Assumptions related to impairment testing of property, plant and equipment and intangible assets as well as associated companies and joint ventures	16	Intangible assets
Judgement used when assessing the nature of Fortum's interest in its investees and when considering the classification of Fortum's joint arrangements as well as commitments arising from these arrangements	18	Participations in associated companies and joint ventures
Assumptions and estimates regarding future tax consequences	27 36	Income taxes in balance sheet Legal actions and official proceedings
Assumptions made to determine long-term cash flow forecasts of estimated costs for provision related to nuclear production	28	Nuclear related assets and liabilities
Assumptions made when estimating provisions	29	Other provisions
Assumptions used to determine future pension obligations	30	Pension obligations

3 Financial risk management

Risk management objectives, principles and framework including governance, organisation and processes as well as description of risks i.e. strategic, financial and operational risks are described in the ▸**Risk management** part in the Operating and financial review (OFR).

3.1 Commodity market risks

Fortum's business is exposed to fluctuations in prices and volume of commodities used in the production and sales of energy products. The main exposure is toward electricity prices and volumes, prices of emissions and prices and availability of fuels. Fortum hedges its exposure to commodity market risks in accordance with annually approved Hedging Guidelines, Strategies and Mandates.

3.2 Electricity price and volume risk

Electricity price risk is hedged by entering into electricity derivatives contracts, primarily on the Nordic power exchange, Nasdaq Commodities. The main objective of hedging is to reduce the effect of electricity price volatility on earnings. Hedging strategies cover several years in the short to medium term and are executed within approved mandates. These hedging strategies are continuously evaluated as electricity and other commodity market prices, the hydrological balance and other relevant parameters change. Hedging of the Generation segment's power sales is performed in EUR on a Nordic level covering both Finland and Sweden, and the currency component of these hedges in the Swedish entity is currently not hedged.

In Russia, electricity prices and capacity sales are the main sources of market risk. The electricity price is highly correlated with the gas price and prices are fixed through bilateral agreements limiting exposure.

Fortum's sensitivity to electricity market price is dependent on the hedge level for a given time period. As per 31 December 2017, approximately 70% of the Generation segment's estimated Nordic power sales volume was hedged for the calendar year 2018 and approximately 40% for the calendar year 2019. Assuming no changes in generation volumes, hedge ratios or cost structure a 1 EUR/MWh change in the market price of electricity would affect Fortum's 2018 comparable operating profit by approximately EUR 14 million and for 2019 by approximately EUR 27 million. The volume used in this sensitivity analysis is 45 TWh which includes the electricity generation sold to the spot market in Sweden and Finland in the Generation segment without minority owner's shares of electricity or other pass-through sales, and excluding the volume of Fortum's coal-condensing generation. This volume is heavily dependent on price level, the hydrological situation, the length of annual maintenance periods and availability of power plants. Sensitivity is calculated only for electricity market price movements. Hydrological conditions, temperature, CO_2 allowance prices, fuel prices and the import/export situation all affect the electricity price on short-term basis and effects of individual factors cannot be separated.

3.2.1 Sensitivity arising from financial instruments according to IFRS 7

Sensitivity analysis shows the sensitivity arising from financial electricity derivatives as defined in IFRS 7. These derivatives are used for hedging purposes within Fortum. Sensitivities are calculated based on 31 December 2017 (31 December 2016) position. Positions are actively managed in the day-to-day business operations and therefore the sensitivities vary from time to time. Sensitivity analysis includes only the market risks arising from derivatives i.e. the underlying physical electricity sales and purchases are not included. Sensitivity is calculated with the assumption that electricity forward quotations in Nasdaq OMX Commodities Europe and in EEX would change 1 EUR/MWh for the period Fortum has derivatives.

Sensitivity according to IFRS 7

+/- 1 EUR/MWh change in electricity forward quotations, EUR million	Effect	2017	2016
Effect on Profit before income tax	-/+	22	18
Effect on Equity	-/+	28	27

3.2.2 Electricity derivatives

The tables below disclose the Group's electricity derivatives used mainly for hedging electricity price risk. The fair values represent the values disclosed in the balance sheet.

See also ▸Note 14 Financial assets and liabilities by categories for accounting principles and basis for fair value estimations and ▸Note 7 Fair value changes of derivatives and underlying items in income statement.

Electricity derivatives by instrument 2017

	Volume, TWh				Fair value, EUR million		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Electricity derivatives	26	24	0	50	360	519	-159
Total					**360**	**519**	**-159**
Netting against electricity exchanges [1)]					-234	-234	0
Total					**126**	**285**	**-159**

Electricity derivatives by instrument 2016

	Volume, TWh				Fair value, EUR million		
	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Electricity derivatives	24	21	0	45	491	711	-220
Total					**491**	**711**	**-220**
Netting against electricity exchanges [1)]					-335	-335	0
Total					**156**	**376**	**-220**

1) Receivables and liabilities against electricity exchanges arising from standard derivative contracts with same delivery period are netted.

Maturity analysis of commodity derivatives

Amounts in the table are fair values.

	2017				2016			
EUR million	Under 1 year	1–5 years	Over 5 years	Total	Under 1 year	1–5 years	Over 5 years	Total
Electricity derivatives, liabilities	162	123	0	**285**	238	136	2	**376**
Electricity derivatives, assets	90	35	0	**126**	88	67	1	**156**
Other commodity derivatives, liabilities	13	3	0	**16**	18	3	0	**21**
Other commodity derivatives, assets	36	6	0	**43**	18	4	0	**22**

3.3 Fuel price risks

Exposure to fuel prices is limited due to Fortum's flexible generation capacity, which allows for switching between different fuels according to prevailing market conditions. In some cases, the fuel price risk can be transferred to the customer. The remaining exposure to fuel price risk is mitigated through fixed-price physical delivery contracts or derivative contracts, such as coal, gas and oil derivatives included in the table above as part of "Other commodity derivatives".

3.4 Emission allowance price and volume risk

Part of Fortum's power and heat generation is subject to requirements of emission trading schemes. Fortum hedges its exposure to these prices and volumes through the use of CO_2 futures. Most of these CO_2 futures are own use contracts valued at cost and some are treated as derivatives in the accounts included in the table above as part of "Other commodity derivatives".

3.5 Liquidity and refinancing risk

Fortum's business is capital intensive and the Group has a diversified loan portfolio mainly consisting of long-term financing denominated in EUR and SEK. Long-term financing is primarily raised by issuing bonds under Fortum's Euro Medium Term Note programme as well as through bilateral and syndicated loan facilities from a variety of different financial institutions.

Financing is primarily raised on parent company level and distributed internally through various internal financing arrangements. For example Fortum's Russian operations are mainly financed via intra group internal long-term RUB denominated loans. The internal RUB loan receivables are hedged via external forward contracts offsetting the currency exposure for the internal lender. On 31 December 2017, 90% (2016: 96%) of the Group's total external financing was raised by the parent company Fortum Corporation.

On 31 December 2017, the total interest-bearing debt was EUR 4,885 million (2016: 5,107) and the interest-bearing net debt was EUR 988 million (2016: -48).

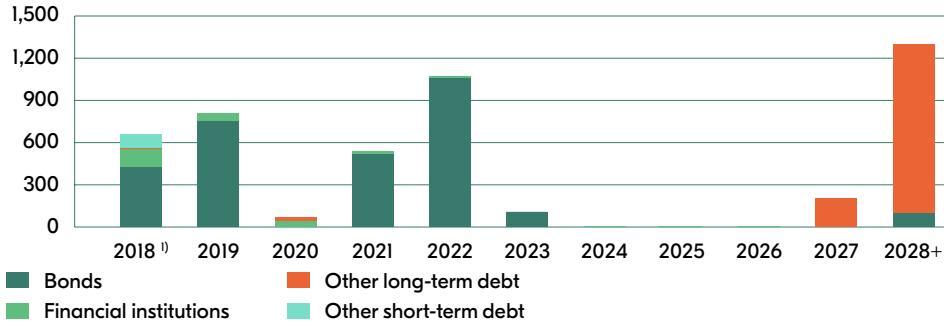
Fortum manages liquidity and refinancing risks through a combination of cash positions and committed credit facility agreements with its core banks. The Group shall at all times have access to cash, marketable securities and unused committed credit facilities including overdrafts, to cover all loans maturing within the next twelve-month period. However, cash/marketable securities and unused committed credit facilities shall always amount to at least EUR 500 million.

On 31 December 2017, loan maturities for the coming twelve-month period amounted to EUR 766 million (2016: 639). Liquid funds amounted to EUR 3,897 million (2016: 5,155) and the total amount of committed and undrawn credit facilities amounted to EUR 1,800 million (2016: 1,963), excluding committed credit facilities for Fortum's offer for Uniper shares. In relation to offer for Uniper shares Fortum Corporation had commitments from 10 relationship banks to provide credit facilities at the request of Fortum in an aggregate amount of up to EUR 12,000 million.

Maturity of interest-bearing liabilities

EUR million	2017
2018	766
2019	812
2020	71
2021	538
2022	1,068
2023 and later	1,630
Total	**4,885**

Loan maturities per loan type, EUR million



1) In addition Fortum has received EUR 113 million based on Credit Support Annex agreements with several counterparties. This amount has been booked as a short-term liability.

Liquid funds, major credit lines and debt programmes 2017

EUR million	Total facility	Drawn amount	Available amount
Liquid funds			
Cash and cash equivalents			3,182
Deposits and securities over 3 months			715
Total			**3,897**
of which in Russia (PAO Fortum)			246
Committed credit lines			
EUR 1,750 million syndicated credit facility	1,750	-	1,750
Bilateral overdraft facilities	50	-	50
Total 1)	**1,800**	**0**	**1,800**
Debt programmes (uncommitted)			
Fortum Corporation, CP programme EUR 500 million	500	-	500
Fortum Corporation, CP programme SEK 5,000 million	508	-	508
Fortum Corporation, EMTN programme EUR 8,000 million	8,000	2,943	5,057
Total	**9,008**	**2,943**	**6,065**

1) Excluding committed credit facilities for Fortum's offer for Uniper shares

Liquid funds, major credit lines and debt programmes 2016

EUR million	Total facility	Drawn amount	Available amount
Liquid funds			
Cash and cash equivalents			1,679
Deposits and securities over 3 months			3,475
Total			**5,155**
of which in Russia (PAO Fortum)			105
Committed credit lines			
EUR 1,750 million syndicated credit facility	1,750	-	1,750
Bilateral overdraft facilities	213	-	213
Total	**1,963**	**-**	**1,963**
Debt programmes (uncommitted)			
Fortum Corporation, CP programme EUR 500 million	500	-	500
Fortum Corporation, CP programme SEK 5,000 million	523	-	523
Fortum Corporation, EMTN programme EUR 8,000 million	8,000	3,329	4,671
Total	**9,023**	**3,329**	**5,694**

Liquid funds amounted to EUR 3,897 million (2016: 5,155), including PAO Fortum's bank deposits amounting to EUR 231 million (2016: 103). See also ▸ Note 23 Liquid funds.

Maturity analysis of interest-bearing liabilities and derivatives

Amounts disclosed below are non-discounted expected cash flows (future interest payments and amortisations) of interest-bearing liabilities and interest rate and currency derivatives.

	2017				2016			
EUR million	Under 1 year	1–5 years	Over 5 years	Total	Under 1 year	1–5 years	Over 5 years	Total
Interest-bearing liabilities	895	2,723	1,869	5,487	765	2,307	2,601	5,673
Interest rate and currency derivatives liabilities	3,210	1,005	4	4,219	2,255	1,119	20	3,394
Interest rate and currency derivatives recievables	-3,319	-1,092	-1	-4,413	-2,131	-1,291	-27	-3,449
Total	**785**	**2,636**	**1,871**	**5,293**	**889**	**2,136**	**2,594**	**5,619**

Interest-bearing liabilities include loans from the State Nuclear Waste Management Fund and Teollisuuden Voima Oyj of EUR 1,129 million (2016: 1,094). These loans are renewed yearly and the related interest payments are calculated for ten years in the table above.

For further information regarding loans from the State Nuclear Waste Management Fund and Teollisuuden Voima Oyj, see ▸ Note 28 Nuclear related assets and liabilities.

3.6 Interest rate risk and currency risk

3.6.1 Interest rate risk

Fortum risk policy states that the average duration of the debt portfolio shall always be kept within a range of 12 and 36 months and that the flow risk i.e. changes in interest rates shall not affect the net interest payments of the Group by more than EUR 50 million for the next rolling 12-month period. Within these mandates, strategies are evaluated and developed in order to find an optimal balance between risk and financing cost.

On 31 December 2017, the average duration of the debt portfolio (including derivatives) was 1.5 years (2016: 1.7). Approximately 65% (2016: 59%) of the debt portfolio was on a floating rate basis or fixed rate loans maturing within the next 12-month period. The effect of one percentage point change in interest rates on the present value of the debt portfolio was EUR 71 million on 31 December 2017 (2016: 87). The flow risk, measured as the difference between the base case net interest cost estimate and the worst-case scenario estimate for Fortum's debt portfolio for the coming 12 months, was EUR 4 million (2016: 3).

The average interest rate for the portfolio consisting mainly of EUR and SEK loans was 2.4% at the balance sheet date (2016: 2.1%). Part of the external loans EUR 773 million (2016: 805) have been swapped to RUB and the average interest cost for these loans, including cost for hedging the RUB, was 9,5% at the balance sheet date (2016: 11.4%). The average interest rate on loans and derivatives on 31 December 2017 was 3.6% (2016: 3.5%). Average cumulative interest rate on loans and derivatives for 2017 was 3.6% (2016: 3.5%).

The average interest rate on deposits and securities excluding Russian deposits on 31 December 2017 was -0.27% (2016: -0.01%). Liquid funds held by PAO Fortum amounted to EUR 246 million (2016: 105) and the average interest rate for this portfolio was 6.1% at the balance sheet date.

3.6.2 Currency risk

Fortum's policy is to hedge major transaction exposures on a local level in the reporting currency of each legal entity in order to avoid exchange differences in the profit and loss statement. These exposures are mainly hedged with forward contracts. An exception is the Generation segment's hedging of power sales in Sweden where the currency component is currently not hedged.

Translation exposures in the Fortum Group are generally not hedged as the majority of these assets are considered to be long-term strategic holdings. In Fortum this means largely entities operating in Sweden, Russia, Norway and Poland, whose base currency is not euro.

The currency risk relating to transaction exposures is measured using Value-at-Risk (VaR) for a one-day period at 95% confidence level. Translation exposures relating to net investments in foreign entities are measured using a five-day period at 95% confidence level. The limit for transaction exposure is VaR EUR 5 million. On 31 December 2017 the open transaction, excluding Generation segment's EURSEK exposure and translation exposures were EUR 13 million (2016: 2) and EUR 8,212 million (2016: 7,213) respectively. The VaR for the transaction exposure was EUR 0 million (2016: 0) and VaR for the translation exposure was EUR 98 million (2016: 96).

Group Treasury's transaction exposure

	2017			2016		
EUR million	Net position	Hedge	Open	Net position	Hedge	Open
RUB	589	-589	0	677	-677	0
SEK	277	-264	13	532	-531	1
PLN	310	-310	0	226	-226	0
NOK	451	-451	0	-72	72	0
INR	117	-117	0	116	-116	0
USD	-118	118	0	-98	98	0
Other	-41	41	0	-20	20	0
Total	**1,585**	**-1,572**	**13**	**1,361**	**-1,359**	**2**

Transaction exposure is defined as already contracted or forecasted foreign exchange dependent items and cash flows. Transaction exposure is divided into balance sheet exposure and cash flow exposure. Balance sheet exposure reflects currency denominated assets and liabilities for example loans, deposits and accounts receivable/payable in currencies other than the company's base currency. Cash flow exposure reflects future forecasted or contracted currency flows in foreign currency deriving from business activities such as sales, purchases or investments. Net conversion differences from transaction

exposure are entered under financial income or expense when related to financial items or when related to accounts receivable/payable entered under items included in operating profit. Conversion differences related to qualifying cash flow hedges are deferred to equity.

Fortum's policy is to hedge balance sheet exposures in order to avoid exchange rate differences in the income statement. The Group's balance sheet exposure mainly relates to financing of non-euro subsidiaries and the fact that the Group's main external financing currency is EUR. For derivatives hedging this balance exposure Fortum does not apply hedge accounting, because they have a natural hedge in the income statement.

Contracted cash flow exposures shall be hedged to reduce volatility in future cash flows. These hedges normally consist of currency derivative contracts, which are matched against the underlying future cash flow according to maturity. Fortum has currency cash flow hedges both with and without hedge accounting treatment under IFRS. Those currency cash flow hedges, which do not qualify for hedge accounting are mainly hedging electricity derivatives. Unrealised hedges create volatility in the operating profit.

Group Treasury's translation exposure

	2017			2016		
EUR million	Net Investment	Hedge	Open	Net Investment	Hedge	Open
RUB	2,673	-173	2,500	2,603	-132	2,471
SEK	4,769	-1,087	3,682	4,747	-837	3,910
NOK	1,600	-	1,600	410	-	410
PLN	294	-	294	282	-	282
Other	136	-	136	141	-	141
Total	**9,472**	**-1,260**	**8,212**	**8,183**	**-970**	**7,213**

Translation exposure position includes net investments in foreign subsidiaries and associated companies. On consolidation, exchange differences arising from the translation of the net investment in foreign entities are taken to equity. The net effect of exchange differences on equity attributable to equity holders mainly from RUB and SEK was EUR -369 million in 2017 (2016: 335). Part of this translation exposure has been hedged and the foreign currency hedge result amounted to EUR 28 million in 2017 (2016: 5).

Interest rate and currency derivatives by instrument

	2017 Notional amount Remaining lifetimes				2017 Fair value			2016 Fair value		
EUR million	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net	Positive	Negative	Net
Forward foreign exchange contracts	2,864	266		3,130	56	19	37	26	130	-103
Interest rate swaps	305	3,421	102	3,827	205	90	115	269	127	142
Interest rate and currency swaps	311	580		892	92	3	89	71	5	66
Total	**3,480**	**4,267**	**102**	**7,849**	**353**	**112**	**241**	**366**	**261**	**105**
Of which long-term					238	88	151	343	121	222
Of which short-term					114	24	90	23	140	-117

3.7 Credit risk

Fortum is exposed to credit risk whenever there is a contractual obligation with an external counterparty.

Credit risk exposures relating to financial derivative instruments are often volatile. Although the majority of commodity derivatives are cleared through exchanges, derivatives contracts are also entered into directly with external counterparties. Such contracts are limited to high-credit-quality counterparties active on the financial or commodity markets. Currency and interest rate derivative counterparties are limited to investment grade banks and financial institutions. ISDA Master agreements, which include netting clauses and in some cases Credit Support Annex agreements, are in place with most of these counterparties. Commodity derivative counterparties are limited to those considered to be creditworthy. Master agreements, such as ISDA, FEMA and EFET, which include netting clauses, are in place with the majority of the counterparties.

Due to the financing needs and management of liquidity, Fortum has counterparty credit exposure toward a number of banks and financial institutions. This includes exposure to the Russian financial sector in terms of deposits with financial institutions as well as to banks that provide guarantees for suppliers and contracting parties. Deposits in Russia have been concentrated to the most creditworthy state-owned or controlled banks. Limits with banks and financial institutions are monitored so that exposures can be adjusted as ratings or the financial situation changes, and Fortum is following the development of economic sanctions against Russia as part of the monitoring process.

Credit risk relating to customers is spread across a wide range of industrial counterparties, small businesses and private individuals over a range of geographic regions. The majority of exposure is to the Nordic market, Poland and Russia. The risk of non-payment in the electricity and heat sales business in Russia is higher than in the Nordic market.

3.7.1 Credit quality of major financial assets

Amounts disclosed below are presented by counterparties for interest-bearing receivables including bank deposits and derivative financial instruments recognised as assets.

EUR million	2017 Carrying amount	2017 of which past due	2016 Carrying amount	2016 of which past due
Investment grade receivables				
Deposits, commercial papers and cash in bank accounts	3,348	-	4,663	-
Fair values of interest rate and currency derivatives	353	-	366	-
Fair values of electricity and other commodity derivatives	56	-	5	-
Total investment grade receivables	**3,757**	**-**	**5,034**	**-**
Energy exchange receivables				
Fair value of derivatives on Nasdaq OMX Commodities Europe	37	-	61	-
Fair value of derivatives on European Energy Exchange AG	2	-	1	-
Fair value of derivatives on the Polish Power Exchange	13	-	0	-
Total energy exchange receivables	**52**	**-**	**62**	**-**
Associated companies and joint venture receivables				
Loan receivables	864	-	886	-
Finance lease receivable	41	-	0	-
Fair values of electricity and other commodity derivatives	9	-	14	-
Total associated companies and joint venture receivables	**914**	**-**	**900**	**-**
Other receivables				
Investments in commercial papers	249	-	275	-
Russian deposits with non-investment grade banks	141	-	103	-
Restricted cash mainly given as collateral for commodity exchanges	363	-	360	-
Receivable from SIBUR related to divested shares of OOO Tobolsk CHP	102	-	131	-
Loan and other interest bearing receivables	35	-	3	-
Fair values of electricity and other commodity derivatives	51	-	96	-
Total other receivables	**941**	**-**	**968**	**-**
Total	**5,664**	**-**	**6,964**	**-**

The following tables indicate how bank deposits, commercial papers and fair values of derivatives are distributed by rating class.

Deposits and Securities

EUR million	2017	2016
Counterparties with external credit rating from Standard & Poor's and/or Moody's Investment grade ratings		
AAA	-	-
AA+/AA/AA-	324	995
A+/A/A-	2,835	3,437
BBB+/BBB/BBB-	189	231
Total investment grade ratings	**3,348**	**4,663**
BB+/BB/BB-	141	103
B+/B/B-	-	-
Below B-	-	-
Non-investment grade ratings	**141**	**103**
Counterparties without external credit rating from Standard & Poor's and/or Moody's		
Government or municipality	-	-
Fortum Rating 5 — Lowest Risk	249	275
Fortum Rating 4 — Low Risk	-	-
Fortum Rating 3 — Normal Risk	-	-
Fortum Rating 2 — High Risk	-	-
Fortum Rating 1 — Highest Risk	-	-
No rating	-	-
Total non-rated counterparties	**249**	275
Total	**3,738**	**5,040**

In addition, cash in other bank accounts totalled EUR 159 million on 31 December 2017 (2016: 115).
See ▸ Note 23 Liquid funds

Interest rate and currency derivatives

EUR million	2017 Receivables	2017 Netted amount [1)]	2016 Receivables	2016 Netted amount [1)]
Counterparties with external credit rating from Standard & Poor's and/or Moody's Investment grade ratings				
AAA	-	-	-	-
AA+/AA/AA-	51	30	11	-
A+/A/A-	292	100	259	76
BBB+/BBB/BBB-	10	9	96	31
Total investment grade ratings	**353**	**140**	**366**	**107**
Total associated companies and joint ventures	**0**	**0**	**0**	**0**
Counterparties without external credit rating from Standard & Poor's and/or Moody's	-	-	0	0
Total	**353**	**140**	**366**	**107**

1) The netted amount includes the cash received in accordance with Credit Support Annex agreements EUR 113 million (2016: 135).

Electricity, coal, gas and oil derivatives and CO_2 emission allowances treated as derivatives

EUR million	2017 Receivables	2017 Netted amount	2016 Receivables	2016 Netted amount
Counterparties with external credit rating from Standard & Poor's and/or Moody's Investment grade ratings				
AAA	-	-	-	-
AA+/AA/AA-	1	1	0	0
A+/A/A-	53	53	4	3
BBB+/BBB/BBB-	2	1	1	0
Total investment grade ratings	**56**	**55**	**5**	**3**
Non-investment grade ratings				
BB+/BB/BB-	1	0	1	0
B+/B/B-	0	0	-	-
Below B-	-	-	-	-
Total non-investment grade ratings	**1**	**0**	**1**	**0**
Total associated companies and joint ventures	**9**	**0**	**14**	**7**

EUR million	2017 Receivables	2017 Netted amount	2016 Receivables	2016 Netted amount
Counterparties without external credit rating from Standard & Poor's and/or Moody's				
Government or municipality	0	0	0	0
Fortum Rating 5 – Lowest risk	15	10	34	28
Fortum Rating 4 – Low risk	19	12	39	29
Fortum Rating 3 – Normal risk	16	12	22	19
Fortum Rating 2 – High risk	0	0	0	0
Fortum Rating 1 – Highest risk	-	-	0	0
No rating	1	1	0	0
Total non-rated counterparties	**51**	**35**	**95**	**77**
Total	**117**	**90**	**115**	**87**

For derivatives, the receivable is the sum of the positive fair values, i.e. the gross amount. Netted amount includes negative fair values where a valid netting agreement is in place with the counterparty. When the netted amount is less than zero, it is not included. In cases where a parent company guarantee is in place, the exposure is shown on the issuer of the guarantee.

All counterparties for currency and interest rate derivatives and the majority of counterparties for bank deposits have an external rating from Standard & Poor's and/or Moody's credit agencies. The above rating scale is for Standard & Poor's rating categories. For those counterparties only rated by Moody's, the rating has been translated to the equivalent Standard and Poor's rating category. For counterparties rated by both Standard & Poor's and Moody's, the lower of the two ratings is used.

In the commodity derivatives and commercial paper market, there are a number of counterparties not rated by Standard & Poor's or Moody's. For these counterparties, Fortum assigns an internal rating. The internal rating is based on external credit ratings from other credit agencies. The rating from Bisnode is used for Nordic counterparties and for other counterparties the rating from Dun & Bradstreet is used. Governments and municipal companies are typically not rated, and are shown separately. This rating category does not include companies owned by governments or municipalities. Counterparties that have not been assigned a rating by the above listed credit agencies are in the "No rating" category.

4 Capital risk management

Financial targets give guidance on Fortum's view of the company's long-term value creation potential, its growth strategy and business activities. The long-term over-the-cycle financial targets (published in Feb 2016) are Return on capital employed, ROCE at least 10% and Comparable net debt to EBITDA around 2.5 times.

In November 2016 the strategy execution plan was detailed in order to enable profit growth and improved cash flow. According to that detailed plan the redeployment of cash and the execution of Fortum's strategy will take place in two phases, and a significant part of the redeployment was targeted to take place during 2016–2017. The goal for the first phase is to maximise cash flow through redeployment and the goal for the second phase is to secure Fortum's longer-term competitiveness.

Following the earlier Ekokem and Hafslund transactions in September 2017 Fortum announced that it has signed a transaction agreement under which E.ON had the right to decide to tender its 46.65% shareholding in Uniper SE into Fortum's public takeover offer.

The investment in Uniper delivers on Fortum's previously announced capital redeployment strategy and investment criteria. The offer will be financed with existing cash resources and committed credit facilities. Fortum has received as of 16 January 2018 in the offer 46.93% including E.ON's shares in Uniper which corresponds to a commitment of billion 3.78 euro. As a result of this transaction, Fortum's leverage will rise above our given guidance for net debt/EBITDA level of around 2.5x. Over time however, Fortum expects its cash generation in combination with the dividend from Uniper to reduce this level towards the stated target.

The dividend policy ensures that shareholders receive a fair remuneration for their entrusted capital, supported by the company's long-term strategy that aims at increasing earnings per share and thereby the dividend. When proposing the dividend, the Board of Directors looks at a range of factors, including the macro environment, balance sheet strength as well as future investment plans. Fortum Corporation's target is to pay a stable, sustainable and over time increasing dividend, in the range of 50–80% of earnings per share, excluding one-off items.

In September 2017, Standard & Poor's and Fitch Ratings placed both Fortum's long-term and short-term credit ratings on credit watch negative on possible adverse impacts of the planned Uniper investment. In January 2018, Standard & Poor's downgraded Fortum's long-term credit rating from BBB+ to BBB with a Negative Outlook due to the Uniper investment. The short-term rating was affirmed at level A-2. Fitch Ratings rates Fortum's long-term credit rating at level BBB+ and the short-term rating at level F2.

Net debt/EBITDA ratios

EUR million	Note	2017	2016
Interest-bearing liabilities	26	4,885	5,107
BS Less: Liquid funds	23	3,897	5,155
Net debt		**988**	**-48**
Operating profit		1,158	633
Add: Depreciation and amortisation		464	373
EBITDA		**1,623**	**1,006**
Less: Items affecting comparability		347	-11
Less: Net release of CSA provision		-	2
Comparable EBITDA		**1,275**	**1,015**
Comparable net debt/EBITDA		**0.8**	**0.0**

5 Segment reporting

ACCOUNTING POLICIES

REVENUE RECOGNITION

Revenue comprises the fair value consideration received or receivable at the time of delivery of products and/or upon fulfilment of services. Revenue is shown net of rebates, discounts, value-added tax and selective taxes such as electricity tax. Revenue is recognised as follows:

SALE OF ELECTRICITY, HEAT, COOLING AND RECYCLED MATERIALS

Sale of electricity, heat and cooling as well as sale of recycled materials is recognised at the time of delivery. The sale to industrial and commercial customers and to end-customers is recognised based on the value of the volume supplied, including an estimated value of the volume supplied to customers between the date of their last meter reading and year-end.

Physical energy sales and purchase contracts are accounted for on accrual basis based on expected purchase, sale and usage requirements.

CONNECTION FEES

Fees paid by the customer when connected to the gas, heat or cooling network are recognised as income to the extent that the fee does not cover future commitments. If the connection fee is linked to the contractual agreement with the customer, the income is recognised over the period of the agreement with the customer.

Fees paid by the customer when connected to district heating network in Finland were refundable until 2013. These connection fees have not been recognised in the income statement and are included in other liabilities in the balance sheet.

SALE OF WASTE TREATMENT SERVICES

Revenue from waste treatment services is recognised over time, when the underlying treatment is performed.

CONTRACT REVENUE

Contract revenue is recognised under the percentage of completion method to determine the appropriate amount to recognise as revenue and expenses in a given period. The stage of completion is measured by reference to the contract costs incurred up to the closing date as a percentage of total estimated costs for each contract.

NETTING AND INTER-SEGMENT TRANSACTIONS

Generation segment sells its production to Nord Pool and Consumer Solutions buys its electricity from Nord Pool. Eliminations of sales include eliminations of sales and purchases with Nord Pool that are netted on group level on an hourly basis and posted either as revenue or cost depending on if Fortum is a net seller or net buyer during any particular hour. Inter-segment sales, expenses and results for the different business segments are affected by intra-group deliveries, which are eliminated on consolidation. Inter-segment transactions are based on commercial terms.

5.1 Fortum's business structure

Fortum has reorganised its operating structure as of 1 March 2017. The City Solutions division was divided into two divisions: City Solutions and Consumer Solutions. City Solutions comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. Consumer Solutions comprises electricity sales in the Nordics, electricity sales and gas sales in Poland, as well as Nordic customer services (previously reported under the Other segment). The business divisions are: Generation, City Solutions, Consumer Solutions, Russia, and Other, which includes the two development units, M&A and Solar & Wind Development, Technology and New Ventures as well as corporate functions.

5.2 Segment structure in Fortum

Fortum discloses segment information in a manner consistent with internal reporting to Fortum's Board of Directors and to Fortum Executive Management led by the President and CEO. Fortum has segments based on type of business operations, combined with one segment based on geographical area. Fortum's reportable segments under IFRS are the business divisions Generation, City Solutions, Consumer Solutions and Russia. Fortum has restated its 2016 comparison segment reporting figures in accordance with the new organisation structure. The restated and previously communicated quarterly information for 2016 were published on 11 April 2017 and can be found in the Interim reports section in Fortum's webpage.

5.3 Definitions for segment information

Fortum's segment information discloses the financial measurements used in financial target setting and forecasting, management's follow up of financial performance and allocation of resources in the group's performance management process. These measurements, such as Comparable operating profit and Comparable return on net assets, have been used consistently since 2005.

Items affecting comparability are disclosed separately in Fortum's income statement to support the understanding of business performance when comparing results between periods. Items classified as

Items affecting comparability include accounting effects from valuation according to IFRS that are not arising from the performance of the business operations. Such items include fair valuation of financial derivatives hedging future cash-flows where hedge accounting is not applied according to IAS 39 and effects from the accounting of Fortum's part of the Finnish Nuclear Waste Fund where the asset in the balance sheet cannot exceed the related provisions according to IFRIC interpretation 5.

The business performance of the operations cannot be compared from one period to another without adjusting for one-time items relating to capital gains, major impairment related items and transaction costs arising from acquisitions. Therefore such items have also been treated as Items affecting comparability. From 2016 onwards transaction costs arising from acquisitions of subsidiary shares are included in capital gains and other within items affecting comparability. According to IFRS 3 transaction costs related to the acquisitions of subsidiary shares are recognised in the income statement.

Consolidation by segment is based on the same principles as for the Group as a whole. See definition of the segment information in ▸Definition of financial key figures.

Divisions

Group

Generation	City Solutions	Consumer Solutions	Russia
			

Reporting segments

Generation	City Solutions	Consumer Solutions	Russia
The Generation segment comprises power production in the Nordics including nuclear, hydro and thermal power production, power portfolio optimisation, trading and industrial intelligence, and nuclear services globally.	City Solutions develops sustainable city solutions into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. The business operations are located in the Nordics, the Baltic countries and Poland. The segment also includes Fortum's 50% holding in Fortum Värme, which is a joint venture and is accounted for using the equity method.	Consumer Solutions comprises electricity and gas retail businesses in the Nordics and Poland, including the customer service, invoicing and debt collection business. Fortum is the largest electricity retail business in the Nordics, with approximately 2.5 million customers across different brands in Finland, Sweden, Norway and Poland. The business provides electricity and related value-added products as well as new digital customer solutions.	The Russia segment comprises power and heat generation and sales in Russia. The segment also includes Fortum's over 29% holding in TGC-1, which is an associated company and is accounted for using the equity method.

5.4 Segment information

Income statement

EUR million	Note	Generation [1]		City Solutions [1]		Consumer Solutions		Russia		Other		Total	
		2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
External sales		1,662	1,643	996	780	1,094	666	1,101	896	35	31	4,888	4,016
Internal sales		15	15	19	1	3	2	0	0	67	61	103	79
Netting of Nord Pool transactions [2]												-367	-384
Eliminations [2]												-103	-79
IS Sales		**1,677**	**1,657**	**1,015**	**782**	**1,097**	**668**	**1,101**	**896**	**102**	**92**	**4,520**	**3,632**
Comparable EBITDA		**603**	**527**	**262**	**186**	**57**	**55**	**438**	**312**	**-83**	**-64**	**1,275**	**1,015**
Net release of CSA provision								0	2			0	2
IS Depreciation and amortisation		-125	-110	-163	-121	-16	-7	-142	-123	-18	-13	-464	-373
IS Comparable operating profit		**478**	**417**	**98**	**64**	**41**	**48**	**296**	**191**	**-102**	**-77**	**811**	**644**
Impairment charges	6	6	27	0	0	0	0	0	0	0	0	6	27
Capital gains and other	6	1	1	1	0	2	0	0	35	322	2	326	38
Changes in fair values of derivatives hedging future cash-flow	6, 7	15	-96	3	22	-4	11	0	0	0	-2	14	-65
Nuclear fund adjustment	6, 28	1	-11									1	-11
IS Items affecting comparability	6	23	-79	4	22	-2	11	0	35	322	0	347	-11
IS Operating profit		**501**	**338**	**102**	**86**	**39**	**59**	**295**	**226**	**221**	**-77**	**1,158**	**633**
IS Share of profit of associated companies and joint ventures	18, 28	-1	-34	80	76	0	0	31	38	38	51	148	131
IS Finance costs - net												-195	-169
IS Income taxes												-229	-90
IS Profit for the year												**882**	**504**

1) Sales, both internal and external, include effects from realised hedging contracts. Effect on sales can be negative or positive depending on the average contract price and realised spot price.

2) Netting and eliminations include eliminations of internal sales and netting of Nord Pool transactions. Sales and purchases with Nord Pool, EUR -367 million, are netted on Group level on an hourly basis and posted either as revenue or cost depending on if Fortum is a net seller or net buyer during any particular hour.

Assets and liabilities

EUR million	Note	Generation		City Solutions		Consumer Solutions		Russia		Other		Total	
		2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Non-interest-bearing assets		6,097	6,206	3,517	2,672	923	348	2,812	2,967	452	240	13,801	12,432
BS Participations in associated companies and joint ventures	18, 28	785	711	611	573	0	0	472	436	32	392	1,900	2,112
Eliminations												-19	-18
Total segment assets		**6,882**	**6,917**	**4,128**	**3,245**	**923**	**348**	**3,284**	**3,402**	**483**	**632**	**15,682**	**14,526**
Interest-bearing receivables	20											1,406	1,380
BS Deferred tax assets	27											73	66
Other assets												696	838
BS Liquid funds												3,897	5,155
Total assets												**21,753**	**21,964**
Segment liabilities		**1,210**	**1,102**	**400**	**371**	**285**	**194**	**124**	**119**	**207**	**117**	**2,227**	**1,903**
Eliminations												-19	-18
Total segment liabilities												**2,208**	**1,885**
BS Deferred tax liabilities	27											819	616
Other liabilities												554	814
Total liabilities included in capital employed												**3,581**	**3,315**
Interest-bearing liabilities	26											4,885	5,107
BS Total equity												13,287	13,542
Total equity and liabilities												**21,753**	**21,964**

Investments/Divestments

EUR million	Note	Generation		City Solutions		Consumer Solutions		Russia		Other		Total	
		2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Gross investments in shares	18, 38	**90**	**7**	**386**	**698**	**486**	**117**	**125**	**0**	**39**	**22**	**1,125**	**844**
Capital expenditure	16, 17	**174**	**196**	**170**	**109**	**7**	**3**	**152**	**201**	**187**	**83**	**690**	**591**
of which capitalised borrowing costs		3	3	2	1	0	0	7	10	4	2	16	16
Gross divestments of shares	38	**0**	**0**	**0**	**33**	**55**	**1**	**0**	**127**	**687**	**0**	**742**	**161**

Comparable return on net assets

	Comparable net assets by segments, EUR million		Comparable return on net assets, %	
	2017	2016	2017	2016
Generation	5,672	5,815	8.4	6.9
City Solutions	3,728	2,873	5.5	5.9
Consumer Solutions	638	154	11.7	44.3
Russia	3,161	3,284	10.1	8.0
Other	276	514	-13.3	-6.1

Employees

	Generation		City Solutions		Consumer Solutions		Russia		Other		Total	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Number of employees 31 Dec	1,035	979	1,907	1,701	1,543	961	3,495	3,745	805	722	8,785	8,108
Average number of employees	1,036	1,064	1,807	1,529	1,180	877	3,710	3,814	774	711	8,507	7,994

5.5 Group-wide disclosures

The Group's operating segments operate mainly in the Nordic countries, Russia, Poland and other parts of the Baltic Rim area. Generation operates mainly in Finland and Sweden, Consumer Solutions operates mainly in Nordic countries and Poland, whereas City Solutions operates in all of these geographical areas except Russia. Other countries are mainly Estonia, Latvia, Lithuania and India. The home country is Finland.

The information below is disclosing sales by product area as well as sales by the country in which the customer is located. Assets, capital expenditure and personnel are reported where the assets and personnel are located. Participations in associates and joint ventures are not divided by location since the companies concerned can have business in several geographical areas.

External sales by product area

EUR million	2017	2016
Power sales excluding indirect taxes	3,089	2,587
Heating sales	782	648
Other sales	649	398
IS Total	**4,520**	**3,632**

Heating sales include sale of delivered heat and transmission of heat.

Due to the large number of customers and the variety of its business activities, there is no individual customer whose business volume is material compared with Fortum's total business volume.

Sales by market area based on customer location

EUR million	2017	2016
Nordic	2,827	2,258
Russia	1,102	899
Poland	452	355
Other countries	139	120
IS Total	**4,520**	**3,632**

The Nordic power production is not split by countries since Nordic power production is mainly sold through Nord Pool.

Capital expenditure by location

EUR million	2017	2016
Finland	179	173
Sweden	104	91
Norway	46	11
Russia	152	201
Poland	92	59
Other countries	115	56
Total	**690**	**591**

Segment assets by location

EUR million	2017	2016
Finland	3,882	3,958
Sweden	4,304	4,341
Norway	1,533	27
Russia	2,812	2,967
Poland	559	513
Other countries and eliminations	692	608
Non-interest bearing assets	**13,781**	**12,414**
BS Participations in associates and joint ventures	1,900	2,112
Total	**15,682**	**14,526**

Number of employees on 31 December by location

	2017	2016
Finland	2,165	2,029
Sweden	968	724
Norway	654	43
Russia	3,494	3,745
Poland	827	894
Other countries	677	673
Total	**8,785**	**8,108**

6 Items affecting comparability

EUR million	2017	2016
Impairment charges	6	27
Capital gains and other	326	38
Changes in fair values of derivatives hedging future cash flow	14	-65
Nuclear fund adjustments	1	-11
IS Total	**347**	**-11**

Items affecting comparability are not included in Comparable operating profit. Comparable operating profit is presented to better reflect the Group's business performance when comparing results for the current period with previous periods. Items affecting comparability are disclosed separately in Fortum's income statement as it is deemed necessary for the purposes of understanding the financial performance when comparing the results.

Impairment charges and capital gains

EUR million	Segment	Country	2017	2016
Impairment charges				
Reversal of provision for early closure of units 1 and 2 in OKG AB	Generation	Sweden		22
Reversal of dismantling provision for the Finnish coal-fired power plant Inkoo	Generation	Finland	6	5
Total			**6**	**27**
Capital gains and other				
Hafslund ASA, associated company	Other	Norway	324	
Transaction costs from Hafslund acquisition	Other	Norway	-4	
OOO Tobolsk CHP, subsidiary	Russia	Russia		35
AS Eesti Gaas, joint venture	City Solutions	Estonia		11
Transaction costs from Ekokem acquisition	City Solutions	Finland		-12
Other non-recurring items			6	4
Total			**326**	**38**

Fair value changes on derivatives

Changes in the fair values of financial derivative instruments hedging future cash flows that do not qualify for hedge accounting are recognised in items affecting comparability. This is done to improve the understanding of the financial performance when comparing results from one period to another.

Nuclear waste management fund adjustment

Nuclear fund adjustment includes effects from the accounting principle of Fortum's part of the State Nuclear Waste Management Fund where the assets in the balance sheet cannot exceed the nuclear related provisions according to IFRIC 5. As long as the Fund is overfunded from an IFRS perspective, the effects to the operating profit from this adjustment will be positive if the provisions increase more than the Fund and negative if actual value of the fund increases more than the provisions.

For more information regarding disposals of shares, see ▸ **Note 38** Acquisitions and disposals.

For more information regarding fair value changes of derivatives, see ▸ **Note 7** Fair value changes of derivatives and underlying items in income statement.

For more information regarding nuclear waste management, see ▸ **Note 28** Nuclear related assets and liabilities.

7 Fair value changes of derivatives and underlying items in income statement

Fair value changes in operating profit presented below are arising from financial derivatives hedging future cash flows where hedge accounting is not applied according to IAS 39 and the ineffectiveness from cash flow hedges.

Fair value changes of currency derivatives in net financial expenses are arising mainly from balance sheet hedges without hedge accounting status according to IAS 39, because they are natural hedges of loans and receivables. Fair value change of interest rate hedges without hedge accounting is EUR -7 million (2016: -9). The net effect of fair value changes of hedging derivative and hedged bonds are EUR 0 million (2016: 0).

EUR million	2017	2016
In operating profit		
Fair value changes from derivatives not getting hedge accounting status		
Electricity derivatives	-20	-43
Currency derivatives	-1	2
Other commodity derivatives	25	-2
Ineffectiveness from cash flow hedges	11	-23
Total effect in operating profit	**14**	**-65**
In finance costs		
Exchange gains and losses on loans and receivables [1]	-51	143
Fair value changes of derivatives not getting hedge accounting status		
Cross currency interest rate derivatives [1]	6	12
Foreign currency derivatives [1]	47	-156
Rate difference on forward contracts	-4	7
Currency derivatives	49	-137
Interest rate derivatives	-7	-9
Fair value change of hedging derivatives in fair value hedge relationship	-31	11
Fair value change of hedged items in fair value hedge relationship	31	-11
Total [2]	**42**	**-146**
Total effect in finance costs	**-10**	**-3**
Total effect on profit before income tax	**4**	**-68**

1) Exchange gains and losses on loans, receivables and derivatives totalling EUR 2 million (2016: -1).

2) Including fair value gains and losses on financial instruments and exchange gains and losses on derivatives EUR -12 million (2016: -2). See also ▸ **Note 11** Finance costs - net.

8 Other income and other expenses

ACCOUNTING POLICIES

OTHER INCOME

Revenue from activities outside normal operations is reported in other income. This includes recurring items such as rental income and non-recurring items such as insurance compensation.

RESEARCH AND DEVELOPMENT COSTS

Research and development costs are recognised as expense as incurred and included in other expenses in the income statement. If development costs will generate future income, they are capitalised as intangible assets and depreciated over the period of the income streams.

8.1 Other income

EUR million	2017	2016
Rental income	6	11
Insurance compensation	2	2
Other items	45	22
IS Total	**55**	**34**

8.2 Other expenses

EUR million	2017	2016
Operation and maintenance costs	125	94
Property taxes	115	145
IT and telecommunication costs	60	51
Other items	276	195
IS Total	**576**	**485**

The major components recorded in other expenses are the external operation and maintenance costs of power and heat plants. Property taxes include taxes relating to directly owned hydropower production EUR 81 million (2016: 118). Other items includes expenses relating to properties and other operative expenses.

Principal auditor's fees

EUR million	2017	2016
Audit fees	1.4	1.3
Audit related assignments	0.2	0.2
Tax assignments	0.0	0.0
Other assignments	1.0	0.0
Total	**2.6**	**1.5**

Deloitte Oy is the appointed auditor until the next Annual General Meeting, to be held in 2018. Audit fees include fees for the audit of the consolidated financial statements, review of the interim reports as well as the fees for the audit of Fortum Corporation and its subsidiaries. Audit related assignments include fees for assurance of sustainability reporting and other assurance and associated services related to the audit. Tax assignments include fees for tax advice services. Other assignments consist of advisory services.

9 Materials and services

EUR million	2017	2016
Materials	1,769	1,216
Materials purchased from associated companies and joint ventures	431	540
Transmission costs	39	38
External services	63	37
IS Total	**2,301**	**1,830**

Materials consists mainly of coal, gas and nuclear fuels used for producing power and heat.

Materials purchased from associated companies consist of nuclear and hydropower purchased at production cost (including interest costs and production taxes) and purchased steam.

Total materials and services include production taxes EUR 109 million (2016: 141), of which nuclear related capacity and property taxes EUR 48 million (2016: 81) and hydro power related property taxes EUR 14 million (2016: 15). Taxes related to nuclear and hydro production are included in taxes paid through purchases from associated companies.

See ▸Note 18 Participations in associated companies and joint ventures.

10 Employee benefits

EUR million	2017	2016
Wages and salaries	312	248
Pensions		
Defined contribution plans	32	25
Defined benefit plans	8	4
Social security costs	44	38
Share-based incentives	4	2
Other employee costs	23	17
IS Total	**423**	**334**

The compensation package for Fortum employees consists of salaries, fringe benefits, short-term incentives, profit sharing paid to the Personnel Fund and share-based long-term incentives.

The remuneration policy is determined by the Board of Directors. The Nomination and Remuneration Committee of the Board of Directors discusses, assesses and makes recommendations and proposals to the Board of Directors on the remuneration policy, remuneration of the President and CEO and the Fortum Executive Management and company-wide incentive arrangements for senior management and key personnel as well as monitors these plans annually. Additionally, the Committee contributes to the Group's nomination issues by proposing to the Board of Directors any nominations regarding the members of Fortum Executive Management.

For further information on pensions see ▸Note 30 Pension obligations.

10.1 Short-term incentives (STI)

Fortum's STI programme is designed to support the achievement of the company's financial and other relevant targets on an annual basis. All employees are covered by the programme or alternatively by a business specific or a comparable local variable pay arrangement.

The Board of Directors determines the performance criteria and award levels for the Fortum Executive Management. The awards are based on the achievement of divisional targets, Group financial performance as well as individual targets. The target incentive opportunity is 20% and the maximum incentive opportunity is 40% of the annual base salary. The Board of Directors assesses the performance of the President and CEO and the members of the Fortum Executive Management on a regular basis.

Awards for other employees are based on a combination of Group, divisional, functional and personal targets. The targets are set in annual performance discussions held at the beginning of the year. Awards under the STI programme are paid solely in cash.

10.2 Share-based long-term incentives (LTI)

The purpose of Fortum's share-based long-term incentive programme is to support the delivery of sustainable, long-term performance, align the interests of management with those of shareholders and assist in committing and retaining key individuals.

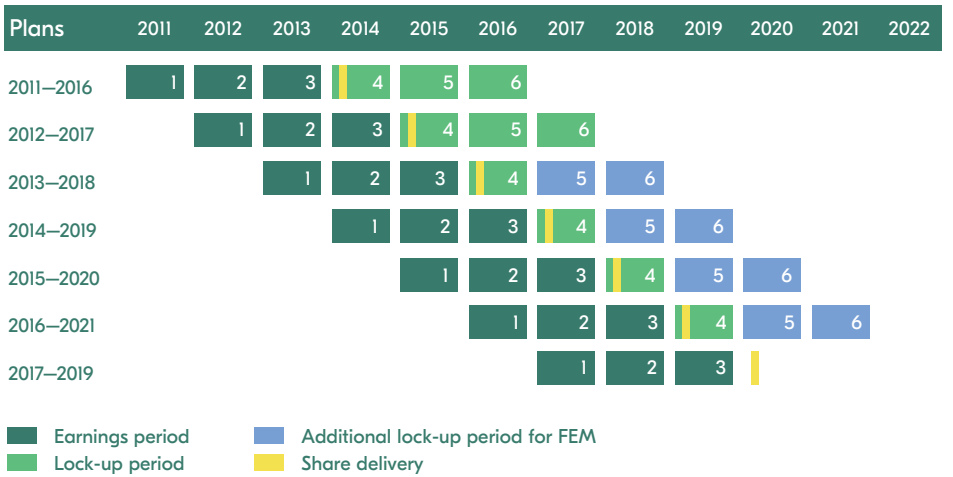
Fortum's LTI programme provides participants with the opportunity to earn company shares. Under the LTI programme and subject to the decision of the Board of Directors, a new LTI plan commences annually. The Board of Directors approves participation of the Fortum Executive Management members in each annually commencing LTI plan. Subject to a decision by the Board of Directors the President and CEO is authorised to decide on individual participants and potential maximum awards for other participants than the Fortum Executive Management in accordance with the nomination guidelines approved by the Board of Directors. Participation in the LTI plan precludes the individual from being a member in the Fortum Personnel Fund.

Each LTI plan begins with a three-year earnings period, during which participants may earn share rights if the performance criteria set by the Board of Directors are fulfilled. If the minimum performance criteria are not exceeded, no shares will be awarded. If performance is exceptionally good and the targets approved by the Board of Directors are achieved, the combined gross value of all variable compensation cannot exceed 120% of the person's annual salary in any calendar year. After the earnings period has ended and the relevant taxes and other employment-related expenses have been deducted, participants are paid the net balance in the form of shares.

For LTI plans commencing in 2013 onwards, any shares awarded to Fortum Executive Management members are subject to a three-year lock-up period. Subject to a decision by the Board of Directors, the lock-up period can be reduced to one year for those Fortum Executive Management members whose aggregate ownership of Fortum shares is greater than or equal to their annual salary. For other participants the lock-up period is one year. For LTI plans commencing prior to 2013, the lock-up period is three years for all participants. If the value of the shares decreases or increases during the lock-up or retention period, the participant will carry the potential loss or gain. For LTI plans commencing in 2017 and beyond, the share awards will not be subject to a minimum lock-up period. However, Fortum Executive Management members whose aggregate ownership of Fortum shares does not yet fulfil the shareholding requirement are required to retain at least 50% of the shares received until the required level of shareholding is met.

The Board of Directors has the right to revise the targets set in the incentive plans or decide to deviate from the payment based on achievement of the set earnings criteria or to discontinue any ongoing incentive plan.

Long-term incentive programme



The share plans under the LTI arrangement are accounted for as partly cash- and partly equity-settled arrangements. The portion of the earned reward that the participants receive in shares is accounted for as an equity settled transaction, and the portion of the earned reward settled in cash covering the tax and other charges, is accounted for as cash settled transaction. For participants receiving cash only, the total arrangement is accounted for as cash-settled transaction. The reward is recognised as an expense during the earnings period with a corresponding increase in the liabilities and for the transactions settled in shares in the equity. The social charges related to the arrangement payable by the employer are accrued as a liability. The LTI liability including social charges at the end of the year 2017 was EUR 18 million (2016: 19), including EUR 4 million (2016: 5) recorded in equity.

At present, approximately 120 key employees are participants in at least one of the six on-going annual LTI plans (plans 2012–2017, 2013–2018, 2014–2019, 2015–2020, 2016–2021 and 2017–2019).

Shares granted

EUR million	Plan 2014–2019	Plan 2013–2018	Plan 2012–2017
Grant date	13 Feb 2017	12 Feb 2016	13 Feb 2015
Grant price, EUR	14.28	12.18	19.96
Number of shares granted	92,321	152,200	126,515
Number of shares subsequently forfeited or released from lock-up and other changes	-13,464	-140,916	-52,217
Number of shares under lock-up at the end of the year 2017	78,857	11,284	74,298

In addition to the shares granted above, share rights have been granted to participants that will receive cash payments instead of shares after the lock-up period. The gross amount of share rights outstanding at the end of the year 2017 for plan 2014–2019 was 76,922, for plan 2013–2018 was 32,066 and for plan 2012–2017 89,111 share rights.

10.3 Fortum Personnel Fund

The Fortum Personnel Fund (for employees in Finland only) has been in operation since year 2000. The Board of Directors determines the criteria for the fund's annual profit-sharing bonus. Persons included in Fortum's long-term incentive schemes are not eligible to be members of this fund. Members of the personnel fund are the permanent and fixed-term employees of the Group. The membership of employees joining the company starts at the beginning of the next month after the employment relationship has been ongoing for five months. An employee is entitled to make withdrawals right from the beginning of the membership. The membership in the fund terminates when the member has received his/her share of the fund in full.

The profit-sharing received by the fund is distributed equally between the members. Each employee's share is divided into a tied amount and an amount available for withdrawal. It is possible to transfer a maximum of 15% of capital from the tied amount to the amount available for withdrawal each year.

The amount available for withdrawal (maximum 15% of the tied amount) is decided each year by the council of the fund and it is paid to members who want to exercise their withdrawal rights.

The fund's latest financial year ended at 30 April 2017 and the fund then had a total of 2,320 members (2016: 2,112). At the end of April 2017 Fortum contributed EUR 2.8 million (2016: 0.6) to the personnel fund as an annual profit-sharing bonus based on the financial results of 2016. The combined amount of members' shares in the fund was EUR 21 million (2016: 20).

The contribution to the personnel fund is expensed as it is earned.

10.4 The President and CEO and the Fortum Executive Management remuneration

The Fortum Executive Management (FEM) consists of ten members, including the President and CEO. The following table presents the total remuneration of the President and CEO and the FEM and takes into account the changes in FEM during the year. The expenses are shown on accrual basis.

Management remuneration

	2017		2016	
EUR thousand	Pekka Lundmark, President and CEO	Other FEM members	Pekka Lundmark, President and CEO	Other FEM members
Salaries and fringe benefits	998	3,387	982	3,581
Performance bonuses [1)]	187	589	248	925
Share-based incentives [1)]	334	1,030	433	886
Pensions (statutory)	231	665	209	683
Pensions (voluntary)	229	712	356	769
Social security expenses	41	257	73	331
Total	**2,019**	**6,640**	**2,299**	**7,174**

1) Based on estimated amounts.

The annual contribution for the President and CEO Pekka Lundmark's pension arrangement is 25% of the annual salary. The annual salary consists of base salary and fringe benefits. The President and CEO's retirement age is 63. In case his assignment is terminated before the retirement age, the President and CEO is entitled to retain the benefits accrued in the arrangement.

For the other members of the FEM the retirement age varies between 60 and 65. According to group policy all new supplementary pension arrangements are defined contribution plans. For the members of the FEM that have defined contribution arrangements, the maximum pension premium percentage can be 25% of the annual salary. Members, who have joined Fortum prior 1 January 2009, are participating in defined benefit pension arrangements, where the benefit is 60–66% of the final pensionable salary with the pension provided by an insurance company or Fortum's Pension Fund.

A pension liability of EUR 693 thousand (2016: 2,070) related to the defined benefit plans for FEM members has been recognised in the balance sheet. The additional pension arrangement for the President and CEO is a defined contribution pension plan and thus no liability has been recognised in the balance sheet.

In the event that Fortum decides to give notice of termination to the President and CEO, he is entitled to the salary for the notice period (6 months) and a severance pay equal to 12 months' salary. Other FEM members' termination compensation is equal to 6 to 12 months' salary.

Number of shares delivered to the management

The table below shows the number of shares delivered during 2017 and 2016 to the President and CEO and other FEM members under the LTI arrangements. Shares delivered under the plans are subject to a lock-up period under which they cannot be sold or transferred to a third party.

	2017 [3]	2016 [4]
FEM members at 31 December 2017		
Pekka Lundmark, CEO	4,463	-
Alexander Chuvaev [1]	15,480	27,897
Kari Kautinen	2,274	4,014
Per Langer	2,358	4,677
Risto Penttinen (member of FEM from 1 April 2016) [2]	1,793	-
Markus Rauramo	4,185	7,383
Arto Räty (member of FEM from 1 April 2016)	-	-
Mikael Rönnblad (member of FEM from 15 May 2017)	-	N/A
Sirpa-Helena Sormunen	1,777	-
Tiina Tuomela	2,563	3,902
Former FEM members		
Helena Aatinen (member of FEM until 31 March 2016)	N/A	3,188
Mikael Frisk (member of the FEM until 31 March 2016)	N/A	5,028
Esa Hyvärinen (member of FEM until 31 March 2016)	N/A	3,053
Timo Karttinen (member of FEM until 28 February 2017)	3,626	6,399
Matti Ruotsala (member of FEM until 31 October 2017)	4,176	7,443
Total	**42,695**	**72,984**

1) Due to local legislation, share rights will be paid in cash instead of shares after the three-year lock-up period.

2) Shares delivered before the term in the Fortum Executive Management are not disclosed.

3) Share delivery based on share plan 2014–2019.

4) Share delivery based on share plan 2013–2018.

10.5 Board of Directors and management shareholding

On 31 December 2017, the members of the Board of Directors owned a total of 9,200 shares (2016: 208,940), which corresponds to 0.00% (2016: 0.02%) of the company's shares and voting rights.

Number of shares held by members of the Board of Directors

	2017	2016
Board members at 31 December 2017		
Sari Baldauf, Chairman	2,300	2,300
Matti Lievonen, Deputy Chairman	1,500	N/A
Heinz-Werner Binzel	-	-
Eva Hamilton	-	40
Kim Ignatius	2,400	2,400
Anja McAlister	-	N/A
Veli-Matti Reinikkala	3,000	3,000
Former Board members		
Tapio Kuula	N/A	201,200
Total	**9,200**	**208,940**

The President and CEO and other members of the FEM owned a total of 200,667 shares (2016: 315,653) which corresponds to approximately 0.02% (2016: 0.04%) of the company's shares and voting rights.

Number of shares held by members of the Fortum Executive Management Team

	2017	2016
FEM members at 31 December 2017		
Pekka Lundmark	60,713	56,250
Alexander Chuvaev	14,713	14,713
Kari Kautinen	30,720	29,246
Per Langer	31,570	29,212
Risto Penttinen	10,588	8,795
Markus Rauramo	32,032	27,847
Arto Räty	-	-
Mikael Rönnblad	-	N/A
Sirpa-Helena Sormunen	4,777	3,000
Tiina Tuomela	15,554	12,991
Former FEM member		
Timo Karttinen	N/A	87,090
Matti Ruotsala	N/A	46,509
Total	**200,667**	**315,653**

10.6 Board remuneration

The Board of Directors comprises five to eight members who are elected at the Annual General Meeting for a one-year term of office, which expires at the end of the first Annual General Meeting following the election. At the end of 2017 the Board of Directors consists of seven members.

The Annual General meeting confirms the yearly compensation for the Board of Directors. Board members are not offered any long-term incentive benefits or participation in other incentive schemes. There are no pension arrangements for the Board members. Social security costs EUR 14 thousand (2016: 25) have been recorded for the fees in accordance with local legislation in respective countries.

Fees for the Board of Directors

EUR thousand	2017	2016
Chairman	75	75
Deputy Chairman	57	57
Chairman of the Audit and Risk Committee [1)]	57	57
Members	40	40

1) If not Chairman or Deputy Chairman simultaneously.

Every member of the Board of Directors receives a fixed yearly fee and additional fees for each meeting attended. A meeting fee of EUR 600 is paid for board and committee meetings. For board members living outside Finland in Europe, the meeting fee is EUR 1,200; for board members living outside Europe, the meeting fee is EUR 1,800. For board and committee meetings held as a telephone conference, the meeting fee is paid as EUR 600 to all members. No fee is paid for decisions made without a separate meeting.

Board members are entitled to travel expense compensation in accordance with the company's travel policy.

Compensation for the Board of Directors

EUR thousand	2017	2016
Board members at 31 December 2017		
Sari Baldauf, Chairman	84	87
Matti Lievonen, Deputy Chairman from 4 April 2017	49	N/A
Heinz-Werner Binzel	57	61
Eva Hamilton	54	56
Kim Ignatius, Chairman of the Audit and Risk Committee	67	70
Anja McAlister (member of the board from 4 April 2017)	47	N/A
Veli-Matti Reinikkala (member of the board from 5 April 2016)	58	44
Former Board members		
Minoo Akhtarzand (member of the board until 4 April 2017)	16	61
Tapio Kuula (member of the board until 7 November 2017)	43	52
Petteri Taalas (member of board until 5 April 2016)	N/A	17
Jyrki Talvitie (member of the board until 4 April 2017)	17	70
Total	**492**	**518**

11 Finance costs - net

EUR million	Note	2017	2016
Interest expense			
Borrowings		-170	-181
Other interest expense		-10	-4
Capitalised borrowing costs	17	16	16
Total		**-164**	**-169**
Interest income			
Loan receivables and deposits		28	29
Other interest income		3	1
Total		**32**	**30**
Fair value gains and losses on financial instruments	7		
Fair value change of interest rate derivatives not getting hedge accounting status		-7	-9
Fair value change of hedging derivatives in fair value hedge relationship		-31	11
Fair value change of hedged items in fair value hedge relationship		31	-11
Rate difference on forward contracts		-4	7
Total		**-12**	**-2**
Exchange gains and losses			
Loans and receivables	7	-51	143
Cross currency interest rate derivatives	7	6	12
Foreign currency derivatives	7	47	-156
Interest income on share of State Nuclear Waste Management Fund	28	6	8
Unwinding of discount on nuclear provisions	28	-45	-40
Unwinding of discount on other provisions	29, 30	-3	-2
Other financial income		14	12
Other financial expenses		-25	-6
Total		**-50**	**-29**
IS Finance costs - net		**-195**	**-169**

Interest expenses include interest expenses on interest-bearing loans, interest on interest rate and currency swaps and forward points on forward foreign exchange contracts hedging loans and receivables. Other interest expenses for 2017 include the interest expense of SEK 69 million (EUR 7 million) relating to the Swedish income tax assessment for 2009–2012. See ▸**Note 36** Legal actions and official proceedings.

Interest income includes EUR 12 million (2016: 15) from shareholders' loans in Finnish and Swedish nuclear companies, and EUR 10 million (2016: 12) from deposits and commercial papers.

Fair value gains and losses on financial instruments include change in clean price of interest rate and cross currency swaps not getting hedge accounting and fair value changes of interest rate derivatives in hedge relationship and hedged items. Accrued interest on these derivatives is entered in interest expenses of borrowings. Fair value gains and losses include also rate difference from forward contracts hedging loans and receivables without hedge accounting.

Exchange gains and losses includes exchange rate differences arising from valuation of foreign currency loans and receivables and exchange rate differences from forward foreign exchange contracts and interest rate and currency swaps.

Other financial income includes EUR 14 million from SIBUR receivable (2016:12). Other financial expenses includes EUR 16 million financial cost related to financing commitment for Uniper acquisition.

Fair value changes on interest rate and currency derivatives

EUR million	2017	2016
Interest rate and cross currency swaps		
Interest expenses on borrowings	21	16
Exchange rate difference from derivatives	6	12
Rate difference in fair value gains and losses on financial instruments [1)]	-38	2
Total fair value change of interest rate derivatives in finance costs - net	**-11**	**30**
Forward foreign exchange contracts		
Interest expenses on borrowings	-68	-62
Exchange rate difference from derivatives	47	-156
Rate difference in fair value gains and losses on financial instruments	-4	7
Total fair value change of currency derivatives in finance costs - net	**-25**	**-211**
Total fair value change of interest and currency derivatives in finance costs - net	**-36**	**-181**

1) Fair value gains and losses on financial instruments include fair value changes from interest rate swaps not getting hedge accounting amounting to EUR -7 million (2016: -9) and fair value change of hedging derivatives in fair value hedge relationship EUR -31 million (2016: 11), totalling EUR -38 million (2016: 2).

12 Income tax expense

12.1 Profit before tax

EUR million	2017	2016
Finnish companies	76	59
Swedish companies	240	46
Russian companies	269	202
Other companies	526	289
IS Total	**1,111**	**595**

Profit before tax split by country represents the respective countries' part of the profit before tax for Fortum Group according to International Financial Reporting Standards (IFRS), i.e. based on the same accounting principles as for the Consolidated Financial Statements. This means that the respective country profits include such items as for example share of profits from associates and effects of accounting for nuclear provisions, which are not included in taxable profits in the local subsidiaries.

12.2 Major components of income tax expense by major countries

EUR million	2017	2016
Current taxes		
Finnish companies	-15	-14
Swedish companies	2	-1
Russian companies	-11	-2
Other companies	-34	-24
Total	**-58**	**-42**
Deferred taxes		
Finnish companies	11	0
Swedish companies	-34	10
Russian companies	-43	-36
Other companies	24	-17
Total	**-42**	**-42**
Adjustments recognised for current tax of prior periods		
Finnish companies	-13	-6
Swedish companies [1)]	-115	0
Russian companies	0	0
Other companies	-1	0
Total	**-129**	**-6**
IS Income tax expense	**-229**	**-90**

1) Income tax expense 2017 from the unfavourable decisions in the Administrative Court of Appeal in Sweden relating to the income tax assessments for 2009–2012.

12.3 Income tax rate

The table below explains the difference between the theoretical enacted tax rate in Finland compared to the tax rate in the consolidated income statement.

EUR million	2017	%	2016	%
Profit before tax	1,111		595	
Tax calculated at nominal Finnish tax rate	-222	20.0	-119	20.0
Tax rate changes	6	-0.6	0	0.0
Differences in tax rates and regulations	5	-0.4	16	-2.7
Income not subject to tax	0	0.0	0	0.0
Tax exempt capital gains	77	-6.9	4	-0.7
Expenses not deductible for tax purposes	-3	0.3	-5	0.8
Share of profit of associated companies and joint ventures	33	-2.9	30	-5.0
Taxes related to dividend distributions	-10	0.9	-8	1.4
Changes in tax valuation allowance related to not recognised tax losses	-2	0.2	-6	1.0
Other items	3	-0.3	0	0.0
Adjustments recognised for taxes of prior periods	-117	10.5	-2	0.3
IS Income tax expense	**-229**	**20.6**	**-90**	**15.2**

Key tax indicators:

- The weighted average applicable income tax rate for 2017 is 21.7% (2016: 20.2%)
- The effective income tax rate in the income statement for 2017 is 20.6% (2016: 15.2%)
- The comparable effective income tax rate (excluding the share of profits from associates, joint ventures as well as tax exempt capital gains, tax rate changes and other major one-time income tax effects) for 2017 is 18.8% (2016: 20.0%).

See ▸ Definitions of key figures.

The major items affecting the effective income tax rate are as follows:

The one-time tax-free capital gain (EUR 324 million) in Norway 2017 from the restructuring of the ownership in Hafslund reduced the effective income tax rate with 6.9%. Share of profit of associated companies and joint ventures during 2017 reduced the effective income tax rate with 2.9%. Fortum has booked a tax cost of EUR 115 million because of the unfavourable decisions from the Administrative Court of Appeal in Sweden relating to the income tax assessments for 2009–2012. This increased the effective income tax rate with 10.4%.

Effective income tax rate and total tax rate are impacted by gains or losses on sale of shares. In many countries like in Finland, Sweden, Netherlands and Norway income on capital gains and losses is treated as tax exempt. The purpose of this is to tax the operative income of the company and avoid taxing the

same income twice in case of the sale of the shares. Taxation of capital gains or losses is in line with the taxation of dividend income.

Fortum has had several tax audits ongoing during 2017. Based on these and earlier audits Fortum has received income tax assessments in Sweden for the years 2013–2015 and Belgium for the years 2008–2012. Fortum has appealed all assessments received. Based on legal analysis, no provision has been accounted for in the financial statements related to Sweden 2013–2015 and Belgium 2008–2012 tax audits.

For further information regarding the ongoing tax appeals see ▸Note 36 Legal actions and official proceedings.

During 2017 entities primarily in Russia and Sweden used a portion of the deferred tax asset relating to tax loss carry forwards.

Fortum has a material deferred tax liability owing to its investments in non-current assets. These assets are depreciated more rapidly for tax than for accounting purposes resulting in lower current tax payments at the start of an asset's lifetime and higher tax payments at the end of its lifetime. This difference results in a deferred tax liability.

12.4 Total taxes

Taxes borne indicate different taxes that Fortum pays for the period. In 2017 Fortum's taxes borne were EUR 445 million (2016: 365). Taxes borne include corporate income taxes (excluding deferred taxes), production taxes, employment taxes, taxes on property and cost of indirect taxes. Production taxes include also taxes, on production and on property, paid through purchased electricity from associated companies.

The total tax rate indicates the burden on taxes borne by Fortum from its profit before these taxes. The total tax rate and total comparable tax rate (excluding the share of profits from associates and joint ventures and tax exempt capital gains) for 2017 is 32.5% and 48.1% (2016: 40.0% and 47.5%). In addition, Fortum administers and collects different taxes on behalf of governments and authorities. Such taxes include VAT, and excise taxes on power consumed by customers, payroll taxes and withholding taxes. The amount of taxes collected by Fortum was EUR 521 million (2016: 376).

See also ▸Note 27 Income taxes in the balance sheet and ▸Note 9 Materials and services.

13 Earnings and dividend per share

ACCOUNTING POLICIES

EARNINGS PER SHARE

Basic earnings per share is calculated by dividing the net profit attributable to the owners of the parent company by the weighted average number of ordinary shares in issue during the year, excluding ordinary shares purchased by the Group and held as treasury shares.

Diluted earnings per share is calculated adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. For the warrants and stock options a calculation is done to determine the number of shares that could have been acquired at fair value (determined as the average annual market share price of the Fortum share) based on the monetary value of the subscription rights attached to outstanding stock options.

The number of shares calculated as above is deducted from the number of shares that would have been issued assuming the exercise of the stock options. The incremental shares obtained through the assumed exercise of the options and warrants are added to the weighted average number of shares outstanding.

Options and warrants have a dilutive effect only when the average market price of ordinary shares during the period exceeds the exercise price of the options or warrants. Previously reported earnings per share are not retroactively adjusted to reflect changes in price of ordinary shares.

DIVIDENDS

Dividends proposed by the Board of Directors are not recognised in the financial statements until they have been approved by the Company's shareholders at the Annual General Meeting.

13.1 Earnings per share

Earnings per share, basic

	2017	2016
IS Profit attributable to owners of the parent (EUR million)	866	496
Weighted average number of shares (thousand)	888,367	888,367
Basic earnings per share (EUR)	0.98	0.56

As Fortum currently has no dilutive instruments outstanding, diluted earnings per share is the same as basic earnings per share.

13.2 Dividend per share

Dividends proposed by the Board of Directors are not recognised in the financial statements until they have been approved by the Company's shareholders at the Annual General Meeting.

A dividend in respect of 2017 of EUR 1.10 per share, amounting to a total dividend of EUR 977 million based on the amount of shares registered as at 1 February 2018, is to be proposed at the Annual General Meeting on 28 March 2018. These Financial statements do not reflect this dividend.

A dividend for 2016 of EUR 1.10 per share, amounting to a total of EUR 977 million, was decided in the Annual General Meeting on 4 April 2017. The dividend was paid on 13 April 2017.

A dividend for 2015 of EUR 1.10 per share, amounting to a total of EUR 977 million, was decided in the Annual General Meeting on 5 April 2016. The dividend was paid on 14 April 2016.

14 Financial assets and liabilities by categories

ACCOUNTING POLICIES

FINANCIAL ASSETS

The Group classifies its investments in the following categories: financial assets at fair value through profit or loss, loans and receivables and available-for-sale financial assets. The classification depends on the purpose for which the investments were acquired. Management determines the classification of its financial assets at initial recognition and re-evaluates this designation at every reporting date.

FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

A financial asset is classified in this category if acquired principally for the purpose of selling in the short term. Derivatives are also categorised as held for trading unless they are designated as hedges. Assets in this category are classified as current assets if they are either held for trading or are expected to be realised within 12 months of the closing date.

LOANS AND RECEIVABLES

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They arise when the Group provides money, goods or services directly to a debtor. They are included in non-current assets, except for maturities under 12 months after the closing date. These are classified as current assets.

AVAILABLE-FOR-SALE FINANCIAL ASSETS

Available-for-sale financial assets are non-derivatives that are either designated in this category or not classified in any of the other categories. They are included in non-current assets unless there is an intention to dispose of the investment within 12 months of the closing date.

Purchases and sales of investments are recognised on the trade-date – the date on which the Group commits to purchase or sell the asset. Investments are initially recognised at fair value plus transaction costs for all financial assets not carried at fair value through profit or loss. Investments are derecognised when the rights to receive cash flows from the investments have expired or have been transferred and the Group has transferred substantially all risks and rewards of ownership.

Available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. Loans are carried at amortised cost using the effective interest method. Gains and losses arising from changes in the fair value of the 'financial assets at fair value through profit or loss' category are included in the income statement in the period in which they arise. Gains and

losses arising from changes in the fair value of securities classified as available-for-sale are recognised in equity. When securities classified as available-for-sale are sold or impaired, the accumulated fair value adjustments are included in the income statement.

The fair values of quoted investments are based on current bid prices. If the market for a financial asset is not active (and for unlisted securities), the Group establishes fair value by using valuation techniques. These include the use of recent arm's length transactions, reference to other instruments that are substantially the same, discounted cash flow analysis, and option pricing models refined to reflect the issuer's specific circumstances.

The Group assesses at each closing date whether there is objective evidence that a financial asset or a group of financial assets is impaired. If any such evidence exists for available-for-sale financial assets, the cumulative loss – measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that financial asset previously recognised in profit or loss – is removed from equity and recognised in the income statement.

ACCOUNTING FOR DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING ACTIVITIES

Within the ordinary course of business the Group routinely enters into sale and purchase transactions for commodities. The majority of these transactions take the form of contracts that were entered into and continue to be held for the purpose of receipt or delivery of the commodity in accordance with the Group's expected sale, purchase or usage requirements. Such contracts are not within the scope of IAS 39. All other net-settled commodity contracts are measured at fair value with gains and losses taken to the income statement.

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently re-measured at their fair value. The method of recognising the resulting gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. The Group designates certain derivatives as either: 1) hedges of highly probable forecast transactions (cash flow hedges); 2) hedges of the fair value of recognised assets or liabilities or a firm commitment (fair value hedge); or 3) hedges of net investments in foreign operations. The Group documents at the inception of the transaction the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items. Derivatives are divided into non-current and current based on maturity. Only for those electricity derivatives, which have cash flows in different years, the fair values are split between non-current and current assets or liabilities.

CASH FLOW HEDGE

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges are recognised in equity. The gain or loss relating to the ineffective portion is recognised immediately in the income statement. Amounts accumulated in equity are recycled in the income statement in the periods when the hedged item will affect profit or loss (for instance when the forecast sale that is hedged takes place). However, when the forecast transaction that is hedged results in the recognition of a non-financial asset (for example, inventory) or a liability, the gains and losses previously deferred in equity are transferred from equity and included in the initial measurement of the cost of the asset or liability. When a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity is recognised in the income statement when the forecast transaction is ultimately also recognised in the income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately recognised in the income statement.

FAIR VALUE HEDGE

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the income statement, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is amortised to profit or loss for the period to maturity.

NET INVESTMENT HEDGING IN FOREIGN OPERATIONS

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gain or loss on the hedging instrument relating to the effective portion of the hedge is recognised in equity; the gain or loss relating to the ineffective portion is recognised immediately in the income statement. Gains and losses accumulated in equity are included in the income statement when the foreign operation is disposed of.

DERIVATIVES THAT DO NOT QUALIFY FOR HEDGE ACCOUNTING

Certain derivative instruments hedging future cash flows do not qualify for hedge accounting. Fair value changes of these financial derivative instruments are recognised in items affecting comparability in the income statement.

Financial assets and liabilities in the tables below are split into categories in accordance with IAS 39. The categories are further split into classes which are the basis for valuing a respective asset or liability. Further information can be found in the Notes mentioned in the table.

Financial assets by categories 2017

EUR million	Note	Loans and receivables	Financial assets at fair value through profit and loss					
		Amortised cost	Hedge accounting, fair value hedges	Non-hedge accounting	Fair value recognised in equity, cash flow hedges	Available-for-sale financial assets	Finance lease	Total financial assets
Financial instruments in non-current assets								
Other non-current assets	19	74				65		140
Derivative financial instruments	3							
Electricity derivatives				35	0			35
Interest rate and currency derivatives			140	85	13			238
Other commodity future and forward contracts				7				7
Long-term interest-bearing receivables	20	969					41	1,010
Financial instruments in current assets								
Derivative financial instruments	3							
Electricity derivatives				69	21			90
Interest rate and currency derivatives				29	85			114
Other commodity future and forward contracts				36	0			36
Trade receivables	22	638						638
Other short-term interest-bearing receivables	20	395						395
Liquid funds	23	1,928				1,968		3,897
Total		**4,004**	**140**	**261**	**119**	**2,033**	**41**	**6,600**

Financial assets by categories 2016

EUR million	Note	Loans and receivables	Financial assets at fair value through profit and loss					
		Amortised cost	Hedge accounting, fair value hedges	Non-hedge accounting	Fair value recognised in equity, cash flow hedges	Available-for-sale financial assets	Finance lease	Total financial assets
Financial instruments in non-current assets								
Other non-current assets	19	55				58		113
Derivative financial instruments	3							
Electricity derivatives				67	1			68
Interest rate and currency derivatives			179	103	61			343
Other commodity future and forward contracts				5				5
Long-term interest-bearing receivables	20	985						985
Financial instruments in current assets								
Derivative financial instruments	3							
Electricity derivatives				88	0			88
Interest rate and currency derivatives				7	16			23
Other commodity future and forward contracts				18	0			18
Trade receivables	22	562						562
Other short-term interest-bearing receivables	20	395						395
Liquid funds	23	1,444				3,711		5,155
Total		**3,441**	**179**	**288**	**78**	**3,769**	**0**	**7,755**

Financial liabilities by categories 2017

EUR million	Note	Financial liabilities at fair value through profit and loss		Fair value recognised in equity, cash flow hedges	Other financial liabilities		Total financial liabilities
		Hedge accounting, fair value hedges	Non-hedge accounting		Amortised costs	Fair value	
Financial instruments in non-current liabilities							
Interest-bearing liabilities	26				3,082	1,037 [1)]	4,119
Derivative financial instruments	3						
Electricity derivatives			100	23			123
Interest rate and currency derivatives		26	43	19			88
Other commodity future and forward contracts			3				3
Financial instruments in current liabilities							
Interest-bearing liabilities	26				766		766
Derivative financial instruments	3						
Electricity derivatives			131	31			162
Interest rate and currency derivatives			12	12			24
Other commodity future and forward contracts			13	0			13
Trade payables	32				318		318
Other liabilities	32				208		208
Total		**26**	**302**	**85**	**4,374**	**1,037**	**5,824**

Financial liabilities by categories 2016

EUR million	Note	Financial liabilities at fair value through profit and loss		Fair value recognised in equity, cash flow hedges	Other financial liabilities		Total financial liabilities
		Hedge accounting, fair value hedges	Non-hedge accounting		Amortised costs	Fair value	
Financial instruments in non-current liabilities							
Interest-bearing liabilities	26				3,188	1,280 [1)]	4,468
Derivative financial instruments	3						
Electricity derivatives			90	48			138
Interest rate and currency derivatives		32	51	38			121
Other commodity future and forward contracts			3				3
Financial instruments in current liabilities							
Interest-bearing liabilities	26				639		639
Derivative financial instruments	3						
Electricity derivatives			155	83			238
Interest rate and currency derivatives			130	10			140
Other commodity future and forward contracts			18	0			18
Trade payables	32				323		323
Other liabilities	32				86		86
Total		**32**	**447**	**179**	**4,236**	**1,280**	**6,174**

1) Fair valued part of bond in fair value hedge relationship.

15 Financial assets and liabilities by fair value hierarchy

ACCOUNTING POLICIES

Fair value measurements are classified using a fair value hierarchy i.e. Level 1, Level 2 and Level 3 that reflects the significance of the inputs used in making the measurements.

FAIR VALUES UNDER LEVEL 1 MEASUREMENT HIERARCHY

The fair value of some commodity derivatives traded in active markets (such as publicly traded electricity options, coal, gas and oil futures) are market quotes at the closing date.

FAIR VALUES UNDER LEVEL 2 MEASUREMENT HIERARCHY

The fair value of financial instruments including electricity derivatives traded in active markets (such as publicly traded derivatives, and trading and available-for-sale securities) is based on quoted market prices at the closing date. Known calculation techniques, such as estimated discounted cash flows, are used to determine fair value of interest rate and currency financial instruments. The fair value of interest-rate swaps is calculated as the present value of the estimated future cash flows. The fair value of forward foreign exchange contracts is determined using forward exchange market rates at the closing date. Fair values of options are determined by using option valuation models. The fair value of financial liabilities is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the Group for similar financial instruments. In fair valuation, credit spread has not been adjusted, as quoted market prices of the instruments used are believed to be consistent with the objective of a fair value measurement.

The Group bases the calculation on existing market conditions at each closing date. Financial instruments used in Fortum are standardised products that are either cleared via exchanges or widely traded in the market. Commodity derivatives are generally cleared through exchanges such as for example Nasdaq Commodities Europe and financial derivatives done with creditworthy financial institutions with investment grade ratings.

FAIR VALUES UNDER LEVEL 3 MEASUREMENT HIERARCHY

Investments in unlisted shares classified as Available-for-sale financial assets, for which the fair value cannot be reliably determined. These assets are measured at cost less any impairments.

OTHER MEASUREMENTS

The nominal value less estimated credit adjustments of trade receivables and payables are assumed to approximate their fair values.

Financial assets

EUR million	Note	Level 1		Level 2		Level 3		Netting [2]		Total	
		2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
In non-current assets											
Available-for-sale financial assets [1]	19	0	0			65	58			65	58
Derivative financial instruments	3										
Electricity derivatives											
Hedge accounting				5	4			-5	-3	0	1
Non-hedge accounting		0	0	66	98			-30	-31	35	67
Interest rate and currency derivatives											
Hedge accounting				153	240					153	240
Non-hedge accounting				85	103					85	103
Other commodity future and forward contracts											
Non-hedge accounting		8	7					-1	-2	7	5
In current assets											
Derivative financial instruments	3										
Electricity derivatives											
Hedge accounting				28	9			-7	-9	21	0
Non-hedge accounting		8	0	253	381			-192	-293	69	88
Interest rate and currency derivatives											
Hedge accounting				85	16					85	16
Non-hedge accounting				29	7					29	7
Other commodity future and forward contracts											
Non-hedge accounting		186	106	1	2			-151	-90	36	18
Total		**202**	**113**	**705**	**860**	**65**	**58**	**-386**	**-428**	**586**	**603**

1) Available-for-sale financial assets, i.e. shares which are not classified as associated companies or joint ventures, consists mainly of shares in unlisted companies of EUR 65 million (Dec 31 2016: 58), for which the fair value cannot be reliably determined. This includes EUR 25 million (Dec 31 2016: 18) from Fortum's shareholding in Fennovoima. These assets are measured at cost less any impairments.

Available-for-sale financial assets include listed shares at fair value of EUR 0 million (2016: 0). The cumulative fair value change booked in Fortum's equity was EUR -3 million (2016: -3).

2) Receivables and liabilities against electricity and other commodity exchanges arising from standard derivative contracts with same delivery period are netted.

Financial liabilities

EUR million	Note	Level 1		Level 2		Level 3		Netting [2]		Total	
		2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
In non-current liabilities											
Interest-bearing liabilities	26			1,037 [1]	1,280 [1]					1,037	1,280
Derivative financial instruments	3										
Electricity derivatives											
Hedge accounting				28	51			-5	-3	23	48
Non-hedge accounting				131	121			-30	-31	100	90
Interest rate and currency derivatives											
Hedge accounting				45	70					45	70
Non-hedge accounting				43	51					43	51
Other commodity future and forward contracts											
Non-hedge accounting		3	5	1				-1	-2	3	3
In current liabilities											
Derivative financial instruments	3										
Electricity derivatives											
Hedge accounting				39	92			-7	-9	31	83
Non-hedge accounting		7	0	315	448			-192	-293	131	155
Interest rate and currency derivatives											
Hedge accounting				12	10					12	10
Non-hedge accounting				12	130					12	130
Other commodity future and forward contracts											
Non-hedge accounting		160	106	4	2			-151	-90	13	18
Total		**170**	**111**	**1,667**	**2,255**	**0**	**0**	**-386**	**-428**	**1,451**	**1,938**

1) Fair valued part of bonds in fair value hedge relationship.

2) Receivables and liabilities against electricity and other commodity exchanges arising from standard derivative contracts with same delivery period are netted.

Net fair value amount of interest rate and currency derivatives is EUR 241 million, including assets EUR 353 million and liabilities EUR 112 million. Fortum has cash collaterals based on Credit Support Annex agreements with some counterparties. At the end of December 2017 Fortum had received EUR 113 million from Credit Support Annex agreements. The received cash has been booked as short-term liability.

16 Intangible assets

ACCOUNTING POLICIES

Intangible assets, except goodwill, are stated at the historical cost less accumulated amortisation and impairment losses. They are amortised on a straight-line method over their expected useful lives.

COMPUTER SOFTWARE

Acquired computer software licences are capitalised on the basis of the costs incurred when bringing the software into use. Costs associated with developing or maintaining computer software are recognised as an expense as incurred. Costs that are directly associated with the production of identifiable and unique software products controlled by the Group, and that will generate economic benefits exceeding costs beyond one year, are recognised as intangible assets. Direct costs include the software development employee costs and an appropriate portion of relevant overheads. Computer software costs recognised as assets are amortised over their estimated useful lives (three to five years).

TRADEMARKS AND LICENSES

Trademarks and licences are shown at historical cost less accumulated amortisation and impairment losses, as applicable. Amortisation is calculated using the straight-line method to allocate the cost of trademarks and licences over their estimated useful lives (15–20 years).

CONTRACTUAL CUSTOMER RELATIONSHIPS

Contractual customer relationships acquired in a business combination are recognised at fair value on acquisition date. The contractual customer relations have a finite useful life and are carried at costs less accumulated amortisation. Amortisation is calculated using the straight-line method over the expected duration of the customer relationship.

GOODWILL

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of net identifiable assets of the acquired subsidiary, associate or joint venture at the date of acquisition. Goodwill on acquisitions of subsidiaries is included in intangible assets and tested yearly for impairment. Goodwill on acquisition of associates and joint ventures is included in investments in associates and joint ventures and is tested for impairment as part of the overall balance. Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on disposal of an entity include the carrying amount of goodwill relating to the entity sold.

EMISSION ALLOWANCES

The Group accounts for emission allowances based on currently valid IFRS standards where purchased emission allowances are accounted for as intangible assets at cost, whereas emission allowances received free of charge are accounted for at nominal value. For CO_2 emissions from power and heat production, a provision is recognized. CO_2 emission costs is settled by returning emission allowances. To the extent that the Group already holds allowances to cover emission costs, the provision is measured at the carrying amount of those allowances. Any shortfall of allowances held over the obligation is valued at the current market value of allowances. The emission cost is recognised in the income statement within materials and services. The sales gains and losses of emission allowances not used for covering the obligation from CO_2 emissions, are reported in other income.

IMPAIRMENT TESTING OF NON-FINANCIAL ASSETS

The individual assets' carrying values are reviewed continuously to determine whether there is any indication of impairment. An asset's carrying amount is written down immediately to its recoverable amount if it is greater than the estimated recoverable amount.

In addition, impairment needs are assessed and documented once a year in connection with the long-term forecasting process. Indications for impairment are analysed separately by each division as they are different for each business and include risks such as changes in electricity and fuel prices, regulatory/political changes relating to energy taxes and price regulations etc. Impairment testing needs to be performed if any of the impairment indications exists. Assets that have an indefinite useful life and goodwill, are not subject to amortisation and are tested annually for impairment.

Value in use is determined by discounting the future cash flows expected to be derived from an asset. If it's not possible to estimate the cash flows generated by an individual asset, the impairment testing is performed on a cash-generating unit level. Fortum defines the cash-generating unit as the smallest business area where the tested assets generate cash flows that are independent of the cash flows generated by other assets in other business areas. Goodwill is allocated to the cash-generating unit or lowest level of groups of cash-generating units that benefit from the synergies of the acquired goodwill. Cash flow projections are based on the most recent long-term forecast that has been approved by management and the Board of Directors. Cash flows arising from future investments such as new plants are excluded unless projects have been started. The cash outflow needed to complete the started projects is included.

Non-financial assets other than goodwill that suffered an impairment charge are reviewed for possible reversal of the impairment at each reporting date.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS:

ASSIGNED VALUES AND USEFUL LIVES IN ACQUISITIONS

In an acquisition acquired intangible and tangible assets are fair valued and their remaining useful lives are determined. Management believes that the assigned values and useful lives, as well as the underlying assumptions, are reasonable. Different assumptions and assigned lives could have a significant impact on the reported amounts.

The Group has significant carrying values in property, plant and equipment, intangible assets and participations in associated companies and joint ventures which are tested for impairment according to the accounting policy described above.

ASSUMPTIONS RELATED TO IMPAIRMENT TESTING

The Group has significant carrying values in property, plant and equipment, intangible assets and participations in associated companies and joint ventures which are tested for impairment according to the accounting policy described in the notes. The recoverable amounts of cash-generating units have been determined based on value in use calculations. These calculations are based on estimated future cash flows from most recent approved long-term forecast. Preparation of these estimates requires management to make assumptions relating to future expectations. Assumptions vary depending on the business the tested assets are in. For power and heat generation business the main assumptions relate to the estimated future operating cash flows and the discount rates that are used in calculating the present value.

Estimates are also made in an acquisition when determining the fair values and remaining useful lives of acquired intangible and tangible assets.

	Goodwill		Other intangible assets		Total	
EUR million	2017	2016	2017	2016	2017	2016
Cost 1 January	**353**	**152**	**386**	**332**	**739**	**485**
Translation differences and other adjustments	-27	39	-20	-1	-47	37
Acquisition of subsidiary companies	286	163	381	59	667	221
Capital expenditure	0	0	18	3	18	3
Disposals	0	0	-14	-11	-14	-11
Sale of subsidiary companies	0	0	-2	0	-2	0
Reclassifications	0	0	15	4	15	4
Cost 31 December	**613**	**353**	**764**	**386**	**1,377**	**739**
Accumulated depreciation 1 January	**0**	**0**	**273**	**262**	**273**	**262**
Translation differences and other adjustments	0	0	-6	-2	-6	-2
Acquisition of subsidiary companies	0	0	30	5	30	5
Disposals	0	0	-14	-11	-14	-11
Sale of subsidiary companies	0	0	-1	0	-1	0
Reclassifications	0	0	2	0	2	0
Depreciation for the period	0	0	30	19	30	19
Accumulated depreciation 31 December	**0**	**0**	**313**	**273**	**313**	**273**
BS Carrying amount 31 December	**613**	**353**	**451**	**113**	**1,064**	**467**

Total goodwill in the balance sheet as of 31 December 2017 amounted to EUR 613 million (2016: 353).

Goodwill arising from acquisitions of Hafslund Markets Group and Fortum Oslo Varme Group increase the amount of goodwill by EUR 285 million. The acquisitions enable scale benefits and combination of competences that support Fortum's strategic growth and cash flow ambitions in the Nordic retail electricity and district heating markets and will also enhance the development of new and greener technologies and services. Hafslund Markets is integrated in Consumer Solutions segment and Fortum Oslo Varme in City Solutions segment. The purchase price allocation is still preliminary and also the allocation of goodwill to separate cash generating units is still on-going.

During 2017 Fortum finalised the purchase price allocation for the Waste Solutions Oy Group (formerly Ekokem Corporation) acquired in 2016. The acquisition supports Fortum's vision and strategy of creating solutions for sustainable cities in the whole City Solutions division and as a result, the goodwill from this acquisition is allocated to the City Solutions segment level.

See more information on the acquisitions in ▸Note 38 Acquisitions and disposals.

Group of cash-generating units	Goodwill EUR million
Consumer Solutions	228
City Solutions	208
Russia	177
Total carrying amount 31 December 2017	**613**

The main items in other intangible assets are customer contracts, costs for software products and software licenses, bought emission rights and emission rights received free of charge, which are recognised to the lower of fair value and historical cost.

16.1 Impairment testing

The impairment testing of the allocated goodwill in 2017 is described below.

Key assumptions used in impairment testing are presented below as well as the basis for determining the value of each assumption. Assumptions are based on internal and external data that are consistent with observable market information, when applicable. The assumptions are determined by management as part of the long-term forecasting process for the Fortum Group.

Key assumptions	Basis for determining the value for key assumptions
Power market development, recycling and waste solutions market development	Historical analysis and prospective forecasting
Regulation framework	Current market setup and prospective forecasting (e.g. CSA mechanism in Russia)
Utilisation of power plants and treatment facilities	Past experience, technical assessment and forecasted market development
Forecasted maintenance investments	Past experience, technical assessment and planned maintenance work
Discount rate	Mostly market based information

The cash flows used in determining the value in use for each cash generating unit are based on the most recent long-term forecasts and are determined in local currency. The period covered by cash flows is related to the useful lives of the assets being reviewed for impairment. The growth rate used to extrapolate the cash flow projections until the end of assets' useful lives is in line with the assumed inflation. In Russia the generation capacity built after 2007 under the Russian Government's Capacity Supply Agreements receives guaranteed capacity payments for a period of 10 years.

The discount rate takes into account the risk profile of the country in which the cash flows are generated. There have not been any major changes in the discount rate components or in the methods used to determine them. The long-term pre-tax discount rate used were: City Solutions 7.4%, Consumer Solutions 7.7% and Russia 11.1%.

The net operating assets of the CGUs and group of CGUs with allocated goodwill are tested yearly for possible impairment. The tested net operating assets include both the goodwill and fair value adjustments arising from the acquisitions. As of 31 December 2017, the recoverable values were greater than their carrying values and therefore no impairments were booked.

The Group has considered the sensitivity of key assumptions as part of the impairment testing. When doing this any consequential effect of the change on the other variables has also been considered. The calculations are most sensitive to changes in estimated future EBITDA levels and changes in discount rate.

Management estimates that a reasonably possible change in the discount rate used or in future earnings would not cause the carrying amount to exceed its recoverable amount in any of the tested units.

Based on the sensitivity analysis done, if the estimated future EBITDA were 10% lower than management's estimates or pre-tax discount rate applied was 10% higher than the one used, the Group would not need to recognise impairment losses for tested items.

17 Property, plant and equipment

ACCOUNTING POLICIES

Property, plant and equipment comprise mainly power and heat producing buildings and machinery buildings, waterfall rights, district heating network and buildings and machinery as well as landfill sites and treatment areas used in waste treatment operations. Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses as applicable in the consolidated balance sheet. Historical cost includes expenditure that is directly attributable to the acquisition of an item and capitalized borrowing costs. Cost may also include transfers from equity of any gains or losses on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Acquired assets on the acquisition of a new subsidiary are stated at their fair values at the date of acquisition.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance expenses are charged to the income statement during the financial period in which they are incurred.

Additionally the cost of an item of property, plant and equipment includes the estimated cost of its dismantlement, removal or restoration.

See ▸Note 29 Other provisions for information about asset retirement obligations and ▸Note 28, Nuclear related assets and liabilities, for information about provisions for decommissioning nuclear power plants.

Land, water areas and waterfall rights are not depreciated since they have indefinite useful lives. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

Hydro power plant buildings, structures and machinery	40—50 years
Thermal power plant buildings, structures and machinery	25 years
Nuclear power plant buildings, structures and machinery	25 years
CHP power plant buildings, structures and machinery	15—25 years
Substation buildings, structures and machinery	30—40 years
Solar and Wind power plant structures and machinery	25 years
District heating network	30—40 years
Other buildings and structures	20—40 years
Other tangible assets	20—40 years
Other machinery and equipment	3—20 years
Other non-current investments	5—10 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each closing date. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. See further information on the impairment testing in ▸Note 16.

GOVERNMENT GRANTS

Grants from the government are recognised at their fair value when there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants relating to costs are deferred and recognised in the income statement over the period necessary to match them with the costs that they are intended to compensate. Government grants relating to the purchase of property, plant and equipment are deducted from the acquisition cost of the asset and are recognised as income by reducing the depreciation charge of the asset they relate to.

BORROWING COSTS

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.

All other borrowing costs are recognised in profit or loss in the period in which they are incurred.

JOINT OPERATIONS

Fortum owns, through its subsidiary Fortum Power and Heat Oy, the coal condensing power plant Meri-Pori in Finland. Teollisuuden Voima Oyj (TVO) has the contractual right to participate in the plant with 45.45%. The capacity and production is divided between Fortum and TVO. Each owner can decide when and how much capacity to use for production. Both Fortum and TVO purchase fuel and emission rights independently. Since Fortum and TVO are sharing control of the power plant, Meri-Pori is accounted for as a joint operation. Fortum is accounting for its part of the investment, i.e. 54.55%. Fortum is also entitled to part of the electricity TVO produces in Meri-Pori through its shareholding of 26.58% of TVO C-series shares.

For further information regarding Fortum's shareholding in TVO, see ▸Note 18 Participations in associated companies and joint ventures.

EUR million	Land and waterfall rights		Buildings, plants and structures		Machinery and equipment		Other tangible assets		Advances paid and construction in progress		Total	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Cost 1 January	**2,765**	**2,859**	**3,621**	**3,146**	**7,147**	**5,614**	**135**	**136**	**824**	**755**	**14,492**	**12,510**
Translation differences and other adjustments	-89	-104	-154	146	-237	325	-2	-2	-18	66	-500	430
Acquisition of subsidiary companies	15	3	161	211	900	954	0	0	32	9	1,109	1,178
Capital expenditure	2	1	15	38	139	24	0	0	516	526	672	588
Nuclear asset retirement cost	0	0	0	0	-6	-6	0	0	0	0	-6	-6
Disposals	-1	-1	-21	-17	-40	-41	-1	0	1	-4	-62	-63
Sale of subsidiary companies	0	0	-49	-46	-14	-92	0	0	-2	-2	-65	-140
Reclassifications	3	7	232	142	445	371	31	1	-726	-525	-15	-4
Cost 31 December	**2,694**	**2,765**	**3,805**	**3,621**	**8,335**	**7,147**	**163**	**135**	**627**	**824**	**15,623**	**14,492**
Accumulated depreciation 1 January	**0**	**0**	**1,550**	**1,367**	**2,898**	**2,319**	**114**	**113**	**0**	**0**	**4,562**	**3,799**
Translation differences and other adjustments	0	0	-38	21	-72	62	-2	-2	0	0	-112	82
Acquisition of subsidiary companies	0	0	52	97	244	333	0	0	0	0	297	430
Disposals	0	0	-17	-14	-36	-40	-1	-2	0	0	-54	-56
Sale of subsidiary companies	0	0	-9	-20	-3	-28	0	0	0	0	-12	-48
Depreciation for the period	0	0	112	102	317	246	4	7	1	0	434	355
Reclassifications	0	0	-21	-3	1	5	18	-2	0	0	-2	0
Accumulated depreciation 31 December	**0**	**0**	**1,629**	**1,550**	**3,349**	**2,898**	**133**	**114**	**1**	**0**	**5,113**	**4,562**
BS Carrying amount 31 December	**2,694**	**2,764**	**2,175**	**2,071**	**4,986**	**4,249**	**29**	**21**	**626**	**824**	**10,510**	**9,930**

The increase of property, plant and equipment arises mainly from the acquisition of Fortum Oslo Varme Group in City Solutions segment in August 2017. The increase was offset by the translation differences in SEK and RUB.

See ▸ **Note 38** Acquisitions and disposals for additional information on the acquisition of Hafslund Markets Group and Fortum Oslo Varme Group.

Property, plant and equipment that are subject to restrictions in the form of real estate mortgages amount to EUR 318 million (2016: 236). See ▸ **Note 35** Pledged assets and contingent liabilities.

17.1 Capitalised borrowing costs

EUR million	Buildings, plants and structures		Machinery and equipment		Advances paid and construction in progress		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
1 January	**55**	**43**	**162**	**132**	**41**	**41**	**258**	**217**
Translation differences and other adjustments	-3	9	-11	28	-1	6	-16	43
Increases / disposals	0	0	10	6	6	10	16	16
Sale of subsidiary companies	0	-1	0	-6	0	0	0	-7
Reclassification	10	5	22	9	-34	-16	-3	-2
Depreciation	-2	-2	-8	-7	0	0	-10	-9
31 December	**59**	**55**	**175**	**162**	**12**	**41**	**245**	**258**

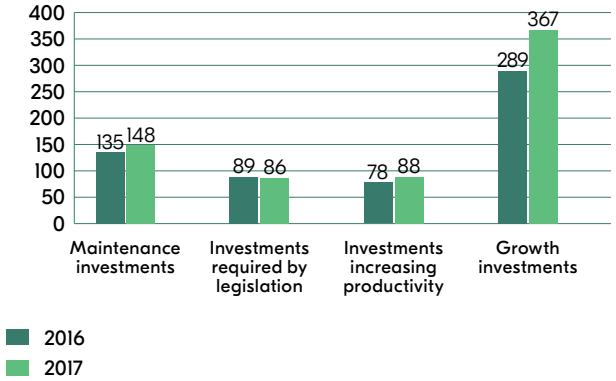
Borrowing costs of EUR 16 million were capitalised in 2017 (2016: 16). The interest rate used for capitalisation varied between 2%–12% (2016: 2%–13%).

17.2 Capital expenditure [1)]

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
EUR million	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Generation														
Hydropower	24	29	62	74									87	103
Nuclear power	84	90											84	90
Fossil-based electricity		1											0	1
Other renewable-based electricity				1									0	1
Other	3	2											3	2
Total Generation	**111**	**122**	**62**	**75**									**174**	**196**
City Solutions														
Fossil-based heat	2	7					3	14			0	0	6	21
Fossil-based electricity							0	1			0		0	1
Renewable, of which	23	17	1	2			72	29	13		4	2	112	50
waste	17	9	1	2			72	29	13		3	1	106	42
biofuels	6	8									0	0	7	8
other	0	0											0	0
District heat network	11	9					13	12			8	6	32	27
Other	4	5	10				1	0			3	4	19	9
Total City Solutions	**41**	**38**	**11**	**2**	**0**	**0**	**90**	**56**	**13**	**0**	**15**	**12**	**170**	**109**
Consumer Solutions														
Other	2		2	0			1	2	2	0			7	3
Total Consumer Solutions	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**2**	**2**	**0**	**0**	**0**	**7**	**3**
Russia														
Fossil-based electricity					81	168							81	168
Fossil-based heat					18	17							18	17
Renewable-based electricity, wind					53	15							53	15
Total Russia					**152**	**201**							**152**	**201**
Other														
Renewable-based electricity, wind			22	11					24				45	11
Renewable-based electricity, solar											99	43	99	43
Other	25	13	7	3					7	11	3	1	42	29
Total Other	**25**	**13**	**28**	**14**					**31**	**11**	**102**	**44**	**187**	**83**
Total	**179**	**173**	**104**	**91**	**152**	**201**	**92**	**59**	**46**	**11**	**115**	**56**	**690**	**591**
Of which investments in CO_2 free production	**115**	**127**	**84**	**85**	**53**	**15**	**0**	**0**	**24**	**0**	**99**	**43**	**375**	**270**

1) Includes capital expenditure to both intangible assets and property, plant and equipment.

Fortum classifies investments in four main categories, EUR million



17.2.1 Generation

In Finland, Fortum invested EUR 84 million (2016: 90) into the Loviisa nuclear power plant. Fortum invested additionally EUR 88 million (2016: 103) into hydro production, mainly maintenance, legislation and productivity investments. The biggest of these were Långströmmen dam safety EUR 9 million in Sweden and Imatra dam safety EUR 9 million in Finland. Investments in CO_2 free production were EUR 171 million (2016: 193).

17.2.2 City Solutions

Growth investments in City Solutions totalled EUR 107 million (2016: 66) in year 2017. Maintenance, legislation and productivity investments totalled EUR 62 million (2016: 42). This amount consists mainly of investments in district heat networks and plants as well as the maintenance of existing CHP plants and measures defined by legal requirements. The largest investment project in 2017 was the new CHP plant in Zabrze, Poland. Investments in CO_2 free production were EUR 7 million (2016: 8).

17.2.3 Consumer solutions

Investments in Consumer solutions totalled EUR 7 million (2016: 3). The amount consists mainly of new product development costs.

17.2.4 Russia

Growth investments in Russia totalled EUR 96 million (2016: 152). The largest growth investments were into the wind power farm in Ulyanovsk and Chelyabinsk GRES 3. Additionally, EUR 56 million (2016: 49) was invested in maintenance, legislation and productivity projects. Investments in CO_2 free production were EUR 53 million (2016:15).

17.2.5 Other

Other Division's investments contain solar investments in India EUR 99 million (2016: 43) and investments in wind power production EUR 45 million (2016:11). Wind investments contain Solberg wind park in Sweden, as well as Anstadblåheia and Sorfjord wind parks in Norway. Other Division invested also in Charge and Drive EUR 13 million (2016: 12), mainly charging poles in Norway. Investments in CO_2 free production were EUR 144 million (2016:54).

18 Participations in associated companies and joint ventures

ACCOUNTING POLICIES

The Group's interests in associated companies and jointly controlled entities are accounted for using the equity method of accounting. Assets acquired and liabilities assumed in the investment in associates or joint ventures are measured initially at their fair values at the acquisition date. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill. If the cost of acquisition is less than the fair value of the net assets of the associate or joint venture acquired, the difference is recognised directly in the income statement.

The Group's share of its associates or joint ventures post-acquisition profits or losses after tax and the expenses related to the adjustments to the fair values of the assets and liabilities assumed are recognised in the income statement. The cumulative post-acquisition movements are adjusted against the carrying amount of the investment. The Group's share of post-acquisition adjustments to associates or joint ventures equity that has not been recognised in the associates or joint ventures income statement, is recognised directly in Group's shareholder's equity and against the carrying amount of the investment.

When the Group's share of losses in an associate or a joint venture equals or exceeds its interest in the associate or joint venture, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associate or joint venture.

Unrealised gains on transactions between the Group and its associates or joint ventures are eliminated to the extent of the Group's interest in the associate or joint venture. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates or joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

If more recent information is not available, the share of the profit of certain associated or joint venture companies is included in the consolidated accounts based on the latest available information.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Management is required to make significant judgements when assessing the nature of Fortum's interest in its investees and when considering the classification of Fortum's joint arrangements. In the classification, emphasis has been put on decision-making, legal structure and financing of the arrangements.

Management judgement is required when testing the carrying amounts for participations in associated companies and joint ventures for impairment. See ▸Note 16 Property, plant and equipment for more information.

18.1 Principal associated companies and joint ventures

	OKG AB	Forsmarks Kraftgrupp AB	Kemijoki Oy	TGC-1	TVO	Fortum Värme
Nature of the relationship	Power production company	Power production company	Power production company	Holding in energy company (listed)	Power production company	Holding in power and heat company
Classification	Associated company	Associated company	Associated company	Associated company	Joint venture	Joint venture
Segment	Generation	Generation	Generation	Russia	Generation	City Solutions
Domicile	Sweden	Sweden	Finland	Russia	Finland	Sweden
Ownership interest, % [1)]	46	26	59	29	26	50
Votes, %	46	26	28	29	26	50

1) Kemijoki and TVO have different series of shares. The ownership interest varies due to the changes in equity assigned to the different share series. The ownership interests for 2016 for Kemijoki Oy and TVO were 60% and 26% respectively.

Shareholdings in power production companies

Power plants are often built jointly with other power producers. Under the consortium agreements, each owner is entitled to electricity in proportion to its share of ownership or other agreements and each owner is liable for an equivalent portion of costs. The production companies are not profit making, since the owners purchase electricity at production cost including interest cost and production taxes. The share of profit of these companies is mainly IFRS adjustments (e.g. accounting for nuclear related assets and liabilities) and depreciations on fair value adjustments from historical acquisitions since the companies are not profit making under local accounting principles.

Fortum has material shareholdings in such power production companies (mainly nuclear and hydro) that are consolidated using equity method either as associated companies (OKG AB, Forsmarks Kraftgrupp AB and Kemijoki Oy) or in some cases as joint ventures (Teollisuuden Voima Oyj (TVO)).

In Sweden nuclear production company shareholdings are 45.5% ownership of the shares in OKG AB and 25.5% ownership of the shares in Forsmarks Kraftgrupp AB. Excluding non-controlling interests in the subsidiaries, Fortum's participation in the companies are 43.4% and 22.2% respectively, which reflects the share of electricity produced that Fortum can sell further to the market. The minority part of the electricity purchased is invoiced further to each minority owner according to their respective shareholding and treated as pass-through. OKG AB and Forsmarks Kraftgrupp AB are accounted for as associated companies as Fortum has a representation on the Board of Directors and it participates in policy-making processes of the companies.

In Finland Fortum has an ownership in power production company TVO that has three series of shares which entitle the shareholders to electricity produced in the different power plants owned by TVO.

Shares in series A entitle to electricity produced in nuclear power plants Olkiluoto 1 and 2 and Fortum owns 26.6% of these shares. Series B entitles to electricity in the nuclear power plant presently being built, Olkiluoto 3, and Fortum's ownership in this share series is 25%. Series C entitles to electricity produced in TVO's share of the coal condensing power plant Meri-Pori, and Fortum's ownership in this share series is 26.6%. The Meri-Pori power plant is accounted for as a joint operation in Fortum.

See also Associated companies in ▸Note 36 Legal actions and official proceedings and Joint operations in the accounting principles in ▸Note 17 Property, plant and equipment.

The most significant hydro production company shareholding is 63.8% of the hydro shares and 28.27% of the monetary shares in Kemijoki Oy. Each owner of hydro shares is entitled to the hydropower production in proportion to its hydro shareholding. Since Fortum has a representation on the Board of Directors and it participates in the policy-making processes, Kemijoki Oy is accounted for as an associated company.

Other shareholdings accounted for using the equity method

In Sweden Fortum has a 50% ownership in AB Fortum Värme Holding samägt med Stockholms stad (Fortum Värme) that is co-owned with the City of Stockholm through Stockholms Stadshus AB. Fortum Värme produces district heating, district cooling and electricity and supplies heat and cooling to customers in the Stockholm area.

Fortum owns shareholdings in listed companies such as Territorial Generating Company 1 (TGC-1). The shareholding in TGC-1 is accounted for as an associated company as Fortum has representatives in the Board of Directors of the company. The share of profit of TGC-1 is accounted for based on previous quarter information since updated interim information is not normally available.

In August 2017 Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo in connection with the restructuring of the ownership in Hafslund. Hafslund ASA was accounted for as an associated company and the share of profits is accounted for according to the latest quarter information available.

Summarised financial information of the principal associated companies

Impact of different accounting principles presented in the tables below on the line Fair values on acquisitions and different accounting principles include mainly IFRS adjustments for Nuclear liabilities and assets and capitalised borrowing costs in Swedish associates. Fortum records its share of nuclear related assets and liabilities in its nuclear associated companies according to equity method. The basis for recognition is similar as for Loviisa power plant, see accounting principles in ▸Note 28 Nuclear related assets and liabilities.

2017

EUR million	OKG AB	Forsmarks Kraftgrupp AB	Kemijoki Oy	Hafslund ASA [2]	TGC-1
Balance sheet	31 Dec 2016	31 Dec 2016	31 Dec 2016	30 Jun 2017	30 Sept 2017
Non-current assets	628	2,367	465	2,329	1,938
Current assets	428	466	12	325	312
Non-current liabilities	961	2,599	264	1,091	420
Current liabilities	82	198	144	585	168
Equity	13	36	69	978	1,663
Attributable to NCI	0	0	0	0	123
Attributable to the owners of the parent	13	36	69	978	1,540
Statement of comprehensive income	1 Jan 2016–31 Dec 2016	1 Jan 2016–31 Dec 2016	1 Jan 2016–31 Dec 2016	1 Oct 2016–30 June 2017	1 Oct 2016–30 Sept 2017
Revenue	430	756	55	1,240	1,289
Profit or loss from continuing operations	1	0	-10	118	81
Other comprehensive income	0	0	0	-12	1
Total comprehensive income	1	0	-10	105	82
Attributable to NCI	0	0	0	0	-1
Attributable to the owners of the parent	1	0	-10	105	83
Reconciliation to carrying amount in the Fortum group					
Group's interest in the equity of the associate at 1 January 2017	6	10	48	349	471
Change in share of profit and from OCI items	0	0	-6	36	32
Dividends received	0	0	0	-23	-5
Divestments	0	0	0	-363	0
Translation differences and other adjustments	0	-1	0	1	-44
Group's interest in the equity of the associate at 31 December 2017	**6**	**9**	**41**	**0**	**454**
Fair values on acquisitions and different accounting principles	16	92	157	0	-25
Carrying amount at 31 December 2017	**22**	**101**	**197**	**0**	**429**
Market value for listed shares [1]					196

1) The market quotation for the TGC-1 share is affected by the low liquidity of the TGC-1 shares in the Russian stock exchanges. During 2017 trading volumes of TGC-1 shares in relation to the number of shares of the company were approximately 10% (2016: 12%).

2) Divested in August 2017, see also ▸Note 38 Acquisition and disposals.

2016

EUR million	OKG AB	Forsmarks Kraftgrupp AB	Kemijoki Oy	Hafslund ASA	TGC-1
Balance sheet	31 Dec 2015	31 Dec 2015	31 Dec 2015	30 Sept 2016	30 Sept 2016
Non-current assets	645	2,361	465	2,442	2,113
Current assets	448	440	9	303	332
Non-current liabilities	611	2,578	306	1,254	382
Current liabilities	469	186	88	468	332
Equity	13	37	80	1,023	1,732
Attributable to NCI	0	0	0	0	134
Attributable to the owners of the parent	13	37	80	1,022	1,598
Statement of comprehensive income	1 Jan 2015–31 Dec 2015	1 Jan 2015–31 Dec 2015	1 Jan 2015–31 Dec 2015	1 Oct 2015–30 Sept 2016	1 Oct 2015–30 Sept 2016
Revenue	1,987	695	60	1,393	1,032
Profit or loss from continuing operations	1	1	-3	154	116
Other comprehensive income	0	0	0	13	-2
Total comprehensive income	1	1	-3	167	114
Attributable to NCI	0	0	0	0	-3
Attributable to the owners of the parent	1	1	-3	167	117
Reconciliation to carrying amount in the Fortum group					
Group's interest in the equity of the associate at 1 January 2016	6	10	46	297	347
Change in share of profit and from OCI items	0	0	-1	56	33
Dividends received	0	0	0	-21	-4
Translation differences and other adjustments	0	0	3	16	95
Group's interest in the equity of the associate at 31 December 2016	**6**	**10**	**48**	**349**	**471**
Fair values on acquisitions and different accounting principles	8	90	158	8	-34
Carrying amount at 31 December 2016	**14**	**100**	**206**	**356**	**436**
Market value for listed shares				693	265

Summarised financial information of the principal joint ventures in 2017 and 2016

	2017		2016	
EUR million	TVO	Fortum Värme	TVO	Fortum Värme
Balance sheet	30 Sept 2017	31 Dec 2017	30 Sept 2016	31 Dec 2016
Non-current assets	6,900	2,642	7,098	2,692
Current assets	606	266	413	271
of which cash and cash equivalents	192	15	129	13
Non-current liabilities	5,159	1,461	5,280	1,488
of which non-current interest-bearing liabilities	4,186	1,071	4,318	1,105
Current liabilities	673	230	659	298
of which current financial liabilities	484	112	466	164
Equity [1]	1,674	1,216	1,573	1,176
Attributable to NCI	0	0	0	0
Attributable to the shareholders of the company	1,674	1,216	1,573	1,176
Statement of comprehensive income	1 Oct 2016–30 Sept 2017	1 Jan 2017–31 Dec 2017	1 Oct 2015–30 Sept 2016	1 Jan 2016–31 Dec 2016
Revenue	343	689	322	699
Depreciation and amortisation	-56	-139	-54	-125
Interest income	14	0	17	0
Interest expense	-46	-17	-44	-13
Income tax expense or income	0	-35	0	-33
Profit or loss from continuing operations	-4	125	-23	124
Other comprehensive income	9	-7	-27	4
Total comprehensive income	5	118	-51	128
Attributable to NCI	0	0	0	0
Attributable to the shareholders of the company	5	117	-51	128
Reconciliation to carrying amount in the Fortum group				
Group's interest in the equity of the joint venture at 1 January	279	588	294	567
Change in share of profit and from OCI items	0	59	-14	64
Dividends received	0	-21	0	-21
Translation differences and other adjustments	0	-18	0	-21
Group's interest in the equity of the joint venture at 31 December	**280**	**608**	**279**	**588**
Fair values on acquisitions and different accounting principles [2]	-11	-75	-6	-81
Carrying amount at 31 December	**269**	**533**	**274**	**507**

1) The equity of TVO includes subordinated loans of EUR 579 million (2016: 479). Fortum has given part of these loans, pro rata to the ownership.

2) Impact of different accounting principles include mainly IFRS adjustments for Nuclear liabilities and assets and capitalised borrowing costs. Fortum records its share of nuclear related assets and liabilities in its nuclear associated companies according to equity method. The basis for recognition is similar as for Loviisa power plant, see accounting principles in ▸ Note 28 Nuclear related assets and liabilities.

18.2 Participations and shares of profits in associated companies and joint ventures

Participations in associated companies and joint ventures in the balance sheet

EUR million	2017	2016
Principal associates	749	1,111
Principal joint ventures	802	781
Other associates	121	42
Other joint ventures	229	178
BS Carrying amount 31 December	**1,900**	**2,112**

Changes in participation during the year

EUR million	Joint ventures 2017	Associated companies 2017	Joint ventures 2016	Associated companies 2016
Historical cost				
1 January	636	864	558	800
Translation differences and other adjustments	-8	-30	-8	64
Acquisitions	52	83	17	0
Reclassifications	-81	-1	83	-1
Divestments	0	-236	-14	0
Historical cost 31 December	**598**	**680**	**636**	**864**
Equity adjustments				
1 January	324	289	388	213
Translation differences and other adjustments	-13	-18	-16	41
Share of profits of associates and joint ventures	75	73	69	62
Reclassifications	81	1	-83	1
Divestments	0	-128	-8	0
Dividends received	-29	-29	-28	-26
OCI items associated companies and joint ventures	-5	2	1	-2
Equity adjustments 31 December	**432**	**190**	**324**	**289**
Carrying amount at 31 December	**1,031**	**870**	**959**	**1,153**

For information about investments and divestments of shares in associated companies, see ▸ **Note 38** Acquisitions and disposals.

Share of profit of associates and joint ventures

EUR million	2017	2016
Principal associates		
OKG AB	8	-30
Forsmarks Kraftgrupp AB	2	6
Kemijoki Oy	-9	-3
Hafslund ASA (divested in August 2017)	39	51
TGC-1	32	38
Principal associates, total	**73**	**62**
Principal joint ventures		
Fortum Värme	66	66
TVO	-4	-7
Principal joint ventures, total	**63**	**59**
Other associates	0	0
Other joint ventures	12	10
IS Total	**148**	**131**

The unrecognized share of losses of associated companies and joint ventures (for the reporting period and cumulatively) is zero.

Share of profits from Teollisuuden Voima Oyj, Forsmarks Kraftgrupp AB and OKG AB includes EUR 13 million (2016: -30) arising from accounting of nuclear related assets and liabilities.

18.3 Transactions and balances

Associated company transactions

EUR million	2017	2016
Sales to associated companies	1	1
Interest on associated company loan receivables	12	14
Purchases from associated companies	319	385

Purchases from joint ventures include mainly purchases of nuclear and hydro power at production cost including interest costs and production taxes.

Associated company balances

EUR million	2017	2016
Receivables from associated companies		
Long-term interest-bearing loan receivables	656	704
Trade receivables	1	1
Other receivables	1	0
Liabilities to associated companies		
Long-term loan payables	2	5
Trade payables	0	1

For more info about receivables from associated companies, see ▸ **Note 20** Interest-bearing receivables.

Joint venture transactions

EUR million	2017	2016
Sales to joint ventures	109	104
Interest income on joint venture loan receivables	1	2
Purchases from joint ventures	153	151

Purchases from joint ventures include mainly purchases of nuclear and hydro power at production cost including interest costs and production taxes.

Joint venture balances

EUR million	2017	2016
Receivables from joint ventures		
Long-term interest-bearing loan receivables	208	182
Finance lease receivable from joint ventures	41	-
Trade receivables	23	19
Other receivables	17	16
Liabilities to joint ventures		
Long-term loan payables	285	273
Trade payables	19	6
Other payables	7	6

For more info about receivables from joint ventures, see ▸ **Note 20** Interest-bearing receivables.

19 Other non-current assets

EUR million	2017	2016
Available-for-sale financial assets	65	58
Other	74	55
BS Total	140	113

Available-for-sale financial assets, i.e. shares which are not classified as associated companies or joint ventures, consist mainly of shares in unlisted companies of EUR 65 million (2016: 58), for which the fair value can not be reliably determined. These assets are measured at cost less possible impairment.

Fortum decided in 2015 to participate in the Fennovoima nuclear power project in Finland with a 6.6% share. The participation is carried out through Voimaosakeyhtiö SF and the book value of the shares is EUR 25 million (2016: 18). The indirect investment in Fennovoima is classified as Available-for-sale financial assets, measured at cost, since fair value cannot be reliably determined.

20 Interest-bearing receivables

EUR million	Carrying amount 2017	Fair value 2017	Carrying amount 2016	Fair value 2016
Long-term loan receivables from associated companies	656	689	704	744
Long-term loan receivables from joint ventures	208	229	182	206
Finance lease receivables from joint ventures	41	41	-	-
Other long-term interest-bearing receivables	106	111	99	99
BS Total long-term interest-bearing receivables	**1,010**	**1,071**	**985**	**1,049**
Other short-term interest-bearing receivables	395	395	395	395
Total short-term interest-bearing receivables	**395**	**395**	**395**	**395**
Total	**1,406**	**1,466**	**1,380**	**1,444**

Long-term loan receivables include receivables from associated companies and joint ventures EUR 864 million (Dec 31 2016: 886). These receivables include EUR 638 million (Dec 31 2016: 686) from Swedish nuclear companies, OKG AB and Forsmarks Kraftgrupp AB, which are mainly funded with shareholder loans, pro rata each shareholder's ownership.

Teollisuuden Voima Oyj (TVO) is building Olkiluoto 3, the nuclear power plant, which is funded through external loans, share issues and shareholder loans according to shareholders' agreement between the owners of TVO. At end of December 2017 Fortum has EUR 145 million (2016: 120) outstanding receivables regarding Olkiluoto 3 and is additionally committed to provide at maximum EUR 88 million, of which 38 million is the Fortum share of a new shareholder loan commitment totalling EUR 150 million signed by all TVO shareholders in December 2017.

Finance leases relate to heat pipelines in Tyumen area, which are leased to newly established joint venture YUSTEK.

Interest-bearing receivables includes also EUR 102 million (2016: 131) from SIBUR, a Russian gas processing and petrochemicals company regarding divested shares of OOO Tobolsk CHP.

Short-term interest-bearing receivables include EUR 363 million (2016: 360) restricted cash mainly given as collateral for commodity exchanges. The new European Market Infrastructure Regulation (EMIR) came into force in 2016 requiring fully-backed guarantees.

For further information regarding credit risk management, see ▸ Note 3.7 Credit risk.

Interest-bearing receivables

EUR million	Effective interest rate, %	Carrying amount 2017	Repricing: Under 1 year	Repricing: 1–5 years	Repricing: Over 5 years	Fair value 2017	Carrying amount 2016	Fair value 2016
Long-term loan receivables	2.8	1,010	835	59	116	1,071	985	1,049
Short-term receivables	0.5	395	395	-	-	395	395	395
Total interest bearing receivables	**2.1**	**1,406**	**1,231**	**59**	**116**	**1,466**	**1,380**	**1,444**

21 Inventories

ACCOUNTING POLICIES

Inventories mainly consist of fuels consumed in the production process or in the rendering of services. Inventories are stated at the lower of cost and net realisable value being the estimated selling price for the end product, less applicable variable selling expenses and other production costs. Cost is determined using the first-in, first-out (FIFO) method.

Inventories which are acquired primarily for the purpose of trading are stated at fair value less selling expenses.

EUR million	2017	2016
Nuclear fuel	83	91
Coal	45	51
Oil	7	7
Biofuels	3	3
Materials and spare parts	54	67
Other inventories	25	12
BS Total	**216**	**233**

Write downs in inventories amounted to EUR 0 million (2016: 1).

22 Trade and other receivables

ACCOUNTING POLICIES

Trade receivables include revenue based on an estimate of electricity, heat and cooling already delivered but not yet measured and not yet invoiced.

EUR million	2017	2016
Trade receivables	743	562
Accrued interest income	1	1
Accrued income and prepaid expenses	29	31
Other receivables	224	249
BS Total	**997**	**844**

The management considers that the carrying amount of trade and other receivables approximates their fair value.

22.1 Trade receivables

Ageing analysis of trade receivables

	2017		2016	
EUR million	Gross	Impaired	Gross	Impaired
Not past due	632	2	471	2
Past due 1–90 days	90	4	85	5
Past due 91–180 days	19	3	15	5
Past due more than 181 days	68	57	85	80
Total	**809**	**66**	**655**	**93**

Impairment losses recognised in the income statement were EUR 9 million (2016: 28), of which EUR 8 million (2016: 24) are impairment losses recognised in the PAO Fortum Group. Impairment losses were offset by recovery of previously impaired trade receivables EUR 25 million (2016: 3), of which EUR 24 million (2016: 3) are recognised in the PAO Fortum Group. On 31 December 2017, trade receivables of EUR 66 million (2016: 93) are impaired and provided for, of which EUR 50 million (2016: 79) refers to the PAO Fortum Group.

Trade receivables by currency (Gross)

EUR million	2017	2016
EUR	206	251
SEK	137	97
RUB	207	215
NOK	177	11
PLN	69	71
Other	13	10
Total	**809**	**655**

Trade receivables are arising from a large number of customers mainly in EUR, SEK, RUB and NOK mitigating the concentration of risk.

For further information regarding credit risk management and credit risks, see ▸ **Counterparty risks** in the Operating and financial review and ▸ **Note 3.7** Credit risk.

23 Liquid funds

ACCOUNTING POLICIES

Cash and cash equivalents in Liquid funds include cash in hand, deposits held at call with banks and other short-term, highly liquid investments with maturities of three months or less. Deposits and securities with maturity more than 3 months include fixed term deposits and commercial papers with maturity more than three months but less than twelve months. Deposits and securities are classified as available-for-sale financial assets.

Bank overdrafts are shown within borrowings in current liabilities in the balance sheet. Cash collaterals or otherwise restricted cash are treated as short-term interest-bearing receivables.

EUR million	2017	2016
Cash at bank and in hand	1,928	1,444
Deposits and securities with maturity under 3 months	1,253	235
Cash and cash equivalents	**3,182**	**1,679**
Deposits and securities with maturity more than 3 months	715	3,475
BS Total	**3,897**	**5,155**

Liquid funds consists of deposits and cash in bank accounts amounting to EUR 3,540 million and commercial papers EUR 357 million. The average interest rate on deposits and securities excl. Russian deposits on 31 December 2017 was -0.27% (2016: -0.01%). Liquid funds held by PAO Fortum amounted to EUR 246 million (2016: 105), of which EUR 231 million (2016: 103) was held as bank deposits. The average interest rate for this portfolio was 6.1% at the balance sheet date.

Liquid funds totalling EUR 3,348 million (2016: 4,663) are placed with counterparties that have an investment grade rating. In addition, EUR 549 million (2016: 377) have been placed with counterparties separately reviewed and approved by the Group's credit control department.

The committed and undrawn credit facilities amounted to EUR 1,800 million (2016: 1,963), excluding committed credit facilities for Fortum's offer for Uniper shares. In relation to offer for Uniper shares Fortum has commitments from 10 relationship banks to provide credit facilities at the request of Fortum in an aggregate amount of up to EUR 12,000 million.

For further information regarding credit risk management and credit risks, see ▸ Note 3.7 Credit risk.

24 Share capital

EUR million	2017 Number of shares	2017 Share capital	2016 Number of shares	2016 Share capital
Registered shares at 1 January	888,367,045	3,046	888,367,045	3,046
Registered shares at 31 December	888,367,045	3,046	888,367,045	3,046

Fortum Corporation has one class of shares. By the end of 2017, a total of 888,367,045 shares had been issued. Each share entitles the holder to one vote at the Annual General Meeting. All shares entitle holders to an equal dividend. At the end of 2017 Fortum Corporation's share capital, paid in its entirety and entered in the trade register, was EUR 3,046,185,953.00.

Fortum Corporation's shares are listed on Nasdaq Helsinki. The trading code is FORTUM (FUM1V before 25 January 2017). Fortum Corporation's shares are in the Finnish book entry system maintained by Euroclear Finland Ltd.

Details on the President and CEO and other members of the Fortum Executive Management Team's shareholdings and interest in the equity incentive schemes is presented in ▸ Note 10 Employee benefits.

24.1 Authorisations from the Annual General Meeting 2017

On 4 April 2017, the Annual General Meeting decided to authorise the Board of Directors to decide on the repurchase and disposal of the company's own shares up to a maximum number of 20,000,000 shares, which corresponds to approximately 2.25% of all the shares in the company. The authorisation is effective for a period of 18 months from the resolution of the General Meeting. The authorisation had not been used by the end of 2017.

24.2 Convertible bond loans and bonds with warrants

Fortum Corporation has not issued any convertible bonds or bonds with attached warrants, which would entitle the bearer to subscribe for Fortum shares. The Board of Directors of Fortum Corporation has no unused authorisations from the General Meeting of shareholders to issue convertible bond loans or bonds with warrants or increase the company's share capital.

25 Non-controlling interests

Principal non-controlling interests

EUR million		2017	2016
PAO Fortum Group	Russia	37	37
AS Fortum Tartu Group	Estonia	34	30
Fortum Oslo Varme AS Group	Norway	150	-
Other		18	17
BS Total		**239**	**84**

Non-controlling interests have increased with EUR 155 million during 2017 mainly due to the acquisition of Fortum Oslo Varme AS which is consolidated as a subsidiary with 50% non-controlling interest. See also ▸Note 38 Acquisitions and disposals.

26 Interest-bearing liabilities

ACCOUNTING POLICIES

Borrowings are recognised initially at fair value less transaction costs incurred. In subsequent periods, they are stated at amortised cost; any difference between proceeds (net of transaction costs) and the redemption value is recognised as interest cost over the period of the borrowing using the effective interest method. Borrowings or portion of borrowings being hedged with a fair value hedge are recognised at fair value.

Net debt

EUR million	2017	2016
Interest-bearing liabilities	4,885	5,107
Liquid funds	3,897	5,155
Net debt	**988**	**-48**

Net debt is calculated as interest-bearing liabilities less liquid funds without deducting interest-bearing receivables amounting to EUR 1,406 million (Dec 31 2016: 1,380). Interest-bearing receivables mainly consist of shareholder loans to partly owned nuclear companies regarded long-term financing. For more information see ▸Note 20 Interest-bearing receivables.

Interest-bearing debt

EUR million	2017	2016
Bonds	2,521	2,986
Loans from financial institutions	155	247
Reborrowing from the Finnish State Nuclear Waste Management Fund	1,129	1,094
Other long-term interest-bearing debt	314	140
BS Total long-term interest-bearing debt	**4,119**	**4,468**
Current portion of long-term bonds	422	343
Current portion of loans from financial institutions	129	145
Current portion of other long-term interest-bearing debt	10	11
Other short-term interest-bearing debt	206	140
BS Total short-term interest bearing debt	**766**	**639**
Total interest-bearing debt	**4,885**	**5,107**

Interest-bearing debt

EUR million	Effective interest rate, %	Carrying amount 2017	Repricing			Fair value 2017	Carrying amount 2016	Fair value 2016
			Under 1 year	1–5 years	Over 5 years			
Bonds	3.3	2,943	523	2,323	97	3,143	3,329	3,609
Loans from financial institutions	4.8	283	283	-	-	303	393	425
Reborrowing from the Finnish State Nuclear Waste Management Fund	0.5	1,129	-	-	1,129	1,192	1,094	1,156
Other long-term interest-bearing debt [1]	3.4	324	223	-	102	373	151	157
Total long-term interest-bearing debt [2]	**2.7**	**4,679**	**1,029**	**2,323**	**1,327**	**5,011**	**4,967**	**5,348**
Other short-term interest-bearing debt	1.2	206	206	-	-	207	140	140
Total short-term interest-bearing debt	**1.2**	**206**	**206**	**-**	**-**	**207**	**140**	**140**
Total interest-bearing debt [3]	**2.6**	**4,885**	**1,235**	**2,323**	**1,327**	**5,218**	**5,107**	**5,488**

1) Includes loans from Finnish pension institutions EUR 48 million (2016: 58) and other loans EUR 276 million (2016: 93).

2) Including current portion of long-term debt.

3) The average interest rate on loans and derivatives on 31 December 2017 was 3.6% (2016: 3.5%).

Reconciliation of interest-bearing liabilities

EUR million	31 Dec 2016	Cash flow from financing activities [1]	Non-cash changes			31 Dec 2017
			Acquisitions	Exchange rate differences	Fair value changes and amortised cost	
Bonds	3,329	-343		-16	-27	2,943
Loans from financial institutions	393	-144	42	-8		283
Reborrowing from the Finnish State Nuclear Waste Management Fund	1,094	35				1,129
Other interest-bearing debt	291	13	233	-8		530
Total interest-bearing debt	**5,107**	**-439**	**275**	**-31**	**-27**	**4,885**

1) Repayments and borrowings.

The interest-bearing debt decreased in 2017 by EUR 222 million to EUR 4,885 million (2016: 5,107). The amount of short-term financing increased with EUR 66 million, and at the end of the year the amount of short-term financing EUR 206 million (2016: 140) included 113 million (2016: 135) from Credit Support Annex agreements.

During the first quarter of 2017 Fortum increased the amount of reborrowing from the Finnish State Nuclear Waste Management Fund and TVO by EUR 35 million to EUR 1,129 million. In March Fortum repaid two SEK bonds equivalent to EUR 290 million (SEK 2,750 million). During the second quarter Fortum repaid a NOK bond equivalent to EUR 53 million (NOK 500 million) and a bilateral SEK loan to NIB equivalent to EUR 78 million (SEK 750 million). A shareholder loan was given by the City of Oslo to Fortum Oslo Varme AS as a part of the whole Hafslund restructuring amounting to EUR 213 million (NOK 2,000 million). Fortum Oslo Varme is financed on pro rata basis.

The average interest rate for the portfolio consisting mainly of EUR and SEK loans was 2.4% at the balance sheet date (2016: 2.1%). Part of the external loans EUR 773 million (2016: 805) have been swapped to RUB and the average interest cost for these loans including cost for hedging the RUB was 9.5% at the balance sheet date (2016: 11.4%). The average interest rate on total loans and derivatives at the balance sheet date was 3.6% (2016: 3.5%).

For more information please see ▸ **Note 3** Financial risk management and ▸ **Note 35** Pledged assets and contingent liabilities.

26.1 Bond issues

Issued/Maturity	Interest basis	Interest rate, %	Effective interest, %	Currency	Nominal value, million	Carrying amount, EUR million
Fortum Corporation EUR 8,000 million EMTN Programme [1]						
2009/2019	Fixed	6.000	6.095	EUR	750	749
2011/2021	Fixed	4.000	4.123	EUR	500	517
2012/2022	Fixed	2.250	2.344	EUR	1,000	1,057
2013/2018	Fixed	2.750	2.855	SEK	1,150	117
2013/2018	Floating	Stibor 3M+1.0		SEK	3,000	305
2013/2023	Floating	Stibor 3M+1.13		SEK	1,000	102
2013/2043	Fixed	3.500	3.719	EUR	100	97
Total outstanding carrying amount 31 December 2017						**2,943**

1) EMTN = Euro Medium Term Note

27 Income taxes in balance sheet

ACCOUNTING POLICIES

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated income statement, because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax is provided in full, using the liability method on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, if the deferred tax arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss, it is not accounted for. Deferred tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the closing date and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised. Deferred tax assets are set off against deferred tax liabilities if they relate to income taxes levied by the same taxation authority.

Deferred tax is provided on temporary differences arising from investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference is controlled by the Group, and it is probable that the temporary difference will not be reversed in the foreseeable future.

The Group recognises liabilities for anticipated tax dispute issues based on estimates of whether additional taxes will be due. No provision will be recognised in the financial statements if Fortum considers the claims unjustifiable. Therefore, if taxes regarding ongoing tax disputes have to be paid before final court decisions, they will be booked as a receivable. Where the final outcome of these matters is different from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS:

ASSUMPTIONS AND ESTIMATES REGARDING FUTURE TAX CONSEQUENCES

Fortum has deferred tax assets and liabilities which are expected to be realised through the income statement over the extended periods of time in the future. In calculating the deferred tax items, Fortum is required to make certain assumptions and estimates regarding the future tax consequences attributable to differences between the carrying amounts of assets and liabilities as recorded in the financial statements and their tax basis.

Assumptions made include the expectation that future operating performance for subsidiaries will be consistent with historical levels of operating results, recoverability periods for tax loss carry-forwards will not change, and that existing tax laws and rates will remain unchanged into foreseeable future. Fortum believes that it has prudent assumptions in developing its deferred tax balances.

Assumptions and estimates regarding uncertain tax positions are supported by external legal counsel or expert opinion.

If the actual final outcome (regarding tax disputes) would differ negatively from management's estimates with 10%, the Group would need to increase the income tax liability by EUR 19 million as of 31 December 2017. For additional information regarding tax disputes, see ▸ Note 36 Legal actions and official proceedings.

27.1 Deferred income taxes in the balance sheet

EUR million	2017			2016		
	1 Jan	Change	31 Dec	1 Jan	Change	31 Dec
BS Deferred tax assets	66	7	73	80	-14	66
BS Deferred tax liabilities	-616	-203	-819	-483	-133	-616
Net deferred taxes	-550	-197	-747	-404	-146	-550

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes relate to the same fiscal authority.

Movement in deferred tax assets and liabilities 2017

EUR million	Intangible assets	Property, plant and equipment	Pension obligations	Provisions	Derivative financial instruments	Tax losses and tax credits carry-forward	Other	Net deferred taxes
1 Jan 2017	-12	-717	14	20	36	100	8	-550
Charged to income statement	7	-38	1	-10	16	8	-26	-42
Charged to other comprehensive income	0	0	3	0	-18	0	0	-15
Exchange rate differences, reclassifications and other changes	2	29	1	-2	1	-2	-6	22
Acquisitions and disposals	-98	-79	2	0	0	10	4	-161
31 Dec 2017	-101	-806	21	7	35	116	-20	-747

Retained earnings when distributed as dividends are subject to withholding tax (Russia) or distribution tax (Estonia). Provision has been made for these taxes only to extent that it is expected that these earnings will be remitted in the foreseeable future. At the end of the year deferred income tax liabilities of EUR 28 million (2016: 19) have been recognised for the withholding tax and other taxes that would be payable on the distributions.

Deferred tax assets and liabilities from acquisitions and disposals in 2017 are mainly related to restructuring of the ownership in Hafslund together with the City of Oslo, acquisition of Solar power plants in Russia and wind power companies in Norway. In addition, the deferred tax asset relating to tax loss carry forwards increased net in 2017 mainly because of the additional taxable losses in the Netherlands partly offset by the usage of losses carry forwards in Russia.

Movement in deferred tax assets and liabilities 2016

EUR million	Intangible assets	Property, plant and equipment	Pension obligations	Provisions	Derivative financial instruments	Tax losses and tax credits carry-forward	Other	Net deferred taxes
1 Jan 2016	0	-551	11	14	-42	146	18	-404
Charged to income statement		-9	2	-3	27	-49	-11	-42
Charged to other comprehensive income			2		49			51
Exchange rate differences, reclassifications and other changes		-40			2	3	-6	-40
Acquisitions and disposals	-12	-118		9			6	-115
31 Dec 2016	-12	-717	14	20	36	100	8	-550

Deferred tax assets and liabilities from acquisitions and disposals in 2016 are mainly related to acquisition of Ekokem and Duon and disposal of Tobolsk. In addition, legal entities, primarily in Russia and Sweden used a portion of the deferred tax asset relating to tax loss carry forwards.

Deferred income tax assets recognised for tax loss carry-forwards

Deferred income tax assets are recognised for tax loss carry-forward to the extent that realisation of the related tax benefit through future profits is probable. The recognised tax assets relate to losses carry-forward with no expiration date and partly with expiry date as described below.

	2017		2016	
EUR million	Tax losses	Deferred tax asset	Tax losses	Deferred tax asset
Losses without expiration date	413	90	352	79
Losses with expiration date	103	26	108	22
Total	**516**	**116**	**460**	**100**

Deferred tax assets of EUR 20 million (2016: 56) have not been recognised in the consolidated financial statements, because the realisation is not probable. The major part of the unrecognised tax asset relates to loss carry-forwards that are unlikely to be used in the foreseeable future.

Tax loss carry-forwards increased in 2017 mainly because of the additional taxable losses in Netherlands and decreased mainly because of use of losses carry forwards in Russia.

27.2 Income tax receivables

	2017	2016
Sweden	28	124
Belgium	114	114
Other	30	52
Total income tax receivables	**172**	**290**

Income tax receivables reflect payments of corporate income tax done in relation to the year 2017 as well as payments according to received tax audit assessments in relation to previous years.

Fortum received in June 2017 an unfavourable decisions from the Administrative Court of Appeal in Sweden relating to the income tax assessments for 2009–2012 and has booked a tax cost of EUR 115 million and interest cost of EUR 7 million. Consequently, the income tax receivable decreased by the corresponding amount. Fortum has in previous years received income tax assessments in Sweden for the year 2013. The additional taxes for 2013 have been paid in July 2017, in total 273 MSEK (EUR 28 million) and based on supporting legal opinion booked as an income tax receivable.

In Belgium, Fortum has in previous years received income tax assessments for the years 2008–2012. The additional taxes have been paid during prior years, in total EUR 114 million and based on supporting legal opinions booked as an income tax receivable. Legal procedures in Finland concerning 2007–2011 transfer pricing audit have been closed to Fortum's benefit.

See ▸ Note 36 Legal actions and official proceedings.

28 Nuclear related assets and liabilities

ACCOUNTING POLICIES

Fortum owns Loviisa nuclear power plant in Finland. In Fortum's consolidated balance sheet, Share in the State Nuclear Waste Management Fund and the Nuclear provisions relate to Loviisa nuclear power plant. Fortum's nuclear related provisions and the related part of the State Nuclear Waste Management Fund are both presented separately in the balance sheet. Fortum's share in the State Nuclear Waste Management Fund is accounted for according to IFRIC 5, Rights to interests arising from decommissioning, restoration and environmental rehabilitation funds which states that the fund assets are measured at the lower of fair value or the value of the related liabilities since Fortum does not have control or joint control over the State Nuclear Waste Management Fund. The Nuclear Waste Management Fund is managed by governmental authorities. The related provisions are the provision for decommissioning and the provision for disposal of spent fuel.

The fair values of the provisions are calculated according to IAS 37 by discounting the separate future cash flows, which are based on estimated future costs and actions already taken. The initial net present value of the provision for decommissioning (at the time of commissioning the nuclear power plant) has been included in the investment cost and is depreciated over the estimated operating time of the nuclear power plant. Changes in the technical plans etc., which have an impact on the future cash flow of the estimated costs for decommissioning, are accounted for by discounting the additional costs to the current point in time. The increased asset retirement cost due to the increased provision is added to property, plant and equipment and depreciated over the remaining estimated operating time of the nuclear power plant. For power plant units taken from use the increase is taken to income statement.

The provision for spent fuel covers the future disposal costs for fuel used until the end of the accounting period. Costs for disposal of spent fuel are expensed during the operating time based on fuel usage. The impact of the possible changes in the estimated future cash flow for related costs is recognised immediately in the income statement based on the accumulated amount of fuel used until the end of the accounting period. The related interest costs due to unwinding of the provision is recognised in the corresponding period.

The timing factor is taken into account by recognising the interest expense related to discounting the nuclear provisions. The interest on the State Nuclear Waste Management Fund assets is presented as financial income.

Fortum's actual share of the State Nuclear Waste Management Fund, related to Loviisa nuclear power plant, is higher than the carrying value of the Fund in the balance sheet. The legal nuclear liability should, according to the Finnish Nuclear Energy Act, be fully covered by payments and guarantees to the State Nuclear Waste Management Fund. The legal liability is not discounted while the provisions are, and since

the future cash flow is spread over 100 years, the difference between the legal liability and the provisions are material.

The annual fee to the Fund is based on changes in the legal liability, the interest income generated in the State Nuclear Waste Management Fund and incurred costs of taken actions.

Fortum also has minority interests in nuclear power companies, i.e. Teollisuuden Voima Oyj (TVO) in Finland and OKG Aktiebolag (OKG) and Forsmarks Kraftgrupp AB (Forsmark) in Sweden. The minority shareholdings are classified as associated companies and joint ventures and are consolidated with equity method. Both the Finnish and the Swedish companies are non-profit making, i.e. electricity production is invoiced to the owners at cost including depreciations, interest costs and production taxes accounted for according to local GAAP. Accounting policies of the associates regarding nuclear assets and liabilities have been changed where necessary to ensure consistency with the policies adopted by the Group.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS:

ASSUMPTIONS MADE WHEN ESTIMATING PROVISIONS RELATED TO NUCLEAR PRODUCTION

The provision for future obligations for nuclear waste management including decommissioning of Fortum's nuclear power plant and related spent fuel is based on long-term cash flow forecasts of estimated future costs. The main assumptions are technical plans, timing, cost estimates and discount rate. The technical plans, timing and cost estimates are approved by governmental authorities.

Any changes in the assumed discount rate would affect the provision. If the discount rate used would be lowered, the provision would increase. Fortum has contributed cash to the State Nuclear Waste Management Fund based on a non-discounted legal liability, which leads to that the increase in provision would be offset by an increase in the recorded share of Fortum's part of the State Nuclear Waste Management Fund in the balance sheet. The total effect on the income statement would be positive since the decommissioning part of the provision is treated as an asset retirement obligation. This situation will prevail as long as the legal obligation to contribute cash to the State Nuclear Waste Management Fund is based on a non-discounted liability and IFRS is limiting the carrying value of the assets to the amount of the provision since Fortum does not have control or joint control over the fund.

Based on the Nuclear Energy Act in Finland, Fortum has a legal obligation to fully fund the legal liability decided by the governmental authorities, for decommissioning of the power plant and disposal of spent fuel through the State Nuclear Waste Management Fund.

Both in Finland and in Sweden nuclear operators are legally obligated for the decommissioning of the plants and the disposal of spent fuel (nuclear waste management). In both countries the nuclear operators are obligated to secure the funding of nuclear waste management by paying to government operated nuclear waste funds. The nuclear operators also have to give securities to guarantee that sufficient funds exist to cover future expenses of decommissioning of the power plant and disposal of spent fuel.

28.1 Nuclear related assets and liabilities for 100% owned nuclear power plant, Loviisa

EUR million	2017	2016
Carrying values in the balance sheet		
BS Nuclear provisions	858	830
BS Fortum's share of the State Nuclear Waste Management Fund	858	830
Legal liability and actual share of the State Nuclear Waste Management Fund		
Liability for nuclear waste management according to the Nuclear Energy Act	1,161	1,141
Funding obligation target	1,153	1,125
Fortum's share of the State Nuclear Waste Management Fund	1,125	1,094
Share of the fund not recognised in the balance sheet	267	264

Legal liability for Loviisa nuclear power plant

The legal liability on 31 December 2017, decided by the Ministry of Economic Affairs and Employment in December 2017, was EUR 1,161 million.

The legal liability is based on a cost estimate, which is done every year, and a technical plan, which is made every third year. The current technical plan was updated in 2016. Following the update of the technical plan in 2016, the liability increased due to updated cost estimates related to interim and final storage of spent fuel. The legal liability is determined by assuming that the decommissioning would start at the beginning of the year following the assessment year.

Fortum's share in the State Nuclear Waste Management Fund

According to Nuclear Energy Act, Fortum is obligated to contribute funds in full to the State Nuclear Waste Management Fund to cover the legal liability. Fortum contributes funds to the Finnish State Nuclear Waste Management Fund based on the yearly funding obligation target decided by the governmental authorities in December in connection with the decision of size of the legal liability. The current funding obligation target decided in December 2017 is EUR 1,153 million.

Nuclear provisions

EUR million	2017	2016
BS 1 January	**830**	**810**
Additional provisions	4	6
Used during the year	-21	-20
Unwinding of discount	45	34
BS 31 December	**858**	**830**
Fortum's share in the State Nuclear Waste Management Fund	858	830

Nuclear provision and fund accounted according to IFRS

Nuclear provisions include the provision for decommissioning and the provision for disposal of spent fuel. The carrying value of the nuclear provisions, calculated according to IAS 37, increased by EUR 28 million compared to 31 December 2016, totalling EUR 858 million on 31 December 2017. The provisions are based on the same cash flows for future costs as the legal liability, but the legal liability is not discounted to net present value.

The carrying value of the Fund in the balance sheet cannot exceed the carrying value of the nuclear provisions according to IFRIC Interpretation 5. The Fund is from an IFRS perspective overfunded with EUR 267 million, since Fortum's share of the Fund on 31 December 2017 was EUR 1,125 million and the carrying value in the balance sheet was EUR 858 million.

Fortum's share of the Finnish Nuclear Waste Management Fund in Fortum's balance sheet can in maximum be equal to the amount of the provisions according to IFRS. As long as the Fund is overfunded from an IFRS perspective, the effects to operating profit from this adjustment will be positive if the provisions increase more than the Fund and negative if actual value of the fund increases more than the provisions. This accounting effect is not included in Comparable operating profit in Fortum financial reporting. For more information see ▸ Note 6 Items affecting comparability.

Borrowing from the State Nuclear Waste Management Fund

Participants in the Finnish State Nuclear Waste Management Fund are allowed to borrow from the fund according to certain rules. Fortum uses the right to borrow back and has pledged shares in Kemijoki Oy as security for the loans. The loans are renewed yearly. See ▸ Note 26 Interest-bearing liabilities and ▸ Note 35 Pledged assets and contingent liabilities.

28.2 Nuclear power plants in associated companies and joint ventures

OKG, Forsmark and TVO are non-profit making companies, i.e. electricity production is invoiced to the owners at cost including depreciations, interest costs and production taxes. Invoiced cost is accounted for according to local GAAP. In addition to the invoiced electricity production cost, Fortum makes IFRS adjustments to comply with Fortum's accounting principles. These adjustments include also Fortum's share of the companies' nuclear waste funds and nuclear provisions.

The tables below present the 100% figures relating to nuclear funds and provisions for the companies as well as Fortum's net share.

TVO's total nuclear related assets and liabilities (100%)

EUR million	2017	2016
Carrying values in TVO's balance sheet		
Nuclear provisions	953	955
Share of the State Nuclear Waste Management Fund	953	955
of which Fortum's net share consolidated with equity method	**0**	**0**
TVO's legal liability and actual share of the State Nuclear Waste Management Fund		
Liability for nuclear waste management according to the Nuclear Energy Act	1,482	1,450
Share of the State Nuclear Waste Management Fund	1,437	1,380
Share of the fund not recognised in the balance sheet	484	425

TVO's legal liability and contribution to the fund are based on same principles as described above for Loviisa nuclear power plant.

TVO's share of the Finnish State Nuclear Waste Management Fund is from an IFRS perspective overfunded with EUR 484 million (of which Fortum's share EUR 129 million), since TVO's share of the Fund on 31 December 2017 was EUR 1,437 million and the carrying value in the balance sheet was EUR 953 million.

Participants in the Finnish State Nuclear Waste Management Fund are allowed to borrow from the fund according to certain rules. Fortum is using the right to reborrow funds through TVO based on its ownership. See more information in ▸ Note 26 Interest-bearing liabilities.

OKG's and Forsmark's total nuclear related assets and liabilities (100%)

EUR million	2017	2016
OKG's and Forsmark's nuclear related assets and liabilities [1]		
Nuclear provisions	3,398	3,297
Share in the State Nuclear Waste Management Fund	3,105	3,068
Net amount	**-293**	**-229**
of which Fortum's net share consolidated with equity method	**-114**	**-106**

1) Accounted for according to Fortum's accounting principles. Companies' statutory financial statements are not prepared according to IFRS.

In Sweden Svensk Kärnbränslehantering AB (SKB), a company owned by the nuclear operators, takes care of all nuclear waste management related activities on behalf of nuclear operators. SKB receives its funding from the Swedish State Nuclear Waste Management Fund, which in turn is financed by the nuclear operators.

In addition to nuclear waste fees nuclear power companies provide guarantees for any uncovered liability and unexpected events.

For more information regarding Fortum's guarantees given on behalf of nuclear associated companies, see ▸ Note 35 Pledged assets and contingent liabilities.

Nuclear waste fees and guarantees are updated every third year by governmental decision after a proposal from Swedish Radiation Safety Authority (SSM). The proposal is based on cost estimates done by SKB. Currently the fees and guarantees are decided for years 2015–2017. A new technical plan for nuclear waste management has been decided by SKB during 2016. During 2017 SKB has submitted the cost estimates based on the revised technical plan to SSM, after which the Swedish government has decided the waste fees and guarantees for years 2018–2020. Nuclear waste fees are currently based on future costs with the assumed lifetime of 50 years (40 years in previous decision) for each unit of a nuclear power plant.

29 Other provisions

ACCOUNTING POLICIES

Provisions for environmental obligations, asset retirement obligations, restructuring costs and legal claims are recognised when the Group has a present legal or constructive obligation as a result of past events to a third party, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognised as interest expense.

ENVIRONMENTAL PROVISIONS

Environmental provisions are recognised, based on current interpretation of environmental laws and regulations, when it is probable that a present obligation has arisen and the amount of such liability can be reliably estimated. Environmental expenditures resulting from the remediation of an existing condition caused by past operations, and which do contribute to current or future revenues, are expensed as incurred.

Environmental provisions include provisions for obligations to cover landfills and clean-up obligations for contaminated land areas. Provisions are determined based on the surface area of the landfill site, remaining land area to be landscaped or otherwise cleaned-up, and the unit cost of conducting the coverage and clean-up activities in the future.

Environmental provisions are also booked for aftercare and monitoring obligations arising from landfill permit holder's requirement to take into account potential danger to health or the environment posed by a landfill site for a period of at least 30 (up to 60) years after the coverage. The aftercare and monitoring provision is determined on the basis of estimated costs and estimated number of years of filling the landfill.

ASSET RETIREMENT OBLIGATIONS

Asset retirement obligation is recognised either when there is a contractual obligation towards a third party or a legal obligation and the obligation amount can be estimated reliably. Obligating event is e.g. when a plant is built on a leased land with an obligation to dismantle and remove the asset in the future or when a legal obligation towards Fortum changes. The asset retirement obligation is recognised as part of the cost of an item of property, plant and equipment when the asset is put in service. The costs will be depreciated over the remainder of the asset's useful life.

RESTRUCTURING PROVISIONS

A restructuring provision is recognised when the Group has developed a detailed formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement the plan or announcing its main features to those affected by it. The measurement of a restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity. Restructuring provisions comprise mainly employee termination payments and lease termination costs.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

ASSUMPTIONS MADE WHEN ESTIMATING PROVISIONS

Provisions for present obligations require management to assess the best estimate of the expenditure needed to settle the present obligation at the end of the reporting period. The actual amount and timing of the expenditure might differ from estimates made.

	2017			2016		
EUR million	Environ-mental	Other	Total	Environ-mental	Other	Total
1 January	**47**	**82**	**129**	**2**	**96**	**98**
Acquisitions	0	7	7	44	4	48
Provisions for the period	0	31	31	1	14	15
Provisions used	0	-35	-35	0	-25	-25
Provisions reversed	0	-10	-10	0	-9	-9
Exchange rate difference and other charges	-4	4	0	0	2	2
31 December	**43**	**79**	**122**	**47**	**82**	**129**
Of which current provisions [1)]	0	22	22	1	11	13
BS Of which non-current provisions	43	57	100	46	70	116

1) Included in trade and other payables in the balance sheet, see ▸ **Note 32** Trade and other payables.

Environmental provisions include mainly provisions for obligations to cover and monitor landfills as well as to clean contaminated land areas. Main part of the provisions are estimated to be used within 10–15 years. The increase in environmental provisions in 2016 is mainly arising from the acquisition of Ekokem (see ▸ **Note 38** Acquisitions and disposals).

Dismantling provision for the Finnish coal fired power plant Inkoo is included in Other provisions.

Regarding provisions for decommissioning and provision for disposal of spent fuel for nuclear production, see ▸ **Note 28** Nuclear related assets and liabilities.

30 Pension obligations

ACCOUNTING POLICIES

The Group companies have various pension schemes in accordance with the local conditions and practises in the countries in which they operate. The schemes are generally funded through payments to insurance companies or the Group's pension funds as determined by periodic actuarial calculations. The Group has both defined benefit and defined contribution plans.

The Group's contributions to defined contribution plans are charged to the income statement in the period to which the contributions relate.

For defined benefit plans, pension costs are assessed using the projected unit credit method. The cost of providing pensions is charged to the income statement as to spread the service cost over the service lives of employees. The net interest is presented in financial items and the rest of the income statement effect as pension cost.

The defined benefit obligation is calculated annually on the balance sheet date and is measured as the present value of the estimated future cash flows using interest rates of high-quality corporate bonds that have terms to maturity approximating to the terms of the related pension liability. In countries where there is no deep market in such bonds, market yields on government bonds are used instead. The plan assets for pensions are valued at market value. The liability recognised in the balance sheet is the defined benefit obligation at the closing date less the fair value of plan assets. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss related to a curtailment is recognised immediately in profit or loss. Gains or losses on settlements of defined benefits plans are recognised when the settlement occurs.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

ASSUMPTIONS USED TO DETERMINE FUTURE PENSION OBLIGATIONS

The present value of the pension obligations is based on actuarial calculations that use several assumptions. Any changes in these assumptions will impact the carrying amount of pension obligations.

Fortum's pension arrangements

Finland

In Finland statutory pension benefits (as determined in Employee's Pension Act /TyEL) provide the employees pension coverage for old age, disability and death of a family provider. The benefits are insured with an insurance company and determined to be defined contribution plans.

In addition the Group has additional old-age and survivors pension benefits arranged with the Fortum Pension Fund. The Fortum Pension Fund is a closed fund managed by a Board, consisting of both employers' and employees' representatives. The Fund is operating under regulation from Financial Supervisory Authority (FSA). The liability has to be fully covered according to the regulations. The national benefit obligation related to the defined benefit plans is calculated so that the promised benefit is fully funded until retirement. After retirement the benefits payable are indexed yearly with TyEL-index. The promised benefit is defined in the rules of the Fund, mostly 66% at a maximum of the salary basis. The salary basis is an average of the ten last years' salaries, which are indexed with a common salary index to the accounting year.

Sweden

In Sweden the Group operates several defined benefit and defined contribution plans like the general ITP-pension plan and the PA-KL and PA-KFS plans that are eligible for employees within companies formerly owned by municipalities. The defined benefit plans are fully funded and have partly been financed through Fortum's own pension fund and partly through insurance premiums. The pension arrangements comprise normal retirement pension, complementary retirement pensions, survivors' pension and disability pension. The most significant pension plan is the ITP-plan for white-collar employees in permanent employment (or temporary employees after a certain waiting period), who fulfil the age conditions. To qualify for a full pension the employee must have a projected period of pensionable service, from the date of entry until retirement age, of at least 30 years.

The Swedish pension fund is managed by a Board, consisting of both employers' and employees' representatives. The fund is operating under regulation from Swedish Financial Supervisory Authority and the County Administrative Board and governed by Swedish law (no. 1967:531). The fund constitutes a security for the employers' defined benefit pension plan liability and the fund has no obligations in relation to pension payments. The employer must have a credit insurance from PRI Pensionsgaranti Mutual Insurance Company for the liability. The liability does not have to be fully covered by the fund according to the regulations.

The part of the ITP multiemployer pension plan that is secured by paying pension premiums to Alecta, in Fortum's case the collective family pension, is accounted for as a defined contribution plan due to that there is no consistent and reliable basis to allocate assets or liabilities to the participating entities within the ITP insurance. The reason for this is that it is not possible to determine from the terms of the plan to which extent a surplus or a deficit will affect future contributions.

Norway

Group companies operate both defined contribution and defined benefit plans. Some defined benefit schemes offer benefits common for municipalities in Norway and some are private pension schemes. Benefits include old age pensions, disability pension and survivor's pension, including pension benefits from the National Insurance Scheme (Folketrygden). The schemes are fully funded within the rules set out in the Norwegian insurance legislation.

The majority of the defined benefit plans are closed, either private plans or public plans, that are operated by the Hafslund and Infratek's Pension Fund. The Group has also a closed public defined benefit plan operated by Oslo Pensjonsforsikring AS. In addition, the Group has defined benefit plans with various insurance companies.

Pension arrangements in other countries

Pension arrangements in Russia include payments made to the state pension fund. These arrangements are treated as defined contribution plans. The Russian (in addition to the defined contribution plans) and Polish companies participate in certain defined benefit plans, defined by collective agreements, which are unfunded and where the company meets the benefit payment obligation as it falls due. The benefits provided under these arrangements include, in addition to pension payments, one-time benefits paid in case of employee mortality or disability as well as lump sum payments for anniversary and financial support to honoured workers and pensioners.

In other countries the pension arrangements are done in accordance with the local legislation and practice, mostly being defined contribution plans.

Main risks relating to defined benefit plans – Finland and Sweden

Overall risks

Finland – If the return of the fund's assets is not enough to cover the raise in liability and benefit payments over the financial year then the employer funds the deficit with contributions unless the fund has sufficient equity.

Sweden – As the pension fund is separated from the funding companies Fortum is not obliged to make additional contributions to the pension fund in any case of deficit. However if the assets decrease to a level lower than the liability according to Swedish GAAP, Fortum's credit insurance cost from PRI will increase.

Change in discount rate

Finland – The discount rate which is used to calculate the defined benefit obligation (according to IFRS) depends on the value of corporate bond yields as at reporting date. A decrease in yields increases the benefit obligation that is offset by increase in the value of fixed income holdings.

Investment and volatility risk

Finland – The pension fund's board accepts yearly an Investment Plan, which is based on an external asset-liability analysis. The assets are allocated to stocks and stock funds, fixed income instruments and real estate. The investments are diversified into different asset classes and to different asset managers taking into account the regulation of the Financial Supervisory Authority. The real estate investments consist mainly of the Fortum headquarters, rented by Fortum Corporation.

Sweden – The pension fund operation is regulated by law and supervised by central administrative authorities (Finansinspektionen and the County Administrative Board). The pension fund board decides yearly on a policy for asset allocation and a risk management model that stipulates a maximum acceptable market value decrease of the assets. The major assets are fixed income instruments, stock index funds and cash.

Risks relating to assumptions used

Actuarial calculations use assumptions for future inflation and salary levels and longevity. Should the actual outcome differ from these assumptions, this might lead to higher liability.

Movement in the net defined benefit liability

EUR million	Defined benefit obligation		Fair value of plan assets		Net defined benefit asset(-)/ liability(+)	
	2017	2016	2017	2016	2017	2016
Balance at 1 January	**452**	**448**	**-378**	**-384**	**74**	**64**
Included in profit or loss						
Current service cost	6	8			7	9
Past service cost [1]	0	-4			0	-4
Settlements	-3	-6	5	5	2	-1
Net interest [2]	9	11	-7	-9	2	2
	12	**9**	**-2**	**-3**	**10**	**6**
Included in OCI						
Remeasurement gains(-)/losses(+)	10	15	7	-5	17	10
Actuarial gains/losses arising from changes in financial assumptions	16	28			16	28
Actuarial gains/losses arising from experience adjustments	-6	-12			-6	-12
Return on plan assets (excluding amounts included in net interest expense)			7	-5	7	-5
Exchange rate differences	-5	-4	4	4	-1	0
	5	**11**	**11**	**-1**	**16**	**10**
Other						
Contributions paid by the employer			-3	-1	-3	-1
Benefits paid	-18	-16	14	12	-3	-4
Acquisitions of subsidiary companies	50	0	-43	0	7	0
Balance at 31 December	**501**	**452**	**-401**	**-378**	**101**	**74**
Present value of funded defined obligation					497	447
Fair value of plan assets					-401	-378
Funded status					**96**	**70**
Present value of unfunded obligation [3]					4	5
Net liability arising from defined benefit obligation					**101**	**74**
Pension assets included in other non-current assets in the balance sheet					2	1
BS Pension obligations in the balance sheet					102	76

1) In 2016 including EUR -6 million from the pension reform in Finland.

2) Net interest is presented among financial items in income statement, the rest of costs related to defined benefit plans are included in staff costs (row defined benefits plans in the staff cost specification in ▸ **Note 10** Employee benefits).

3) The unfunded obligation relates to arrangements in Russia and Poland.

At the end of 2017 a total of 985 (2016: 864) Fortum employees are included in defined benefit plans providing pension benefits. During 2017 pensions or related benefits were paid to a total of 3,160 (2016: 2,865) persons.

Contributions expected to be paid during year 2018 are EUR 4 million.

Fair value of plan assets

EUR million	2017	2016
Equity instruments	126	120
Debt instruments	156	140
Cash and cash equivalents	48	26
Real estate, of which EUR 42 million (2016: 66) occupied by the Group	47	69
Investment funds	1	-
Company's own ordinary shares	5	4
Other assets	18	19
Total	**401**	**378**

When the pension plan has been financed through an insurance company, a specification of the plan assets has not been available. In these cases the fair value of plan assets has been included in other assets.

The actual return on plan assets in Finland, Sweden and Norway totalled EUR 0 million (2016: 14).

Amounts recognised in the balance sheet by country 2017

EUR million	Finland	Sweden	Norway	Other countries	Total
Present value of funded obligations	295	141	61	0	497
Fair value of plan assets	-245	-105	-51	0	-401
Deficit(+)/surplus(-)	**50**	**36**	**10**	**0**	**96**
Present value of unfunded obligations				4	4
Net asset(-)/liability(+) in the balance sheet	**50**	**36**	**10**	**4**	**101**
Pension asset included in non-current assets	0	1	1	0	2
BS Pension obligations in the balance sheet	50	37	11	4	102

Amounts recognised in the balance sheet by country 2016

EUR million	Finland	Sweden	Norway	Other countries	Total
Present value of funded obligations	308	130	9	0	447
Fair value of plan assets	-262	-110	-6	0	-378
Deficit(+)/surplus(-)	**46**	**20**	**3**	**0**	**70**
Present value of unfunded obligations				5	5
Net asset(-)/liability(+) in the balance sheet	**46**	**20**	**3**	**5**	**74**
Pension asset included in non-current assets	0	1	1	0	1
BS Pension obligations in the balance sheet	46	21	4	5	76

The principal actuarial assumptions used

%	2017			2016		
	Finland	Sweden	Norway	Finland	Sweden	Norway
Discount rate	1.50	2.40	2.30	1.50	2.80	2.10
Future salary increases	2.90	2.80	2.50	1.90	3.00	2.25
Future pension increases	2.00	2.80	1.34	2.00	1.70	1.27
Rate of inflation	1.70	1.80	1.50	1.70	1.70	1.75

The discount rate in Finland is based on high quality European corporate bonds with maturity that best reflects the estimated term of the defined benefit pension plans. The discount rate in Sweden is based on yields on Swedish covered bonds with maturity that best reflects the estimated term of the defined benefit pension plans. The covered bonds in Sweden are considered high quality bonds as they are secured with assets.

The life expectancy is the expected number of years of life remaining at a given age

Longevity at age 65	Finland	Sweden	Norway
45– male	22	23	23
45– female	27	25	26
65– male	21	22	22
65– female	25	24	25

The discount, inflation and salary growth rates used are the key assumptions used when calculating defined benefit obligations. Effects of 0.5 percentage point change in the rates to the defined benefit obligation on 31 December 2017, holding all other assumptions stable, are presented in the table below.

Sensitivity of defined benefit obligation to changes in assumptions

Change in the assumption	Impact to the pension obligation increase(+)/ decrease(-)		
	Finland	Sweden	Norway
0.5% increase in discount rate	-7%	-10%	-6%
0.5% decrease in discount rate	8%	12%	7%
0.5% increase in benefit	1%	10%	5%
0.5% decrease in benefit	-1%	-9%	-6%
0.5% increase in salary growth rate	6%	2%	3%
0.5% decrease in salary growth rate	-6%	-3%	-3%

The methods used in preparing the sensitivity analysis did not change compared to the previous period. Change in mortality basis so that life expectancy increases by one year would increase the net liability in Finland, Sweden and Norway with EUR 17 million (19%).

Maturity profile of the undiscounted defined benefit obligation for Finland, Sweden and Norway as of 31 December 2017

EUR million	Future benefit payments
Maturity under 1 year	17
Maturity between 1 and 5 years	73
Maturity between 5 and 10 years	90
Maturity between 10 and 20 years	171
Maturity between 20 and 30 years	133
Maturity over 30 years	98

The weighted average duration of defined benefit obligation in Finland, Sweden and Norway at the end of year 2017 is 17 years.

31 Other non-current liabilities

EUR million	2017	2016
Connection fees	109	109
Other liabilities	66	70
BS Total	**175**	**179**

Connection fees are refundable connection fees to the district heating network in Finland.

32 Trade and other payables

EUR million	2017	2016
Trade payables	318	323
Accrued expenses and deferred income		
Accrued personnel expenses	97	61
Accrued interest expenses	113	132
Other accrued expenses and deferred income	174	130
Other liabilities		
VAT-liability	43	43
Current tax liability	25	20
Energy taxes	15	14
Advances received	98	19
Current provisions [1)]	22	13
Other liabilities	209	86
BS Total	**1,112**	**841**

1) See also ▸ Note 29 Other provisions.

The management considers that the amount of trade and other payables approximates fair value.

33 Lease commitments

ACCOUNTING POLICIES

OPERATING LEASES

Leases of property, plant and equipment, where the Group does not have substantially all of the risks and rewards of ownership are classified as operating leases. Payments made under operating leases are recognised in the income statement as costs on a straight-line basis over the lease term.

Payments received under operating leases where the Group leases out fixed assets are recognised as other income in the income statement.

FINANCE LEASES

Leases of property, plant and equipment, where the Group has substantially all the risks and rewards of ownership, are classified as finance leases. Finance leases are capitalised at the commencement of the lease term at the lower of the fair value of the leased property and the present value of the minimum lease payments determined at the inception of the lease.

33.1 Leases as a lessor

Operating leases

The operating rental income recognised in income statement was EUR 6 million (2016: 5).

Finance leases

Finance leases relate to heat pipelines in Tyumen area, which are leased to newly established joint venture YUSTEK. See additional information in ▸ Note 38 Acquisitions and disposals.

Maturity of future minimum lease payments

	2017	2016	2017	2016	2017	2016
EUR million	Gross investment in finance lease arrangements		Unearned interest income		Present value of minimum lease payments	
Due within 1 year	1	-	4	-	-3	-
Due in 1 to 5 years	21	-	21	-	0	-
Due in more than 5 years	167	-	123	-	44	-
Total	**189**	**-**	**148**	**-**	**41**	**-**

The present value of minimum lease payments is included in interest-bearing receivables in the balance sheet, see ▸ Note 20 Interest-bearing receivables.

33.2 Leases as lessee

Operating leases

Fortum leases mainly land and office buildings under various non-cancellable operating leases, some of which contain renewal options. The future costs for non-cancellable operating lease contracts are stated below. Lease rental expenses amounting to EUR 33 million (2016: 15) are included in the income statement in other expenses.

Future minimum lease payments on operating leases

EUR million	2017	2016
Not later than 1 year	23	16
Later than 1 year and not later than 5 years	72	31
Later than 5 years	65	27
Total	**160**	**74**

Increase in operating lease commitments arises mainly from the lease agreement relating to the new head office in Espoo.

Finance leases

Fortum does not have material finance lease arrangements where the Group is acting as a lessee.

34 Capital commitments

EUR million	2017	2016
Property, plant and equipment	362	467

Capital commitments are capital expenditures contracted for at the balance sheet date but not recognised in the financial statements. The decrease in capital commitments compared to previous year comes mainly from progressing of the automation investment in Loviisa nuclear power plant and India solar investments, partly offset by increased wind power investments in Norway.

For more information regarding capital expenditure, see ▸Note 17 Property, plant and equipment.

Other commitments

On 26 September 2017, Fortum announced it had signed a transaction agreement with E.ON under which E.ON has the right to tender its 46.65% shareholding in Uniper in early 2018. In November 2017 Fortum launched a voluntary public takeover offer to all Uniper shareholders at a total value of EUR 22 per share (in total approximately EUR 8 billion).

On 19 January 2018, Fortum announced that the number of shares tendered during the initial acceptance period of Fortum's voluntary public takeover offer for the outstanding shares of Uniper totalled 171,736,647 shares. This corresponds to approximately 46.93% of the share capital and the voting rights of Uniper. The initial acceptance period ended on 16 January 2018 and the additional acceptance period resumed on 20 January 2018 and will end on 2 February 2018. The value of the tendered shares from the initial acceptance period is EUR 3.78 billion based on the total value of EUR 22 per share.

Fortum has committed to provide a maximum of EUR 93 million (Dec 31 2016: 100) to Voimaosakeyhtiö SF, for its participation in the Fennovoima nuclear power project in Finland. Furthermore, Fortum's remaining direct commitment regarding the construction of a waste-to-energy combined heat and power plant (CHP) in Kaunas, Lithuania is EUR 15 million at maximum at the end of 2017. The investment is made through Kauno Kogeneracinė Jėgainė (KKJ), a joint venture owned together with Lietuvos Energija.

For information regarding shareholder loan commitments related to associated companies and joint ventures, see ▸Note 20 Interest bearing receivables.

35 Pledged assets and contingent liabilities

ACCOUNTING POLICIES

CONTINGENT LIABILITIES

A contingent liability is disclosed when there is a possible obligation that arises from past events and whose existence is only confirmed by one or more doubtful future events or when there is an obligation that is not recognised as a liability or provision because it is not probable that an outflow of resources will be required or the amount of the obligation cannot be reliably estimated.

EUR million	2017	2016
Pledged assets on own behalf		
For debt		
Pledges	300	291
Real estate mortages	177	137
For other commitments		
Pledges	346	379
Real estate mortages	141	99
Contingent liabilities on own behalf		
Other contingent liabilities	161	205
On behalf of associated companies and joint ventures		
Guarantees	598	603

35.1 Pledged assets for debt

Finnish participants in the State Nuclear Waste Management Fund are allowed to borrow from the fund. Fortum has pledged shares in Kemijoki Oy as a security. The value of the pledged shares was EUR 269 million on 31 December 2017 (2016: 269).

Fortum Tartu in Estonia (60% owned by Fortum) has given real estate mortgages for a value of EUR 96 million (2016: 96) as a security for an external loan. Real estate mortgages have also been given for loan from Fortum's pension fund for EUR 41 million (2016: 41).

Property of the Russian solar plants of EUR 41 million was mortgaged for loans (2016: 0).

Regarding the relevant interest-bearing liabilities, see ▸Note 26 Interest-bearing liabilities.

35.2 Pledged assets for other commitments

Pledges also include restricted cash given as trading collateral of EUR 346 million (2016: 345) for trading of electricity and CO_2 emission allowances in Nasdaq Commodities Europe, in Intercontinental Exchange (ICE), European Energy Exchange (EEX) and Polish Power Exchange (TGE). See also ▸Note 20 Interest-bearing receivables.

Fortum has given real estate mortgages in power plants in Finland, total value of EUR 141 million in December 2017 (2016: 99), as a security to the Finnish State Nuclear Waste Management Fund for the uncovered part of the legal liability and unexpected events relating to future costs for decommissioning and disposal of spent fuel in Loviisa nuclear power plant. According to the Nuclear Energy Act, Fortum is obligated to contribute the funds in full to the State Nuclear Waste Management Fund to cover the legal liability. Any uncovered legal liability relates to periodising of the payments to the fund. The size of the securities given is updated yearly in Q2 based on the decisions regarding the legal liabilities and the funding target which take place around year-end every year. Due to the yearly update, the amount of real estate mortgages given as a security increased by EUR 42 million.

See also ▸Note 28 Nuclear related assets and liabilities.

35.3 Contingencies on own behalf

Fortum owns the coal condensing power plant Meri-Pori in Finland. Teollisuuden Voima Oyj (TVO) has the contractual right to participate in the plant with 45.45%. Based on the participation agreement Fortum has to give a guarantee to TVO against breach in contract. The amount of the guarantee is set to EUR 125 million (2016: 125).

35.4 Contingencies on behalf of associated companies

Guarantees and other contingent liabilities on behalf of associated companies and joint ventures mainly consist of guarantees relating to Fortum's associated nuclear companies Teollisuuden Voima Oyj (TVO), Forsmarks Kraftgrupp AB (FKA) and OKG AB (OKG). The guarantees are given in proportion to Fortum's respective ownership in each of these companies.

According to law, nuclear companies operating in Finland and Sweden shall give securities to the Finnish State Nuclear Waste Management Fund and the Swedish Nuclear Waste Fund respectively, to guarantee that sufficient funds exist to cover future expenses of decommissioning of the power plant and disposal of spent fuel. In Finland, Fortum has given a guarantee on behalf of TVO to the Finnish State Nuclear Waste Management Fund to cover Fortum's part of TVO's uncovered part of the legal liability and for unexpected events. The amount of guarantees is updated every year in June based on the legal liability decided in December the previous year. Due to the yearly update, the amount of guarantees given were EUR 50 million (2016: 38). The guarantee covers the unpaid legal liability due to periodisation as well as risks for unexpected future costs.

In Sweden, Fortum has given guarantees on behalf of FKA and OKG to the Swedish Nuclear Waste Fund to cover Fortum's part of FKA's and OKG's liability. Guarantees for the period of 2015–2017 has been given on behalf of Forsmarks Kraftgrupp AB and OKG AB amounting to SEK 5,393 million (EUR 548 million) at 31 December 2017 (2016: EUR 565 million). There are two types of guarantees given on behalf of Forsmark Kraftgrupp AB and OKG AB. The Financing Amount is given to compensate for the current deficit in the Nuclear Waste Fund, assuming that no further nuclear waste fees are paid in. This deficit is calculated as the difference between the expected costs and the funds to cover these costs at the time of the calculation. The Supplementary Amount constitutes a guarantee for deficits that can arise as a result of unplanned events. The Financing Amount given by Fortum on behalf of Forsmark Kraftgrupp AB and OKG AB was SEK 3,843 million (EUR 391 million) and the Supplementary Amount was SEK 1,550 million (EUR 157 million) at 31 December 2017.

36 Legal actions and official proceedings

36.1 Group companies

Tax cases in Finland

No tax cases with material impact in Finland.

Tax cases in Sweden

Cases related to Swedish interest deductions

Fortum received income tax assessments in Sweden for the years 2009, 2010, 2011 and 2012 in December 2011, December 2012, December 2013 and October 2014, respectively. According to the tax authorities, Fortum would have to pay additional income taxes for the years 2009, 2010, 2011 and 2012 for the reallocation of loans between the Swedish subsidiaries in 2004–2005. In June 2017 the Administrative Court of Appeal in Stockholm, Sweden announced its decision relating to the income tax assessments for 2009–2012. The decisions were unfavourable to Fortum. Fortum disagrees with the interpretation of the Administrative Court of Appeal and has applied for the right to appeal from the Supreme Administrative Court. Due to the unfavourable decisions from the Administrative Court of Appeal, Fortum has booked a tax cost of SEK 1,106 million (EUR 115 million) and interest expense of SEK 69 million (EUR 7 million), in total SEK 1,175 million (EUR 122 million) in the second quarter 2017 results. The additional taxes and interest for 2009–2012 have already been paid in June 2016. Fortum has filed a request to initiate a mutual agreement procedure between Sweden and the Netherlands for the year 2012.

In addition Fortum has received income tax assessments in Sweden for the years 2013, 2014 and 2015 in December 2015, December 2016 and October 2017, respectively. The assessments concerns the loans given in 2013, 2014 and 2015 by Fortum's Dutch financing company to Fortum's subsidiaries in Sweden. The interest income for these loans was taxed in the Netherlands. The tax authorities considers just over a half of the interest relating to each loan as deductible, i.e. deriving from business needs. The rest of the interest is seen as non-deductible. The decision is based on the changes in the Swedish tax regulation in 2013. Fortum considers that the claims are unjustifiable and has appealed the decisions. In May 2017 the Administrative Court in Stockholm, Sweden, announced its decisions relating to the income tax assessment for the year 2013. The decisions were unfavourable to Fortum. Fortum disagrees with the argumentation of the court and has filed an appeal to the Administrative Court of Appeal in Stockholm in July 2017. The cases regarding the year 2014 and the year 2015 are pending before the Administrative Court. In December 2017, the Swedish tax authorities withdrew a part of their claims with respect to the years 2013 and 2015. Therefore, the additional tax claimed by the tax authorities for the year 2013 is currently SEK 239 million (EUR 24 million) and for the year 2015 SEK 186 million (EUR 19 million). For the year 2015 the adjusted amount was confirmed in a new tax assessment ("Obligatoriskt omprövningsbeslut") issued by the Swedish tax authorities in December 2017. The adjusted amount of additional tax for the year 2013 still needs to be confirmed by the Administrative Court of Appeal, as the additional tax according to the decision of Administrative Court from May 2017 was SEK 273 million (EUR 28 million).

Based on legal analysis supporting legal opinions, no provision has been recognized in the financial statements for the Swedish tax cases regarding the year 2013, 2014 and 2015. If the amounts of additional tax claimed by the tax authority remain final despite the appeals processes, the impact on net profit would be SEK 239 million (EUR 24 million) for the year 2013, SEK 282 million (EUR 29 million) for the year 2014 and SEK 186 million (EUR 19 million) for the year 2015. The additional taxes and interest for 2013, in total SEK 282 million (EUR 29 million) have been paid in accordance with the decision from the Administrative Court in July 2017 and based on the legal opinion booked as receivables.

Cases relating to the Swedish hydro real estate tax

Fortum Sverige AB has received a favourable decision from the Administrative Court in Stockholm in June 2017 relating to the Swedish hydro real estate tax. According to the decision, the increased property tax on hydro power generated electricity comprises unlawful state aid (i.e. the tax law is in conflict with EU legislation) and the property tax shall be set as 0.5 percent of the tax assessment value. The decision relates to the years 2009–2014 and the disputed amount for the five years totalled SEK 508 million tax, SEK 12 million interest (EUR 52 million tax, EUR 1 million interest). The amount has been repaid to Fortum in July 2017 and it has been booked in other current liabilities, not yet as income. The tax authorities has appealed the decision and the case is pending before the Administrative Court of Appeal.

Tax cases in Belgium

Fortum has received income tax assessments in Belgium for the years 2008, 2009, 2010 and 2011. The tax authorities disagree with the tax treatment of Fortum EIF NV. Fortum finds the tax authorities' interpretation not to be based on the local regulation and has appealed the decisions. The court of First instance in Antwerpen rejected Fortum's appeal for the years 2008 and 2009 in June 2014. Fortum found the decision unjustifiable and appealed to the Court of Appeal.

In January 2016 Fortum received a favourable decision from the Court of Appeal in which the Court disagreed with the tax authorities' interpretation and the tax assessment for 2008 was nullified. The tax authorities disagreed with the decision and filed an appeal to Hof van Cassatie (Supreme Court) in March 2016. Fortum's appeals concerning 2009–2011 are still pending and Fortum expects the remaining years to follow the final decision for 2008. Based on legal analysis and a supporting legal opinion, no provision has been accounted for in the financial statements. The amount of additional tax claimed is approximately EUR 36 million for the year 2008, approximately EUR 27 million for the year 2009, approximately EUR 15 million for the year 2010 and approximately EUR 21 million for the year 2011. The tax has already been paid.

In November 2015 Fortum received an income tax assessment from the Belgian tax authorities for the year 2012. The tax authorities disagree with the tax treatment of Fortum Project Finance NV. Fortum finds the tax authorities' interpretation not to be based on the local regulation and has filed an objection against the tax adjustment. In line with treatment of the cases concerning 2008–2011, no provision has been accounted for in the financial statements. The amount of additional tax claimed is approximately EUR 15 million for the year 2012. The tax has already been paid.

For critical accounting estimates regarding uncertain tax positions, see ▸Note 27 Income taxes in balance sheet. See also ▸Note 12 Income tax expense.

In addition to the litigations described above, some Group companies are involved in other routine tax and other disputes incidental to their normal conduct of business. Based on the information currently available, management does not consider the liabilities arising out of such litigations likely to be material to the Group's financial position.

36.2 Associated companies

In Finland, Fortum is participating in the country's fifth nuclear power plant unit, Olkiluoto 3 (OL3), through the shareholding in Teollisuuden Voima Oyj (TVO) with an approximately 25% share representing some 400 MW in capacity. Most of the construction work for the plant unit have been completed. The installation of the electrical systems, the instrumentation and control system (I&C), and mechanical systems is still in progress.

In April 2016 TVO submitted to the Ministry of Economic Affairs and Employment (TEM) an application for an operating license. The simulator training for operating personnel commenced in February 2017. The cold functional testing to ensure the integrity of the primary circuit was completed in July. The hot functional testing phase started in December. In the hot functional tests which will take several months, the OL3 plant systems are tested as a whole, but without the fuel.The first phase of the turbine plant commissioning is completed. The de-preservation that started at the turbine plant in January 2017 has been completed, and the plant is ready for the hot functional testing.

OL3 was procured as a fixed-price turnkey project from a consortium (Supplier) formed by AREVA GmbH, AREVA NP SAS and Siemens AG. As stipulated in the plant contract, the consortium companies have joint and several liability for the contractual obligations. In accordance with the Supplier's schedule, updated in October 2017, regular electricity production in the unit was to commence in May 2019. The Supplier's schedule review for the project completion had reached a phase where the Supplier confirmed the main milestones. According to the Supplier, the first connection to the grid takes place in December 2018, and the start of regular electricity production will take place in May 2019. According to the Supplier's plant ramp-up program the unit will produce 2–4 TWh of electricity, at varying power levels, during the period of time between the first connection to the grid and the start of regular electricity production.

In December 2008 the OL3 Supplier initiated the International Chamber of Commerce (ICC) arbitration proceedings and submitted a claim concerning the delay and the ensuing costs incurred at the Olkiluoto 3 project. The Supplier has submitted claims to the ICC for an aggregate amount of approximately EUR 3.59 billion, which includes a total amount of approximately EUR 1.58 billion in penalty interest (calculated up to 30 June 2017) and payments allegedly delayed by TVO under the Plant Contract, as well as approximately EUR 132 million of alleged loss of profit.

In 2012, TVO submitted a counter-claim and defence in the matter. In July 2015, TVO updated its quantification estimate of its costs and losses to the amount of approximately EUR 2.6 billion until December 2018, which according to the schedule submitted by the OL3 supplier in September 2014 was the estimated start of regular electricity production of OL3.

In November 2016, the ICC Tribunal made a final and binding partial award. In the partial award, the ICC Tribunal addressed the early period of the project (time schedule, licensing and licencability, and system design). This comprised many of the facts and matters that TVO relies upon in its main claims against the supplier, as well as certain key matters that the supplier relies upon in its claims against TVO. In doing so, the partial award finally resolved the great majority of these facts and matters in favour of TVO, and conversely rejected the great majority of the supplier's contentions in this regard. The partial award did not take a position on the claimed monetary amounts.

The ICC Tribunal made another final and binding partial award in July 2017. This partial award addresses the preparation, submittal, review, and approval of design and licensing documents on the project. This comprises the key facts and matters that the supplier relies upon in its main claims against TVO, as well as certain matters that TVO relies upon in its claims against the Supplier. In doing so, the partial award has finally resolved the great majority of these facts and matters in favour of TVO. Conversely, it has also rejected the great majority of the Supplier's contentions in this regard. Although the partial award did not take a position on the claimed monetary amounts, it has conclusively rejected the analytical method used by the Supplier to support its principal monetary claims against TVO.

The parties received a final and binding partial award also in November 2017. This partial award addresses the execution and construction works and the overall project management of the OL3 EPR project. This comprises many facts and matters that TVO relies upon in its main claim against the Supplier, as well as certain matters that the Supplier relies upon in its claims against TVO. The partial award finally resolves many of the facts and matters concerning the execution of the construction works in favour of TVO and notably defers many of the issues raised by TVO including the Supplier's project management for determination in a subsequent award.

The arbitration proceeding is still going on and it now proceeds towards the final award where the Tribunal will declare liabilities to pay compensation.

In 2016, Areva announced a restructuring of its business. The restructuring plan involved a transfer of the operations of Areva NP to a company called NEW NP, the majority owner of which is going to be EDF. The transaction was completed at the end of 2017, and thereafter 75.5 percent of the shares of New NP were transferred to EDF. New NP was renamed Framatome as of January 2018. OL3 EPR project and the means required to complete the project, as well as certain other liabilities will remain within AREVA NP and AREVA GmbH, within the scope of AREVA SA. In January 2017, the EU Commission made a decision

on the state aid, and in May 2017, the Commission accepted the merger. In September 2017, TVO filed an appeal to the General Court of the European Union of the Commission decision on French state aid to the AREVA Group. TVO requires that the restructuring of the French nuclear industry will not compromise the completion of the OL3 EPR project within the Supplier's schedule and that all liabilities of the plant contract are respected.

37 Events after the balance sheet date

On 8 January 2018, E.ON SE announced that it had decided to tender its 170,720,340 Uniper SE shares (corresponding to 46.65% of shares and voting rights) into Fortum's public takeover offer. Furthermore, E.ON announced that the members of the E.ON Board of Management who have until now held Uniper shares privately will also tender all of their shares to Fortum under the voluntary public takeover offer.

On 19 January 2018, Fortum announced that 46.93% of the share capital and the voting rights in Uniper were tendered during the initial acceptance period of Fortum's voluntary public takeover offer for the outstanding shares of Uniper corresponding to 171,736,647 shares. The initial acceptance period ended on 16 January 2018 and the additional acceptance period resumed on 20 January 2018 and will end on 2 February 2018.

38 Acquisitions and disposals

38.1 Acquisitions

EUR million	2017	2016
Gross investments in shares in subsidiary companies	982	813
Gross investments in shares in associated companies and joint ventures	135	17
Gross investments in available for sale financial assets	8	14
Gross investments in shares	**1,125**	**844**

Uniper investment

On 26 September 2017, Fortum announced it had signed a transaction agreement with E.ON under which E.ON has the right to tender its 46.65% shareholding in Uniper in early 2018. In November 2017 Fortum launched a voluntary public takeover offer to all Uniper shareholders at a total value of EUR 22 per share.

On 8 January 2018, E.ON SE announced that it had decided to tender its 170,720,340 Uniper SE shares (corresponding to 46.65% of shares and voting rights) into Fortum's public takeover offer. Furthermore, E.ON announced that the members of the E.ON Board of Management who have until now held Uniper shares privately will also tender all of their shares to Fortum under the voluntary public takeover offer.

On 19 January 2018, Fortum announced that the number of shares tendered during the initial acceptance period of Fortum's voluntary public takeover offer for the outstanding shares of Uniper totalled 171,736,647 shares. This corresponds to approximately 46.93% of the share capital and the voting rights of Uniper. The initial acceptance period ended on 16 January 2018 and the additional acceptance period resumed on 20 January 2018 and will end on 2 February 2018. The value of the tendered shares from the initial acceptance period is EUR 3.78 billion based on the total value of EUR 22 per share.

38.1.1 Acquisitions of subsidiary companies 2017

In January 2017 Fortum completed the acquisition of 100% of the shares in three wind power companies from the Norwegian company Nordkraft. The transaction consists of the Nygårdsfjellet wind farm, which is already operational, as well as the fully-permitted Ånstadblåheia and Sørfjord projects. Fortum has started the construction of the Ånstadblåheia and Sørfjord projects, expected to be commissioned in 2018 and 2019. When built the installed capacity of the three wind farms would total approximately 170 MW.

Fortum started a redemption process for the remaining shares of Ekokem Corporation (renamed as Fortum Waste Solution Oy) in October 2016. The process was finalized in March 2017 after which Fortum owns 100% of the shares in the company.

On 4 August Fortum concluded the restructuring of the ownership in Hafslund together with the City of Oslo. Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo. Fortum acquired 100% of Hafslund Markets AS, 50% of Hafslund Varme AS (renamed as Fortum Oslo Varme AS) including the City of Oslo's waste-to-energy company Klemetsrudanlegget AS (renamed as Fortum Oslo Varme KEA AS) and 10% of Hafslund Produksjon Holding AS. The total debt-free price of the acquisition was approximately EUR 940 million.

The combined net cash investment of the transactions, including the dividend received in May 2017, was approximately EUR 230 million.

Hafslund Markets and Fortum Oslo Varme are consolidated into Fortum Group from 1 August 2017. Hafslund Markets is consolidated as a part of the Consumer Solutions segment. Fortum has operational responsibility of Fortum Oslo Varme, which is consolidated as a subsidiary with 50% non-controlling interest into the results of City Solutions segment. Hafslund Produksjon Holding is treated as an

associated company and reported in the Generation segment. The initial goodwill from the purchase price allocations, prepared based on the 31 July balance sheets, is EUR 215 million for Hafslund Markets and EUR 69 million for Fortum Oslo Varme respectively. The initial purchase price allocation is still preliminary as all valuation effects, especially regarding the provisions, have not been finalised.

The impact from Hafslund acquisition on 2017 sales in the Consumer Solutions segment was EUR 344 million, comparable operating profit EUR 13 million and comparable EBITDA EUR 22 million. The impact on 2017 sales in the City Solutions segment was EUR 56 million, comparable operating profit EUR 15 million and comparable EBITDA EUR 29 million.

EUR million	Hafslund Markets AS	Fortum Oslo Varme AS	Other	Fortum total
Consideration paid in cash	589	152	70	811
Unpaid consideration	0	0	9	9
Total consideration	**589**	**152**	**79**	**820**
Fair value of the acquired assets	374	84	77	535
Translation difference	1	0	2	2
Goodwill	**215**	**69**	**1**	**286**

In December 2017 Fortum acquired three solar power companies from Hevel Group. The Pleshanovskaya (10 MW) and Grachevskaya (10 MW) solar power plants are located in the Orenburg region and the Bugulchanskaya (15 MW) solar power plant in the Republic of Bashkortostan. All three power plants are operational and will receive capacity Supply Agreement (CSA) payments for approximately 15 years after commissioning at an average CSA price corresponding to approximately EUR 430/MWh. The plants were commissioned in 2016 and 2017.

	Hafslund Markets AS			Fortum Oslo Varme AS			Fortum total [1]		
EUR million	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value
Fair value of the acquired net identifiable assets									
Cash and cash equivalents	158		158	37		37	201		201
Intangible assets	12	284	296	0		0	17	334	352
Property, plant and equipment	5		5	526	207	733	604	208	811
Other assets	179		179	21		21	206		206
Deferred tax liabilities	-19	-68	-88	-21	-50	-71	-46	-129	-175
Other non-interest bearing liabilities	-176		-176	-39		-39	-217		-217
Interest-bearing liabilities	0		0	-445		-445	-489		-489
Net identifiable assets	**158**	**216**	**374**	**79**	**157**	**237**	**275**	**413**	**688**
Non-controlling interests	0	0	0	51	102	153	51	102	153
Total	**158**	**216**	**374**	**29**	**55**	**84**	**225**	**310**	**535**

1) Including acquired book values and allocated fair values from the acquisition of Norwegian wind park companies, Russian solar power companies as well as other smaller acquisitions.

EUR million	Hafslund Markets AS	Fortum Oslo Varme AS	Other	Fortum total
Gross investment				
Purchase consideration settled in cash	589	152	70	811
Cash and cash equivalents in acquired subsidiaries	158	37	6	201
Translation difference	1	0	2	3
Cash outflow in acquisition	**432**	**116**	**65**	**613**
Unpaid consideration			9	9
Interest-bearing debt in acquired subsidiaries		445	44	489
of which loans given by Fortum		-213		-213
Transaction adjustments to debt-like items	54	26	0	80
Translation difference	0	1	2	4
Total gross investment in acquired subsidiaries	**486**	**375**	**121**	**982**

38.1.2 Acquisitions of subsidiary companies 2016

The acquisition of approximately 81% of the shares in the Nordic circular economy company Ekokem Corporation (renamed as Fortum Waste Solutions Oy) was finalised on 31 August 2016. The debt and cash-free purchase price for 100% of the company was approximately EUR 680 million. Fortum also made a tender offer valid until end of September to the remaining shareholders at the same price of 165 EUR per share. By the end of December Fortum's total shareholding was 98.2%.

The initial purchase price allocation as of 31 August 2016 was finalised during 2017. No material changes were made to the initial purchase price allocation.

Fortum Waste Solutions Oy is fully consolidated into Fortum Group from the end of August 2016 and has been integrated as a business area into the City Solutions segment. The comparative numbers in the financial statement include the income statement effect of Fortum Waste Solutions from 1 September 2016 onwards. The consolidated sales for 2017 included in the City Solutions segment was EUR 293 million (Sept to Dec 2016: 105), comparable operating profit EUR 24 million (Sept to Dec 2016: 7) and comparable EBITDA EUR 74 million (Sept to Dec 2016: 26).

On 8 January 2016, Fortum made a public tender offer in Poland to purchase all shares in Grupa DUON S.A. (renamed as Fortum Markets Polska S.A.), an electricity and gas sales company listed on the Warsaw Stock Exchange. During the subscription period that ended on 26 February 2016 Fortum received subscriptions from shareholders representing altogether 93.35% shares in the company at the offered price PLN 3.85 per share. The remaining shares were purchased from shareholders under the mandatory squeeze-out procedure at the same price per share. In April Fortum obtained 100% of shares in Fortum Markets Polska S.A. and in June the company was delisted.

This financial statement includes the income statement effect of Grupa Duon S.A. group from 1 April 2016 onwards. The consolidated sales for 2017 included in the Consumer Solutions segment was EUR 266 million (April–Dec 2016: 155), comparable operating profit EUR 0 million (April–Dec 2016: 4) and comparable EBITDA EUR 4 million (April-Dec 2016: 8).

The initial purchase price allocation as of 31 March 2016 was finalised during 2017. No material changes were made compared to the information disclosed in the consolidated financial statements for 2016.

Other acquisitions include the shares of Info24 AB and Turebergs Recycling AB. On 1 April 2016 Fortum acquired 100% of the shares in the Swedish IT company Info24, a company specialised in the development of business solutions within the IoT, Internet of Things. On 21 December 2016 Fortum acquired 100% of the shares in Turebergs Recycling AB, a Swedish company with main business in environmental construction, recycling and processing of bottom ash from waste-to-energy plants.

EUR million	Fortum Waste Solutions Oy	Fortum Markets Polska S.A.	Other	Fortum total
Consideration paid in cash	570	106	15	691
Unpaid consideration	10		3	13
Total consideration	**580**	**106**	**17**	**703**
Fair value of the acquired assets	440	86	17	543
Translation difference	0	2	0	2
Goodwill	**141**	**22**	**0**	**163**

EUR million	Fortum Waste Solutions Oy			Fortum Markets Polska S.A.			Fortum total [1]		
	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value	Acquired book values	Allocated fair value	Total fair value
Fair value of the acquired net identifiable assets									
Cash and cash equivalents	17		17	8		8	26		26
Tangible and intangible assets	315	387	702	49	34	83	366	438	804
Other assets	67		67	37		37	108		108
Deferred tax liabilities	-34	-77	-112	-1	-7	-7	-35	-88	-123
Other non-interest bearing liabilities	-117		-117	-16		-16	-135		-135
Interest-bearing liabilities	-117		-117	-19		-19	-136		-136
Net identifiable assets	**131**	**309**	**441**	**58**	**28**	**86**	**194**	**351**	**545**
Non-controlling interests	1		1	1		1	2		2
Total	**131**	**309**	**440**	**58**	**28**	**86**	**192**	**351**	**543**

1) Including acquired book values and allocated fair values from the acquisition of Info24 AB and Turebergs Recycling AB.

EUR million	Fortum Waste Solutions Oy	Fortum Markets Polska S.A.	Other	Fortum total
Gross investment				
Purchase consideration settled in cash	570	106	15	691
Cash and cash equivalents in acquired subsidiaries	17	8	1	26
Cash outflow in acquisition	**553**	**98**	**14**	**664**
Unpaid consideration	10		3	13
Interest-bearing debt in acquired subsidiaries	117	19	0	136
Total gross investment in acquired subsidiaries	**680**	**117**	**17**	**813**

38.1.3 Other acquisitions

In April 2017, Fortum and RUSNANO, a Russian state-owned development company, signed a 50/50 investment partnership in order to secure the possibility of a Russian Capacity Supply Agreement (CSA) wind portfolio in Russia. The wind investment fund 50/50 owned by Fortum and RUSNANO was awarded 1,000 MW wind capacity in Russian wind CSA auction in June 2017. The investments decisions will be made on a case-by-case basis within the total mandate of the wind investment fund. Fortum's equity stake in the wind investment fund totals a maximum of RUB 15 billion (currently approximately EUR 220 million). The amount is invested over time (within approximately 5 years) as it is subject to positive investment decisions. During 2017 Fortum invested EUR 43 million in the fund.

In October 2017 Fortum and SUENKO established a joint venture, JSC Ural-Siberian Heat and Power Company (YUSTEK), for the heat supply in Tyumen, Russia. Fortum will continue as CHP owner and selling heat to YUSTEK.

38.2 Disposals

EUR million	2017	2016
Gross divestments of shares in subsidiary companies	55	127
Gross divestments of shares in associated companies and joint ventures	687	34
Gross divestments of shares	**742**	**161**

38.2.1 Disposals of subsidiary companies

In May 2017, Fortum agreed to sell 100% of its shares in the Polish gas infrastructure company DUON Dystrybucja S.A. to Infracapital, the infrastructure investment arm of M&G Investments. DUON Dystrybucja S.A. is transporting grid gas and LNG in Poland. The company was acquired as part of the acquisition of the electricity and gas sales company Grupa DUON S.A. (currently Fortum Markets Polska S.A.) in 2016. Fortum booked in 2017 a one-time pre-tax sales gain in Consumer Solution segment totalling EUR 2 million.

In November 2017 Fortum sold its 51% stake in the Norwegian electricity sales company Røyken Kraft AS to the minority shareholder Røyken Energiverk AS. The company was acquired as part of the Hafslund Markets AS group in the restructuring of the ownership in Hafslund.

In February 2016 Fortum sold its 100% shareholding in its Russian subsidiary OOO Tobolsk CHP to SIBUR, Russia's largest integrated gas processing and petrochemicals company. OOO Tobolsk CHP owns and operates the combined heat and power (CHP) plant in the city of Tobolsk in Western Siberia. Fortum booked a one-time pre-tax sales gain in Russia segment totalling EUR 35 million.

Divestments of shares in subsidiaries - Impact on financial position

EUR million	2017	2016
Gross divestments of shares in subsidiary companies	55	127
Liquid funds in sold subsidiaries	5	10
Sales price including liquid funds in sold subsidiaries	**60**	**137**
Intangible assets and property, plant and equipment	58	92
Other non-current and current assets	6	15
Liquid funds	5	10
Interest-bearing loans	-3	0
Other liabilities and provisions	-7	-15
Net assets divested	**59**	**102**
Gain on sale	**2**	**35**

38.2.2 Other disposals

On 3 August 2017 Fortum sold its 34.1% stake in Hafslund ASA to the City of Oslo in connection with the restructuring of the ownership in Hafslund. Fortum booked a one-time tax-free sales gain in Other segment in the 2017 results totalling approximately EUR 324 million including transaction costs, corresponding EUR 0.36 earnings per share.

In March 2016 Fortum concluded the divestment of its 51.4% shareholding in the Estonian natural gas import, sales and distribution company AS Eesti Gaas. Fortum sold its shareholding to Trilini Energy OÜ. The sale resulted in a one-time pre-tax sales gain in City Solutions segment totalling EUR 11 million.

39 Related party transactions

39.1 The Finnish State and companies owned by the Finnish State

At the end of 2017, the Finnish State owned 50.76% of the Company's shares. The Finnish Parliament has authorised the Government to reduce the Finnish State's holding in Fortum Corporation to no less than 50.1% of the share capital and voting rights.

All transactions between Fortum and other companies owned by the Finnish State are on arm's length basis.

On 31 August 2016 Fortum finalised the acquisition of Ekokem Corporation with the four biggest owners, representing approximately 81% of the shares. The Finnish State was among the biggest owners with a 34%-shareholding in Ekokem. For more information see ▸Note 38 Acquisitions and disposals.

39.2 Board of Directors and Fortum Executive Management

The key management personnel of the Fortum Group are the members of Fortum Executive Management and the Board of Directors. Fortum has not been involved in any material transactions with members of the Board of Directors or Fortum Executive Management. No loans exist to any member of the Board of Directors or Fortum Executive Management at 31 December 2017. The total compensation (including pension benefits and social costs) for the key management personnel for 2017 was EUR 9 million (2016: 10).

See ▸Note 10 Employee benefits for further information on the Board of Directors and Fortum Executive Management remuneration and shareholdings.

39.3 Associated companies and joint ventures

In the ordinary course of business Fortum engages in transactions on commercial terms with associated companies and other related parties, which are on same terms as they would be for third parties, except for some associates as discussed later in this note.

Fortum owns shareholdings in associated companies and joint ventures which in turn own hydro and nuclear power plants. Under the consortium agreements, each owner is entitled to electricity in proportion to its share of ownership or other agreements. Each owner is liable for an equivalent portion of costs regardless of output. These associated companies are not profit making, since the owners purchase electricity at production cost including interest costs and production taxes.

For further information on transactions and balances with associated companies and joint ventures, see ▸Note 18 Participations in associated companies and joint ventures.

39.4 Pension fund

The Fortum pension funds in Finland and Sweden are stand-alone legal entities which manage pension assets related to the part of the pension coverage in Sweden and Finland. The assets in the pension fund in Finland include Fortum shares representing 0.04% (2016: 0.04%) of the company's outstanding shares. Real estate and premises owned by the Finnish pension fund have been leased to Fortum. Fortum has not paid contributions to the pension funds in 2017 nor in 2016. Real estate mortgages have also been given for loan from Fortum's Finnish pension fund for EUR 41 million (2016: 41).

40 Subsidiaries by segment on 31 December 2017

C = City Solutions
CS = Consumer Solutions
G = Generation
R = Russia
O = Other

1) New company
2) Shares held by the parent company

Company name	Domicile	Segment	Group holding, %
Ekopartnerit Turku Oy	Finland	C	51.0
Fortum Asiakaspalvelu Oy [2)]	Finland	CS	100.0
Fortum Assets Oy	Finland	O	100.0
Fortum C&H Oy	Finland	O	100.0
Fortum Environmental Construction Oy	Finland	C	100.0
Fortum Growth Oy	Finland	O	100.0
Fortum Heat and Gas Oy [2)]	Finland	C, O	100.0
Fortum Markets Oy [2)]	Finland	CS	100.0
Fortum Norm Oy [2)]	Finland	O	100.0
Fortum Power and Heat Holding Oy	Finland	G	100.0
Fortum Power and Heat Oy [2)]	Finland	C, G, O	100.0
Fortum Real Estate Oy [2)]	Finland	O	100.0
Fortum Waste Solutions Oy [2)]	Finland	C	100.0
Kiinteistö Oy Espoon Energiatalo	Finland	O	100.0
Koillis-Pohjan Energiantuotanto Oy	Finland	G	100.0
Kotimaan Energia Oy [1)]	Finland	CS	100.0
Oy Pauken Ab	Finland	O	100.0
Oy Tersil Ab	Finland	O	100.0
Oy Tertrade Ab	Finland	O	100.0
Vindin Böle Ab/Oy [1)]	Finland	O	100.0
Vindin Kalax Ab/Oy [1)]	Finland	O	100.0
Vindin Molpe Ab/Oy [1)]	Finland	O	100.0
Vindin Pjelax Ab/Oy [1)]	Finland	O	100.0
Vindin Poikel Norra Ab/Oy [1)]	Finland	O	100.0
Vindin Pörtom Ab/Oy [1)]	Finland	O	100.0
Fortum Project Finance N.V. [2)]	Belgium	O	100.0
Fortum Energi A/S	Denmark	CS	100.0
Fortum Waste Solutions A/S	Denmark	C	100.0
Fortum Waste Solutions OW A/S	Denmark	C	100.0
AS Anne Soojus	Estonia	C	60.0
AS Fortum Tartu	Estonia	C	60.0
AS Tartu Joujaam	Estonia	C	60.0
AS Tartu Keskkatlamaja	Estonia	C	60.0
Fortum CFS Eesti OU	Estonia	O	100.0
Fortum Eesti AS	Estonia	C	100.0
Fortum France S.A.S	France	O	100.0
Fortum Deutschland SE [1)]	Germany	O	100.0
Fortum Service Deutschland GmbH	Germany	C	100.0
Fortum Carlisle Limited	Great Britain	C	100.0
Fortum Energy Ltd	Great Britain	O	100.0
Fortum Glasgow Limited	Great Britain	C	100.0
Fortum O&M(UK) Limited	Great Britain	C	100.0
IVO Energy Limited	Great Britain	G	100.0
Fortum Insurance Ltd	Guernsey	O	100.0
Fortum Amrit Energy Private Limited	India	O	100.0
Fortum FinnSurya Energy Private Limited	India	O	100.0
Fortum India Private Limited	India	O	100.0
Fortum Solar India Private Limited	India	O	100.0
Fortum Finance Ireland Designated Activity Company [2)]	Ireland	O	100.0
Fortum P&H Ireland Limited [1)]	Ireland	O	100.0
Fortum Participation Ltd [1)]	Ireland	O	100.0
Fortum Jelgava, SIA	Latvia	C	100.0
Fortum Latvia SIA	Latvia	C	100.0
UAB Fortum Heat Lietuva	Lithuania	C	100.0
UAB Fortum Klaipeda	Lithuania	C	96.0
UAB Joniskio energija	Lithuania	C	66.2
UAB Svencioniu energija	Lithuania	C	50.0
Fortum Investment SARL	Luxembourg	O	100.0
Fortum Luxembourg SARL	Luxembourg	O	100.0
Fortum Forvaltning AS	Norway	O	100.0
Fortum Markets AS	Norway	CS	100.0
Fortum Oslo Varme AS [1)]	Norway	C	50.0
Fortum Oslo Varme KEA AS [1)]	Norway	C	50.0
Fortum Waste Solutions Norway AS	Norway	C	100.0
Fredrikstad EnergiSalg AS [1)]	Norway	CS	100.0
Hafslund Hedging AS [1)]	Norway	CS	100.0
Hafslund Kundesenter AS [1)]	Norway	CS	100.0
Hafslund Marked AS [1)]	Norway	CS	100.0
Hafslund Strøm AS [1)]	Norway	CS	100.0

Company name		Domicile	Segment	Group holding, %
Hafslund Tellier AS	1)	Norway	CS	100.0
Hallingkraft AS	1)	Norway	CS	100.0
Mitt Hjem Norge AS	1)	Norway	CS	100.0
NorgesEnergi AS	1)	Norway	CS	100.0
Nygårdsfjellet Vindpark AS	1)	Norway	O	100.0
Oslo Energi AS	1)	Norway	CS	100.0
Solvencia AS	1)	Norway	CS	100.0
Sørfjord Vindpark AS	1)	Norway	O	100.0
Ånstadblåheia Vindpark AS	1)	Norway	O	100.0
AMB Energia Sprzedaż Sp. z o.o.		Poland	CS	100.0
Fortum Customer Services Polska Sp. z o.o.		Poland	CS	100.0
Fortum Marketing and Sales Polska S.A.		Poland	CS	100.0
Fortum Markets Polska S.A.		Poland	CS	100.0
Fortum Network Częstochowa Sp. z o.o.		Poland	C	100.0
Fortum Network Płock Sp. z o.o.		Poland	C	100.0
Fortum Network Wrocław Sp. z o.o.		Poland	C	100.0
Fortum Power and Heat Polska Sp. z o.o.		Poland	C, CS	100.0
Fortum Silesia SA		Poland	C	100.0
Fortum Sprzedaż Sp. z o.o.		Poland	CS	100.0
Rejonowa Spółka Ciepłownicza Sp. z o.o.		Poland	C	100.0
Chelyabinsk Energoremont		Russia	R	100.0
Fortum New Generation LLC	1)	Russia	R	98.2
LLC Pleshanovskaya Solar power station	1)	Russia	R	98.2
LLC Bugulchanskaya Solar power station	1)	Russia	R	98.2
LLC Grachevskaya Solar power station	1)	Russia	R	98.2
PAO Fortum		Russia	R	98.2
Ural Heat Networks Company Joint Stock Company		Russia	R	98.2
Escandinava de Electricidad S.L.U	1)	Spain	CS	100.0
Blybergs Kraftaktiebolag		Sweden	G	66.7
Brännälven Kraft AB		Sweden	G	67.0
Bullerforsens Kraft Aktiebolag		Sweden	G	88.0
Energibolaget i Sverige Holding AB	1)	Sweden	CS	100.0
Energikundservice Sverige AB		Sweden	CS	100.0
Fortum 1 AB		Sweden	R	100.0
Fortum Fastigheter AB		Sweden	O	100.0
Fortum Markets AB		Sweden	CS	100.0

Company name		Domicile	Segment	Group holding, %
Fortum Produktionsnät AB		Sweden	G	100.0
Fortum Sweden AB	2)	Sweden	O	100.0
Fortum Sverige AB		Sweden	C, G, O	100.0
Fortum Waste Solutions AB		Sweden	C	100.0
Fortum Waste Solutions Holding AB		Sweden	C	100.0
Fortum Vind Norr AB		Sweden	O	100.0
Göta Energi AB	1)	Sweden	CS	100.0
Hafslund Energi AB	1)	Sweden	CS	100.0
Mellansvensk Kraftgrupp Aktiebolag		Sweden	G	86.9
Nordgroup Waste Management AB		Sweden	C	100.0
Oreälvens Kraftaktiebolag		Sweden	G	65.0
SverigesEnergi Elförsäljning AB	1)	Sweden	CS	100.0
Tellier Service AB	1)	Sweden	CS	100.0
Turebergs Recycling AB		Sweden	C	100.0
Uddeholm Kraft Aktiebolag		Sweden	G	100.0
VG Power Tools AB	1)	Sweden	C	100.0
VG Power Turbo AB	1)	Sweden	C	100.0
Värmlandskraft-OKG-delägarna Aktiebolag		Sweden	G	73.3
FB Generation Services B.V.		The Netherlands	O	100.0
Fortum 2 B.V.		The Netherlands	O	100.0
Fortum 3 B.V.		The Netherlands	O	100.0
Fortum Charge & Drive B.V.		The Netherlands	O	100.0
Fortum Finance B.V.		The Netherlands	O	100.0
Fortum Holding B.V.	2)	The Netherlands	C, G, O	100.0
Fortum Hydro B.V.		The Netherlands	O	100.0
Fortum India B.V.		The Netherlands	O	100.0
Fortum Power Holding B.V.		The Netherlands	O	100.0
Fortum Russia B.V.		The Netherlands	R	100.0
Fortum Russia Holding B.V.		The Netherlands	O	100.0
Fortum SAR B.V.		The Netherlands	O	100.0
Fortum Star B.V.		The Netherlands	O	100.0
Fortum Sun B.V.		The Netherlands	O	100.0
Fortum Wave Power B.V.		The Netherlands	O	100.0
PolarSolar B.V.		The Netherlands	O	100.0
RPH Investment B.V.		The Netherlands	R	100.0

Financial key figures

Comparability of information presented in tables and graphs

Fortum announced the sale of Swedish Distribution business in March 2015. After the divestment of the Swedish Distribution business Fortum has no electricity distribution operations and therefore Distribution segment was treated as discontinued operations in 2015, with restatement of year 2014, according to IFRS 5 Non-current Assets Held for Sale and Discontinued Operations.

Information in the tables and graphs presented for year 2012 or earlier is not restated due to the adoption of IFRS 10 and IFRS 11. Adoption of standards influences treatment of Fortum's holding in AB Fortum Värme samägt med Stockholms stad (Fortum Värme) in the consolidated financial statements. From 1 January 2014 onwards Fortum Värme is treated as a joint venture and thus consolidated with equity method. Before the change the company was consolidated as a subsidiary with 50% minority interest.

EUR million or as indicated	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Change 17/16, %
Income statement											
Sales total Fortum	5,636	5,435	6,296	6,161	6,159	5,309	4,751	3,702	3,632	4,520	24
Sales continuing operations							4,088	3,459	3,632	4,520	24
EBITDA total Fortum [1)]	2,478	2,292	2,271	3,008	2,538	2,129	3,954	4,640	1,006	1,623	61
EBITDA continuing operations							1,673	196	1,006	1,623	61
Comparable EBITDA total Fortum	2,360	2,398	2,396	2,374	2,416	1,975	1,873	1,265	1,015	1,275	26
Comparable EBITDA continuing operations							1,457	1,102	1,015	1,275	26
Operating profit total Fortum	1,963	1,782	1,708	2,402	1,874	1,508	3,428	4,245	633	1,158	83
- of sales %	34.8	32.8	27.1	39.0	30.4	28.4	72.2	114.7	17.4	25.6	
Operating profit continuing operations							1,296	-150	633	1,158	83
- of sales %							31.7	-4.3	17.4	25.6	
Comparable operating profit total Fortum	1,845	1,888	1,833	1,802	1,752	1,403	1,351	922	644	811	26
Comparable operating profit continuing operations							1,085	808	644	811	26
Profit before income tax total Fortum	1,850	1,636	1,615	2,228	1,586	1,398	3,360	4,088	595	1,111	87
- of sales %	32.8	30.1	25.7	36.2	25.8	26.3	70.7	110.4	16.4	24.6	
Profit before income tax continuing operations							1,232	-305	595	1,111	87
- of sales %							30.1	-8.8	16.4	24.6	
Profit for the period total Fortum	1,596	1,351	1,354	1,862	1,512	1,212	3,161	4,142	504	882	75
- of which attributable to owners of the parent	1,542	1,312	1,300	1,769	1,416	1,204	3,154	4,138	496	866	75
Profit for the period continuing operations							1,089	-228	504	882	75
- of which attributable to owners of the parent							1,081	-231	496	866	75

EUR million or as indicated	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Change 17/16, %
Financial position and cash flow											
Capital employed total Fortum	15,911	15,350	16,124	17,931	19,420	19,183	17,918	19,870	18,649	18,172	-3
Interest-bearing net debt	6,179	5,969	6,826	7,023	7,814	7,793	4,217	-2,195	-48	988	2,158
Interest-bearing net debt without Värme financing						6,658	3,664	N/A	N/A	N/A	
Capital expenditure and gross investments in shares total Fortum	2,624	929	1,249	1,482	1,574	1,020	843	669	1,435	1,815	26
- of sales %	46.6	17.1	19.8	24.1	25.6	19.2	17.7	18.1	39.5	40.2	
Capital expenditure and gross investments in shares continuing operations							695	625	1,435	1,815	26
Capital expenditure total Fortum	1,108	862	1,222	1,408	1,558	1,005	774	626	591	690	17
Capital expenditure continuing operations							626	582	591	690	17
Net cash from operating activities total Fortum	2,002	2,264	1,437	1,613	1,382	1,548	1,762	1,381	621	993	60
Net cash from operating activities continuing operations							1,406	1,228	621	993	60
Key ratios											
Return on capital employed total Fortum, %	15.0	12.1	11.6	14.8	10.2	9.0	19.5	22.7	4.0	7.1	
Return on shareholders' equity total Fortum, %	18.7	16.0	15.7	19.7	14.6	12.0	30.0	33.4	3.7	6.6	
Interest coverage total Fortum	9.4	12.4	13.7	10.5	7.6	6.7	19.9	27.6	4.6	8.7	
Interest coverage including capitalised borrowing costs total Fortum	8.6	10.3	10.0	8.5	5.7	5.3	15.7	21.5	4.1	7.8	
Funds from operations/interest-bearing net debt total Fortum, %	34.1	37.6	20.5	21.5	19.9	18.8	42.9	-59.7	-1,503.4	83.9	
Funds from operations/interest-bearing net debt without Värme financing total Fortum, %						22.1	49.3	N/A	N/A	N/A	
Gearing, %	73	70	78	69	73	77	39	-16	0	7	
Comparable net debt/EBITDA total Fortum	2.6	2.5	2.8	3.0	3.2	3.9	2.3	-1.7	0.0	0.8	
Comparable net debt/EBITDA without Värme financing						3.4	2.0	N/A	N/A	N/A	
Equity-to-assets ratio, %	41	43	40	44	43	43	51	61	62	61	
Other data											
Dividends	888	888	888	888	888	977	1,155	977	977	977 [2)]	0
Research and development expenditure	27	30	30	38	41	49	41	47	52	53	2
- of sales %	0.5	0.5	0.5	0.6	0.7	0.9	1.0	1.4	1.4	1.2	
Average number of employees total Fortum	14,077	13,278	11,156	11,010	10,600	9,532	8,821	8,193	7,994	8,507	
Average number of employees continuing operations							8,329	8,009	7,994	8,507	

1) EBITDA is defined as Operating profit + Depreciation and amortisation.

2) Board of Directors' proposal for the planned Annual General Meeting on 28 March 2018.

See ▸ Definitions of key figures.

Share key figures

EUR million or as indicated	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Change 17/16 %
Data per share											
Earnings per share total Fortum	1.74	1.48	1.46	1.99	1.59	1.36	3.55	4.66	0.56	0.98	75
Earnings per share continuing operations							1.22	-0.26	0.56	0.98	75
Earnings per share discontinued operations	-	-	-	-	-	-	2.33	4.92	-	-	
Diluted earnings per share total Fortum	1.74	1.48	1.46	1.99	1.59	1.36	3.55	4.66	0.56	0.98	75
Diluted earnings per share continuing operations							1.22	-0.26	0.56	0.98	75
Diluted earnings per share discontinued operations	-	-	-	-	-	-	2.33	4.92	-	-	
Cash flow per share total Fortum	2.26	2.55	1.62	1.82	1.56	1.74	1.98	1.55	0.70	1.12	60
Cash flow per share continuing operations							1.38	1.38	0.70	1.12	60
Equity per share	8.96	9.04	9.24	10.84	11.30	11.28	12.23	15.53	15.15	14.69	-3
Dividend per share	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10 [1)]	0
Extra dividend							0.20	-	-	-	
Payout ratio, %	57.5	67.6	68.5	50.3	62.9	80.9	36.6	23.6	196.4	112.2 [1)]	
Dividend yield, %	6.6	5.3	4.4	6.1	7.1	6.6	7.2	7.9	7.5	6.7 [1)]	
Price/earnings ratio (P/E)	8.8	12.8	15.4	8.3	8.9	12.2	5.1	3.0	26.1	16.8	
Share prices											
At the end of the period	15.23	18.97	22.53	16.49	14.15	16.63	17.97	13.92	14.57	16.50	
Average	24.79	15.91	19.05	19.77	15.66	15.11	17.89	16.29	13.56	15.28	
Lowest	12.77	12.60	17.18	15.53	12.81	13.10	15.13	12.92	10.99	12.69	
Highest	33.00	19.20	22.69	24.09	19.36	18.18	20.32	21.59	15.74	18.94	
Other data											
Market capitalisation at the end of the period, EUR million	13,519	16,852	20,015	14,649	12,570	14,774	15,964	12,366	12,944	14,658	
Trading volumes [2)]											
Number of shares, 1,000 shares	628,155	580,899	493,375	524,858	494,765	465,004	454,796	541,858	611,572	582,873	
In relation to weighted average number of shares, %	70.8	65.4	55.5	59.1	55.7	52.3	51.2	61.0	68.8	65.6	
Number of shares, 1,000 shares	887,638	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	
Number of shares excluding own shares, 1,000 shares	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Average number of shares, 1,000 shares	887,256	888,230	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	
Diluted adjusted average number of shares, 1,000 shares	887,839	888,230	888,367	888,367	888,367	888,367	888,367	888,367	888,367	888,367	

1) Board of Directors' proposal for the Annual General Meeting on 28 March 2018.

2) Trading volumes in the table represent volumes traded on Nasdaq Helsinki. In addition to the Nasdaq Helsinki, Fortum shares were traded on several alternative market places, for example at Boat, Cboe and Turquoise, and on the OTC market as well. In 2017, approximately 61% (2016: 63%) of Fortum's shares were traded on markets other than the Nasdaq Helsinki Ltd.

See ▸ Definitions of key figures.

Segment key figures

Following the acquisition of the Russian company, PAO Fortum, Fortum changed its segment reporting during 2008. Comparison numbers were restated in 2008.

Fortum renewed its business structure as of 1 March 2014. The reorganisation lead to a change in Fortum's external financial reporting structure as previously separately reported segments Heat and Electricity Sales were combined into one segment: Heat, Electricity Sales and Solutions.

Fortum has applied new IFRS 10 Consolidated financial statements and IFRS 11 Joint arrangements from 1 January 2014. The effect of applying the new standards to Fortum Group financial information relates to AB Fortum Värme samägt med Stockholm Stad (Fortum Värme), that is treated as a joint venture and thus consolidated with equity method from 1 January 2014 onwards. Before the change the company was consolidated as a subsidiary with 50% minority interest.

Fortum announced the sale of Swedish Distribution business in March 2015. After the divestment of the Swedish Distribution business Fortum does not have any distribution operations and therefore Distribution segment has been treated as discontinued operations starting from 2015 with restatement of year 2014, according to IFRS 5 Non-current Assets Held for Sale and Discontinued Operations.

Fortum reorganised its operating structure as of 1 April 2016. The business divisions are: Generation (mainly the former Power and Technology); City Solutions (mainly the former Heat, Electricity Sales and Solutions) and Russia. Because of the minor financial impact, the comparable segment information for 2015 was not restated.

As of 1 March 2017, the City Solutions division was divided into two divisions: City Solutions and Consumer Solutions, both reported as separate reporting segments (see ▸ Note 5 Segment reporting). Fortum has restated its 2016 comparison segment reporting figures in accordance with the new organisation structure.

Sales by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	2,892	2,531	2,702	2,481	2,415	2,252	2,156	1,722	1,657	1,677
- of which internal	0	254	-281	-24	296	69	85	83	15	15
City Solutions						1,516	1,332	1,187	782	1,015
- of which internal						87	34	-13	1	19
Heat	1,466	1,399	1,770	1,737	1,628					
- of which internal	0	23	-8	8	18					
Consumer Solutions									668	1,097
- of which internal									2	3
Electricity Sales	1,922	1,449	1,798	900	722					
- of which internal	177	67	158	95	55					
Russia	489	632	804	920	1,030	1,119	1,055	893	896	1,101
- of which internal	-	-	-	-	-	-	0	0	0	0
Other	83	71	51	108	137	63	58	114	92	102
- of which internal	82	-5	169	115	-66	54	44	75	61	67
Distribution	789	800	963	973	1,070	1,064				
- of which internal	10	13	18	15	37	19				
Eliminations and Netting of Nord Pool transactions	-2,005	-1,447	-1,792	-958	-843	-706	-513	-458	-463	-470
Total for continuing operations	**5,636**	**5,435**	**6,296**	**6,161**	**6,159**	**5,309**	**4,088**	**3,459**	**3,632**	**4,520**
Discontinued operations							751	274		
Eliminations [1)]							-89	-31		
Total							**4,751**	**3,702**	**3,632**	**4,520**

1) Sales to and from discontinued operations.

Comparable operating profit by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	1,528	1,454	1,298	1,201	1,146	859	877	561	417	478
City Solutions						109	104	108	64	98
Heat	250	231	275	278	271					
Consumer Solutions									48	41
Electricity Sales	-33	22	11	27	39					
Russia	-92	-20	8	74	68	156	161	201	191	296
Other	-56	-61	-66	-73	-92	-54	-57	-63	-77	-102
Distribution	248	262	307	295	320	332				
Comparable operating profit	**1,845**	**1,888**	**1,833**	**1,802**	**1,752**	**1,403**	**1,085**	**808**	**644**	**811**
Impairment charges							0	-918	27	6
Capital gains and other	85	29	93	284	155	61	305	22	38	326
Changes in fair values of derivatives hedging future cash flow									-65	14
Nuclear fund adjustment									-11	1
Other items affecting comparability [1)]	33	-135	-218	316	-33	45	-94	-62		
Operating profit, continuing operations	**1,963**	**1,782**	**1,708**	**2,402**	**1,874**	**1,508**	**1,296**	**-150**	**633**	**1,158**
Discontinued operations							2,132	4,395		
Operating profit							**3,428**	**4,245**	**633**	**1,158**

1) Other items affecting comparability comprise Changes in fair values of derivatives hedging future cash flow and Nuclear fund adjustment.

Comparable EBITDA by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	1,625	1,547	1,398	1,310	1,260	1,007	998	680	527	603
City Solutions						211	204	209	186	262
Heat	419	393	462	471	481					
Consumer Solutions									55	57
Electricity Sales	-26	28	13	29	40					
Russia	-25	55	94	148	189	258	304	267	312	438
Other	-46	-51	-56	-66	-83	-49	-49	-53	-64	-83
Distribution	413	426	485	482	529	548				
Total for continuing operations	**2,360**	**2,398**	**2,396**	**2,374**	**2,416**	**1,975**	**1,457**	**1,102**	**1,015**	**1,275**
Discontinued operations							416	163		
Total							**1,873**	**1,265**	**1,015**	**1,275**

Depreciation and amortisation, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	97	93	100	109	114	148	121	118	110	125
City Solutions						102	100	101	121	163
Heat	169	162	187	193	210					
Consumer Solutions									7	16
Electricity Sales	7	6	2	2	1					
Russia	67	75	86	108	121	150	147	117	123	142
Other	10	10	10	7	9	5	8	10	13	18
Distribution	165	164	178	187	209	216				
Total for continuing operations	**515**	**510**	**563**	**606**	**664**	**621**	**377**	**346**	**373**	**464**
Discontinued operations							150	50		
Total							**526**	**395**	**373**	**464**

Share of profit of associates and joint ventures by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	26	-35	-25	3	-12	4	-14	-111	-34	-1
City Solutions						91	88	59	76	80
Heat	12	30	31	19	20					
Electricity Sales	5	0	1	2	0					
Russia	19	20	8	30	27	46	35	32	38	31
Other	48	-4	28	23	-20	32	37	40	51	38
Distribution	16	10	19	14	8	4				
Total for continuing operations	**126**	**21**	**62**	**91**	**23**	**178**	**146**	**20**	**131**	**148**
Discontinued operations							3	0		
Total							**149**	**20**	**131**	**148**

Capital expenditure by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	134	96	97	131	190	179	197	187	196	174
City Solutions						123	86	105	109	170
Heat	408	358	304	297	464					
Consumer Solutions									3	7
Electricity Sales	3	1	0	5	1					
Russia	256	215	599	670	568	435	340	285	201	152
Other	11	4	9	16	11	12	3	6	83	187
Distribution	296	188	213	289	324	255				
Total for continuing operations	**1,108**	**862**	**1,222**	**1,408**	**1,558**	**1,005**	**626**	**582**	**591**	**690**
Discontinued operations							147	44		
Total							**774**	**626**	**591**	**690**

Gross investments in shares by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	0	57	25	17	-	2	2	16	7	90
City Solutions						11	37	23	698	386
Heat	23	1	1	32	10					
Consumer Solutions									117	486
Russia	1,492	3	-	24	-	0	27	0	0	125
Other	1	1	1	1	6	2	4	4	22	39
Distribution	0	5	0	-	-	0				
Total for continuing operations	**1,516**	**67**	**27**	**74**	**16**	**15**	**69**	**43**	**844**	**1,125**
Discontinued operations							0	0		
Total							**69**	**43**	**844**	**1,125**

Gross divestments of shares by segment, EUR million	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	10	0	3	102	79	67	0	0	0
City Solutions					11	446	27	33	0
Heat	1	52	203	269					
Consumer Solutions								1	55
Electricity Sales	-	-	16	2					
Russia	-	43	23	-	-	0	0	127	0
Other	2	6	0	0	-	2	-	0	687
Distribution	1	46	323	37	52				
Total for continuing operations	**14**	**147**	**568**	**410**	**142**	**515**	**27**	**161**	**742**
Discontinued operations						2,681	6,369		
Total						**3,196**	**6,395**	**161**	**742**

Comparable net assets by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation								5,931	5,815	5,672
City Solutions								2,182	2,873	3,728
Consumer Solutions									154	638
Russia								2,561	3,284	3,161
Other								258	514	276
Total for continuing operations								**10,932**	**12,641**	**13,474**

Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards. Net assets until 2015 are disclosed below.

Net assets by segment, EUR million	2008	2009	2010	2011	2012	2013	2014	2015 [1)]
Generation	5,331	5,494	5,806	6,247	6,389	6,355	6,001	5,913
City Solutions						2,295	2,112	2,170
Heat	3,468	3,787	4,182	4,191	4,286			
Electricity Sales	188	125	210	11	51			
Russia	2,205	2,260	2,817	3,273	3,848	3,846	2,597	2,561
Other	796	382	29	208	158	295	496	291
Distribution	3,032	3,299	3,683	3,589	3,889	3,745		
Total for continuing operations	**15,020**	**15,347**	**16,727**	**17,519**	**18,621**	**16,537**	**11,206**	**10,934**
Net assets related to discontinued operations							2,615	-
Total							**13,820**	**10,934**

1) Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards.

Comparable return on net assets by segment, %	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	28.0	26.4	22.3	19.9	18.5	13.8	14.2	9.5	6.9	8.4
City Solutions						8.7	8.7	7.9	5.9	5.5
Heat	7.3	7.6	7.7	7.4	7.0					
Consumer Solutions									44.3	11.7
Electricity Sales	-15.3	18.6	9.3	33.5	203.1					
Russia	-3.8	0.0	0.7	3.5	2.7	5.2	5.6	8.2	8.0	10.1
Distribution [1)]	8.2	8.6	9.3	8.6	8.8	8.8	9.3			

1) Classified as discontinued operations from 2014 onwards.

Return on net assets by segment, %	2008	2009	2010	2011	2012	2013	2014	2015 [1)]
Generation	29.6	24.5	19.5	24.6	18.7	14.5	13.6	-8.5
City Solutions						9.7	19.1	7.7
Heat	8.9	7.9	8.4	9.9	8.8			
Electricity Sales	-14.0	28.9	38.4	4.2	152.3			
Russia	3.7	0.0	2.4	3.5	3.0	5.2	5.6	8.3
Distribution [2)]	8.1	8.7	9.7	13.7	9.1	9.3	73.6	

1) Fortum is disclosing Comparable net assets instead of Net assets from 2016 onwards.

2) Classified as discontinued operations from 2014 onwards.

Average number of employees	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	3,591	2,068	1,891	1,873	1,896	1,900	1,685	1,389	1,064	1,036
City Solutions						2,051	1,913	1,458	1,529	1,807
Heat	2,422	2,652	2,482	2,682	2,354					
Consumer Solutions									877	1,180
Electricity Sales	766	629	538	510	515					
Russia	5,566	6,170	4,555	4,436	4,301	4,245	4,196	4,180	3,814	3,710
Other	510	593	592	607	661	550	536	983	711	774
Distribution	1,222	1,166	1,098	902	873	786				
Total for continuing operations	**14,077**	**13,278**	**11,156**	**11,010**	**10,600**	**9,532**	**8,329**	**8,009**	**7,994**	**8,507**
Discontinued operations							492			
Total							**8,821**			

Definitions of key figures

EBITDA (Earnings before interest, taxes, depreciation and amortisation)	=	Operating profit + depreciation and amortisation
Comparable EBITDA	=	EBITDA - items affecting comparability - net release of CSA provision
Items affecting comparability	=	Impairment charges + capital gains and other + changes in fair values of derivatives hedging future cash flow + nuclear fund adjustment
Comparable operating profit	=	Operating profit - items affecting comparability
Impairment charges	=	Impairment charges and related provisions (mainly dismantling)
Capital gains and other	=	Capital gains, transaction costs from acquisitions and other
Changes in fair values of derivatives hedging future cash flow	=	Effects from financial derivatives hedging future cash-flows where hedge accounting is not applied according to IAS 39.
Nuclear fund adjustment	=	Effects from the accounting of Fortum's part of the Finnish Nuclear Waste Fund where the asset in the balance sheet cannot exceed the related liabilities according to IFRIC interpretation 5.
Adjustment for Share of profit of associated companies and joint ventures	=	Adjustment for IAS 39 effects, major sales gains and impairment charges
Funds from operations (FFO)	=	Net cash from operating activities before change in working capital
Capital expenditure	=	Capitalised investments in property, plant and equipment and intangible assets including maintenance, productivity, growth and investments required by legislation including borrowing costs capitalised during the construction period. Maintenance investments expand the lifetime of an existing asset, maintain usage/availability and/or maintains reliability. Productivity investments improve productivity in an existing asset. Growth investments' purpose is to build new assets and/or to increase customer base within existing businesses. Legislation investments are done at a certain point of time due to legal requirements.
Gross investments in shares	=	Investments in subsidiary shares, shares in associated companies and other shares in available-for-sale financial assets. Investments in subsidiary shares are net of cash and grossed with interest-bearing liabilities in the acquired company.
Return on shareholders' equity, %	=	$\frac{\text{Profit for the year}}{\text{Total equity average}} \times 100$
Return on capital employed, %	=	$\frac{\text{Profit before taxes + interest and other financial expenses}}{\text{Capital employed average}} \times 100$
Comparable return on net assets, %	=	$\frac{\text{Comparable operating profit + share of profit (loss) in associated companies and joint ventures + adjustment for Share of profit of associated companies and joint ventures}}{\text{Comparable net assets average}} \times 100$
Capital employed	=	Total assets - non-interest bearing liabilities - deferred tax liabilities - provisions
Comparable net assets	=	Non-interest bearing assets + interest-bearing assets related to the Nuclear Waste Fund - non-interest bearing liabilities - provisions (non-interest bearing assets and liabilities do not include finance related items, tax and deferred tax and assets and liabilities from fair valuations of derivatives used for hedging future cash flows)

Interest-bearing net debt = Interest-bearing liabilities - liquid funds

Gearing, % = Interest-bearing net debt / Total equity x 100

Equity-to-assets ratio, % = Total equity including non-controlling interests / Total assets x 100

Comparable net debt/EBITDA = Interest-bearing net debt / Comparable EBITDA

Interest coverage = Operating profit / Net interest expenses

Interest coverage including capitalised borrowing costs = Operating profit / Net interest expenses - capitalised borrowing costs

Average number of employees = Based on monthly average for the whole period

Earnings per share (EPS) = Profit for the period - non-controlling interests / Average number of shares during the period

Cash flow per share = Net cash from operating activities / Average number of shares during the period

Equity per share = Shareholders' equity / Number of shares at the end of the period

Payout ratio, % = Dividend per share / Earnings per share x 100

Dividend yield, % = Dividend per share / Share price at the end of the period x 100

Price/earnings (P/E) ratio = Share price at the end of the period / Earnings per share

Average share price = Amount traded in euros during the period / Number of shares traded during the period

Market capitalisation = Number of shares at the end of the period x share price at the end of the period

Trading volumes = Number of shares traded during the period in relation to the weighted average number of shares during the period

Effective income tax rate = Income tax expense / Profit before income tax

Comparable effective income tax rate = Income tax expense - effects from tax rate changes and major one time income tax effects / Profit before income tax decreased by profits from associated companies and joint ventures as well as tax exempt capital gains and losses

Taxes borne = Taxes that a company is obliged to pay to a government, directly or indirectly, on that company's own behalf in respect of an accounting period. Taxes borne include corporate income taxes (excluding deferred taxes), production taxes, employment taxes, taxes on property and cost of indirect taxes. Production taxes include also taxes paid through electricity purchased from associated companies.

Total tax rate = Taxes borne / Profit before income tax increased by taxes borne in operating profit

Comparable total tax rate = Taxes borne / Profit before income tax increased by taxes borne in operating profit and decreased by profits from associated companies and joint ventures and by tax exempt capital gains or losses

Weighted average applicable income tax rate = Sum of the proportionately weighted share of profits before taxes of each group operating country multiplied with an applicable nominal tax rate of the respective countries.

Parent company financial statements, Finnish GAAP (FAS)

Income statement

EUR million	Note	2017	2016
Sales	2	73	70
Other income	3	6	8
Employee costs	4	-32	-31
Depreciation, amortisation and write-downs	8	-6	-6
Other expenses		-79	-67
Operating profit		**-38**	**-26**
Financial income and expenses	6	823	675
Profit before appropriations		**785**	**649**
Group contributions [1)]		157	145
Profit before income tax		**943**	**794**
Income tax expense	7	-10	-14
Profit for the period		**933**	**780**

1) Taxable profits transferred from Finnish subsidiaries.

Balance sheet

EUR million	Note	31 Dec 2017	31 Dec 2016
ASSETS			
Non-current assets			
Intangible assets	8	10	9
Property, plant and equipment	8	21	7
Shares in Group companies	8	16,725	16,379
Participations in associated companies	8	2	6
Interest-bearing receivables from Group companies	8	212	717
Interest-bearing receivables from associated companies	8	15	15
Other non-current assets	8	0	0
Derivative financial instruments	13, 14	242	344
Deferred tax assets		0	6
Total non-current assets		**17,226**	**17,484**
Current assets			
Other current receivables from Group companies	9	173	155
Other current receivables from associated companies	9	0	0
Derivative financial instruments	13, 14	132	127
Other current receivables	9	14	45
Deposits and securities (maturity over three months)		714	3,473
Cash and cash equivalents		2,792	1,463
Liquid funds		3,506	4,935
Total current assets		**3,825**	**5,263**
Total assets		**21,052**	**22,746**
EQUITY			
Shareholders' equity	10		
Share capital		3,046	3,046
Share premium		2,822	2,822
Hedging reserve		-11	-23
Retained earnings		4,249	4,447
Profit for the period		933	780
Total shareholders' equity		**11,038**	**11,072**
Provisions for liabilities and charges		**0**	**1**
LIABILITIES			
Non-current liabilities			
External interest-bearing liabilities	11, 13, 14	3,448	4,018
Interest-bearing liabilities to Group companies		3,290	2,323
Interest-bearing liabilities to associated companies	11	285	273
Derivative financial instruments	13, 14	94	124
Other non-current liabilities		44	61
Total non-current liabilities		**7,160**	**6,799**
Current liabilities			
External interest-bearing liabilities	11	657	617
Trade and other payables to Group companies	12	1,991	4,002
Trade and other payables to associated companies	12	4	6
Derivative financial instruments	13, 14	102	149
Trade and other payables	12	100	101
Total current liabilities		**2,854**	**4,875**
Total liabilities		**10,014**	**11,674**
Total equity and liabilities		**21,052**	**22,746**

Cash flow statement

EUR million	2017	2016
Cash flow from operating activities		
Profit for the period	**933**	**780**
Adjustments:		
Income tax expense	10	14
Group contributions	-157	-145
Finance costs - net	-823	-675
Depreciations, amortisation and write-downs	6	6
Operating profit before depreciations (EBITDA)	**-32**	**-20**
Non-cash flow items and divesting activities	0	8
Interest and other financial income	6	21
Interest and other financial expenses paid	-101	-88
Dividend income	944	756
Group contribution received	145	447
Realised foreign exchange gains and losses	-28	113
Income taxes paid	23	-46
Funds from operations	**957**	**1,191**
Other short-term receivables increase(-)/decrease(+)	-12	-1
Other short-term payables increase(+)/decrease(-)	12	-6
Change in working capital	0	-7
Net cash from operating activities	**958**	**1,184**
Cash flow from investing activities		
Capital expenditures	-15	-5
Acquisition of shares and capital contributions in subsidiaries	-380	-583
Acquisition of other shares	0	0
Proceeds from sales of fixed assets	0	2
Change in interest-bearing receivables and other non-current assets	504	-5
Net cash used in investing activities	**109**	**-591**
Cash flow before financing activities	**1,067**	**593**

EUR million	2017	2016
Cash flow from financing activities		
Proceeds from long-term liabilities	35	27
Payment of long-term liabilities	-482	-811
Change in cashpool liabilities	967	-3,940
Change in short-term liabilities	-2,038	2,398
Dividends paid	-977	-976
Net cash used in financing activities	**-2,496**	**-3,302**
Net increase(+)/decrease(-) in liquid funds	**-1,429**	**-2,710**
Liquid funds at the beginning of the period	**4,935**	**7,645**
Liquid funds at the end of the period	**3,506**	**4,935**

Notes to the parent company financial statements, FAS

1 Accounting policies and principles

The financial statements of Fortum Oyj are prepared in accordance with Finnish Accounting Standards (FAS).

1.1 Sales

Sales include sales revenue from actual operations and exchange rate differences on trade receivables, less discounts and indirect taxes such as value added tax.

1.2 Other income

Other income includes gains on the sales of property, plant and equipment and shareholdings, as well as all other operating income not related to the sales of products or services, such as rents.

1.3 Foreign currency items and derivative instruments

Transactions denominated in foreign currencies have been valued using the exchange rate at the date of the transaction. Receivables and liabilities denominated in foreign currencies outstanding on the balance sheet date have been valued using the exchange rate quoted on the balance sheet date. Exchange rate differences have been entered in the financial net in the income statement.

Fortum Oyj enters into derivative contracts mainly for hedging foreign exchange and interest rate exposures in Fortum Group.

Accounting principles of financial derivatives, see ▸Note 3 Financial risk management, ▸Note 14 Financial assets and liabilities by categories and ▸Note 15 Financial assets and liabilities by fair value hierarchy in the Consolidated financial statements.

1.4 Income taxes

Income taxes presented in the income statement consist of accrued taxes for the financial year and tax adjustments for prior years.

1.5 Shares in group companies

The balance sheet value of shares in group companies consists of historical costs less write-downs. If the estimated future cash flows generated by a non-current asset are expected to be permanently lower than the balance of the carrying amount, an adjustment to the value must be made to write-down the difference as an expense. If the basis for the write-down can no longer be justified at the balance sheet date, it must be reversed.

1.6 Property, plant and equipment and depreciation

The balance sheet value of property, plant and equipment consists of historical costs less depreciation and possible impairments. Property, plant and equipment are depreciated using straight-line depreciation based on the expected useful life of the asset.

The depreciation is based on the following expected useful lives:

Buildings and structures	15–40 years
Machinery and equipment	3–15 years
Other intangible assets	5–10 years

1.7 Pension expenses

Statutory pension obligations are covered through a compulsory pension insurance policy or Group's own pension fund. Costs for pension fund are recorded in the income statement based on contributions paid pursuant to the Finnish pension laws and regulations.

1.8 Long-term incentive schemes

Costs related to the Fortum long-term incentive plans are accrued over the earnings period and the related liability is booked to the balance sheet.

1.9 Provisions

Foreseeable future expenses and losses that have no corresponding revenue to which Fortum is committed or obliged to settle, and whose monetary value can be reasonably assessed, are entered as expenses in the income statement and included as provisions in the balance sheet.

1.10 Presentation of the primary statements and notes

Information presented in the notes is given separately for Fortum Group companies and for associated companies of the Group.

2 Sales by market area

EUR million	2017	2016
Finland	46	43
Other countries	27	28
Total	**73**	**70**

3 Other income

EUR million	2017	2016
Rental and other income	6	8
Total	**6**	**8**

4 Employee costs

EUR million	2017	2016
Personnel expenses		
Wages, salaries and remunerations	25	24
Indirect employee costs		
Pension costs	5	5
Other indirect employee costs	1	1
Other personnel expenses	1	1
Total	**32**	**31**

EUR thousand	2017 Pekka Lundmark, President and CEO	2016 Pekka Lundmark, President and CEO
Compensation for the President and CEO		
Salaries and fringe benefits	998	982
Performance bonuses [1)]	187	248
Share-based incentives [1)]	334	433
Pensions (statutory)	231	209
Pensions (voluntary)	229	356
Social security expenses	41	73
Total	**2,019**	**2,299**

1) Based on estimated amounts.

EUR thousand	2017	2016
Compensation for the Board of Directors	**492**	**518**

The compensation above is presented on accrual basis. Paid salaries and remunerations for the President and CEO Pekka Lundmark were EUR 1,405 thousand (2016: 1,012).

For the President and CEO Pekka Lundmark the retirement age of old-age pension is 63. The pension obligations are covered through insurance company.

Board members are not in an employment relationship or service contract with Fortum, and they are not given the opportunity to participate in Fortum's STI or LTI programme, nor does Fortum have a pension plan that they can opt to take part in. The compensation of the board members is not tied to the sustainability performance of the Group.

See ▸Note 10 Employee benefits and ▸Note 30 Pension obligations in the Consolidated financial statements.

	2017	2016
Average number of employees	258	272

5 Auditor's fees

EUR thousand	2017	2016
Audit fees	295	188
Audit related assignments	64	61
Tax assignments	0	0
Other assignments	81	0
Total	**440**	**249**

Deloitte Oy is the appointed auditor until the next Annual General Meeting, to be held in 2018. Audit fees include fees for the audit of the consolidated financial statements, review of the interim reports as well as the fees for the audit of Fortum Oyj. Audit related assignments include fees for assurance of sustainability reporting and other assurance and associated services related to the audit. Tax assignments include fees for tax advice services. Other assignments consist of advisory services.

6 Financial income and expenses

EUR million	2017	2016
Dividend income from group companies	944	756
Dividend income from associated companies and other companies	0	0
Interest and other financial income from group companies	12	8
Write-downs of participations in group companies	-35	-4
Write-downs of participations in associated companies	-3	-
Write-downs on loan receivables	-1	-
Interest and other financial income	0	3
Exchange rate differences	22	41
Changes in fair values of derivatives	-16	-11
Interest and other financial expenses to group companies	-1	0
Interest and other financial expenses	-99	-116
Total	**823**	**675**
Interest income	13	11
Interest expenses	-81	-113
Interest net	**-68**	**-102**

Write-downs of participations in group companies are related to shares in Fortum Heat and Gas Oy due to received dividend payments.

7 Income tax expense

EUR million	2017	2016
Taxes on regular business operations	-21	-15
Taxes on group contributions	31	29
Total	**10**	**14**
Current taxes for the period	6	9
Current taxes for prior periods	0	7
Changes in deferred tax	3	-1
Total	**10**	**14**

8 Non-current assets

Intangible assets

EUR million	Intangible assets total
Cost 1 January 2017	**47**
Additions	0
Disposals	-8
Cost 31 December 2017	**39**
Accumulated depreciation 1 January 2017	**39**
Disposals	-13
Depreciation for the period	4
Accumulated depreciation 31 December 2017	**30**
Carrying amount 31 December 2017	**10**
Carrying amount 31 December 2016	9

Property, plant and equipment

EUR million	Buildings and structures	Machinery and equipment	Advances paid and construction in progress	Total
Cost 1 January 2017	**1**	**9**	**4**	**14**
Additions and transfers between categories		1	14	15
Disposals		-2	0	-2
Cost 31 December 2017	**1**	**7**	**18**	**27**
Accumulated depreciation 1 January 2017	**1**	**6**	**0**	**7**
Disposals		-2		-2
Depreciation for the period	0	1		1
Accumulated depreciation 31 December 2017	**1**	**5**	**0**	**6**
Carrying amount 31 December 2017	**0**	**2**	**18**	**21**
Carrying amount 31 December 2016	0	2	4	7

Investments

EUR million	Shares in Group companies	Participation in associated companies	Receivables from Group companies	Receivables from associated companies	Other non-current assets	Total
1 January 2017	17,467	6	717	15	8	18,213
Additions [1]	380			1	0	382
Disposals			-506			-506
31 December 2017	17,847	6	212	16	8	18,089
Accumulated write-downs 1 January 2017	-1,088	0	0	0	-7	-1,095
Impairment charges	-35	-3		-1	-1	-40
Accumulated write-downs 31 December 2017 [2]	-1,123	-3	0	-1	-8	-1,135
Carrying amount 31 December 2017	16,725	2	212	15	0	16,954

1) Additions regarding shares comprise acquisitions of shares and capital contributions and reclassification between other non-current assets and shares in Group companies.

2) Write-downs of participations in group companies are related to shares in Fortum Heat and Gas Oy due to received dividend payments.

9 Other current receivables

EUR million	2017	2016
Other current receivables from group companies		
Trade receivables	9	10
Group contribution and other receivables	157	145
Accrued income and prepaid expenses	6	0
Total	173	155
Other current receivables from associated companies		
Accrued income and prepaid expenses	0	0
Total	0	0
Other current receivables		
Trade receivables	0	0
Other receivables	0	0
Accrued income and prepaid expenses	14	44
Total	14	45

See ▸ Note 3.5 Liquidity and refinancing risk in the Consolidated financial statement

10 Changes in shareholders' equity

EUR million	Share capital	Share premium	Hedging reserve	Retained earnings	Total
Total equity 31 December 2016	3,046	2,822	-23	5,226	11,072
Cash dividend				-977	-977
Change in hedging reserve			11		11
Profit for the period				933	933
Total equity 31 December 2017	3,046	2,822	-11	5,182	11,038
Total equity 31 December 2015	3,046	2,822	-31	5,424	11,261
Cash dividend				-977	-977
Change in hedging reserve			8		8
Profit for the period				780	780
Total equity 31 December 2016	3,046	2,822	-23	5,226	11,072

EUR million	2017	2016
Distributable funds		
Retained earnings 31 December	5,182	5,226
Hedging reserve	-11	-23
Distributable funds 31 December	5,170	5,204

11 Interest-bearing liabilities

EUR million	2017	2016
External interest-bearing liabilities [1)]		
Bonds	2,521	2,986
Loans from financial institutions	82	210
Other long-term interest-bearing debt	844	822
Total long-term interest-bearing debt	**3,448**	**4,018**
Current portion of long-term bonds	422	343
Current portion of loans from financial institutions	122	139
Other short-term interest-bearing debt	114	135
Total short-term interest-bearing debt	**657**	**617**
Total external interest-bearing debt	**4,105**	**4,635**

Maturity of external interest-bearing liabilities [1)]

EUR million	2017
2018	657
2019	792
2020	28
2021	528
2022	1,057
2023 and later	1,042
Total	**4,105**

See ▸ Note 3.5 Liquidity and refinancing risk and ▸ Note 26 Interest-bearing liabilities in the Consolidated financial statements.

EUR million	2017	2016
External interest-bearing liabilities due after five years [1)]		
Bonds	198	1,282
Other long-term liabilities	844	821
Total	**1,042**	**2,102**

EUR million	2017	2016
Other interest-bearing liabilities due after five years		
Interest-bearing liabilities to associated companies	285	273
Total	**285**	**273**

1) Does not include liabilities to group and associated companies.

Non-discounted cash flows of interest-bearing liabilities and their maturities, see ▸ Note 13 Financial derivatives.

12 Trade and other payables

EUR million	2017	2016
Trade and other payables to group companies		
Trade payables	3	0
Deposits from group companies and other liabilities	1,987	4,002
Accruals and deferred income	0	0
Total	**1,991**	**4,002**
Trade and other payables to associated companies		
Accruals and deferred income	4	6
Total	**4**	**6**
Trade and other payables		
Trade payables	21	6
Other liabilities	2	4
Accruals and deferred income	76	91
Total	**100**	**101**

13 Financial derivatives

Interest rate and currency derivatives by instrument 2017

	Notional amount				Fair value		
	Remaining lifetimes						
EUR million	Under 1 year	1–5 years	Over 5 years	Total	Positive	Negative	Net
Forward foreign exchange contracts	7,790	517		8,307	77	104	-27
Interest rate swaps	305	3,421	102	3,827	205	90	115
Interest rate and currency swaps	311	580		892	92	3	89
Total	**8,406**	**4,518**	**102**	**13,025**	**373**	**196**	**177**
Of which long-term					242	94	148
Short-term					132	102	29

Interest rate and currency derivatives by instrument 2016

EUR million	Notional amount, Remaining lifetimes: Under 1 year	1–5 years	Over 5 years	Total	Fair value: Positive	Negative	Net
Forward foreign exchange contracts	6,369	252		6,621	131	141	-11
Interest rate swaps	259	2,718	1,105	4,081	269	127	142
Interest rate and currency swaps	29	798		827	71	5	66
Total	**6,657**	**3,767**	**1,105**	**11,529**	**471**	**273**	**198**
Of which long-term					344	124	220
Short-term					127	149	-22

Maturity analysis of interest-bearing liabilities and derivatives

Amounts disclosed below are non-discounted expected cash flows (future interest payments and amortisations) of interest-bearing liabilities and interest rate and currency derivatives.

EUR million	2017: Under 1 year	1–5 years	Over 5 years	Total	2016: Under 1 year	1–5 years	Over 5 years	Total
Interest-bearing liabilities	2,752	2,613	1,509	6,875	6,047	2,239	2,491	10,777
Interest rate and currency derivates liabilities	8,132	1,256	4	9,392	6,669	1,234	20	7,924
Interest rate and currency derivates receivables	-8,191	-1,341	-1	-9,534	-6,650	-1,404	-27	-8,080
Total	**2,693**	**2,529**	**1,511**	**6,733**	**6,067**	**2,069**	**2,485**	**10,621**

Interest-bearing liabilities include loans from the State Nuclear Waste Management Fund and Teollisuuden Voima Oyj of EUR 1,129 million (2016: 1,094). These loans are renewed yearly and the related interest payments are calculated for ten years in the table above.

14 Derivatives and liabilities by fair value hierarchy

Fair value measurements are classified using a fair value hierarchy i.e. Level 1, Level 2 and Level 3 that reflects the significance of the inputs used in making the measurements. For further information look accounting principles in Fortum consolidated accounts ▸ Note 15 Financial assets and liabilities by fair value hierarchy.

Derivatives in financial assets

EUR million	Level 1: 2017	2016	Level 2: 2017	2016	Level 3: 2017	2016	Total: 2017	2016
In non-current assets								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			154	240			154	240
Non-hedge accounting			87	103			87	103
In current assets								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			88	17			88	17
Non-hedge accounting			44	110			44	110
Total	**-**	**-**	**373**	**471**	**-**	**-**	**373**	**471**

Derivatives and liabilities at fair value in financial liabilities

EUR million	Level 1: 2017	2016	Level 2: 2017	2016	Level 3: 2017	2016	Total: 2017	2016
In non-current liabilities								
Interest-bearing liabilities [1)]			1,037	1,280			1,037	1,280
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			47	72			47	72
Non-hedge accounting			47	52			47	52
In current liabilities								
Derivative financial instruments								
Interest rate and currency derivatives								
Hedge accounting			14	12			14	12
Non-hedge accounting			88	137			88	137
Total	**-**	**-**	**1,233**	**1,554**	**-**	**-**	**1,233**	**1,554**

1) Fair valued part of bond in the fair value hedge relationship.

Net fair value amount of interest rate and currency derivatives is EUR 177 million (2016: 198), including assets EUR 373 million (2016: 471) and liabilities EUR 196 million (2016: 273). Fortum Corporation has cash collaterals based on Credit Support Annex agreements with some counterparties. At the end of December 2017 Fortum Corporation had received EUR 113 million (2016: 135) from Credit Support Annex agreements. The received cash has been booked as a short-term interest-bearing liability.

15 Contingent liabilities

EUR million	2017	2016
On own behalf		
Other contingent liabilities	2	2
On behalf of group companies		
Guarantees	221	135
On behalf of associated companies		
Guarantees on behalf of Swedish associated companies	548	565
Contingent liabilities total	**771**	**702**

Operating leases

EUR million	2017	2016
Operating lease commitments		
Due within a year	7	2
Due after one year and within five years	28	2
Due after 5 years	18	-
Total	**54**	**5**

Increase in operating lease commitments arises mainly from the lease agreement relating to the new head office in Espoo.

16 Related party transactions

See ▸ Note 39 Related party transactions in the Consolidated financial statements.

Investments in group companies, associated companies and other holdings

		No. of shares units	Holding %
Investments in group companies			
Fortum Waste Solutions Oy	Finland	3,520,800	100.00
Fortum Asiakaspalvelu Oy	Finland	10,010	100.00
Fortum Heat and Gas Oy	Finland	2,000,000	100.00
Fortum Markets Oy	Finland	24,039	100.00
Fortum Norm Oy	Finland	250	100.00
Fortum Power and Heat Oy	Finland	91,197,543	100.00
Fortum Real Estate Oy	Finland	2,000,000	100.00
Fortum Project Finance N.V.	Belgium	727,820	99.99
Fortum India Private Ltd	India	1	0.10
Fortum Finance Ireland Designated Activity Company	Ireland	25,000	100.00
Fortum Investment S.A.R.L.	Luxembourg	990	0.45
Fortum Sweden AB	Sweden	1,000	100.00
Fortum Holding B.V.	The Netherlands	61,062	100.00
Investments in associated companies			
AW-Energy Oy	Finland	806	13.60
Wello Oy	Finland	1,508	16.18
Other holdings			
Clic Innovation Oy	Finland	100	3.80
East Office of Finnish Industries Oy	Finland	1	5.88
Prototype Carbon Fund	USA	N/A	

Proposal for the use of the profit shown on the balance sheet

The distributable funds of Fortum Oyj as at 31 December 2017 amounted to EUR 5,170,240,554.04 including the profit of the financial period 2017 of EUR 932,525,770.24. The company's liquidity is good and the dividend proposed by the Board of Directors will not compromise the company's liquidity.

The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.10 per share be paid for 2017.

Based on the number of registered shares as at 1 February 2018 the total amount of dividend proposed to be paid is EUR 977,203,749.50. The Board of Directors proposes, that the remaining part of the distributable funds be retained in the shareholders' equity.

Signatures for the operating and financial review and the financial statements

Espoo, 1 February 2018

Sari Baldauf

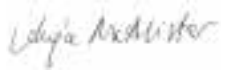
Kim Ignatius

Matti Lievonen

Heinz-Werner Binzel

Eva Hamilton

Veli-Matti Reinikkala



Anja McAlister

Pekka Lundmark
President and CEO

Auditor's report

To the Annual General Meeting of Fortum Oyj

Report on the Audit of Financial Statements

Opinion

We have audited the financial statements of Fortum Oyj (business identity code 1463611-4) for the year ended 31 December, 2017. The financial statements comprise the consolidated balance sheet, consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in total equity, consolidated cash flow statement and notes to the consolidated financial statements, including a summary of significant accounting policies, as well as the parent company's balance sheet, income statement, cash flow statement and notes to the financial statements.

In our opinion

- the consolidated financial statements give a true and fair view of the group's financial position and financial performance and cash flows in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU,
- the financial statements give a true and fair view of the parent company's financial performance and financial position in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements.

Our opinion is consistent with the additional report submitted to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the Auditor's Responsibilities for the Audit of Financial Statements section of our report.

We are independent of the parent company and of the group companies in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

In our best knowledge and understanding, the non-audit services that we have provided to the parent company and group companies are in compliance with laws and regulations applicable in Finland regarding these services, and we have not provided any prohibited non-audit services referred to in Article 5(1) of regulation (EU) 537/2014. The non-audit services that we have provided have been disclosed in note 8 to the consolidated financial statements.
We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have also addressed the risk of management override of internal controls. This includes consideration of whether there was evidence of management bias that represented a risk of material misstatement due to fraud.

Key audit matter	How our audit addressed the key audit matter
Valuation of fixed assets and goodwill Refer to Notes 2, 16 and 17. • The consolidated balance sheet includes property, plant and equipment amounting to EUR 10,510 million and goodwill amounting to EUR 613 million. • The main assumptions used in the valuation of energy production property, plant and equipment and goodwill relate to the estimated future operating cash flows and the discount rates. • In acquisition the assumptions relates to determining the fair values and remaining useful lives of acquired intangible and tangible assets. • The potential indicators for impairment are among other things changes in electricity and fuel prices, regulatory/political changes relating to energy taxes and price regulations. • The assumptions used in the valuation of the balances in question require management judgment. • This matter is a significant risk of material misstatement referred to in EU Regulation No 537/241, point (c) of Article 10(2).	• We have evaluated the process how management has assessed the indicators for potential impairment. We have performed audit procedures on impairment models relating to material cash generating units. • We obtained entity's impairment testing documentation for goodwill and energy production assets when tested and evaluated the rationale of key assumptions applied by management, including commodity price forecasts, profit and cash flow forecasts, terminal values, foreign exchange rates and the selection of discount rates. • We have compared, that the forecasts used in the impairment testing calculations are based on long term forecast approved by management. • We challenged management's assumptions and judgments with reference to historical data and, where applicable, external benchmarks. • We assessed the models used in the impairment testing and carried out our testing for the sensitivity calculations. • We assessed the adequacy of related disclosures in the financial statements.

Key audit matter	How our audit addressed the key audit matter
Associated companies and joint ventures Refer to Notes 2, 18 and 36. • Fortum participates in a number of associated companies and joint ventures with a total carrying amount of EUR 1,900 million in the consolidated financial statements. • The assessment of the recoverable value of the associated companies and joint ventures incorporates significant management judgments and estimates. • The associated companies and joint ventures are joint contractual arrangements, which include several complex accounting, regulatory and legal aspects as described in note 36. These aspects may have significant impact on Fortum's financial reporting.	• We have reviewed and evaluated the management's process to monitor and control the significant associated companies and joint ventures as well as to follow the related legal cases. • We have assessed and challenged the management judgment and assumptions used determining the recoverable amount for associated companies and joint ventures. We have also evaluated the accuracy of the calculations prepared to quantify the recoverable amount. • We assessed the adequacy of related disclosures in the financial statements.

Key audit matter	How our audit addressed the key audit matter
Fair value measurement of derivatives and hedge accounting Refer to Notes 3, 6, 7, 14 and 15. • In Fortum's consolidated financial statements total derivative assets amounts to EUR 521 million and total derivative liabilities amounts to EUR 414 million. The net effect of changes in fair values of derivatives hedging future cash flow amounts to EUR 14 million in items affecting comparability in the consolidated income statement and the cash flow hedges in other equity components amount to EUR 74 million. • The fair value of derivative financial instruments is determined through the application of valuation techniques which often involve management judgment. Fortum's business is exposed to fluctuations in prices and volume of commodities used in the production and sales of energy products. The main exposure is toward energy prices. Electricity price risk is hedged by entering into electricity derivative contracts. Fortum uses hedging instruments to reduce the effect of electricity price volatility.	• Our audit procedures included an assessment of internal controls over the hedge accounting documentation and effectiveness testing, measurement of fair value measures, and evaluating the methodologies, inputs, judgments made and assumptions used by management in determining fair values. • For Fortum's fair valuation models, we evaluated rationale of the models and accounting treatment applied. We compared observable inputs against independent sources and externally available market data. • We have assessed the existence and completeness of outstanding derivative contracts as of 31 December 2017 by requesting confirmations from the counterparties. • We have assessed that financial instruments included in hedge relationships are accounted for in accordance with IAS 39. • We have assessed the adequacy of the presentation for derivative financial instruments and hedge accounting applied in the financial statements.

Key audit matter	How our audit addressed the key audit matter
Nuclear related assets and liabilities Refer to Notes 2 and 28. • Nuclear related assets and liabilities in consolidated balance sheet amount to EUR 858 million. • Fortum's nuclear related provisions and the related part of the Finnish State Nuclear Waste Management Fund are both presented separately as disclosed in note 28. • Fortum's share in the Finnish State Nuclear Waste Management Fund is accounted for according to IFRIC 5 which states that the fund assets are measured at the lower of fair value or the value of the related liabilities. • Due to complexity and materiality, the accounting treatment for nuclear decommissioning is complex and requires application of special accounting practice and management judgment when forming estimates for the basis of accounting such as technical plans, timing, cost estimates and discount rate.	• We have assessed Fortum's accounting manual and principles for Nuclear Decommissioning Accounting, whether they are in line with IFRS accounting principles. • We have assessed the assumptions and judgments made and adopted by the management in the accounting for the nuclear waste provisions and share in state nuclear waste management fund have been based on current legislation and decisions set by Finnish State Nuclear Waste Management Fund. • We assessed the adequacy of related disclosures in the financial statements.

Key audit matter	How our audit addressed the key audit matter
Income taxes Refer to Notes 2, 12, 27 and 36. • Fortum has several tax assessments ongoing. • The accounting treatment and disclosing of tax cases require management to make judgments and estimates in disclosing and accounting tax contingencies and receivables as described in note 27. • Ongoing tax assessments are lengthy and at various stages from preliminary discussions with tax authorities through to court proceedings, where obtaining the final tax assessments can take a number of years prior to concluding.	• We performed testing regarding Fortum's tax positions in the significant tax jurisdictions in which Fortum operates. • We assessed the rationale of management's assumptions and challenged the management judgment applied in relation to disclosing and accounting the tax contingencies and receivables of the tax cases. Together with our tax specialist we have also assessed the company's external opinions which have been used to support the management's assumptions. • We assessed the adequacy of related disclosures as well as the accounting treatment in the financial statements.

Responsibilities of the Board of Directors and the President and CEO for the financial statements

The Board of Directors and the President and CEO are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, and of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the President and CEO are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the President and CEO are responsible for assessing the parent company's and the group's ability to continue as going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the parent company or the group or cease operations, or there is no realistic alternative but to do so.

Auditor's responsibilities in the audit of financial statements

Our objectives are to obtain reasonable assurance on whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the parent company's or the group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of the Board of Directors' and the President and CEO use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the parent company's or the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other Reporting Requirements

Information on our audit engagement

We were first appointed as auditors by the Annual General Meeting on 16.3.2006, and our appointment represents a total period of uninterrupted engagement of 11 years.

Other information

The Board of Directors and the President and CEO are responsible for the other information. The other information comprises the Operational and Financial Review and the information included in the Financials, but does not include the financial statements and our auditor's report thereon. We have obtained the Operating and Financial Review prior to the date of this auditor's report, and the Financials is expected to be made available to us after that date.

Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. With respect to Operating and Financial Review, our responsibility also includes considering whether the Operating and Financial Review has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the Operating and Financial Review is consistent with the information in the financial statements and the Operating and Financial Review has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed on the other information that we obtained prior the date of this auditor's report, we conclude that there is a material misstatement of this information, we are required to report that fact. We have nothing to report in this regard.

Other opinions

We support that the financial statements should be adopted. The proposal by the Board of Directors regarding the use of the profit shown on the balance sheet is in compliance with the Limited Liability Companies Act. We support that the Board of Directors of the parent company and the President and CEO should be discharged from liability for the financial period audited by us.

Espoo, 1 February 2018

Deloitte Oy
Audit Firm

Reeta Virolainen
Authorised Public Accountant (KHT)

Operational key figures

Note: Operational key figures are unaudited.

Comparability of information presented in tables and graphs

Information in the tables and graphs presented for year 2012 or earlier is not restated due to the adoption of IFRS 10 and IFRS 11. Adoption of standards influences treatment of Fortum's holding in AB Fortum Värme samägt med Stockholms stad (Fortum Värme) in the the consolidated financial statements. From 1 January 2014 onwards Fortum Värme is treated as a joint venture and thus consolidated with equity method. Before the change the company was consolidated as a subsidiary with 50% minority interest.

Generation

Fortum's total power and heat generation in EU and Norway, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Power generation	52.6	49.3	53.7	55.3	53.9	47.4	50.1	50.2	47.5	46.6
Heat generation	25.0	23.2	26.1	22.0	18.5	10.4	8.2	6.4	7.1	8.6

Fortum's total power and heat generation in Russia, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Power generation	11.6	16.0	16.1	17.4	19.2	20.0	23.3	25.7	25.5	26.3
Heat generation	15.3	25.6	26.0	25.4	24.8	24.2	26.4	25.8	20.7	20.0

Fortum's own power generation by source, total in the Nordic area, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Hydro and wind power	22.9	22.1	22.0	21.0	25.2	18.1	22.4	25.1	20.8	20.9
Nuclear power	23.7	21.4	22.0	24.9	23.4	23.7	23.8	22.7	24.1	23.0
Thermal power	5.0	4.6	8.3	7.2	3.0	3.4	1.8	1.0	1.4	1.6
Total	**51.6**	**48.1**	**52.3**	**53.1**	**51.6**	**45.2**	**48.0**	**48.8**	**46.2**	**45.4**

Fortum's own power generation by source, total in the Nordic area, %	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Hydro and wind power	44	46	42	40	49	40	46	51	45	46
Nuclear power	46	44	42	47	45	52	50	47	52	51
Thermal power	10	10	16	13	6	8	4	2	3	3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Power generation capacity by segment, MW	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	9,575	9,709	9,728	9,752	9,702	9,475	9,063	8,046	8,039	7,862
Heat	1,213	1,446	1,600	1,670	1,569					
City Solutions						793	803	743	760	775
Russia	2,785	2,785	2,785	3,404	3,404	4,250	4,758	4,903	4,482	4,794
Other									53	292
Total	**13,573**	**13,940**	**14,113**	**14,826**	**14,675**	**14,518**	**14,624**	**13,692**	**13,334**	**13,722**

Heat production capacity by segment, MW	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Generation	250	250	250	250	250	250	0			
Heat	10,218	10,284	10,448	10,375	8,785					
City Solutions						4,317	3,936	3,915	3,818	4,671
Russia	13,796	13,796	13,796	14,107	13,396	13,466	13,466	12,696	9,920	10,094
Total	**24,264**	**24,330**	**24,494**	**24,732**	**22,431**	**18,033**	**17,402**	**16,611**	**13,738**	**14,765**

	Finland		Sweden		Russia		Poland		Other		Total	
Fortum's power generation capacity by type and area, MW	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Hydropower	1,547	1,535	3,125	3,117	0	0	0	0	0	0	4,672	4,652
Nuclear power	1,480	1,472	1,334	1,539	0	0	0	0	0	0	2,814	3,011
Combined heat and power	452	456	9	9	4,760	4,482	186	186	128	109	5,534	5,242
Condensing power	376	376	0	0	0	0	0	0	0	0	376	376
Wind power	0	0	75	38	0	0	0	0	32	0	107	38
Solar power	0	0	0	0	35	0	0	0	185	15	220	15
Total	**3,854**	**3,839**	**4,543**	**4,703**	**4,794**	**4,482**	**186**	**186**	**345**	**124**	**13,722**	**13,334**

	Finland		Sweden		Russia		Poland		Other		Total	
Fortum's heat production capacity by area, MW	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Heat	1,941	2,024	35	35	10,094	9,920	786	961	1,909	798	14,765	13,738

Sales

Fortum's total power and heat sales in EU and Norway, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Electricity sales	2,959	2,802	3,110	2,868	2,700	2,462	2,344	1,921	1,893	2,244
Heat sales	1,157	1,095	1,309	1,278	1,201	538	468	423	449	524

Fortum's total power and heat sales in Russia, EUR million	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Electricity sales	332	390	505	590	713	822	758	661	691	837
Heat sales	141	219	287	324	300	290	285	228	199	258

Fortum's total power sales by area, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Finland	28.7	26.1	30.7	24.6	21.6	23.4	21.6	22.3	22.8	22.5
Sweden	28.5	26.9	28.3	29.4	30.1	23.3	28.2	29.8	28.8	30.8
Norway									1.5	7.2
Russia	14.8	19.5	18.7	20.2	23.3	25.6	26.5	29.4	29.5	30.5
Other countries	3.0	3.2	3.2	3.6	3.8	4.3	3.8	2.8	2.1	2.9
Total	**75.0**	**75.7**	**80.9**	**77.8**	**78.8**	**76.6**	**80.1**	**84.3**	**84.7**	**93.9**

Fortum's total heat sales by area, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Finland	10.8	8.0	9.6	8.5	5.8	5.5	3.2	3.1	3.6	3.9
Russia	15.3	25.6	26.8	26.7	26.4	24.1	26.0	25.4	20.7	19.8
Sweden	9.1	9.8	10.9	8.5	8.5	-	-	-	0.1	0.3
Poland	3.6	3.7	4.0	4.3	4.3	4.1	3.4	3.4	3.6	3.7
Other countries	3.4	3.5	3.6	3.4	2.9	3.1	2.8	1.2	1.4	2.2
Total	**42.2**	**50.6**	**54.9**	**51.4**	**47.9**	**36.8**	**35.4**	**33.2**	**29.4**	**29.9**

Volume of distributed electricity in distribution networks, TWh	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Finland	9.3	9.4	10.0	9.5	9.8	9.5	2.8	-	-	-
Sweden	14.0	14.0	15.2	14.2	14.4	14.1	13.7	6.4	-	-
Norway	2.3	2.3	2.5	2.3	2.4	2.5	1.1	-	-	-
Estonia	0.2	0.2	0.2	0.1	0.0	-	-	-	-	-
Total	**25.8**	**25.9**	**27.9**	**26.1**	**26.6**	**26.1**	**17.6**	**6.4**	**-**	**-**

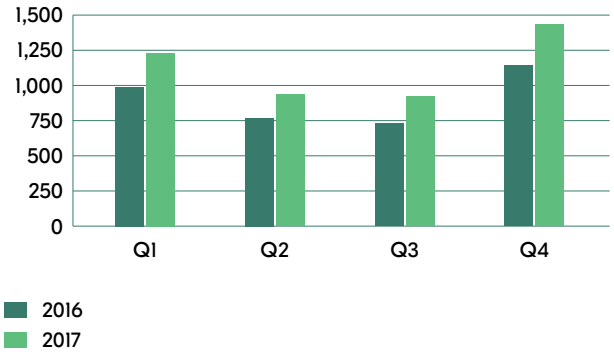
Quarterly financial information

Note: Quarterly financial information is unaudited.

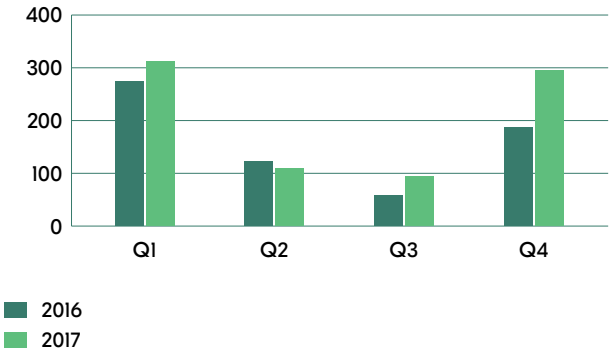
Selected data based on quarterly consolidated income statement

EUR million	Q1/2016	Q2/2016	Q3/2016	Q4/2016	2016	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017
IS Sales	989	768	732	1,143	3,632	1,232	937	919	1,432	4,520
Comparable EBITDA continuing operations	357	209	151	298	1,015	423	219	210	424	1,275
IS Comparable operating profit	275	122	58	188	644	313	109	94	295	811
IS Operating profit	369	67	-6	202	633	389	66	387	315	1,158
IS Share of profit/loss of associates and joint ventures	67	38	11	15	131	59	35	21	34	148
IS Finance costs - net	-47	-44	-44	-34	-169	-36	-52	-58	-49	-195
IS Profit before income tax	390	61	-40	184	595	412	49	351	300	1,111
IS Income tax expense	-59	-4	9	-37	-90	-72	-118	4	-43	-229
IS Profit for the period	331	57	-31	147	504	340	-69	355	257	882
IS Non-controlling interests	-5	-1	0	-3	-8	-5	0	2	-12	-16
IS Profit for the period, owners of the parent	326	57	-31	145	496	335	-70	357	244	866
Earnings per share for profit attributable to the equity owners of the company (EUR per share)										
Basic	0.37	0.06	-0.03	0.16	0.56	0.38	-0.08	0.40	0.28	0.98

Sales by quarter, EUR million



Comparable operating profit by quarter, EUR million



Quarterly sales by segment

EUR million	Q1/2016	Q2/2016	Q3/2016	Q4/2016	2016	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017
Generation [1]	467	384	371	435	**1,657**	474	402	367	433	**1,677**
City Solutions [1]	228	121	116	316	**782**	290	205	179	341	**1,016**
Consumer Solutions	175	146	126	221	**668**	242	164	238	453	**1,097**
Russia	249	182	175	289	**896**	349	238	200	314	**1,101**
Other [1]	24	23	22	24	**92**	24	24	25	28	**101**
Netting of Nord Pool transactions [2]	-120	-69	-66	-129	**-384**	-118	-73	-73	-103	**-367**
Eliminations	-33	-19	-14	-13	**-79**	-29	-23	-17	-34	**-103**
IS Total	**989**	**768**	**732**	**1,143**	3,632	**1,232**	**937**	**919**	**1,432**	4,520

1) Sales, both internal and external, includes effects from realised hedging contracts. Effect on sales can be negative or positive depending on the average contract price and realised spot price.

2) Sales and purchases with Nord Pool Spot is netted on Group level on an hourly basis and posted either as revenue or cost depending on if Fortum is a net seller or net buyer during any particular hour.

Quarterly comparable operating profit by segments

EUR million	Q1/2016	Q2/2016	Q3/2016	Q4/2016	2016	Q1/2017	Q2/2017	Q3/2017	Q4/2017	2017
Generation	155	98	77	87	**417**	136	78	104	160	478
City Solutions	44	-5	-25	50	**64**	56	1	-20	59	**96**
Consumer Solutions	14	13	9	13	**48**	12	6	5	18	**41**
Russia	79	34	12	66	**191**	132	53	26	84	**296**
Other	-16	-18	-16	-27	**-77**	-24	-28	-21	-26	**-99**
IS Comparable operating profit	**275**	**122**	**58**	**188**	644	**313**	**109**	**94**	**295**	811
Impairment charges	0	0	0	27	**27**	0	0	0	6	**6**
Capital gains and other	44	2	-10	2	**38**	1	1	317	8	**326**
Changes in fair values of derivatives hedging future cash flow	50	-57	-57	-1	**-65**	74	-46	-19	5	**14**
Nuclear fund adjustment	0	0	2	-14	**-11**	2	4	-5	1	**1**
IS Operating profit	**369**	**67**	**-6**	**202**	633	**389**	**66**	**387**	**315**	1,158

The first and last quarters of the year are usually the strongest quarters for power and heat businesses.

Investor information

Fortum's 2017 reporting entity comprises Online Annual Review, CEO letter, Financials, Corporate Governance Statement and Remuneration Statement as well as Tax footprint.

Annual General Meeting 2018

The Annual General Meeting 2018 of Fortum Corporation will be held on Wednesday, 28 March 2018 at 11.00 EET at Finlandia Hall, address: Mannerheimintie 13 e, Helsinki, Finland. The reception of the registered participants will commence at 9.30 EET.

Payment of dividends

The Board of Directors proposes to the Annual General Meeting that Fortum Corporation pays a dividend of EUR 1.10 per share for 2017, totalling approximately EUR 977 million based on the registered shares as of 1 February 2018. The possible dividend related dates planned for 2018 are:

- the ex-dividend date 29 March 2018,
- the record date for dividend payment 3 April 2018, and
- the dividend payment date 10 April 2018.

Financial information in 2018

Fortum will publish three interim reports in 2018:

- January–March interim report on 26 April
- January–June half year financial review on 19 July, and
- January–September on 24 October.

The reports are published at approximately 9:00 EET in Finnish and English, and are available on Fortum's website at ▸ www.fortum.com/investors

Fortum's management hosts regular press conferences, targeted at analysts and the media. Webcasts of these conferences is available online at ▸ www.fortum.com/investors. Management also gives interviews on a one-on-one and group basis. Fortum observes closed and silent period of 30 days prior to publishing its results.

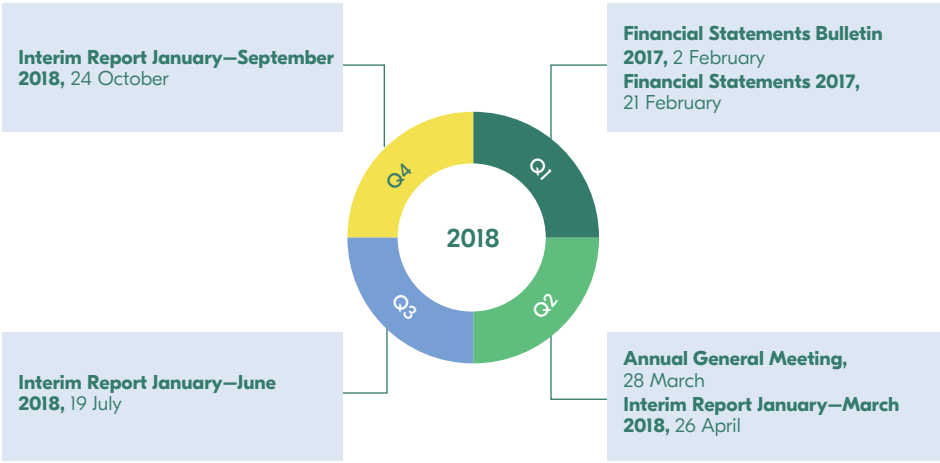
Fortum share basics

Listed on Nasdaq Helsinki
Trading ticker: FORTUM
Number of shares, 2 February 2018: 888,367,045
Sector: Utilities

Fortum's activities in capital markets during 2017

Fortum's Investor Relations activities cover equity and fixed-income markets to ensure full and fair valuation of the Company's shares, access to funding sources and stable bond pricing. The key task of Investor Relations is to provide correct, adequate and up-to-date information regularly and equally to all market participants. By doing this, Investor Relations aims to minimise the investor's risk and reduce the share's volatility. Investors and analysts primarily are met on a regular basis in Europe and North America.

In 2017, Fortum met approximately 200 professional equity investors individually or in group meetings and at investor conferences and maintained regular contact with equity research analysts at investment banks and brokerage firms.



fortum

Join the change

Governance

2017

Corporate Governance Statement 2017

Fortum Corporation (FORTUM) has been listed on Nasdaq Helsinki since 18 December 1998. Fortum's industrial sector, according to the Global Industry Classification Standard, is Electric Utilities. The State of Finland is the majority owner in Fortum with 50.76% of the shares as of 31 December 2017.

Corporate governance at Fortum is based on Finnish laws and the company's Articles of Association. Fortum complies fully with and has prepared this corporate governance statement in accordance with the Finnish Corporate Governance Code 2015. The corporate governance statement is issued separately from the operating and financial review, and it has been reviewed by the Audit and Risk Committee of Fortum's Board of Directors.

Fortum prepares consolidated financial statements and interim reports in accordance with the International Financial Reporting Standards (IFRS), as adopted by the EU, the Finnish Securities Markets Act as well as the appropriate Financial Supervision Authority's regulations and guidelines and Nasdaq Helsinki's rules. The company's operating and financial review and the parent company financial statements are prepared in accordance with the Finnish Companies Act, Accounting Act, Securities Markets Act, and the opinions and guidelines of the Finnish Accounting Board.

The auditor's report covers the consolidated financial statements and the parent company financial statements. The Finnish Corporate Governance Code 2015 is available on the website of the Securities Market Association at
▸ http://www.cgfinland.fi

Description of Governance

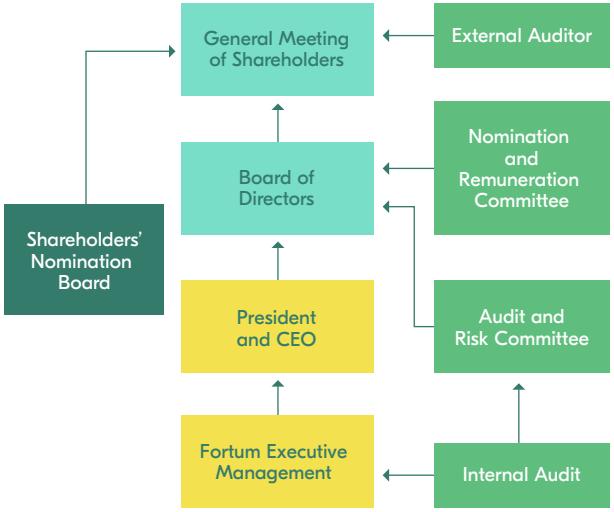
Governing bodies of Fortum

The decision-making bodies managing and overseeing the Group's administration and operations are the General Meeting of Shareholders, the Board of Directors with its two Committees, the Audit and Risk Committee and the Nomination and Remuneration Committee, and the President and CEO, supported by the Fortum Executive Management.

Fortum also has an informal Advisory Council consisting of representatives of Fortum's stakeholder groups as invited by the Board of Directors. The Advisory Council aims to advance Fortum's businesses by facilitating a dialogue and exchange of views between Fortum and its stakeholders. During 2017, the Advisory Council consisted of 14 representatives of Fortum's stakeholder groups and three employee representatives.

As sustainability is an integral part of Fortum's strategy, the highest decision making of these issues falls on the duties of the Board of Directors, who share joint responsibility on sustainability matters. Therefore Fortum has not established a specific Sustainability Committee for decision making on economic, environmental and social issues. The Audit and Risk Committee, members of the Fortum Executive Management, and other senior executives support the Board of Directors in the decision-making in these matters, when necessary.

Governing bodies of Fortum



General Meeting of Shareholders

The General Meeting of Shareholders is the highest decision making body of Fortum. Every shareholder has the right to attend the General Meeting, propose items for the agenda of the General Meeting and exercise his/her power of decision in matters belonging to the General Meeting by law, as stipulated in the Finnish Companies Act. Each share is entitled to one vote. A shareholder who is present at the General Meeting of Shareholders also has the right to request information on matters to be considered at the meeting. Before the end of each financial year Fortum states on the Annual General Meeting website and in the Investor Relations calendar the date by which a shareholder must declare his/her proposals to the General Meeting.

Decisions at the General Meeting of Shareholders are primarily made by a simple majority of votes. Such decisions include, for example, resolutions on the adoption of the financial statements, payment of dividends, discharging the members of the Board of Directors and the President and CEO from liability, appointment of the Board of Directors and the external auditors, and deciding on their remuneration.

In accordance with Fortum's Articles of Association and the Finnish Companies Act, a notice to convene the General Meeting of Shareholders is issued by the Board of Directors. The notice is delivered no more than three months and no less than three weeks before the General Meeting of Shareholders by publishing the notice on the company's website or in two newspapers chosen by the Board of Directors. The Annual General Meeting of Shareholders is to be held once a year, in June at the latest.

An Extraordinary General Meeting of Shareholders shall be held whenever the Board of Directors finds it necessary or when it is required by law to convene such a meeting.

The main duties of Annual General Meeting of shareholders include:

- Adoption of the parent company financial statements and consolidated financial statements
- Resolution on the use of the earnings shown on the balance sheet and the payment of dividends
- Resolutions on the discharge from liability of the members of the Board of Directors and the CEO
- Resolution on the remuneration of the members of the Board of Directors
- Resolution on the number of members of the Board of Directors
- Election of the chairman, deputy chairman and members of the Board of Directors
- Resolution on the remuneration of the external auditor
- Election of the external auditor

General Meetings in 2017

Fortum's Annual General Meeting was held at the Finlandia hall in Helsinki on 4 April. No Extraordinary General Meeting of Shareholders was held in 2017.

Shareholders' Nomination Board

The Annual General Meeting on 9 April 2013 established a permanent Shareholders' Nomination Board. The purpose and task of the Shareholders' Nomination Board is to prepare and present to the Annual General Meeting, and, if necessary, to an Extraordinary General Meeting, a proposal on the remuneration, size and members of the Board of Directors. In addition, the Shareholders' Nomination Board seeks candidates for potential board members.

The Shareholders' Nomination Board consists of four members, three of which are appointed by the company's three largest shareholders, who shall appoint one member each. The Chairman of the Board of Directors serves as the fourth member. The members are nominated annually and their term of office ends when new members are nominated to replace them. Fortum's three largest shareholders that are entitled to appoint members to the Shareholders' Nomination Board are determined on the basis of the registered holdings as of the first working day in September in the year concerned. In the event that a shareholder does not wish to exercise their right to appoint a representative, it shall pass the right to the next-largest shareholder who would not otherwise be entitled to appoint a member to the Nomination Board. The Shareholders' Nomination Board forwards its proposals for the Annual General Meeting to the Board of Directors by 31 January each year.

Diversity Principles for the Board of Directors

The Shareholders' Nomination Board uses diversity principles for the Board of Directors in line with the Corporate Governance Code 2015. The principles are applied in preparing proposal concerning nomination of board members. The diversity principles include, among others, that the board composition shall include expertise from the geographical areas where Fortum conducts its business, the background profession of the board members shall include such competences that support realisation of Fortum's strategy and that enable board members to challenge management decisions and to exercise their role of having oversight. In addition, the board composition shall include both genders. Fortum's target is to comply with the principles issued in the Government Resolution dated 17 February 2015 on equal gender representation in the boards of listed companies with the aim of the board consisting of at least 40% each of women and men by 2020. The Shareholders Nomination Board reviews the diversity principles and their implementation annually.

Fortum reports the objectives, actions and progress of the diversity principles in its corporate governance statement. The Shareholders' Nomination Board has applied the diversity principles in preparing the proposal concerning nomination of board members for the Annual General Meeting 2017 and for the upcoming Annual General Meeting of 2018. The Shareholders' Nomination Board deems that the current board composition and the proposed board members for the Annual General Meeting 2018 include all the competences defined in the diversity principles in well balanced manner.

The proposal for the board members for the Annual General Meeting 2018 consists of 3 women and 5 men. The current Board of Directors consists of 3 women and 4 men, corresponding to a ratio of 42.9% and 57.1%.

Shareholders' Nomination Board prior to the Annual General Meeting 2018

In October 2017, the following persons were appointed to the Shareholders' Nomination Board: Pekka Timonen, b. 1960, Doctor of Laws (LL.D.), Director General of Ministry of Economic Affairs and Employment (Chairman); Timo Ritakallio, b. 1962, D.Sc. (Tech.), LL.M., MBA, President and CEO, Ilmarinen Mutual Pension Insurance Company and Elli Aaltonen (b. 1953, D.Sc. (Soc.), docent, Director General, Social Insurance Institution of Finland (KELA). The Chairman of the Board of Directors, Sari Baldauf, acts as a member of the Shareholders' Nomination Board. The Nomination Board convened 4 times and the attendance rate was 100%.

The Shareholders' Nomination Board proposed to the Annual General Meeting 2018, which will be held on 28 March 2018, that the fees to be paid to the members of the Board of Directors are for a term ending at the end of the Annual General Meeting 2019 as follows: for the chairman, EUR 75,000 per year; for the deputy chairman, EUR 57,000 per year; and for each member, EUR 40,000 per year, as well as for the chairman of the Audit and Risk Committee EUR 57,000 per year if he/she is not at the same time acting as chairman or deputy chairman of the Board of Directors. In addition, for each Board of Directors and Board Committee meeting a fee of EUR 600 is proposed. For Board of Directors members living outside Finland in Europe, the proposed fee for each meeting will be doubled, and for Board of Directors members living outside Europe, the proposed fee for each meeting will be tripled. For Board of Directors members living in Finland, the proposed fee for each Board of Directors and Board Committee meeting will be doubled for meetings held outside Finland and tripled for meetings held outside Europe. For Board of Directors and Committee meetings held as a telephone conference, the proposed fee will be paid as single to all members. No fee will be paid for decisions made without a separate meeting.

In addition, the Shareholders' Nomination Board proposed that the Board of Directors consists of 8 members and that the following persons be elected to the Board of Directors for the upcoming term: Heinz-Werner Binzel, Eva Hamilton, Kim Ignatius, Matti Lievonen (chairman), Anja McAlister, Veli-Matti Reinikkala, and as new members: Essimari Kairisto and Klaus-Dieter Maubach (deputy chaiman).

Shareholders' Nomination Board prior to the Annual General Meeting 2017

In September 2016, the following persons were appointed to the Shareholders' Nomination Board: Eero Heliövaara, b. 1956, M.Sc. (Econ.) and M.Sc. (Eng.), Director General of the Government Ownership Steering Department, Prime Minister's Office; Timo Ritakallio, b. 1962, D.Sc. (Tech.), LL.M., MBA, President and CEO, Ilmarinen Mutual Pension Insurance Company and Liisa Hyssälä, b. 1948, M.Sc. (Soc.), D.D.S., Director General, Social Insurance Institution of Finland (KELA). In addition, the Chairman of the Board of Directors, Sari Baldauf, was a member of the Shareholders' Nomination Board. The Nomination Board convened 3 times and the attendance rate was 100%.

Following the retirement of Liisa Hyssälä, Director General of KELA, her successor Elli Aaltonen (b. 1953, D.Sc. (Soc.), docent, Director General) replaced her as a member of the Shareholders' Nomination Board as of 1 January 2017. Ms Hyssälä participated in two meetings and Ms Aaltonen in one meeting.

The Shareholders' Nomination Board presented its proposal covering the members of the Board of Directors and the remuneration be paid to them, on 27 January 2017.

Board of Directors

The Board of Directors is responsible for the company's strategic development and for supervising and steering the company's business and management. Further, under the Articles of Association and in line with the Companies Act, the Board of Directors represents the company and is responsible for the proper arrangement of the control of the company's accounts and finances. The Board of Directors is also responsible for defining the company's mission and values.

The Board of Directors comprises five to eight members who are elected at the Annual General Meeting for a one-year term of office expiring at the end of the first Annual General Meeting following

the election. The Annual General Meeting also elects the Chairman and the Deputy Chairman of the Board of Directors.

The Board of Directors convenes according to a previously agreed schedule to discuss specified themes and issues on its charter. The Chairman of the Board of Directors prepares the agenda for the Board of Directors meeting based on the proposal by the President and CEO. The members of the Board of Directors have the right to suggest specific matters and have them included on the agenda. More than half of the members must be present at the meeting to constitute a quorum. Decisions of the Board of Directors shall be made by a simple majority. The Board of Directors has approved a written charter for its work, the main content of which is disclosed herein, including the duties of the Board of Directors.

The President and CEO, the Chief Financial Officer, and the General Counsel, as secretary to the Board of Directors, attend the Board meetings on a regular basis. Other Fortum Executive Management members and senior executives attend as required.

As part of its duties, the Board of Directors conducts an annual self-assessment in order to further develop its work. In accordance with the Finnish Corporate Governance Code, the Board of Directors also annually evaluates which of the directors are independent of the company and which are independent of its significant shareholders.

The main duties of the Board of Directors include:

- Strategic development and steering of the company's business and fields of activity
- Confirming the Group's Code of Conduct, operating principles and Group policies, including sustainability, and overseeing their implementation
- Ensuring that the administration and operations of the company are properly organised
- Ensuring that the accounting, financial administration and the risk management are arranged appropriately
- Confirming the Group's business plan on an annual basis
- Setting and following up the annual performance targets for the company and its management
- Reviewing the interim reports and approving the consolidated financial statements, the parent company financial statements and the operating and financial review
- Defining the dividend policy
- Deciding on major investments, divestments and business arrangements
- Confirming the Group's organisational structure at the top management level, and appointing and dismissing the members of the Fortum Executive Management
- Appointing and dismissing the President and CEO; deciding on his/her remuneration
- Appointing the Chairman and Deputy Chairman as well as members of the Fortum Corporation Advisory Council
- Convening the Annual General Meeting and the Extraordinary General Meeting, when necessary
- Deciding on the donations policy

Board of Directors in 2017

Until the Annual General Meeting held on 4 April 2017, the Board of Directors comprised the following eight members: Chairman Sari Baldauf, Deputy Chairman Kim Ignatius, Minoo Akhtarzand, Heinz-Werner Binzel, Eva Hamilton, Tapio Kuula, Veli-Matti Reinikkala and Jyrki Talvitie.

The Annual General Meeting on 4 April 2017 re-elected Ms Sari Baldauf as Chairman, and Mr Heinz-Werner Binzel, Ms Eva Hamilton, Mr Kim Ignatius, Mr Tapio Kuula and Mr Veli-Matti Reinikkala as Members, in addition as new members Mr Matti Lievonen as Deputy Chairman, and Ms Anja McAlister as member until the end of the Annual General Meeting in 2017. In November 2017, Tapio Kuula passed away. After evaluation, the Shareholders' Nomination Board confirmed the Board of Directors' ability to function with 7 members until the Annual General Meeting 2018.

The Chairman, the Deputy Chairman and the members of the Board of Directors were, with the exception of Tapio Kuula (Mr. Kuula acted as President and CEO of Fortum until 31 January 2015), independent of the company and all were independent of the company's significant shareholders. Three members, including the Chairman, are female and four members are male.

The Board of Directors met 17 times, and the attendance rate was 97%.

The Board of Directors focused especially on the development and implementation of the company's strategy, growth options, investments and acquisitions, including the Hafslund and Uniper transactions. Other focus areas included the market outlook and market development, as well as Fortum's competitiveness in the energy market transition. Based on the self-assessment conducted during the previous year, the Board of Directors set certain focus areas and amended certain processes in an effort to further enhance the efficiency of the board work.

Fortum's Board of Directors on 31 December 2017

	Born	Nationality	Education	Occupation	Member since	Attendance at Board Meetings	Attendance at Board Committee Meetings	Share ownership (31 Dec 2017)
Ms Sari Baldauf, Chairman	1955	Finnish	M.Sc. (Econ.)	Non-executive director, Independent member of the Board of Directors	2009	17/17	Nomination and Remuneration Committee, 4/4	2,300
Mr Heinz-Werner Binzel	1954	German	Economics and electrical engineering degree	Independent consultant, Non-executive director, Independent member of the Board of Directors	2011	17/17	Audit and Risk Committee, 5/5	0
Ms Eva Hamilton	1954	Swedish	B.A. Journalism	Non-executive director, Independent member of the Board of Directors	2015	16/17	Nomination and Remuneration Committee, 4/4	40
Mr Kim Ignatius	1956	Finnish	B.Sc. (Econ.)	Non-executive director, Independent member of the Board of Directors	2012	17/17	Audit and Risk Committee, 5/5	2,400
Mr Veli-Matti Reinikkala	1957	Finnish	Executive MBA	Non-executive Director, Independent member of the Board of Directors	2016	17/17	Audit and Risk Committee, 5/5, Nomination and Remuneration Committee, 1/1	3,000
Member of Fortum's Board of Directors since 4 April 2017								
Mr Matti Lievonen, Deputy Chairman	1958	Finnish	B.Sc. (Eng.), Executive MBA	President & CEO of Neste Corporation, Independent member of the Board of Directors	2017	11/13	Nomination and Remuneration Committee, 3/3	1,500
Ms Anja McAlister	1960	Finnish	M.Sc. (Energy technology), MBA	Pöyry PLC, Head of Transformation and Strategy, Independent member of the Board of Directors	2017	13/13	Audit and Risk Committee, 4/5	0
Member of Fortum's Board of Directors until 7 November 2017								
Mr Tapio Kuula	1957	Finnish	M.Sc. (Eng.) M.Sc. (Econ.)	Non-executive director, Independent of the significant shareholders, not independent of the company	2015	14/15	Nomination and Remuneration Committee, 2/3	-
Member of Fortum's Board of Directors until 4 April 2017								
Ms Minoo Akhtarzand	1956	Swedish	M.Sc. (Electrical Engineering)	Governor in the County of Västmanland, Independent member of the Board of Directors	2011	4/4		-
Mr Jyrki Talvitie	1966	Finnish	Executive MBA, LL.M.	Sperbank, Vice President, Strategic Partners and Investors, Independent member of the Board of Directors	2014	4/4		-

Board Committees

The committees of the Board of Directors are the Audit and Risk Committee and the Nomination and Remuneration Committee. The committees assist the Board of Directors by preparing and reviewing in more detail matters falling within the duties of the Board of Directors.

The Board of Directors appoints members of the Audit and Risk Committee and the Nomination and Remuneration Committee from amongst its members. Each committee shall have at least three members. The members shall have the expertise and experience required by the duties of the respective committee.

Members are appointed for a one-year term of office expiring at the end of the first Annual General Meeting following the election. All the members of the Board of Directors have the right to attend the committee meetings. The Chairman of the committee reports on the committee's work to the Board of Directors regularly after each meeting, and the committee meeting materials and minutes are available to all members of the Board of Directors. The Board of Directors has approved written charters for the committees; the charters are reviewed regularly and updated as needed.

Audit and Risk Committee

The Audit and Risk Committee assists the Board of Directors in matters relating to financial reporting and control in accordance with the duties specified for audit committees in the Finnish Corporate Governance Code. The Board of Directors regularly determines the role and duties of the Audit and Risk Committee in a written charter. The committee monitors the Group's reporting process of financial statements and the efficiency of the internal controls, internal audit and risk management systems. In addition, the committee monitors and assesses the legal compliance and the business ethics compliance.

Pursuant to the Finnish Corporate Governance Code, the members of the Audit and Risk Committee shall have the qualifications necessary to perform the responsibilities of the committee, and at least one of the members shall have expertise specifically in accounting, bookkeeping or auditing. The members shall be independent of the company, and at least one member shall be independent of the company's significant shareholders.

The external auditors, Chief Financial Officer, Head of Internal Audit, Corporate Controller, and General Counsel, as secretary to the committee, attend the committee meetings on a regular basis. Other senior executives attend the meetings as invited by the committee.

The Audit and Risk Committee carries out a self-assessment of its work and approves the internal audit charter and the internal audit plan and its budget. The committee evaluates the independence of the external auditors, reviews the external auditor's audit plan and meets with them regularly to discuss the audit plan, audit reports and findings.

Audit and Risk Committee in 2017

After the Annual General Meeting on 4 April 2017, the Board of Directors elected from amongst its members to the Audit and Risk Committee Kim Ignatius as Chairman and Heinz-Werner Binzel, Anja Mc Alister and Veli-Matti Reinikkala as members. Until the Annual General Meeting on 4 April 2017, the committee comprised Kim Ignatius as the Chairman, Minoo Akhtarzand, Heinz-Werner Binzel and Jyrki Talvitie as members.

In 2017, the members were all independent of the company and of its significant shareholders. The Audit and Risk Committee met 5 times in 2017 and the attendance rate was 95%.

The main duties of the Audit and Risk Committee include:

- Monitoring the financial position of the company
- Supervising the financial reporting process
- Monitoring the reporting process of financial statements
- Monitoring the statutory audit of the financial statements and consolidated financial statements
- Preparing for the Board of Directors the proposal for resolution on the election of the auditor
- Evaluating the independence of the statutory auditor or audit firm, particularly the provision of related services to the company to be audited and pre-approval of non-audit services
- Monitoring the efficiency of the company's internal control, internal audit, compliance and risk management systems
- Reviewing the description in the company's Corporate Governance Statement of the main features of the internal control and risk management systems in relation to the financial reporting process
- Reviewing annually the Group Risk Policy and risk exposures
- Approving the internal audit charter, the annual audit plan, the budget of the internal audit function and reviewing the internal audit reports
- Monitoring and assessing legal compliance and business ethics compliance

Nomination and Remuneration Committee

The Nomination and Remuneration Committee assists the Board of Directors in issues related to nomination and remuneration of the company's management. The committee has a written charter in which its duties have been defined. Pursuant to the Finnish Corporate Governance Code, the majority of the members of a remuneration committee shall be independent of the company. The regular participants at the committee meetings are the President and CEO, Senior Vice President of Strategy, People and Performance, and General Counsel as Secretary to the Committee.

The Nomination and Remuneration Committee conducts annually a self-evaluation of its work.

Nomination and Remuneration Committee in 2017

After the Annual General Meeting on 4 April 2017, the Board of Directors elected from amongst its members to the Nomination and Remuneration Committee Matti Lievonen as Chairman and Sari Baldauf, Eva Hamilton and Tapio Kuula as members. Until the Annual General Meeting on 4 April 2017, the committee comprised Sari Baldauf as the Chairman and Eva Hamilton, Tapio Kuula and Veli-Matti Reinikkala as members.

In 2017, the members were all independent of the company, with the exception of Tapio Kuula (Mr Kuula acted as President and CEO of Fortum until 31 January 2015), and of its significant shareholders. The committee met 4 times during 2017 and the attendance rate was 93%.

President and CEO

Mr. Pekka Lundmark is the President and CEO of Fortum Corporation. The President and CEO holds the position of Managing Director under the Companies Act and is the Chairman of the Fortum Executive Management. The President and CEO is in charge of the day-to-day management of the Group, in accordance with the Companies Act and the instructions and orders issued by the Board of Directors. Under the Companies Act, the President and CEO is responsible for ensuring that the accounts of the company comply with the applicable laws and that its financial affairs have been arranged in a reliable manner.

The main duties of the Nomination and Remuneration Committee include:

- Preparing nomination and remuneration issues and proposals to the Board of Directors concerning the President and CEO, the executives reporting directly to the President and CEO as well as the Fortum Executive Management
- Reviewing and preparing succession plans for the President and CEO and for the members of the Fortum Executive Management
- Evaluating the performance and the remuneration of the President and CEO, the executives reporting directly to the President and CEO as well as the Fortum Executive Management
- Preparing for the Board of Directors recommendations on the Group's and its management's pay structures, bonus, and incentive systems and remuneration policy
- Monitoring the functioning of the bonus systems to ensure that the management's bonus systems will advance the achievement of the company's strategic objectives and that they are based on performance
- Monitoring, planning and promoting competence development in the Group based on strategic target setting

Fortum Executive Management

The President and CEO is supported by the Fortum Executive Management. The Fortum Executive Management assists the President and CEO in implementing the strategic and sustainability targets within the framework approved by the Board of Directors, preparing the Group's business plans, and deciding on investments, mergers, acquisitions and divestments within its authorisation.

Financial and sustainability results are reviewed in the monthly reporting by the Fortum Executive Management. Quarterly Performance Review meetings with the management are embedded in the Fortum Performance Management process.

Each member of the Fortum Executive Management is responsible for the day-to-day operations and the implementation of operational decisions in their respective organisations. The Fortum Executive Management meets on a monthly basis.

Fortum Executive Management in 2017

In February 2017, Fortum announced that it will reorganise the Group structure as of 1 March 2017. City Solutions was divided into two divisions, City Solutions and Consumer Solutions. The target of the new organisation was to enable the implementation of the company's vision and strategy announced on 3 February 2016. The new organisation comprises four divisions: Generation, City Solutions, Consumer Solutions and Russia. In addition, there are two development units focusing on growing new businesses: M&A and Solar & Wind Development and Technology and New Ventures. In addition, the organisation has four staff functions: Finance; Legal; Strategy, People and Performance; as well as Corporate Affairs and Communications.

At the same time, Fortum announced changes in the company's executive management team. Markus Rauramo, Executive Vice President, City Solutions was appointed Chief Financial Officer of the company following Timo Karttinen's resignation from his CFO duties and Per Langer was appointed Executive Vice President, City Solutions. Mikael Rönnblad, M.Sc. (Econ.) was appointed Executive Vice President heading the new Consumer Solutions division and member of Fortum's Executive Management as of 15 May 2017.

On 31 October 2017, Matti Ruotsala, Deputy CEO retired from the company.

Generation

Generation division is responsible for the large scale power production, physical optimisation and trading activities in the Nordic area. The division comprises nuclear, hydro and thermal

power production, portfolio management and trading, industrial intelligence and nuclear services.

City Solutions

City Solutions is responsible for developing sustainable city solutions into a growing business for Fortum. The segment comprises heating and cooling, waste-to-energy, biomass and other circular economy solutions. The business operations are located in the Nordics, the Baltic countries and Poland.

Consumer Solutions

Consumer Solutions provides electricity and gas products, and develops new digital services and solutions for consumers. The segment comprises electricity sales and customer services in the Nordics and in Poland, as well as gas sales in Poland.

Russia

Russia division comprises Fortum's power and heat generation and sales activities in Russia.

Technology and New Ventures

Technology and New Ventures unit is responsible for Fortum's research and development activities and is the in-house incubator for start-ups. It is also responsible for direct and indirect investments in external start-ups as well as cooperation with universities and research institutions.

M&A and Solar & Wind Development

M&A and Solar & Wind Development is responsible for Fortum's mergers and acquisitions activities and developing Fortum's solar and wind portfolio.

Fortum Executive Management on 31 December 2017

	Position and responsibility area	Born	Education	Member since	Share ownership 31 December 2017
Mr Pekka Lundmark	President and CEO, Chairman of the Fortum Executive Management	1963	M.Sc. (Eng.)	2015	60,713
Mr Alexander Chuvaev	Executive Vice President, Russia Division	1960	M.Sc. (Eng.)	2009	14,713
Mr Kari Kautinen	Senior Vice President, M&A and Solar & Wind Development	1964	LL.M.	2014	30,720
Mr Per Langer	Executive Vice President, City Solutions	1969	M.Sc. (Econ.)	2009	31,570
Mr Risto Penttinen	Senior Vice President, Strategy, People and Performance	1968	M.Sc. (Econ.)	2016	10,588
Mr Markus Rauramo	Chief Financial Officer	1968	M.Sc. (Econ. and Pol. Host.)	2012	32,032
Mr Arto Räty	Senior Vice President, Corporate Affairs and Communications	1955	Lieutenant General (Ret.)	2016	0
Mr Mikael Rönnblad	Executive Vice President, Consumer Solutions	1969	M.Sc. (Econ.)	15 May 2017	0
Ms Sirpa-Helena Sormunen	General Counsel	1959	LL.M.	2014	4,777
Ms Tiina Tuomela	Executive Vice President, Generation	1966	M.Sc. (Eng.), MBA	2014	15,554
FEM member until 28 February 2017					
Mr Timo Karttinen	Chief Financial Officer	1965	M.Sc. (Eng.)	2004	-
FEM member until 31 October 2017					
Mr Matti Ruotsala	Deputy CEO	1956	M.Sc. (Eng.)	2009	-

All the members of the Executive Management Team report to the President and CEO, apart from the General Counsel who administratively reports to the CFO.

The main features of the Internal Control and Risk Management Systems

The internal control and risk management systems relating to financial reporting are designed to provide reasonable assurance regarding the reliability of financial reporting and aim to ensure compliance with applicable laws and regulations.

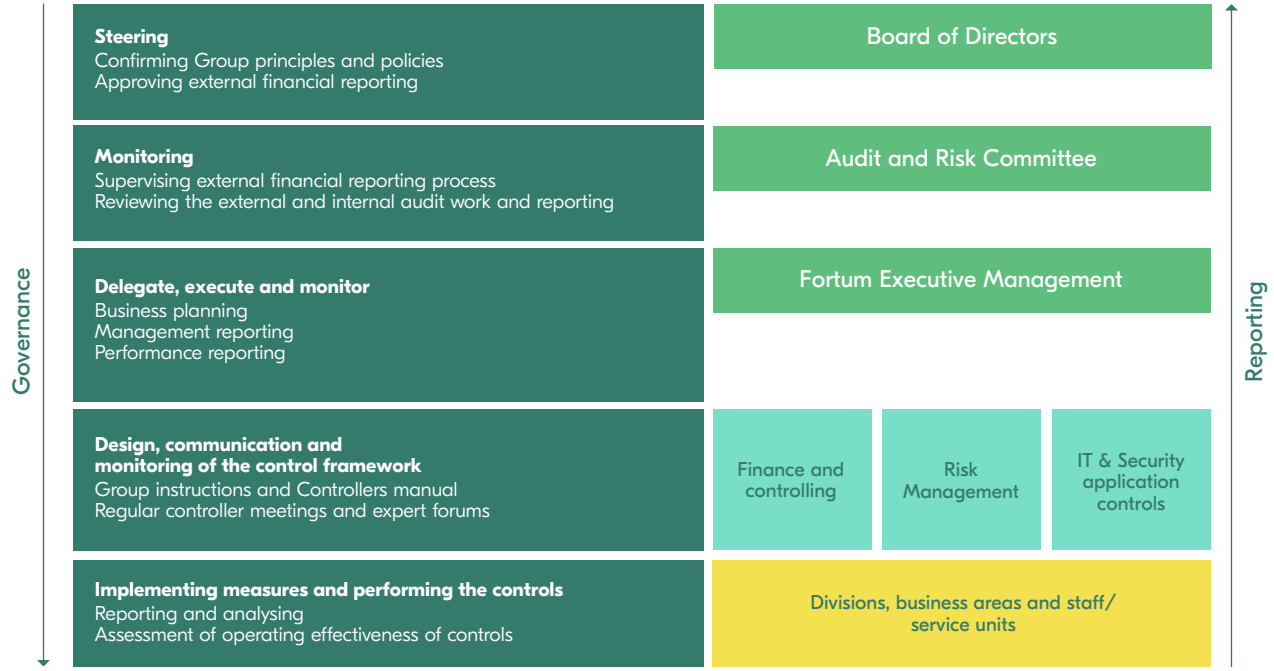
Risk management systems

Fortum's Board of Directors approves the Group Risk Policy that defines the objective, main principles and division of responsibilities for risk management. The Group Risk Policy also includes a description of the main features of the risk management process which is applicable to all processes including financial reporting.

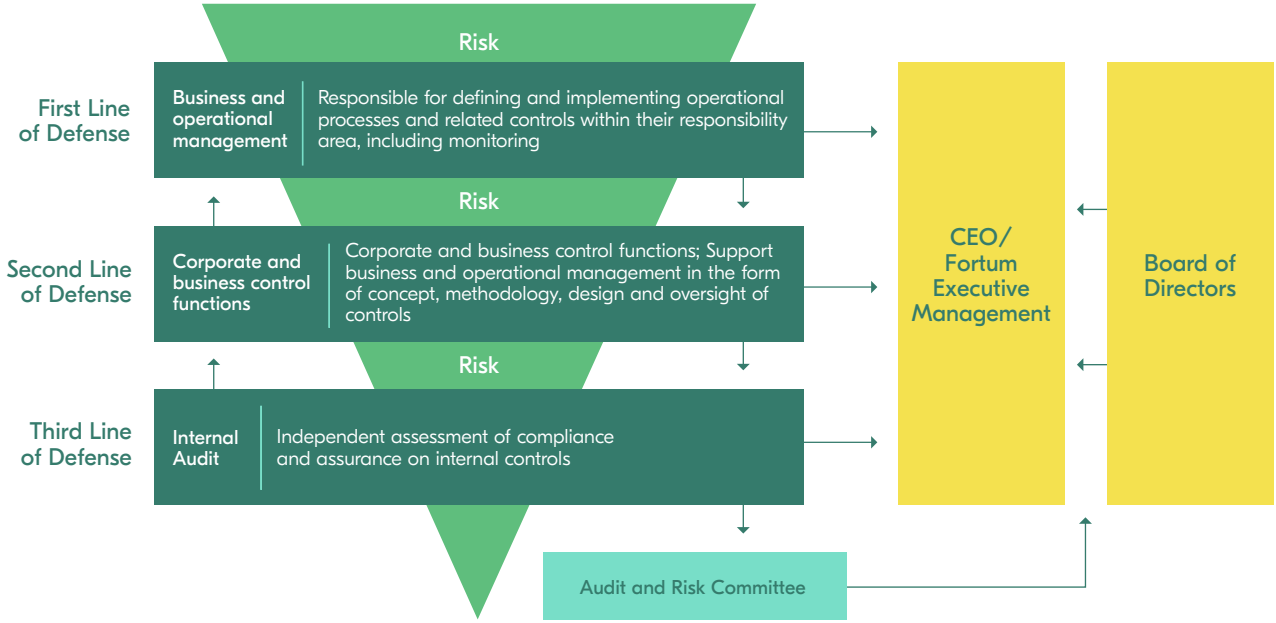
Internal controls in relation to financial reporting

Fortum's internal control framework is based on the main elements from the framework introduced by the Committee of Sponsoring Organisations of the Treadway Commission (COSO). The controls including financial reporting controls, have been defined based on the main risks in the process. Internal controls are an integral part of compliance in Fortum covering key areas of business ethics, regulatory compliance and internal controls.

Financial reporting framework in Fortum



Fortum's Control Governance



Control environment

The standards, processes and structures in internal control are set through Group policies, Group instructions and the Fortum internal control framework. Fortum's internal control framework is designed to support operational effectiveness and efficiency, reliable financial reporting, and compliance with laws, regulations and policies. The internal control framework defines the key controls and minimum requirements for the key processes. During 2017, Group Instruction for Compliance Management was implemented also describing the roles and responsibilities in terms of internal controls. Corporate Accounting and Control is responsible for the overall control structure of the financial reporting process. Fortum Controllers' manual defines instructions and guidelines relating to financial reporting.

Fortum's organisation is decentralised, and a substantial degree of authority and responsibility is delegated to the divisions in the form of control responsibilities. Fortum's control governance follows the so-called "Three lines of defense" model as illustrated in the graphic.

Risk assessment

Risks are continuously identified and analysed as part of the risk management process. Material risks, that might, if realised, have financial impact or lead to non-compliance are reported at least annually to the ARC, and follow-up of actions and improvements are integrated in operational management. The currently ongoing Internal Controls Quality Programme is to review and enhance existing controls to ensure that the key risks in the processes are mitigated.

Control activities

Control activities are applied in the processes and, from the financial reporting perspective, they ensure that errors or deviations are prevented or detected and corrected.

The Corporate Accounting and Control unit together with the Record-to-Report internal controls process team determine the control requirements and the scope covering the financial reporting process. Divisions and units define their controls based on these common requirements. Responsibilities are assigned for the control activities and for ensuring that the control coverage is in accordance with the defined requirements and scope.

Control requirements for the financial reporting process include controls regarding the initiation, recognition, measurement, approval, accounting and reporting of financial transactions as well as disclosure of financial information. The general IT controls support the financial reporting controls in areas like access control and back-up management.

Responsibilities are assigned to finance functions ensuring that analyses of the business performance, including analyses on volumes, revenues, costs, working capital, and asset values are performed in accordance with the control requirements.

Information and communication

The Controllers' manual includes the Fortum Accounting manual, Investment manual and reporting instructions, and other instructions relating to financial reporting. Regular core controllers' meetings, headed by the Corporate Controller, steer the Finance function. Regular Accounting Network Forum meetings are to inform about upcoming changes in IFRS, new accounting policies and other changes in reporting requirements.

Monitoring and follow-up

Financial performance and key short-term risks and uncertainties related to business operations are reported monthly to the Fortum Executive Management.

As part of the Fortum internal control framework, divisions and units regularly assess the maturity of the control activities they are responsible for including the financial reporting process controls. The Head of Internal Controls reports the maturity assessments results and improvement actions to the management and to the ARC. Internal control design and operating effectiveness are also assessed as part of the audits by Internal Audit. Audit results, including corrective actions and their status, are regularly reported to the management and to the Audit and Risk Committee.

Auditing

Internal Audit

Fortum's Internal Audit is an independent and objective assurance function that is responsible for examining and evaluating the appropriateness and effectiveness of the Group's management and corporate governance processes, internal control system, risk management, and operational processes. The Standards for the Professional Practice of Internal Audit form the basis for the work of Internal Audit.

External Audit

The Group and the parent company have one external auditor, which shall be an audit firm certified by the Central Chamber of Commerce. Due to ongoing mergers and acquisition processes some of the target companies have other audit firms during the transition period. The external auditor is elected by the Annual General Meeting for a term of office that expires at the end of the first Annual General Meeting following the election.

Fortum's Annual General Meeting on 4 April 2017 elected Authorised Public Accountant Deloitte Oy as the company's external auditor, with Authorised Public Accountant Reeta Virolainen having the principal responsibility.

The Annual General Meeting decided on 4 April 2017 that the auditor's fee be paid pursuant to invoice approved by the company.

The fee paid to the auditor for services rendered and invoiced in 2017 totalled approx. EUR 1,448,000. In addition, the audit firm was paid a total of approx. EUR 1,158,000 for non-audit and advisory services rendered and invoiced.

Code of Conduct and Compliance Programme

Fortum's Code of Conduct is based on the shared corporate values which form the ethical basis for all work at Fortum. Fortum values were updated in 2017. Fortum's Code of Conduct was rebranded and relaunched in 2017 (originally launched in 2007 and updated 2015) to whole company, including Recycling and Waste Solutions and Hafslund, and is published in ten languages. The Code of Conduct has been approved by the Board of Directors. Fortum employees are responsible for reporting any suspected misconduct to their own supervisors, to other management members or, if necessary, directly to Internal Audit. Additionally, Fortum employees and partners can report suspicions of misconduct confidentially to the Fortum Head of Internal Audit via the "raise-a-concern channel" on Fortum's internal and external web pages. The report can be submitted in several languages and anonymously if necessary. In Russia, Fortum even has a separate compliance organisation with compliance officers in place.

Prevention of corruption is one of the Code of Conduct's focus areas. Fortum has procedures for anti-corruption including prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. Fortum also has a country and partner risk evaluation process to support the understanding and management of compliance needs at the local business and partner level. These also cover export control and anti-money laundering aspects.

Fortum has a compliance programme which covers key areas of regulatory compliance and business ethics. It is managed with risk-based prioritisation. Internal Controls are integral part of the compliance and both the Group Compliance Officer and the Head of Internal Controls report to the General Counsel independently of the business.

The Code of Conduct and compliance topics and instructions are communicated through internal and external communication channels. Alignment is enforced by top management with their full commitment.

Insider Administration

Fortum complies with the EU regulation No. 596/2014 on market abuse (MAR) and EU regulation No. 1227/2011 on wholesale Energy Market Integrity and Transparency (REMIT) and related regulation. Fortum complies also with the Guidelines for Insiders issued by Nasdaq Helsinki.

Persons discharging managerial responsibilities

Persons discharging managerial responsibilities and the persons associated with them are under a duty to disclose their transactions with Fortum's financial instruments. Fortum has defined persons discharging managerial responsibilities to be the members of the Board of Directors and Fortum Executive Management.

Duty to disclose and Closed Window

Fortum's Board of Directors and Executive Management members as well as persons related to them are under a disclosure duty towards Fortum and the Finnish Financial Supervision Authority regarding their transactions with Fortum's financial instruments. Fortum makes the said transactions public with a stock exchange release.

Fortum's Board of Directors and Executive Management members as well as other Fortum personnel defined to have access to sensitive financial information of Fortum may not trade in Fortum's financial instruments within 30 days prior to the publication of interim reports and financial statements (Closed Window).

Internal supervision of insider affairs

Fortum's own internal insider rules are regularly updated and made available to all employees of Fortum. Fortum arranges training on insider rules. The coordination and control of insider affairs are included in the responsibilities of Fortum's General Counsel. Fortum regularly monitors the trading of its insiders.

Board of Directors 31 December 2017

Sari Baldauf
Chairman

Born 1955, nationality: Finnish

M.Sc., Business Administration, honorary doctorate degrees in Technology (Helsinki University of Technology) and Business Administration (Turku School of Economics and Business Administration, and Aalto University School of Business)

Independent member of Fortum's Board of Directors since 2009

Member of the Nomination and Remuneration Committee

Fortum shareholding on 31 December 2017: 2,300 (31 December 2016: 2,300)

Main occupation:
Non-executive Director

Primary work experience:
- Nokia Corporation, several senior executive positions. Member of the Group Executive Board until 2005

Key positions of trust:
- Vexve Holding Oy, Chairman of the Board
- Daimler AG, Member of the Supervisory Board
- Deutsche Telekom AG, Member of the Supervisory Board
- DevCo Partners Oy, Senior Advisor
- Tukikummit-säätiö, Member of the Board
- Kasvuryhmä ry, Member of the Board

Matti Lievonen
Deputy Chairman

Born 1958, nationality: Finnish

B.Sc. (Eng.), eMBA, D.Sc. (Tech.) h.c.

Independent member of Fortum's Board of Directors since 2017

Chairman of the Nomination and Remuneration Committee

Fortum shareholding on 31 December 2017: 1,500 (31 December 2016: not disclosed)

Main occupation:
President & CEO, Neste Corporation

Primary work experience:
- President of the Fine and Speciality Papers Division at UPM-Kymmene Corporation, and number of other senior positions at UPM 1986–2008, and prior to that at ABB, Member of UPM-Kymmene's Executive Board 2002–2008

Key positions of trust:
- European Business Leaders' Convention, Member of the Board
- East Office of Finnish Industries Oy, Member of the Board
- Chemical Industry Federation of Finland, Member of the Board
- Suomen Messut Osuuskunta, Member of the Supervisory Board
- National Emergency Supply Agency (HVK), Member of the Supervisory Board
- The Finnish Business and Policy Forum (EVA), Member of the Supervisory Board
- Nynäs AB, Member of the Board
- SSAB AB, Member of the Board

Heinz-Werner Binzel

Born 1954, nationality: German

Economics and Electrical Engineering degree

Independent member of Fortum's Board of Directors since 2011

Member of the Audit and Risk Committee

Fortum shareholding on 31 December 2017: 0
(31 December 2016: 0)

Main occupation:
Independent consultant

Primary work experience:
- RWE Energy AG, Member of the Executive Board, procurement and sale of electricity, gas, and water 2003–2005
- RWE Solutions AG, Member of the Executive Board as CFO 1999–2002 and as CEO 2002–2003
- NUKEM GmbH, several senior executive positions in Germany and the USA 1981–1999

Key positions of trust:
- TÜV Rheinland Holding AG, Member of the Supervisory board, Chairman of the Audit Committee

Eva Hamilton

Born 1954, nationality: Swedish

B.A. Journalism, honorary doctorate degree at Mid Sweden University (Mittuniversitetet)

Independent Member of Fortum's Board of Directors since 2015

Member of the Nomination and Remuneration Committee

Fortum shareholding on 31 December 2017: 40
(31 December 2016: 40)

Main occupation:
Senior adviser

Primary work experience:
- Sveriges Television (SVT), CEO, 2006–2014
- Sveriges Television (SVT), Head of SVT Fiction, 2004–2006
- Sveriges Television (SVT), Head of News, 2000–2004
- Sveriges Television (SVT), Foreign Correspondent, Brussels 1993–1996
- Aftonbladet 1978–1979, Svenska Dagbladet 1979–1988, Dagens Industri 1988–1989: news reporter

Key positions of trust:
- Nexiko Media AB, Chairman of the Board
- Kungliga Dramatiska Teatern AB, Member of the Board
- LKAB, Member of the Board
- Lindex AB, Member of the Board
- IVA (Royal Swedish Academy of Engineering), Member of the Board, Chairman of Näringslivsrådet
- Moment Group AB, Member of the Board
- Swedish Film & TV Producers Association, Chairman
- Arholma Landsort AB, Member of the Board

Born 1956, nationality: Finnish

BSc (Econ), Helsinki School of Economics and Business Administration

Independent member of Fortum's Board of Directors since 2012

Chairman of the Audit and Risk Committee

Fortum shareholding on 31 December 2017: 2,400 (31 December 2016: 2,400)

Main occupation:
Non-executive Director

Primary work experience:
- Sanoma Corporation, Chief Financial Officer 2008—2016, Executive Vice President 2017
- TeliaSonera AB, Executive Vice President and CFO 2003—2008
- Sonera Oyj, Executive Vice President and CFO 2000—2002
- Tamro Oyj, Group CFO 1997—2000

Key positions of trust:
- Rovio Entertainment Corporation, Member of the Board
- RR Holding Oy, Chairman of the Board

Born 1960, nationality: Finnish

M.Sc., Energy technology, MBA

Independent member of Fortum's Board of Directors since 2017

Member of the Audit and Risk Committee

Fortum shareholding on 31 December 2017: 0 (31 December 2016: not disclosed)

Main occupation:
Head of Transformation and Strategy, Pöyry PLC

Primary work experience:
- Pöyry PLC, President Energy Business Group 2015—2016
- Pöyry Management Consulting Oy, Vice President 2014—2015
- Renewa Oy (biomass boiler manufacturer), Managing director 2013
- UPM Group, Senior Vice President, Head of Energy Business 2004—2013
- Electrowatt-Ekono Oy (part of the Pöyry Group), Senior Vice President, Head of the Management Consulting Northern Europe 2000—2004
- Ministry of Trade and Industry, Finland, Industrial Counsellor, Head of Energy Policy & Analyses team 1998-2000
- Kymppivoima Oy, Operations Manager and Managing Director 1995—1998
- Energia-Ekono Oy, Senior Consultant 1993—1995
- Sheffield Heat and Power Ltd., Sheffield, UK, Technical Manager 1990—1993
- City of Kuopio, Finland, Operations Manager of 100/200 MW biomass CHP plant 1984—1989

Veli-Matti Reinikkala

Born 1957, nationality: Finnish

Executive Master of Business Administration

Independent Member of Fortum's Board of Directors since 2016

Member of the Audit and Risk Committee

Fortum shareholding on 31 December 2017: 3,000 (31 December 2016: 3,000)

Main occupation:
Non-executive Director

Primary work experience:
- ABB, President of Region Europe 2015 and Member of the Group Executive Committee 2006–2015
- ABB, President of Process Automation division 2006–2014, Head of Business Area Process Automation 2005
- ABB China, Automation Technologies Division Manager 2003–2004
- ABB Drives & Power Electronics, Business Area Manager 2002
- ABB Drives, Manager, 1996–2002
- ABB Industry Oy, CFO 1994–1996
- Before 1994, various positions in paper and packaging companies in Finland

Key positions of trust:
- Cramo Plc, Chairman of the Board
- UPM-Kymmene Corporation, Member of the Board

Executive Management Team 31 December 2017

Pekka Lundmark
President and CEO

Born 1963, nationality: Finnish

M.Sc. (Eng.)

Member of the Executive Management Team since 2015
Employed by Fortum since 2015
President and CEO since 2015

Fortum shareholding on 31 December 2017: 60,713
(31 December 2016: 56,250)

Previous positions:
- Konecranes Plc, President and CEO, 2005–2015
- Konecranes Plc, Group Executive Vice President, 2004–2005
- Hackmann Oyj Abp, President and CEO, 2002–2004
- Startupfactory Oy, Managing Partner, 2000–2002
- Nokia Corporation, various executive positions, 1990–2000

Key positions of trust:
- Finnish Energy, Chairman of the Board
- Confederation of Finnish Industries, Member of the Board
- Helsinki Metropolitan Smart & Clean Foundation, Chairman of the Board
- East Office of Finnish Industries, Member of the Board
- Climate Leadership Council, Member of the Board
- Fortum Foundation, Chairman of the Board

Alexander Chuvaev
Executive Vice President
Russia Division

Born 1960, nationality: Russian

M.Sc. (Eng.)

Member of the Executive Management Team since 2009
Employed by Fortum since 2009
Executive Vice President, Russia Division and General Director of PAO Fortum since 2009

Fortum shareholding on 31 December 2017: 14,713
(31 December 2016: 14,713)

Previous positions:
- GE Oil & Gas, Regional Executive Director, Russia and CIS 2009
- SUEK, Investment Development Director, Russia 2008–2009
- JSC Power Machines, Managing Director, Russia 2006–2008
- GE Oil & Gas, Regional General Manager, Russia 2006
- JSC OMZ, Chief Operations Officer, Russia 2005–2006
- GE, various positions in the USA and Canada 1999–2005
- Solar Turbines Europe S.A., various positions in Europe and the USA 1991–1999

Key positions of trust:
- Energy Producers Council, Deputy Head of the Supervisory Board
- Russian Union of Industrialists and Entrepreneurs, Member of the Board, Chairman of Commission on Public Utility
- TGC-1, Member of the Board
- Government Commission on the Development of the Electric Power Industry, Member
- Aggreko Eurasia LLC, Non-executive member of the Management Board
- Wind Power AM LLC, General Director

Kari Kautinen
Senior Vice President
M&A and Solar & Wind Development

Born 1964, nationality: Finnish

LL.M

Member of the Executive Management Team since 2014
Employed by Fortum since 1998
Senior Vice President, M&A and Solar & Wind Development since 2016

Fortum shareholding on 31 Dec 2017: 30,720
(31 December 2016: 29,246)

Previous positions:
- Fortum Corporation, Senior Vice President, Strategy, Mergers and Acquisitions 2014–2016
- Fortum Corporation, Vice President, Strategy, Mergers and Acquisitions 2012–2014
- Fortum Corporation, Vice President, Mergers and Acquisitions 2007–2012
- Fortum, several managerial positions 1998–2007

Key positions of trust:
- TGC-1, Member of the Board of Directors

Per Langer
Executive Vice President
City Solutions

Born 1969, nationality: Swedish

M.Sc. (Econ.)

Member of the Executive Management Team since 2009
Employed by Fortum since 1999
Executive Vice President, City Solutions as of 1 March 2017

Fortum shareholding on 31 December 2017: 31,570
(31 December 2016: 29,212)

Previous positions:
- Fortum Corporation, Senior Vice President, Technology and New Ventures 2016–2017
- Fortum Corporation, Executive Vice President, Hydro Power and Technology 2014–2016
- Fortum Power and Heat Oy, Executive Vice President, Heat Division 2009–2014
- Fortum Power and Heat Oy, President of Heat 2007–2009
- Fortum Power and Heat Oy, President of Portfolio Management and Trading 2004–2007
- Fortum Oyj, managerial positions 1999–2004
- Gullspång Kraft, managerial positions 1997–1999

Key positions of trust:
- Fortum Oslo Varme AS, Deputy Chairman of the Board
- AB Fortum Värme Holding samägt med Stockholms stad, Deputy Chairman of the Board
- Exeger Sweden AB, Member of the Board

Risto Penttinen
Senior Vice President
Strategy, People and Performance

Born in 1968, nationality: Finnish

M.Sc. (Economics)

Member of the Executive Management Team since 2016
Employed by Fortum since 2011
Senior Vice President, Strategy, People and Performance since 2016

Fortum shareholding on 31 December 2017: 10,588
(31 December 2016: 8,795)

Previous positions:
- Fortum Corporation, Vice President, Corporate Strategy 2014–2016
- Fortum Power Division, Vice President, Strategic Ventures 2011–2014
- McKinsey & Company, Partner 2005–2011
- McKinsey & Company, Consultant and Project Leader 1996 and 1997–2005

Key positions of trust:
- Varma Mutual Pension Insurance Company, Member of the Supervisory Board

Markus Rauramo
Chief Financial Officer

Born 1968, nationality: Finnish

M.Sc. (Econ. and Pol. Hist.)

Member of the Executive Management Team since 2012
Employed by Fortum since 2012
Chief Financial Officer as of 1 March 2017

Fortum shareholding on 31 December 2017: 32,032
(31 December 2017: 27,847)

Previous positions:
- Fortum Corporation, Executive Vice President, City Solutions 2016–2017
- Fortum Corporation, Executive Vice President, Heat, Electricity Sales and Solutions 2014–2016
- Fortum Corporation, Chief Financial Officer 2012–2014
- Stora Enso Oyj, Helsinki, CFO and Member of the GET 2008–2012
- Stora Enso International, London, SVP Group Treasurer 2004–2008
- Stora Enso Oyj, Helsinki, VP Strategy and Investments 2001–2004
- Stora Enso Financial Services, Brussels, VP Head of Funding 1999–2001
- Enso Oyj, Helsinki, several financial tasks 1993–1999

Key positions of trust:
- Wärtsilä Oyj Abp, Member of the Board
- Teollisuuden Voima Oyj, Member of the Board

Arto Räty
Senior Vice President
Corporate Affairs & Communication

Born 1955, nationality: Finnish

Lieutenant General (Ret.)

Member of the Executive Management Team since 2016
Employed by Fortum since 2016
Senior Vice President, Corporate Affairs & Communications since 2016

Fortum shareholding on 31 December 2017: 0
(31 December 2016: 0)

Previous positions:
- Permanent Secretary at the Ministry of Defence of Finland 2011–2015 and Director of the National Defence Policy Unit 2005–2008

Various positions within Finnish Defence Forces including:
- Deputy Chief of Staff, Operations at Defence Command 2009–2010
- Chief of Staff at Army Command 2008–2009
- Brigade Commander, Pori Brigade 2000–2002
- Commanding Officer of the Finnish Battalion in KFOR, Kosovo 2000
- Deputy Chief of the International Department, Defence Command 1997–2000
- Director of the National Defence Courses of the Finnish Government 2003–2004
- Finnish Liaison Officer at NATO HQ and PCC SHAPE, Brussels, Belgium, 1994–1997

Key positions of trust:
- Destia Oy, Chairman of the Board
- Aalto University Executive Education Oy, Member of the Board
- Suomi Gas Distribution Holding Oy, Member of the Board
- Fennovoima Oy, Deputy member of the Board
- Ahlström Capital Cleantech Fund I, Member of the Board
- Fortum Art Foundation, Member of the Board
- Urlus Foundation, Member of the Board

Mikael Rönnblad
Executive Vice President
Consumer Solutions

Born 1969, nationality: Finnish

M.Sc. (Econ.)

Member of the Executive Management Team as of 15 May 2017
Employed by Fortum since 15 May 2017
Executive Vice President, Consumer Solutions as of 15 May 2017

Fortum shareholding on 31 December 2017: 0
(31 December 2016: not disclosed)

Previous positions:
- Elisa Corporation, SVP & GM, New Digital Services Businesses and Consumer Customers Executive Board Member 2009–2017
- Elisa Corporation, VP, Corporate Strategy and Acquisitions 2004–2009
- ABN AMRO Global Equities, London, Director and Global Head of Nordic Sector 2000–2004
- Pannon, Budapest, General Manager and Head of Department 1999–2000
- Sonera Corporation, Manager, Corporate Venturing and International Mobile Operations 1997–2000
- Hanken Swedish School of Economics, Project Director and Assistant Professor (acting) 1995–1997
- Vectia Ltd, Junior Strategy Consultant 1994–1995
- Nokia Corporation, In-house Consultant, Major Accounts Sales 1991–1993

Key positions of trust:
- Nikus Oy Ab, Chairman of the Board

Sirpa-Helena Sormunen
General Counsel

Born 1959, nationality: Finnish

LL.M, Trained on the bench

Member of the Executive Management Team since 2014
Employed by Fortum since 2014
General Counsel since 2014

Fortum shareholding on 31 December 2017: 4,777
(31 December 2016: 3,000)

Previous positions:
- Patria Oyj, General Counsel 2012–2014
- Nokia and Nokia Siemens Networks, several legal and managerial positions (NSN) 2004–2012
- TeliaSonera Finland Oyj, Vice President, Head of Legal, Mergers and Acquisitions and Finance 2003–2004
- Sonera Oyj, Senior Legal Counsel, Head of Legal, Merger and Acquisitions 2000–2002

Key positions of trust:
- Nammo AS, Member of the Board of Directors
- Association of Finnish Fine Arts Foundations, Member of the Board
- Fortum Art Foundation, Chairman of the Board

Tiina Tuomela
Executive Vice President
Generation

Born 1966, nationality: Finnish

M.Sc. (Eng.), MBA

Member of the Executive Management Team since 2014
Employed by Fortum since 1990
Executive Vice President, Generation since 2016

Fortum shareholding on 31 December 2017: 15,554
(31 December 2016: 12,991)

Previous positions:
- Fortum Corporation, Executive Vice President, Nuclear and Thermal Power Division 2014–2016
- Fortum Power and Heat Oy, Vice President, Finance in Power Division 2009–2014
- Fortum Power and Heat Oy, Vice President, Business Control and Support, Generation 2005–2009
- Fortum, several managerial positions 1990–2005

Key positions of trust:
- Kemijoki Oy, Chairman of the Board
- YIT Corporation, Member of the Board
- Teollisuuden Voima Oyj, Member of the Board

fortum

Join the change

Remuneration 2017

Remuneration Statement 2017

Dear Shareholders,

Fortum has determinedly executed the strategy that was designed and introduced in spring 2016 to ensure the company's successful growth and continued profitability as Europe transitions towards clean energy. The most visible steps include our investment in Uniper, the restructuring of our Hafslund ownership, the acquisition of Ekokem, and our sizeable investments into new renewable and low carbon production such as wind, solar, biomass and waste-to-energy power plants.

At the same time, we are strengthening our corporate culture to ensure that the company is ready to meet the challenges brought upon the rapidly changing operating environment. For a company undergoing change it is of utmost importance that we have leaders and employees who are highly motivated and consistently performing very well. During the year we introduced Open Leadership as the main framework for developing our people and leadership culture. Our refreshed values, our leadership principles, as well as fair and transparent remuneration are key enablers to the success and continuous improvement of our company.

At Fortum we expect a lot from our people and in turn reward the high performance they deliver in line with our strategy, culture and values. We emphasise clear measurable targets aligned with Fortum's strategy and our reward and incentive programmes are designed to attract and retain high calibre employees and to support the creation of shareholder value.

The criteria for Fortum's short-term incentive plan are set annually by the Board of Directors and is based on the company's financial and operational performance. 2017 was a good year for Fortum as our strategy implementation proceeded well and the financial results improved clearly. Accordingly, the financial targets in the short-term incentive plan were reached. However, the performance in our key safety indicator Lost workday injury frequency was not on a satisfactory level and we have further increased our efforts to reach best practice safety levels in all units.

The criteria for Fortum's long-term incentive plans are set by the Board of Directors at the beginning of each plan. The performance during the earnings period 2014–2016 was satisfactory and the 2014–2019 long-term incentive plan exceeded the minimum performance criteria and vested at 27%. This resulted in approximately 150,000 shares being awarded to eligible participants in 2017. The performance for the earnings period 2015–2017 also exceeded the minimum performance criteria and the 2015–2020 LTI plan vested at 26% on average.

Fortum's continued success relies to a great extent on the dedication and hard work of our people. We want to be a company where people grow, thrive and exceed our – and their own – expectations. We trust that this is the best way to reach sustainable long-term success.

Matti Lievonen
Chairman of the Nomination and Remuneration Committee

Remuneration Governance

Remuneration at Fortum is directed by the Group's remuneration principles and Fortum's general compensation and benefits practices as well as guidance set out in the Government Resolution on State-Ownership Policy. This Remuneration Statement has been prepared and issued in accordance with the Finnish Corporate Governance Code 2015.

The Shareholders' Nomination Board, the Annual General Meeting of Shareholders (AGM), the Board of Directors and the Nomination and Remuneration Committee are all involved in the preparations and decision-making regarding remuneration at Fortum.

Remuneration Policy

Remuneration Principles

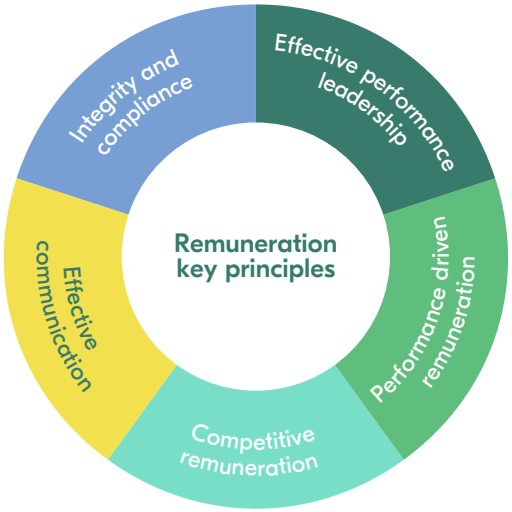
At Fortum, we strive for a performance-focused culture where our people understand:

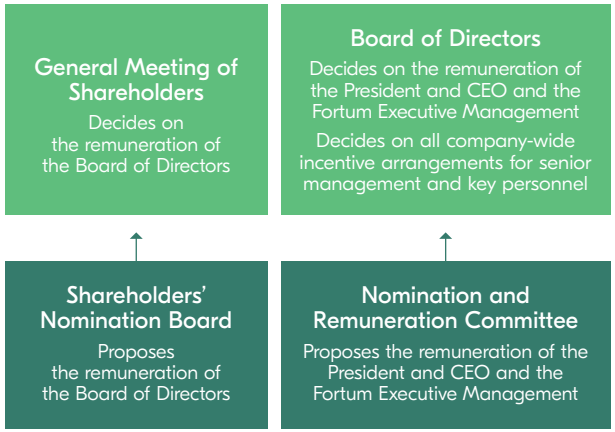
- the company, its strategy and performance targets,
- how they as individuals can impact the results,
- the link between business performance and remuneration, and
- the importance of delivering sustainable business results.

This philosophy underpins our remuneration principles which are designed to encourage and recognise high performance and behaviour in line with Fortum's values.

Fortum follows a total compensation approach where all remuneration elements are taken into account when setting and reviewing salaries; base salaries, short- and long-term incentive opportunities as well as different benefits.

Key Remuneration Principles	
Effective performance leadership	We motivate our people by setting challenging targets. We encourage initiative taking, active leadership of own and team performance as well as collaboration to enable desired behaviour and achieve business success. We emphasise setting and cascading clear targets aligned with Fortum's strategy as an essential part of good leadership on all levels. We emphasise cross-unit and cross-function collaboration in reaching our business objectives, also reflected in target setting. Rewarding is tightly linked to the overall performance leadership in Fortum.
Performance driven remuneration	We reward concrete achievements in implementing Fortum's strategy and achieving business targets and desired change. We differentiate performance and pay for real achievement. Both low and high performance have consequences.
Competitive remuneration	We take into consideration relevant market and industry practices as well as different business models and their needs when defining the level and nature of compensation and benefits, aiming to be an attractive employer for the relevant persons with needed skills and competences.
Effective communication	To gain full advantage of the compensation and benefits programs, we emphasize clear, transparent and regular communication about the company's as well as the individual's performance, in particular clarifying the link between performance and variable compensation. We invest in developing managers' knowledge of performance and reward practices and programmes.
Integrity and compliance	We run our performance and reward processes and programmes with high integrity and follow local legislation in each country where we operate. We follow the Corporate Governance Code for Finnish listed companies as well as the guidelines regarding remuneration for the management of state-owned companies. We don't accept any kind of compliance breach.





Summary of remuneration of the President and CEO and other members of the Fortum Executive Management

Base salary	Fixed salary including fringe benefits, designed to compensate for the job responsibilities and to reflect the skills, knowledge and experience of the individual.
Short-term incentives	Support achievement of the Group's financial, strategic and sustainability targets. The maximum incentive opportunity is 40% of the executive's annual base salary of the year in question.
Long-term incentives	Focus performance on what drives business success in the long-term, rewarding long-term, sustainable high performance and ensuring alignment of interests between management and shareholders. Awards are made annually under Fortum's LTI programme with performance measured over a three-year earnings period. If the minimum performance criteria are exceeded, the resulting award, net of tax, is paid in shares which are subject to shareholding guidelines. The combined value, before taxation, of all variable compensation paid in a calendar year cannot exceed 120% of the participant's annual base salary.
Pensions	In addition to the statutory pensions, the members of Fortum Executive Management have supplementary pension arrangements. All supplementary pension arrangements since 2008, including the pension plan for the President and CEO, are defined contribution plans with a maximum premium percentage of 25% of the annual salary. For members joining the Fortum Executive Management after the end of 2016 as well as for those current members to whom the premium has been below 20% of the annual salary, the pension premium is 20% of the annual base salary as of 1 January 2017.
Shareholding requirement	Members of the Fortum Executive Management (including the President and CEO) are required to build and maintain a holding in Fortum shares equivalent to 100% of their annual salary. [1)]

1) Measured as the gross annual salary

Short-term incentives (STI)

Fortum's STI programme is designed to support the achievement of the company's financial and other relevant targets on an annual basis. All employees are covered by the programme or alternatively by a business specific or a comparable local variable pay arrangement.

The Board of Directors determines the performance criteria and award levels for the Fortum Executive Management. The awards are based on the achievement of Group financial performance, divisional targets, and individual targets. The target incentive opportunity is 20% and the maximum incentive opportunity is 40% of the annual base salary. The Board of Directors assesses the performance of the President and CEO and the members of the Fortum Executive Management on a regular basis.

Awards for other employees are based on a combination of Group, divisional, functional and personal targets. The targets are set in annual performance discussions held at the beginning of the year. Awards under the STI programme are paid solely in cash.

In addition to the STI programme, other variable pay mechanisms may be used to reward employees for limited specific purposes, e.g. projects with significant importance and impact on Fortum level or to reward for extraordinary commitment and effort. The use of such mechanisms are approved according to the principles and within the lines set out in the Fortum Remuneration Policy.

Long-term incentives (LTI)

The purpose of Fortum's long-term incentive programme is to support the delivery of sustainable, long-term performance, align the interests of management with those of shareholders and assist in committing and retaining key individuals.

Fortum's LTI programme provides participants with the opportunity to earn company shares. Under the LTI programme and subject to the decision of the Board of Directors, a new LTI plan commences annually.

The Board of Directors approves participation of the Fortum Executive Management members in each annually commencing LTI plan. Subject to a decision by the Board of Directors the President and CEO is authorised to decide on individual participants and potential maximum awards for other participants than the Fortum Executive Management in accordance with the nomination guidelines approved by the Board of Directors. Participation in the LTI plan precludes the individual from being a member in the Fortum Personnel Fund.

Each LTI plan begins with a three year earnings period, during which participants may earn share rights if the performance criteria set by the Board of Directors are fulfilled.

If the minimum performance criteria are not exceeded, no shares will be awarded. If performance is exceptionally good and the targets approved by the Board of Directors are achieved, the combined gross value of all variable compensation cannot exceed 120% of the person's annual salary in any calendar year.

After the earnings period has ended and the relevant taxes and other employment-related expenses have been deducted, participants are paid the net balance in the form of shares.

For LTI plans commencing in 2013 onwards, any shares awarded to Fortum Executive Management members are subject to a three-year lock-up period in accordance with the State-Ownership Guidelines in force at the time the LTI plan was introduced. Subject to a decision by the Board of Directors, the lock-up period can be reduced to one year for those Fortum Executive Management members whose aggregate ownership of Fortum shares is greater than or equal to their annual salary. For other participants (i.e. below the Fortum Executive Management), the lock-up period is one year. For LTI plans commencing prior to 2013, the lock-up period is three years for all LTI plan participants.

If the value of the shares decreases or increases during the lock-up or retention period, the participant will carry the potential loss or gain.

To reflect the changes in the State-Ownership Guidelines in 2016, for LTI plans commencing in 2017 and beyond, the share awards will not be subject to a minimum lock-up period. However, Fortum Executive Management members whose aggregate ownership of Fortum shares does not yet fulfil the shareholding requirement are required to retain at least 50% of the shares received until the required level of shareholding is met.

The Board of Directors has the right to revise the targets set in the incentive plans, deviate from the payment based on achievement of the set earnings criteria, or to discontinue any ongoing incentive plan. Remuneration that has been paid out without grounds shall be reclaimed in accordance with the regulations on returning an unjust enrichment and remuneration. A payment which has been influenced by the recipient's unethical conduct, may be recovered based on the terms of the LTI programme.

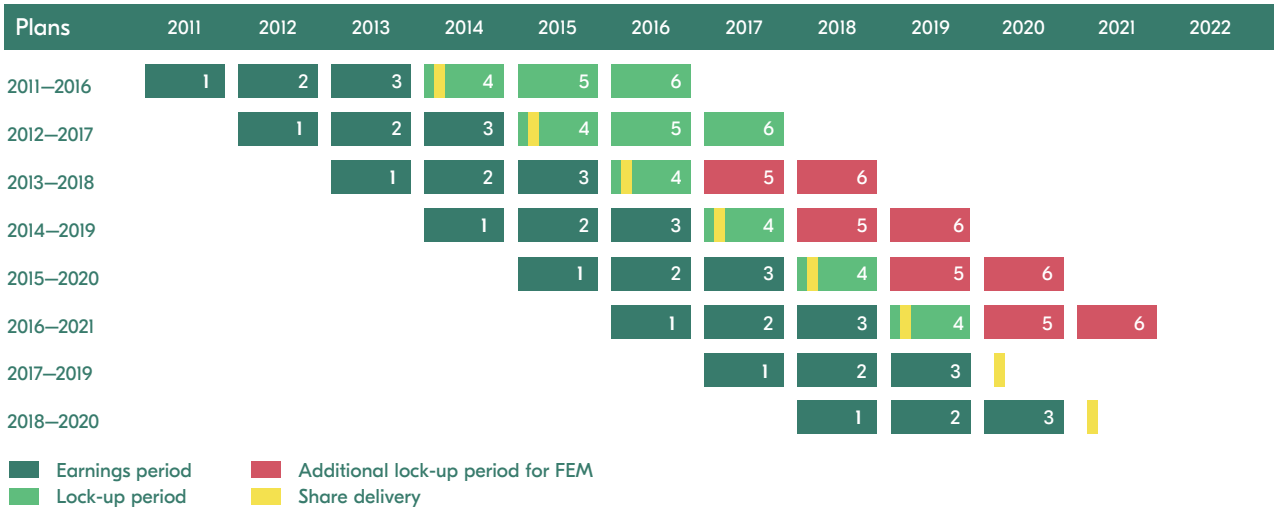
The Nomination and Remuneration Committee is using independent advisors in support of its work.

Pensions

Members of the Fortum Executive Management in Finland participate in the Finnish TyEL pension system, which provides a retirement benefit based on earnings in accordance with the prescribed statutory system. In the Finnish pension system earnings are based on base pay, annual bonuses and taxable fringe benefits, but gains realised from the LTI plans are not included. Members of the Fortum Executive Management outside Finland participate in pension systems based on statutory pension arrangements and market practices in their local countries.

In addition to the statutory pensions, the members of the Fortum Executive Management have supplementary pension arrangements. The Group principle is that all new supplementary pension arrangements for the President and CEO as well as the Fortum Executive Management are defined contribution plans.

The retirement age for Fortum's President and CEO is 63, and for the other members of the Fortum Executive Management the retirement age varies between 60 and 65. For the President and CEO and other members of the Fortum Executive Management, the maximum supplementary pension premium is 25% of the annual base salary. For the members joining the Fortum Executive Management after the end of the year 2016 as well as for those current members to whom the premium has been below 20% of the annual salary, the pension premium is 20% of the annual base salary as of 1 January 2017. Finnish members of the Fortum Executive Management, who joined Fortum prior to 1 January 2009, are entitled to a supplementary defined benefit pension plan. This currently applies to only one member of the Fortum Executive Management and in this case, the pension is provided by Fortum's Pension Fund.



Terms of employment for President and CEO Pekka Lundmark

The President and CEO is entitled to a base salary including free car allowance and phone allowance as fringe benefits.

According to the terms of the STI and LTI programmes the President and CEO participates in the STI programme with a maximum incentive opportunity of 40% of the annual base salary and in the LTI programme starting from the 2014–2019 LTI plan. The LTI awards are calculated on a pro rata basis from 7 September 2015, when Pekka Lundmark started as President and CEO of Fortum.

The notice period for both parties is six months. If the company terminates the contract, the President and CEO is entitled to the salary for the notice period and a severance pay equal to 12 months' salary. If the President and CEO's contract is terminated before retirement age, he is also entitled to retain the funds that have accrued in the pension fund.

Fees for the Board of Directors

The Annual General Meeting on 4 April 2017 confirmed the following annual fees for the members of the Board of Directors:

Thousands of euros	2017	2016
Chairman	75	75
Deputy Chairman	57	57
Chairman of the Audit and Risk Committee [1)]	57	57
Members	40	40

1) If not Chairman or Deputy Chairman simultaneously

Every member of the Board of Directors receives a fixed yearly fee and additional fees for each meeting attended. The fees in 2017 were the same as in previous years.

A meeting fee of EUR 600 is paid for board and committee meetings. For board members living outside Finland in Europe, the meeting fee is EUR 1,200; for board members living outside Europe, the meeting fee is EUR 1,800. For board and committee meetings held as a telephone conference, the meeting fee is paid as EUR 600 to all members. No fee is paid for decisions made without a separate meeting.

Board members are not in an employment relationship or service contract with Fortum, and they are not given the opportunity to participate in Fortum's STI or LTI programme, nor does Fortum have a pension plan that they can opt to take part in. The compensation for the board members is not tied to the sustainability performance of the Group.

Board members are entitled to travel expense compensation in accordance with the company's travel policy.

Annual Remuneration Report 2017

This part of the report sets out the remuneration payable to the President and CEO and members of the Fortum Executive Management in 2017.

Remuneration of the President and CEO and the Fortum Executive Management

The table below includes the salaries and fringe benefits as well as STI and LTI programme payments to the President and CEO and to the Fortum Executive Management during the year. The STI payments are based on the 2016 targets and achieved results. The LTI payments includes the shares delivered during the year 2017.

The STI and LTI programme payments to Fortum Executive Management members, including the President and CEO, amounted to a total of EUR 2,246 thousand (EUR 1,957 thousand in 2016), which corresponds to 0.73% (0.82% in 2016) of the total compensation in the Fortum Group. The table also includes payments made to supplementary pension arrangements for the President and CEO and for Fortum Executive Management.

Thousands of euros	President & CEO Pekka Lundmark		Other Members of Fortum Executive Management	
	2017	2016	2017	2016
Salaries and fringe benefits	998	982	3,387	3,581
Short-term incentive	271	30	962	233
Long-term incentive	136	-	877	1,694
Supplementary pensions	229	356	636	560
Total	**1,634**	**1,368**	**5,862**	**6,068**

The figures include actual payments and shares delivered during 2017. The amounts differ from those presented in the consolidated financial statements (▸ Note 10.4). The financial statements include costs accrued for the year 2017, part of which will be paid later.

Salary and fringe benefits

The base salary levels are set taking into account the nature of the role, local and international market conditions and individual experience and performance. The salary for the President and CEO, Pekka Lundmark, was EUR 80,000 per month, including free car allowance and phone allowance as fringe benefits.

Short-term incentives

Short-term incentives for 2016 (paid in 2017)

The STI for 2016 for the members of Fortum Executive Management was based on:

Weighting	Measure	Outcome
40%	Comparable Operating Profit	Between target and maximum
20%	Free Cash Flow	Between target and maximum
5%	Lost workday injury frequency	On target
5%	Serious accidents	Below threshold
30%	Individual targets	Individually assessed

The STI payments for the Fortum Executive Management were on average 28% of the salary (70% of the maximum). The aggregate STI payment to members of Fortum Executive Management for 2016 performance was EUR 1.23 million (EUR 0.26 million for 2015).

In total, EUR 16.6 million (EUR 9.6 million for 2015) was paid as short-term incentives across the Group for the financial year 2016. The amount paid increased compared to the previous year, mainly due to better realisation of the set financial targets.

Short-term incentives for 2017 (payable in 2018)

The STI for 2017 for the members of Fortum Executive Management was based on:

Weighting	Measure	Outcome
60%	Comparable Operating Profit	Between target and maximum
10%	Lost workday injury frequency	Below threshold
30%	Individual targets	Individually assessed

The outcome of the Group level Comparable Operating Profit was above the set target level. The Group level Lost workday injury frequency did not reach the threshold level.

The achieved performance based on the individual targets is evaluated in connection with the individual performance review at the beginning of the year. The accrued incentives for the year 2017 are paid out in April 2018.

Short-term incentives for 2018 (payable in 2019)

As in 2017, the short-term incentive targets for the Fortum Executive Management in 2018 are based on the achievement of divisional targets, Group financial performance as well as individual targets. The STI performance measures and weighting are: 40% Comparable Operating Profit, 20% Operational Free Cash Flow, 10% lost workday injury frequency and 30% individual targets.

Long-term incentives

The table sets out the pipeline of recently granted LTI awards, including details of the shares delivered in the reporting period.

LTI plan	2013–2018	2014–2019	2015–2020	2016–2021	2017–2019
Earnings period	2013–2015	2014–2016	2015–2017	2016–2018	2017–2019
Share delivery year	2016	2017	2018	2019	2020
Number of participants (31 December 2017)	76	85	98	105	90
Number of shares delivered [1]	241,699	153,956	-	-	-
Measures	A combination of EBITDA, EPS and share price development	50% EPS, 25% TSR & 25% Reputation Index	30% EPS, 30% Return on Net Assets (Group or Divisional), 20% TSR and 20% Group EBITDA	50% EPS & 50% TSR	50% EPS & 50% TSR
Payment (% of annual salary)	42%	27%	26%		
Shares delivered to members of Fortum Executive Management: [2]					
Pekka Lundmark [3]	-	4,463			
Alexander Chuvaev [4]	27,897	15,480			
Kari Kautinen	4,014	2,274			
Per Langer	4,677	2,358			
Risto Penttinen [5]	n/d [6]	1,793			
Markus Rauramo	7,383	4,185			
Arto Räty [5]	-	-			
Mikael Rönnblad [7]	-	-			
Sirpa-Helena Sormunen	-	1,777			
Tiina Tuomela	3,902	2,563			
Former members of the Fortum Executive Management:					
Helena Aatinen [8]	3,188	n/d [6]			
Mikael Frisk [8]	5,028	n/d [6]			
Esa Hyvärinen [8]	3,053	n/d [6]			
Timo Karttinen [9]	6,399	3,626			
Matti Ruotsala [10]	7,443	4,176			

1) For the 2013–2018 and 2014–2019 LTI plans, the number of shares delivered after deduction of taxes and tax related expenses. For the 2015–2020, 2016–2021, and 2017–2019 LTI plans the shares will be delivered after the three year earnings period, subject to the achievement of the earnings criteria

2) After deduction of taxes and tax related expenses

3) President and CEO since 7 September 2015. Pekka Lundmark participates in the LTI plans starting from the 2014–2019 LTI plan

4) Due to local legislation, share rights will be paid in cash instead of shares after the three-year lock-up period

5) Member of FEM from 1 April 2016

6) Shares delivered before or after the term in the Fortum Executive Management are not disclosed

7) Member of FEM from 15 May 2017

8) Member of FEM until 31 March 2016

9) Member of FEM until 28 February 2017

10) Member of FEM until 31 October 2017

The Board of Directors approved the amended LTI programme in December 2016. The share awards will not be subject to a minimum lock-up period but members of the Fortum Executive Management will be required to retain 50% of the shares until they have achieved their required shareholding level of 100% of the annual salary. For other key employees included in the new LTI plan no lock-up period will be applied. Under the 2017–2019 LTI plan, the Board-approved earnings criteria are based on earnings per share (50%) and relative total shareholder return (50%) measured against the European Utilities Group. Under the plan, the maximum gross number of shares to be delivered after the earnings period in 2020 is 580,120 shares (based on participant status on 31 December 2017). In December 2017, the Board of Directors approved the same earnings criteria, i.e. earnings per share (50%) and relative total shareholder return (50%) for the 2018–2020 LTI plan.

Shareholdings for Members of the Fortum Executive Management as of 31 December 2017

The following table shows the shareholdings of the President and CEO and other members of the Fortum Executive Management as of 31 December 2017. Members of the Fortum Executive Management are required to build and maintain a shareholding equivalent to 100% of the annual salary.

		Shareholding
Pekka Lundmark	President and CEO	60,713
Alexander Chuvaev	Executive Vice President, Russia Division	14,713
Kari Kautinen	Senior Vice President, M&A and Solar & Wind Development	30,720
Per Langer	Executive Vice President, City Solutions	31,570
Risto Penttinen	Senior Vice President, Strategy, People and Performance	10,588
Markus Rauramo	Chief Financial Officer	32,032
Arto Räty	Senior Vice President, Corporate Affairs and Communications	0
Mikael Rönnblad	Executive Vice President, Consumer Solutions	0
Sirpa-Helena Sormunen	General Counsel	4,777
Tiina Tuomela	Executive Vice President, Generation	15,554

Fortum Personnel Fund

Fortum employees in Finland, who are not participating in the long-term incentive programme, belong to the Fortum Personnel Fund. The amount paid annually to the Personnel Fund is based on the achievement of annual targets. The payments to the fund in 2017 totalled EUR 2.8 million (2016: EUR 0.6 million).

Remuneration for the Board of Directors in 2016 and 2017

The following table includes the compensation paid to the Board of Directors during 2016 and 2017. The amounts include fixed yearly fees and meeting fees.

Thousands of euros	2017	Board service 2017	2016	Board service 2016
Board members at 31 December 2017				
Sari Baldauf, Chairman	84	1 Jan–31 Dec	87	1 Jan–31 Dec
Matti Lievonen, Deputy Chairman	49	4 Apr–31 Dec	-	-
Heinz-Werner Binzel	57	1 Jan–31 Dec	61	1 Jan–31 Dec
Eva Hamilton	54	1 Jan–31 Dec	56	1 Jan–31 Dec
Kim Ignatius, Chairman of the Audit and Risk Committee	67	1 Jan–31 Dec	70	1 Jan–31 Dec
Anja McAlister	47	4 Apr–31 Dec	-	-
Veli-Matti Reinikkala	58	1 Jan–31 Dec	44	5 Apr–31 Dec
Former board members				
Minoo Akhtarzand	16	1 Jan–4 Apr	61	1 Jan–31 Dec
Tapio Kuula [1)]	43	1 Jan–7 Nov	52	1 Jan–31 Dec
Petteri Taalas	-	-	17	1 Jan–5 Apr
Jyrki Talvitie	17	1 Jan–4 Apr	70	1 Jan–31 Dec

1) In November 2017, Tapio Kuula passed away

The following table shows the shareholdings of the Board of Directors as of 31 December 2017.

	Shareholding
Sari Baldauf, Chairman	2,300
Matti Lievonen, Deputy Chairman	1,500
Heinz-Werner Binzel	0
Eva Hamilton	40
Kim Ignatius, Chairman of the Audit and Risk Committee	2,400
Anja McAlister	0
Veli-Matti Reinikkala	3,000

fortum

Join the change

Tax Footprint

2017

Fortum as a tax payer 2017

The energy sector, including Fortum, is in the middle of a transition. Global megatrends, such as climate change, emerging new technologies, changes in consumer behavior, and questions regarding resource efficiency, are having a major impact on the energy sector globally. These changes make it harder for Fortum to have the predictability that we need to be able to operate in this capital-intensive sector and to finance operations in an efficient and safe manner. We therefore need to have as much predictability as possible in other areas such as tax.

As set out in our tax policy below, we aim to identify simple and cost-efficient solutions to manage our taxes in a sustainable manner. The goal is to ensure that our businesses can continue to invest, to operate flexibly and efficiently, and to safeguard returns to our shareholders.

Fortum operates in more than 20 countries. The majority of our business is based on local fuels and energy sources, local production, local distribution of heat, and sale of energy to customers locally. Therefore our profits are typically generated locally and similarly the taxes are paid locally.

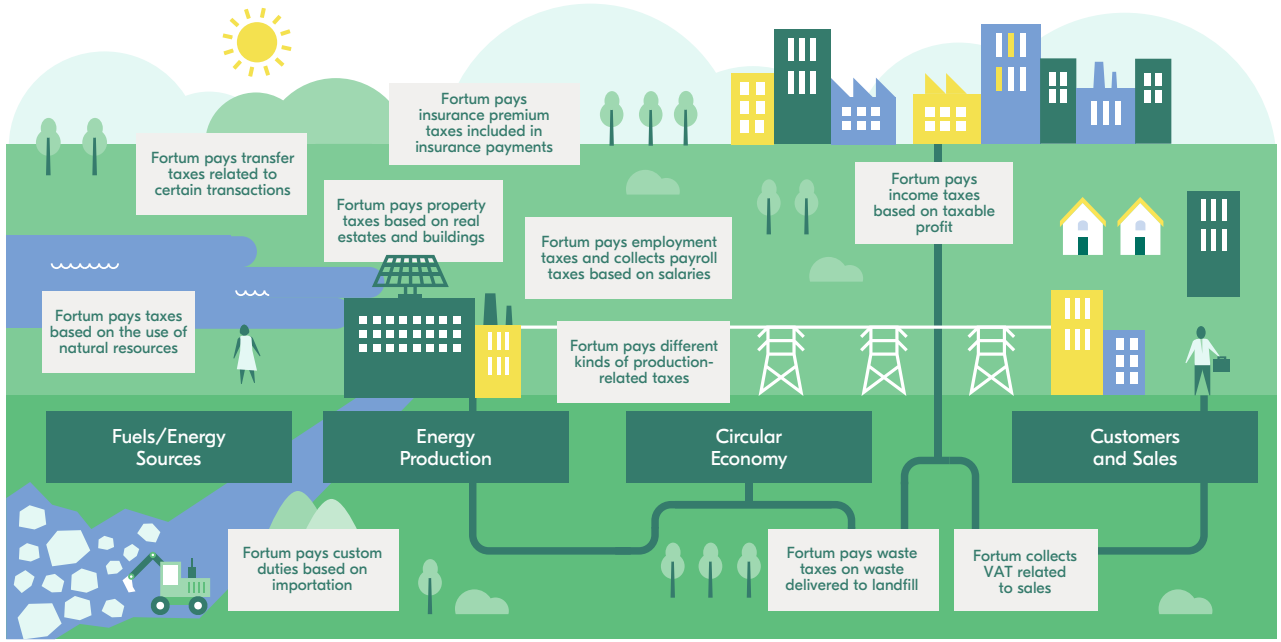
Taxation is always a consequence of business operations and is therefore always based on business decisions and needs. For us this means that there will always be tax impacts arising from the long lifetimes of our investments, from price levels which are set locally and from the efficiency of our financing. It is important that we can operate and finance our businesses efficiently, carry out investments and manage financing risks in all the countries where we operate. Financing, which underpins all our operations, is one of the international aspects of Fortum's tax profile. Therefore predictability and stability of our operating environment are crucial for us.

The extent and nature of the taxes Fortum pays is shown by our total tax contribution. In 2017, it was EUR 966 (2016: 741) million of which EUR 445 (2016: 365) million related to taxes borne and EUR 521 (2016: 376) million to taxes collected. Finland, Sweden and Russia are our biggest production countries. In 2017, the taxes borne in Finland were EUR 98 (2016: 101) million, in Sweden EUR 246 (2016: 201) million and in Russia EUR 38 (2016: 23) million.

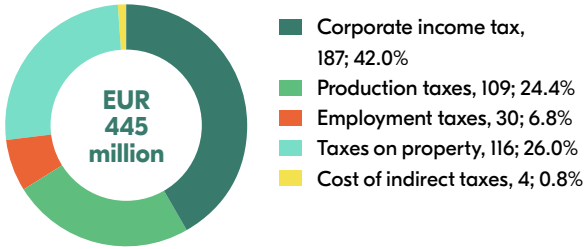
Taxes borne include corporate income taxes (excluding deferred taxes), production taxes, employment taxes, taxes on property, and the cost of indirect taxes. Taxes collected include VAT, payroll taxes, excise taxes and withholding taxes.

While income taxes are paid on taxable profit, Fortum also pays other taxes based on, for example, fuel usage, waste, production capacity, and the value of real estate. As a major part of our taxes are not based on profits, our total taxes borne in relation to our accounting profit (total tax rate) will increase if the profit level decreases. With the current low electricity prices, these

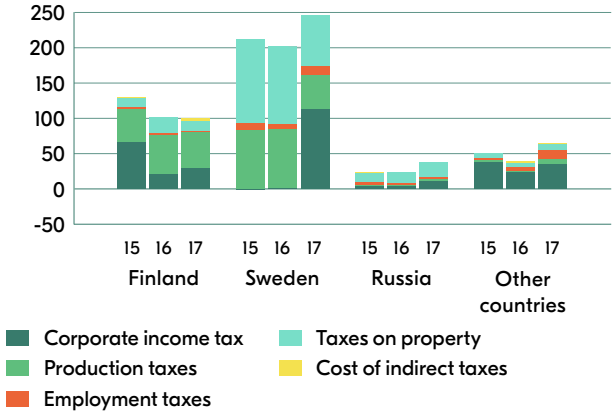
Taxes cover the entire value chain



Taxes borne 2017, EUR million and %



Taxes borne by country, EUR million



non-profit-based taxes account for a more significant share of costs of operations than before. Such a large tax burden, which is unrelated to profitability, can be a significant challenge to run an economically viable business.

Tax environment in 2017

The operating environment has been affected by the global macro economic problems and the related challenges to the public finances. In many of the our operating countries, taxes on the energy sector have been increasing in the past years. Combined with low electricity prices, high taxes threaten the profitability of utilities, including Fortum.

With this background, 2017 can partly be seen as a turning point for the energy sector. While some countries continued to increase tax rates especially for production and property taxes, Finland did not implement plans to increase real estate tax rate on power plants and Sweden decided on a staged alignment of the real estate tax rates for hydro operations with real estate tax rates for other electricity producers and industrial real estate by 2020. At the same time the capacity tax on nuclear power was completely abolished in Sweden from the beginning of 2018. The approach taken in Finland and Sweden was welcome as it makes the tax burden sustainable again.

Intense political interest in taxes and especially the focus on so-called aggressive tax planning has decreased the predictability and stability of all business operations. For example, the OECD's BEPS work, the EU Commission's anti-tax avoidance directive (ATAD), and the EU Accounting directive work are changing existing rules, policies and even fundamental aspects of taxation. In 2017, the developments in this area has been two-fold. Firstly, OECD has placed predictability high on its agenda. We appreciate this positive development and wish it to continue. Secondly, as the ATAD directive has been confirmed, which creates a minimum requirement for rules such as interest deductions, it lowers the predictability. These rules vary between countries and their impact can extend beyond combatting aggressive tax planning. Strong national interests in the area of taxation are often reflected both in the drafting of legislation and its interpretations, giving rise to further uncertainty. The EU's proposal for dispute resolution is a further positive development, but it will not tackle the matters at the heart of the uncertainty of the tax environment.

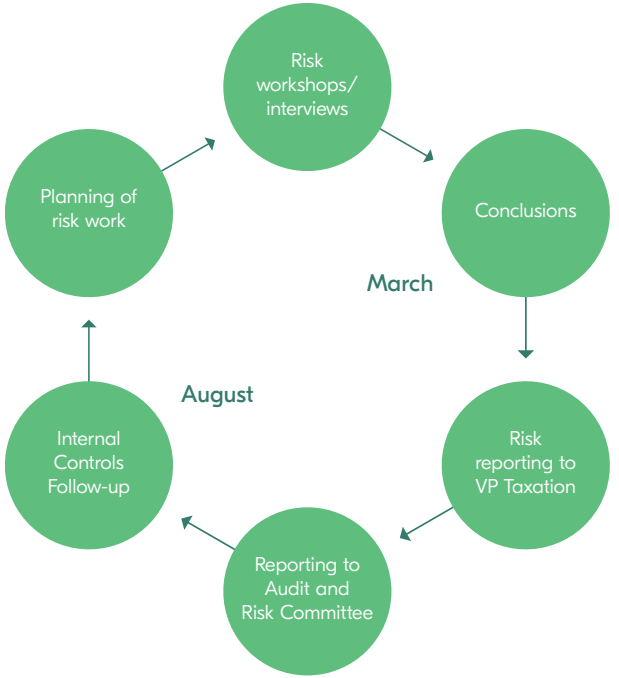
Taxes are high on the political agenda, putting pressure on governments to develop new legislation quickly, often without proper preparation and impact assessment. We are seeing hurriedly designed tax rules being in conflict with underlying fundamental legislative principles at the level of the EU and in individual Member States and we expect this to continue. For example, the Administrative Court in Stockholm made a bold decision in favour of Fortum in which it held that the real estate tax for hydro operations in Sweden created an unlawful negative state aid (i.e. the tax is in conflict with EU legislation) as it taxes the hydro power operations more heavily than other forms of power generation. The tax authorities have appealed this decision.

Fortum's approach to taxation – our tax policy

Fortum's tax policy is based on the fact that taxes should be handled as part of the business process and tax management supports the corporate strategy. Therefore, taxes are managed based on Fortum Group's operating strategy with a focus especially on the protection of the parent company's dividend distribution capability, in order to meet our dividend policy. Currently the main focus has been on growth through mergers and acquisitions including strong focus on positive cash flow. These corporate level targets also steer the tax strategy with focus on ensuring the correct taxes being paid where and when they should be. Taxes are managed through actions within the normal business processes and control points.

Tax planning is managed to support business efficiency and profitability in order to create and protect shareholder value, while respecting existing regulations. This ensures that we appropriately assess, report and pay our taxes to the tax authorities to the benefit of our stakeholders and wider society.

We always operate within the law and on the basis of being open and transparent with tax authorities in all the jurisdictions where we operate. We also follow guidelines set out by the Ownership Steering Department in the Finnish Prime Minister's Office. Predictability and transparency of both international and local legislation as well as interpretations and decisions by tax authorities on all levels are critical to us, as all our investments have



a long lifetime and our operations are capital intensive. We respect existing regulations, such as market-based pricing of internal transactions (the arm's length principle). We pay taxes in the country where our business operations are located and where the value added is generated, in accordance with the local regulations.

Tax risk management – During the year we regularly assess the uncertainties relating to taxation in our business. We report tax risks and how they are managed and assured annually to the Audit and Risk Committee in line with our internal calendar and risk-related work.

The risk analysis in 2017 identified particular risks that require mitigation. These included low levels of predictability due to the implementation of certain ATAD rules, developments in the Finnish real-estate tax, tax leakage on acquisitions and the late involvement of the tax department in some investment projects. To mitigate these risks, we aim to make tax issues, an integral part of our business processes, to improve communication around taxes and further develop analysis on our tax position and raise management's awareness of them.

Our Corporate Tax Team manages and mitigates tax-related uncertainties by targeting predictability in the taxes for the business operations in all our operating countries. This means that in unclear cases we discuss with tax authorities or seek advice from experts to clarify interpretations. We pay special attention to the correctness and transparency of our tax returns, and we discuss our positions with tax authorities.

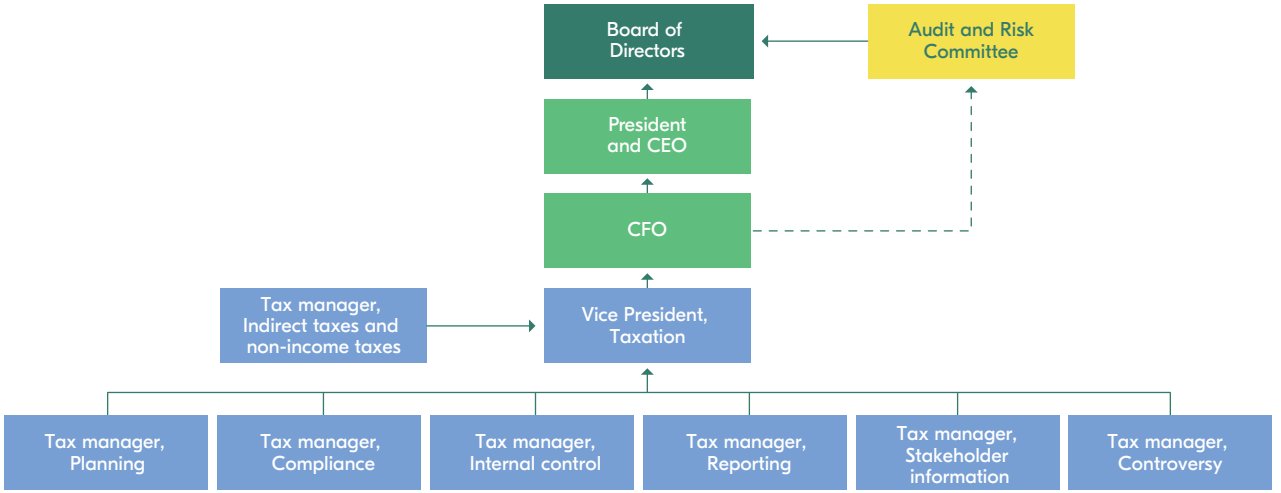
Tax governance – The Vice President Taxation implements our tax approach and is responsible for ensuring that policies and procedures which support the tax approach are in place, maintained and implemented in the same manner in all countries. Furthermore, the VP Taxation is responsible for ensuring that the Corporate Tax Team has the proficiency and experience to implement our approach appropriately.

The VP Taxation reports to the CFO. Furthermore, tax issues, such as tax strategy, legal processes and tax-related risks are followed on a regular basis by the Audit and Risk Committee of Fortum's Board of Directors. The chart on this page presents the different tax functions within the Corporate Tax Team.

Transparency and relationships with governments – In Fortum's tax reporting we are committed to ensuring that stakeholders are able to understand the important elements of our tax position and that the information provided is fair and accurate. We have published our tax footprint as part of our annual reporting since 2012. In our tax reporting we apply the 2017 guidelines of the Ownership Steering Department of the Finnish Prime Minister's Office for majority state-owned companies as the Finnish state is the majority shareholder in Fortum. We strive for effective collaboration with authorities to clarify existing rules, so that we can respond to potential challenges in a timely manner and avoid surprises.

We believe that transparency is crucial both for our external and internal stakeholders. Open, transparent and consistent communication guides our tax footprint reporting. To create the best possible understanding of us as a tax payer and of the impact of taxes on our business and on the societies we operate in, we continue to develop our tax footprint report.

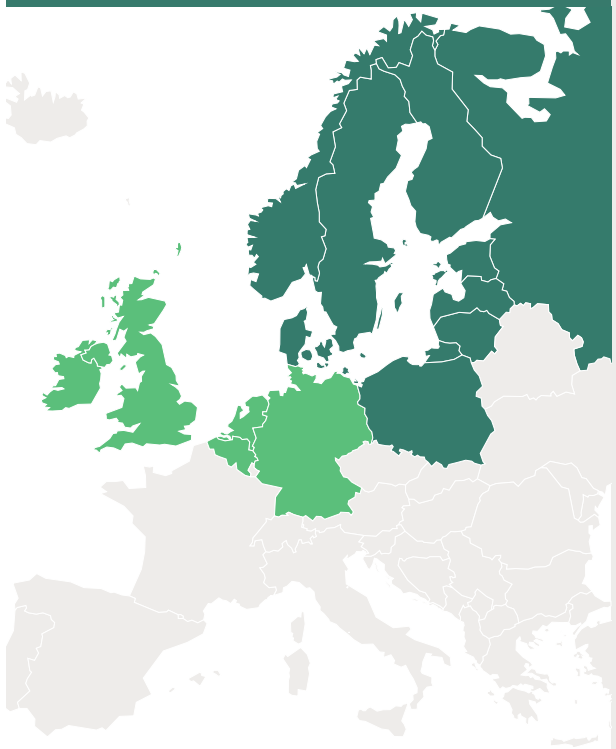
At Fortum, we recognise the demands of our stakeholders for more information on taxes and our disclosures reflect this. We report both our effective tax rate and total tax rate. In line with the 2017 tax reporting guidelines for state-owned companies in Finland, we apply the principle of materiality in our financial reporting, i.e. we publish tax information on the most significant countries, and we publish more detailed information about taxation for the majority of the countries in which Fortum operates in this report. Furthermore, we publish information about our companies registered in countries that are considered by the EU, the OECD and the Global Forum to be tax havens. We disclose all significant tax-related decisions concerning, for example, tax audits and appeals.



Legal structure and intra-group financing

To support our strategy and dividend policy, Fortum's legal structure is designed to mitigate various financial risks in our operations, ensure sound and efficient financing of operations and investments, and safeguard the parent company's financial strength and dividend distribution capability in accordance with Fortum's dividend policy. The financing and holding of our operations is located in the EU area, in countries where the operating environment is the most predictable. Our Finnish operations are owned through the parent company, our Swedish operations by our Swedish holding company and our operations in other countries mainly by our Dutch and Irish holding companies. The taxes are, however, paid in the country where the revenue is generated independently of the ownership structure.

Case | **Acquisitions and ownership restructuring**



Fortum's main production countries in 2017: Finland, Sweden, Denmark, Russia, Poland, Norway, Estonia, Lithuania and Latvia

Other main Fortum countries: India, Ireland, Germany, the Netherlands, Great Britain and Belgium

Within Fortum Group, there are a number of active holding and finance companies. We explain below the commercial reasons for such companies, how they operate and their relationship to our core business operations.

In 2017, Fortum acquired wind power generation companies in Norway and restructured its ownership of the Norwegian energy company Hafslund. Fortum's income from the local operations, for example wind power in northern Norway and heating operations in Oslo is taxed in Norway.

In order to increase its heating and power generation capacity, which in turn leads to more income and more tax revenue for Norway, Fortum has to invest.

Such investments in Norway require financing, at least in part through borrowing from group finance companies. The interest paid by the company making the investment gives rise to taxable income for the group finance entity that lends the money and receives the interest. The finance entities independently manages its own financial position including setting the interest rate for the loans. These interests are set at arm's length, and so reflects the costs that would be incurred if the investment company were to borrow from an external bank.

Why do you have separate financing and holding companies?

Fortum Group needs to have a corporate legal structure that provides the necessary flexibility to deal with negative events. Financing and holding companies independently bear the risks associated with their operations and so protect Fortum Oyj's, the parent company's, distributable funds as losses from financing operations and other negative events are primarily booked in holding and finance companies.

Could you finance and hold operations directly from the parent company Fortum Oyj?

Finance and holding companies protect Fortum Oyj from losses. Having direct financing or holding would not give the necessary flexibility to protect Fortum Oyj from these losses.

Is Fortum avoiding taxes by having separate financing entities?

Each financing company is taxed on its profits from financing operations based on normal local standards and rules. Netherlands taxes profits at 25% and Ireland at 12.5%. Financing companies regularly distribute part of their profits to Fortum Oyj.

Why does Fortum have a finance company in Ireland as you don't have any other operations there?

Ireland has stable and predictable legislation concerning financing and holding operations. Ireland also offers a favorable statutory tax rate of 12.5%.

Do the financing companies have artificial operations?

Each finance company has its own personnel capable of executing financing operations. Each finance company carries their own risks independently from other group companies and from any other business operation. Financing companies fund our commercial financing needs such as acquisitions and investments in capital intensive power and heat production.

Is Finland losing tax revenue as a result of Fortum's separate holding and finance companies?

No, as these companies protect the parent company's distributable reserves, they also protect the Finnish tax base from losses. An example of this is the losses that arose in the Dutch finance company in 2017, not in Finland.

Financial statement disclosures

Fortum publishes tax information as part of its financial statements. Income taxes and deferred taxes in the balance sheet are included and explained in the tax notes to the financial statements. The most relevant parts of these tax notes are reproduced below, with some commentary to explain some of the drivers of the numbers. See ▸Note 12 Income tax expense and ▸Note 27 Income taxes in balance sheet for further information.

The effective income tax rate according to the income statement was 20.6% (2016: 15.2%). The tax rate used in the income statement is always impacted by the fact that the share of profits from associates and joint ventures is recorded based on Fortum's share of profits after tax. Other major items affecting the effective income tax rate are one-time tax exempt capital gains and losses, tax rate changes and major one-time tax effects.

The comparable effective income tax rate is presented to better reflect the Group's tax position when comparing the current period to previous periods. Items affecting comparability are not included in the comparable effective income tax rate. The comparable effective income tax rate for 2017 was 18.8% (2016: 20.0%). The table below explains the difference between the statutory tax rate in Finland compared to the rate at which Fortum is taxed on its profit before income tax decreased by profits from associated companies and joint ventures and by tax exempt capital gains or losses as per the tax charge on the income statements excluding tax rate changes and major one-time tax effects.

The effective income tax rate and comparable effective income tax rate reflect the income tax expense recognised in the income statement including changes in deferred taxes. When the pre-tax profit is close to null or negative, the total tax rate does not illustrate the tax contribution in an informative way. Therefore, we use "not applicable" for total tax rate in 2015.

Income tax expense

EUR million	2017	%	2016	%	2015	%
Profit before tax	**1,111**		**595**		**-305**	
Profits from associated companies and joint ventures	-148		-131		-20	
Tax exempt capital gains or losses	-323		-13		-6	
Profit before income tax decreased by profits from associated companies and joint ventures and by tax exempt capital gains or losses	**641**		**451**		**-331**	
Income tax at nominal rate	-128	20.0%	-90	20.0%	66	20.0%
Differences in tax rates and regulations	21	-3.2%	21	-4.6%	25	7.6%
Income not subject to tax	0	-0.0%	0	-	1	0.2%
Expenses not deductible for tax purposes	-3	0.4%	-5	1.1%	-2	-0.6%
Changes in tax valuation allowance related to not recognised tax losses	-2	0.2%	-6	1.4%	-1	-0.3%
Adjustments recognised for taxes of prior periods	-2	0.4%	-2	0.4%	-3	-1.0%
Taxes related to dividend distributions	-10	1.6%	-8	1.8%	-7	-2.0%
Other items	3	-0.5%	0	0.0%	-1	-0.4%
Comparable effective income tax rate	**-121**	**18.8%**	**-90**	**20.0%**	**78**	**23.5%**
Tax rate changes	**6**		**0**		**0**	
Other major one time tax effects	**-115**					
Income tax expense	**-229**		**-90**		**78**	

The one-time tax-free capital gain in 2017 mainly relates to the restructuring of the ownership in Hafslund. The other major one-time tax effect relates to Fortum booking a tax cost of EUR 115 million because of the unfavorable decisions from the Administrative Court of Appeal in Sweden relating to the income tax assessments for 2009–2012.

Key tax indicators, %

	2017	2016	2015
Effective income tax rate	20.6%	15.2%	25.4%
Weighted applicable tax rate	21.7%	20.2%	20.2%
Comparable effective income tax rate	18.8%	20.0%	23.5%
Total tax rate	32.5%	40.0%	n/a
Comparable total tax rate	48.1%	47.5%	n/a

Deferred taxes in the balance sheet

Deferred taxes illustrate timing differences between the treatment of costs under accounting and tax rules. The timing differences give rise to deferred tax assets and liabilities, the most significant of which for Fortum are explained below.

EUR million	1 Jan 2017	Change 2017	31 Dec 2017
Intangible assets	-12	-89	-101
Property, plant and equipment	-717	-88	-806
Pension obligations	14	7	21
Provisions	20	-12	7
Derivative financial instruments	36	-1	35
Tax losses and tax credits carry-forward	100	16	116
Other	8	-28	-20
Net deferred tax liability	**-550**	**-196**	**-747**

Deferred tax liabilities in 2017 mainly relate to property, plants and equipment in Finland, Sweden and Russia. The deferred tax asset relating to tax losses and tax credits carry forwards increased net in 2017 mainly because of the additional taxable losses in the Netherlands partly offset by the usage of losses carry forwards in Russia.

Case | **Tax losses and timing of income taxes paid**

If a company has poor profitability, it may make tax losses that cannot be utilised in the period in which they arise, but can be carried forward and used to offset taxable profits in the future. A concrete example of tax losses is the one-time write-down of the two reactors at the Oskarshamn nuclear power plant in Sweden during 2015; this gave rise to significant losses that will only be utilised once the Swedish operations return to profit. It may take many years to fully utilise the losses. The future benefit of these losses is booked as a deferred tax asset (or reduction of deferred tax liability) in the balance sheet. In years in which the tax loss is utilised, the company will have taxable profits, but will pay no tax, as the losses from previous years are used to offset the taxable profits arising in the current year. The tax contribution of Fortum with its capital intensive businesses should be considered over a longer period of years rather than over one year.

Fortum's tax indicators and country-by-country taxation

In line with the 2017 guidelines of the Ownership Steering Department of the Finnish Prime Minister's Office for majority state-owned companies, Fortum has selected key indicators that reflect the nature of its business operations and the related tax. As Fortum's operations are capital-intensive and have a long lifetime, the net assets has been selected as the best determinant of our value creation in each country. Our operations are not labour-intensive, nor is revenue the most relevant base for a value creation indicator. Therefore, for our operations, the table below presents assets used in operations along with taxes borne and taxes collected for the eleven of the most significant countries of operation. To ensure a good understanding of our value creation, we also present interest bearing loan receivables, as financing is crucial for the success of our operations. We trust this is the best determinant of value creation for our operations.

Countries of operations

	Finland			Sweden			Russia			Poland			Estonia			Norway		
EUR million	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Taxes borne																		
Corporate income tax	29	21	66	113	1	-1	11	3	3	9	4	2	1	1	2	1	0	1
Production taxes [1]	51	54	46	48	83	83	2	2	2	1	1	1	0	0	0	0	0	0
Employment taxes	1	3	3	12	8	10	4	3	4	1	1	1	1	1	1	9	0	0
Taxes on property	15	23	13	73	109	118	20	15	13	6	6	5	0	0	0	2	0	0
Cost of indirect taxes	3	1	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Total taxes borne	**98**	**101**	**130**	**246**	**201**	**210**	**38**	**23**	**23**	**17**	**12**	**10**	**3**	**2**	**3**	**12**	**0**	**1**
Assets used in operations [2]	3,882	3,958	3,051	4,304	4,341	4,559	2,812	2,967	2,347	559	513	350	193	196	196	1,533	27	11
Interest bearing loan receivables [2] [3]	549	522	862	779	860	775	0	0	0	3	2	0	0	0	0	28	0	0
Number of employees	2,165	2,029	1,959	968	724	618	3,494	3,745	4,126	827	894	586	207	201	214	654	43	41
Effective income tax rate	23.4%	34.5%	20.2%	61.3%	-20.9%	21.1%	20.1%	19.1%	18.9%	71.7%	15.0%	22.1%	13.7%	28.1%	30.9%	-0.7%	0.0%	2.1%
Total tax rate	67.6%	72.6%	59.9%	66.0%	81.8%	n/a	12.7%	10.5%	11.8%	88.4%	34.8%	43.6%	11.9%	18.2%	30.8%	3.0%	0.8%	2.8%
Taxes collected																		
Net VAT	1	13	15	7	0	0	76	48	22	0	18	9	5	5	5	56	0	2
Sales VAT	323	351	311	325	292	344	290	240	244	129	105	51	19	18	19	109	12	12
VAT on Purchases	322	338	295	317	309	527	215	192	222	131	87	42	13	13	13	52	14	10
Payroll taxes	44	42	43	18	12	13	8	7	8	3	3	3	2	2	2	7	1	1
Excise taxes	1	4	7	208	152	151	0	0	0	3	2	0	0	0	0	0	0	0
Withholding taxes	55	53	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Total taxes collected	**101**	**112**	**125**	**233**	**165**	**163**	**84**	**55**	**30**	**7**	**23**	**12**	**8**	**7**	**7**	**64**	**1**	**3**

1) Taxes on property in Finland 2016 include EUR 9 million asset transfer tax (tax on transfer of shares and real estate)

2) Group internal eliminations between the countries are not included

3) Including cash collaterals

EUR million	Denmark			The Netherlands			Ireland			Belgium			Luxembourg			Other countries		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Taxes borne																		
Corporate income tax	2	1	0	-8	8	19	10	4	0	18	6	13	0	0	0	1	0	0
Production taxes [1]	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Taxes on property	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of indirect taxes	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total taxes borne	**8**	**2**	**0**	**-8**	**9**	**20**	**10**	**4**	**0**	**19**	**6**	**13**	**0**	**0**	**0**	**3**	**3**	**3**
Assets used in operations [2]	125	131	0	16	8	6	68	0	0	0	0	0	0	0	0	384	291	266
Interest bearing loan receivables [2] [3]	0	11	0	6,715	9,442	9,804	9,558	9,827	6,478	1,573	2,069	947	2	2	3,024	42	49	53
Number of employees	178	181	0	8	10	5	3	2	2	2	2	2	1	1	1	278	276	281
Effective income tax rate	24.4%	-19.1%	0.0%	18.9%	46.7%	30.8%	13.0%	1.6%	-36.6%	13.2%	24.8%	28.0%	-7.4%	50.0%	45.5%	-386.4%	182.2%	7.5%
Total tax rate	**99.3%**	**74.5%**	**0.0%**	**5.9%**	**31.8%**	**26.4%**	**9.3%**	**3.8%**	**0.4%**	**13.6%**	**9.8%**	**11.1%**	**n/a**	**52.8%**	**48.6%**	**85.5%**	**51.2%**	**26.9%**
Taxes collected																		
Net VAT	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7
Sales VAT	13	5	0	3	0	2	0	0	0	0	0	0	0	0	0	13	15	15
VAT on Purchases	6	2	0	3	1	3	12	0	0	0	0	0	0	0	0	7	8	8
Payroll taxes	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
Excise taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Withholding taxes	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total taxes collected	**14**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**10**	**13**

1) Taxes on property in Finland 2016 include EUR 9 million asset transfer tax (tax on transfer of shares and real estate)

2) Group internal eliminations between the countries are not included

3) Including cash collaterals

Comments by country

Finland: Low electricity prices have resulted in low levels of profit and consequently in lower amounts of corporate income tax in 2017.

Sweden: Income taxes increased in 2017 as a one-off mainly due to unfavorable decision from the Administrative Court of Appeal in Stockholm in relation to year 2009–2012 (See ▸**Note 36** Legal actions and official proceedings). The level of property and production taxes are slightly reduced due to the Swedish parliament's decision to gradually reduce these taxes.

Russia: Taxes on property were increased by tax rate changes. The tax depreciation on investments in new power and heat plants result in low corporate income taxes borne. The fact that more income tax will be paid in the later years of an asset's life is recognised by booking a deferred tax liability in the balance sheet.

Poland: Income taxes have increased due to the one time effect of the sale of the gas infrastructure company DUON Dystrybucja.

Estonia: Undistributed corporate profits are tax exempt. The taxation of profits is postponed until the profits are distributed as dividends.

Norway: At the beginning of August 2017, Fortum made the restructuring of ownership in Hafslund that increased our presence in the Norwegian heat and retail markets.

Denmark: Taxes increased mainly by Fortum entering into the waste solution business during 2016.

The Netherlands: The Dutch financing operations were loss-making in 2017 due to lower interest margins and a one-off realisation of financial risks in its loan portfolio.

Ireland: Income is taxed at normal 12.5% tax rate.

Belgium: The effective tax rate is lowered from the nominal rate due to so called notional interest deduction based on Belgium law.

Luxembourg: Our activities in Luxembourg are minimal and are estimated to be closed within 2018.

The table above reflects the current challenging power and financial markets as well as the tax environment. The high total tax rates in Sweden and Finland reflect lower profits in those countries, driven by the current price of power and the significant amount of taxes that are not based on profits. We have organised the financing of our operations so that it also protects our capability to distribute

dividends. This simultaneously also protects the tax base in Finland.

Other payments to the public sector

In addition to taxes borne and taxes collected, we make other compulsory tax-like payments to the public sector, payments that are not compensation for goods or services received. For example, in 2017 we paid EUR 43 (2016: 38) million in employer's statutory pension contributions.

We are also a significant dividend payer. Fortum's Board of Directors proposes to the 2018 Annual General Meeting that a dividend of EUR 977 (2017: 977) million be paid for 2017. The Finnish State's share of this would be about EUR 496 (496) million.

Ongoing tax appeals

Lack of clarity in tax legislation and changes in the interpretation of tax rules can result in a long delay between a transaction taking place and its tax treatment being agreed with the relevant tax authority.

Fortum had several tax audits ongoing during 2017. Based on these and earlier audits Fortum has received income tax assessments in Sweden for the years 2009–2015 and Belgium for the years 2008–2012.

Fortum has appealed all assessments received. Based on legal analyses, no provision has been accounted for in the financial statements related to Sweden 2013–2015 and Belgium 2008–2012 tax audits.

Fortum has received a positive decision from the Stockholm Administrative Court in June 2017 relating to hydro property tax in Sweden. According to the decision the property tax rate on hydro power (that is higher than the tax on other types of electricity production) comprises unlawful state aid (i.e. the tax law is against EU legislation) and the property tax shall be set to 0.5 percent of the tax assessment value. The disputed amount for the five years totalled EUR 52 million. The Swedish Tax Authority has appealed the decision and the case is pending before the Administrative Court of Appeal in Sweden. The decision is expected in 2018.

See ▸Note 36 Legal actions and official proceedings for more information.

Information about companies registered in countries considered to be tax havens

The EU, the OECD and the Global Forum have established a list of countries considered to be tax havens. Fortum has a fully-owned captive insurance company in Guernsey, for insurance reasons; it also has a stake in Nature Elements Asia Renewable Energy and Cleantech Fund L.P., which makes research and development investments and is located in the Cayman Islands. Fortum's earnings from both companies were negative and are subject to normal taxation in Finland. The taxes borne on these operations were EUR null in 2017.

Fortum operates internationally and, therefore, our international financing operations are located in EU countries with stable operating environments and predictable taxation. We have financing and leasing companies in Ireland, the Netherlands and Belgium. In the recent tax management debate, the Netherlands and Ireland have also been mentioned as tax havens. We pay taxes in each of these countries of operation based on local rules and normal tax rates: the Netherlands 25%, Belgium 33.99% (29.58% from 2018) and Ireland 12.5%. Fortum's subsidiary companies are listed by country in the ▸Note 40, Subsidiaries by segment, of the consolidated financial statement.

Fortum tax footprint — Key terms

Term	Definition
Corporate income tax	All taxes that are based on the taxable profits of a company and temporary differences between accounting values and tax bases, as defined in the International Financial Reporting Standard IAS12.
Current tax	The corporate income tax due with respect to taxable profits of an accounting period, as defined in the International Financial Reporting Standard IAS12.
Deferred tax	The corporate income tax due with respect to temporary differences between accounting values and tax bases, as defined in the International Financial Reporting Standard IAS12.
Effective income tax rate	Income tax expense divided by Profit before income tax.
Comparable effective income tax rate	Income tax expense minus effects from tax rate changes and major one-time tax effects divided by Profit before income tax decreased by profits from associated companies and joint ventures and by tax exempt capital gains or losses.
Weighted average applicable income tax rate	Sum of the proportionately weighted share of profits before taxes of each group operating country multiplied with an applicable nominal tax rate of the respective countries.
The Group / Fortum Group	Fortum Oyj and its subsidiaries and Fortum Group associated companies and joint ventures.
Indirect tax	Tax that is required to be paid to a government by one person or company at the expense of another person or company.
Profit before tax	Accounting profit for a period before deducting a charge for corporate income taxes.
Tax	Any amount of money required to be paid to a government without receiving any services, whether by law or by agreement, including without limitation corporate income tax, production taxes, property taxes, employment taxes, sales taxes, asset transfer tax, and any other required payments.
Tax borne	Taxes that a company is obliged to pay to a government, directly or indirectly, on that company's own behalf with respect to an accounting period. Taxes borne include corporate income taxes (excluding deferred taxes), production taxes, employment taxes, taxes on property and cost of indirect taxes. Production taxes include also taxes paid through electricity purchased from associated companies.
Tax collected	Tax that a company is obliged to pay to a government on behalf of another person or a company. Taxes collected include VAT, and excise taxes on power consumed by customers, payroll taxes and withholding taxes.
Total tax rate	Taxes borne divided by profit before tax increased by taxes borne in operating profit.
Comparable total tax rate	Taxes borne divided by profit before tax increased by taxes borne in operating profit and decreased by profits from associated companies and joint ventures and by tax exempt capital gains or losses.
Other payments to and from the public sector	Other compulsory tax-like payments to the public sector, payments that are not compensation for goods or services received.
Assets used in operations	Non-interest bearing assets plus interest bearing assets related to the Nuclear Waste Fund (non-interest bearing assets do not include finance related items, taxes and assets from fair valuations of derivatives used for hedging future cash flows).

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Join the change

Sustainability

2017

Highlights 2017

61%
of our electricity production was CO_2-free

We reached our energy efficiency improvement target (1,400 GWh/a by 2020) in advance

205 MW
of new solar power in India and Russia and 32 MW of new wind power in Norway in operation

Our circular economy business expanded and we gained 1.2 million new customers, increasing our Nordic customer base to
2.5
million

100%
of employees completed our Safety & Security eLearning

A fish trap and transport facility for the Montta hydropower plant commissioned in the River Oulujoki, Finland

Our support to society increased to
EUR 4.9
million, including a donation of EUR 1 million to Finnish universities

Energise Your Day wellbeing programme expanded to nine operating countries

Sustainability 2017

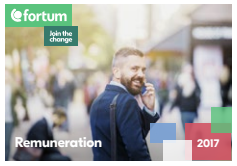
Fortum's 2017 reporting entity

Online Annual Review

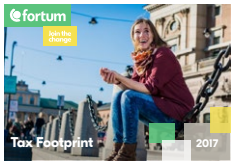
CEO Letter

Financials

Governance



Remuneration



Tax Footprint

Sustainability

Sustainability approach

The entire energy sector is undergoing a transformation. Four megatrends are shaping this change: Climate change and resource efficiency, urbanisation, digitalisation and new technologies, and active customers. These megatrends have a major impact on how energy is produced, sold and used.

Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. This way we deliver excellent shareholder value. Our values – curiosity, responsibility, integrity and respect – form the foundation for all our activities.

Sustainability is an integral part of Fortum's strategy. Business and responsibility are tightly linked, underlining the role of sustainable solutions as a competitive advantage. In our operations, we give balanced consideration to economic, social and environmental responsibility.

- FORTUM'S VISION, MISSION AND STRATEGY
- FORTUM'S VALUES

Our contribution to the Sustainable Development Goals

The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 define international sustainable development focus areas and goals to 2030. We want to do our part to promote the achievement of the goals in our value chain by increasing our positive impacts and decreasing our negative impacts. The Sustainable Development Goals offer business opportunities as well as the opportunity to create value for our stakeholder groups.

As a producer of energy and circular economy solutions, Fortum impacts most of the Sustainable Development Goals and their specific targets. In line with our strategy, we are driving the change towards a cleaner world. Those SDGs for which we have the biggest contribution to their achievement as well as our most important ways to contribute and our related Group sustainability targets are presented in the graphic.

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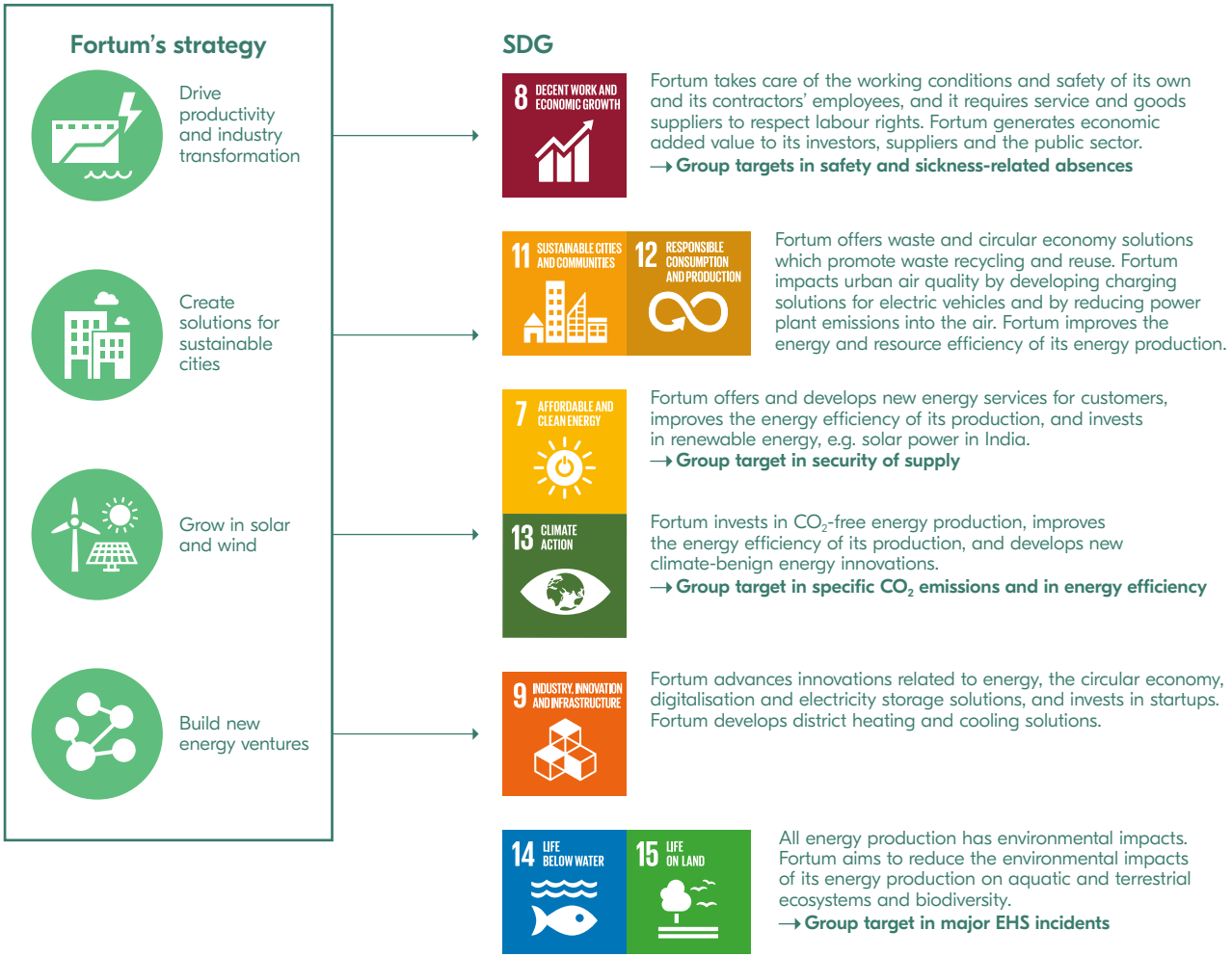
SUSTAINABLE DEVELOPMENT GOALS

Fortum supports the Sustainable Development Goals.

Our contribution to the Sustainable Development Goals (SDG)



Examples of measures we implemented in 2017 that promote the achievement of the Sustainable Development Goals

Sustainable Development Goal (SDG)	Measure
7. Ensure access to affordable, reliable, sustainable and modern energy for all 13. Take urgent action to combat climate change and its impacts	• **We invested in renewable energy production**: solar, wind and hydropower • We commissioned two new solar power plants (total 170 MW) in India, and we acquired three solar power plants (total 35 MW) in Russia • We invested in wind power in Sweden, Norway and Russia • We invested in energy efficiency, e.g. at the Loviisa nuclear power plant in Finland and at hydropower plants in Sweden and Finland • We made a Society's Commitment to Sustainable Development for **carbon-free district heating in Espoo by 2030** and implemented measures reducing emissions • We expanded our HorsePower manure bedding service from Finland to Sweden • Our **energy efficiency investments** totalled 131 GWh • We strive to realise a carbon capture and storage project in Oslo in co-operation with the City of Oslo. If the project is realised, waste incineration in Oslo will become virtually CO_2-free. • We started working with Futurice to develop a **solution** to provide easier access to solar power in developing countries
8. Promote inclusive and sustainable economic growth, employment, and decent work for all	• We conducted 11 supplier audits covering work conditions and other issues • Our entire personnel completed the new online training for occupational safety • We renewed the Group's EHS minimum requirements
9. Build resilient infrastructure, promote sustainable industrialisation and foster innovation	• We started offering private customers a virtual power plant service that balances electricity demand • We commissioned **the Nordic countries' biggest electricity storage** in Järvenpää, Finland • We commissioned new district cooling in Tartu, Estonia • We engaged in collaboration with universities in our operating countries, and Fortum Foundation awarded nearly EUR 700,000 in grants • We used EUR 53 million for research and development
11. Make cities and human settlements inclusive, safe, resilient and sustainable 12. Ensure sustainable consumption and production patterns	• We participate in the City of Oslo's waste incineration in Norway through **the restructuring of Hafslund** • We started the development of charging systems for EVs in India and Great Britain, and expanded our charging network in the Nordic countries • With our company cars, we are shifting to EVs and chargeable hybrids in Finland • We supplied emissions-reducing combustion solutions to customers in Poland and Sweden
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	• We implemented hydropower environmental projects valued at EUR 3.7 million • **A trap and transport facility** was commissioned at the Montta hydropower plant in Oulujoki, Finland • We tore down the Acksjön dam in Sweden, removing a barrier to migrating fish and improving a valuable river habitat • We made preparations for the Chain of Custody certification of wood-based biomass purchases that we aim to acquire in 2018

Key sustainability topics

We have defined our most important sustainability focus areas in the areas of economic, social and environmental responsibility.

Our focus areas are based on Fortum's and our stakeholders' views of the significance of the impacts on the company and its ability to create value for its stakeholders and on the environment. Our understanding of stakeholder views is based on the results of the extensive stakeholder survey conducted annually as well as on information gained through other stakeholder collaboration.

In 2015, a total of 2,133 stakeholder representatives, more than 60% of them representing personnel, participated in our latest separate sustainability survey. In that sustainability survey, decision makers, organisations, employees and the general public put special emphasis on the significance of security of supply of heat and electricity, management of sustainability-related risks, and sustainable ways of operating. Our personnel emphasised the safety of operations. The general public considered the use of renewable energy sources as important. Our goal is to conduct our separate sustainability survey again during 2018.

Sustainability targets affect every Fortum employee

Sustainability targets affect every Fortum employee and safety-related targets are part of Fortum's short-term incentive scheme. In addition to the Group-level targets, divisions have their own targets. Fortum's Board of Directors annually decides on the sustainability targets to be included in the incentive scheme. The injury frequency for Fortum employees and for contractors was included in the incentive scheme in 2017.

The 2018 incentive scheme remains unchanged in terms of safety targets (the injury frequency rate for personnel and contractors), but the Board can, if it wants, take into consideration in the result also other safety-related incidents and especially the number of severe occupational accidents. The target for severe occupational accidents is zero. The weight of the sustainability target in the incentive scheme is 10% (2017: 10%).

Group sustainability targets and performance in 2017

	Target for the year 2017	Status at the end of 2017	Status at the end of 2016
Reputation index, based on One Fortum Survey	70.7 *	72.3	72.5
Customer satisfaction index (CSI), based on One Fortum Survey	CSI divisional scores at level "good" (70–74)	64–76	67–79
Environmental responsibility			
Specific CO_2 emissions			
Total energy production, gCO_2/kWh, 5-year average	<200	188	188
Energy efficiency			
Energy efficiency improvement by year 2020, base line year 2012, GWh/a	>1,400 **	1,502	1,372
Major EHS incidents [1]	≤21	20	22
Social responsibility			
Security of supply			
CHP plant energy availability, %	>95.0	96.1	97.4
Occupational safety			
Total recordable injury frequency (TRIF) [2], own personnel	≤2.5	1.8	1.9
Lost workday injury frequency (LWIF) [3], own personnel	≤1.0	1.2	1.0
Lost workday injury frequency (LWIF) [3], contractors	≤3.5	4.2	3.0
Quality of investigation process of injuries, serious EHS incidents, and near misses	Level 1.0	Level 0.75	-
Number of severe occupational accidents [4]	≤5	1	5
Employee wellbeing			
Sickness related absences, %	≤2.3	2.2 ***	2.3 ***

1) Fires, leaks, explosions, INES events exceeding level 0, dam safety incidents, environmental non-compliances. INES = International Nuclear Event Scale

2) TRIF = Total recordable injury frequency, injuries per million working hours

3) LWIF = Lost workday injury frequency, injuries per million working hours

4) Accidents leading to a fatality or permanent disability and accidents that could have caused serious consequences

* The target is not comparable with the status of year 2016, because the target group is different.

** By the year 2020

*** Excluding DUON and Hafslund

Successes and development needs:

- Our reputation is strong particularly among public administration, opinion makers, non-governmental organisations and Fortum's personnel.
- The target for customer satisfaction was achieved in all business areas, but not in retail electricity sales.
- We achieved our target in specific carbon dioxide emissions. In 2017, specific emissions from total energy production were 184 gCO_2/kWh.
- By the end of 2017, we exceeded the Group energy efficiency target (>1,400 GWh/a) at the annual level by about 100 GWh.
- We strive to be a safe workplace for own and our contractors' employees. In 2017, one severe occupational accident occurred. There were no accidents leading to a fatality.
- Mergers and acquisitions implemented as part of our growth strategy weakened Fortum's occupational safety level that had been at a rather good level before. During 2018 we will focus on establishing Fortum's safety practices in our new operations.
- In 2017, the focus of our auditing was on solar module suppliers in particular. We conducted 11 supplier audits in six countries.

Our targets for 2018

Our sustainability targets are based on continuous operational improvement. We achieved our Group target for energy efficiency in 2017, and for that reason we raised the target by 500 GWh. Our new target for energy efficiency improvement is >1,900 GWh/a by 2020 compared to 2012.

We also renewed our occupational safety targets. At the Group level we are focusing on monitoring the number of severe occupational accidents and the combined own personnel and contractor Lost workday injury frequency (LWIF) per million working hours. The indicator is the same as in the short-term incentive scheme. The target level for the combined LWIF is on ≤2.1. The target is very challenging because the realised combined LWIF was 2.4. In terms of severe occupational accidents, we had a target of 0 accidents by 2020. However, in the 2018 target setting, Fortum's Board tightened the target to zero already by 2018.

As a new indicator in 2018 we will monitor the GAP index measuring how well the Group's EHS minimum requirements are realised at the power plant level. The target is that the minimum requirements will be realised in practice and that there will be no serious deviations detected in terms of their compliance (target level 3.0).

Group-level sustainability targets in 2018

	Target 2018	Target 2020
Reputation index, based on One Fortum Survey	73.0	Not defined
Customer satisfaction index, based on multiple measurements as defined in business plans	Multiple targets	Not defined
Environmental responsibility		
Specific CO_2 emissions		
Total energy production, gCO_2/kWh, 5-year average	<200	<200
Energy efficiency		
Energy efficiency improvement by year 2020, base line year 2012, GWh/a	Target only for year 2020	>1,900
Major EHS incidents [1]	≤20	≤15
Social responsibility		
Security of supply		
CHP plant energy availability, %	>95.0	>95.0
Occupational safety		
Lost workday injury frequency (LWIF) [2], own personnel and contractors	≤2.1	Not defined
Quality of investigation process of injuries, serious EHS incidents, and near misses	Level 3.0	Level 4.0
GAP index, quality of implementation of EHS minimum requirements	Level 3.0	Level 4.0
Number of severe occupational accidents [3]	0	0
Employee wellbeing		
Sickness related absences, %	≤2.2	≤2.2

1) Fires, leaks, explosions, INES events exceeding level 0, dam safety incidents, environmental non-compliances. INES = International Nuclear Event Scale

2) LWIF = Lost workday injury frequency, injuries per million working hours

3) Accidents leading to a fatality or permanent disability and accidents that could have caused serious consequences

Governance and management

Sustainability management at Fortum is strategy-driven and is based on the company's values, the ▸Code of Conduct, the ▸Supplier Code of Conduct, the ▸Sustainability Policy and other policies and their specifying instructions defined at the Group level. We comply with laws and regulations. All of our operations are guided by good governance, effective risk management, adequate controls and the internal audit principles supporting them.

Fortum's goal is a high level of environmental and safety management in all business activities. Calculated in terms of sales, 99.8% of Fortum's electricity and heat production operations at the end of 2017 were ISO 14001 certified and 98.4% were OHSAS 18001 certified. The level of certification slightly dropped due to acquisitions and investments. The divisions and sites develop their operations with internal and external audits required by environmental, occupational safety and quality management systems.

Responsibilities

Sustainability is an integral part of Fortum's strategy, so the highest decision-making authority in these issues is with the Board of Directors, which has joint responsibility in matters related to sustainability. For this reason, Fortum has not designated a Sustainability Committee for decision-making on economic, environmental and social issues. The Audit and Risk Committee, members of the Fortum Executive Management, and other senior executives support the Board of Directors in the decision-making in these matters, when necessary.

The Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. Fortum Executive Management monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. The achievement of the targets is regularly reported also to Fortum's Board of Directors.

Fortum's line management is responsible for the implementation of the Group's policies and instructions and for day-to-day sustainability management. Realisation of the safety targets is a part of Fortum's short-term incentive system. Fortum's Corporate Sustainability unit is responsible for coordination and development of sustainability at the Group level and for maintaining an adequate situation awareness and oversight regarding sustainability.

Sustainability management by topic

Sustainability management in the areas of economic responsibility, environmental responsibility and social responsibility is described in more detail in ▸Appendix 1. Additionally, more detailed information about the management of different aspects and impacts is presented by topic in this Sustainability Report.

▸ CORPORATE GOVERNANCE STATEMENT 2017
▸ REMUNERATION STATEMENT 2017

Policies and commitments

Fortum is a participant of the UN Global Compact initiative and the UN Caring for Climate initiative. We support and respect the international initiatives and commitments, and national and international guidelines listed in the table, and they guide our operations in the areas of economic, environmental and social responsibility.

Fortum's EHS minimum requirements were updated in 2017. We focused particularly on updating contractor management practices to improve contractor safety. We believe that our requirements are now clearer and more comprehendible to our collaboration partners and that will help us to achieve better contractor safety results, and it offers a good foundation for continuous improvement.

We report on the training related to the updated instructions in the sections ▸Business ethics and compliance, ▸Sustainable supply chain and ▸Occupational and operational safety.

The company's Group-level policies are approved by Fortum's Board of Directors. The Group-level instructions are approved by either the President and CEO or Fortum Executive Management.

Fortum's main internal policies and instructions guiding sustainability are listed in the table in ▸Appendix 2.

International and national initiatives, commitments and guidelines

			Social responsibility		
	Economic responsibility	Environmental responsibility	Social and personnel issues	Human rights	Anti-corruption and bribery
UN Universal Declaration of Human Rights			x	x	
International Covenant on Economic, Social and Cultural Rights	x		x	x	
International Covenant on Civil and Political Rights			x	x	
UN Convention on the Rights of the Child			x	x	
Core conventions of the International Labour Organisation			x	x	
UN Global Compact initiative	x	x	x	x	x
UN Caring for Climate initiative		x			
UN Guiding Principles on Business and Human Rights			x	x	
OECD Guidelines for Multinational Enterprises	x	x	x	x	x
International Chamber of Commerce's anti-bribery and anti-corruption guidelines	x				x
Bettercoal initiative's Code on responsible coal mining	x	x	x	x	x
Responsible advertising and marketing guidelines			x		
Environmental marketing guidelines			x		

Business ethics and compliance

We believe there is a clear connection between high standards of ethical business practices and excellent financial results. As an industry leader, we obey the law, we embrace the spirit of integrity, and we uphold ethical business conduct wherever we operate.

Code of Conduct sets the basic requirements

The Fortum Code of Conduct and Fortum Supplier Code of Conduct define how we treat others, engage in business, safeguard our corporate assets, and how we expect our suppliers and business partners to operate.

Fortum's Board of Directors is responsible for the company's mission and values and has approved the Fortum Code of Conduct. The online training on the Code of Conduct is part of the induction programme for new employees. The Supplier Code of Conduct is based on the ten principles of the UN Global Compact and has been approved by the Head of Procurement in collaboration with the purchasing steering group.

About 95% of Fortum's total purchasing volume, excluding purchases by DUON, is purchased from suppliers with a purchasing volume of EUR 50,000 or more. Geographically they target mainly suppliers in Russia, Finland, Sweden and Poland. The Supplier Code of Conduct is part of purchase agreements with a contract value of EUR 50,000 or more.

In line with the Code of Conduct, Fortum has zero tolerance for corruption and fraud and does not award donations to political parties or political activities, religious organisations, authorities, municipalities or local administrations.

Compliance risks

The compliance risks related to our business operations include the potential risk of bribery or corruption, fraud and embezzlement, non-compliance with legislation or company rules, conflicts of interest, improper use of company assets, and working under the influence of alcohol or drugs. Compliance risk management is an integrated part of business operations, and key compliance risks, including action plans, are identified, assessed and reported annually. This applies also to the management of risks related to sustainability.

Training

Fortum has a Total Compliance programme covering key areas of regulatory compliance and business ethics. It is managed with a risk-based prioritisation.

Training is a fundamental part of the Total Compliance programme. In 2017, training was provided to employees working in the Recycling and Waste Solutions business area in Finland, Sweden and Denmark. Training for employees of Fortum Oslo Varme and Hafslund Markets also was started. Fortum's Code of Conduct booklet was updated due to the brand renewal, and all Fortum employees received the booklet electronically.

Training on the Market Abuse Regulation and insider regulations was provided for those management teams that had not received the training earlier. Targeted training on internal controls and focusing on the process-level improvement of controls was also arranged for selected management teams and experts. Training on competition law issues was provided for the functions responsible for sales and for the selected individuals joining Fortum through acquisitions. Additionally, Anti-Money Laundering training for key stakeholders was arranged.

The supplier qualification process was renewed in 2016 and the majority of the personnel received training back then. Training events held in 2017 targeted Fortum's personnel in the Baltic countries and Poland, as well as Recycling and Waste Solutions personnel in Finland, Sweden and Denmark.

Reporting misconduct

In addition to internal reporting channels, Fortum has an external "Raise a concern" channel. The same mechanism is used for reporting any suspected misconduct relating to the environment, labour practices or human rights violations, and it is available to all stakeholders. In Russia, Fortum has a separate compliance organisation in place and employees there are encouraged to use the channels provided by the compliance organisation. They may, however, also use the "Raise a concern" channel should they so wish.

Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly reported to the Audit and Risk Committee.

Suspected cases of misconduct

A total of 178 reports of suspected misconduct were made in 2017. By year-end, 167 cases had been closed. About one third of the investigated cases were related to non-compliance with laws and regulations or with company rules, which constituted the majority of the cases. In these cases, corrective action was taken by reviewing and developing existing processes and instructions and by providing training for employees.

Fortum has zero tolerance towards alcohol and drug use. About 40% of the cases were related to alcohol abuse by either Fortum's or contractors' employees during working hours. As a result of the investigations, five employment contracts were terminated either by immediate dismissal or by mutual agreement, and 12 written warnings were given. There were 14 cases of misconduct reported to the police. There was no cause for action to be taken in 18 of the cases investigated.

No cases of suspected corruption or bribery related to Fortum's operations were reported in 2017.

Fortum also requires its goods and service suppliers as well as its business partners to comply with a zero tolerance policy towards corruption and bribery. As part of supply chain management, we requested a report from the goods and service suppliers we had knowledge of possible cases of misconduct. We requested the reports to include information about e.g. the corrective measures taken related to the supplier's own operations. The reports

were considered sufficient and didn't lead to the termination of a contract.

We deal with potential cases of corruption in a professional manner, in accordance with the defined compliance investigation process, in line with applicable laws and with respect to the rights and personal integrity of all parties involved.

Restricting competition

There were three ongoing investigation cases in Russia in 2017. Two of these cases had been initiated in the previous year. During the year Fortum was not subject to any significant monetary fines for competition law violations.

Other significant fines

In Norway, Fortum Oslo Varme was ordered to pay a fine of NOK 150,000 (EUR 16,043) for a district heating pipe leakage that caused burns to a third party. In Denmark, Fortum Waste Solutions OW A/S was ordered to pay a fine of DKK 60,000 (EUR 8,066) for a work-related accident that took place in 2016. The handling of another work-related accident originating in 2015 in Fortum Waste Solutions OW A/S was on-going.

- FORTUM CODE OF CONDUCT
- FORTUM SUPPLIER CODE OF CONDUCT
- ENVIRONMENTAL GRIEVANCES
- LABOUR PRACTICES AND HUMAN RIGHTS GRIEVANCES
- INCIDENTS OF DISCRIMINATION
- FINES RELATED TO ENVIRONMENTAL NON-COMPLIANCES

Stakeholders

Our way of operating responsibly includes continuously identifying the views of our stakeholders and finding a balance between the different expectations our stakeholders have. Dialogue, feedback and good collaboration are the key ways to promote a mutual understanding with our stakeholders.

Stakeholder collaboration

Collaboration with different stakeholder groups helps Fortum to assess and meet the expectations that stakeholder groups have towards the company. We engage in an active dialogue with the different stakeholders associated with our operations. We conduct annual stakeholder surveys. We monitor and assess the public dialogue in the countries where we operate, and we have increased the dialogue with our stakeholders also through social media channels. Feedback from customers drives the development of our products and services. Additionally, our activities in national and international organisations help to deepen our understanding of global sustainability issues and their connections to our business.

Management of stakeholder collaboration at Fortum is assigned particularly to communications, public affairs, group sustainability, the functions responsible for electricity and heat sales and energy production, as well as many of our experts. Responsibilities for managing stakeholder collaboration are primarily determined by stakeholder group or interaction theme. Key interaction areas, e.g. public affairs, and corporate communications, have annual plans that guide the activities.

Fortum has an informal Advisory Council consisting of representatives of Fortum's key stakeholder groups as invited by the Board of Directors. The Advisory Council aims to increase the dialogue and the exchange of views between the company and its stakeholders.

Information through surveys

In collaboration with third parties, we annually conduct surveys regarding stakeholder collaboration.

The aim of these surveys is to help Fortum assess and respond to the important stakeholder groups' expectations of the company. The surveys also measure the success of our stakeholder collaboration. Additionally, the surveys provide information about emerging sustainability trends and risks we should acknowledge. We use the survey results in business planning and development and in identifying material aspects in corporate responsibility.

The One Fortum survey and its results in terms of customer satisfaction and reputation are presented in the section ▸**Customer satisfaction and reputation**. As part of the One Fortum survey, we regularly survey what our stakeholders consider to be the ▸**most important areas of sustainability**.

Our stakeholder surveys

Survey	Target groups	Target countries	Frequency
One Fortum Survey	Customers General public Public administration Capital markets NGOs Opinion leaders Personnel Media	Finland, Sweden, Norway, Poland, Baltic countries, Russia, India	Customer satisfaction is measured semi-annually Reputation is measured annually
Media tracking	Media	All operating countries	Daily
Brand tracking	General public and customers	Finland, Sweden, Norway, Poland, Baltic countries	Continuously in Finland and Sweden, annually in other countries
Pulse survey	Own personnel	All operating countries	Semi-annually

Most important expectations stakeholders have towards Fortum, and Fortum's actions in response to them

	Stakeholder expectations	Fortum's actions
Lenders and shareholders	• Long-term value creation • High-yield share • Responsible operations	• In 2017 we continued our strategy implementation: We published ▸an offer for Uniper shares • We are committed to achieving our financial targets • Our goal is to pay a stable, sustainable and over time increasing dividend of 50—80% of earnings per share excluding one-off items • Economic, social and environmental responsibility play a key role in our business
Customers	• Competitively priced products • Useful additional services and advice • Reliability • Ensuring data protection	• With efficient operations and high-quality products, we ensure that we are competitive and our customers feel they get their money's worth • In collaboration with customers, we develop new products and services, especially new digital solutions for customers • We deliver what we promise to our customers, and we offer constantly better customer service through different channels • We interviewed over 4,600 customers and 3,100 other stakeholders for our One Fortum survey in 2017 • In 2017 we launched a data protection programme in order to develop personal information processing
Personnel	• Equal treatment and open interaction • Job security and incentivising compensation • Opportunities for professional development • Occupational safety and work wellbeing	• We operate in line with Fortum's Code of Conduct, and our Values updated in 2017 • In 2017 we launched our Open Leadership concept and Leadership Principles based on positive psychology • Our employee compensation is based on standardised principles • We conducted training for employees and managers to support changes in the ▸Ways of Working • We improve safety and wellbeing: In 2017 Safety and Security eLearning and expansion of ▸Energise Your Day Programme to new Fortum countries
Service and goods suppliers	• Good financial position and the ability to take care of the agreed obligations • Fair and equal treatment of suppliers • Long-term business relations and development of business and products/services • Responsible operations	• We comply with the Fortum Code of Conduct, agreements and legislation • We conduct a supplier qualification process • In 2017 we updated the ▸Contractor management procedures in order to address challenges with contractor safety
Authorities and decision makers	• Compliance • Integration of sustainability with strategy and business, risk management • Transparency and reliable reporting • Maintaining dialogue • Being a constructive partner in policy developments	• We comply with laws, regulations and permits • We develop our business and the management of environmental and safety risks • We communicate openly and we actively engage in a dialogue with authorities and decision makers about energy issues: e.g. in 2017 we called for ▸enforced Nordic regional cooperation in energy and climate policies • We provide authorities with constructive suggestions on legislative proposals: In 2017 we contributed e.g. to the preparation of the EU Governance Regulation by providing a proposal to assess and mitigate the impact of ▸overlapping policies on the EU ETS
Media	• Relevant, reliable and transparent communication	• In line with our ▸Disclosure Policy, we communicate proactively and openly. In 2017 we had a special focus on communicating Fortum's strategy and on international media work. • We communicate about issues of topical and media interest through multiple channels and we are easily accessible • We meet regularly with media representatives • We continuously improve our crisis communication preparedness
Energy sector organisations	• Advocating on behalf of shared interests • Dialogue and expertise	• We advocate our shareholders' and the sector's shared interests and actively participate in organisational activities in our sector • We publish position papers and views on energy-sector and policy development, and we actively communicate them in multiple media: In 2017, we published three ▸Fortum Energy Reviews. • In addition to sector organisations, Fortum has joined several joint business initiatives promoting market-driven energy and climate policy: UN Caring for Climate initiative, World Bank's Carbon Pricing Leadership Coalition and Climate Leadership Council
Non-governmental organisations	• Responsibility for operations and risk management • Promoting renewable energy production • Reliable and open reporting	• We develop environmental and safety risk management • We invest in renewable energy: in 2017, a total of EUR 291 million in hydro, wind and solar power and bioenergy • We collaborate with Finnish and Swedish nature conservation associations regarding our environmentally benign electricity products • We communicate actively and we report openly
Local communities	• Operational safety • Developing employment, infrastructure and recreational use • Reducing emissions, noise and other inconveniences	• We invest in infrastructure and plant safety. In 2017 we arranged an emergency preparedness exercise for hydropower in Finland • We collaborate with local communities in all our operating countries: ▸Examples of our activities in 2017 • We reduce emissions and local environmental impacts

Fortum's bid for Uniper raised stakeholder interest

Fortum announced ▸ **a voluntary public takeover offer** for all shares in Uniper towards the end of 2017. By investing in Uniper, Fortum continues the capital redeployment to enable a more efficient use of its balance sheet and delivers on its strategic goal to drive productivity and industry transformation in Europe. The offer period commenced in November and in early January E.ON tendered its 46.65% shareholding to Fortum. At the end of the acceptance period in early February 2018 altogether 47.12% of Uniper's shares were tendered to Fortum. The offer is still subject to competition and regulatory approvals. Fortum expects to finalise the transaction in mid-2018.

Fortum's bid for Uniper is one of the biggest in the history of Finnish economy and it has gained a lot of attention both nationally and internationally. Also many stakeholders such as SRI investors and non-governmental organisations have contacted Fortum to discuss the bid. The main concern raised by the various stakeholders has been the strategic fit of Uniper's fossil-based production with Fortum low-carbon assets and, consequently, the potential increase of Fortum's carbon footprint. Our anticipated role as Uniper's biggest shareholder has also been connected with the discussions around the Nord Stream 2.

A powerful combination to drive the European energy transition

Together Fortum and Uniper have the strategic mix of assets – both clean and secure – as well as the expertise required to successfully and affordably drive Europe's transition towards a low carbon energy system. Fortum's power production is divided roughly in three equal parts consisting of hydropower and other renewables, nuclear power and gas-fired production. Also Uniper is much more than a coal company. Approximately 70% of the company's power generation is based on low-carbon gas-fired generation and CO_2 free hydro and nuclear power. The share of the company's CO_2 free production is about 20%. Fortum's investment in Uniper does not increase the total CO_2 emissions in Europe.

Conventional energy production continues to play an important role in ensuring affordable and secure supply of energy during the transition. Furthermore, gas-fired generation, in particular, can respond to the increasing intermittent renewable production, providing the flexibility needed in geographies where sufficient hydropower resources are not available. Fortum expects its investment in Uniper to deliver an attractive return that will further support us in accelerating the development and implementation of sustainable energy technologies.

Fortum continues to be fully committed to its strategy and sustainability targets – this has not changed. Fortum's carbon exposure (gCO_2/kWh) is already one of the lowest within the European power generation industry and we have a proven track-record on driving transition to a low-CO_2 direction. This is something that we consider our core competence and competitive advantage.

Towards a low carbon energy system with efficient policies

Fortum is of the opinion that phasing out coal-fired generation to mitigate climate change is absolutely necessary, but it must be executed in a controlled and affordable manner. It is the role of political decision makers to agree on the conditions and set up the frameworks that make this transition possible. Fortum respects these decisions, but argues that decision-makers should provide a level playing field for companies operating in the integrating European energy market.

Over the year, several European countries have been discussing specific measures to forbid the use of coal in energy production to advance the transition. However, in Fortum's opinion, the best tool to phase out coal is the EU Emissions Trading Scheme (ETS). If allowed to work properly, the ETS will drive emissions down in an economically efficient manner as it is neutral to the technology and location. Should individual member states, nevertheless, decide to issue a coal ban, it is important that the decision-makers do respective changes in the ETS, so that their action lead to true emission reduction and not shift emissions from one country or sector to another.

Ensuring a responsible supply chain for coal

Fortum also acknowledges that not only the use of coal, but also the origin of coal is a source of concern to some stakeholders. Fortum can only comment its own supply chain. However, both Fortum and Uniper are members of the Bettercoal initiative, which drives for sustainable coal supply chain. Bettercoal companies are committed to use Bettercoal tools in their coal purchasing. The Bettercoal Code sets out the ethical, social and environmental principles and provisions that members of Bettercoal expect organizations producing coal in their supply chain to align with. What comes to Fortum's power plants, the ▸ **coal** Fortum uses in Finland and Sweden originates from Russia. The coal used in Poland originates mainly from Poland. Fortum's power plants in Russia use coal originating from Russia and Kazakhstan.

Case | **NGO cooperation in India**

In December 2017 the 100-MW Pavagada solar plant was connected to the grid in India. Thousands of migrant workers from diverse backgrounds around the country, with different religions, cultures, ethnicities, language, food habits and social rituals were involved in the construction phase.

Parivartan, a grassroots-level NGO was brought in to help Fortum to draw synergy from this diversity and to ensure functionality between the workers. The Parivartan team members became a part of the community. They shared the same living conditions at the workers' housing accommodations throughout the construction period. They started with small steps by first encouraging the workers to use good hygiene practices and gradually stepped up their efforts by sharing their knowledge about worker's rights, the value of safety, respect for women workers, and how to use and share all the wellbeing facilities provided by the company.

Parivartan employed many ingenious ways of communicating. They organized Saturday movies, and when the house was full they would take a break and talk about one of the topics. Separate events were also organised for female workers to discuss topics important to them. Parivartan trained workers to volunteer as, for example, hygiene inspectors, safety stewards and day care attendants for children. All aligned behaviours were rewarded. Parivartan also brought fun and games to their pitch and communicated thrugh street dramas. This approach ensured better recall and implementation of good practices at the workplace and better personal and group wellbeing.

The results were impressive: the rate of absenteeism dropped, safety compliance increased, and the use of alcohol or other misconduct became nonexistent.

Fortum's activities have also been appreciated by the governmental health officials. Our well maintained housing accommodations and the high standards achieved in preventing diseases common in the area have been showcased as a benchmark for other solar developers.

Sustainability indexes

Fortum was ranked in category A- (scale from D- to A, A being the highest score) and one of the top companies in the utilities sector in the annual CDP (formerly Carbon Disclosure Project) rating 2017. The rating means that the company represents best practices in environmental stewardship, understands risks and opportunities related to climate change, and implements strategies and approaches to mitigate and accommodate these risks and opportunities. CDP is an international, not-for-profit organisation, which represents 827 institutional investors.

Fortum is included in the ECPI® Indices. These indices are used for benchmarking, thematic investments, risk management purposes and to create index-tracking investment strategies or ETF's (Exchange-traded funds). ECPI is a leading rating and index company dedicated to ESG Research (Environmental, Social and Governance) since 1997.

Fortum is included in the STOXX Global ESG Leaders indices which list global leaders in terms of environmental, social and governance (ESG) criteria. The family of indices is made up of three specialised indexes for the categories mentioned and one broad index which sums up the specialized indexes.

German oekom research AG has awarded Fortum a Prime Status (B-) rating. Prime Status means that Fortum is among the best companies in its sector and fulfils industry-specific best-in-class requirements. Oekom research AG annually assesses about 3,800 companies.

Fortum has been integrated into the Euronext Vigeo Eurozone 120 index as of December 2016. This index distinguishes the 120 companies in the Eurozone region achieving the most advanced environmental, social and governance performances.
The assessment is based on a review of up to 330 indicators.

Fortum has been included in the NASDAQ OMX and GES Investment Service's OMX GES Sustainability Finland index. It provides investors with reliable and objective information about company performance in sustainability. GES Investment Services compares leading companies listed on NASDAQ OMX Helsinki and their responsibility in environmental, social and governance issues. The 40 top-ranking companies in the assessment are included in the index.

Economic responsibility

For Fortum, economic responsibility means competiveness, performance excellence and market-driven production that create long-term value for our stakeholders and enable sustainable growth. Satisfied customers are key to our success and active consumers will have a crucial role in the future energy system.

Fortum has indirect responsibility for its supply chain. We conduct business with viable companies that act responsibly and comply with the Fortum Code of Conduct and the Supplier Code of Conduct.

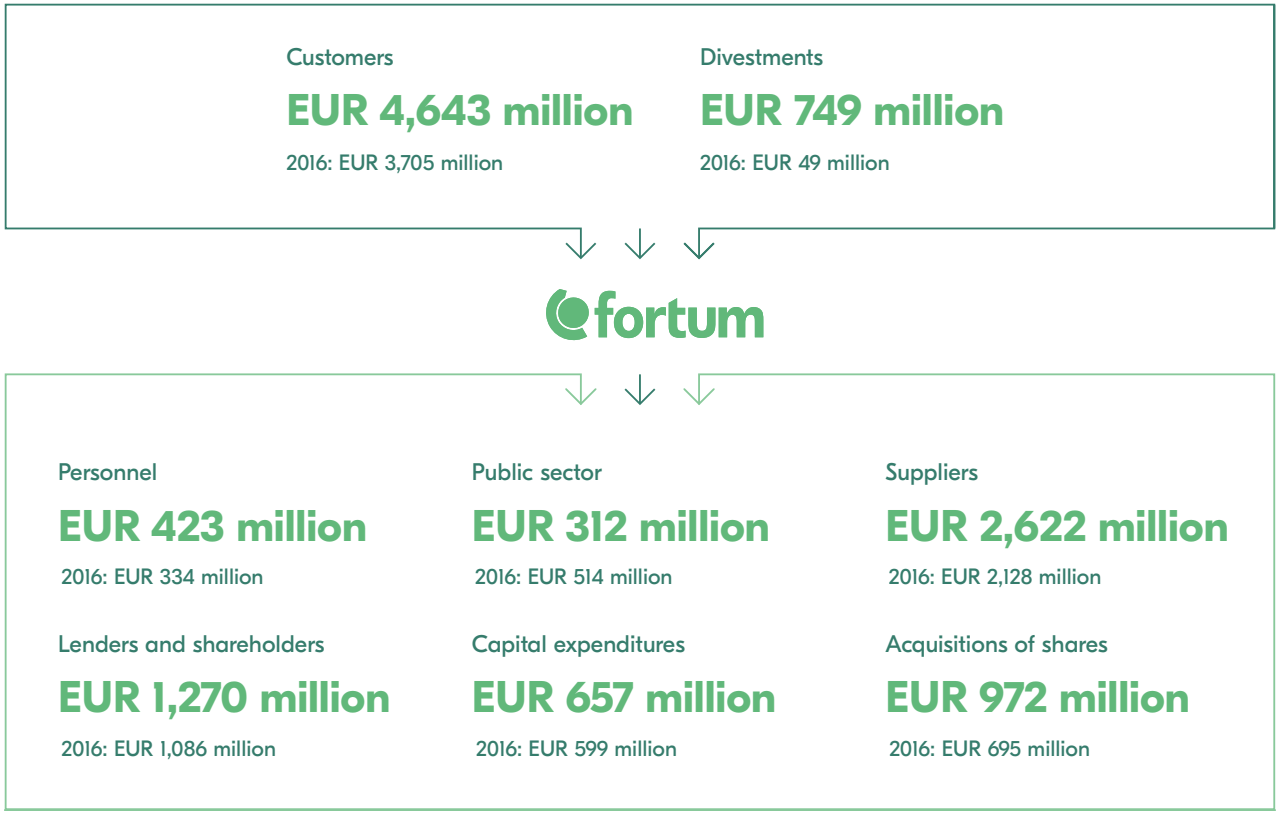
Economic impacts

Fortum is a significant economic actor in Finland, Sweden, Russia, Poland, Norway and the Baltic countries. We continuously monitor the impact and wellbeing generated by our operations to our stakeholders. The key stakeholders include lenders and shareholders, customers, personnel, suppliers of goods and services, and the public sector.

The most significant direct monetary flows of Fortum's operations come from revenue from customers, procurements of goods and services from suppliers, compensation to lenders, dividends to shareholders, growth and maintenance investments, employee wages and salaries, and taxes paid.

Our operations also have indirect economic impacts. The Finnish State owns 50.8% of Fortum's shares, and we contribute to a functioning society by, among other things, paying taxes and dividends. These secure society's basic functions and build wellbeing. Investments and the procurement of goods and services provide employment both locally and outside our operating areas. New investment proposals are assessed against sustainability criteria. In terms of suppliers of goods and services, we also assess the global impacts, paying particular attention to suppliers of goods and services operating in risk countries. The wages and taxes paid have a positive impact on local communities.

Distribution of added value



Monetary flows by stakeholder group in 2015–2017 (GRI 201-1)

EUR million		2017	2016	2015
Generation of added value				
Income from customers	Income from customers on the basis of products and services sold and financial income	4,643	3,705	3,517
Divestments	Income from divestment of shares, business activities or plants	749*	49	55
Purchases from suppliers	Payments to suppliers of raw materials, goods and services	-2,622	-2,128	-1,623
Fortum produced added value		2,770	1,627	1,950
Distribution of added value				
Employees compensation	Wages, salaries and remunerations and other indirect employee costs	-423	-334	-351
Lenders and shareholders compensations	Dividends paid to investors, interest, realised foreign exchange gains and losses and other financial expenses	-1,270	-1,086	-1,119
Public sector	Income and production taxes paid, support for society and donations	-312	-514	-351
Distributed to stakeholders, total		-2,004	-1,934	-1,821
Surplus/deficit cash		**765**	**-307**	**128**
Capital expenditures		-657	-599	-527
Acquisitions of shares		-972*	-695	-43
Discontinued operations [1)]				6,457
Surplus/deficit including investments and discontinued operations		**-864**	**-1,601**	**6,015**

1) Includes the electricity distribution business divested in 2015.

* Divestments and acquisitions of shares are mainly related to the restructuring of the ownership in Hafslund. Further information in Financial Statements Note 38 Acquisitions and disposals.

In 2017, the difference between added value generated and distributed to stakeholders was EUR 765 (2016: -307) million for the development of own operations.

The distribution of the economic added value generated by our operations to the most significant operating areas is reported in the following parts of the annual reporting:

- SALES BY MARKET AREA BASED ON CUSTOMER LOCATION: FINANCIAL STATEMENTS, NOTE 5
- EMPLOYEE COSTS BY COUNTRY
- TAX FOOTPRINT

We have included investments in our own assessment of economic impacts, as their annual volume and impact on the society is significant. In 2017 we invested EUR 375 (2016: 270) million in CO_2 free energy production. Capital expenditure by country and by production type is presented in the Financial Statements, Note 17.2 Capital Expenditure.

Provisions related to nuclear power are covered in the Financial statements, Note 28 Nuclear related assets and liabilities. Financial implications and other risks and opportunities due to climate change, as well as emissions trading are reported in the section ▸Climate change mitigation. Our pension arrangements conform to the local regulations and practices in each operating country; the arrangements are discussed in the Financial Statements, Note 30 Pension obligations.

In 2017 we received financial support from the public sector in the form of investments, R&D and other significant grants totalling EUR 1.7 (2016: 3.8) million. The figure excludes free emission allowances and electricity certificates as well as electricity and heat price related subsidies.

Customer satisfaction and reputation

For Fortum, customer satisfaction and reputation are a top priority in implementing the company's strategy and in growing the business. We have set Group-wide targets for customer satisfaction and for our reputation.

Customer in the centre

The Group-wide Customer in the centre development programme, which was launched in 2015 with the aim of promoting a customer-centric culture in our company, continued in 2017. One of our five must-win battle (MWB) development programmes is "Put the customer in the centre". The programme contains specific projects to improve the customer experience and our offering, e.g., by utilising the opportunities brought by digitalisation. As an expanding company, it is also important to ensure that our new customers are satisfied with our services. In 2017 we expanded in Norway, where Fortum acquired 100% of Hafslund's Markets business area, which consists of several electricity retail brands. In conjunction with that, Fortum gained 1.1 million new customers, increasing our Nordic customer base to 2.5 million.

One Fortum survey provides information about all stakeholder groups

We use the extensive One Fortum survey to annually measure customer satisfaction and our reputation and the factors that impact them. The survey is conducted yearly in spring and it covers customers, decision makers, capital markets, non-governmental organisations and opinion influencers as well as Fortum's personnel. In Finland and Sweden, we also survey the views of the general public and media. During autumn we also conduct a follow-up survey among our electricity sales customers.

We conducted the One Fortum survey in 2017 in Finland, Sweden, Norway, Poland, the Baltic countries, Russia and India. Over 4,600 customers and nearly 3,100 other stakeholders were interviewed. We also monitor other publicly available research sources, but up to year-end 2017 we have defined Group targets and our identified development areas on the basis of the One Fortum survey results. As of 2018 we will use multiple monitoring data to best accommodate the multiple electricity retail brands Fortum now owns after the Hafslund acquisition.

Customer satisfaction

In the annual One Fortum Survey in spring, our district heating customers' satisfaction remained overall fairly unchanged and in most countries on a good level. Among our retail electricity sales customers, the satisfaction decreased somewhat in Norway and in Poland, whereas in Finland and Sweden the results were stable. Our Power Solutions customers ranked us a bit lower this year compared to last year, but the satisfaction is still on a very good level. The Recycling and Waste Solutions unit was not part of the One Fortum survey in spring 2017. In the autumn 2017 One Fortum follow-up survey, the results were stable among the electricity retail customers in Finland and Norway compared to autumn 2016, while in Sweden we improved a bit. We saw a slight decrease in the satisfaction in Poland.

In the autumn 2017 measurement we also included new Fortum units in the survey scope. Several of the acquired Hafslund Markets brands were measured as well as our Recycling and Waste Solutions unit, which had the highest customer satisfaction level of all measured Fortum units in the One Fortum Survey.

Our Group-level target for all business areas in 2017 was to achieve a customer satisfaction rating of "good", i.e. 70–74 on a scale 0–100, in the One Fortum survey. The target was achieved among all business areas, but not in retail electricity sales.

Other public customer satisfaction results

The international and independent EPSI Rating annually surveys the level of satisfaction of electricity retail company customers in Finland, Sweden and Norway.

Customer satisfaction [1] in 2015–2017

	2017	2016	2015
Finland			
Fortum	75.6	73.3	74.7
Sweden			
Fortum	56.1	53.4	64.4
Göta Energi [2]	64.7	62.9	64.4
SverigesEnergi [2]	60.5	61.0	68.8
Norway			
Fortum	71.1	72.7	75.6
Hafslund Strøm [2]	68.2	70.3	66.6
NorgesEnergi [2]	71.9	71.3	71.4

1) EPSI Rating in Finland and Norway; Svenskt Kvalitetsindex in Sweden

2) Brands acquired through the Hafslund acquisition

Reputation

Our reputation is strongest amongst opinion influencers and non-governmental organisations, followed by decision makers and our own personnel. The biggest change compared to the previous year was among capital markets, where the result recovered significantly from the drop in the previous year. Our reputation continues to be weakest among the general public. Based on the survey results, we should continue our efforts to improve social responsibility and customer centricity and to maintain our good operational expertise.

The Group-level target for our reputation in 2017 was a rating of 70.7 in the One Fortum survey, measured as the average rating given by all stakeholders included in the One Fortum Survey, apart from customers. Rankings given by customers are not included in the reputation index calculation because we treat customer satisfaction as a separate entity. In 2017, we achieved an average rating of 72.3 among these stakeholder groups. The target set for 2018 (73.0) includes the same stakeholder groups as in 2017.

Brand

We also monitor brand development, i.e. what impression the general public has about our brand. The survey includes the measurement of, e.g., brand awareness, preference and brand attributes.

64–76
Customer satisfaction
Target: 70–74

72.3
Reputation
Target: 70.7

Supply chain management

Fortum is a significant purchaser of goods and services. We actively strive to reduce the environmental impacts caused by our operations and to improve economic and social wellbeing. We also manage risks related to our supply chain. The aim is that open and efficient collaboration creates value for both parties.

Electricity purchases increased significantly

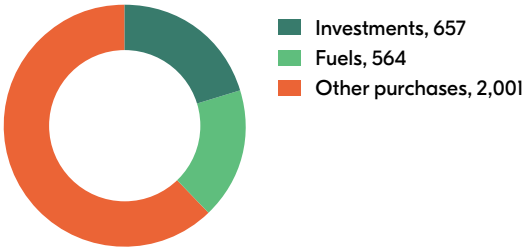
Fortum's purchasing volume in 2017 was EUR 3.2 (2016: 2.5) billion. Electricity purchased from the Nordic wholesale electricity market for retail sales, investments, and fuel purchases accounted for the majority of Fortum's purchases. The number of electricity customers increased with the acquisition of Hafslund, which also increased electricity purchases from the wholesale markets by 40% compared to 2016.

Of our purchases, EUR 657 (2016: 599) million targeted various investments. The biggest investments, EUR 173 million, were made in Finland. A large share of the investments is contracted out in full with materials, installation and other service as well as contractor work included in the total purchase.

Fortum's fuel purchases in 2017 totalled EUR 564 (2016: 524) million. We purchase fuels from international and local suppliers. Our fossil fuel purchases totalled about EUR 498 (2016: 448) million, biomass fuels about EUR 48 (2016: 44) million, and nuclear fuel about EUR 35 (2016: 38) million.

The rest of our purchases, EUR 2.0 (2016: 1.4) billion, consist of other goods and services. The figure includes electricity purchased from the Nordic wholesale electricity market for retail sales. The other goods and services purchases were related to, for example, operation and maintenance as well as to other functions, such as IT solutions, marketing and travel.

Purchases, EUR million



Half of purchases from Europe

Half, i.e. 50%, of the purchasing volume was purchased from suppliers operating in Europe, mostly in Finland, Sweden and Poland. This does not include electricity purchases from the Nordic wholesale market. 47% of Fortum's purchases were from risk countries. The majority of these purchases were from Russia.

Violations related to work conditions and human rights are more likely in risk countries than in non-risk countries. Fortum's risk-country classification is based on the ILO's Decent Work Agenda, the UN's Human Development index and Transparency International's Corruption Perceptions index.

In 2017, we had about 16,000 (2016: 15,000) suppliers of goods and services. About 1,500 of the suppliers were in risk countries. Excluding the Russia Division's local suppliers, there were about 260 suppliers in risk countries.

Purchases [1] excluding investments, 2015–2017

EUR million	2017	2016	2015
Nordic countries	1,548	1,106	935
Russia	586	505	546
Poland	375	279	138
Other countries	56	53	58
Total	**2,565**	**1,943**	**1,677**

1) Includes purchases of fuel, power and other materials and services

Sustainable fuel purchasing

The most significant environmental impacts of our supply chain are related mainly to fuels, particularly to coal and biomasses. There are significant environmental aspects associated with open-pit coal mining, including natural resource efficiency, emissions to air, water and soil, and impacts on biodiversity. Significant occupational health and safety risks can be related to working in underground mines. The sustainability aspects of biomass sourcing are related primarily to biodiversity, but risks particularly outside the EU can also include, for instance, illegal logging or human rights violations.

In fuel purchasing, special attention is paid to the origin of the fuel and to responsible production. In 2017 we had about 150 suppliers in our fuel supply chain, 6% of them operated in risk countries.

Natural gas

The natural gas used in Russia, the Baltic countries and Finland originated from several different suppliers in Russia. The natural gas used in Poland originated from Poland and the natural gas used in Norway originated from Norway.

Coal

The coal used in Finland originated from Russia. The coal used in Poland originated mainly from Poland. The power plants in Russia used coal originating from Russia and Kazakhstan.

Fortum is a member of the ▸Bettercoal initiative, and uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain.

Biomass

The biomass we used consisted mainly of forest residue chips, chips from roundwood and industrial wood residues that originated from Finland, Russia, the Baltic countries, Norway and Poland. About 57% of the wood-based biofuel used by Fortum in 2017 originated from certified sources. The share was over 70% in Finland.

Our goal is that 80% of the wood-based biomass fuel we use is certified by a third party by the end of 2020. We also aim to apply for Chain of Custody certification for our wood-based fuel purchases during 2018.

The bio-oil plant integrated with Fortum's Joensuu power plant has a sustainability system approved by The Finnish Energy Authority. The system is used to prove compliance with nationally legislated sustainability criteria for bio-oil.

Over 70% of the wood-based biofuel we used in Finland originated from certified sources.

Uranium

The fuel assemblies used at the Loviisa power plant in Finland are completely of Russian origin. The fuel supplier acquires the uranium used in the fuel assemblies from Russian mines in accordance with Fortum's agreement. In 2017, the uranium originated from the Krasnokamensk, Khiagda and Dalur mines.

Both ARMZ Uranium Holding Co., a uranium producer, and TVEL, which is responsible for refining and manufacturing uranium, have environmental and occupational safety systems in place in all their plants. All three uranium mines have ISO 14001 environmental certification. The Khiagda mine has also an OHSAS 18001 certified occupational health and safety management system. The zirconium material manufacturing plant and the plant responsible for manufacturing uranium oxide pellets and fuel assemblies have ISO 14001 environmental management system certification and OHSAS 18001 occupational health and safety management system certification.

We regularly assess the quality, environmental, and occupational health and safety management systems of our nuclear fuel suppliers and the manufacturing of nuclear fuel assemblies. In summer 2017, Fortum's representatives assessed the operations of Fortum's Russian fuel supplier's uranium mine. The plant was in good condition technically, and its quality and environmental management systems were certified.

Origin of fuels used at Fortum in 2017 [1)]

Fuel	Country of origin
Biomass	Finland, Poland, Russia, Norway, Baltic countries
Coal	Russia, Kazakhstan, Poland
Natural gas	Russia, Poland, Norway
Uranium	Russia
Oil	Russia
Peat	Finland, Estonia

1) Biggest countries of origin by purchase volume in 2017

▸ FUEL CONSUMPTION

Sustainable supply chain

We expect our business partners to act responsibly and to comply with the Fortum Code of Conduct and the Supplier Code of Conduct. Fortum's key tools in supply chain management are country and counterparty risk assessments, supplier qualification and supplier audits.

Codes of conduct cover basic requirements

The Fortum Code of Conduct forms the foundation for ethical business conduct and defines how we treat others, engage in business, and safeguard our corporate assets.

The Supplier Code of Conduct includes the sustainability requirements for suppliers of services and goods. The Supplier Code of Conduct is based on the principles of the United Nations Global Compact initiative and is divided into four sections: anti-corruption, human rights, labour standards, and the environment. The country and counterparty risk assessment follows the same structure.

The Supplier Code of Conduct is used in all our countries of operation and is included in all purchase agreements with a contract value of EUR 50,000 or more. Training related to the Supplier Code of Conduct were arranged in 2017 for Fortum's Baltic functions and for the Recycling and Waste Solutions personnel in Finland and Sweden.

Supplier qualification

We assess the level of operations of our business partners through supplier qualification and supplier audits. The supplier qualification is made when the purchase volume is EUR 50,000 or more. In the qualification process, suppliers respond to a survey that we use to help determine, among other things, the supplier's possible operations in risk countries, certified management systems, and the occupational safety level of the contractors. We pay special attention also to anti-corruption practices.

If potential risks in the supplier's operations are identified through the questionnaire, a more extensive self-assessment questionnaire may be sent or a supplier audit is conducted. The extensive self-assessment questionnaire is always sent to fuel suppliers and the suppliers of Fortum India.

The supplier qualification process was renewed in 2016, and the majority of the personnel received training in the new practices. Training events were held in 2017 for Fortum's personnel in the Baltic countries and Poland, and Recycling and Waste Solutions personnel in Finland, Sweden and Denmark.

The Russia Division uses its own supplier qualification process that is based on Russian procurement law. In the Russian operations, we set supplier requirements for business principles, ethics, environmental management, and occupational health and safety practices.

Supplier audits support assessments

In supplier audits, we assess the supplier's compliance with the requirements in Fortum's Supplier Code of Conduct. Audits are always done on-site, and they include production inspections, employee interviews, and reviews of documents. If non-compliances are found, the supplier makes a plan for corrective actions and we monitor the implementation of them.

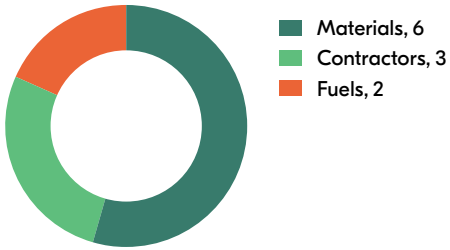
Fortum uses an international service provider for conducting audits, especially in risk countries. In Fortum's own operating countries, the audits are performed mainly by own personnel.

In 2017, we conducted a total of 11 (2016: 13) supplier audits for a total of ten suppliers in China, India, Russia, Slovenia, Estonia and Finland.

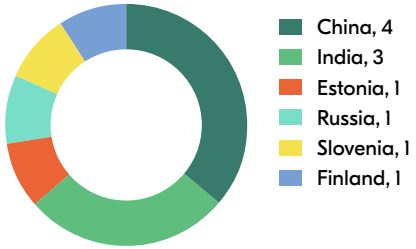
Most of the non-compliances identified in the audits in 2017 were related to occupational safety, overtime hours and remuneration. The audits conducted did not reveal non-compliances related to freedom of association, discrimination, or child or forced labour, but we issued a recommendation to two Chinese suppliers to strengthen their practices to prevent the potential use of child labour.

Fortum uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. Bettercoal audits are always conducted by a third, accredited party. The Bettercoal Assessment Programme was renewed in 2017. In the renewed programme, coal suppliers commit already in the initial phase to the Bettercoal Assessment by signing a Letter of Commitment. In 2017, one of Fortum's Russian coal suppliers and one Kazakhstan coal supplier signed the Letter of Commitment. One of Fortum's Russian coal suppliers was audited in February 2018. Additionally, two of Fortum's coal suppliers have been audited in previous years.

Supplier audits by supplier type



Supplier audits by country



Environmental responsibility

Fortum's aim is to provide our customers with environmentally benign products and services. We strive to continuously reduce the environmental impacts of our operations by using best available practices and technologies. We emphasise a circular economy, resource and energy efficiency, the use of waste and biomass, and climate change mitigation in environmental responsibility.

Our company's know-how in carbon dioxide-free hydro and nuclear power production and in energy-efficient combined heat and power production, investments in solar and wind power, as well as solutions for sustainable cities play a key role in environmental responsibility.

Environmental impacts

Some of the environmental impacts of energy production are global or wide-reaching, some are regional or local. In terms of Fortum's operations, the key environmental aspects include:

- Climate change
- Use of renewable energy sources
- Circular economy
- Flue-gas emissions
- Hydropower's environmental impacts and biodiversity
- Fuel procurement

We manage our environmental impacts with environmental management systems. 99.8% of our electricity and heat production is ISO 14001 certified.

Climate change mitigation

We can reduce our greenhouse gas emissions by increasing carbon dioxide-free energy production and the use of renewable energy sources, and improving energy efficiency of production. 61% of the total electricity we produced in 2017 was carbon dioxide-free. We made several investments and investment decisions that will significantly grow our wind and solar power production in the years ahead.

Circular economy boosts resource efficiency

We recycle significant amounts of waste and energy production by-products generated in our operations. Additionally, our circular economy services separate from municipal waste streams substances that can be utilised as materials and for energy production.

The continuous improvement of resource and energy efficiency is important in terms of the sufficiency of natural resources and climate change mitigation. In improving the energy efficiency of our own production, we have gained expertise that we have put to use in providing energy-efficiency services to other energy companies.

Advanced combustion technology

Fuel use generates sulphur dioxide, nitrogen oxide and particle emissions that degrade air quality and cause acidification of soil and water systems. These emissions can be effectively reduced with various flue-gas cleaning technologies. Special expertise in combustion technology is one of Fortum's strengths, and we have supplied our own power plants and many other energy companies with combustion technology solutions to reduce nitrogen oxides.

Mitigation of hydropower's environmental impacts

Damming rivers and regulating water systems change the natural water levels and discharges and cause changes in aquatic habitats. We actively take part in research activities in the sector and implement voluntary and permit-based measures to develop the biodiversity, fish populations and the multi-use of water systems where we produce hydro power.

▸ ENVIRONMENTAL IMPACTS BY PRODUCTION FORM

Environmental key figures

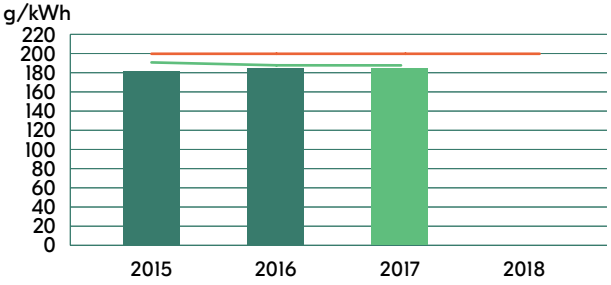
The table and graphs present our key targets and figures for environmental responsibility.

Key figures for environmental responsibility

	2017	2016	2015
Carbon dioxide emissions (Scope 1), million tonnes	18.3	18.6	19.2
Sulphur dioxide emissions, 1000 tonnes	18.8	22.5	19.9
Nitrogen oxide emissions, 1000 tonnes	27.5	26.0	26.8
Particle emissions, 1000 tonnes	15.8	16.8	17.8
Specific CO_2 emissions of power generation, g/kWh	173	173	166
Specific CO_2 emissions of power generation in the EU, g/kWh	28	28	21
Specific CO_2 emissions of total energy production, g/kWh	184	184	181
5-year average, g/kWh	188	188	191
Share of CO_2-free energy in power generation, %	61	62	64
Share of renewable energy in power generation, %	30	30	34
Share of renewable energy in heat production, %	9	7	8
Energy efficiency improvement, GWh/a	131	245	479*
Utilisation of gypsum originated from energy production, %	100	100	100
Utilisation of ash originated from energy production, %	47	37	33
Material recovery rate of waste received from customers, %	57	-	-
Water withdrawal in production operations, million m^3	2,120	2,140*	2,138
of which cooling water, million m^3	1,994	2,035*	2,060
Major EHS incidents, no.	20	22	18
of which environmental permit violations, no.	2	11	14
ISO 14001-certified operations in power and heat production, % of sales	99.8	99.9	99.9

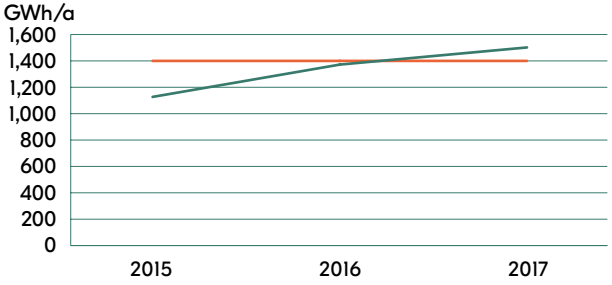
* Figure revised

Specific carbon dioxide emissions of total energy production in 2015–2017



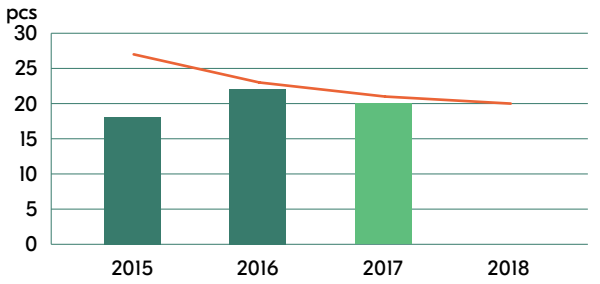
- Annual specific emissions
- Specific emissions (5-year average)
- Target (5-5-year average)

Annual energy savings achieved in 2015–2017



- Cumulative energy savings from 2012
- Target (year 2020)
  New target is 1,900 GWh/a by 2020.

Number of major EHS incidents in 2015–2017



- Number of major EHS incidents
- Target

Sustainable energy production

Our energy production is based primarily on carbon dioxide-free hydro and nuclear power and on energy-efficient combined heat and power production. In line with our strategy, we are targeting a gigawatt-scale solar and wind portfolio.

Fortum's power generation in 2017 was 73.2 (2016: 73.1) TWh and heat production 28.6 (2016: 27.8) TWh. 61% (2016: 62%) of our power generation was carbon dioxide-free and 30% (2016: 30%) was produced from renewable energy sources. About 9% (2016: 7%) of our heat production was produced from renewable, carbon-free energy sources.

Power generation and heat production by energy source are presented in the accompanying tables. The figures include also figures from Fortum's share in associated companies and joint ventures that sell their production to the owners on cost basis.

More renewable energy

We commissioned two new solar power plants in India in 2017, in addition to the previous 15-MW solar power capacity. The new solar power plants are the 70-MW Bhadla solar power plant and the 100-MW Pavagada solar power plant. At the end of 2017, we acquired the 10-MW Pleshanovskaya and 10-MW Grachevskaya solar power plants, and the 15-MW Bugulchanskaya solar power plant in Russia.

Fortum has actively invested also in wind power. At the beginning of 2017, we acquired Nygårdsfjellet's 32-MW wind power park and the licensed Ånstadblåheia (about 50 MW) and Sørfjord (about 90 MW) wind power projects in Norway. Additionally, there were under construction the 35-MW Ulyanovsk wind power park in Russia, and in Sweden the Solberg 75-MW wind power park, of which Fortum's share of ownership is 50%. Ulyanovsk, Solberg and Ånstadblåheia wind power parks are estimated to start production in 2018.

In 2017, Fortum and RUSNANO established a 50/50-owned wind investment fund that was awarded the right to build 1,000 MW of wind power in Russia in 2018–2022 in the RES capacity selection auction. The wind investment fund made a decision on construction of the first 50-MW wind farm in Russia. The wind farm is expected to start production in 2019.

In 2017, the refurbishments of Fortum's own hydropower plants in Sweden and Finland introduced 8 MW of new, renewable electricity production capacity.

New, energy-efficient production capacity

Replacement of a high-pressure turbine was carried out at the Loviisa nuclear power plant's unit 1 during the annual outage. This replacement increased the plant unit's nominal output by 5 MW.

In Russia, the third new CHP unit at the Chelyabinsk GRES power plant was completed at the end of 2017. The plant is fuelled by natural gas, and its electricity production capacity is 248 MW and heat production capacity 174 MW. The first power plant unit of the same size was completed in late 2015 and the second in spring 2016.

Construction of the new CHP plant in Zabrze, Poland, continued; the plant is scheduled for completion in 2018. The power plant has a maximum production capacity of 75 MW electricity and 145 MW heat, and the plant replaces the old coal-fired plants units in Zabrze and Bytom. The plant is primarily fuelled by refuse-derived fuel (RDF) and coal. The Russia and Poland investments improve the efficiency of energy production and reduce carbon dioxide and other emissions into the environment in relation to produced energy.

Energy production from waste and biomass fuels

In early August 2017, Fortum concluded the restructuring of its ownership in Hafslund together with the City of Oslo. In the arrangement, Hafslund's district heat business operations and the City of Oslo's waste-to-energy company Klemetsrudanlegget AS (KEA) were combined into one company, and Fortum acquired 50% of the combined company. Fortum has operational responsibility for the joint venture.

The total heat production capacity of Fortum Oslo Varme is 1,111 MW. The Klemetsrud waste-to-energy plant incinerates mainly municipal waste, and the plant's production capacity is 148 MW heat and 19 MW electricity. Haraldrud's heat power plant has a 56-MW bioboiler, a 30-MW waste boiler, a 25-MW electricity boiler and two 50-MW gas boilers. In addition to the Haraldrud heat plant, there are nine other heat plants in the Oslo region.

› ENERGY PRODUCTION FORMS

Power generation by energy source in 2015–2017 (GRI 302-1)

TWh	2017	2016	2015
Hydropower	20.7	20.7	25.0
Nuclear power	23.0	24.1	22.7
Natural gas	25.3	24.3	24.1
Coal	2.6	2.8	2.9
Biofuels	0.8	0.8	0.8
Waste-derived fuels	0.3	0.2	0.1
Wind, solar	0.5	0.1	0.1
Other [1)]	0.1	0.1	0.1
Total	**73.2**	**73.1**	**75.9**

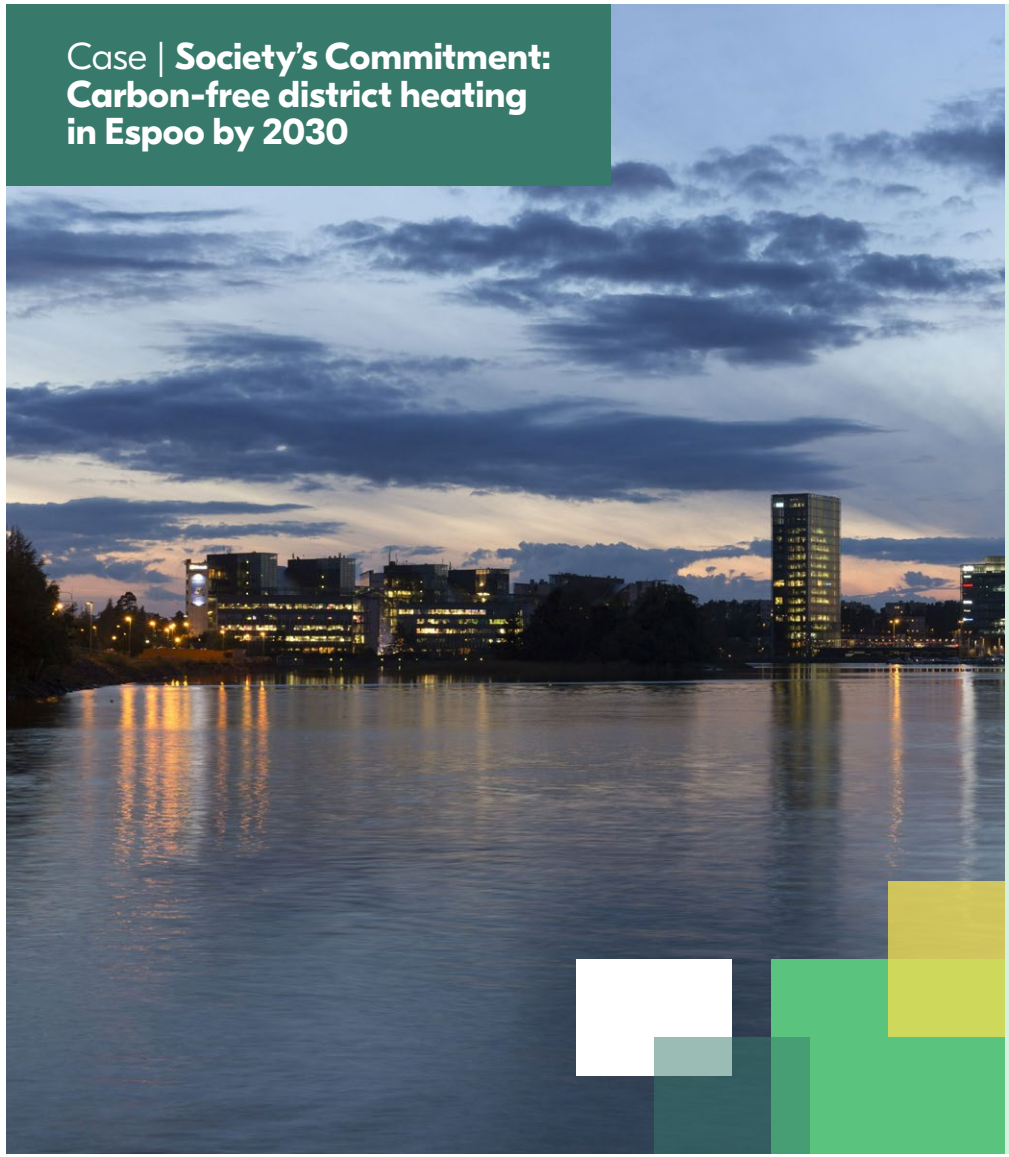
1) Peat, other

Heat production by energy source in 2015–2017 (GRI 302-1)

TWh	2017	2016	2015
Natural gas	18.6	19.7	24.2
Coal	4.8	4.7	5.0
Biomass fuels	1.9	1.9	2.0
Waste-derived fuel	2.3	0.8	0.4
Heat pumps, electricity	0.6	0.3	0.3
Peat	0.4	0.4	0.3
Other [1)]	0.0	0.0	0.1
Total	**28.6**	**27.8**	**32.2**

1) Fuel oil, other

Case | **Society's Commitment: Carbon-free district heating in Espoo by 2030**



The City of Espoo and Fortum made a commitment in 2017 to make Espoo's district heating system carbon-free and CO_2-neutral by 2030. Our joint pledge to Society's Commitment to Sustainable Development has been published on the Finnish National Commission on Sustainable Development's ▸**commitment2050.fi** website. We are also participating in the national implementation of the global Agenda2030 for Sustainable Development.

The goal will be achieved by, among other things, developing and investing in new energy production solutions that aim to utilise waste heat flows, biomass and recycled fuels, as well as geothermal energy when possible. Additionally, we are developing new solutions and services for customers and thereby enabling sustainable, efficient and smart energy use. In city planning, extensive energy analyses at the master and town planning level are being compiled and energy-planning expertise is being utilised to meet climate targets. Land-use planning supports low-emission lifestyles.

Over the past four years, heat production in Espoo has already integrated a heat pump plant in Suomenoja utilising heat from treated wastewater, a conversion to wood pellets at the Kivenlahti heat plant, the combustion of bio-oil at the Vermo heat plant, and a thermal energy storage in Suomenoja. Additionally, we have implemented various waste heat projects, like heat recovery at Ericsson's data centre in Kirkkonummi and heat recovery at the Espoo Hospital. In just a short period of time, these measures have increased the share of waste heat and biomass fuels in heat production from close to zero to more than 25%.

In 2017, we advanced the realisation of the new Kivenlahti biomass fuelled heat plant by submitting an environmental permit application. Our goal is to start construction of the new heat plant during 2018. Additionally, we have advanced other new plant investments that will make it possible to stop using coal in Espoo's district heat production in the 2020s.

We made significant investments in 2016—2017 to expand the district cooling system in the southern region of Espoo. Based on CO_2-free and environmentally friendly free cooling, the expanded district cooling system will be fully deployed in 2018. In the district cooling system the thermal energy generated in the cooling of buildings is recycled back into the district heating network.

Climate change mitigation

Our vision – **For a cleaner world** – defines our ambition to move towards a low-emission energy system and optimal resource efficiency. Our main tools in climate change mitigation are increasing renewable energy production, improving energy efficiency and providing smart energy solutions for our customers.

Risks and opportunities associated with climate change

We believe that our know-how in carbon dioxide-free hydro, nuclear, wind and solar energy and in energy-efficient combined heat and power (CHP) production is a competitive advantage. We expect the concern about climate change to increase the demand for low-carbon and energy-efficient energy products and solutions. Our developing circular economy services also meet this demand, as the use of non-recyclable and non-recoverable waste in energy production replaces fossil fuel and reduces the formation of greenhouse gases generated from biodegradable waste at landfills.

Our operations are exposed to physical risks caused by climate change, including changes in weather patterns that could alter energy demand and energy production volumes. Higher precipitation, flooding and extreme temperatures may affect, for instance, hydropower production, dam safety, and bioenergy supply and availability. Hydrological conditions and temperature also affect the short-term electricity price in the Nordic power market.

Potential strategic risks are related to regulation and to the future energy and climate policy, which impacts decision making on, for example, the technology used at production plants and the fuel selections, such as the use of biomass fuels. In addition to climate change mitigation, we also aim to adapt our operations to the changing climate, and we take climate change into consideration in, among other things, production planning and the assessment of growth projects.

Towards low-emissions production

In Europe, we produce carbon dioxide-free electricity with hydro, nuclear and wind power and at CHP plants that utilise biomass and waste-derived fuels. In the EU area, 96% (2016: 96%) of our electricity production was carbon-free in 2017. The rest of the electricity was produced mainly with coal. We produce solar power in India.

Our electricity production in Russia is based on fossil fuels, mainly on natural gas. Our new plant units in Russia are based on gas turbine technology, which represents the best available technology in natural gas combustion. 61% (2016: 62%) of our total electricity production was carbon dioxide-free.

The following investments and projects, among others, directly or indirectly reducing carbon dioxide emissions were completed in 2017:

- Bhadla and Pavagada solar power plants in India
- District heating and district cooling construction project in Tartu, Estonia
- Heat recovery at a data centre to Espoo district heating network in Finland
- Replacement of the high-pressure turbine in unit 1 at the Loviisa nuclear power plant in Finland
- Refurbishments of hydropower plants in Sweden and Finland

We have estimated that these projects will reduce annual carbon dioxide emissions by about 162,000 tonnes.

Projects under construction and decisions on new investments are described in more detail in the
▸Sustainable energy production section.

The Tartu district heating and district cooling system expansion project wins the Global District Energy Climate Award 2017.

Climate-benign products and services

We offer our customers a range of energy products and
▸energy services to help them improve their energy efficiency and reduce their carbon footprint:

- Carbon dioxide-free electricity products and carbon-neutral heat products
- Solar panel solutions
- Electric vehicle charging systems
- Real-time monitoring and optimisation of energy consumption

The growth of renewable energy increases the need for regulating power to balance the energy system and the need for new storage solutions in the energy system. In a service based on demand flexibility, customers participate with Fortum to maintain the power balance. Household water heaters or house batteries can be used to reduce the need to start up fossil-fuel-based reserve power plants and support the use of renewable energy by balancing peak consumption in the electricity network.

We are expanding our offering also by investing in startups that are developing new technologies.

Innovative fuels

Fortum HorsePower is a service concept in which Fortum delivers bedding to horse stables and picks up the bedding-manure mixture for combustion. In 2017, bedding-manure mixture was collected from more than 200 horse stables in Finland. Fortum combusts the bedding-manure mixture at the Järvenpää CHP plant, and it was delivered also to other energy companies. The service was rolled out also in Sweden in 2017.

The Joensuu bio-oil plant produced about 11,200 tonnes of bio-oil, the majority of which was used at a heat plant in the Joensuu power plant area and at the Vermo heat plant in Espoo, Finland.

Emissions trading

Over 79% of carbon dioxide emissions from our energy production in the Nordic countries, the Baltic countries and Poland are within the sphere of the EU's emissions trading scheme. We had a total of 50 (2016: 45) plants in six member countries within the EU's emissions trading scheme in 2017. Fortum was granted free emission allowances corresponding to 1.0 (2016: 1.0) million tonnes. Our carbon dioxide emissions within the EU's emissions trading scheme were 2.3 (2016: 2.7) million tonnes. In terms of the emissions allowances, we had a deficit and had to purchase the shortfall of emissions allowances from the markets.

Fortum's view is that emissions trading is the most cost-efficient way to achieve emissions targets. In late 2017, a consensus was reached between the Commission and the Parliament regarding the revision of the EU's emissions trading directive for 2021–2030; national adoption of it will start in member states in 2018. Fortum expects the revision to make emissions trading more efficient and to strengthen its steering effect. We are of the opinion that the proposed EU governance model should eliminate national and EU-level policy measures that overlap with emissions trading.

We also want to promote the establishment of a global carbon pricing and carbon market. Fortum has signed the Carbon Price Communiqué, an international business statement for setting a price on carbon emissions. We also participate in several international business initiatives promoting the role of business in climate change mitigation. These include the UN Global Compact's Caring for Climate initiative and the World Bank's Carbon Pricing Leadership Coalition initiative. In Finland, Fortum is a member of the Climate Leadership Council.

Carbon funds

Fortum is a participant in the international Prototype Carbon Fund (PCF) climate fund. In 2017, we received a total of about 12,000 CER emission reduction units from this fund. So far, we have received a total of 2,760,000 emission reduction units, and we estimate that we will still receive about 120,000 units during the PCF's operating period.

FORTUM'S POSITION ON THE DEVELOPMENT OF THE EU CLIMATE POLICY

Greenhouse gas emissions

Our greenhouse gas emissions in 2017 totalled 23.3 (2016: 23.6) million tonnes. Scope 1 emissions were 18.4 million tonnes, Scope 2 emissions 0.1 million tonnes, and Scope 3 emissions 4.8 million tonnes. Greenhouse gas emissions are reported on a pro forma basis and the figures of the comparison years have not been adjusted because of partially insufficient data. The effect of the Hafslund business acquisition is estimated to be less than 2% of our greenhouse gas emissions.

Direct greenhouse gas emissions — Scope 1

The majority of our greenhouse gas emissions are generated from the use of fossil fuels in electricity and heat production.
A small amount of emissions is generated from the use of company vehicles and leaks related to the natural gas distribution. Our direct greenhouse gas emissions were 18.4 (2016: 18.8) million CO_2-equivalent tonnes. The share of carbon dioxide from our direct greenhouse gas emissions was 99%. The share of Scope 1 greenhouse gas emissions from our total greenhouse gas emissions was 79%.

Direct greenhouse gas emissions in 2015—2017 (GRI 305-1)

Mt CO_2-eq	2017	2016	2015
CO_2	18.3	18.6	19.2
CH_4	0.01	0.01	0.01
N_2O	0.09	0.17	0.14
HFCs	0.00	0.00	0.00
SF_6	0.00	0.00	0.00
Total	**18.4**	**18.8**	**19.3**

Direct carbon dioxide emissions by country in 2015—2017 (GRI 305-1)

million tonnes	2017	2016	2015
Finland	1.7	2.0	1.3
Russia	15.4	15.5	17.0
Poland	0.7	0.8	0.8
Other countries	0.5	0.3	0.1
Total	**18.3**	**18.6**	**19.2**

Of the direct carbon dioxide emissions, 84% (2016: 83%) originated from the Russian operations and 9% (2016: 10%) from Finland. Carbon dioxide emissions decreased from the previous year by about 260,000 million tonnes primarily because of the decreased condensing power production. Fortum's direct biogenic carbon dioxide emissions were 1.2 (2016: 1.3) million tonnes.

The calculation of greenhouse gas emissions covers carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorinated hydrocarbons (HFCs) and sulphur hexafluoride (SF_6). Carbon dioxide emissions as well as methane and nitrous oxide emissions have been calculated on the basis of plant-specific fuel data. The amounts of HFC compounds and SF_6 are reported on the basis of the amounts of gas added to the equipment. Specific emission factors of gases are based on IPCC publications.

Indirect greenhouse gas emissions — Scope 2

Greenhouse gas emissions from the production of electricity purchased for our own use were 102,700 (2016: 95,500) tonnes of carbon dioxide-equivalent. Carbon dioxide emissions accounted for 99.6% of this. The share of Scope 2 greenhouse gas emissions of our total greenhouse gas emissions was 0.4%.

69% of Scope 2 greenhouse gas emissions have been estimated on the basis of information received from electricity suppliers. The rest, including Scope 2 greenhouse gas emissions in Russia, has been estimated on the basis of country-specific breakdown of electricity production.

Indirect greenhouse gas emissions (Scope 2) in 2015–2017 (GRI 305-2)

t CO_2-eq	2017	2017 (Location-based)	2016	2015
CO_2	102,300	109,900	95,000	85,003
CH_4	75	100	76	52
N_2O	370	600	375	344
Total	**102,700**	**110,600**	**95,500**	**85,400**

Other indirect greenhouse gas emissions — Scope 3

The majority of our Scope 3 greenhouse gas emissions are caused by the purchases of goods and services, investments and the production and transportation of fuels. The transportation of waste received from customers also creates greenhouse gas emissions in our circular economy business. Other activities (e.g. employee travel and waste management) account for less than 1% of Scope 3 greenhouse gas emissions.

Our Scope 3 greenhouse gas emissions in 2017 were an estimated 4.8 (2016: 4.7) million tonnes. The share of Scope 3 emissions was 21% of our total greenhouse gas emissions. We estimate that all our Scope 3 emissions come from fossil energy sources.

Indirect greenhouse gas emissions (Scope 3) in 2015–2017 (GRI 305-3)

t CO_2-eq	2017	2016	2015
Fuel procurement	4,225,800	4,347,900	4,557,000
Purchased goods and services	371,700	233,700	83,000
Capital goods	229,400	142,700	50,000
Other activities	17,600	17,500	18,000
Total	**4,844,500**	**4,741,800**	**4,708,000**

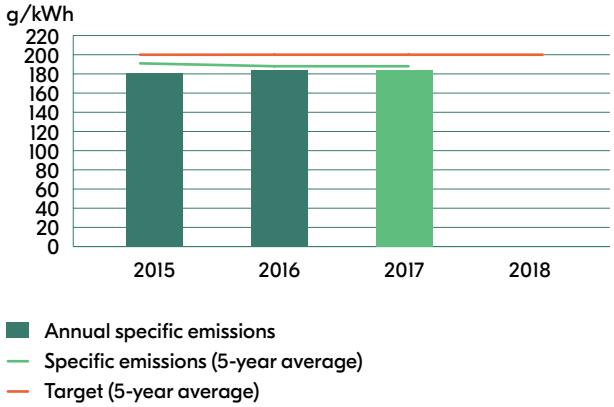
We report Scope 3 greenhouse gas emissions in accordance with the requirements of the Corporate Value Chain (Scope 3) Accounting and Reporting standard. The volumes describing the scope of the various activities have been obtained from our monitoring and reporting systems.

About 18% (2016: 20%) of the purchases were excluded from the purchasing categories defined by Fortum's Procurement function, due to insufficient reporting. The emissions for these are estimated with the average emissions factor of the specified purchasing categories. The specific emission factors used in calculating the greenhouse gas emissions are based on different literature sources.

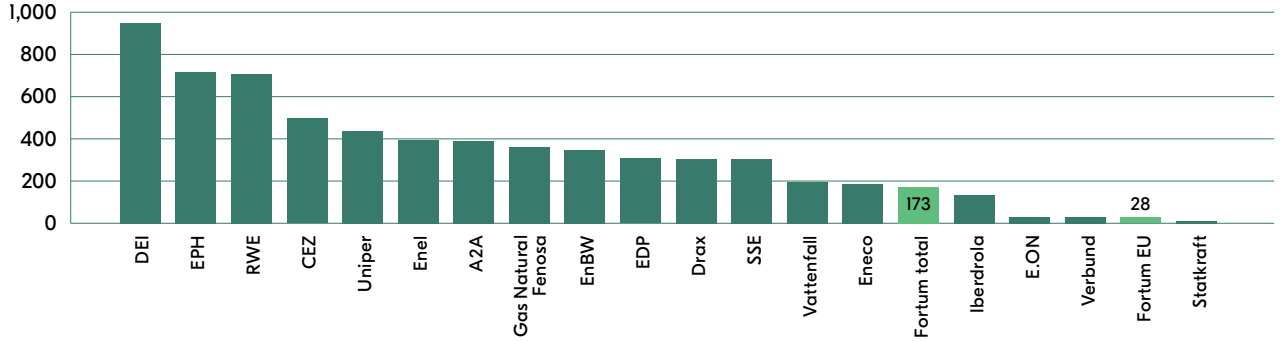
Specific carbon dioxide emissions

Our specific carbon dioxide emissions (Scope 1) from total energy production in 2017 remained at the same level and were 184 (2016: 184) g/kWh. The five-year average, including 2017, was 188 (2016: 188) g/kWh, which is below the target of 200 g/kWh.

Specific carbon dioxide emissions of total energy production in 2015–2017 (GRI 305-4)



Specific CO_2 emissions of major utilities in Europe, g CO_2/kWh electricity, 2016



Note: All figures, except "Fortum total", include only European power generation.
Fortum's specific emissions of the power generation in 2017 in the EU were 28 g/kWh and in total 173 g/kWh, same as in the previous year.
Source: PwC, December 2017, Climate Change and Electricity (including companies with power generation only), Fortum

Our specific carbon dioxide emissions from total electricity production (Scope 1) in 2017 were 173 (2016: 173) g/kWh. Our specific carbon dioxide emissions from power production in the EU area were 28 (2016: 28) g/kWh. The specific carbon dioxide emissions from our electricity production, measured as g CO_2/kWh, are low compared to other European electricity producers. Our specific emissions in 2016 were one of the smallest among European major electricity utilities. European reference data for 2017 is not yet available.

The boundary for specific carbon dioxide emissions generated from electricity production differs from other environmental reporting. The figures include also figures from Fortum's share in associated companies and joint ventures that sell their production to the owners on cost basis. This electricity production is based on hydro, wind and nuclear power, and the production doesn't cause direct carbon dioxide emissions.

In the calculation of electricity production's specific emissions, CHP plant emissions have been allocated for electricity and heat using the efficiency method presented in the Greenhouse Gas Protocol guidelines, with heat production efficiency of 90% and electricity production efficiency of 40%.

188 g/kWh

Specific CO_2-emissions, 5-year average

Target: <200 g/kWh

Improving energy efficiency

Energy efficiency is a key factor in energy production – from both an economic and environmental perspective. Improving energy efficiency at power plants refers to measures we implement to increase the efficiency of production processes or reduce the energy consumption of plants or equipment. This enables us to produce more electricity or heat for our customers without increasing fuel consumption.

The energy efficiency of power plants can be increased through investments and technical improvements, preventive maintenance, and by training personnel in the optimal operation of the plant and in monitoring the plant's operating economy. Improving power plant availability also increases energy efficiency, as unplanned plant start-ups are reduced.

Energy-efficiency investments

In fuel-based energy production, we aim to utilise the fuel's energy as efficiently as possible. Our most important means to improve the energy efficiency of fuel use is to increase combined heat and power (CHP) production. In CHP production, up to 90% of the energy content of the fuels can be utilised. Separate electricity production's efficiency is about 40–60%.

A high-pressure turbine was replaced at the Loviisa nuclear power plant's unit 1 in 2017. The replacement increased the unit's nominal output by 5 MW, which means that in an average year it can produce 40 GWh more electric energy. The Loviisa plant's unit 2 will undergo the same replacement during the 2018 annual outage.

In addition, other projects to improve energy efficiency were completed in 2017:

- Refurbishments of hydropower plants in Sweden and Finland, 27 GWh
- Heat recovery from a data centre to Espoo's district heating network in Finland, 17 GWh
- Construction of a district cooling plant in Tartu, Estonia, 12 GWh
- Installation of a preheater at the Bytom Miechowice CHP plant in Poland, 9 GWh

The energy-efficiency improvement projects are calculated to yield an annual energy savings of about 131 GWh.

1,502 GWh/a
Energy-efficiency improvement
Target: >1,400 GWh/a by 2020

Target was achieved

Fortum's target has been to achieve an annual energy savings of more than 1,400 GWh by 2020 compared to 2012. By the end of 2017, the annual cumulative energy savings achieved was 1,502 GWh, which exceeded the set target by about 100 GWh. The target was increased by 500 GWh/a, and the new target is to achieve annual energy savings of 1,900 GWh by 2020 compared to 2012.

Energy-efficiency services for homes

Fortum has introduced energy-efficiency services for private customers in Finland and Sweden. Fortum's customers can, for instance, control and optimise the heating of their homes based on electricity price and demand or they can monitor energy consumption with an in-home display.

Energy-efficiency services for businesses

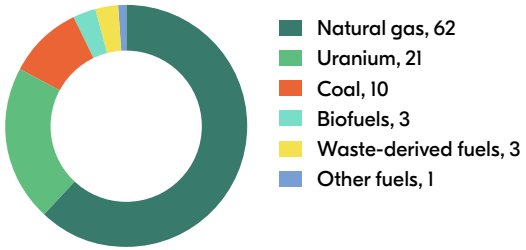
Fortum's operation and maintenance services have been improving the energy-efficiency of our customers' power plants already for decades. We have expanded our energy-efficiency services: in addition to an individual power plant, we can review the development of a broader urban area and the profitability and environmental impacts of investments related to them. In addition to production, the review takes into consideration the energy distribution to customers and the changes in energy consumption. Energy-efficiency services were delivered to Finland and Eastern Europe in 2017.

› ENERGY-EFFICIENCY SERVICES FOR HOMES
› ENERGY-EFFICIENCY SERVICES FOR BUSINESSES

Fuel consumption

The most significant fuel used in our energy production was natural gas, and the next highest fuel use was uranium and coal. Our goal in the future is to produce increasingly more added value from biomass fuels and waste-derived fuels. The share of waste-derived fuels used in energy production in 2017 increased due to the growth of our circular economy business.

Fuel consumption in energy production, %



Fuel use in 2015–2017, energy (GRI 302-1)

petajoules	2017	2016	2015
Natural gas	246.1	247.6	272.0
Nuclear fuel	83.8	91.1	90.5
Coal	39.0	40.6	38.8
Waste-derived fuel, fossil	7.6	3.6	1.0
Peat	1.9	1.8	1.4
Other fossil fuels	0.3	0.6	0.8
Non-renewable fuels total	**378.8**	**385.4**	**404.4**
Biofuels	11.2	10.2	11.4
Waste-derived fuel, renewable	4.4	2.5	1.7
Renewable fuels total	**15.6**	**12.7**	**13.1**
Fuels total	**394.4**	**398.1**	**417.5**

Fuel use in 2015–2017, mass/volume (GRI 301-1)

	2017	2016	2015
Non-renewable fuels			
Natural gas, million m^3	7,151	6,710	8,023
Coal, 1,000 t	1,999	2,208	2,062
Waste-derived fuel, fossil, 1,000 t	751	344	97
Peat, 1,000 t	190	178	135
Fuel oil, 1,000 t	10	21	20
Nuclear fuel, t	23	20	22
Renewable fuels			
Biomass fuels, 1,000 t	1,142	1,041	1,126
Biogas, million m^3	3	3	1
Waste-derived fuel, renewable, 1,000 t	428	225	198

Fuel use by country in 2017 (GRI 301-1)

	Finland	Russia	Poland	Estonia	Denmark	Other countries	Total
Non-renewable fuels							
Natural gas, million m^3	66	7,068	1	4		12	7,151
Coal, 1,000 t	490	1,176	333				1,999
Waste-derived fuel, fossil, 1,000 t	200				189	363	751
Peat, 1,000 t	132			58			190
Fuel oil, 1,000 t	6	1			1	1	10
Nuclear fuel, t	23						23
Renewable fuels							
Biofuels, 1,000 t	371		101	486		184	1,142
Biogas, million m^3	3						3
Waste-derived fuel, renewable, 1,000 t	197					231	428

The energy-specific fuel consumption has been calculated based on the usage volumes and fuel-specific caloric values measured at the power plants. Uranium consumption has been calculated as the thermal heat generation in the reactors. Russia's share of the total fuel consumption in 2017 was about 67%. Russia accounted for 99% of our use of natural gas and 51% of our use of coal.

Energy intensity

In 2017, our fuel consumption in electricity and heat production was 110 (2016: 111) TWh, or 394 (2016: 398) PJ. Additionally, we acquired 479 (2016: 460) GWh of electricity from external electricity suppliers. With these energy resources, we produced 53,900 GWh of electricity, 27,900 GWh of heat, 30 GWh of cooling, and 53 GWh of bio-oil. The total energy consumption, calculated as the difference between the procured energy resources and net production, was 45,000 (2016: 47,900) GWh, or 162 (2016: 172) PJ.

In combustion-based energy production, we aim to utilise the fuel as efficiently as possible. In 2017, our average fuel use efficiency was 59% (2016: 64%). The decline in fuel use efficiency was due to the increased use of waste-derived fuels. The efficiency has been calculated by dividing the electricity and heat energy produced with the fuel by the energy content of the fuel used in the production.

The energy intensity of our own production was 1.7 (2016: 1.4). The intensity figure has been calculated by dividing the amount of used energy resources by the total net production of energy products, including also hydropower, wind power and solar power.

› ORIGIN OF OUR FUELS

Circular economy

Challenges for rapidly growing major cities and growth centres include not only the management of emissions but also growth in waste volumes. Fortum's goal is to offer expert solutions and sustainable circular economy services for cities.

Received and processed waste from customers in 2017

By circular economy we mean that materials are utilised as efficiently as possible and hazardous materials are removed from circulation. We also recover by-products and wastes generated in energy production whenever possible.

Our circular economy business has grown in the Nordic countries. We acquired Turebergs Recycling AB at the end of 2016. The business receives and processes ash and slag and recovers purified materials for use in infrastructure construction materials. An important part of the business is the separation of metals for reuse. The operation is concentrated mainly in the Stockholm area.

We completed the restructuring of the Hafslund business ownership at the beginning of August 2017. The City of Oslo's waste-to-energy plant Klemetsrud, which is the largest energy recovery plant in Norway, and the Haraldrud heat plant, which also has a waste incineration boiler, were transferred to Fortum's ownership through the transaction.

Waste management services

Reliable waste management and resource efficiency are important in a society based on sustainability. Fortum's aim is to promote the transition towards a more extensive circular economy. We offer waste management services for customers in the Nordic countries and Lithuania.

In 2017, we received a total of approximately 1.2 million tonnes of non-hazardous waste from our customers; contaminated soil accounted for 212,000 tonnes of that amount and ash 301,000 tonnes. We also received about 640,000 tonnes of hazardous waste from our customers; contaminated soil accounted for 88,000 tonnes of that amount and ash 88,000 tonnes. As much of the waste stream as possible is recycled, recovered or reused. Waste that is unsuitable for recycling or reuse as a material is incinerated in our waste-to-energy plants. This reduces the use of virgin fossil or renewable fuels in electricity and heat production. Waste that is unsuitable for recovery is disposed of at landfilling sites.

Received and processed waste from customers in 2017 [1)]

kilotonnes, 1,000 t	Finland	Sweden	Denmark	Norway	Lithuania	Total
Received waste from customers						
Non-hazardous waste	350	383		155	280	1,168
Hazardous waste	185	222	237			644
Recovery and disposal						
Recovery of materials [2)]	252	335	33	23	4	646
Energy recovery (waste incineration)	401	172	202	155	280	1,211
Final disposal [2)]	240	126	11	28	82	487

1) Fortum Oslo Varme's (formerly Hafslund's) operations in Norway are included in all figures from 1 August 2017.
2) Includes received waste from customers and also ash from waste incineration

Recovery of materials

Various types of waste can be reused as raw materials. Of the waste received from our customers in 2017, we recovered as materials about 650,000 tonnes; environmental construction materials accounted for about 362,000 tonnes of that amount, recoverable ash accounted for about 159,000 tonnes, and processed raw materials and products about 80,000 tonnes. The material recovery rate of the waste was 57%. In addition, about 226,000 tonnes of recoverable materials originated at Fortum's own power and heat plants.

We are continuously developing activities that increase the proportion of waste materials kept in circulation:

- We refine new plastic out of waste plastic received from customers.
- We pick up and process our customers' waste oils to be refined and reused as industrial lubricants.
- We recycle scrap metals generated in the maintenance activities of our power plants and other facilities. We also recover and separate metals from customers' municipal waste and boiler slag.
- We process ash and slag, sand, sludge, dredging masses and slurries from energy production and other industries for reuse in various types of environmental construction and earthwork.

Hazardous waste treatment

We take hazardous waste out of circulation in a sustainable manner and we clean the hazardous substances from materials that end up in recycling by offering solutions to treat hazardous waste while also producing clean energy and ensuring a safe final disposal. High-temperature incineration ensures the best available solution for the destruction of hazardous substances.

We have three high-temperature incineration plants: in Riihimäki, Finland; Kumla, Sweden; and Nyborg, Denmark. At these facilities, 353,000 tonnes of hazardous waste and 390,000 tonnes of non-hazardous waste were incinerated in 2017, producing electricity and district heating for the surrounding areas.

Contaminated soil

In 2017, we received and treated about 300,000 tonnes of contaminated soil from our customers. We directed metal, rocks, concrete and wood, sieved from the soil for reuse as raw materials. Soil that is suitable for environmental construction is used at our own construction sites and industrial waste reception centres. In addition, we treated about 140,000 tonnes of contaminated soil at customer sites.

› SUSTAINABLE ENERGY PRODUCTION

Waste and by-products

Ash is a by-product of the use of fuels in power and heat production, and gypsum and other desulphurisation products are by-products of flue-gas desulphurisation. Ash and desulphurisation products account for a more than 90% share, on average, of the by-products and waste from our energy production.

The maintenance of power and heat plants generates scrap metal and other conventional industrial waste and, to a smaller extent, waste oil and other hazardous waste. We aim for the highest possible utilisation and recovery of by-products and waste. The waste management service providers we use are properly licensed and reliable waste management companies.

In addition to conventional industrial waste, the Loviisa nuclear power plant also generates radioactive waste, which we treat in accordance with the requirements of Finnish nuclear energy legislation. The volume of radioactive waste generated is small, but special solutions are needed in their treatment and final disposal.

The total volume of by-products and waste generated at Fortum's power and heat plants in 2017 was about 850,000 (2016: 735,000) tonnes. Of this volume, 45% was recycled or reused. Alongside the growth of our circular economy business, the use of waste-derived fuels has increased and, consequently, the volume of by-products.

The Sustainable Development Forum of Finnish Energy selected Fortum's Circular Economy Village project as the Climate Deed of the 2017. Municipal waste is recycled at the Circular Economy Village in Riihimäki.

Ash and gypsum

Ash is created in the combustion of all solid fuels. About 70% of the ash from our plants operating in Europe is utilised as a raw material, e.g. for the construction industry, road construction and soil improvement, and as backfill. Ash from the power plants in Russia is stored in ash basins, because there is no demand for wet ash sludge in Russia.

Coal-fired power plants generate either a wet or semi-dry desulphurisation by-product. Gypsum created as a by-product in the wet desulphurisation process at the Meri-Pori power plant in Finland is suitable for use as raw material for the construction industry. In 2017, 100% (2016: 100%) of the gypsum was utilised. The desulphurisation product created at the Suomenoja power plant is not suitable for utilisation.

In 2017, about 810,000 (2016: 695,000) tonnes of ash, 4,000 (2016: 8,500) tonnes of gypsum, and 12,800 (2016: 12,700) tonnes of the other desulphurisation product were generated. The increase in the volume of ash was due to the increased use of waste-derived fuels. The decrease in the volume of gypsum was due to the reduction in condensing power production in Finland. About 40% of the ash was generated at Russian plants, 21% in Poland and 10% in Finland. The ash recycling rate was 47% (2016: 37%)

By-products that cannot be utilised are transported to the appropriate final disposal at landfilling sites. In 2017, about 446,000 (2016: 453,000) tonnes of by-products were transported for landfilling, or in Russia for ash basins.

The reported volumes of ash and gypsum from our European power plants are based on the weighing of the truckloads. Ash volumes at our Russian power plants are calculated on the basis of the ash content of the coal.

Ash and gypsum handling in 2015–2017 (GRI 306-2)

t	2017	2016	2015
Ash utilisation	377,000	255,000	189,000
Ash disposal	433,000	440,000	381,000
Gypsum utilisation	4,000	8,500	2,300
Gypsum disposal	0	0	0

Radioactive waste

At the Loviisa nuclear power plant, low-level radioactive maintenance waste is disposed in Loviisa's repository. In 2017, 19.0 (2016: 13.9) tonnes of low-level radioactive waste went into final disposal. Intermediate-level radioactive liquid is generated mainly from spent ion exchange resins and wastewater from the controlled area. Liquid waste is processed into solid form at the solidification plant for liquid radioactive waste before final disposal in Loviisa's repository.

High-level spent nuclear fuel is stored in an interim storage at the Loviisa power plant site. In 2017, 23.4 (2016: 19.6) tonnes of spent nuclear fuel was removed from Loviisa power plant's reactors. 2.9 (2016: 2.5) g/MWh of spent fuel was generated per produced energy unit. Fortum and Teollisuuden Voima have established Posiva Oy to handle the technical implementation of the final disposal of the spent fuel, and final disposal is scheduled to begin at Olkiluoto in Eurajoki in the first half of the 2020s.

Other waste

Other, conventional waste generated during the operation and maintenance of power and heat plants is sorted, and waste that can be recycled, such as metal, is sent for further processing. Hazardous waste is delivered to licensed hazardous waste treatment facilities.

The power and heat plants generated a total of about 34,200 (2016: 29,400) tonnes of other waste, approximately 3,200 (2016: 2,700) tonnes of which was hazardous waste. In addition, about 500 tonnes of contaminated soil was removed for disposal in Finland. The reported volumes of other waste are based mainly on the information provided by the waste management companies.

Waste handling in energy production plants in 2015–2017 (GRI 306-2)

t	2017	2016	2015
Material recovery of non-hazardous waste	3,100	5,500 *	8,000
Energy recovery of non-hazardous waste	300	300	-
Final disposal of non-hazardous waste	27,500	20,900	17,400
Material recovery of hazardous waste	200	200	90
Energy recovery of hazardous waste	800	300	-
Disposal of hazardous waste	2,200	2,300	1,700
Total	**34,200**	**29,400 ***	**27,200**

* Figure revised

Material recovery from demolition project of the power plant

Fortum decided on the demolition of the Inkoo condensation power plant in the end of 2016, and the demolition work started in spring 2017. The Inkoo demolition project is one of the biggest demolition projects in Finnish industrial history. Fortum's recycling and waste solutions is responsible for the demolition work. In 2017, a total of about 9,200 tonnes of waste was generated in the demolition project of the Inkoo power plant, and about 1,000 tonnes of it was hazardous waste. About 90% of the dismantled waste was recovered. In addition, about 200 tonnes of contaminated soil was removed.

▸ NUCLEAR WASTE MANAGEMENT
▸ FINAL DISPOSAL OF SPENT NUCLEAR FUEL

Biodiversity

The degradation of biodiversity is one of the biggest environmental problems globally. We need to know our impacts and dependencies on biodiversity and ecosystem services to be able to assess the related risks and opportunities.

Our impacts on biodiversity

Fortum's impacts on biodiversity are primarily related to our hydropower production operations in Finland and Sweden. Hydropower construction and the related water regulation alter the conditions in water systems and thus impact the diversity of the aquatic habitat and, in particular, the fish population. Emissions from fossil fuel-based energy production may decrease local biodiversity, especially in Russia. Indirect impacts may be caused by, for example, large-scale procurement of biomass and other fuels. However, our production of CO_2-free energy replaces fossil fuel-based energy production and thus mitigates climate change, which is globally one of the greatest threats to biodiversity.

Fortum's biodiversity engagement

In 2017 we updated ▸ Fortum's Biodiversity Manual, which defines Fortum's approach in biodiversity management. According to the manual, biodiversity issues are systematically considered as part of our environmental management processes and our operations throughout Fortum. The manual contains specific instructions for biodiversity issues in current operations, new projects, the supply chain as well as for reporting and communication.

Sustainable use of biomass fuels has been actively debated in recent years. Fortum's position is that EU-wide, harmonised and binding sustainability criteria for all bioenergy is needed. The EU Commission's proposal to extend the existing sustainability criteria for bioliquids to cover also solid biomass and biogas is in line with Fortum's position. The proposal is included in the EU Commission's legislative "Smart and Clean Energy Package" published on 30 November 2016. Legislation is expected to be finalised in 2018.

Fortum is a member of the Bettercoal initiative and uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. Biodiversity aspects related to coal mining are covered in Bettercoal assessments.

We aim to improve biodiversity in connection with our operations, carry out biodiversity-related projects and cooperate with stakeholders in projects. We assess the impacts of our new projects. We offset and reduce the impacts of hydropower production on biodiversity. We carried our obligatory fish care measures valued at EUR 1.9 million and several types of voluntary environmental projects valued at EUR 1.5 million.

Habitat restoration and other projects

Most of our habitat restorations and other projects improving biodiversity are related to hydropower production. Additional information about our hydropower-related projects supporting biodiversity is available ▸ on our website.

River strategies focus on environmentally effective solutions

Based on the earlier mapping of valuable riverine biodiversity areas in 2015, by the end of 2017 we finalised our river strategies for all of the rivers where we operate hydropower plants. The aim of these river-tailored strategies is to balance the increasing need for flexible hydropower and the needed case-by-case selected environmental improvements by focusing environmental actions on valuable species and habitats in the most important areas environmentally. We started implementing the strategies in 2017 with the licensing of the first projects.

Restoring river stretches by tearing down dams

In Sweden, we tore down the Acksjön dam in a tributary of the River Klarälven. The operation was successfully carried out in cooperation with local stakeholders. The tearing down resulted in a new 100 m long stretch of river and the removal of a migration barrier that will benefit biodiversity. A similar case is the Kolsjön dam. An application for removal of the Kolsjön dam has been submitted to the environmental court.

In Sweden, we have mapped out and prioritised old dams that have low value for hydropower production, but have environmental impacts on riverine ecosystems. The aim is to restore habitats and river continuum in places with biodiversity benefits.

Restoring fish habitat

At the River Dalälven in Sweden, we restored a 180 m-long river stretch in 2017. The aim was to increase possibilities for sea trout to spawn in the River Dalälven. Gravel and boulders were added to the river. We carried out the restoration in cooperation with the local fishing organisation in Älvskarleby. The restoration was part of the "Biodiversity in lower Dalälven" project, with the goal to enhance fish spawning of migratory fish in the River Dalälven. The project, a cooperative effort between regional authorities and another hydropower company, was finalised in 2017.

Monitoring of the River Vuoksi in Finland gave positive results regarding fish abundance at previously restored riverine habitats upstream of the Imatra hydropower plant. Together with our cooperation partners, the City of Imatra and regional environmental authorities, the restored areas were further amended by morphological modifications in November 2017.

Protection of red listed species

We improved the habitat of Myrstarr *(Carex heleonastes),* a rare aquatic plant species growing downstream of the Laforsen dam in the River Ljusnan in Sweden. The plant habitat was cleared from bushes and other vegetation that would suppress the Carex plants. The conditions need to be maintained to safeguard the plant at the site.

Biomass fuels actions

Forest certification schemes will continue to play a strong role in verifying the sustainability of wood-based biomass. Certified wood-based biomass fuel originates from sustainably managed forests in which special attention is paid to biodiversity. We annually collect data on the volume of certified wood-based biomass fuel used in our power plants in Finland, Sweden, Poland and the Baltics. Our goal is that 80% of all wood-based biomass fuel we use is verified by a third party by the end of 2020. We aim to obtain a Chain of Custody certificate for our wood-based biomass fuel purchasing by the end of 2018.

› ENVIRONMENTAL IMPACTS OF HYDROPOWER PRODUCTION

We established a private nature conservation area in Muhos as a 100th anniversary gift to Finland.

Case | Fish trap and transport facility for Montta power plant in the River Oulujoki, Finland

A trap and transport facility for fish was completed in late August in conjunction with the Montta hydropower plant on the River Oulujoki. We use the trap and transfer facility to capture salmon and trout as they migrate upstream; it enables the fish to be efficiently and safely transported around the migration barriers. The facility correspond to the lower portion of a fishway. The fish swimming into the facility can be transferred into a tanker truck and transported across several power plant dams to tributaries upstream for spawning. Based on experiences gained elsewhere, this results in significantly more broodfish in the spawning areas than if all the necessary fishways between the sea and the spawning areas were built. Fortum has good experiences with transporting landlocked salmon in Sweden on the River Klarälven, which is harnessed for hydropower production.

From the new trap and transport facility, fish can also be transferred into reservoirs for fishing, or their roe that has gone through natural selection can be taken to the Montta fish farm where Fortum produces salmon and sea trout for stocking in the River Oulujoki.

The trap and transport facility is a joint project by Fortum, the Muhos, Utajärvi and Vaala municipalities, the North Ostrobothnia ELY Centre, and the Ministry of Agriculture and Forestry to revitalise salmon and trout in the River Oulujoki. The facility has special national significance because it will gain experiences for use in migrating fish projects on other constructed rivers.

The trap and transport facility is part of the overall conservation of the fish population in the River Oulujoki. Fish conservation is based on the stocking of migrating fish, strengthening the natural life cycle, and developing the quality of the stock fish. In recent years, Fortum has invested over EUR 5.5 million in the modernisation of the Montta fish farm and the construction of the trap and transport facility.

Emissions into air

Fortum's activities cause various emissions into air. Greenhouse gases that accelerate global climate change are generated primarily from the use of fossil fuels and the combustion of waste of a fossil origin.

Flue-gas emissions causing local environmental and health effects are generated from all incineration. Nitrogen oxides are generated from the nitrogen contained in the fuel and in the combustion air. Sulphur dioxide, in turn, is generated from the sulphur that is an impurity in, e.g., coal, peat and oil. Particle emissions are fine-grained ash generated primarily in the combustion of solid fuels and waste. Depending on the origin of the fuel and waste, the particles contain various heavy metals.

Improving air quality

It is possible to decrease nitrogen oxide, sulphur dioxide and particle emissions through fuel selections, combustion technology, and various flue-gas cleaning technologies. Fortum has world-class know-how in combustion technology, and we have delivered combustion technology solutions to reduce nitrogen oxide emissions to many other power utilities. In 2017, we implemented nitrogen oxides reduction projects in Poland, and bio-oil burner modification projects in Sweden.

Our Meri-Pori and Suomenoja power plants are equipped with a desulphurisation plant. Our waste incineration plants located in Riihimäki, Finland; Kumla, Sweden; Nyborg, Denmark; and Oslo, Norway, are equipped with efficient flue-gas cleaning systems. Harmful emissions to air are minimised with various filters and scrubbers selected on the basis of the waste to be incinerated.

Stricter standards

The EU has set very strict limits for flue-gas emissions; meeting the requirements necessitates the use of best available technology (BAT). Our nitrogen oxide, sulphur dioxide and particle emissions have, in fact, decreased significantly in our European production over the past decades. Emissions limits became even stricter when the Industrial Emissions Directive came into force in 2016.

All Fortum power plants operate in compliance with the terms of their environmental permits, and the plants meet the new emissions requirements, for the most part. Investments in flue-gas cleaning process and systems will be made in 2018–2019 at the Suomenoja power plant in Finland and the Rejtana heat plant in Poland.

At Russian power plants, emissions are limited in accordance with Russian legislation. The new legislation currently being drafted in Russia will bring stricter emissions standards in the future.

Flue-gas emissions

Our sulphur dioxide (SO_2) emissions were 18,800 (2016: 22,500) tonnes, nitrogen oxide (NO_x) emissions 27,500 (2016: 26,000) tonnes and particle emissions 15,800 (2016: 16,800) tonnes. 77% (2016: 81%) of sulphur dioxide, 81% (2016: 82%) of nitrogen oxide and 98% (2016: 98%) of particle emissions originated from Russian operations. In 2017, the most significant source of particle emissions, 9,200 (2016: 9,100) tonnes, was the Argayash CHP power plant in Russia.

The reporting of sulphur dioxide, nitrogen oxide and particle emissions from our European power plants is based on continuous measurement. Other flue-gas emissions data is based on discontinuous measurements or are calculated using fuel consumption data and specific emission factors. Specific emission factors are based on measurements taken at regular intervals, on information from the equipment supplier, or on regulatory norms.

Carbon dioxide emissions are reported in the section ▸ Greenhouse gas emissions.

Flue-gas emissions in 2015—2017 (GRI 305-7)

	2017	2016	2015
SO_2, t	18,800	22,500	19,900
NO_x, t	27,500	26,000	26,800
Particles, t	15,800	16,800	17,800
HCl, t	960	1,180	
Lead, kg	3,990	4,140	
Mercury, kg	118	150	105
Cadmium, kg	96	116	
Dioxins, mg	430	504	

Water use

Fortum uses large volumes of water at various types of power plants and in district heating networks.

Risks and opportunities related to water use

Risks related to Fortum's water availability are relatively small and local, according to our assessments. The majority of our water withdrawal volume is seawater for the cooling of power plants. In most cases we don't consume water; it is returned into the same water system from which it was taken. India is the only country, where we operate in areas of high or extremely high water risk; our water use in India is low. Within the policy framework, we identify the implementation of the EU Water Framework Directive in Sweden as a potential risk to hydropower production.

The Argayash CHP power plant in Russia takes water from a nearby lake, the level of which is regulated by pumping water from another lake. The amount of additional water pumped was insufficient until 2017, and the water surface level was reduced significantly. New permit limits, effective in 2017 and 2018, should ensure water adequacy. Fortum also has an ongoing investment project to increase the recycling of water. When the investment is completed part of the purified water can be returned to the production cycle. This will allow to take less water from the lake.

There are currently temporary water loading permit limits in force at the Russian Chelyabinsk CHP-2 and CHP-3 and the Argayash CHP power plants. These power plants have agreed with the authorities on action plan that aims to reduce the load on waterways.

Improving the efficiency of water use and reducing leaks in the district heating network generate cost savings for us. We monitor the water use of our power plants, and we implement measures that improve water use efficiency when needed. With good water use management in hydropower production, we can optimize our production and control the impacts to the environment and to stakeholders, impacts like flooding and droughts.

Water withdrawal in production operations in 2015–2017 (GRI 303-1)

million m^3	2017	2016	2015
Seawater	1,519	1,533	1,487
Fresh surface water	598	605 *	643 **
of which at fish farms	43	33	-
Tap water	2	2	4
Groundwater	0.1	0.1	0.2
Other source	0.3	0.2	4.4
Total	**2,120**	**2,140 ***	**2,138 ****

* Figure revised

** Excluding water volumes used for fish farming

Water use in production operations in 2015–2017 (GRI 303-1)

million m^3	2017	2016	2015
Cooling water	1,994	2,035 *	2,060
Process and auxiliary water	115	93 *	64 **
of which at fish farms	43	33	-
Make-up water for district heat network	11	12	14
Water recycling	13	13	12

* Figure revised

** Excluding water volumes used for fish farming

In our operations we are preparing for changes in water availability in the future as the climate changes. The preparation is related to, for example, production planning, dam safety, investment projects, the rise in the cooling water temperature, and flood protection. In hydropower production planning we are preparing for climate change by taking into consideration changes in precipitation and temperature and extreme weather phenomena. We are also monitoring the need for adjustments to regulation permits with changes in seasonal variation; one permit change is currently under way in preparation for autumn flooding.

The Loviisa nuclear power plant is prepared for nature's extreme phenomena and possible oil spill due to an accident at sea with a seawater-independent back-up cooling system including air-cooled cooling towers.

Our forms of water use

The majority of Fortum's power and heat production capacity is located in the Nordic countries, Russia and Poland. The Baltic Sea and local fresh water systems are the most important water sources for our plants. Municipal tap water is used mainly at CHP plants in major cities.

We withdrew 2,120 (2016: 2,140) million m^3 of water in 2017. Seawater accounted for about 72% of this amount. Our water withdrawal includes 8 million m^3 of water delivered to customers. The reported water withdrawal and water use volumes are based on measurements and on calculations of water consumption.

Cooling water

Condensing power production requires large volumes of cooling water. Cooling water accounts over 90% of our water withdrawal.

Fortum has two condensing power plants in Finland: the Loviisa nuclear power plant and the Meri-Pori power plant. Both are located in coastal areas and use direct seawater cooling. The Loviisa nuclear power plant withdrew and discharged back into the sea 1,372 million m^3 of cooling water in 2017. No water is consumed in the process and the water withdrawn is discharged back into the sea. The only change is an approximately 10 °C increase in the temperature of the cooling water. Additionally, in Russia, Fortum has the Nyagan condensing power plant, which uses river water for cooling.

Condensing power is occasionally produced also at our CHP plants. In most cases, the cooling water is withdrawn from a local water system, such as a river or lake. In Russia and Poland, cooling towers are used, so some of the cooling water evaporates into the atmosphere.

District heating network

Fortum is a major supplier of district heating in Finland, Norway, Poland, Russia and the Baltic countries. Fortum has a total of about 3,400 kilometres of district heat pipes in these countries. Water is used as the heat transfer media in district heating. Some water is lost through leaks that occur in the pipes, so occasionally water must be added to the district heating network.

Process water

A thermal power plant needs water in the water-steam cycle when electricity is generated with a steam turbine. Because of leaks in the pipes, occasionally water must be added to the water-steam cycle. Water is also needed in power plant auxiliary processes, for example in flue-gas cleaning with wet scrubber technology, and in radioactive waste handling and storage at nuclear power plants.

Hydropower production and fish farming

We produce hydropower from water flowing in rivers in Finland and Sweden. The power plants are typically located in big rivers that have no problems with regards to water supply. Water is not consumed in our hydropower production, it is not typically directed to another water system, and the water properties are not altered. However, the water system is often regulated for hydropower production, and the regulation changes the water flow and level patterns compared to their natural state.

We have precise knowledge of the water situation in those waterways where we use hydropower, and we use real-time hydrological forecasts in production planning. We don't report river discharges as a hydropower-related water withdrawal.

We farm and stock fish to offset the impacts of hydropower production. The majority of the fresh water withdrawn for fish farming is returned into the bodies of water with only a slight change in its properties. We have included water use at the fish farms in water volumes since 2016.

Our water use in water risk areas

According to the WRI Aqueduct Water Risk Atlas, the solar power plants in India are the only of our power plants located in high to extremely high risk (level 3–5) areas in terms of water risk. The Amrit (5 MW) and the Kapeli (10 MW) power plants use groundwater we have purchased, and the Bhadla (70 MW) plant uses surface water. Water for the Bhadla plant is withdrawn from the channel shared by several actors in the solar park area. Fortum gets a fixed amount of its water discharge. The Pavagada (100 MW) plant completed at the end of 2017 has not yet used water in 2017.

Water is used to clean the solar panels at our solar power plants in India. India's share of our water use in 2017 was about 6,000 (2016: 4,000) m^3, i.e. only 0.0003% of our total water withdrawal. While the water volumes are small, we aim to increase the efficiency of our water use in India. We have set a target in the Indian solar power production environmental management system to discontinue the use of water for cleaning panels at our current solar power plants by 2020. At the Amrit solar power plant, we have built an absorption basin to collect and absorb rainwater. By improving the efficiency of the cleaning processes, water use at the Amrit and Kapeli power plants decreased by 11% in 2017. We are also developing waterless cleaning methods for solar panels. We will start a waterless cleaning pilot project in the first part of 2018.

Wastewater

Wastewater generated at our power plants is either treated at the power plant's own wastewater treatment plant and discharged into a water system or it is piped to a municipal wastewater system for further processing. In Russia, the wet method is used to pump ash from power plants into ash ponds. Part of the water from the ponds is recycled back to the power plant and part is released into a water system after sedimentation.

Wastewater contains solids and nutrients, like nitrogen and phosphor, and heavy metals. Wastewater effluents can impact local water quality as well as the nutrient and oxygen balance of the water system. Our plants generated a total of 64 (2016: 56) million m^3 of wastewater, of which 97% was released into the environment after being treated and 3% was piped to municipal wastewater treatment plants.

About 66% of the wastewater is discharged water from fish farms. Discharged water is purified and its nutrient content is monitored in line with permit conditions. The sludge water separated from the process water at the Montta fish farm in Finland has been piped to a municipal wastewater treatment plant since 2016, which has reduced the nutrient load on the water system.

About 1.0 (2016: 1.3) tonnes of oil was released into water systems through wastewater.

The thermal load discharged into water systems with cooling water was 17 (2016: 17) TWh. The Loviisa nuclear power plant's share of this was 16 TWh. Temperature measurements indicate that the cooling water has increased the temperature of surface water by 1–2 °C within a 1–2 kilometre radius from the discharge point. The reported wastewater is based on measurements and calculations.

Wastewater emissions by recipient in 2015–2017 (GRI 306-1)

million m^3	2017	2016	2015
Sea	0.7	0.7 *	0.4 **
Fresh surface water	62	54 *	23 **
of which from fish farms	43	33	-
Municipal sewage	1.7	1.3	1.3
Other recipient	0.1	0.1	0.5
Total	**64**	**56 ***	**25 ****

* Figure revised

** Excluding water volumes used for fish farming

NURES products for purifying radioactive waters

Initially developed for the needs of the Loviisa nuclear power plant, the NURES products are a unique solution for purifying radioactive waters. A selective ion exchange material purifies liquid waste more efficiently than any other alternative on the market. In 2017, we continued product deliveries globally, and, in addition to ion exchange materials, we supplied a radioactive liquid purification system to customers in Finland and Germany.

Environmental non-compliances and incidents

At the Group level, we monitor the number of major EHS incidents, which, in part, reflects the quality of environmental management. In 2017, there were 20 (2016: 22) major EHS incidents, and 10 (2016: 12) of these were significant environmental incidents. Significant environmental incidents include spills of over 100 litres into the environment, significant environmental permit violations, and other environmental non-compliances that have a significant impact on environment.

20
Major EHS incidents
Target: ≤23

Spills and leaks into the environment

In 2017, there were 8 (2016: 1) spills and leaks of more than 100 litres into the environment, all in the Nordic countries. In Finland, there were four incidents of refrigerant leakage at the Suomenoja heat pump plant. Also in Finland, there was leakage from a container of chemical waste to be transport to Riihimäki and a spill involving a tank of lubrication oil used at the waste-to-energy plant. In Sweden, a chemical leak occurred at the waste-to-energy plant in conjunction with the emptying of the scrubber. Additionally, a diesel spill took place during a transport related to the hydropower production investment project in Sweden. The incidents have been investigated to find corrective measures. The incidents did not have significant environmental impacts.

Significant environmental permit violations

There were two (2016: 11) environmental permit violations in 2017, one of them in Russia and the other in Denmark. At the Nyagan GRES power plant in Russia, the permit limit for the sanitary wastewater emissions was exceeded. The process wastewater limit was exceeded at the waste-to-energy plant in Denmark. The incidents have been investigated to find corrective measures.

Environmental enquiries and grievances

Power plants receive environmental enquiries and other contacts every year, and they are mainly handled locally. The aim is to communicate in advance about upcoming measures that have possible environmental impacts, for example, through local media and at public events.

Fortum's website also has a grievance channel that our stakeholders can use to report problems possibly caused by our operations. No new environment-related grievances were reported to us through this channel in 2017.

Fines

In 2017, Fortum paid fines totalling RUB 8,000 (EUR 121) for permit violations involving exceeding the sanitary wastewater emission limits.

› BUSINESS ETHICS AND COMPLIANCE
› OCCUPATIONAL AND OPERATIONAL SAFETY

Social responsibility

Fortum impacts the daily lives of millions of people through its businesses. Fortum's social responsibility emphasises operational and occupational safety, employee wellbeing, the secure energy supply for customers, creating sustainable solutions for cities, as well as ethical business operations and compliance with regulations. We engage in an active dialogue with different stakeholder groups and we strive to find a balance between their various expectations.

Social impacts

We want to offer a safe workplace for our employees and for the contractors and service providers who work at our power plants. We promote operational and occupational safety and wellbeing in the work community, which are prerequisites for efficient and interruption-free production. Our innovations and the secure supply of power and heat for customers support the development of society and increase wellbeing. We offer sustainable city solutions that promote a circular economy.

Ethical business practices and respecting internationally recognised human rights are the foundation of Fortum's Code of Conduct. We want to support responsible operations in Fortum's supply chain and in all our business relationships. Fortum's sustainability approach also includes being a good corporate citizen and taking care of the surrounding communities.

Key figures for social responsibility

Our key figures for social responsibility are presented in the table and graphs.

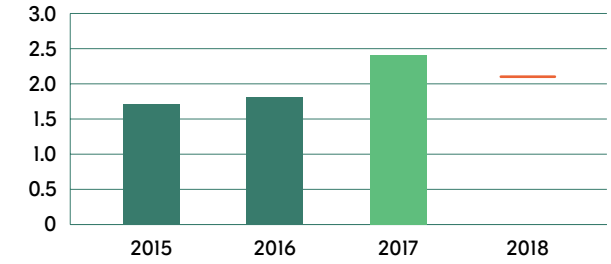
› BUSINESS ETHICS AND COMPLIANCE

Key figures for social responsibility

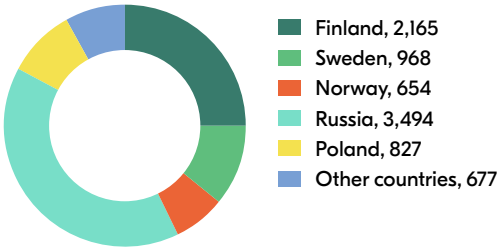
	2017	2016	2015
CHP plant energy availability, %	96.1	97.4	96.4
Average number of employees	8,507	7,994	8,009
Number of employees, 31 December	8,785	8,108	7,835
Departure turnover, %	10.5	13.0	8.6
Female employees, %	32	29	29
Females in management, %	29	25	33
Sickness-related absences, %	2.2 *	2.3 *	2.4
Total recordable injury frequency (TRIF) [1], own personnel	1.8	1.9	1.6
Lost workday injury frequency (LWIF) [2], own personnel	1.2	1.0	1.1
Lost workday injury frequency (LWIF) [2], contractors	4.2	3.0	2.7
Severe occupational accidents [3]	1	5	-
Fatalities	0	0	0
OHSAS 18001 -certified opeartions in power and heat production, % of sales	98.4	99.9	99.9
Supplier audits, number	11	13	9
Support for society, EUR million	4.9	2.9	2.9

1) TRIF = Total recordable injury frequency, injuries per million working hours
2) LWIF = Lost workday injury frequency, injuries per million working hours
3) Fatality or an accident leading to permanent disability and an accident that could have caused serious consequences
* Excluding DUON, Hafslund

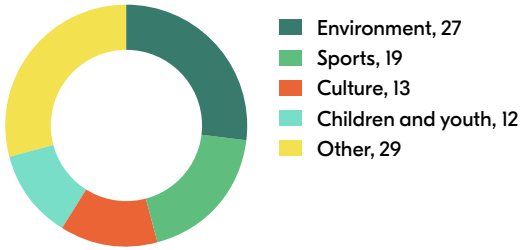
Combined injury frequency (LWIF), Fortum's employees and contractors



Number of employees by country, 31 December 2017



Fortum's support to society by target, %



Security of supply

A functional society requires an uninterrupted and reliable supply of energy. Fortum is committed to working for cleaner energy production. Implementing our vision – For a cleaner world – requires a reliable supply of economically priced energy delivered to customers as we transition towards a low-carbon energy system.

Hydropower balances the growing, but weather-dependent, fluctuating production of other renewable energy forms like solar and wind. The flexibility of hydropower is needed to secure the functionality of the energy system and the power grid and to balance fluctuations in the price of electricity.

If a sufficient supply of hydropower is not available, then adjustable natural gas power production can be used to balance fluctuations in renewable energy production and to secure the supply of electricity. With planned preventive maintenance and condition monitoring, we ensure that our power plants operate reliably to produce the electricity and heat customers need.

Power plant availability at a good level

We measure the availability of our CHP and hydropower plants with an energy availability indicator. Energy availability is calculated by dividing the power plant's actual production in the period under review by the theoretical maximum production. Planned maintenance outages are not included in the calculation. If the outage at a CHP plant is longer than planned, it is considered a production interruption, which decreases the energy availability. The energy availability of our CHP plants in 2017 was, on average, 96.1% (2016: 97.4%); the target level was over 95.0%.

For hydropower plants, outages due to a failure and unplanned or prolonged outages decrease the availability factor only if they lead to spillage. The energy availability of our hydropower plants was 98.2% (2016: 98.7%).

The load factor describing the availability of the Loviisa nuclear power plant is among the best in the world for pressurised water reactor power plants. The Loviisa nuclear power plant's load factor in 2017 was 92.7% (2016: 91.1%).

Interruptions in heat distribution

Fortum has about 3,400 km of district heating networks in Finland, Norway, Poland, Russia and the Baltic countries. The aim is to keep interruptions in district heat distribution as short as possible by carrying out planned and preventive refurbishment and maintenance activities.

Fortum sold the Polish gas distribution company DUON Dystrybucja S.A. in summer 2017, because gas distribution is outside Fortum's core strategy.

96.1%

CHP plant energy availability

Target: >95.0%

Employees

In 2017, an average of 8,507 (2016: 7,994) employees worked at Fortum. The highest number of employees was in Russia, 3,710 (2016: 3,814) on average. The average and the year-end total personnel figures include 200 employees who are not included in the other figures and tables presented in this report. These individuals include the civil contractors working in the Consumer Solutions division in Poland, Sweden and Norway.

Permanent employees accounted for 95.2% (2016: 96.1%) of the personnel. Of these, the share of full-time employees was 98.1% (2016: 98.5%).

During the year 734 (2016: 476) new employees joined Fortum, and 855 (2016: 968) employment relationships were terminated, 206 of which by the employer. The number of employment relationships terminated due to production and financial reasons was 77. Departure turnover in 2017 was 10.5% (2016: 13.0%). Voluntary departure turnover was 5.4% (2016: 5.6%).

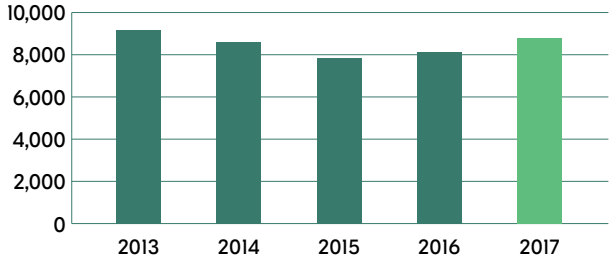
With the acquisition of Hafslund, 722 new employees joined Fortum. Other acquisitions and outsourcings decreased the number of personnel by a total of 185 (2016: 248) people.

Contractor employees worked at Fortum sites for a total of approximately 1,249,000 (2016: 1,113,000) days during the year. The figure is based on contractors' hourly logs and on estimates made on the basis of job costs and average hourly rates. The figure has been calculated on the basis of an 8-hour work day.

Personnel statistics from 2017, by country of operation

	Finland	Sweden	Norway	Russia	Poland	Other countries	Total
Personnel at year-end	2,165	968	654	3,494	827	677	8,785
Male	1,525	558	381	2,517	490	467	5,938
Female	640	410	273	977	337	210	2,847
Personnel, average	2,147	834	282	3,710	863	672	8,507
Personnel expenses, 1,000 euros	183,533	75,311	30,658	79,339	20,429	33,361	422,632
Personnel expenses per person, 1,000 euros	85.5	90.3	108.5	21.4	23.7	49.6	50.0

Number of employees, 31 December



Workforce by employment contract and employment type, broken down by region and gender (GRI 102-8)

	Finland		Sweden		Norway		Russia		Poland		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employment contract	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
Permanent	1,461	601	542	358	369	249	2,465	910	341	220	461	195	5,639	2,533
Fixed-term	64	39	31	36	11	12	52	67	23	65	5	8	186	227
Employment type (permanently employed)	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
Full-time	1,453	577	529	326	353	210	2,461	909	338	217	457	189	5,591	2,428
Part-time	8	24	13	32	16	39	4	1	3	3	4	6	48	105

Diversity and equal opportunity

We promote equal treatment and opportunities in the recruiting, remuneration, development and career advancement of personnel, regardless of the employee's race, religion, political views, gender, age, nationality, language, sexual orientation, marital status or disabilities.

Fortum is a Top 200 company included in 2017 Equileap Gender Equality Global Ranking. The assessment criteria are related to personnel's gender division, equal pay, work-life balance and family leave, and principles supporting gender equality in e.g. recruiting and career development.

The average age of our permanent employees was 43.6 (2016: 44.2) years. The share of employees over 50 years old was 29% (2016: 32%). Females accounted for 32% (2016: 29%) of our total personnel. Females accounted for 29% (2016: 25%) of the Group- and division-level management. At the end of 2017, the Board of Directors comprised seven members, three of them, including the Chairman, were women.

Any form of harassment is forbidden and addressed immediately. In Finland, Sweden, and India, for example, there are separate guidelines in place for workplace harassment and discrimination. There were no incidents of discrimination reported in 2017.

Total number and rate of new employee hires and employee turnover (GRI 401-1)

New employee hires	Finland		Sweden		Norway		Russia		Poland		Other countries	
	M	F	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	30	7	28	16	12	10	70	35	1	11	9	5
30–50	84	31	42	19	14	8	123	75	8	9	14	10
over 50	9	4	7	4	0	0	13	20	0	0	4	2
New recruits, %	8.4	7.0	14.2	10.9	7.0	7.2	8.4	14.3	2.6	9.1	5.9	8.7

Employees leaving	Finland		Sweden		Norway		Russia		Poland		Other countries	
	M	F	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	11	4	14	17	1	1	54	15	4	9	2	2
30–50	40	25	17	28	2	8	215	68	7	5	14	12
over 50	14	8	8	7	0	0	163	67	1	1	10	1
Departure turnover, %	4.4	6.2	7.2	14.5	0.8	3.6	17.5	16.5	3.5	6.8	5.6	7.7

Employees leaving, employee's initiative	Finland		Sweden		Norway		Russia		Poland		Other countries	
	M	F	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	10	4	12	17	1	1	24	6	4	9	2	2
30–50	40	21	15	22	2	8	85	34	7	5	9	12
over 50	10	4	5	3	0	0	50	14	1	0	3	0
Voluntary departure turnover, %	4.1	4.8	5.9	11.7	0.8	3.6	6.5	5.9	3.5	6.4	3.0	7.2

Service years of the permanent employees in 2015–2017, %

	2017	2016	2015
0–5 y.	37	33	32
6–10 y.	20	21	23
11–15 y.	10	10	9
16–20 y.	10	10	9
21–26 y.	8	9	10
27–30 y.	7	8	9
31+	7	8	8

Personnel age distribution of permanent employees by age group, gender and personnel group (GRI 405-1)

Age group	Finland				Sweden				Norway				Russia				Poland				Other countries				Total			
	Male		Female		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female	
	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w
under 30	34	84	2	50	3	93	1	74	4	67	0	42	234	73	13	88	0	16	0	64	22	15	0	20	297	348	16	338
30–50	177	701	8	350	25	244	1	188	28	194	2	163	817	657	137	423	62	117	1	118	124	118	9	106	1,233	2,031	158	1,348
over 50	121	344	3	188	25	152	2	92	14	62	0	42	432	252	113	136	76	70	2	35	113	69	11	49	781	949	131	542

b = blue-collar, w = white-collar

Group and division-level management, by age and gender, persons (GRI 405-1)

Age group	Male	Female
under 30	0	0
30–50	32	7
over 50	19	14

Equal remuneration

Salary levels at Fortum are compliant with established industry practices in each country, local legislation and labour market agreements. We remunerate personnel for achievement of the strategic business targets and successful implementation of changes. Remuneration is based on job grade levels, job performance and local job market practices.

In the incentive scheme, the maximum amount of the short-term variable remuneration is based on the individual's job, and the amount of the final incentive pay is based on the job-based salary level and the achievement of the goals of the business unit and the individual. For the reasons mentioned above, a male/female comparison of the short-term incentive pay is not expedient.

However, the global human resources data system and the harmonised job grade classification system enable the examination and reporting of pay equality for the base salary in all our operating countries. Besides the centralised HR data management system, a separate, local, data system is also used in Russia, and therefore the data on Russia's pay equality is reported separately. With the corporate acquisitions made in 2017, the companies merged with Fortum – and for which the job grade classification and the integration of the personnel system has just started – are not included in the figures.

Our reporting covers all personnel groups except individuals working in blue-collar positions. A male/female comparison in this group is not done because of the small group sizes. Blue-collar workers accounted for about 32% of Fortum's personnel. In countries where the number of personnel is small, we have reported these countries collectively under "Other countries" so that the data are not identifiable. The figures presented are not comparable with last year's figures because the method of calculation has been changed.

In our operating countries, total number of personnel included in the comparison was 3,091, of which 1,124 (36%) were female.

The base salaries of female employees in 2017 were, on average, 18% lower than the male base salaries. When examining the differences by employee group and by country, the differences ranged between -1% to -16%.

In Russia, the difference between female and male salaries was -19% on average. The total number of personnel included in the comparison was 2,202.

Basic salary and service years of women compared to men (GRI 405-2) [1)]

Country	Difference between basic salaries				Difference between service years
	All roles, %	Operational specialists and managers, %	Broad operational professionals and managers, %	Tactical and strategic leaders and middle management, %	Average service years, %
Finland	-3	-3	-3	-4	0
Sweden	-2	-4	-3	-1	0
Poland	-7	-16	-4	N/A	-5
Other countries [2)]	-14	+8	-24	N/A	+1

1) Excluding Hafslund

2) Excluding Russia

Employee-employer relations

Fortum's business operations are developed and strengthened in good collaboration with employees. We believe that the successful management of business is built on relationships of trust between management and employees and on the free flow of information. Fortum respects employees' freedom of association and the right to collective bargaining.

In our operating countries, freedom of association and collective bargaining are guaranteed by law. The exception to this is India, which has not ratified the International Labour Organisation's (ILO) Convention on the right to freedom of association and collective bargaining. In India, we comply with the same practices as in other countries of operation, and we do not limit or prohibit the right to freedom of association.

We apply local collective bargaining agreements in compliance with the scope of each respective agreement in all our operating countries. Collective bargaining agreements cover nearly 85% of Fortum's employees in our biggest operating countries and range from 6% coverage in Latvia to about 100% in Finland, Sweden and Russia. There are no collective bargaining agreements in Lithuania, Poland and India. Employment contracts are based on local legislation and on the company's human resources policy.

Fortum European Council

Fortum European Council (FEC) is Fortum's Europe-level cooperation function in which personnel and employer representatives meet. FEC convenes, as a rule, once a year. In 2017, the Fortum European Council (FEC) held a meeting in Poland, and personnel representatives from Finland, Sweden, Poland, Estonia and Denmark participated. The Council's meeting focused on, among other topics, Fortum's strategy, corporate culture, leadership, wellbeing and safety. In addition to Fortum European Council meetings, local level meetings are held several times a year in different countries based on need.

Restructuring situations

In situations of organisational restructuring, we negotiate with personnel representatives in compliance with each country's local legislation and contractual procedures. In situations involving personnel reductions, we want to primarily support the reemployment of the personnel.

In restructuring situations, the length of the obligatory negotiation period depends on the scale of upcoming changes and varies in Fortum's different operating countries. The shortest period for obligatory negotiations is three weeks (Finland) and the longest is 90 days (India). There is no statutory obligatory negotiation period in Sweden, Norway and Lithuania.

The minimum notice period is based on local legislation, collective agreements or employment contracts, which are in harmony with the local legislation and agreements.

In situations involving personnel reductions, we offer outplacement services on a per case and per country basis, and, in cooperation with local unemployment authorities or service providers, we investigate the possibilities to arrange vocational or other training enhancing employability. Retraining for employees who continue working is arranged based on organisational and individual needs. In situations involving personnel reductions, the content of the support package that we offer is decided based on local needs. The financial compensation of the package is usually based on the years of employment at Fortum.

Employee wellbeing

Our operating environment is constantly changing, and we want to support our personnel in the change by paying special attention to work wellbeing. In line with our new leadership principles, the development of work wellbeing supports the work environment and corporate culture, which helps our employees to succeed.

Energise Your Day wellbeing programme expanded to new operating countries

The goal of the work wellbeing model, ForCare, is to promote the health and occupational safety of our employees and the functionality of the work community. Operating under the ForCare model since 2016, the Energise Your Day wellbeing programme aims to support and encourage all Fortum employees to maintain and improve their overall wellbeing.

In 2017 the Energise Your Day programme was expanded, and is now under way in nine of our operating countries. The Energise Your Day programme starts with a self-assessment-based wellbeing survey; close to 4,700 Fortum employees have responded to the survey. The response rate is 73%. Based on the responses, the most sought after support and tools are for recovery and stress management.

Based on the wellbeing survey results, employees are offered various wellbeing services, such as lectures, coaching clinics, campaigns and other wellbeing activities. Self-management, stress management, recovery, nutrition and physical activity are among the themes.

We promote wellbeing at the workplace also through what is called an early-support model. We increase open communication between employees and supervisors by discussing and mapping the reasons for absences.

Nearly 4,700 Fortum employees responded to the wellbeing survey. Based on the results, we offered physical fitness, recovery, stress management and other support to personnel.

Occupational safety and health care

Occupational safety and health care are organised in our operating countries in line with local legislative requirements. The occupational safety committees represent all personnel groups, and they regularly address issues related to occupational safety and workplace wellbeing.

All our employees are within the sphere of occupational health care. We emphasise the significance of preventive activities in promoting wellbeing in the company. The occupational health care costs per person in Finland, before the share reimbursed by Kela (The Social Insurance Institution of Finland), were EUR 533 (2016: 460).

Fortum conducts regular examinations of its personnel in accordance with local laws. Employees who in their work are exposed to e.g. noise, dust, radiation or who perform shift work are within the sphere of the examinations. Occupational health care also participates in various discussions and assessments in the work community. The occupational health care professionals support supervisors by providing information on preventive actions as well as alternatives when the ability to work decreases. Occupational health care also offers methods and tools for these situations.

In 2017, the percentage of sickness-related absences (excluding DUON and Hafslund) was 2.2 (2016: 2.3), which is better than the target level of ≤2.3. For males, the percentage of sickness-related absences was 1.9 (2016: 2.1) and for females 2.9 (2016: 3.0). The sickness absence rate is calculated based on the reported working hours of the permanent employees. The percentage of sickness-related absences for Hafslund was 3.0. In addition to expansion of the Energise Your Day occupational wellbeing programme, the management of sickness-related absences was one of our focus areas in 2017.

There was one (2016: 8) case of suspected occupational disease in Finland. The case was related to noise and involved a male employee. The case was determined to be non-occupational.

An indication of the good management level of working capacity and workplace wellbeing at Fortum is the average retirement age, which was 62 (2016: 62) years. In 2016, the average effective retirement age in the earnings-related pension scheme in Finland was 61.1 years (Source: Finnish Centre for Pensions).

2.2%

Sickness-related absences

Target: ≤ 2.3%

Sickness absence rate of permanent employees in 2015–2017 (GRI 403-2)[1], %

	2017		2016		2015	
	Male	Female	Male	Female	Male	Female
Finland	2.2	2.6	2.4	3.5	2.3	3.5
Sweden	2.8	8.0	2.6	6.3	3.1	5.3
Russia	1.5	1.5	1.8	1.6	1.7	2.0
Poland	2.7	3.1	2.6	3.8	4.1	6.5
Other countries	2.5	2.3	2.2	3.5	1.8	3.2

1) Excluding: DUON, Hafslund

Employee development

Our goal is to be a forerunner in the future energy system. This means that our corporate culture must evolve to be more flexible and agile. That is why we have drafted new Leadership Principles and have updated our company's Values.

Our Open Leadership framework is based on views and input received from the Fortum Sound employee survey, Fortum Summit, Fortum European Council (FEC), and Must-Win-Battle development programmes, among others. This input emphasised the need for more collaboration between units as well as an environment fostering innovation and smart risk-taking. Based on feedback we received, there is a need within the teams to better understand how the daily work advances the implementation of our company's strategy. Open Leadership aims to address these issues.

FORTUM'S LEADERSHIP PRINCIPLES

BELIEVE THE BEST IN OUR PEOPLE

We believe in our people, which empowers them to believe in themselves, grow and exceed their own expectations.

WANT THE BEST FOR OUR PEOPLE

We create a work environment and company culture that help our people thrive.

EXPECT THE BEST FROM OUR PEOPLE

As we believe in our people and provide them with a good work environment, we can expect them to deliver results. We are confident they will even exceed our expectations.

Our Leadership Principles promote openness and curiosity towards the world, our customers, the industry, and each other.

Our Values form the foundation for our corporate culture and guide our decision-making. Fortum's Values have withstood the test of time, and that is why we updated only some elements of our Values so that they are in even better alignment with our strategic context and our situation. Our updated Values are:

CURIOSITY
We question the status quo and have the courage to explore.

RESPONSIBILITY
We have a strong sense of responsibility.

INTEGRITY
We believe in transparency.

RESPECT
We greatly value each other and all our stakeholders.

Our Leadership Principles and our Values have already been introduced and discussed in various management meetings and in other unit and team meetings. Leadership Principles have also been a central part of seminars and training events that have been arranged in conjunction with the Ways of Working project.

The change in our working culture and the move of the headquarters into a new multi-space office require learning on the part of the personnel and the ability to renew ways of working. The purpose of the Ways of Working change management trainings, launched in late 2017, is to offer tools to support better collaboration and self-leadership. The target group of the training includes all the employees and their managers who are moving to the new premises.

The total number of all training hours in 2017 was 62,189 (2016: 39,129). The Safety and Security eLearning aimed at all Group personnel contributed to the increase in the number of training hours. Training costs in 2017 totalled EUR 3.6 (2016: 3.1) million.

Performance and development discussions support the achievement of targets and professional growth

We support employee development through the annual performance and development discussions; all employees are within the scope of the annual discussions.

The main target of the performance and development discussion is to ensure that the employee has clear targets that align with the business as well as the competencies supporting the achievement of the targets and professional growth.

The achievement of the targets forms the basis for payment of incentives. All employees who have a minimum of three months of employment in Fortum are within the scope of Fortum's incentive plan.

Faster feedback from personnel

In 2017 we adopted a new, quick pulse survey tool. By asking ten questions we can measure personnel engagement and satisfaction. The tool replaces the previously used Fortum Sound employee survey, and it will be conducted every six months. The employees and supervisors see the survey results immediately after the feedback is given.

The survey conducted in October 2017 had a response rate of 69%. According to the results, 68% of the personnel feel a commitment to the company. Based on the survey results, the personnel feel that Fortum is an innovative company and pursues new ways to operate. There is a clear connection seen between one's own work duties and the company's targets, and the respondents felt that they can trust management's decisions.

Targets of development included increasing the collaboration between the divisions and units, encouraging smart risk-taking, and decreasing the decision-making hierarchy. Open Leadership aims to have an impact on these issues.

Training hours in 2017 (GRI 404-1)

	Total number of training hours for employees	Average training hours per employee	Total number of training hours for females	Average training hours per female	Total number of training hours for males	Average training hours per male
Finland	51,027	25	12,608	21	38,419	26
Blue-collar	8,465	25	441	34	8,024	24
White-collar	42,562	25	12,167	21	30,395	27
Other countries [1)]	11,162	5	3,643	5	7,519	6
Blue-collar	2,817	6	110	5	2,707	7
White-collar	8,345	5	3,533	5	4,812	5
Total	**62,189**	**15**	**16,251**	**12**	**45,938**	**17**

1) Excluding: Russia, Hafslund in Norway

Level of education of the permanent employees in 2015–2017, %

Level of education	2017	2016	2015
Doctorate	1	1	1
University	40	43	41
Lower university	8	7	6
College	19	24	27
Vocational	18	17	21
Compulsory	3	3	4
Not indicated	11	5	0

Safety and security

For Fortum, excellence in safety is the foundation of our business, and safe performance is a sign of professionalism.

Occupational and operational safety

We strive to be a safe workplace for our employees and for the contractors and service providers who work for us. We believe that all work injuries are preventable when competence and the right attitude prevails, when potential risks are addressed and when measures are taken to safeguard against them. Good operational safety is an absolute prerequisite for safe and efficient operations in terms of the employees and the environment.

In 2017, we had the following Group-level key safety indicators:

- Injury frequency (TRIF* and LWIF**) for own employees and (LWIF) for contractors
- Number of severe*** accidents
- Major environmental, health and safety (EHS) incidents
- Quality of investigation process of occupational accidents, major EHS incidents and near misses

Fortum's Board of Directors has approved the following amendments for 2018: at the Group-level, the LWIF combined (own employees and contractors) will be used as the main safety indicator. Total recordable injury frequency (TRIF) for own employees will be used as a follow-up indicator. In addition, the GAP index measuring compliance with the Group's minimum requirements for EHS management is a new Group safety indicator.

The safety targets apply to all Fortum employees and are part of the Group's ▸short-term incentive plan.

Safety improvements needed

2017 was a challenging year in terms of occupational safety. The safety performance of our employees is still at a relatively good level but exceeds the lost workday injury frequency (LWIF) target level of 1.0, and we have not been able to reduce the number of contractor accidents.

The LWIF for both own employees and contractors has increased mainly due to the integration of Recycling and Waste Solutions, where the safety actions implemented on the ground have not yet resulted in an improved safety performance.

As a result, only the total recordable incident frequency (TRIF) for own employees and the number of severe accidents met the set target level. The LWIF for own employees per million working hours was 1.2 (2016: 1.0) and the TRIF was 1.8 (2016: 1.9).

The LWIF for contractors continues to be our main challenge. The LWIF for contractors per million working hours was 4.2 (2016: 3.0), and we did not achieve the target of ≤3.5. The same challenge applies to the combined LWIF (own employees and contractors): the result was 2.4 (2016: 1.8), exceeding the target of 1.9. However, we can be pleased that there have been no accidents leading to a fatality in Fortum's operations in the last three years.

Our target defined in 2017 is to reduce severe accidents to zero by 2020. We had one severe accident in Russia in 2017; our target for the Group was ≤5. Consequently, Fortum's Board of Directors amended the target and we are now aiming for zero severe accidents already in 2018.

In reporting accidents, we comply with the principles of the United States Occupational Safety & Health Administration (OSHA) and ILO's Practices on Recording and Notification of Occupational Accidents and Diseases to the extent that they conform with the legislation in Fortum's countries of operation.

100%

of the personnel completed the Safety and Security eLearning.

* TRIF: Total recordable injury frequency, injuries per million working hours

** LWIF: Lost workday injury frequency, injuries per million working hours, absence of one or more working days or shifts, excluding the day the accident happened

*** Severe accident: Fatality or an accident leading to permanent disability and an accident that could have caused serious consequences

Key safety figures in 2015–2017 (GRI 403-2)

	Target 2018	Target 2017	2017	2016	2015
Total recordable injury frequency (TRIF) [1], own personnel		≤2.5	1.8	1.9	1.6
Lost workday injury frequency (LWIF) [2], own personnel and contractors	≤2.1	≤1.9	2.4	1.8	1.7
Lost workday injury frequency (LWIF) [2], own personnel		≤1.0	1.2	1.0	1.1
Lost workday injury frequency (LWIF) [2], contractors		≤3.5	4.2	3.0	2.7
Lost workday injuries, own personnel			17	14	15
Lost workday injuries, contractors			42	27	29*
Severe occupational accidents [3]	0	≤5	1	5	
Fatalities, own personnel			0	0	0
Fatalities, contractors			0	0	0
Major EHS incidents [4]	≤20	≤21	20	22	18

1) TRIF = Total recordable injury frequency, injuries per million working hours

2) LWIF = Lost workday injury frequency, injuries per million working hours

3) Fatality or an accident leading to permanent disability and an accident that could have caused serious consequences

4) Fires, leaks, explosions, INES events exceeding level 0, dam safety incidents, environmental non-compliances. INES = International Nuclear Event Scale

* Including contractor injuries of the divested Distribution business

Occupational accidents, accident frequencies and absence days due to occupational accidents in 2017 by region and gender (GRI 403-2)

	Finland	Sweden	Norway	Russia	Poland	Others
Own personnel						
Occupational accidents causing absence, men	6	0	1	1	3	5
Occupational accidents causing absence, women	0	0	0	1	0	0
LWIF, men	2.2	0.0	3.4	0.2	4.4	5.8
LWIF, women	0.0	0.0	0.0	0.6	0.0	0.0
Absence from work due to occupational accidents for men, days	30	0	1	43	87	62
Absence from work due to occupational accidents for women, days	0	0	0	15	0	0
Contractors						
Occupational accidents causing absence, men	24	6	1	0	5	3
Occupational accidents causing absence, women	1	0	2	0	0	0
LWIF, men and women [1]	13.2	6.5	24.5	0.0	2.2	1.7
Absence from work due to occupational accidents for men, days	268	98	2	0	76	7
Absence from work due to occupational accidents for women, days	2	0	48	0	0	0

1) Contractor hours not available by gender

Operational safety

We track major environmental, health and safety (EHS) incidents as a Group target; these incidents cover fires, leaks >100 litres into the environment, explosions, nuclear and dam safety incidents, and environmental non-compliances. There were 20 (2016: 22) EHS incidents in 2017; the target was ≤21. There was one (2016: 0) INES event exceeding level 0 (INES = International Nuclear Event Scale). The incidents did not cause significant harm to people, operations or the environment.

Common guidelines steer our operations

Fortum has Group-level EHS instructions and minimum requirements that set requirements for all the operations for which we have operative responsibility. The requirements are updated regularly, and the divisions' performance in complying with the revised requirements is assessed yearly.

The two proactive KPIs (Quality of EHS incident investigations and GAP index) introduced in 2017 help ensure compliance with the Group minimum requirements for EHS management and thus reduce the risk of improper work practices. They also ensure a timely investigation of incidents, the sharing of lessons learned, and reduce the risk of repeating the same mistakes again. Both of these proactive KPIs are also internal control points of the EHS processes.

A Safety and Security eLearning programme, compulsory for all personnel, was launched in spring 2017. The training for Fortum Executive Management took place already in January 2017. By year end, all personnel had completed the e-learning. In 2018, Fortum will also introduce external safety training for both the management level and key individuals leading safety work as well as for the most challenging business areas in terms of safety.

A development project addressing contractor safety was carried out during the year. New tools were developed to assess contractor safety performance as part of the supplier qualification process and to evaluate their safety practices in a more systematic manner during work. The project also included benchmarking with leading European companies to assess best practices in contractor management. Key persons were trained on the new tools and implementation of them will continue during 2018.

We will continue our efforts to improve safety

Our goal is to continuously improve the safety of our operations. Our target for LWIF combined (own employees and contractors) for 2018 is 2.1 (2017: 1.9). Setting a higher numeric target than in 2017 might seem controversial, but it is challenging considering that the actual result in 2017 was 2.4. Achieving the target of 2.1 requires robust safety improvement actions and implementation of Fortum's EHS minimum requirements.

Excellent occupational safety continues to be a promise we want to keep also in the years ahead. We are committed to achieving the contractor safety level target (LWIF ≤2.0) by 2020.

Corporate security

Through corporate security, we strive to ensure the uninterrupted continuity of business and the safety of people, information, our assets and processes in normal and exceptional situations. Uninterrupted energy production and distribution is important both for Fortum's business operations and for an energy-dependent society. Our Corporate Security unit is responsible at the Group level for personnel and operational security; cyber security and data security are also within the scope of the unit's areas of responsibility.

1.8
TRIF own employees
Target: ≤ 2.5

20
Major EHS incidents
Target: ≤ 21

Securing personnel and business safety

Compliance with the minimum safety requirements improves our operational ability to withstand and recover from disruptions and thus reduces unplanned maintenance outages and improves productivity.

We assess risks related to people, business and information in all geographical areas where Fortum has potential operations and business travel. Risks impacting the company and business operations may be related to political situations, terrorism, crime, conflicts and business partners.

Corporate security is improved also by gaining a deeper understanding of the security situation so that we can anticipate and prevent risks before they materialise.

Cyber security

Security with the information we handle and with our IT systems ensures that we can meet society's and our customers' expectations. Our cyber security programme is currently divided into data, IT and digital services security and security of automation systems. The aim is to ensure the production and distribution of power and heat and the functioning of new digital services, like Internet of Things applications.

In IT security, we aim to ensure the accessibility, integrity and confidentiality of critical information. We also take seriously our compliance with the regulations related to the protection of personal data. Customer data protection is discussed in the ▸ Product responsibility section.

We actively engage in collaboration with authorities and other stakeholders to understand and prevent new and growing cyber threats. We launch campaigns to increase employee awareness of security risks. We promote ways of operating that take employee information security into consideration by, e.g., providing guidelines and online training.

Contingency planning

The main disaster and emergency situations we prepare for are related to our critical operations, such as power plant and dam safety and securing other operations.

For dam and nuclear safety, emergency preparedness obligations in Finland and Sweden are based on regulatory provisions; likewise, there are terrorism-related preparedness obligations in Russia. Otherwise, emergency preparedness obligations prescribed by authorities are of a general nature. Based on its own risk assessments, Fortum independently defines the crisis and exceptional situations it prepares for and drafts action plans for.

Fortum's crisis and emergency management instructions are prepared for Group, division and site levels. The testing and updating of the crisis management and continuity plans are the responsibility of each division and line organisation. Crises impacting Group operations more broadly are managed at the Group level. Crisis communication instructions have been prepared for e.g. power and heat outages and for the Loviisa nuclear power plant. Corporate Security is responsible for crisis management development, e.g., for organising rehearsals and supporting planning. Group Communications is responsible for crisis communication.

In 2017, an emergency preparedness exercise for hydropower production in Finland was held. The annual emergency preparedness exercise related to a nuclear power accident was held at the Loviisa power plant.

Corporate citizenship

Social responsibility is a cornerstone of Fortum's operations. Our operations impact the local communities where our power plants are located, and we engage in many kinds of collaboration with local stakeholders.

We support activities promoting the common good in society, including the work of organisations and communities in our operating countries. Fortum's Policy for Sponsoring and Donations was revised in December 2017. According to the policy, Fortum's sponsoring will focus on the wellbeing of children and youth, renewable energy projects, R&D and innovations supporting Fortum's strategy, recycling, recovery and reutilisation. For 2017, we are reporting support for society pursuant to the categorisation based on the previous version of the Sponsoring and Donations Policy. Fortum also engages in significant collaboration with different research and development projects, particularly with Nordic universities.

We actively participate in ▸**national and international organisations**. Public affairs and collaboration with authorities are a priority in the energy sector.

Local impacts and collaboration with local communities

We are an important employer and significant tax payer in our operating areas. In addition, our investments improve the local infrastructure. Of our energy production forms, hydropower has the most significant ▸**impacts on local communities** and local forms of land use. Hydropower construction and use may alter the fluctuation range and rhythm in the discharge and water level in waterways as well as the fish fauna. These changes impact fishing, recreational use, and boating. We mitigate and compensate the adversities caused by hydropower production through numerous measures, such as stocking fish and building boat launch ramps.

We communicate openly, honestly and proactively, and we engage in a dialogue with the stakeholder groups located in the vicinity of our power plants. We carry out collaboration projects with local communities. We conduct environmental impact assessments (EIA) for our projects in accordance with legislative requirements. The hearing of stakeholders is part of the EIA process. In addition, relevant stakeholders are heard in all permit procedures.

Examples of our activities with local communities in 2017:

- We arranged open-house events at power plants in different countries of operation; thousands of locals attended the events.
- We continued publishing the Naapurina ydinvoimala (Nuclear power plant as a neighbour) magazine in Loviisa, Finland, and maintained an active dialogue with local residents and representatives of the city of Loviisa.
- In Riihimäki, Finland, an active dialogue with local residents is supported by a cooperation council convening twice a year.
- ▸**Projects** aiming to mitigate the adverse environmental impacts of hydropower were under way in Finland and Sweden in collaboration with municipalities, research facilities, fishermen, universities and environmental organisations. For example, the River Oulujoki restoration and multi-use framework agreement was renewed for 2018-2021 in Finland. Within the agreement, we continue improving environmental conditions and recreational use of the river with local partners. In Sweden, we finalised a multiannual, cooperation research project in on migratory fish in River Klarälven.
- We held the fifth River Clean-Up for sports clubs in Sweden. More than 1,700 children and adults raised money for sports activities by collecting 17.5 tonnes of trash along the banks of four rivers (Dalälven, Klarälven, Ljusnan and Gullspångälven) where Fortum has hydropower plants.
- We continued supporting local communities with several projects in the vicinity of the Kapeli and Amrit solar power plants in India. Among other things, Fortum has improved water and electricity supply in the villages as well as supported local schools by building a new classroom and furnishing the kitchen for providing lunch for the children. In three villages in the vicinity of the Bhadla power plant, a ▸**community development programme** was started. The programme includes a Self Help Group for local women and provides drinking water through a "Water ATM".
- We support the communities in power plant areas through various donations. In Poland, e.g., we supported workshops and scholarships for talented children raised in difficult conditions and installed solar panels on the rooftop of a kindergarten. In Russia, we supported medical care for children with serious diseases. In Finland, elementary schools in the Hausjärvi and Riihimäki region were supported to join "Vihreä lippu" sustainable development programme.

Support for society

As part of Finland 100, the centenary of Finland's independence, Fortum made donation of EUR 1 million to four Finnish universities. Fortum Waste Solutions distributed a total of EUR 120,000 in grants to five environmental management research projects. The grant, awarded by the company's environmental scholarship fund, is the largest research grant in the industry to be awarded by a company on an annual basis. In 2017, our support for activities promoting the common good totalled about EUR 4.9 (2016: 2.9) million.

Fortum Foundation supports research, education and development in the natural, technical and economical sciences within the energy industry. Fortum Foundation is not part of Fortum Group. The grants awarded by Fortum Foundation in 2017 were about EUR 696,000 (2016: 675,000).

The goal of the collaboration with universities and colleges is to develop Fortum's business, promote energy-sector research and development, and foster Fortum's recruiting and training opportunities.

Examples of our collaboration with universities and colleges in different operating countries:

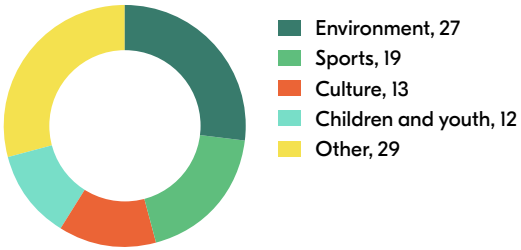
- In Sweden, there is a multi-year project under way that aims to offer sustainability-related training to more than 4,000 educators. Fortum's collaboration partners in the project are Pedagog Värmland, Karlstad municipality, engineering and consulting company ÅF, and Chalmers University of Technology.
- In Estonia and Lithuania, Fortum is a member of the Baltic Innovative Research and Technology Infrastructure (BIRTI), which coordinates collaboration between universities, scientific institutes and entrepreneurs.
- In Latvia, Fortum is taking an active part in the THERMOS (Thermal Energy Resource Modelling and Optimisation System) project. It is an EU Horizon 2020-funded research project that will provide advanced energy system data and models to make heat network planning faster, more efficient, and more cost effective.

Sponsorship projects

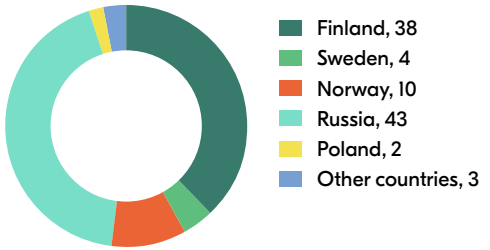
In 2017, we continued sponsoring the coaching of children and youth in football, volleyball, basketball, and track and field. Through the Fortum Tutor programme, we offer tutors to support coaches in their daily work as well as financial support for teams to train new coaches. Fortum Tutor operates in Finland and in the Baltic cities where Fortum has power plants. In 2017, we were the main partner for the world's largest junior volleyball tournament in Finland. Fortum Power Cup attracted thousands of junior players and their coaches for outdoor games.

The Fortum Honorary Energy Donor mobile app has been in use in Poland. It encourages people to engage in physical activity. The distance covered during a physical activity can be converted into energy, for which Fortum makes a financial donation to selected charities.

Fortum's support to society by target, %



Fortum's support to society by country, %



Case | **AboutEnergy educational programme in Russia**

In 2017, more than 1,500 school kids in Tyumen, Chelyabinsk, and other cities in the Chelyabinsk region completed the "AboutEnergy" educational programme sponsored by Fortum. The goal of the programme is to teach children to use resources efficiently and to foster an ecological mindset.

During the school year, 67 classes in 20 schools in the participating cities and the districts took the total of more than 2,000 lessons under this programme. The most active students were invited to a closing event in Chelyabinsk. They passed a final exam on the course they completed and took part in various activities. There was also a Jeka computer game tournament — a game developed by the Housing and Utilities Foundation to teach and promote energy saving skills.

Fortum first launched the "Culture of the new generation: energy saving and efficiency" project in 2015. The "AboutEnergy" programme has been praised by local educators and the Ministry of Education and Science of the Chelyabinsk region. Along with theoretical studies, it includes workshops, excursions, creative competitions and environmental campaigns.

Human rights

Fortum supports and respects internationally recognised human rights, which are included in the key human rights agreements. Our own operations have a direct or indirect impact on the realisation of the human rights of our own personnel, those working in the supply chain, and members of local communities.

Management of human rights issues and personnel training

Our goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights, and to apply these principles in our own operations as well as in country and partner risk assessments and supplier audits. Fortum's approach to the management of human rights issues is described in more detail in ▸ Appendix 1: Sustainability management by topic, Human rights.

Fortum's Corporate Sustainability unit is responsible for coordinating and developing sustainability, including human rights issues, at the Group level.

The online course for Fortum's Code of Conduct includes training in human rights-related issues. The course is part of the induction programme for new employees. The Supplier Code of Conduct includes human rights requirements and they are reviewed as part of the Code of Conduct training. Trainings were arranged in 2017 for Fortum's Baltic functions and for the Recycling and Waste Solutions personnel in Finland and Sweden.

In 2017 Fortum participated in the Ministry of Economic Affairs and Employment and the Ministry for Foreign Affairs' round table discussions about the human rights issues of Finnish companies' operations located in risk countries. Non-governmental and labour market organisations also participated in the discussions. The discussions resulted in a joint ▸ statement that was published in conjunction with a stakeholder event in March 2018.

Assessment of human rights impacts

A sustainability assessment is carried out for our investment projects and takes into consideration the environmental, occupational health and safety, and social impacts of the project. The sustainability assessment includes a human rights evaluation, especially in new operating areas. A human rights assessment is also part of the systematic assessment of country and counterparty risks when planning a project.

The process has two parts: a light and a deep assessment. A light assessment is done for all new countries in which one of our business units is planning the sales of products or services, and it is based on publically available sources. In 2017, 14 of these assessments were made. One deep assessment was made.

Fortum's supplier audits cover the most important human rights aspects related to purchases. The supplier audits conducted in 2017 and their results are described in more detail in the section ▸ Sustainable supply chain.

Identified impacts on human rights, corrective measures and grievances

All forms of child and forced labour are strictly prohibited and in violation of Fortum's Code of Conduct. Of our operating countries, India has not ratified the International Labour Organisation's (ILO) Convention on the minimum age and the worst forms of child labour. Our functions in India require job applicants to be of adult age. We have not identified risks related to the use of forced labour in our own operations. Support of employees' right to freedom of association and collective bargaining are discussed in the section ▸ Employee-employer relations.

Internal reporting channels used for reporting any suspected misconduct relating to labour practices or human rights violations are defined in Fortum's Code of Conduct. In addition to internal reporting channels, Fortum has an external "Raise a concern" channel which is available to all stakeholders.

Fortum participated in the Ministry of Economic Affairs and Employment and the Ministry for Foreign Affairs' round table discussions about the human rights issues of companies.

There were no grievances related to human rights, labour rights or discrimination filed through formal grievance channels in 2017, nor were there any grievances carried over from the previous year.

Product responsibility

Fortum is a clean energy company that provides customers with electricity, heating and cooling as well as smart solutions to improve resource efficiency. Our ambition is to engage our customers and society to drive the change towards a low-carbon energy system and optimal resource efficiency.

Fortum is the third largest power generator and the largest electricity retailer in the Nordic countries. We are one of the world's largest producers of heat. We also offer district cooling, energy efficiency services, recycling and waste solutions, and the largest electric vehicle charging network in the Nordic countries.

Guarantee-of-origin-labelled and renewable electricity

Hydro and nuclear account for two-thirds of our electricity production, making us one of the Nordic countries' leading sellers of carbon dioxide-free and guarantee-of-origin-labelled electricity. All the electricity we sold to household customers in Finland and Sweden in 2017 was renewable and carbon dioxide-free hydro, wind or solar power. The origin of the electricity was guaranteed with European Guarantees of Origin. A guarantee of origin is proof that the electricity has been produced from renewable energy sources. Some of the electricity we sell is also guaranteed with the pan-European EKOenergy label granted by environmental organisations and, in Sweden, with the Bra Miljöval label.

Services to customers

In recent years Fortum has introduced many new services that reduce environmental impacts and give customers better opportunities to control their electricity consumption and costs. The sustainable solutions we offer to growing urban areas in energy production, traffic and waste management also support a circular economy. The number of consumers participating in energy production is growing. The solutions offered by Fortum for this area are related to home automation, smart EV charging, local energy production and storage, and flexible demand. Additionally, we offer diverse expertise services for energy systems, electricity and heat production and for the process industry.

Marketing communications and customer data protection

Our goal is to present products and services truthfully in all our marketing and communication materials. We strictly follow responsible marketing communication guidelines, and we do not present misleading statements. In statements regarding environmental issues, we follow the regulations for environmental marketing.

In 2017 Fortum received from the Finnish Energy Authority one request of further clarification as regards a marketed product. The Finnish Energy Authority also sent a separate request to add missing information on the Authority's web pages. The requested information was provided within the set timeframe. The Swedish Consumer Agency as well as the Energy Market Inspectorate in Sweden requested Fortum to implement some changes in its marketing communication. Fortum is in the process of implementing the requested changes. The Energy Market Inspectorate also ordered an injunction in the case, which Fortum has appealed.

Data protection legislation has been amended in recent years. In 2016 the EU published the Data Protection Regulation, which will take effect in May 2018. We have prepared for the regulation to take effect by launching a data protection programme, and several development projects for personal information processing have been started in conjunction with it. In 2017 the Data Protection Ombudsman initiated an enquiry against Fortum Markets A/S in Norway. Due to a software failure, some data classified as personal data were mismanaged. The software functionality has been corrected, but the case was pending at the year end.

▸ CUSTOMER SATISFACTION AND REPUTATION
▸ PRODUCTS AND SERVICES

Reporting principles

We report on sustainability in this Sustainability Report and in the Online Annual Review. Non-financial reporting, in line with the Accounting Act, is included in the Operating and Financial Review in the ▸ Financials. Additionally, we describe sustainability-related governance practices in the Corporate Governance Statement, and strategy and the CEO's view in the CEO Letter. Our reporting entity also includes the Tax Footprint.

In our sustainability reporting, we follow the integrated reporting principles, and we apply specific disclosures of the GRI Sustainability Reporting Standards we have identified as material.

We gain information about our stakeholders' views through the One Fortum survey, the stakeholder sustainability survey and other stakeholder collaboration. Our selection of material topics is based on Fortum's own and our stakeholders' views regarding the materiality of the impacts.

We report sustainability information annually in Finnish and English. In our annual reporting we describe Fortum's operations in 2017 as well as some information from January–February 2018. The previous reporting was published in March 2017, and our next reporting will be published in February/March 2019. In addition to the annual reporting, we report on our sustainability activities in Fortum's interim reports.

Reporting scope and boundaries

Reporting related to operations and management covers all functions under Fortum's control, including subsidiaries in all countries of operation. The figures for power and heat generation and investments include also figures from Fortum's share in associated companies and joint ventures that sell their production to the owners on cost basis. Possible deviations to these principles are reported in conjunction with information applying different boundaries. A list of Fortum's subsidiaries is included in the ▸ Financial Statements Note 40 Subsidiaries by segment.

Information from previous years is mainly presented as pro forma information, i.e. on the basis of the organisation and the functions of each year; the impacts of ownership changes in production facilities, for example, have not been updated afterwards in the previous figures.

The company AB Fortum Värme samägt med Stockholms stad (Fortum Värme, at present Stockholm Exergi) is classified in the Financial Statements as a joint venture and is consolidated with the equity method. Fortum Värme is not included in Fortum's sustainability targets and indicators nor in the descriptions of management practices. Fortum Värme's sustainability information is available in Fortum Värme's sustainability report.

Fortum completed the divestment of its Distribution business on 1 June 2015. In this report, the information for 2017 and 2016 and, as a general rule, also for 2015 does not include the Distribution business.

On 4 August 2017, Fortum concluded the restructuring of its ownership in Hafslund ASA with the City of Oslo. Sustainability information relating to Hafslund Markets' and Fortum Oslo Varme's operations is included in Fortum's reporting as of 1 August 2017.

On 28 July 2017, Fortum concluded the divestment of its 100-per cent shareholding in the Polish gas infrastructure company DUON Dystrybucja S.A, which is included in the sustainability reporting up to 30 June 2017.

Exceptions to the accounting practice are presented in conjunction with each figure.

Capacity changes

Fortum commissioned unit 3 (248 MW electricity and 174 MW heat) of its Chelyabinsk GRES combined heat and power (CHP) plant in Russia in November 2017. During 2017 Fortum acquired or commissioned 205 MW of solar power capacity in India and Russia and 32 MW of wind power capacity in Norway. Through the Hafslund ASA ownership restructuring, 19 MW of electricity and 1,111 MW of heat production capacity was transferred to Fortum. The commissioned and acquired capacity during the year is included in the reporting starting from their commissioning.

Measurement and calculation principles

Data for economic performance indicators is collected from the audited Financial Statements and from financial accounting and consolidation systems.

The environmental information of the report covers the plants for which Fortum is the legal holder of the environmental permit. In such cases, the plant information is reported in its entirety. An exception is the calculation of specific CO_2 emissions and fuel use from the Meri-Pori power plant, where the calculation covers only Fortum's share of production and emissions as specified in the operation agreement between Fortum and Teollisuuden Voima Oy.

Fortum utilises a Group-wide database with instructions for collecting site-level environmental data. Sites are responsible for data input, emissions calculations and the accuracy of the information provided. The Corporate Sustainability unit compiles the data at the Group level and is responsible for the disclosed sustainability information.

Fortum's CO_2 emissions subject to the EU Emissions Trading Scheme are annually verified at the site-level by external verifiers. Direct and indirect greenhouse gas emissions have been reported in accordance with the Greenhouse Gas (GHG) Protocol on the basis of the Greenhouse Gas Analysis performed by an external consultant.

Fortum's human resources (HR) management system is used in all Fortum's operating countries and is the main system for employee-related personal and job data. In Russia, the employee data system covers mainly superiors. In addition, Russian operations have their own, local data system. Other social responsibility data, such as occupational health-related data, originates from various data systems.

Designated individuals collect the information and deliver it to the Corporate Sustainability unit primarily in the format recommended by the GRI Standards.

Assurance

Deloitte Oy has provided limited assurance for the 1 January 2017 to 31 December 2017 reporting period for emissions calculations (Scope 1–3) based on the GHG protocol according to the requirements published by CDP (Verification of Climate Data).

Global Compact and Caring for Climate reporting

Fortum has been a participant of the United Nations Global Compact initiative since 2010. In our sustainability report, in conjunction with the description of environmental responsibility, social responsibility and business ethics, we describe the realisation of the Ten Principles of the Global Compact initiative in our operations in 2017. We use the GRI Sustainability Reporting Standards disclosures to measure compliance with the principles of human rights, labour standards, the environment and anti-corruption.

Fortum joined the UN Caring for Climate initiative in 2013. Fortum meets the reporting requirements of the Caring for Climate initiative by annually participating in the assessment in the CDP's climate change survey and by publishing its response on the CDP website.

UN GLOBAL COMPACT

COMMUNICATION ON PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Reported GRI disclosures

This Sustainability Report 2017 references the following Disclosures from the GRI Topic-specific Standards presented in the table.
All the standards are from the 2016 version.

DISCLOSURE	DESCRIPTION	SECTION
GRI 103: MANAGEMENT APPROACH		
103-1	Explanation of the material topics	▸Sustainability approach / Key sustainability topics ▸Appendix 1: Sustainability management by topic Additionally reported by topic
103-2	The management approach and its components	▸Sustainability approach / Governance and management ▸Sustainability approach / Policies and commitments ▸Appendix 1: Sustainability management by topic ▸Sustainability approach / Business ethics and compliance ▸Environmental responsibility / Environmental non-compliances and incidents ▸Social responsibility / Human rights
103-3	Evaluation of the management approach	▸Appendix 1: Sustainability management by topic Additionally reported by topic

DISCLOSURE	DESCRIPTION	SECTION
ECONOMIC RESPONSIBILITY		
GRI 201: Economic performance		
201-1	Direct economic value generated and distributed	▸Economic responsibility / Economic impacts
201-2	Financial implications and other risks and opportunities due to climate change	▸Environmental responsibility / Climate change mitigation ▸Financials / Operating and financial review / Risk management
201-3	Defined benefit plan obligations and other retirement plans	▸Financials / Notes to the consolidated financial statements / 30 Pension obligations
201-4	Financial assistance received from government	▸Economic responsibility / Economic impacts
GRI 205: Anti-corruption		
205-1	Operations assessed for risks related to corruption	▸Sustainability approach / Business ethics and compliance
205-2	Communication and training about anti-corruption policies and procedures	▸Sustainability approach / Business ethics and compliance
205-3	Confirmed incidents of corruption and actions taken	▸Sustainability approach / Business ethics and compliance
GRI 206: Anti-competitive Behavior		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	▸Sustainability approach / Business ethics and compliance
Nuclear Plant Decommissioning		
103	Management Approach	▸Financials / Notes to the consolidated financial statements / 28 Nuclear related assets and liabilities
System Efficiency		
EU11	Average generation efficiency of thermal plants	▸Environmental responsibility / Improving energy efficiency / Energy intensity

DISCLOSURE	DESCRIPTION	SECTION
ENVIRONMENTAL RESPONSIBILITY		
GRI 301: Materials		
301-1	Materials used by weight or volume	▸Environmental responsibility / Improving energy efficiency / Fuel consumption
301-2	Recycled input materials used	▸Environmental responsibility / Improving energy efficiency / Fuel consumption ▸Environmental responsibility / Circular economy
GRI 302: Energy		
302-1	Energy consumption within the organisation	▸Environmental responsibility / Improving energy efficiency / Fuel consumption ▸Environmental responsibility / Sustainable energy production ▸Environmental responsibility / Improving energy efficiency / Energy intensity
302-3	Energy intensity	▸Environmental responsibility / Improving energy efficiency / Energy intensity
302-4	Reduction of energy consumption	▸Environmental responsibility / Improving energy efficiency
GRI 303: Water		
303-1	Water withdrawal by source	▸Environmental responsibility / Water use
GRI 304: Biodiversity		
304-3	Habitats protected or restored	▸Environmental responsibility / Biodiversity

DISCLOSURE	DESCRIPTION	SECTION
GRI 305: Emissions		
305-1	Direct (Scope 1) GHG emissions	▸Environmental responsibility / Climate change mitigation / Greenhouse gas emissions
305-2	Energy indirect (Scope 2) GHG emissions	▸Environmental responsibility / Climate change mitigation / Greenhouse gas emissions
305-3	Other indirect (Scope 3) GHG emissions	▸Environmental responsibility / Climate change mitigation / Greenhouse gas emissions
305-4	GHG emissions intensity	▸Environmental responsibility / Climate change mitigation / Greenhouse gas emissions
305-7	Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	▸Environmental responsibility / Emissions into air
GRI 306: Effluents and Waste		
306-1	Water discharge by quality and destination	▸Environmental responsibility / Water use
306-2	Waste by type and disposal method	▸Environmental responsibility / Circular economy / Waste and by-products
306-3	Significant spills	▸Environmental responsibility / Environmental non-compliances and incidents
GRI 307: Environmental Compliance		
307-1	Non-compliance with environmental laws and regulations	▸Environmental responsibility / Environmental non-compliances and incidents
GRI 308: Supplier Environmental Assessment		
308-2	Negative environmental impacts in the supply chain and actions taken	▸Economic responsibility / Supply chain management / Sustainable supply chain

DISCLOSURE	DESCRIPTION	SECTION
SOCIAL RESPONSIBILITY		
102-8	Information on employees and other workers	▸Social responsibility / Employees
102-41	Collective bargaining agreements	▸Social responsibility / Employees / Employee-employer relations
GRI 401: Employment		
401-1	New employee hires and employee turnover	▸Social responsibility / Employees
GRI 403: Occupational Health and Safety		
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	▸Social responsibility / Safety and security / Occupational and operational safety ▸Social responsibility / Employees / Employee wellbeing
GRI 404: Training and Education		
404-1	Average hours of training per year per employee	▸Social responsibility / Employees / Employee development
404-2	Programs for upgrading employee skills and transition assistance programs	▸Social responsibility / Employees / Employee development
404-3	Percentage of employees receiving regular performance and career development reviews	▸Social responsibility / Employees / Employee development
GRI 405: Diversity and Equal Opportunity		
405-1	Diversity of governance bodies and employees	▸Social responsibility / Employees / Diversity and equal opportunity ▸Governance / Corporate governance statement / Board of directors
405-2	Ratio of basic salary and remuneration of women to men	▸Social responsibility / Employees / Diversity and equal opportunity
GRI 406: Non-discrimination		
406-1	Incidents of discrimination and corrective actions taken	▸Social responsibility / Employees / Diversity and equal opportunity
GRI 407: Freedom of Association and Collective Bargaining		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	▸Social responsibility / Employees / Employee-employer relations ▸Economic responsibility / Supply chain management / Sustainable supply chain
GRI 408: Child Labor		
408-1	Operations and suppliers at significant risk for incidents of child labor	▸Social responsibility / Human rights

DISCLOSURE	DESCRIPTION	SECTION
GRI 409: Forced or Compulsory Labor		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	▸Social responsibility / Human rights
GRI 412: Human Rights Assessment		
412-1	Operations that have been subject to human rights reviews or impact assessments	▸Social responsibility / Human rights
412-2	Employee training on human rights policies or procedures	▸Social responsibility / Human rights
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	▸Social responsibility / Human rights
GRI 413: Local Communities		
413-2	Operations with significant actual and potential negative impacts on local communities	▸Social responsibility / Corporate citizenship
GRI 414: Supplier Social Assessment		
414-2	Negative social impacts in the supply chain and actions taken	▸Economic responsibility / Supply chain management / Sustainable supply chain
GRI 415: Public Policy		
415-1	Political contributions	▸Sustainability approach / Business ethics and compliance
GRI 417: Marketing and Labeling		
417-3	Incidents of non-compliance concerning marketing communications	▸Social responsibility / Product responsibility
GRI 419: Socioeconomic Compliance		
419-1	Non-compliance with laws and regulations in the social and economic area	▸Sustainability approach / Business ethics and compliance ▸Social responsibility / Employees / Diversity and equal opportunity ▸Social responsibility / Human rights ▸Social responsibility / Product responsibility
Disaster/Emergency Planning and Response		
103	Management Approach	▸Social responsibility / Safety and security / Corporate security
Access		
EU30	Average plant availability factor	▸Social responsibility / Security of supply

Independent limited assurance report on Fortum's Greenhouse Gas Emissions 2017

To the Management of Fortum Corporation

We have been engaged by Fortum Corporation (hereafter: Fortum) to provide a limited assurance on Fortum's Fossil Greenhouse Gas Emissions (hereafter: GHG Emissions) broken down by scope 1, 2 and 3 for the reporting period of January 1, 2017 to December 31, 2017 (hereafter: GHG Emissions Disclosures). The information subject to the assurance engagement is presented in the section "Greenhouse gas emissions" of Fortum's sustainability reporting 2017 (hereafter: GHG Reporting).

Management's responsibility

Management is responsible for the preparation of the GHG Reporting in accordance with the reporting criteria as set out in Fortum's reporting principles and the Greenhouse Gas Protocol (hereafter: GHG Protocol). This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the GHG Reporting that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances.

Assurance provider's responsibility

Our responsibility is to express a limited assurance conclusion on the reported GHG Emissions Disclosures within Fortum's GHG Reporting based on our engagement. Our assurance report is made in accordance with the terms of our engagement with Fortum. We do not accept or assume responsibility to anyone other than Fortum for our work, for this assurance report, or for the conclusions we have reached.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3410 to provide a limited assurance on performance data. This Standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain a limited assurance whether any matters come to our attention that cause us to believe that the GHG Emissions Disclosures have not been presented, in all material respects, in accordance with the reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the GHG Reporting. Consequently, we draw no conclusion on the prospective information.

A limited assurance engagement with respect to the GHG Emissions Disclosures involves performing procedures to obtain evidence about the reported GHG Emissions. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on this engagement included:

- A review of management systems, reporting and data compilation processes
- Selected interviews of persons conducting scope 1, 2 and 3 analysis and data owners
- Review of assumptions and emission factors used in calculations
- Analytical testing of consolidated data
- Testing of source data on spot check basis

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Our independence, quality control and competences

We complied with Deloitte's independence policies which address and, in certain cases, exceed the requirements of the International Federation of Accountants Code of Ethics for Professional Accountants in their role as independent assurance providers and in particular preclude us from taking financial, commercial, governance and ownership positions which might affect, or be perceived to affect, our independence and impartiality and from any involvement in the preparation of the report. We have maintained our independence and objectivity throughout the year and there were no events or prohibited services provided which could impair our independence and objectivity.

Deloitte Oy applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. This engagement was conducted by a multidisciplinary team including assurance and sustainability expertise with professional qualifications. Our team is experienced in providing sustainability reporting assurance.

Conclusion

On the basis of the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the assurance engagement is not prepared, in all material respects, in accordance with the GHG Protocol or that the GHG Emissions Disclosures are not reliable, in all material respects, with regard to the reporting criteria.

Our assurance statement should be read in conjunction with the inherent limitations of accuracy and completeness of the GHG Reporting.

Helsinki 28 February 2018
Deloitte Oy

Reeta Virolainen
Authorized Public Accountant

Lasse Ingström
Authorized Public Accountant

Appendix 1: Sustainability management by topic

Sustainability management in the areas of economic responsibility, environmental responsibility and social responsibility is described in the accompanying tables. Additionally, more detailed information about the management of different topics and impacts as well as about the measures, processes and projects is presented by topic in this report. Fortum's "Raise a concern" channel has been described in the section Business ethics and compliance. The purpose of the sustainability management approach is to ensure our operational compliance and to avoid, mitigate and compensate the adverse impacts from our operations and to increase the positive impacts.

Management of economic responsibility

	Description
Targets and approach	For Fortum economic responsibility means competitiveness, performance excellence and market-driven production that creates long-term value for our stakeholders and enables sustainable growth. Satisfied customers are key to our success and active consumers will have a crucial role in the future energy system. Fortum has indirect responsibility for its supply chain. We conduct business with companies that act responsibly. Each new research and development project is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency. Likewise, new investment proposals are assessed against sustainability criteria as part of Fortum's investment assessment and approval process. In our investments we seek economically profitable alternatives that provide the opportunity to increase capacity and reduce emissions. We measure financial performance with the return on capital employed (target: at least 10%) and capital structure (target: comparable net debt/EBITDA around 2.5). The realisation of financial targets in 2017 is reported in the Financial performance and position section of the ▸Financials.
Policies and commitments	The financial management system is based on Group-level policies and their specifying instructions, and on good governance, effective risk management, sufficient controls and the internal audit principles supporting them. Other key elements steering financial management are presented in the section ▸Policies and commitments and in ▸Appendix 2.
Responsibilities	The CFO and the Group's Financial unit, division management, and ultimately the CEO and the Board of Directors are responsible for issues related to finances and financial statements and for broader financial responsibility issues. Our sustainability responsibilities are presented in the section ▸Governance and management.
Monitoring and follow-up	The Board decides on the company's financial targets as a part of the annual business planning process. Realisation of the targets is monitored on monthly basis both at the division level and by Fortum Executive Management. Fortum's management monitors the realisation of financial targets quarterly as part of the business performance assessment, and key indicators are regularly reported to Fortum's Board of Directors. Financial key indicators related to investments are monitored in divisions' investment forums and by Fortum Executive Management. We report regularly on the direct and indirect financial impacts on our most important stakeholder groups. Fortum also uses the GRI Sustainability Reporting Standards indicators to measure economic responsibility.

Management of environmental responsibility

	Description
Targets and approach	Fortum's aim is to provide its customers with environmentally benign products and services. We strive to continuously reduce the environmental impacts of our operations by using best available practices and technologies. We emphasise a circular economy, resource and energy efficiency, the use of waste and biomass, and climate change mitigation in our environmental responsibility. Our company's know-how in carbon dioxide-free hydro and nuclear power production and in energy-efficient combined heat and power production, investments in solar and wind power, as well as solutions for sustainable cities play a key role in environmental responsibility. We measure the realisation of the environmental responsibility with the following indicators, for which we have set ▸Group-level targets: • Specific CO_2 emissions • Energy efficiency • Major EHS incidents • Quality of investigation process of occupational accidents, major EHS incidents, and near misses • GAP index, quality of implementation of EHS minimum standards (2018) Additionally, we have a Group-level target for the number of supplier audits.
Policies and commitments	Environmental management is based on Fortum's Sustainability Policy. Other key elements steering environmental management are presented in the section ▸Policies and commitments and in ▸Appendix 2. We assess environmental risks as part of the Group's risk assessment process. Risk assessment process is reported in the section Operating and financial review/Risk management of the ▸Financials.
Responsibilities	Our sustainability responsibilities are presented in the section ▸Governance and management.
Monitoring and follow-up	The Group's key indicators are reported regularly to Fortum's Board of Directors and are published in Fortum's Interim Reports. Major EHS incidents are reported monthly, specific carbon dioxide emissions and the quality of investigation process are reported quarterly, and energy efficiency improvements as well as the GAP index are reported annually to Fortum Executive Management. The divisions and sites follow and develop their operations with audits required by environmental management systems. Internal and external auditors regularly audit our ISO 14001 standard-compliant management system. The CO_2 emissions of plants within the sphere of the EU's emissions trading scheme are audited annually on a per plant basis by an external verifier accredited by the emissions trading authority. The verification addresses the reliability, credibility and accuracy of the monitoring system and the reported data and information relating to emissions. The plants must annually submit to the authorities a verified emissions report of the previous calendar year's carbon dioxide emissions. Our supply chain monitoring system covers also environmental responsibility and is presented in the section Management of social responsibility: Human rights. We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.

Management of social responsibility: Employees

	Description
Targets and approach	We aspire to be a responsible employer who invests in the development and wellbeing of our employees. We aim to be a safe workplace for our employees and for the contractors and service providers working for us. We measure the realisation of the social responsibility with the following indicators, for which we have set ▸Group-level targets: • Total recordable injury frequency (TRIF), own personnel (2017) • Lost workday injury frequency (LWIF), own personnel (2017) • Lost workday injury frequency (LWIF), contractors (2017) • Lost workday injury frequency (LWIF), own personnel and contractors (2018) • Number of severe occupational accidents • Quality of investigation process of occupational accidents, major EHS incidents, and near misses • GAP index, quality of implementation of EHS minimum standards (2018) • Percentage of sickness-related absences
Policies and commitments	Safety management is based on Fortum's Sustainability Policy. Other key principles steering labour practices and safety management are presented in the section ▸Policies and commitments and in ▸Appendix 2. We assess safety risks as part of the Group's risk assessment process. Everyday safety management is guided with about 20 Group-level Environment, Health and Safety (EHS) instructions.
Responsibilities	Our sustainability responsibilities are presented in the section ▸Governance and management.
Monitoring and follow-up	Fortum employee and contractor injury frequencies and the number of serious occupational accidents are reported monthly to Fortum Executive Management. The Group's key indicators are reported regularly to Fortum's Board of Directors and are published in Fortum's interim reports. The divisions and sites follow and develop their operations with audits required by safety and quality management systems. Internal and external auditors regularly audit our OHSAS 18001 standard-compliant management system. Work wellbeing, indicated as a percentage of sickness-related absences is reported to the Fortum Executive Management every quarter. In addition, work wellbeing is monitored through other Group-level indicators, such as the ratio between actual retirement age and the statutory start of the retirement pension. Feedback about the personnel's wellbeing and work satisfaction is received also from wellbeing survey as part of the Energise Your Day programme and from employee survey. We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.

Management of social responsibility: Human rights

	Description
Targets and approach	Fortum supports and respects internationally recognised human rights, which are included in the key human rights agreements. Our goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights. Our social responsibility includes taking care of our own employees and the surrounding communities. We advance responsible operations in our supply chain and more broadly in society. We have set a Group-level target for the number of supplier audits. Targets related to our own personnel are presented in the section Management of social responsibility: Employees.
Policies and commitments	Key elements steering human rights management are presented in the section ▸Policies and commitments and in ▸Appendix 2.
Responsibilities	Our sustainability responsibilities are presented in the section ▸Governance and management.
Monitoring and follow-up	The key tools for monitoring the impacts of human rights are country and partner risk assessments, supplier qualification, and supplier audits. A sustainability assessment is carried out for our investment projects and takes into consideration also human rights. The assessments are presented to Fortum Executive Management and to the Board of Directors when needed. Fortum has set a Group target for the number of audits, and the audits that are conducted are reported in our interim reports. For coal, we use the Bettercoal Code and tools in assessing the sustainability of the supply chain. Monitoring systems related to our own personnel are presented in the section Management of social responsibility: Employees. We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.

Management of social responsibility: Business ethics (incl. Anti-corruption and anti-bribery)

	Description
Targets and approach	We believe that an excellent financial result and ethical business are intertwined. We follow good business practices and ethical principles in all our operations. We work within the framework of competition laws and Group competition instructions. We avoid all situations where our own personal interests may conflict with the interests of the Fortum Group. Notably, we never accept or give a bribe or other improper payment for any reason. Our customer relations are based on honesty and trust. We treat our suppliers and subcontractors fairly and equally. We select them based on their merit and we expect them to consistently comply with our requirements and with Fortum's Supplier Code of Conduct.
Policies and commitments	Key elements steering social and compliance management are presented in the section ▸**Policies and commitments** and in ▸**Appendix 2**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸**Governance and management**.
Monitoring and follow-up	Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly reported to the Fortum Executive Management and to the Board's Audit and Risk Committee. Fortum has a ▸**grievance channel** available to all stakeholder groups for the reporting of misconduct. Monitoring systems related to the supply chain are presented in the section Management of social responsibility: Human rights.

Management of social responsibility: Product responsibility

	Description
Targets and approach	Uninterrupted supply of energy is necessary for a functioning society. We ensure the reliable operation of our power plants with preventive maintenance and continuous monitoring. Our goal is to present products and services truthfully in all our marketing and communication materials. We strictly follow responsible marketing communication guidelines and the regulations for environmental marketing. We assume responsibility for customer data protection and comply with the valid regulations related to the handling of customer data. We have set Group-level targets for the energy availability of CHP plants and for customer satisfaction and reputation indices.
Policies and commitments	Key elements steering product responsibility management are presented in the section ▸**Policies and commitments** and in ▸**Appendix 2**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸**Governance and management**.
Monitoring and follow-up	The Group's key indicators are reported regularly to Fortum's Board of Directors and are published in Fortum's interim reports. Figures related to the availability of power plants are reported monthly to Fortum Executive Management. Customer satisfaction is monitored annually with the One Fortum survey. The results of the survey are presented to Fortum's management and they are used to develop the business.

Appendix 2: Fortum's main internal policies and instructions guiding sustainability

	Economic responsibility	Environmental responsibility	Social responsibility		
			Social and employee matters	Human rights	Anti-corruption and bribery
Values	x	x	x	x	x
Code of Conduct	x	x	x	x	x
Supplier Code of Conduct	x	x	x	x	x
Disclosure Policy	x		x		
Group Risk Policy	x	x	x	x	x
Sustainability Policy (including environmental, and health and safety policies)	x	x	x	x	x
Minimum Requirements for EHS Management		x	x	x	
Biodiversity Manual		x			
Group Manual for Sustainability Assessment		x	x	x	x
Human Resources Policy			x	x	
Leadership Principles			x	x	
Accounting Manual	x	x	x		
Investment Manual	x	x	x		x
Group Instructions for Anti-Bribery	x		x		x
Group Instructions for Safeguarding Assets	x		x		x
Group Instructions for Conflicts of Interest	x		x		x
Anti-Money-Laundering Manual	x		x		x
Compliance Guidelines for Competition Law	x		x		x
Security Guidelines		x	x	x	
Policy for Sponsoring and Donations	x		x	x	x
Group Instructions for Compliance Management	x	x	x	x	x

Contact information

SUSTAINABILITY CONTACT INFORMATION ON OUR WEBSITE