Registered No. 03690830

LUXFER HOLDINGS PLC

Annual Report and Financial Statements

31 December, 2019

LUXFER HOLDINGS PLC ¦ Lumns Lane ¦ Manchester ¦ M27 8LN

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Glossary of Terms

Unless the context in which we use the terms indicates otherwise, the following terms used in this report have the following meanings:

Term	Meaning
ADR	American Depositary Receipt which evidences an ADS, being the uncertificated form in which the Company's ordinary shares were traded on the NYSE. One ordinary share was represented by one ADR.
ADS	American Depositary Share, the uncertificated form in which the Company's ordinary shares were traded on the NYSE. One ordinary share was represented by one ADS.
AGM	Annual General Meeting of the Company.
Articles	The Articles of Association of Luxfer Holdings PLC adopted by special resolution of the Company on 26 October 2011, effective from the date of the I.P.O. (and subsequently updated).
Companies Act	U.K. Companies Act 2006.
FPI	Foreign Private Issuer under the SEC registration rules.
GAAP	Generally Accepted Accounting Principles is an accounting standard adopted by the U.S. Securities and Exchange Commission.
Group	Luxfer Holdings PLC and its subsidiaries.
I.P.O.	The Initial Public Offering in the U.S. completed by Luxfer Holdings PLC on 9 October, 2012.
NYSE	New York Stock Exchange.
£0.50 Ordinary shares	The Company's ordinary shares of £0.50 each.
SEC	Securities and Exchange Commission of the U.S.
Year	1 January, 2019, to 31 December, 2019.
LTiP	Long-Term Umbrella Incentive Plan.

STRATEGIC REPORT

Principal Activities and Review of the Business

The principal activity of Luxfer Holdings PLC is that of the holding company for the Luxfer Group.

Luxfer Group is an international materials technology company specialising in the design, manufacture and supply of high-performance materials, components and gas cylinders to customers in a broad range of transportation, defence and emergency response, healthcare and general industrial end-markets.

Our area of expertise covers the chemical and metallurgical properties of aluminium, magnesium, zirconium, carbon and rare earths, and we have pioneered the application of these materials in many high-technology industries. For example:

- We were the first to use rare earths to develop and patent a magnesium alloy (EZ33A) for use in high-temperature aerospace applications such as helicopter gearboxes;
- We were at the forefront of the commercial development of zirconia-rich mixed oxides for use in automotive catalysis;
- We were the first to manufacture a high-pressure gas cylinder out of a single piece of aluminium using cold-impact extrusion;
- We developed and patented the superforming process and the first superplastic aluminium alloy (AA2004) and were the first to offer preformed aluminium panel-work commercially;
- We have a long history of innovation derived from our strong technical base, and we work closely with customers to apply innovative solutions to their most demanding product needs.

Luxfer Group is comprised of two reporting divisions:

Our **Elektron Division** focuses on specialty materials based primarily on magnesium and zirconium. Our key product lines under the Elektron Division include:

- Advanced lightweight, corrosion-resistant and heat- and flame-resistant magnesium alloys including our our dissolvable Solumag® alloy.
- Magnesium powders used in countermeasure flares that protect aircraft from heat-seeking missiles and also for heating pads for self-heating meals used by military and emergency-relief agencies.
- High performance zirconium-based materials and oxides used as catalysts and in the manufacture of advanced ceramics, fibre optic fuel cells, and many other performance products.
- Magnesium, copper, and zinc photo-engraving plates for graphic arts and luxury packaging.

Our **Gas Cylinders Division** manufactures and markets specialized products using aluminium, titanium and carbon composites. Our key product lines under the Gas Cylinders Division include:

- Carbon composite cylinders for self-contained breathing apparatus (SCBA), used by firefighters and other emergency-responders. Our products are also used by SCUBA divers and personnel in potentially hazardous environments such as mines.
- Aluminium and composite cylinders used for containment of oxygen and other medical gases used by patients, healthcare facilities and laboratories.
- Carbon composite cylinders for compressed natural gas (CNG) and hydrogen containment in alternative fuel (AF) vehicles.
- Light-weight aluminium cylinders for a variety of industrial applications such as fire extinguishers and containment of high-purity specialty gases.
- Light-weight aluminium and titanium panels superformed into highly complex shapes used mainly in the Aerospace and Luxury-Auto industries.

Strategy and Business Model

Our business strategy is underpinned by the "Luxfer B.E.S.T. Model," which consists of the following key themes:

- A common set of values that drives accountability, innovation, customer first, personal development, teamwork and integrity.
- Disciplined capital allocation with the aim of maximizing organic growth and the product portfolio value through value-enhancing acquisitions and divestitures.
- Balanced score-card used in an effort to continuously improve employee performance in an effort to help translate our vision into actionable individual goals and ensure that employee compensation is commensurate with individual performance.
- A published Customer Charter designed to enable us to retain and grow our customer base and capture additional market share.
- A lean enterprise philosophy that helps drive operational process excellence in all functions including, sales, marketing, innovation, human resources, supply, manufacturing, information technology and finance.

Group Key Performance Indicators (“KPIs”)

The Group has used the following indicators of performance to assess its development against its strategic and financial objectives during the year.

For the years 2019 and 2018, the Group monitors these KPIs under its primary GAAP which from 2018 is US GAAP. The financial metrics disclosed below for these years are based on US GAAP, and reconciliations to non-GAAP measures can be found in our Form 10-K filed with the SEC on March 9, 2020. Prior to 2018 the primary GAAP was IFRS.

Operating performance		**2019**	2018	2017	2016	2015
Revenue	$m	**443.5**	487.9	441.3	414.8	460.3
Adjusted net income[1]	$m	**39.8**	46.8	27.6	24.7	29.5
Basic earnings per share	$	**0.15**	0.55	0.43	0.83	0.60
Adjusted net income basic earnings per share	$	**1.43**	1.69	1.04	0.93	1.10
Adjusted EBITDA[2]	$m	**68.1**	79.6	61.8	55.3	62.2
Revenue per employee	$'000s	**269**	297	266	246	270
Financial performance						
Net cash flow from operating activities	$m	**10.2**	57.3	45.2	29.2	52.8
Net debt to adjusted EBITDA[5]	times	**1.2**	0.8	1.6	1.9	1.5
Non-financial performance						
Number of days lost following accidents at work[3]	work-days	**21**	208	197	215	285
ISO 14001 environmental management system certification[4]	%	**86.4**	92.1	90.0	91.8	87.6
Economic indicators						
Average aluminium price (three-month LME)	$/tonne	**1,812**	2,114	1,819	1,609	1,674
Average U.S. dollar to GBP sterling exchange rate	$:£	**1.28**	1.33	1.30	1.34	1.52
Average Euro to GBP sterling exchange rate	€:£	**1.12**	1.13	1.14	1.22	1.38

1. A non-GAAP measure for net income after tax, excluding certain non-trading items. Reconciliation to GAAP measure is disclosed in our Form 10-K, filed with the SEC on March 9, 2020.
2. A non-GAAP measure for earnings before interest, tax, depreciation and amortisation and other items. Reconciliation to GAAP measure is disclosed in our Form 10-K, filed with the SEC on March 9, 2020
3. Under regulations issued by the Occupational Safety & Health Administration of the U.S. Department of Labor, the number of days absent for each accident is capped at 180 days.
4. Percentage of Group revenue originating from ISO14001-certified businesses.
5. Net debt is defined as cash and cash equivalents less non-current bank and other loans.

Review of the Year Ended 31 December, 2019

2019 full year results were behind expectations as sales fell 9%, led by a 62% decline in sales of our Solumag® product line used in fracking operations and a general slowdown observed in our industrial end-market. Given the industrial sales softness, we are accelerating our cost savings initiatives and increasing our growth focus on markets such as Defense. The Group is looking to accelerate productivity and growth recovery as we progress towards a lean manufacturing process and more focused and faster product innovation.

Group revenue decreased by $44.4 million from the previous year. Net income for 2019 was $4.2 million compared with $14.6 million in 2018, a 71% decrease. The decrease in profitability was a result of the impact of decreased sales, coupled with a higher tax charge reflecting the impact of significant non-deductible restructuring and other expenses. This was partially offset by defined benefit pensions credits reflecting special events affecting our US and French pension schemes.

Cash generated from operating activities was $10.2 million in 2019, down from $57.3 million in 2018, due to adverse movements in working capital and approximately $20 million of cash spent on restructuring activities. The Group has continued to return funds to its shareholders in the form of regular dividends each quarter throughout 2019.

The ratio of Net Debt to adjusted EBITDA at the end of 2019 was 1.2x compared to 0.8x at the end of 2018, as a result of the increase in net debt as the Group drew down $17.5 million on the revolving credit facility coupled with a $11.5 million decrease in adjusted EBITDA.

Translation Exchange Rates

The consolidated financial statements are presented in U.S. dollars, the reporting currency of the Group. The two principal currencies used to translate the results of non-U.S. operations are GBP sterling and the euro. In 2019, GBP sterling and euro fluctuations relative to the U.S. dollar, resulted in net unfavourable movements when translating the operating results of U.K. and European operations respectively into U.S. dollars.

Revenue

On an IFRS reported basis, Group revenue for the 12-month period from operations was $443.5 million, a decrease of $44.4 million from $487.9 million in 2018. Compared to 2018, revenue reflected a $9.5 million reduction from unfavourable average exchange rates. Thus, underlying revenue, net of exchange, fell by $34.9 million. Reasons for revenue decline are discussed in detail by division below.

Elektron Division revenue in 2019 was $219.9 million compared to $249.8 million in 2018, a decrease of 12% on the prior year, which included a 1.8% loss from foreign currency. Revenue was lower in the Division primarily due to:

- Decline of $8.3 million as a result of the divestiture of Elektron's magnesium Czech recycling business at the end of Q2, with underlying business excluding the divestiture declining 7.1%;
- Significantly lower sales of our proprietary SoluMag® alloy; and
- Lower sales of other industrial products.

Gas Cylinders Division revenue was lower at $223.6 million compared to $238.1 million in 2018, a 6.1% decrease on prior year, which included a 2.1% adverse impact from foreign currency. Revenue was lower in the Division largely due to:

- Lower sales of aluminium cylinders used in industrial applications; and
- Decreased demand in Superform for parts supplied to European luxury car manufacturers.
- These are partially offset by continued strength in alternative fuel cylinder sales.

Cost of Sales and Gross Profit

The 1.0 percentage point decrease in gross profit as a percentage of sales in 2019 from 2018 was primarily the result of:

- Adverse sales mix;
- Unfavorable foreign exchange variances; and
- Impact of short-term process inefficiency following plant consolidation exercises.

These decreases were partially offset by cost savings resulting from our continued effort to reduce production-based costs, partially derived from our transformation plan.

Operating Profit

Operating profit of $20.3 million, decreased 15.8% from $24.1 million in 2018. The $17.0 million decrease in gross profit has been partially offset by the effect of the Company's cost saving initiatives, which has contributed to the reduction in administrative and distribution costs as well as a $2.7 million credit related to changes in defined benefit pensions plans as a result of special events affecting our US and French pension schemes. Restructuring and other expenses of $31.4 million were up, $2.5 million, on 2018.

During the year, $21.5 million of costs were incurred in relation to rationalization cost in the Gas Cylinders Division and $0.9 million in the Elektron Division. $21.4 million of the charge in the Gas Cylinders Division was in relation to the closure of the Company's French site. $0.6 million of the charge in the Elektron Division relates to one-time employee benefits following the decision to scale down production at one of our Luxfer Magtech sites in 2019 and further closure costs in relation to the previously announced rationalization of Elektron's Graphic Arts operations. There were other simplification costs of $0.4 million across both divisions.

Impairment charges of $2.1 million have recognized in respect of the Gas Cylinders Division and $4.4 million within the Elektron Division. Within the Gas Cylinders Division, the charge predominantly relates to our Superform business following a downturn affecting European luxury automotive sales. Within the Elektron Division, the $4.4 million relates to the write down of land and buildings following the decision to scale down production at one of our Luxfer Magtech sites.

There has also been a $2.5 million charge recognized as the result of the Company's decision to commence a project to remove low-level naturally occurring radioactive material (NORM) from a redundant building at Elektron's Manchester, UK site. The work represents remediation of a legacy environmental issue and is expected to complete in the second quarter of 2020, but with no significant further costs envisioned.

Taxation

In 2019, we reported a tax charge of $7.3 million on profit before tax of $11.5 million, representing an effective tax rate of 63.5%. The charge of $7.3 million was made up of a current income tax charge of $4.1 million and a deferred income tax charge of $3.2 million. The 2019 effective tax rate was significantly impacted due to the effect of large non-deductible expenses linked to restructuring projects.

In 2018, we reported a tax credit of $1.3 million on profit before tax of $13.3 million, representing an effective tax rate of negative 9.8%. The tax credit was made up of a current income tax charge of $6.1 million offset by a deferred tax credit of $7.4 million. The 2018 effective tax rate was significantly impacted due to a re-evaluation of our ability to utilise historic losses against future taxable profits in certain overseas jurisdictions, as well as a prior year adjustment in respect of additional tax credits related to certain new product sales

Net Income for the Year

Net income for the year was $4.2 million, compared to $14.6 million in 2018. The decrease can be attributed to lower sales, coupled with the significant increase in the tax charge, partially offset by defined benefit pension credits.

Cash Flow

In 2019, net cash flows from operating activities decreased by $47.1 million to $10.2 million from $57.3 million in 2018. The decrease is predominantly due to adverse movements in working capital and approximately $20 million of cash spent on restructuring activities. The Group has continued to return funds to its shareholders in the form of regular dividends each quarter throughout 2019.

Net cash used in investing activities remained relatively flat at $8.9 million compared to $8.7 million in 2018. Capital expenditure in 2019 was $14.0 million, compared with $14.1 million in 2018. In 2019 the Group received $4.4 million and $1.2 million as a result of the sale of the Czech recycling business and sale of property, plant and equipment respectively, compared to nil in 2018. However, in 2018, the Group received cash of $3.5 million from joint ventures and associates. The Group paid $0.5 million in relation to deferred consideration in 2019, compared to an inflow of $1.9 million in 2018 for purchase of business.

The Group had net cash outflows from financing activities $1.3 million compared to $47.6 million in 2018. Cash outflows in respect of dividend payments to holders of our ordinary shares were $13.6 million, an increase of $0.2 million from 2018. There was $17.5 million of cash drawdowns in 2019 on the banking facilities, compared to a $36.3 million repayment in 2018. In 2019, there was also $4.1 million of cash outflows relating to lease liabilities now recognized on the balance sheet.

Shareholder Equity and Borrowings

Shareholder equity as at 31 December, 2019, was $161.9 million, compared to $169.7 million at 31 December, 2018, the decrease being primarily attributable to the payment of dividends, unfavorable measurement of defined benefit pension plans, movements relating to share-based compensation and FX translation losses, partially offset by the contribution of net income. The Group had gross debt of $91.0 million and net debt of $80.8 million as at 31 December, 2019. Invested capital, defined as total shareholder equity plus net debt, was $244.7 million as at 31 December, 2019; this compares to an equivalent figure of $234.0 million in 2018.

Future Developments

In 2020, our operating objectives and trends we expect to impact our business include the following:

- Productivity acceleration and growth recovery as we progress towards a lean manufacturing process and more focused and faster product innovation.
- Leveraging delivered plant consolidation projects in our Gas Cylinders and Graphic Arts businesses to further reduce fixed costs and safeguard competitiveness.
- Continued focus on developing global talent and implementing a high-performance culture.
- Improved operating cash generation with lower restructuring activity and stronger working capital performance.
- However, any future developments are going to be impacted by the extent that the COVID-19 virus affects our supply of raw materials and demand for our products.

Essential Contracts or Arrangements

Apart from our financing agreements, we do not have contracts or other arrangements which individually are fundamental to the ability of the business to operate effectively.

Environmental Matters and Corporate Social Responsibility

Many of our corporate values are reflected in the Luxfer Model described on page 4 of this Strategic Report.

Helping Create a Greener World

We produce materials used in automotive catalysts to neutralise noxious gases. Our MELsorb® and Magtech products remove or neutralise harmful chemicals from drinking water, effluent, body fluids or surfaces. Many of our materials, such as magnesium alloys and superformed aluminium sheet, are in demand because they are lighter in weight than alternatives, enabling users to improve fuel efficiency and reduce carbon emissions. In recent years we have introduced a range of large high-pressure cylinders for the containment of cleaner alternative fuels such as compressed natural gas and hydrogen.

Managing Environmental Impact

We, and our predecessor businesses, have been around for a long while, and a number of our sites have been manufacturing at their locations for several decades, including during times when there was less awareness about protecting the environment. Today we are very focused on minimising any on-going environmental impact from our operations and we are also proactively and progressively clearing those legacy issues that we acquired in 1996 with the businesses that now comprise the Luxfer Group. We estimate that our expenditures on environmental matters could be approximately $2.5 million in 2020.

Other than for minor violations, the Group has neither created nor uncovered new environmental concerns in more than a decade and we continue to strengthen our controls. All our major sites are expected to achieve ISO 14001 certification to ensure environmental awareness and compliance. 14 of our 16 sites had achieved certification by the end of 2019. The Group has chosen the proportion of sales revenue generated from ISO 14001-compliant sites as a non-financial key performance indicator, and this figure is 86%.

Our U.K. MEL Technologies business comes under the European Union Regulation, Evaluation, Authorisation and Restriction of Chemicals ("REACH") controls, which aim, among other things, to provide a high level of protection of human health and the environment from the use of chemicals, and to make manufacturers and importers responsible for understanding and managing the risks associated with their use. As a manufacturer and importer, our MEL Technologies business participates in several REACH consortia (as member or lead member), under which manufacturers and importers of like substances register them and work together to collect and collate specified information about those chemicals, which is then used to assess any potential hazards or risks posed, and how those risks are best controlled.

Managing Energy Use

Energy is a major requirement for the Group's activities, which involve melting and forming metals, changing the state of chemicals, and running heavy machinery. Our U.K. plants have signed up for the European-wide ESOS programme aimed at minimising energy usage and we undertook baseline audits during 2017.

Our U.K. operations are regulated under the Carbon Reduction Commitment Energy Efficiency Scheme ("CRC"). The scheme is designed to target CO_2 emissions not already covered by Climate Change Levy Agreements and the European Union Trading Emissions Scheme. The legislation requires organisations to monitor and report on their energy usage and take action to reduce consumption. We are registered under the scheme. All of our U.K. operations participate in Climate Change Agreements, with the exception of our gas cylinders plant, due to the nature of its cold-extrusion process.

Greenhouse Gas Emissions

Each business unit monitors its usage of the following:

- Electricity (from utility bills);
- Natural gas (from utility bills);
- Propane (for fork-lift trucks from number of bottles used multiplied by capacity);
- Cover gases (to prevent molten metal from oxidising from number of cylinders used multiplied by capacity);
- Any other greenhouse gases used in the manufacturing process (from amount invoiced).

Other than for electricity, the conversion into equivalent CO_2 tonnes is done using standard conversion factors readily available from websites of, for example, DEFRA in the U.K. Broadly speaking, natural gas (and other, pure gases) has a very similar CO_2 equivalency no matter from where it is sourced.

For electricity, the CO_2 equivalency depends on the power stations being used to generate it. Accordingly, each business unit uses the 'local' equivalency factor published on official sites. For our U.S. businesses this is available individually for each State on the U.S. Environmental Protection Agency website, and is updated each year according to the mix of power-generation facilities in use. Whilst the U.K. is historically a heavy user of gas-powered electricity generation, it has transitioned away from using coal-fired power and is increasingly adopting zero-emissions technologies, especially off-shore wind power.

Each business unit has a manager responsible for the collation of this data, which is collected centrally along with other accounting information at year-end. The submissions from each business unit are aggregated, with electricity usage being classified as 'scope 2', while natural gas and all other gases are classified as 'scope 1'.

Year-on-year figures by business unit are used to identify any anomalies, while similar business units are also compared to ensure consistency and understanding of the information.

The Greenhouse Gas ("GHG") emissions statement below provides a summary of the Group GHG (carbon) emissions for the year ended 31 December, 2019, compared to 2018.

We report on both Scope 1 and Scope 2 emission sources:

Scope 1 emissions: Direct emissions from sources owned or operated by the Group such as combustion of gas;

Scope 2 emissions: Indirect emissions attributable to the Group due to its consumption of electricity.

We do not collect details of emissions from travel.

Greenhouse Gas Emission Statement

Baseline year	**Full year 2019**
Consolidation Approach	Operational control.
Boundary	Consolidated factories operated by us to manufacture Group products.
Emission factor data source	U.K. sites: Conversion factors published by the Carbon Trust. U.S. sites: Conversion factors published by the U.S. Environmental Protection Agency for the individual State in which the site is situated. Sites in other countries have used their relevant countries conversion factor.
Intensity ratio	CO_2 equivalent tonnes per $1 million of sales value ($1mSV).
Group Metric - Sales value	**$443.5 million in 2019** (2018: $487.9 million)

Greenhouse Gas Emission Source

	2019		2018	
	(tCO_2e) [1]	(tCO_2e/\$1mSV)	(tCO_2e) [1]	(tCO_2e/\$1mSV)
Scope 1 Fuel combustion (natural gas and propane) and operation of facilities	71,904	162.1	111,263	228.0
Scope 2 Purchased electricity	39,203	88.4	46,916	96.2
Statutory total (Scope 1 & 2) [2]	**111,107**	**250.5**	**158,179**	**324.2**

Notes:

1. Tonnes of CO_2 equivalent.

2. Statutory carbon reporting disclosure required by the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.

Overall our total CO_2 emissions decreased by 29.8%, and our CO_2 emissions per $million of sales decreased by 22.8% as the decrease in emissions is a result of plant consolidations, product mix and reduced sales. Purchased electricity decreased by 16.4% and there was also a decrease in scope 1 fuel of 35.4%.

Industry Engagement

Our divisions are active members of relevant industry associations and standards bodies, both in Europe and North America, where they have a positive influence variously as members and officers and technical advisors. They often participate in, and chair committees within, those associations on technical and other matters of interest or concern to their relevant industry, including standards, specifications and safety. These organisations include the International Magnesium Association, the Chemical Industry Association, the Zircon Industry Association, the Compressed Gas Association, the Metal Powder Producers Association, the British Standards Institute, the Canadian Standards Association, the American Society of Testing and Materials, and many others.

Our People

Employee Participation and Alignment of Employees' Interests with the Interests of Shareholders

All Employee Share Schemes

Since the end of 2013 we have offered an all employee share investment plan ("SIP") to our U.K. employees, and a substantial number of employees have taken up the opportunity to make contributions out of their pay to purchase shares on a six-monthly basis under the plan. In 2014, we also established an employee stock purchase plan ("ESPP") under which our U.S. employees can accumulate contributions from pay over a six monthly period to purchase shares. Both plans are set up under the relevant legislation in their country to take advantage of any tax efficiencies offered by that legislation for the employees. We are investigating ways in which we might, where cost-effective, offer the opportunity to purchase shares on a regular basis in jurisdictions where we have smaller numbers of employees.

As far as reasonably possible, bonus arrangements are made available to motivate employees towards financial, business and personal targets.

We also have a long-term incentive plan under which selected managers receive a grant of awards over shares to encourage their retention in the Group and/or performance awards over shares where the targets are designed to align the remuneration of managers with returns to shareholders and reward the achievement of business targets and key strategic objectives.

Training and Development

The knowledge and skills of our people are key competitive advantages, and we endeavour to involve our employees through regular local, divisional and Group communications and training.

We first launched a corporate management development programme in 2012 aimed at developing junior and middle managers into future leaders.

We have also implemented a Group-wide e-learning programme to provide training to employees to support them in, and to promote compliance with, our Group compliance policies including, among other policies, our Code of Ethics, Anti-Bribery, Competition and Whistleblowing polices.

In addition to the Group initiatives referred to above, training and development of our employees is carried out in various different ways. Training of employees is undertaken on a business unit basis in areas where we want to ensure compliance with regulation and encourage best practice such as in health and safety or in specific areas to train, update and support employees in undertaking their jobs and on a divisional and cross divisional basis to train functions within the Group. Training is delivered both from internal resources (where available) and third party external resources as appropriate. Our divisions also have a commitment as part of their own strategy maps to encourage and assist personal development of their employees.

Further information on employee policies, communication and engagement can be found in the Directors' Report on pages 30 to 32.

At 31 December, 2019, the number of employees was as follows:

Employees *	Male	Female
Directors of Luxfer Holdings PLC	4	2
Senior Managers	38	6
Employees	1,275	239

*The Directors of Luxfer Holdings PLC include 5 independent Non-Executive Directors who are not employees of the Group.

Health and Safety

We want our sites to be safe places to work so we closely monitor near-misses, injuries and lost-time accidents ("LTAs"). We have chosen days lost from LTAs as a key performance indicator; see table on page 4.

We are pleased to report that 2019 has been an exceptional year for safety. The 21 working days lost through accidents in 2019 maintained the very significant improvements seen in recent years compared to 2013 (973 days). The number of LTAs during the year was 5, which is a significant reduction from 18 in 2018.

Customers and Suppliers

While we have multiple sourcing options in almost every area of the Group, our key suppliers are important to us, and we have chosen them for their combination of quality, delivery performance and value for money. We aim to pay them to terms and resolve any issues amicably.

We recognise our customers as the source of our success. Our aim is to build and sustain long-term relationships based on mutual cooperation on design and high standards of quality and service. We work closely in collaboration with our customers to find more innovative solutions to their needs for advanced materials and products. Our focus is on demanding applications where our technical know-how and manufacturing expertise combines to deliver a superior product.

Responsible Business Ethics

We expect our employees and associates to apply a high ethical standard in every aspect of business. We have a corporate Whistleblowing Policy to facilitate reporting of failures to maintain these standards.

Our systems are designed to ensure compliance with all laws and regulations wherever we operate and we have a number of Group and local policies to ensure compliance and best practice as appropriate. We actively participate on many regulatory bodies that oversee or regulate industries to which we sell our products. We have undertaken training on the U.K. Bribery Act, the U.S. Foreign Corrupt Practices Act, both European and U.S. Competition law and other areas related to compliance which has been supplemented by the e-learning training referred to earlier in this section.

All of our businesses are required to take into account the importance of human rights.

Corporate Giving and Engagement with the Community

Our business units are encouraged to support local causes, business-related charities and other community support events through the donation of personal time and monetary contributions. For example, our U.S. Luxfer Gas Cylinders and Superform businesses have for a long time made significant contributions to the United Way charity through both corporate giving and individual employee fund raising activities and donation of personal time.

The Group made charitable donations in 2019 amounting to $8,000 (2018: $17,000), consisting of a number of small donations to various community, welfare, health, sport and educational charities local to the businesses that make up the Group both in the U.K. and elsewhere. During 2019, our businesses continued their links with universities and schools to develop young talent.

Stakeholder agenda

The Directors within the Group take their responsibilities under Companies Act 2006 seriously and consider their responsibilities to stakeholders when making decisions for the Group. The responsibilities under Section 172 are underpinned by our values of customer first, innovation, accountability, personal development and teamwork.

The Group is committed to being a responsible business and the interests of the environment in which we operate are considered with every decision that we take to serve customers. This is reflected in our mission to create products that contribute to a safe, clean and energy-efficient world, as well as the steps we take to minimise any negative impact we could have on our environment and be involved within our local communities.

We recognise the value of our employees and seek to invest in them wherever possible. We believe in encouraging their growth within the business through training and development as well as rewards such as our share programmes.

The Board is committed to engagement with shareholders of all levels and we recognise the value of an open dialogue in developing plans and long term strategy.

Principal Risks and Uncertainties

Internal Controls and Risk Management

The Group has in place a comprehensive risk management programme designed to ensure that significant and emerging risks are identified, assessed and managed effectively.

We operate to established procedures to identify key risks, evaluate their likelihood and size, and manage / assess the effectiveness of controls to mitigate the impact and likelihood of these significant risks materialising. Such a system can only provide reasonable and not absolute assurance against material misstatement or loss. Our procedures are reviewed on an on-going basis as considered appropriate and cover both financial and non-financial risks.

Below we describe the Group's principal internal procedures for identifying, evaluating and mitigating risk generally and in certain specific areas. We also discuss our principal risks and uncertainties.

Risk Management - Over the years the Company has developed and implemented a Risk Management Process with the help of external advisors.

Health and Safety - As an integral part of good business practice; the Group is committed to achieving and maintaining high standards of health and safety for all its employees, contractors, visitors and all those who may be affected by its operations.

Environment - The Group remains committed to a high standard of environmental management to ensure legislative compliance across all operations.

Internal Financial Controls

During 2019, the internal audit function among other things, continued to work on the internal controls over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act.

As at 31 December, 2019, the Executive Director in his capacity as Chief Executive Officer, has carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures under the supervision and the participation of the Executive Leadership Team, which is responsible for the management of the internal controls, and which includes the Chief Executive Officer. In accordance with the requirements of Section 404 of the Sarbanes-Oxley Act, and as included in the Form 10-K filed with the SEC, management conducted an evaluation of the effectiveness of internal control over financial reporting based on the Internal Control - Integrated Framework (the 2013 Framework) issued by the Committee of Sponsoring Organisations of the Treadway Commission. As at 31 December, 2019, management concluded that our disclosure controls and procedures were not effective as of December 31, 2019, as a result of the material weakness described below.

In light of the material weakness described below, the Company performed additional analysis and other post-closing procedures to ensure our consolidated financial statements are prepared in accordance with International Financial Reporting Standards (IFRS). Management, including the Chief Executive Officer and the Chief Financial Officer, has concluded that the Company's consolidated financial statements for the periods covered by and included in this Annual Report are fairly presented in all material respects in accordance with IFRS for the periods presented herein.

Implementation of new ERP system

In October 2019, the Company implemented a new ERP system in the Luxfer MEL Technologies business unit within the Elektron segment. As a result of the newly implemented ERP, which replaced two legacy ERP systems, management had to design, implement and operate new information technology ("IT") general controls and process-level controls and make changes to existing process-level controls during the fourth quarter. As a result of the new ERP system implementation in the fourth quarter, there were control deficiencies identified that led to the material weakness, described below.

The Company did not maintain effective controls over certain IT general controls for the new ERP system. Specifically, the Company did not (a) adequately tailor privileged access to the financial application, programs, and data or sufficiently evidence the monitoring of such access; (b) adequately approve exceptions to segregation of duties in respect of the ability to develop and implement changes to the IT production environment; and (c) ensure that it appropriately used complete and accurate information in performing monitoring and oversight controls. In addition, as a consequence of the implementation of the new ERP system, the Company did not design, implement and consistently operate effectively certain process-level controls in the fourth quarter in respect of the appropriate recording, accounting, and review of certain transactions and accounts; and ensure the completeness and accuracy of system-generated information used in performing certain IT-dependent manual controls.

While the control deficiencies did not result in any material misstatement of the Company's financial statements, the Company's management concluded that, as these deficiencies, in combination, potentially could result in a material misstatement, these deficiencies, in combination, represent a material weakness.

Treasury and Financial Risk - The Group operates a central treasury function that controls all borrowing facilities, investment of surplus funds and management of financial risks. The Group also has a number of financial risks. The management of these financial risks and mitigating actions are explained further in Note 28 of the Group consolidated financial statements.

We set out in the tables below our principal risks and uncertainties and how we seek to mitigate or eliminate them.

Area of Risk	Mitigating Activity
Dependency on certain key markets - The Group depends on certain end-markets, including automotive, self-contained breathing apparatus, aerospace and defence, medical and printing and paper. An economic downturn or regulatory changes in any of these end-markets could reduce sales. It is possible that all or most of these end-markets could be in decline at the same time, such as during a recession, which could significantly adversely affect the results of our operations due to decreased sales. With oil prices remaining relatively low, this has had an impact in recent years on our alternative fuels end-markets, and has also reduced demand from the oil and gas sector for products that use our materials, such as helicopters.	The Group's diverse product portfolio reduces the risk of any one adverse external economic factor impacting across all of these end-markets; however, a range of external factors could impact across the majority or all of the Group's end-markets. To further mitigate this risk, the Group continues to invest in research and development and to innovate, working closely with its customers, to develop next generation products in these end markets.
Effect of external factors due to the global nature of our business - Our global presence exposes us in the countries in which we operate to economic conditions, geopolitical risks, specific regulations and other external factors, which could affect our operations. On June 23, 2016, the U.K. held a referendum in which voters approved an exit from the European Union (the "E.U."), commonly referred to as 'Brexit'. On March 29, 2017, the U.K. Government invoked Article 50 of the Treaty on the European Union, which was expected to result in the U.K. leaving the E.U. on March 29, 2019 but was subsequently twice deferred with the Withdrawal Agreement taking effect on January 31, 2020. Following the exit there is an eleven month transition period during which existing E.U. rules and regulations will continue to apply to the U.K. pending agreement on the future trading arrangements, currently required to be achieved by December 31, 2020. It is possible that following agreement, the new relationship will result in greater restrictions on imports and exports between the U.K. and E.U. countries, the U.S. and other markets with increased regulatory complexity. There is also the potential for disruption to the movement of raw materials and finished goods in the event that no agreement is reached by the end of the transition period. These changes may adversely affect our operations and financial results.	The Group's diverse product portfolio and geographic spread reduces the risk of any one external factor impacting across all end-markets. The Group also closely monitors geopolitical and global economic developments in its markets and will be closely monitoring the outcome of negotiations following the U.K.'s decision to leave the E.U. and has taken action to address short term restrictions on movements of supplies.
Competition - Markets for many of the Group's products are now increasingly global and highly competitive, especially in terms of quality, price and service. The Group could lose market share as a result of these competitive pressures, which could negatively impact profit margins. More generally, the Group may also face potential competition from manufacturers of products similar to the Group's aluminium and magnesium-based products using other materials, such as steel, plastics or composite materials.	The Group continues to invest in new and better products and aims to focus its resources in speciality markets that need high-performance products and a reliable partner.
Protection and development of intellectual property rights and changing industry requirements - As a result of the nature of the competition faced by the Group, its ability to remain profitable depends on its ability to protect intellectual property and to invest in research and development, which requires funding.	The Group seeks to protect its intellectual property through patents and by reducing the disclosure of commercially sensitive information. It also invests long-term in new products and manufacturing processes and maintains this investment through the business cycle.

Reliance on major customers - If the Group fails to maintain its relationships with its major customers, or fails to replace customers, or if there were reduced demand from such customers or for the products produced by such customers, it could reduce the Group's sales and have an adverse effect on the Group's financial position. The Group's top 10 customers accounted for, in aggregate, approximately 25% of Group revenue in 2019.	Long-term relationships with customers are especially important, and the Group's operations work closely with customers to ensure customer service is the best in the industry and aim to support our customers in their development of new products through our own product innovations and technical know-how.
Risks relating to interruption of operations - The Group's production facilities are located worldwide. Any of its facilities could suffer an interruption in production, either at separate times or at the same time, because of various unavoidable occurrences including major equipment failure. Although the Group carries insurance, the cover on certain catastrophic events or natural disasters, including earthquakes and certain other events, could be limited.	The Group performs routine maintenance on its production equipment on all its manufacturing sites. These maintenance programmes are carefully planned to keep all plants operating at a high level of efficiency, and to reduce the risk of breakdowns and failure of equipment. Health and Safety is also a major consideration in the operation of the Group manufacturing facilities and is carefully monitored. The Group carries comprehensive business interruption insurance.
Effect of international currency markets - Changes in foreign currency exchange rates or interest rates could cause sales to drop or costs to rise. The Group conducts a large proportion of its commercial transactions, purchases of raw materials and sales of goods in various countries and regions outside of the U.K., including the U.S., continental Europe and Asia. Changes in the relative values of currencies can decrease the profits of the Group's operations through both the translation of profits into USD or on import and export transactions.	The Group regularly enters into forward foreign currency exchange contracts to manage currency risks and a Treasury Committee, overseen by the Chief Financial Officer / Corporate Controller, monitors the implementation of the Group's hedging policy.
Exposure to fluctuations in raw material - The Group is exposed to fluctuations in costs of the raw materials and utilities that are used to manufacture its products and can incur unexpected cost changes. The primary raw material used in the manufacturing of gas cylinders and superformed panels is aluminium, and though our operations use specialist alloys, their prices are pegged directly or indirectly to the quoted London Metal Exchange prices for primary aluminium. This makes the costs subject to speculative commodity cost changes, as well as fundamental supply and demand cost pressures. We have also experienced significant cost fluctuations in other raw material costs such as primary magnesium, carbon fibre, zircon sand and rare earths. The Group's operations also buy and sell goods in regional markets that may be protected by tariff barriers. Changes in these tariffs could have an adverse impact on the profitability of the operations.	In the long-term the Group has sought to recover the cost of increased commodity and utility costs through price increases and surcharges. Short term fluctuations in the price risk on aluminium are mitigated by agreeing fixed prices with the suppliers, along with the use of LME derivative contracts. Increasingly, in recent years we have included in our sales agreements an ability to share cost increases with our customers.
Product liability and regulatory risks - The Group is exposed to possible claims for personal injury, fatality or property damage that could result from a failure of a product manufactured by the Group, or of a third party integrating a Group product. Many factors beyond the Group's control could lead to liability claims, which may in turn lead to product legal claims or disruption in sales to customers. The Group could be required to pay a material amount if a claim is made against it that is not covered by insurance or otherwise subject to indemnification, or that exceeds the insurance coverage that the Group maintains. Moreover, the Group does not routinely carry insurance to cover the expense of product recalls, and litigation involving significant product recalls or product liability could have a materially adverse effect on the Group's financial position / performance.	The Group uses its operating and technical expertise to mitigate these risks, with a strong emphasis on high levels of product quality and rigorous testing, and by ensuring that products are designed to meet or exceed the regulatory design standards of the markets they serve. The Group has also obtained insurance coverage for most of these types of liabilities.
Environmental costs and liabilities - The Group may be exposed to substantial environmental costs and liabilities, as its operations are subject to a broad range of environmental laws and regulations in each of the jurisdictions in which it operates. An increase in environmental costs and liabilities could have a materially adverse effect on the Group in any given year, which could negatively affect the Group's cash flows.	To mitigate this risk the Group seeks to operate best practice procedures in this area and is in the process of attaining the ISO 14001 qualification at all of its larger manufacturing sites. The bulk of the Group's known environmental issues are legacy problems that arose many years ago. Management have a programme in place to progressively improve and eliminate these historic issues.

Risks relating to the Group's retirement benefit plans - The Group operates defined benefit arrangements in the U.K., the U.S. and France. These are further explained in Note 30 of the Group consolidated financial statements. Their funding requirements are subject to fluctuations in investment markets and changes in the life expectancy of members and, as a result, these plans have significant deficits. Increased regulatory burdens have also proved to be a significant risk, with taxes such as the U.K.'s Pension Protection Fund Levy, which cost $0.4 million in 2019 ($0.4 million in 2018). Regulations in this area can also constrain the level of debt incurred and restrict the Group's ability to pay dividends.	The Group and the Trustees of the plans closely monitor the financial performance of the Schemes, taking actuarial and investment advice as appropriate. These are long-term liabilities, and we have a programme in place to contribute cash to our defined benefit plans over a number of years. This is based on affordability and is varied according to our net earnings. These plans are funded and the bulk of the assets are invested in 'growth' assets.
Exposure to risks related to cybersecurity threats and incidents - In the conduct of its business, the Group collects, uses, transmits and stores data on information technology systems. This data includes confidential information belonging to us, our customers and other business partners, as well as personally identifiable information of individuals. We have experienced, and expect to continue to be subject to, cybersecurity threats and incidents, ranging from employee error or misuse to individual attempts to gain unauthorised access to information systems to sophisticated and targeted measures known as advanced persistent threats, none of which have materially affected the Group to date. We also rely in part on the reliability of certain tested third parties' cybersecurity measures, including firewalls, virus solutions and backup solutions. Cybersecurity incidents may result in business disruption, the misappropriation, corruption or loss of confidential information and critical data (ours or that of third parties), reputational damage, regulatory fines, litigation with third parties, diminution in the value of our investment in research and development, data privacy issues and increased cybersecurity protection and remediation costs. Future cybersecurity breaches or incidents or further increases in cybersecurity protection costs may have a materially adverse effect on our business, financial condition or results of operations.	The Group devotes significant resources to network security, data encryption and other measures to protect our systems and data from unauthorised access or misuse, including to meet certain information security standards that may be required by our customers, all of which increases cybersecurity protection costs. As these threats, and government and regulatory oversight of associated risks, continue to evolve, we may be required to expend additional resources to enhance or expand upon the security measures we currently maintain.
Our results of operations may be negatively impacted by the coronavirus disease outbreak - In December 2019, the 2019 novel coronavirus disease (COVID-19) surfaced in Wuhan, China. The World Health Organization declared a global emergency on January 30, 2020, with respect to the outbreak. Subsequently several countries, including the United States, United Kingdom, Japan and Australia have implemented measures that have restricted movement of people and certain goods and services. This widespread health crisis has adversely affected the global economy, resulting in an economic downturn that could impact demand for our products. With many countries in 'lockdown', non-essential manufacturers and suppliers have been forced to shutdown operations. This has caused disruptions from the temporary closure of third-party supplier and manufacturer facilities and interruptions in product supply. Disruption to our suppliers and falling demand of our customers will likely impact our sales and operating results. To date the outbreak has not had a material adverse impact on our operations. However, the future impact is highly uncertain and cannot be predicted and there is no assurance that the outbreak will not have a material adverse impact on the future results of the Group. The extent of the impact, if any, will depend on future developments, including actions taken to contain the coronavirus.	The Company continues to monitor the COVID-19 situation closely, while simultaneously executing business continuity plans. These business continuity plans include, but are not limited to, (i) retooling operations to maintain social distance and maximize employee safety; (ii) increasing resources and efforts to satisfy demand from the most impactful parts of our business; (iii) expanding flexible work arrangements and policies, where practical, to maximize employee safety; (iv) increased monitoring of short-term cash flow, including measures to reduce costs and generate cash; and (v) providing regular updates to our shareholders, employees, customers, and suppliers in a transparent and timely manner. At this time, Luxfer is continuing to operate at the majority of its facilities, as permitted by local authorities. However, due to weaker demand resulting from uncertain economic conditions, potential supply constraints, and the continued spread of COVID-19, Luxfer has temporarily suspended operations at certain facilities and reduced capacity at others. As the situation evolves and if warranted, the Company may suspend or reduce operations at additional facilities.

Approval

The Strategic Report is set out on pages 3 to 17 and incorporates the sections titled Environmental Matters and Corporate Social Responsibility and Principal Risks and Uncertainties.

Signed on behalf of the Board by:

A. Maskara

A Maskara

CHIEF EXECUTIVE OFFICER

May 6, 2020

GOVERNANCE

The Board of Directors

The Directors of the Company who were in office during the year and up to the date of signing the financial statements were:

Name	Age	Position
David F. Landless	60	Non-Executive Chair (appointed as Chair 15 May 2019)
Joseph A. Bonn	76	Non-Executive Chair (resigned 15 May 2019)
Alok Maskara	49	Executive Director and Chief Executive Officer
Clive J. Snowdon	66	Non-Executive Director
Richard J. Hipple	67	Non-Executive Director
Allisha Elliott	49	Non-Executive Director (appointed 5 March 2019)
Lisa G. Trimberger	59	Non-Executive Director (appointed 1 September 2019)
Adam L. Cohn	49	Non-Executive Director (resigned 15 May 2019)

Biographical information concerning the current members of our Board of Directors is set forth below:

Biographies:

David F. Landless

David was appointed as a Non-Executive Director in March 2013 and was appointed to the Audit Committee on 28 March 2013, and the Nominating and Governance Committee on 23 July 2013. He was appointed as Chair of the Board on 15 May 2019 and stepped down as the Chair of the Audit Committee.

Experience: David started his career with Bowater Plc and Carrington Viyella Plc and joined Courtaulds Plc in 1984. He was appointed a Finance Director in the U.K. and U.S. divisions of Courtaulds Plc from 1989 to 1997 and Finance Director of Courtaulds Coatings (Holdings) Limited from 1997 to 1999. He was appointed Group Finance Director of Bodycote plc in 1999 until he retired from the position on 1 January 2017. He is a Non-Executive Director of Innospec, Inc., of Renold Plc and of European Metal Recycling Limited. He is chairman of the audit committees at Innospec Inc. and Renold Plc. David is a Chartered Management Accountant. He graduated from the University of Manchester Institute of Science and Technology.

Joseph A. Bonn (Resigned 15 May 2019)

Joseph (Joe) was appointed as a Non-Executive Director on March 1, 2007, at which time he was also appointed to both the Audit and Remuneration Committees. He has also been a member of the Nominating and Governance Committee since its establishment in July 2013. Joe was appointed as Non-Executive Chairman on December 6, 2016. Joe was a member of the Audit Committee until and including December 31, 2018. Joe decided not to stand for re-election as Director at the AGM in 2019 and therefore resigned his position as Chair if the Board on 15 May 2019

Experience: Joe has extensive experience in the aluminium and speciality chemical industry, having worked for Kaiser Aluminium and Chemical Corporation for over 35 years in various senior capacities. Among other appointments in the U.S., he has served on the board and executive committee of the Aluminium Association, the board of the National Association of Purchasing Management and the

International Primary Aluminium Institute board. He is currently a consultant with Joseph Bonn RE&C Corp.

Joe holds a Bachelor of Science degree from Rensselaer Polytechnic Institute and an M.B.A. degree in Finance from Cornell University.

Alok Maskara

Alok was named as the next Chief Executive Officer of Luxfer and appointed to the Board of Directors on May 23, 2017 and later became Chief Executive Officer on July 1, 2017.

Experience: Before joining Luxfer, Alok was a business segment President at Pentair Plc for eight years where he led businesses of progressively larger sizes. Prior to Pentair, he was at General Electric Corporation for four years. Alok began his management career as a consultant at McKinsey & Company and prior to that was the Vice-President at NanoPore, Inc.

Alok holds an M.B.A. from the Kellogg Graduate School of Management at Northwestern University, an M.S. in Chemical Engineering from the University of New Mexico and a Bachelor of Technology degree in Chemical Engineering from the Indian Institute of Technology, Mumbai.

Clive J. Snowdon

Clive was appointed as a Non-Executive Director on July 29, 2016, at which time he was also appointed to the Remuneration and Nominating and Governance Committees. He was appointed to the Audit Committee on August 5, 2016 and acts as a financial expert as defined under the listing rules of the New York Stock Exchange. From May 15, 2019, Clive stepped into the position as Chair of the Audit Committee. Clive was a member of the Remuneration Committee until and including January 30, 2017 and is a member of the Nominating and Governance Committee.

Experience: Clive has served as Chairman of the Midlands Aerospace Alliance from 2007 to December 2016 and is a Trustee of the Stratford Town Trust. He is also the aerospace industry advisor to Cooper Parry Corporate Finance. In May 2016, Mr. Snowdon stepped down from the board of Hill & Smith Holdings PLC, where he had been Senior Non-Executive Director since May 2007 and chair of the remuneration committee, as well as a member of the audit and Nominating and Governance Committees. Mr. Snowdon retired from Umeco PLC in June 2011 after serving as Chief Executive since April 1997, and he was Executive Chairman of Shimtech Industries Group Limited until the sale of the business in May 2015. From 1992 to 1997, Mr. Snowdon served as Managing Director of Burnfield PLC after being promoted to that position from Finance Director. He has also held senior positions with Vickers PLC, BTR PLC and Hawker Siddeley Group. Mr. Snowdon is qualified as a Chartered Accountant.

Richard J. Hipple

Richard was appointed as a Non-Executive Director on November 19, 2018, at which time he was also appointed Chair of the Remuneration Committee and a member of the Audit Committee.

Experience: Richard served as Chairman and Chief Executive Officer of Materion Corporation from 2006 until his retirement in 2017, as well as President and Chief Operating Officer from 2005 to 2006. Prior to that, Richard served in the steel industry for 26 years in a number of increasing capacities, including project engineer, strategic planning, supply chain management, operations, sales and marketing, and executive management, including President. Since 2012, he has been a Non-Executive Director of KeyCorp and is currently a member of both their Audit and Technology Committees, and a Non-Executive Director and member of the Compensation and Governance Committees of the Barnes Group since 2017. He served as a Non-Executive Director for Ferro corporation from 2007 to 2018 and served as Lead Director, Chairman of the Compensation

Committee and Governance Committee. He is Chairman of the board of trustees of the Cleveland Institute of Music and has served as a Director of the Greater Cleveland Partnership, as well as the Manufacturers Alliance for Productivity and Innovation.

Allisha Elliott *(Appointed as a Non-Executive Director on March 5, 2019)*

Allisha was appointed as a Non-Executive Director on March 5, 2019, at which time she was also appointed to the Remuneration Committee and the Nominating and Governance Committee. Allisha became Chair of the Nominating and Governance Committee from 15 May 2019.

Experience: Allisha is currently the Chief Human Resources Officer and Senior Vice President for Human Resources and Communications at Sensata Technologies, Inc. Prior to Sensata Technologies, Ms. Elliott served in several human resource leadership roles in the global manufacturing industry, culminating as Vice President, Human Resources and Communications for Transportation Systems of Honeywell International Inc. Allisha received her Master of Labor and Human Resources degree from the University of Illinois Urbana-Champaign, and her Bachelor of Arts degree in Sociology from Purdue University.

Lisa G. Trimberger *(Appointed as a Non-Executive Director on September 1, 2019)*

Lisa was appointed as a Non-Executive Directors on 1 September 2019, at which time she was also appointed to the Audit Committee and the Remuneration Committee.

Experience: Lisa is a certified public accountant who served as an audit partner of Deloitte & Touche LLP, spending 31 years with the firm until her retirement in 2014.As a lead client service partner, Ms. Trimberger audited and interacted with the management and boards of publicly traded companies, including real estate investment trusts, and worked on significant corporate transactions and control and risk- assessment issues. She was also actively involved in the firm's engagement quality review practice as Deputy Professional Practice Partner and Engagement Quality Control Review Partner. Currently, Ms. Trimberger is a principal and owner of a private investment company, Mack Capital Investments LLC. Ms Trimberger has a Bachelor of Science in Accounting from St. Cloud University.

Adam L. Cohn (Resigned 15 May 2019)

Adam was appointed as a Non-Executive Director on July 18, 2016, at which time he was also appointed to the Remuneration Committee. Adam was appointed to the Nominating and Governance Committee from January 31, 2017. During March 2019, Adam informed the Board that he would not be standing for re-election at the 2019 AGM and has since stepped down from his role as Non-Executive Director.

Experience: Adam is Co-CEO of Stone Canyon Industries LLC (SCI), a company he co-founded in September 2014. Prior to SCI, from March 2000 to September 2014, Mr. Cohn was a partner at Knowledge Universe ("KU"), where he served as Head of Mergers and Acquisitions and Business Development for KU and its portfolio companies. Prior to joining KU, he was employed with Whitney & Co., a private equity firm. Before that, Mr. Cohn was an investment banker in the Financial Sponsors Group at Bankers Trust Company and Deutsche Bank. He has a B.S. in business from Skidmore College and an M.B.A. from Columbia University. Mr. Cohn served on the board of k12, Inc, where he was also chairman of the compensation committee. In addition, he serves on several other private company boards.

Executive Leadership Team

The members of the Executive Leadership Team of Luxfer are responsible for the day-to-day management of our company.

The following table lists the names and positions of the current members of the Executive Leadership Team as well as those who served during the year. Joining dates are listed for new members in 2019 onwards.

Name	Age	Position
Alok Maskara	49	Executive Director and Chief Executive Officer
Heather C. Harding	51	Chief Financial Officer
Andrew W. J. Butcher	51	President of Luxfer Gas Cylinders
Graham D. Wardlow	52	Managing Director of Luxfer MEL Technologies
James G. Gardella	63	President of Luxfer Magtech
Mark A. Chivers	51	Managing Director of Luxfer Superform
Peter N. Gibbons	49	Vice President and General Manager of Luxfer Graphic Arts
Jeff C. Moorefield	56	Vice President of Operations
Megan E. Glise	27	Associate General Counsel (member from January 6, 2020)
Chris A. Barnes	65	President of Luxfer Graphic Arts (resigned July 1, 2019)

Biographies:

Alok Maskara,

Chief Executive Officer

Please refer to the main Board biographies on pages 18 to 20.

Heather C. Harding

Chief Financial Officer

Heather was named Chief Financial Officer of Luxfer on January 1, 2018.

Before joining Luxfer, Heather was vice president, finance, for Eaton Lighting, a business unit of Eaton Corporation from 2012 to 2017. Prior to that, she was vice president, finance, for various operating units within Cooper Industries and Emerson Electric.

Heather is a Certified Public Accountant and received a Bachelor of Science degree in accounting from Southern Illinois University at Carbondale.

Andrew W. J. Butcher

President of Luxfer Gas Cylinders

Andrew (Andy) was appointed as President of Luxfer Gas Cylinders in April 2014 and is employed in this role by Luxfer Inc., a Luxfer subsidiary. He became a member of the Executive Management Board (now Executive Leadership Team), on January 1, 2014, on his appointment as President designate. He joined Luxfer Gas Cylinders in Nottingham in 1991, before moving to California in 2002, where he led our composite businesses. He was President of Luxfer Gas Cylinders North America from 2009 to 2014. Andy holds an M.A. degree in Engineering from Cambridge University, and an M.B.A. from Keele University.

Graham D. Wardlow

Managing Director of Luxfer MEL Technologies

Graham was appointed Manging Director of Luxfer MEL Technologies in October 2017 following the merger of Luxfer's MEL Chemicals and Magnesium Elektron Alloys businesses. Graham joined Magnesium Elektron in 1984 and undertook several technical and commercial roles before becoming Managing Director of the Alloys business in 2008 and Divisional Managing Director of MEL Chemicals in May 2017, at which time he became a member of the Executive Leadership Team.

Graham holds a degree in materials engineering from Imperial College, University of London, as well as an M.B.A. from Keele University.

James G. Gardella

President of Luxfer Magtech

James (Jim) was appointed President of Luxfer Magtech and became a member of the Executive Leadership Team in July 2017. Prior to serving in his current position, he was appointed President of Magnesium Elektron Powders in 2007 which he originally joined in 1990 as Financial Controller.

Jim holds a Bachelor of Science degree in Accounting from Villanova University, an M.B.A. in Finance and is a Certified Public Accountant.

Mark A. Chivers

Managing Director of Luxfer Superform

Mark was appointed Managing Director of Luxfer Superform in 2018. Mark joined Luxfer in 2009 as Operations Director of Superform's Worcester facility, before moving to California in 2014 to become General Manager of the Riverside facility. Before joining Luxfer, Mark held production and operations management and vice president roles in the castings and tool making industry, particularly servicing the automotive sector. Mark holds a B.A. degree in Business Studies from Wolverhampton University.

Peter N. Gibbons

Vice President and General Manager of Luxfer Graphic Arts

Peter was appointed Director of Sourcing and IT and became a member of the Executive Leadership Team in July 2017. In July 2019, Peter took on the role of Vice President and General Manager of Luxfer Graphic Arts, relocating to St Louis, Missouri. He joined Luxfer in 2004 as European Financial Controller at Magnesium Elektron, before moving to the corporate office to take up the Group Financial Controller role. He returned to Magnesium Elektron in 2014 as Divisional Finance Director. Peter is a qualified accountant.

Jeff C. Moorefield

Vice President of Operations

Jeff Moorefield was appointed to the Executive Leadership Team as Vice President of Operations of Luxfer in March 2019. Before joining Luxfer, Jeff served as Senior Vice President of Global Operations at Tennant Company. Prior to that, he served as Global Vice President of Operations for various operating units within Pentair. Jeff attended Western Kentucky University where he received a Bachelor of Science degree in Industrial Technology.

Megan E. Glise

Associate General Counsel

Megan Glise joined Luxfer as U.S. Legal Counsel in July 2018 and was appointed Associate General Counsel in February 2019. On January 6, 2020, Ms. Glise became a member of the Executive Leadership Team and an Executive Officer of the Company. Before joining Luxfer, she was an Associate Attorney at a Wisconsin-based law firm, where she focused her practice on corporate and transactional law. Ms. Glise received her Juris Doctor from Marquette University Law School and holds a Bachelor of Arts degree in English and Criminology and Law Studies from Marquette University.

Chris A. Barnes

President of Luxfer Graphic Arts (Resigned July 1, 2019)

Chris was the President of Luxfer Graphic Arts until his resignation on July 1, 2019. Chris joined Magnesium Elektron North America, a Luxfer entity in 2003. Prior to joining Luxfer, he held several key leadership positions in serving the graphic arts industry and the manufacturing of magnesium wrought products. Chris has a Bachelor of Science degree from Michigan State University and an M.B.A. from Washington University in St. Louis, Missouri.

Corporate Governance

In this section we explain our corporate governance and what informs and influences our corporate governance practices.

Overview of Corporate Governance

The Company is incorporated in England and Wales and has a single listing of ordinary shares on the New York Stock Exchange (NYSE). Accordingly, our corporate governance is informed by the relevant aspects of two regulatory regimes, the U.K. and the U.S.

As a company incorporated in England and Wales, our corporate governance practices primarily are governed by our articles of association (our “Articles”) and the Companies Act 2006 (the “Companies Act”). For example, as a company listed on the NYSE we are a “quoted company” for the purposes of the Companies Act and therefore required to comply with its “quoted company” requirements. The most significant aspects are around the way in which we report on remuneration including an annual advisory shareholder vote on director remuneration and a binding shareholder vote every three years.

As we are not, however, listed on the London Stock Exchange, the Company is not required to comply with the U.K. Corporate Governance Code (the “Code”). Nevertheless, we choose to follow aspects of the Code, insofar as it is appropriate, relevant and practical to a company of the size and status of the Company.

In July 2018, the Company informed the NYSE of its loss of Foreign Private Issuer (FPI) status and, in accordance with the SEC’s rules and regulations, its intention to transition to a domestic issuer effective January 1, 2019. From this date, the Company has complied , in full, with the requirements for domestic issuer pursuant to the Exchange Act of 1934, as amended (the “Exchange Act”) and the NYSE’s Manual. We believe this further raises the overall standard of corporate governance requirements of the Company, and notable changes include each committee being required to consist of entirely independent Directors and the majority of the Board must compromise of independent Directors as set out in Section 303A.02 of the NYSE’s Manual..

Due to our shares being listed on the NYSE, we are required to comply with certain provisions of the Sarbanes-Oxley Act. This includes Section 404(a) that requires our management to identify in our Annual Report on Form 10-K a framework used by management to evaluate the effectiveness of our

internal controls over financial reporting. Such evaluation must be based on a suitable, recognised control framework that is established by a body or group that has followed due-process procedures, such as the framework established in "Internal Control-Integrated Framework (2013)" issued by the Committee of Sponsoring Organisations of the Treadway Commission (the "COSO framework"). We are required to and have updated our framework for the evaluation of the effectiveness of our internal controls over financial reporting in accordance with the COSO 2013 framework.

In developing corporate governance practices for the Group, the Directors have taken note of all of these different regulatory requirements including those required under the Companies Act, as well as reflecting best practice as the Directors consider appropriate.

Board Members

During 2019, the Board comprised between five and six Non-Executive Directors, including the Chair, and one Executive Director. Currently the maximum number of Directors permitted under the Articles is ten. A number of Directors have an interest in the shares of the Company as set out in the Remuneration Report on pages 35 to 54.

Our Articles contain a provision requiring a third of the Directors to retire by rotation each year. In line with best practice, the Nominating and Governance Committee has proposed, and the Board has agreed, that all directors should offer themselves for re-election at the 2020 AGM.

Brief biographical details of the Directors who served during 2019 are provided on pages 18 to 20.

Roles

The Board

The Board has responsibility for the overall leadership of the Company, its long-term success and helping to develop and approve its strategic aims. The Directors have determined a schedule of matters reserved to the Board. Reserved matters are comprehensive and reviewed as the Board considers appropriate, normally annually. A review was undertaken during the year, following a comprehensive review taking into consideration the transition to a domestic issuer. Matters reserved to the Board are set out in the Governance section of the Company's website.

Executive Leadership Team

The Executive Leadership Team meets at least once a month. It is chaired by the Chief Executive Officer and consists of the Chief Financial Officer and senior management at group and divisional levels. The members of the Executive Leadership Team during 2019 are listed on page 21. The Executive Leadership Team acts in an advisory capacity to the Chief Executive Officer and provides a forum where matters of interest or concern to the Group can be reviewed and discussed, strategy debated, policies developed and agreed, best practice discussed, and appropriate measures implemented. It also provides an opportunity for senior management to receive updates on progress in other areas of the Group outside their remit.

Division of Responsibilities

Due to the small size of the Board, the Directors have determined it to be unnecessary to appoint a Senior Independent Director.

The division of responsibilities between the Chief Executive Officer and the Chair is clear and it has not been considered necessary to record it in writing.

- The Chief Executive Officer is responsible to the Board for the management and performance of the business within the framework of the matters reserved to the Board and for developing strategy and then implementing the strategy he has agreed with the Board;

- The Chair is responsible for the leadership of the Board and ensuring its effectiveness. He ensures that Board discussions are conducted taking into account all views, promoting openness and debate by facilitating the effective contribution of the Non-Executive Directors and ensuring no individual or group dominates the Board.

The Chair maintains a dialogue with the Non-Executive Directors in the absence of the Executive Directors, and where appropriate, canvasses their opinion on issues and meets with them in the absence of the Executive Directors on a regular basis.

The Nominating and Governance Committee annually reviews succession planning for senior appointments in the Group and to the Board, with recommendations made to the Board.

Meetings

There are typically at least four main scheduled meetings of the Board each year, where the Board physically meets. Additional scheduled telephone meetings are called as appropriate. The Board will normally look to hold a majority of their physical meetings at the Group's operational plants, as part of their monitoring role and to ensure a better understanding of the Group's operations. At these meetings, the Board tours the plant and has an opportunity to meet local and divisional management on both a formal and informal basis and discuss the progress of their operations with them.

Attendance at Board and Committee Meetings during 2019

		Attendance		
	No. of Meetings held during Membership	Main Board	Telephone Board	Total Board
David Landless	6	5	1	**6**
Joseph Bonn	3	3	-	**3**
Alok Maskara	6	5	1	**6**
Clive Snowdon	6	5	1	**6**
Richard Hipple	6	5	1	**6**
Allisha Elliott	5	4	1	**5**
Lisa Trimberger	2	2	-	**2**
Adam Cohn [i]	3	2	-	**2**
Total number of meetings		**5**	**1**	**6**
No. of meetings held at operational sites in the U.K. or U.S.		**4**	**-**	**4**

[i] The director attended two of the physical board meetings held by telephone. The director did not stand for re-election at the 2019 AGM and resigned from the Board and its Committees on this date.

	Audit Committee	Remuneration Committee	Nominating and Governance Committee
David Landless	Member	Non-Member	Member
Joseph Bonn	Non-Member	Member until 15 May 2019	Member until 15 May 2019
Alok Maskara	Non-Member	Non-Member	Non-Member
Clive Snowdon	Member	Non-Member	Member
Richard Hipple	Member	Member	Non-Member
Allisha Elliott	Non-Member	Member from 5 March 2019	Member from 5 March 2019
Lisa Trimberger	Member from 1 September 2019	Member from 1 September 2019	Non-Member
Adam Cohn	Non-Member	Member until 15 May 2019	Member until 15 May 2019

Information and Support

The Company Secretary normally distributes Board and Committee agendas and materials to the Board and Committees seven days before a scheduled meeting.

There is a written procedure for decisions to be taken between scheduled Board and Committee meetings that also deals with information distribution in such cases.

The Board receives both financial and operational information to assist it in discharging its duties. The Chief Executive Officer and the Chief Financial Officer provide monthly reports to the Board which together cover all aspects of the business and which are then elaborated or commented upon at scheduled Board meetings as appropriate. Additional topics for review and discussion are added in these reports from time to time at the request of the Directors. In addition, specific items are scheduled into the Board agenda for report and review on a regular basis, such as health and safety and environmental matters and current topical issues.

There is a written procedure in place to cover circumstances when the Directors either individually or collectively determine that they require independent professional advice at the Company's expense.

The Company Secretary as well as internal and external counsel provides updates to the Board on issues and changes of a legal and regulatory nature of which it and the individual Directors should be aware to refresh their skills and knowledge. There is a culture of information exchange on various matters of interest to the Group and its operations between Directors and senior managers to keep Directors abreast of relevant developments. In addition to meetings held at sites as described above, the Non-Executive Directors may independently visit operational sites to enlarge their knowledge of the individual businesses that make up the Group. The Executive Director has regular business reviews at operational sites throughout the year, and any appropriate information gathered on those visits will be reported to the Board.

Newly appointed directors undergo a comprehensive induction program along with opportunities for continuing development and learning.

The Board evaluates its information and support procedures periodically to ensure they remain appropriate.

Accountability

The Directors are responsible for preparing the financial statements to satisfy U.K. law. This responsibility is explained further in the Statement of Directors' Responsibilities on page 55 and the Independent Auditors' Report on pages 56 to 63.

Audit Committee

Attendance		Meetings held during membership	Meetings attended
Clive Snowdon	Member and Chair from 15 May 2019	7	7
David Landless	Member and Chair until 15 May 2019	7	7
Richard Hipple	Member	7	7
Lisa Trimberger	Member from 1 September 2019	2	2

The Company Secretary acts as secretary to the Audit Committee. The Chief Financial Officer and the Chief Executive Officer attend as required. The Company's external auditor is invited to attend the meetings of the Audit Committee.

The responsibility and duties of the Audit Committee are set out in written terms of reference which appear on the Company's website under the Governance section. The terms of reference were reviewed during the year. The Committee has the responsibility of overseeing corporate accounting and financial reporting in the Group.

Its duties include:

- **External Auditors:** Engagement and retention of our independent auditors, pre-approval of audit and non-audit services, approving fees paid, monitoring independence and performance, discussing audit findings with auditors;
- **Financial Reporting:** Monitoring the integrity of the financial information to be included in all consolidated financial statements and announcements, reviewing and challenging critical accounting policies, the manner in which major elements of judgement are reflected in the consolidated financial statements, disclosures, significant adjustments and compliance with standards;
- **Internal Controls and Risk Management System:** Reviewing systems of internal control and risk management and adequacy of disclosure controls and procedures. Maintaining a record of complaints regarding accounting and audit matters; and
- **Whistleblowing**: Establishment and monitoring of the Group Whistleblowing Policy and procedures

The Board considers that all the members have appropriate financial experience to enable them to contribute to the Audit Committee's work. The Board also considers that each member of the Audit Committee satisfies the requirements for independence set out in Section 303A.02 of the NYSE rules and Rules 10A-3 under the Exchange Act. David Landless, Clive Snowdon and Lisa Trimberger all qualify as 'Audit Committee Financial Experts' as defined in Item 407(d) of Regulation S-K.

Each year, normally prior to the commencement of the financial year, the Committee establishes a schedule of meetings to coincide with the key events in the Company's financial reporting and audit cycle to ensure it has sufficient time on its agendas to deal with matters for which it has responsibility. Agendas and appropriate papers are issued for each meeting. The Chair speaks to the external auditors as he considers appropriate and necessary in preparation for meetings at which matters are discussed that have been audited by the Company's external auditors or are relevant to them.

The Audit Committee has adopted and implemented a 'Policy on the Provision of Audit and Non-Audit Services by Auditors' (the "Pre-approval Policy") to comply with auditor independence requirements contained in Rule 2-01 of Regulation S-X under the Exchange Act. The policy requires the Audit Committee to pre-approve all matters upon which the Company's external auditors are requested to advise (audit and non-audit work), including fees, subject to certain pre-approvals made annually by the Audit Committee. A pre-approved sum to be spent on audit and tax matters is delegated to the Chief Financial Officer and there is a procedure for approval of urgent items by the Chair between meetings. The policy also affirmatively proscribes the Company's external auditors from advising on certain matters.

During the year the Audit Committee met on seven occasions and among other matters they undertook the following:

- A specific review of the Company's external auditors' independence with the Company's external auditors and the Company's management, which confirmed the independence of the external auditors;
- A discussion of matters pertaining to, and approval of, work to be undertaken by the Company's external auditors under the Pre-approval Policy;
- A review with the Head of Corporate Review and senior management of the internal audit work, the system of internal controls and monitored the implementation of internal controls over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act and the progress of the update to the internal controls over financial reporting framework to reflect the 2013 COSO framework throughout the Group;
- A review of how Group risks are assessed, the Group's risk profile and how the Group mitigates its risks;
- A review of the Company's annual SEC filing, statutory report and consolidated financial statements and the quarterly financial releases made by the Company;
- An evaluation of the work of the Audit Committee.

Its terms of reference appear under the Governance section on the Company's website.

Remuneration Committee

Membership of the Remuneration Committee and details of its work appear in the Remuneration Report on pages 35 to 54. Its terms of reference appear under the Governance section on the Company's website.

Nominating and Governance Committee

The members of our Nominating and Governance Committee during the year were:

		Meetings held during membership	Meetings Attended
Allisha Elliott	Member from March 5, 2019, Chair from May 15, 2019	1	1
Clive Snowdon	Member and Chair until May 15, 2019	2	2
Joseph Bonn	Member until May 15, 2019	1	1
David Landless	Member	2	2
Adam Cohn	Member until May 15, 2019	1	0

The Company Secretary acts as secretary to the Nominating and Governance Committee. The Chief Executive Officer attends as required.

Adam Cohn announced his decision not to stand for re-election in March 2019. On his departure from the Board of Directors he stood down from the Nominating and Governance Committee.

Since her appointment to the Board on March 5, 2019, Allisha Elliott has been a member of the Nominating and Governance Committee.

The responsibility and duties of the Nominating and Governance Committee are set out in written terms of reference which appear on the Company's website under the Governance section. The terms of reference were reviewed during the year.

Its duties include:

- Identify and review individuals qualified to become Directors and fill vacancies;
- Select and approve Directors to stand for re-election pursuant to the retirement provisions under our Articles;
- To identify and review individuals qualified to become Executive Officers of the Company, (other than its Board members), consistent with criteria approved by the Board;
- Develop a process for annual evaluation of the Board and its Committees;
- Develop and recommend to the Board a succession plan, and review management's succession plan;
- Develop and recommend to the Board a set of corporate governance principles applicable to the Company;
- Review the Company's corporate governance processes and its governance principles; and Play a leadership role in the Company's corporate governance.

Whistleblowing Arrangements

We have established policies, subject to individual legal requirements in the countries in which the Group operates, which encourage and enable employees to report in confidence any possible impropriety in either financial reporting or, where permitted in the relevant jurisdiction, other matters. An independent third-party telephone line is provided for reporting matters where the individual believes they cannot report any issue through their line management. The Audit Committee oversees the operation of the Whistleblowing Policy and receives a report from the Company Secretary at each meeting of the Audit Committee.

Anti-Corruption Policy

We have an established policy and procedures to enable compliance with current legislation.

Relations with Shareholders

Directors seek to develop an understanding of the views of our shareholders in various ways and from time to time engage with them on a one-to-one basis, as appropriate, considering the need to treat shareholders equally. The Chief Executive Officer and the Chief Financial Officer hold quarterly investor conference calls as part of the Group’s reporting cycle. From time to time we consult with our major shareholders in an effort to seek feedback on various matters of corporate governance, including our Director remuneration policy. The Chief Executive Officer and the Chief Financial Officer also attend investor conferences

Directors' Report

The Directors of Luxfer Holdings PLC (the "Company") present their annual report together with the audited financial statements of the Group and the Company for the year ended 31 December, 2019. This Directors' Report should be read together with, and incorporates, the Corporate Governance section on pages 23 to 29.

Results

The profit for the year, after taxation, amounted to $4.2 million (2018: $14.6 million); please see the Strategic report on pages 3 to 17 for more detail.

Dividends per Share

Quarterly interim dividends of $0.125 each £0.50 ordinary share, each quarter totaling $13.6 million, were paid in 2019 (2018: $13.4 million).

Two further interim dividends were paid in February and May 2020 of $0.125 each £0.50 ordinary share totaling $6.8 million.

Directors

The names of the people who were Directors during the year, and up to the date of this report, and their brief biographical details are set out in the Governance section on pages 18 to 20.

Capital Structure

On 11 December, 2017, the Company terminated its ADS facility and converted all outstanding ADSs into ordinary shares. The conversion is a one-for-one exchange with one ADS converted into one ordinary share.

During 2018, the company issued an additional 1,863,201 shares and also canceled 7,578,369,556 deferred shares.

As at 31 December, 2019, the Company's issued share capital comprised of 29,000,000 ordinary shares of £0.50 each and 761,835,338,444 deferred shares of £0.0001 each as set out in Note 19 to the financial statements.

Substantial shareholdings

The Company had been notified of the following interests amounting to 3% or more of its issued share capital as at the end of the financial year:

Shareholder	Number of shares	Percent
FMR LLC	5,193,313	18.9%
Wellington Management Group LLP	3,551,633	12.9%
Paradice Investment Management LLC	2,632,226	9.6%
Nantahala Capital Management LLC	2,432,531	8.9%
William Blair Investment Management LLC	1,489,042	5.4%
BlackRock Inc	1,433,737	5.2%
Kempen Capital Management N.V.	847,423	3.1%
Granahan Investment Management Inc	816,230	3.0%

Directors' Interests and Related Party Transactions

No Director had a material interest in, nor was any Director party to, any contract or arrangement to which the Company or any subsidiary is or was party to either during the year or at the end of the year, with the following exceptions: in the case of the Executive Director, his individual service contract and in the case of the Non-Executive Directors, their engagement letters, see Note 33 of the financial statements.

The interests of the Directors who held office at 31 December, 2019, and those of their families, in the share capital of the Company, including share options are set out in the Remuneration Report on pages 35 to 54. All of the interests were beneficial. There has been no change in the interests of the directors between the balance sheet date and the date of approval of the financial statements.

Going Concern

After making enquiries, the Directors have a reasonable expectation that the Company has adequate resources and borrowing facilities to continue operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the consolidated financial statements.

Research and Development

During the year, the Group invested $5.7 million (2018: $6.4 million) in research and development on new and improved products and processes. Once a project is reasonably certain to deliver a commercial product, certain of the development costs are capitalised. The Group continues to maintain links in fields of research with both leading universities in various countries and outside agencies to support and supplement its own in-house expertise. The Group also continues to gain significant tax benefit from the U.K. Patent Box regime.

Future Developments

An indication of the future developments of the business of the Group can be found in the Strategic Report on page 7.

Disabled Employees

Where an employee has developed a disability whilst employed in his or her business that impacts on his or her ability to carry out a certain job effectively, the relevant business unit will make arrangements where possible to retrain that employee and continue his or her employment. Applicants for job vacancies who are disabled are given full and fair consideration, bearing in mind requirements of the particular job and the particular aptitude and abilities of the candidate.

Employee Involvement

Many employees are directly involved in the performance of the Group and divisions through the use of various incentive schemes. These include bonus schemes and various share-related schemes, details of which can be found in the Corporate Social Responsibility ("CSR") section of the Strategic Report on pages 11 and 12.

A combination of newsletters, regular line manager and team briefings, exchanges and consultations, at both Group and site level (as appropriate) are used to systematically communicate with employees and develop their awareness of matters that concern them, their business unit, division and the Group. As required, employees are consulted on matters that concern them in an appropriate manner and through appropriate channels.

The Group continues to offer training and development opportunities to employees at all levels and to all abilities, providing benefit to both the Group and the individual employee. Further details can be found in the CSR section of the Strategic Report on pages 11 and 12. Periodically we undertake a succession planning review to ensure that we develop suitable candidates for critical leadership roles within the Group.

For more senior management we hold an annual management conference at the beginning of each year where the Luxfer Group strategy for the year at Group and divisional level is presented and discussed and workshops undertaken on subjects that have been determined will promote the Group strategy during the year. Meetings of employees carrying out the same function within the Group companies are also held to convey Group policy, to exchange best practice and to undertake training.

We have an equal opportunities policy, which is intended to promote good employment practices throughout the Group in the treatment of both employees and job applicants.

Political Donations

The Company and its subsidiaries made no political donations in either 2019 or 2018.

Directors' Liabilities

The Company maintains liability insurance for Directors and officers that gives appropriate cover for any legal action brought against Directors. During the year and at the date of approval of the financial statements, the Company had in force provision in the Articles allowing the Company to indemnify the Directors against liability incurred in the proper conduct of the Company's business, subject to the conditions set out in the Companies Act 2006.

Greenhouse Gas Emissions

A statement regarding the greenhouse gas emissions resulting from the Company's activities can be found on pages 9 to 10 of the Strategic Report.

Treasury and the Use of Financial Derivatives

Details of our financing and treasury policies, along with the management of treasury risks and use of financial derivatives can be found in Notes 28 and 29 to the consolidated financial statements.

Directors' Statement as to Disclosure of Information to the Auditors

The Directors who were members of the Board at the time of approving this Directors' Report are listed on page 18. Having made enquiries of fellow Directors and of the Company's auditors, each of those Directors confirms that:

- To the best of each Director's knowledge and belief, there is no information relevant to the preparation of their report of which the Company's auditors are unaware;
- Each Director has taken all steps a Director may be reasonably expected to have taken to be aware of relevant audit information and to establish that the Company's auditors are aware of that information.

Statement of Directors' Responsibilities in respect of the Financial Statements

The Statement of Directors' Responsibilities in respect of the Financial Statements can be found on page 55 and forms part of this report.

Independent Auditors

A resolution will be put to the Annual General Meeting of the Company to re-appoint PricewaterhouseCoopers LLP as auditors.

The financial statements on pages 64 to 141 were approved by the Board of Directors on May 6, 2020 and signed by order of the Board:

J. Savage

J Savage

Secretary

May 6, 2020

DIRECTORS' REMUNERATION REPORT

Chair's Letter

Dear Shareholder,

Following my first full year as Chair of the Remuneration Committee, I present my report for the year 2019 to the shareholders pursuant to U.K. regulations governing the way remuneration for directors of quoted U.K. companies is reported and voted upon.

As our Remuneration Policy ("the Policy") was approved by our shareholders at the 2018 AGM, we are not required to seek reapproval of the Policy again for three years unless it is amended. The Remuneration Committee ("the Committee") currently has no proposal to amend the Policy.

The Company's Remuneration Policy can be found in a standalone document in the Governance section of the Company's website **www.luxfer.com/governance/**.

The Annual Remuneration Report starting on page 35 sets out how the Directors were remunerated in 2019 in accordance with the Policy. As the Committee generally reviews Director pay and incentives at the beginning of the financial year, the second half of the report on page 47 also contains details of the decisions made on the remuneration of our Directors for 2020. The Annual Remuneration Report will be proposed for an advisory vote at the Company's 2020 AGM as required by the relevant U.K. regulations.

Major Decisions on Remuneration during the Year

Decisions made affecting 2019 remuneration

Overall, 2019 was a challenging year for the Company. We experienced a decrease in net sales relating to both the macro economic environment and following the divestiture of our Czech recycling operations. Significant one-off costs were also incurred due to certain planned restructuring activities. There were however significant cost savings made and management remain committed to meeting the targets previously promised.

The main targets of the annual bonus for 2019 related to two financial performance goals, management EBITA and cash conversion. For the Chief Executive Officer, Alok Maskara, the bonus plan also contained a number of non-financial objectives relating to the achievement of certain balanced scorecard objectives. Both financial performance goals and the non-financial objectives pay-out on a sliding scale basis at predetermined criteria, based on the achievement of threshold, target or stretch levels. Due to the challenging economic climate, the total annual bonus awarded to Alok Maskara was 60.1% of his base salary, out of a maximum potential of 200%. The achievement of both management EBITA and cash conversion metrics fell in the range of between the threshold and target levels. Further details of the bonus arrangements and the bonus paid can be found in the *Single Figure, Executive Directors' Remuneration section of the Remuneration Report* on page 37.

For 2019, 60% of the total target share award to Alok Maskara was in the form of performance-based share awards and 40% was in the form of time-based restricted stock units. With regards to the performance-based elements of his share awards, the Committee believe the targets set were challenging, motivated the executive and align the interests of the executive with those of shareholders. Stretch targets required exceptional performance to be achieved. These performance-based awards for the year were based upon adjusted diluted EPS (earnings per share) targets and relative total shareholder return. The total shareholder return performance measurement period runs until the year ending December 31, 2021, but in 2019 the Company's relative total return to shareholders was in the lower quartile of its peer group. The EPS share award opportunity for the year ended December 31, 2019 was missed.

As previously reported, the EPS share award targets set for 2018 were achieved at a maximum level and therefore awards were made in 2019 accordingly. Furthermore, although the relative total shareholder return metric for the 2018 share award opportunity is subject to remeasurement up to the year ending December 31, 2020, it is pleasing that the position as at December 31, 2019 showed the Company in the upper quartile when compared to its peer group. Further details are set out in the *Single Figure, Executive Director's Remuneration and the Awards Granted During the Year sections of the Remuneration Report, and the associated Notes.*

Decisions affecting 2020

The Committee reviewed the Chief Executive Officer's salary at its March 2020 meeting in accordance with the Policy. In light of the challenging year and despite the excellent work Alok Maskara and his team continue to do in driving simplification across the business it was agreed to freeze his salary and benefits for the year ending December 31, 2020. In addition, no changes are proposed to the maximum bonus and share award opportunities available under his variable remuneration arrangements. For 2020, the maximum annual bonus opportunity relating to the achievement of certain financial metrics will remain at 160% of base salary, with the metrics being consistent with the previous year. The annual bonus opportunity relating to the achievement of certain non-financial objectives will continue, capped at a maximum of 40% of base salary. A summary of the Chief Executive Officer's salary and incentive arrangements for the financial year 2020 can be found under the section headed *Implementation of the Remuneration Policy for the Year Ending 31 December 2020* on pages 47 to 48 of the Remuneration Report.

The Committee has also reviewed the compensation of its Non-Executive Directors. In light of the fee increases made during 2019, as disclosed in the Remuneration Report for the previous year, it is proposed to also freeze the base fees for Non-Executive Directors and the Non-Executive Chair for 2020. The value of share awards available to the Non-Executive Directors is to remain capped at a value of up to 55% of annual base fee, at the date of award.

The Committee intends to perform an external benchmarking exercise using independent advisory consultants looking at both Executive Director and Non-Executive Director remuneration later in the year.

The Committee looks forward to gaining your support for the Annual Remuneration Report at the 2020 AGM.

R. J. Hipple

R J Hipple

CHAIR OF THE REMUNERATION COMMITTEE

May 6, 2020

[1] Management EBITA (also referred to as Adjusted EBITA) and Cash Conversion are non-GAAP Company financial measures. The derivation and reconciliation to U.S. GAAP of each measure, is shown in 'Appendix A: Reconciliation of non-GAAP Financial Measures to GAAP Measures' of the Proxy Statement filed with the SEC.

Remuneration Report

2019 Remuneration Report

(subject to advisory vote by the shareholders at the 2020 AGM)

This report has been compiled in accordance with the U.K. '*The Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendments) Regulations 2013'*. As required by the Regulations, the report will be proposed for an advisory vote at the 2020 AGM. **The approved Remuneration Policy can be found on the Company's website at www.luxfer.com/governance/.**

The Remuneration Committee, its Activities and Responsibilities

The members of the Committee during the year are set out below.

Members of Committee during 2019		Meetings held during membership	Meetings attended
Richard Hipple	Member and Chair	3	3
Allisha Elliott	Member from March 5, 2019	2	2
Lisa Trimberger	Member from September 1, 2019	1	1
Joseph Bonn	Member until May 15, 2019	2	2
Adam Cohn [i]	Member until May 15, 2019	2	1

[i] The member attended one of the physical committee meetings held by telephone.

The Company Secretary acts as secretary to the Committee. The Chief Executive Officer normally attends all the meetings, at least in part.

Adam Cohn announced his decision not to stand for re-election in March 2019. On his departure from the Board of Directors he also stood down from the Remuneration Committee.

Since her appointment to the Board on March 5, 2019, Allisha Elliott has been a member of the Remuneration Committee.

Since her appointment to the Board on September 1, 2019, Lisa Trimberger has been a member of the Remuneration Committee.

The Committee is responsible for determining and agreeing with the Board the framework on executive remuneration and its costs. **The Committee's written Terms of Reference can be accessed in the Governance section of the Company's website www.luxfer.com/governance/.**

During 2019, the Committee dealt with some of the following matters:

January 2019

- Consideration as to whether, and to what extent, the Executive Directors' bonus targets for 2018 had been met;
- Determination of the Executive Director's annual bonus targets for 2019;
- Annual review of the Executive Director's and Company Secretary salaries;
- Review of bench marking peer companies;
- Setting of goals to be met by the Executive Directors and Senior Managers which if met would lead to the awarding of time-based share awards;
- Delegation of authority to Chief Executive Officer to make awards under the LTIP over a defined number of shares to junior and middle management in his sole discretion; and
- Review of Committee Performance of the previous year.

March 2019

- Review of 2018 Remuneration Report for subsequent approval by the Board; and
- Review of Awards under the LTIP made to junior and middle management.

December 2019

- Progress review of proposed 2019 bonus and share award pay-out for Executive Director and Senior Managers;
- Annual review of Committee's Terms of Reference; and
- Evaluation of Committee Self-Assessment Evaluation Process.

Advisors to the Committee

The Committee has access to independent advice when it considers it requires such advice.

The Company engaged with Meridian Compensation Partners, LLC ("Meridian") to provide advisory and benchmarking surveys with regards to Director and Executive Officer remuneration and benchmarking peer companies. The cost of advice provided by Meridian during 2019 was $17,969 (2018: $8,806).

REMUNERATION RECEIVED BY THE DIRECTOR FOR THE YEAR ENDED DECEMBER 31, 2019

(Information in this part of the Remuneration Report is audited unless stated otherwise)

Single Figure

The tables below set out an analysis of the Director's total remuneration for 2019. Total remuneration reflects both the performance of the Company and the contribution made by the Director to the continued success of the Company during their period of tenure.

Executive Director's Remuneration

Single Total Figure Table

U.S.$	Year	Salary[1]	Taxable Benefits[2]	Annual Bonus[3]	Long-Term Incentive Awards[4]	Other Share Awards[5]	Pensions Contributions[6]	Total
Alok Maskara	**2019**	**675,000**	**57,513**	**405,711**	**485,300**	**42,127**	**168,750**	**1,834,401**
	2018	615,000	75,726	1,230,000	1,021,963	2,874,662	153,750	5,971,101

Table compiled in accordance with the U.K. 'The Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008', as amended by 'The Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013'.

(1) **Salaries**. Single Total Figure remuneration reflects the period from January 1, 2019 to December 31, 2019.

(2) **Taxable Benefits.** During the year an amount was paid to the director in respect of expenses relating to car allowance, and medical and dental insurance. All payments made to Alok Maskara in respect of these allowances were determined and paid in U.S. dollars.

(3) **Annual Bonus.** For the 2019 financial year, the annual bonus plan was based on the achievement of two financial performance goals, management EBITA (adjusted earnings before interest, taxation and amortisation) performance and the ratio of management EBITA to adjusted operating cash flow "Cash Conversion" (two of the key strategic performance indicators used by the Company to assess its development against its financial objectives during the year), measured against the annual budget and an element was based on the achievement of certain predetermined balanced scorecard objectives. For the financial performance goals, both are measured on a sliding scale that commences only once threshold has been achieved and rises through the target performance up to a stretch target. The financial performance award elements of the annual bonus opportunity were split evenly between the above two financial metrics.

For the balanced scorecard objectives element of the bonus, these targets were partially achieved at the year end.

Summary of the annual bonus potential as a percentage of base salary for the Executive Director for 2019:

	Maximum Annual bonus (number of points available and % of salary)	Sliding scale between threshold, target and stretch		Non-financial objectives	Bonus outcome 2019
		Management EBITA[(2)]	Cash Conversion[(3)]		
Alok Maskara	200%	0.0% - 80.0%	0.0% - 80.0%	12.0%	60.1%

(1) In 2019, Luxfer achieved levels of EBITA and cash conversion that resulted in a bonus opportunity of 48.1% out of 160% being awarded to Alok Maskara. In addition, Alok Maskara achieved a bonus opportunity of 12.0% in relation to the achievement of agreed balanced scorecard objectives.

(2) Management EBITA (earnings before interest, taxation and amortisation) is defined as operating income (as reported under U.S. GAAP) adjusted for equity income /(loss) of unconsolidated affiliates, qualifying restructuring charges, impairment charges, acquisition-related charges / credits, amortisation of finance costs, the unwind of deferred consideration, amortisation of acquired intangibles and share based compensation charges.

(3) Cash conversion is defined as the ratio of management EBITA to adjusted operating cash flow. Adjusted operating cash flow is reconciled from management EBITA by adding back depreciation, loss / (gain) on disposal of property, plant and equipment, changes in assets and liabilities, net of effects of business acquisitions, non-restructuring capital expenditures, equity income of unconsolidated affiliates and U.K. pension deficit funding contributions.

In 2019, the Company generated a management EBITA of $53.8 million being in the range of between agreed threshold and target levels and a cash conversion ratio in the same range.

The Board has considered whether to include in this report the targets which applied to the bonus arrangements for the Executive Director in 2019 but has determined that these amounts are commercially sensitive.

(4) **The Long-Term Incentive Awards.** *The 2019 Single Figure:*

In 2019, 40% of the total target award communicated by the Remuneration Committee was in the form of time-based restricted stock units granted on March 14, 2019. The value of these awards was $470,852 based on the closing share price on the day of grant of $23.21 per share and deducting the nominal cost value of $1.00 each share. The awards will vest in one-quarter increments on each of the first four annual anniversaries following grant.

In addition, the Remuneration Committee performance targets for the year were based upon EPS targets and total shareholder return, as described in *Executive Director Awards Under the LTIP* on page 44. The total shareholder return performance measurement period remains open until the year ending December 31, 2021. The EPS share award opportunity for the year ended December 31, 2019 was missed.

The LTIP share award disclosure in the Proxy Statement filed with the SEC (Form DEF 14A) for Alok Maskara as part of his executive compensation for the year ended December 31, 2019 differs to the amount included in the *Single Total Figure Table,* as it is based upon the achievement of targeted Company performance for all performance-based awards communicated in the year. The value of the awards included in the Proxy Statement is in accordance with U.S. GAAP.

In 2018, the Remuneration Committee targets were based upon certain EPS and TSR targets, consistent with the methodology applied for the year ended December 31, 2019. The total shareholder return performance measurement period remains open until the year ending December 31, 2020. The EPS maximum level was achieved in 2018, that resulted in the granting of time-based in 2019.

(5) **Other Share Awards.** In May 2017 Alok Maskara was granted share options in respect of his appointment to the role of Chief Executive Officer. These time-based awards and performance-based awards were outside the terms of reference of the LTIP but granted in accordance with the provisions of the Remuneration Policy. The number, and details of the terms, of the grants are set out in the table in *Outstanding Share Awards During 2019* and the accompanying notes, on pages 44 to 45.

As shown in the *Outstanding Share Awards During 2019* table on page 44 a total of 30,000 share awards made to the Executive Director on his appointment vested and were released during the year. The value of these awards was included in the Other Share Awards remuneration figure of the Single Total Figure table for 2017. These awards carry with them the right to receive accumulated dividends during the period of the award, in shares. The dividends are not credited until the award vests. The value of the dividends vested and paid in shares was $42,127 resulting from the vesting of 1,824 dividend shares. The dividend shares were valued at the closing share price on the NYSE on the date of vesting, less the issue price of £0.50 translated into U.S. dollars at the date of vesting.

For the year ended December 31, 2018, $2,706,000 of the amount shown related to the vesting and release of 120,000 performance-based awards as a result of an adjusted diluted EPS of $1.74 per share being achieved. These were one-off awards made available to Alok Maskara on hiring. These awards carried with them the right to receive accumulated dividends during the period of the award, in shares. Dividends were not credited until the award vested. The value of the dividends accrued up to and including the date of vesting and paid in shares was $149,484 resulting from the vesting of 6,629 dividend shares. Furthermore, a value of $19,178 resulted from the vesting of 1,110 dividend shares in relation to the 30,000 shares made to the Executive Director on his appointment.

(6) For details of pension arrangements see page 46.

Payments to Past Directors

There were no payments made to past directors during the year.

Non-Executive Directors' Remuneration

None of the Non-Executive Directors (including the Chair) received taxable benefits, annual bonus, long-term incentive awards (exceeding one year) or pension-related benefits during the year.

Single Total Figure Table

U.S.$[1]	Year	Base Fee[1]	Other Fees (Fees in the form of share awards)[2]	Total
David Landless	**2019**	**103,194**	**55,770**	**158,964**
	2018	79,050	42,868	121,918
Joseph Bonn	**2019**	**43,199**	**1,565**	**44,764**
	2018	98,812	53,597	152,409
Clive Snowdon	**2019**	**82,000**	**44,587**	**126,587**
	2018	79,050	44,473	123,523
Richard Hipple	**2019**	**82,000**	**-**	**82,000**
	2018	7,547	-	7,547
Allisha Elliott	**2019**	**67,492**	**-**	**67,492**
	2018	-	-	-
Lisa Trimberger	**2019**	**27,333**	**-**	**27,333**
	2018	-	-	-
Adam Cohn	**2019**	**30,803**	**1,252**	**32,055**
	2018	79,050	44,523	123,573

Table compiled in accordance with the U.K. 'The Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008', as amended by 'The Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013'.

(1) Allisha Elliott was appointed to the Board as a Non-Executive Director from March 5, 2019. Her base fees in 2019 reflects the period of service from this date to December 31, 2019.

Lisa Trimberger was appointed to the Board as a Non-Executive Director from September 1, 2019. Her base fees in 2019 reflects the period of service from this date to December 31, 2019.

Joseph Bonn did not offer himself for re-election to the Board at the 2019 AGM and consequently he ceased to be a Director of the Company with effect from May 15, 2019. His base fee in 2019 reflects the period of service as a Non-Executive Director.

Adam Cohn did not offer himself for re-election to the Board at the 2019 AGM and consequently he ceased to be a Director of the Company with effect from May 15, 2019. His base fee in 2019 reflects the period of service as a Non-Executive Director.

The Non-Executive Directors' fees of Adam Cohn, Clive Snowdon, Richard Hipple, Lisa Trimberger and Allisha Elliott are all determined in U.S. dollars.

The Non-Executive Director's fee of David Landless although determined in U.S. dollars, is paid in GBP sterling translated at the closing month-end exchange rate of each month prior to payment. Actual

payments received by David Landless aggregated to £81,267 (2018: £59,102). The base fee for 2019 includes the supplementary fee for being Chair from May 15, 2019.

(2) *2019 Single figure:*

The value of the Other Fees in the Single Figure table is calculated as follows:

- An element of the fees received by the Chair and the other Non-Executive Directors are delivered as time-based restricted stock units ("RSUs"). The award value is a percentage of their Base Fee as provided in the Director Equity Incentive Plan ("EIP") less the issue price per share of $1.00. The value of the award is capped at to up to 55% of base fees at the date of the award. Awards were made immediately after the 2019 AGM and vest immediately before the 2020 AGM. The number of RSUs was calculated using the closing share price on the NYSE ($25.58) the day before the award was made. The number of awards received by each Non-Executive Director is set out in *Awards Granted During the Year - Non-Executive Directors Under the Director Equity Incentive Plan (EIP)* on page 43.
- The RSU awards carry with them the right to receive accumulated dividends during the period of the award, in shares. The dividends are not credited until the award vests. The Other Fees amount includes the value of the dividends vested and paid on the 2018 RSU fee awards that vested immediately before the 2019 AGM. The value of the awards themselves were included in the Single Figure for 2018 as they were time-based awards (see below). The dividend shares were valued at the closing share price on the NYSE on the date of vesting, being $24.73, less the issue price of £0.50 translated at the date of vesting at an exchange rate of $1.2917:£ (65 cents). The number of dividend shares allocated, and their value were:

Non-Executive Director	Dividend shares allocated	Value of dividend less nominal cost of share $
David Landless	52	1,252
Clive Snowdon	52	1,252
Adam Cohn	52	1,252
Joseph Bonn	65	1,565

LUXFER SHARE INCENTIVE PROGRAMS

Luxfer has a number of share incentive plans designed to align the interests of its Directors, managers and employees, with the interests of its shareholders, and to act as retention tools.

The plan under which awards are granted to the Executive Directors on an on-going basis is the Luxfer Holdings PLC Long-Term Umbrella Incentive Plan ("LTIP"). Awards, which are considered part of their fees, are made to the Non-Executive Directors under the Non-Executive Directors Equity Incentive Plan ("EIP"). The U.K. Executive Directors also participate in the Company's All Employee Share Plan ("SIP") open to all U.K. employees. In the U.S. the Company has established an Employee Share Purchase Plan ("ESPP") which is open to all U.S. employees and U.S. based Executive Directors.

LTIP: The LTIP was adopted for the I.P.O. in 2012. It is used to grant awards not only to the Executive Directors but also senior and junior managers in the Luxfer Group. A variety of different awards can be granted under the LTIP. To date, it has been used to grant time-based nominal cost options to U.K. employees including the Executive Directors, performance-based nominal cost options and market value options to the Executive Directors and other senior U.K. employees and time-based and performance restricted stock units to U.S. managers and managers from other countries in which the Luxfer Group operate. The maximum value of

awards under the rules of the LTIP that can be granted to the Chief Executive Officer and Other Executive Directors are defined in the Remuneration Policy.

ESOP 2007: In 2007, prior to the 2012 I.P.O. and as part of the re-organization the Company underwent in that year, it implemented The Luxfer Holdings Executive Share Options Plan (“ESOP 2007”). All the options made available under the 2007 Plan have been exercised. The Trustees have agreed to make available for use under the various LTIP grants the remaining shares held in the employee benefit trust (“EBT”). Further details on the EBT and the 2007 Plan can be found in Note [31] to the Consolidated Financial Statements.

I.P.O. Options: As part of the I.P.O. in October 2012, stand-alone option grants were made over shares to the Executive Directors, Non-Executive Directors and certain other key executives seen as critical to the Company’s future success on completion of the I.P.O. All these options had fully vested and were exercisable up to October 2019, being seven years from the date of grant. No dividend shares were allocated on these awards, either before or after vesting, whilst unexercised. The exercise price is the I.P.O. price of $10 per share. The IPO Options expired in October 2019 and are no longer available for exercising.

EIP: Annual awards are made under the EIP to Non-Executive Directors as part of their fees. The value of the award is up to 55% of the base fee of a Non-Executive Director. These awards are made the day after the AGM of the Company in each year and vest the day before the following AGM. Annual awards are usually made as restricted stock units. They are paid out immediately on vesting, together with dividends which have been accumulated during the vesting period. New Non-Executive Directors cannot participate in the annual awards until they have served six months, however, the awards they would have earned from the date of appointment are added to the next annual award provided they are re-elected at the AGM.

Copies of the LTIP, ESOP 2007, I.P.O. Options and EIP plans mentioned above are filed on the Company’s file at the SEC.

AWARDS GRANTED DURING THE YEAR

Executive Directors' Awards Under the LTIP

In 2019, the Remuneration Committee awarded long-term incentive compensation under the Long-Term Umbrella Incentive Plan. As it does each year, the Remuneration Committee referenced benchmark data (including compensation surveys, Comparator Group information and other data provided by Meridian Compensation Partners LLC) in setting target U.S. dollar award levels for the Executive Director. In accordance with the Remuneration Policy the maximum share award opportunity available to the Executive Director (in any one year) at the time of communicating their award during 2019 was capped at 220% of their base salary, on achievement of stretch performance. Achievement of target performance would result in a share award opportunity capped equivalent to 150% of base salary being available and threshold performance at 75% of base salary.

Based on the target level of the Executive Director’s share awards available (capped at 150% of base salary), 40% of this award was granted in March 2019 in the form of time-based restricted stock units, vesting evenly on the first three anniversaries of the award from grant date. This amounted to 21,200 time-based restricted stock units. The remaining 60% of the target award allocation was split 40% available based on the delivery of a certain adjusted diluted EPS target for the year ending December 31, 2019 and 60% available on the delivery of certain total shareholder return targets. The total shareholder return target consists of a ranking of Company performance against a peer group of twenty companies for the last ninety days of the year ended December 31, 2018 against the last ninety days of the year ending December 31, 2021. Based on the relative level of shareholder return achieved, awards in relation total shareholder return would vest evenly in March 2022 and March 2023. For each of the adjusted diluted EPS and total shareholder return performance metrics, it is possible to achieve a threshold, target and stretch level of award grants, based on result delivery.

The EPS share award opportunity for the year ended December 31, 2019 was missed. The relative total shareholder return performance will be subject to remeasurement up to and including the year ending December 31, 2021.

For 2018, the Remuneration Committee set performance targets consistent with that used in 2019 based upon the achievement of adjusted diluted EPS to be measured at threshold, target and stretch levels and the achievement of relative total shareholder return to be measured at threshold, target and stretch levels. The relative total shareholder return performance will be subject to remeasurement up to and including the year ending December 31, 2020. The reported EPS for 2018 resulted in the stretch level being achieved which resulted in Alok Maskara earning the maximum available awards. The number, and details of the terms, of the grants are set out in the table in *Outstanding Share Awards During 2019* and the accompanying notes, on pages 44 to 45.

The Committee believe they set challenging targets to motivate the executive director and align the interests of the executive with those of shareholders. Achievement of stretch targets requires exceptional performance.

Non-Executive Directors under the Director EIP

The table below sets out the share award grants made to the Non-Executive directors during the year in accordance with the remuneration policy.

Chair or Non-Executive Director	Date of Grant	Basis of Aggregate Awards Granted	Share Price at Date of Grant $	Type of Award	No. of Shares Granted	Face Value of Award $	Issue Price per share & in Aggregate $	Vesting Date	% of Face Value That Vest
David Landless	May 16, 2019	55% of annual fee for 2019	25.58	Restricted Stock Unit	2,218	56,756	$1.00 each share	Day before 2020 AGM	On vesting date 100%
Clive Snowdon	May 16, 2019	55% of annual fee for 2019	25.58	Restricted Stock Unit	1,763	45,098	$1.00each share	Day before 2020 AGM	On vesting date 100%

OUTSTANDING SHARE AWARDS DURING 2019

Executive and Non-Executive Directors

Awards granted in 2019 in respect of 2018 Company financial performance to the Executive Director have been included in the table below. Based on the Company's financial performance in 2019, no performance related awards were granted in 2020.

	Awards				Options/Restricted Stock Units				
Awards	Available Jan 1, 2019	Granted During Year	Settled During Year	Available Dec 31, 2019	Vested Awards Jan 1, 2019	Vested Awards During Year	Settled During Year	Vested Awards Dec 31, 2019	Available Unvested Awards
Alok Maskara									
Upon Appointment[1]	30,000	—	(15,000)	15,000	—	15,000	(15,000)	—	15,000
Upon Appointment[2]	45,000	—	(15,000)	30,000	—	15,000	(15,000)	—	30,000
Upon Appointment[3]	120,000	—	(120,000)	—	—	120,000	(120,000)	—	—
LTIP 2017[4]	48,550	—	(16,183)	32,367	—	16,183	(16,183)	—	32,367
LTIP 2018[5]	26,400	—	(8,800)	17,600	—	8,800	(8,800)	—	17,600
LTIP 2018[6]	—	31,680	—	31,680	—	—	—	—	31,680
LTIP 2019[7]	—	21,200	—	21,200	—	—	—	—	21,200
Totals	**269,950**	**52,880**	**(174,983)**	**147,847**	**—**	**174,983**	**(174,983)**	**—**	**147,847**
David Landless									
EIP 2018[8]	2,338	—	(2,338)	—	—	2,338	(2,338)	—	—
EIP 2019[9]	—	2,218	—	2,218	—	—	—	—	2,218
Totals	**2,338**	**2,218**	**(2,338)**	**2,218**	**—**	**2,338**	**(2,338)**	**—**	**2,218**
Clive Snowdon									
EIP 2018[8]	2,338	—	(2,338)	—	—	2,338	(2,338)	—	—
EIP 2019[9]	—	1,763	—	1,763	—	—	—	—	1,763
Totals	**2,338**	**1,763**	**(2,338)**	**1,763**	**—**	**2,338**	**(2,338)**	**—**	**1,763**

Key to table:

Award	Award Scheme, Type & Grant	Grant Date	Exercise Price / Nominal Cost Each Award	Remaining Vesting/ Settlement Dates	Vesting Period
(1)	Upon appointment – Time-Based Restricted Stock Units [(i)]	Aug 23, '17	£0.50[(ii)]	Jun 13, 2020	To Aug 12, 2020
(2)	Upon appointment – Time-Based Restricted Stock Units [(iii)]	Aug 23, '17	£0.50[(ii)]	May 23, 2020, 2021	To Jul 22, 2021
(3)	Upon appointment – Performance-Based - EPS Targets Restricted Stock Units [(iv)]	Aug 23, '17	£0.50[(ii)]	All vested	No longer applicable
(4)	LTIP 2017-Performance-Based-EPS targets [(v)]	Mar 23, '18	£0.50[(ii)]	Mar 23, 2021	To May 22, 2021
(5)	LTIP 2018—Time-Based Restricted Stock Units [(vi)]	Mar 26, '18	£0.50[(ii)]	Mar 26, 2021	To May 25, 2021
(6)	LTIP 2018-Performance-Based-EPS targets [(vii)]	Mar 26, '19	£0.50[(ii)]	Mar 26, 2021	To May 25, 2021
(7)	LTIP 2019 – Time-Based Restricted Stock Units [(viii)]	Mar 14, '19	$1.00	Mar 14, 2021, 2022, 2023	To May 13, 2023
(8)	EIP 2018—Time-Based Restricted Stock Units [(ix)]	May 23, '18	£0.50[(ii)]	All vested the day before 2019 AGM	No longer applicable
(9)	EIP 2019—Time-Based Restricted Stock Units [(ix)]	May 16, '19	$1.00	Day before 2020 AGM	—

(i) Upon Appointment - The Remuneration Committee determined that the new Chief Executive Officer should acquire a minimum quantity of 22,500 shares within twelve months of appointment. Upon the Chief Executive Officer acquiring the shares, the Company matched the purchase by granting an award over 45,000 nominal cost RSUs, to vest over three years.

(ii) Where the exercise price / nominal cost is indicated in GBP sterling, in so far as it is required to be translated into U.S. dollars for the purpose of the exercise / settlement, it is translated at the $:£ exchange rate reported in the Financial Times for the date of exercise / settlement.

(iii) Upon Appointment - The Remuneration Committee determined to make a one-off share award to the new CEO, outside the terms of the LTIP, over 60,000 time-based nominal cost RSUs, to vest over four years.

(iv) Upon Appointment – Performance-Based Awards made to the new Chief Executive Officer vest upon achievement of attaining a specified adjusted diluted EPS target at each annual measurement date. Three levels of targets were set, resulting in the potential vesting of 120,000 shares. As result of the financial performance for the year ended December 31, 2018, the remuneration committee deemed that the full criteria had been met and these 120,000 awards vested in March 2019. The award grants are subject to “holding period” and “claw back” provisions. The Board concluded that the targets set were commercially sensitive and should not be disclosed.

(v) LTIP 2017: Awards made on attainment of 2017 EPS performance goals and include “holding period” and “claw back” provisions, to vest evenly over three years. Time-based restricted stock units accumulate additional restricted stock units when the Company pays a dividend. Shares underlying the total amount of restricted stock units are then issued when the restricted stock unit vests.

(vi) LTIP 2018: Time based awards granted on March 26, 2018 and include “holding period” and “claw back” provisions, to vest evenly over three years. Time-based restricted stock units accumulate additional restricted stock units when the Company pays a dividend. Shares underlying the total amount of restricted stock units are then issued when the restricted stock unit vests.

(vii) LTIP 2018: Awards made on attainment of 2018 EPS performance goals and include “holding period” and “claw back” provisions, to vest evenly over two years. Time-based restricted stock units accumulate additional restricted stock units when the Company pays a dividend. Shares underlying the total amount of restricted stock units are then issued when the restricted stock unit vests.

(viii) LTIP 2019: Time based awards granted on March 14, 2019 and include “holding period” and “claw back” provisions, to vest evenly over four years. Time-based restricted stock units accumulate additional restricted stock units when the Company pays a dividend. Shares underlying the total amount of restricted stock units are then issued when the restricted stock unit vests.

(ix) EIP 2018 and EIP 2019 annual awards are settled immediately on vesting, together with dividends which have been accumulated during the vesting period. The 2018 awards were settled in 2019 net of payroll taxes.

Joseph Bonn held 2,922 restricted stock units which were granted as part of the 2018 EIP awards. These awards vested the day before the 2019 AGM and were subsequently settled net of payroll taxes. As he did not seek re-election as a Director at the AGM in 2019 no further awards have been made. During August 2019, Joseph exercised his remaining 20,000 IPO $10.00 options in two equal amounts.

Adam Cohn held 2,338 restricted stock units which were granted as part of the 2018 EIP awards. These awards vested the day before the 2019 AGM and were subsequently settled net of payroll taxes. As he did not seek re-election as a Director at the AGM in 2019 no further awards have been made.

Non-Executive Directors Richard Hipple, Allisha Elliott and Lisa Trimberger do not currently hold any Company share awards.

PENSION ARRANGEMENTS

In lieu of contributions into Company pension plans, the Company offers a salary supplement, which ultimately reflect the cost of previous defined benefit arrangements, now withdrawn. Executive Directors are paid the equivalent of 25% of base salary, with an element of this funding being paid into the U.S. funded defined contribution scheme for Alok Maskara.

Details of the payments made to the defined contribution arrangement and salary supplement during years 2019 and 2018 for the Executive Director are set forth in the tables below.

Director's Remuneration and Benefits for the Year Ended December 31, 2019 and 2018

Executive Director	Year	Defined Benefit	Funded Defined Contribution[1]	Unfunded Defined Contribution	Cash Supplement	Total
Alok Maskara	**2019**	$ —	$ 16,800	$ —	$ 151,950	**$ 168,750**
	2018	$ —	$ 16,500	$ —	$ 137,250	**$ 153,750**

(1) The Funded Defined Contribution for Alok Maskara relates to amounts paid in respect of a 401(k) matching program.

Implementation of the Remuneration Policy for the Year Ending December 31, 2020 (*Information not subject to audit unless stated otherwise)*

Set out below is a summary of how the Directors Remuneration Policy will be applied during the year ending December 31, 2020.

Base Salary

	2020	2019	
	$	$	% increase[1]
Alok Maskara	675,000	675,000	0%

[1] The Remuneration Committee agreed to freeze Alok Maskara's base salary for 2020.

Pension Arrangements

The Executive Director will receive a cash supplement calculated at a flat rate of 25% of base salary.

Annual Bonus

In accordance with the Remuneration Policy, the maximum annual bonus for Alok Maskara, as Chief Executive Officer, is capped at 200% of base salary. Included within this is the Additional Percentage Bonus to be awarded on achievement of specific targets set by the Remuneration Committee. At the start of each year, the Remuneration Committee reserve the discretion to set the Additional Percentage Bonus and related specific targets that are aligned with the strategic goals of the Company.

As in previous years, the financial performance target element of the annual bonus will be based on a combination of two financial performance metrics, management EBITA and Cash Conversion. It will be on a sliding scale that commences only once threshold has been achieved and rises through the target performance up to a stretch target. The financial performance award element of the annual bonus opportunity will be split evenly between the above two financial metrics:

	Split; sliding scale between threshold, target and stretch	
Financial metric annual bonus opportunity	**Management EBITA**	**Cash Conversion**
Alok Maskara	0% - 50%	0% - 50%

Long Term Incentives

The Remuneration Committee has then set targets for 2020 which, if attained, would lead to the granting of time-based restricted stock units for Alok Maskara. The Committee has set a scorecard of metrics to assess the performance of the Company based upon Total Shareholder Return ("TSR") and adjusted diluted EPS. A greater weighting has been assigned to the attainment of the TSR target which earns 60% of the performance awards available, compared to the EPS target which has a 40% weighting.

The total shareholder return target will consist of a ranking of Company performance against a peer group of twenty companies for the last ninety days of the year ended December 31, 2019 against the last ninety days of the year ending December 31, 2022. Based on the relative level of shareholder return achieved, awards in relation total shareholder return would be granted in March 2023 and vest in equal tranches in 2023 and 2024.

The Remuneration Committee is also proposing that Alok Maskara be granted time-based restricted stock units, which vest in equal tranches commencing on the first anniversary of the grant date at the value of 40% of the total target share award available.

If, during the preparation of the current year's financial results, a material misstatement of the previous year's results is discovered, a clawback of the long-term incentive awards granted with respect to the misstated element of the previous financial results applies to all employees, including our Executive Director. The Remuneration Committee has discretion to apply the policy to recover and recoup incentive compensation in such situations involving a material misstatement of financial results.

In accordance with the Remuneration Policy, the maximum value of awards that can be made to the Chief Executive Officer Director in any one year is capped at up to 220% of base salary.

Non-Executive Directors

Summary of how the Directors' Remuneration Policy for the Non-Executive Directors will be applied during the year ending December 31, 2020.

The Board decides the approach to compensating the Non-Executive Directors. The Board agreed to freeze the base fees of the Non-Executive Directors for 2020, as shown below. The value of share awards as a percentage of base fee is to remain fixed at up to 55% of base fee under the EIP.

	2020 $ Base Fee	2019 $ Base Fee	% Increase Base Fee	Value of Share Awards % of Base Fee 2020	Value of Share Awards % of Base Fee 2019
David Landless [(1)]	**115,000**	103,194	-%	**Up to 55%**	Up to 55%
Clive Snowdon	**82,000**	82,000	-%	**Up to 55%**	Up to 55%
Richard Hipple	**82,000**	82,000	-%	**Up to 55%**	Up to 55%
Allisha Elliott [(2)]	**82,000**	67,492	-%	**Up to 55%**	Up to 55%
Lisa Trimberger [(2)]	**82,000**	27,333	-%	**Up to 55%**	Up to 55%

(1) Fee for 2019 reflects part-year as Chair. Freeze in underlying base fee is on an annualised basis.

(2) Fee for 2019 part-year only. Freeze in underlying base fee is on an annualised basis.

Directors' Interests in Shares in the Company (audited)

	Number of Ordinary Shares Held at Dec 31, 2019	Number of Ordinary Shares Held at Jan 1, 2019
David Landless [(1)]	9,638	9,507
Alok Maskara [(2)]	154,925	45,192
Clive Snowdon [(3)]	6,447	5,114
Richard Hipple [(4)]	3,022	—
Allisha Elliott	—	—
Lisa Trimberger [(5)]	5,000	—

(1) 1,277 shares acquired by David Landless during the year were as the result of his 2018 "Other Fees" awards of 2,338 shares vesting prior to the 2019 AGM together with accrued dividend of 52 shares. In May 2019, David Landless sold 1,250 of his shares on market. The additional shares acquired in the year by David Landless through the operation of a Dividend Reinvestment Plan (DRIP) which allows the reinvestment of cash dividends to purchase additional shares. Further details of his awards can be found in the notes to *Single Figure-Non-Executive Directors' Remuneration* on pages 40 to 41.

(2) Of the 109,733 additional shares held by Alok Maskara at December 31, 2019, 15,000 were purchased on market in August 2019. The additional 94,733 shares acquired by Alok Maskara during the year were as a result of the vesting of his time-based restricted stock units as detailed in the *Outstanding Share Awards During 2019* table on pages 44 to 45. The shares delivered are net of those sold to pay the option costs and tax due on the value of the awards.

(3) The additional 1,333 shares acquired by Clive Snowdon during the year were as the result of his 2018 "Other Fees" awards of 2,338 shares vesting prior to the 2019 AGM together with accrued dividend of 52 shares. The shares delivered are net of those sold to pay the option costs and tax due on the value of the awards. Further details on these awards can be found in the notes to *Single Figure-Non-Executive Directors' Remuneration* on pages 40 to 41. The shares identified as held by Clive Snowdon are held by a connected person.

(4) In August 2019, Richard Hipple purchased 3,000 shares on market. The additional 22 shares acquired were through the operation of a Dividend Reinvestment Plan (DRIP) which allows the reinvestment of cash dividends to purchase additional shares.

(5) In August 2019, Lisa Trimberger purchased 5,000 shares on market. These shares are owned by a trust of which Lisa Trimberger is the sole beneficiary and trustee.

Executive Director Shareholding Requirements

The Executive Director is required to hold and maintain ordinary shares equal in value to 150% of base salary. The Director is allowed a period of three years from date of appointment to acquire the holding. Executive Directors are required to obtain the Chair's permission before they or their connected persons can deal in the Company's shares providing an effective way of ensuring their shareholding requirements are maintained.

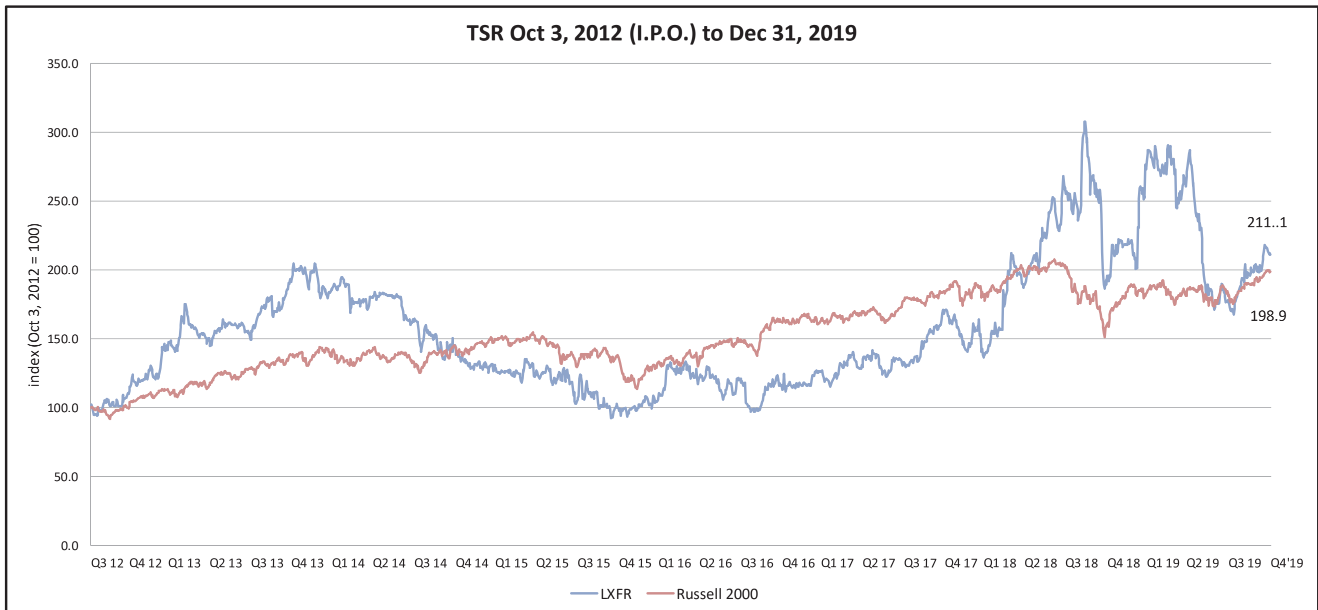
Total Directors' Shareholdings and Interests at 31 December 2019

	Shares Owned Beneficially	Options Vested but not Exercised[1]	Restricted Stock Units Not Yet Vested (assuming will be settled in Shares not Cash)[1]
Alok Maskara	154,925	—	147,847
Non-Executive			
David Landless	9,638	—	2,218
Clive Snowdon	6,447	—	1,763
Richard Hipple	3,022	—	—
Allisha Elliott	—	—	—
Lisa Trimberger	5,000	—	—

(1) A breakdown of the vested and unvested awards and brief details of the plans under which the awards were made can be found in the *Outstanding Share Awards During 2019* table on page 44 of this report.

Performance Graph

U.K. legislation requires the Annual Remuneration Report to contain a line graph that shows the TSR over a ten-year period for both a holding of the Company's listed shares and a hypothetical comparator holding of shares representing a specified broad equity market index. As the Company was only listed on the NYSE at the beginning of October 2012, we are only able to provide TSR for the Company's shares in a listed environment for a period 3 October 2012 to 31 December 2019. We have used the Russell 2000 index as the most appropriate published index for comparison purposes. The graph shows the value of $100 vested in Luxfer in October 2012 at the I.P.O., and the reinvestment of dividends since that date, compared to $100 invested in the Russell 2000 on the same date, assuming the same reinvestment of dividends. The Russell 2000 was chosen as the index as it comprises companies that closely resemble Luxfer. The TSR is calculated in U.S. dollars.



History of Total Remuneration Figure for Chief Executive Officer

We have included the total remuneration figure for the Chief Executive Officer for a seven-year period as required by legislation.

U.S.$ Year ended December 31	2013	2014	2015	2016	2017 (2)	2018	2019 (3)
Total remuneration	985,076	853,320	1,021,357	836,317	3,396,615	5,971,101	1,834,401
Annual bonus % (1)	— %	—%	39%	—%	124%	200%	60%
Share awards vesting % (1)	59 %	59%	21%	—%	37%	84%	584%

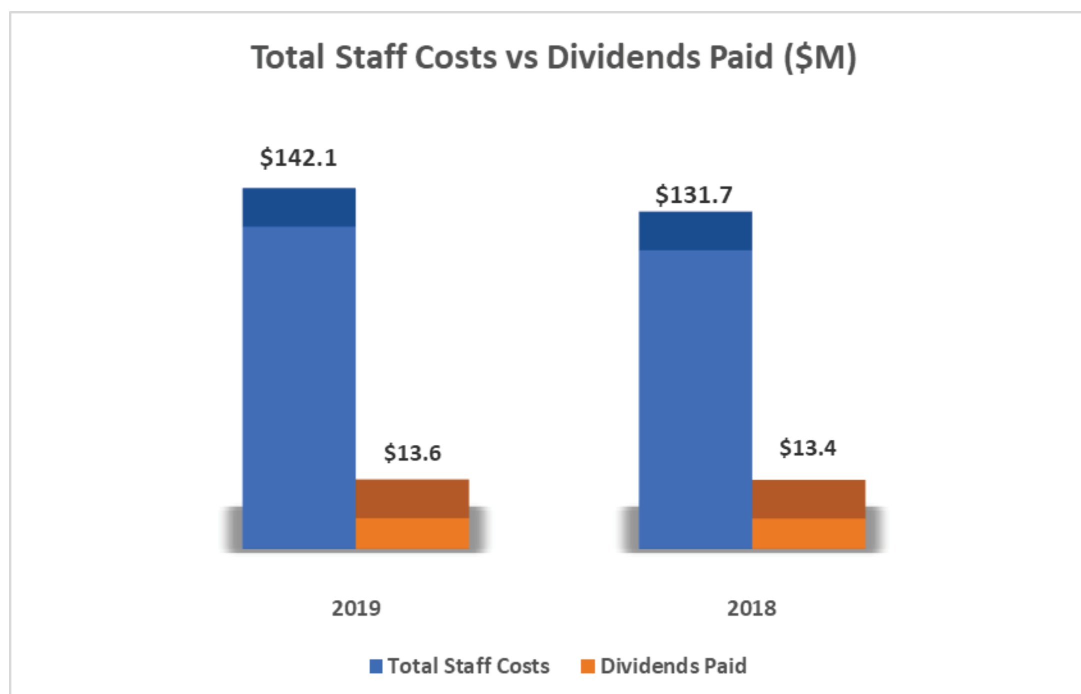
(1) Percentage of salary.

(2) The 2017 figures include Brian Purves' remuneration for the first six months of 2017 and Alok Maskara's remuneration for the second six months of 2017.

(3) The 2019 share awards vesting figure of 584% (as a percentage of salary) includes the vesting of 120,000 performance-based EPS awards granted on hire. Excluding these awards, the adjusted share awards vesting figure would be 183%.

Relative Importance of Spend on Pay

The following chart sets out the Group's actual spend on pay (for all employees) relative to dividends paid in the current and prior year.



(To assist with conformity and transparency we have used staff costs as set out in Note 7 to the Consolidated Financial Statements.)

Percentage Change in Chief Executive Officer's Remuneration

For 2019, we have selected U.S. employees as the most appropriate comparator as the Chief Executive Officer is based in the U.S. and the benefits structure is similar, consistent with the approach taken for 2018.

U.S.$	2019	2018	% change
Salary			
Chief Executive Officer	**675,000**	615,000	9.8 %
Employee average	**56,491**	58,657	(3.7) %
Benefits			
Chief Executive Officer	**57,513**	75,726	(24.1) %
Employee average	**11,045**	7,545	46.4 %
Annual Bonus			
Chief Executive Officer	**405,711**	1,230,000	(67.0) %
Employee average	**3,359**	4,689	(28.4) %

Statement of voting at AGM

The Annual Remuneration Implementation Report and Remuneration Policy was put to an advisory vote at the 2019 AGM.

	Votes for (and percentage of votes cast)	Votes against (and percentage of votes cast)	Proportion of share capital voting	Shares on which votes were withheld
Annual Remuneration Implementation Report	20,481,387	12,886	71.60%	7,478
	99.94%	0.06%		

The vote received in favour of the Remuneration Report was 99.94%, and the larger shareholders with whom the Directors liaise with from time to time did not make any negative comments in those conversations concerning Directors' pay and incentives.

Approval of Report

Richard Hipple, the Chair of the Committee, will attend the forthcoming AGM and will be available to answer any questions shareholders may have concerning the Directors' remuneration. This Remuneration Report will be submitted for approval by an advisory vote at the forthcoming AGM.

Signed on behalf of the Board by:

R. J. Hipple

R J Hipple

CHAIR OF THE REMUNERATION COMMITTEE

May 6, 2020

For and on behalf of the Board

Statement of directors' responsibilities in respect of the financial statements

The directors are responsible for preparing the Annual Report and the financial statements in accordance with applicable law and regulation.

Company law requires the directors to prepare financial statements for each financial year. Under that law the directors have prepared the group financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and company financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union. Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and company and of the profit or loss of the group and company for that period. In preparing the financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- state whether applicable IFRSs as adopted by the European Union have been followed for the group financial statements and IFRSs as adopted by the European Union have been followed for the company financial statements, subject to any material departures disclosed and explained in the financial statements;
- make judgements and accounting estimates that are reasonable and prudent; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the group and company will continue in business.

The directors are also responsible for safeguarding the assets of the group and company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the group and company's transactions and disclose with reasonable accuracy at any time the financial position of the group and company and enable them to ensure that the financial statements and the Directors' Remuneration Report comply with the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

The directors are responsible for the maintenance and integrity of the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Directors' confirmations

The directors consider that the annual report and accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the group and company's position and performance, business model and strategy.

Each of the directors, whose names and functions are listed in Directors' Report confirm that, to the best of their knowledge:

- the company financial statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and loss of the company;
- the group financial statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and profit of the group; and
- the Directors' Report includes a fair review of the development and performance of the business and the position of the group and company, together with a description of the principal risks and uncertainties that it faces.

Independent auditors' report to the members of Luxfer Holdings PLC

Report on the audit of the financial statements

Opinion

In our opinion, Luxfer Holdings PLC's group financial statements and company financial statements (the "financial statements"):

- give a true and fair view of the state of the Group's and of the Company's affairs as at 31 December 2019 and of the Group's profit and the Group's and the company's cash flows for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and, as regards the Company's financial statements, as applied in accordance with the provisions of the Companies Act 2006; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report and Financial Statements (the "Annual Report"), which comprise: the consolidated and company balance sheets as at 31 December 2019; the consolidated income statement and consolidated statement of comprehensive income, the consolidated and company cash flow statements, and the consolidated and company statements of changes in equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the Group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Our audit approach

Overview

- Overall group materiality: $2,145,000 (2018: $2,200,000), based on 5% of profit on operations before taxation, adjusted for restructuring and other expense.
- Overall company materiality: £1,462,000 (2018: £1,550,000), based on 1% of total assets capped at 90% of group materiality.

- We conducted audit or review work procedures across 13 reporting units in two countries in which the Group has operations.
- The 13 reporting units we conducted audit procedures accounted for 89% of Group revenue and 91% of profit on operations before taxation, adjusted for restructuring and other expense.

- Valuation of retirement benefits in relation to defined benefit schemes (Group and Company).
- Carrying value of non-current assets (Group).
- Inventory costing (Group).
- Restructuring and other expense (Group).
- Impact of COVID-19. (Group and Company).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, 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. This is not a complete list of all risks identified by our audit.

Key audit matter	***How our audit addressed the key audit matter***
Valuation of retirement benefits in relation to defined benefit schemes Refer to pages 74 and 78 within the accounting policies and note 30 of the consolidated financial statements and note 46 in the company financial statements. The Group operates material defined benefit pension plans principally in the UK and the US. A net deficit of $35.2 million is recognised in the financial statements. We focused on this area because the magnitude of the gross pension plan liabilities, and the associated changes compared to the prior year balances, are significant in the context of the balance sheet and the results of the Group. Measurement of the pension plan liabilities requires a significant level of judgement and technical expertise in selecting appropriate assumptions. Changes in key assumptions can have a material impact on the gross liability recorded. *Group and Company*	Our audit procedures included understanding and evaluating the controls and processes related to the pension process and selectively testing those controls we identified as being key and on which we planned to rely. Testing of controls included checking sufficient review of the key assumptions and appropriate approval of any changes to pension plans. No significant control deficiencies were identified. For the UK and US defined benefit pension plans, we involved our internal pensions experts to assist us with testing the reasonableness of key actuarial assumptions as follows: • we compared the discount and inflation rates, assumed pension increases, salary increases and mortality rates to our internally developed benchmarks based on market conditions and expectations at the balance sheet date; • we assessed the treatment and impact of U.S. plan lump sum settlement offered to deferred pensioners including the assumptions used by management; • we also tested whether the methods used by the directors to determine key assumptions had been consistently applied year-on-year and evaluated the rationale for any changes in approach. We tested the reconciliation of the opening to closing liability for accuracy, taking into account the movements in key assumptions over the year and any changes made to benefits provided within the plans; and • we have obtained confirmations from fund managers over the pension asset values and assessed the validity of pension scheme member data used. The results of our audit work indicated that the valuation of the retirement benefits was appropriate.

Carrying value of non-current assets

Refer to pages 70 to 74 within the accounting policies, note 13 of the consolidated financial statements and note 37 in the company financial statements.

The Group has recognised goodwill assets of $57.9m as at 31 December 2019, which are required to be tested for impairment on an annual basis. The directors have allocated these assets to individual cash-generating units ('CGUs').

There is further judgement around the determination of the recoverable amount of the CGUs, being the higher of value-in-use and fair value less costs to dispose. We focused on this area because the determination of the recoverable amounts involves judgements and estimates based on the directors' assessment of the future results and prospects of the CGUs, the appropriate discount rates and other key assumptions, including profit and cash flow growth rates in the short and long term, to be applied and specific risk factors applied to each CGU.

The Group's goodwill relates to several CGUs each with operations located in different geographies. Therefore specific considerations need to be given to macroeconomic and CGU specific risks in determining the most appropriate assumptions to adopt.

Group

In respect of the Group's goodwill, we evaluated the process by which the directors prepared their cash flow forecasts and compared them against the latest Board approved forecasts and found them to be consistent. Our audit procedures included understanding and evaluating the controls and processes related to the goodwill process and selectively testing those controls we identified as being key and on which we planned to rely. Testing of controls included checking sufficient review of the key assumptions and appropriate review of forecast estimates and judgements. No significant control deficiencies were identified.

We evaluated the historical accuracy of forecasts by comparing the forecasts used in the prior year value-in-use models to the actual performance of the CGUs in the current year. These procedures enabled us to determine the accuracy of the directors' forecasting process. When comparing the prior year forecasts to the actual performance in 2019, we considered why some forecasts were not met and factored this into other areas of our work.

We evaluated the assumptions used in the profit and cash flow forecasts included in the directors' value in use calculations. We compared forecast growth rates with historical performance as well as gaining an understanding of key factors and judgements applied in determining the future growth rates. We inspected detailed forecasts for each CGU and obtained evidence to support the key drivers for growth included within the profit and cash flow forecasts.

We engaged our internal specialists to assist us in evaluating the growth rate used to determine each CGU's terminal value. We compared the rates used to the weighted average of the long-term growth forecasts in the main geographies in which each CGU operates. The differences identified were not significant to the impairment assessment.

Our internal specialists also assisted us in assessing the appropriateness of the directors' discount rates by comparing the rate used for each CGU to our own independently determined range of what we would consider to be acceptable. The discount rates used by directors were broadly in line with our expectation. We considered any changes to the assumptions through our own sensitivity analysis, and whilst using a higher discount rate would reduce the headroom within each CGU, it would not result in an impairment.

We challenged the directors on the appropriateness of their sensitivity calculations and also applied our own sensitivity analysis to the forecast cash flows and long term growth rates to ascertain the extent to which reasonable adverse changes would, either individually, or in aggregate, require the impairment of non-current assets.

We assessed the appropriateness of the assumptions made in calculating the value of the recognised impairment over certain property, plant and equipment in the Luxfer Superform CGU.

On this basis we concluded that the directors' asset impairments over the property, plant and equipment in the Luxfer Superform CGU of $1.6 million was appropriate. The directors' assessment was that no other impairments were required, which we concluded is appropriate.

Inventory costing Refer to pages 72 within the accounting policies and note 15 of the consolidated financial statements. The Group holds inventory with a value of $94.5m as at 31 December 2019. There are complexities in the methods used to value inventory across the various group divisions, which include judgements in the labour and overhead cost absorption. *Group*	Our audit procedures included understanding the processes and controls related to the inventory costing process. As part of our involvement in component teams' work, the Group engagement team was specifically involved in determining the audit approach in this area to be satisfied that sufficient focus was placed on the more judgemental areas. As a result of this involvement we were satisfied that, whilst complex, the area was well understood and sufficient focus was placed on this area of risk. Audit procedures performed by individual component audit teams included the following testing on a sample basis: • Evaluating the inventory costing methods including absorption of overheads and labour recalculating the amounts to ensure appropriateness; and • Testing of the cost of raw materials to determine they had been recognised for the correct amount. The testing performed highlighted no material differences or errors.
Restructuring and other expense Refer to page 75 within the accounting policies and note 6 of the consolidated financial statements. The directors have classified certain items of expense within the 'Restructuring and other expense' line item which is disclosed separately within the Consolidated Income Statement. These items are excluded from the directors' reporting of the underlying performance of the Group. The nature and reporting of these items is explained within the Group accounting policy and includes restructuring costs, gains or losses arising on acquisitions or disposals and gains and losses resulting from non-recurring and one off events. This year the Group identified, before taxation, $31.4 million of items to be presented within Restructuring and other expense line, which relate to: • $22.4 million of costs in relation to the rationalization of operations; • $6.5 million of costs in relation to non-current asset impairments; • $2.5m of environmental remediation costs; Our Key Audit Matter addresses the accuracy of the calculation of items presented within the Restructuring and other expense line, as well as the appropriateness of the classification of these items. *Group*	We challenged the directors' rationale for presenting certain items of expense or income separately on the face of the consolidated income statement and we assessed such items against the Group's accounting policy and consistency of treatment with prior periods. We considered the items identified to meet the Group's definition of these items. The separate disclosure of expenses relating to the rationalization of operations was deemed appropriate due to the Group continuing to recognise costs on previously announced plant closures including the closure of its French site. The costs include employee benefits, legal and professional fees which are deemed significant and non-recurring. We tested a sample of items within this amount to appropriate supporting documentation. We assessed the appropriateness of the directors' estimates in respect of future costs attributable to the closure of the French site and found them to be reasonable. A non-current asset impairment charge of $4.4 million was recognised as a result of a decision to scale down production at one site and we concur that the nature of this item is material and non-recurring in nature and agreed its calculation to appropriate supporting evidence. The remaining asset impairment charge of $2.1 million predominantly relates to the Superform CGU which we agreed to our work in respect of impairment of non-current assets and concur it is appropriate to be presented separately. The costs in relation to environmental remediation are generally not within the business operations and are therefore disclosed separately from the trading results of the business. We concluded that this is appropriate. We agreed a sample of items from each category to appropriate supporting evidence. We did not identify any other material items incurred in the year that should have been included within the 'Restructuring and other expense' line item.

Impact of COVID-19

Refer to page 79 within the accounting policies, note 21 and note 34 of the consolidated financial statements.

The ongoing and evolving COVID-19 pandemic, and the related government responses to this crisis, is having a significant impact on the economies of those countries in which the Group operates. There is a high level of uncertainty as to the duration of the pandemic and what its lasting impact will be on those economies.

The directors have considered the potential impact to the Group of the ongoing COVID-19 pandemic in several areas, including the assessment of going concern, the carrying value of the group's assets and disclosures to be included in the financial statements.

The Group has committed facilities totalling $225 million, of which $91.0 million was drawn at 31 December 2019. The Group's cash balance was $10.3 million at 31 December 2019.

In relation to the Group's going concern assessment, the directors adjusted the cash flow forecasts for the period to the end of June 2021 to reflect their revised expectation of the cash flows that will be generated by the Group (including each of its business units and corporate costs) factoring in the direct and indirect consequences of COVID-19, including for example, a prolonged reduction in demand. Where mitigating actions have already been taken, such as restricting non-essential capital expenditure and making employee related cost savings, these were reflected in the directors' forecasts. Further potential cost mitigations, if required, were not built into the directors' forecasts. The directors then assessed the extent to which these cash flows would need to reduce to cause a breach of the Group's banking covenants.

The directors also considered the impact of COVID-19, as a post-balance sheet event, on the carrying value of the group's assets. It was concluded that this is a non-adjusting post balance sheet event, and as such, no changes to the carrying value of assets as at 31 December 2019 are required.

Group and Company

We considered whether any change was necessary to our initial assessment of the risk relating to the appropriateness of the going concern basis of preparation of the financial statements. Having considered the change in circumstances from the date of our planning due to COVID-19, and the evaluation performed by the directors, we did not consider any increase to our assessment of the risk to be necessary.

We agreed that the management accounts for the financial year to date were consistent with the starting point of the directors' revised cash flow forecasts. We also checked the arithmetical accuracy of management's forecasts for the period to the end of June 2021.

We evaluated management's downside scenarios and challenged their adequacy and underlying assumptions, including the level of reduction in sales, the period of such reduction and the timing and rate of anticipated sales recovery. In doing so, we examined evidence relating to committed customer orders and communications with key customers regarding intent to place further orders.

We discussed the forecasts with each of the business units and further sensitised the cash flow forecasts by applying more pessimistic assumptions to items with a higher degree of judgement and/or uncertainty.

On the basis of the procedures above, we evaluated the level of forecast liquidity and agreed with management's assessment that banking covenants would likely be met over the period to the end of June 2021.

We recalculated the impact on the Group's banking covenants and corroborated the applicable ratios to the underlying agreement. We evaluated the likelihood of circumstances arising in which a covenant may be breached, including the sensitivities applied as part of our work.

We read management's disclosures in the financial statements in relation to the impact of COVID-19 and are satisfied that they are consistent with the assessment performed and correctly identify COVID-19 as a non-adjusting post balance sheet event. We also read the disclosures made in the other information and did not identify any inconsistencies with the financial statements.

Our conclusions relating to going concern are included below.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Group and the Company, the accounting processes and controls, and the industry in which they operate.

The Group is split into two main reporting divisions being Elektron and Gas Cylinders. These are further split into six business units as Luxfer Gas Cylinders, Luxfer Superform, Luxfer MEL Technologies, Luxfer Graphic Arts, Luxfer Magtech and Luxfer Czech Republic. Each business unit has multiple management reporting units in a range of different geographies and is structured mainly across Europe and North America.

Each business unit consists of a number of management reporting units which are consolidated by the Group. The financial statements are a consolidation of a number of management reporting units representing the Group's operating businesses within these business units and the centralized functions.

The management reporting units vary in size and we identified four reporting units from across two countries which required an audit of their full financial information due to their individual size or risk characteristics. Additionally, we identified nine reporting units from across two countries which required an audit of specific balances or specified procedures to be performed over specific balances. In total, these 13 reporting units accounted for 89% of the Group's revenue and 91% of the Group's profit on operations before taxation, adjusted for restructuring and other expense.

Two component auditor teams performed the required audit and specified procedures over nine of the 13 reporting units, with the procedures over the remaining four performed by the Group engagement team. The Group engagement team have visited component teams at seven of the reporting units to meet with local management, discuss the audit approach and findings with the local audit team, as well as attending the audit clearance meetings for the components. For the components not visited, we attended the audit clearance meetings via conference call and had regular communication with the local teams during their audit. Our attendance at the clearance meetings, review and discussion of reporting received from local component teams, together with the work performed at a Group level, gave us the evidence we needed for our opinion on the consolidated financial statements as a whole.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Group financial statements	***Company financial statements***
Overall materiality	$2,145,000 (2018: $2,200,000).	£1,462,000 (2018: £1,550,000).
How we determined it	5% of profit on operations before taxation, adjusted for restructuring and other expense.	1% of total assets capped at 90% of group materiality.
Rationale for benchmark applied	Based on the benchmarks used in the annual report, profit on operations before taxation is the primary measure used by the shareholders in assessing the performance of the Group, and is a generally accepted auditing benchmark. Restructuring and other expense were adjusted for as this provides us with a consistent year on year basis for determining materiality.	We believe that total assets are the most indicative measure for the Company as a not-for-profit holding entity however have capped this at 90% of overall group materiality.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between $341,000 and $1,880,000.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above $110,000 (Group audit) (2018: $90,000) and £75,000 (Company audit) (2018: £77,000) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Group's and Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's and Company's ability to continue as a going concern.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information 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. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 and ISAs (UK) require us also to report certain opinions and matters as described below.

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2019 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the Group and Company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities in respect of the financial statements, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors 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 directors are responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or the Company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' 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 ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the Company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the Company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

G. Parsons

Graham Parsons (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
Manchester
6 May 2020

LUXFER HOLDINGS PLC
CONSOLIDATED INCOME STATEMENT
All amounts in millions, except share and per share data

	Note	2019 $M	2018 $M	2017 $M
REVENUE	2	**443.5**	487.9	441.3
Cost of sales		**(325.7)**	(353.1)	(332.7)
Gross profit		**117.8**	134.8	108.6
Distribution costs		**(9.2)**	(12.7)	(9.3)
Administrative expenses		**(60.3)**	(67.3)	(58.9)
Share of results of joint ventures and associates	14	**0.7**	0.4	0.1
Profit on sale of redundant site	6	**—**	—	0.4
Changes to defined benefit pension plans	6	**2.7**	(2.2)	—
Restructuring and other expense	6	**(31.4)**	(28.9)	(21.6)
OPERATING PROFIT	4	**20.3**	24.1	19.3
Other (expense) / income:				
Net (loss) / gain on acquisitions and disposals	6	**(1.4)**	(4.3)	1.3
Finance income:				
Interest received	8	**0.1**	0.5	0.5
Finance costs:				
Interest costs	9	**(5.9)**	(5.5)	(7.2)
IAS 19R retirement benefits finance charge	9	**(1.4)**	(1.3)	(1.8)
Unwind of discount on deferred contingent consideration from acquisitions	9	**(0.2)**	(0.2)	(0.2)
Total finance costs		**(7.5)**	(7.0)	(9.2)
PROFIT ON OPERATIONS BEFORE TAXATION		**11.5**	13.3	11.9
Income tax (expense) / credit	10	**(7.3)**	1.3	(0.4)
NET INCOME FOR THE YEAR		**4.2**	14.6	11.5
Attributable to:				
Equity shareholders		**4.2**	14.6	11.5
Earnings per share:				
Basic		**$ 0.15**	$ 0.55	$ 0.43
Diluted		**$ 0.15**	$ 0.53	$ 0.43
Weighted average ordinary shares outstanding:				
Basic		**27,289,042**	26,708,469	26,460,947
Diluted		**27,882,864**	27,692,262	26,723,981

LUXFER HOLDINGS PLC
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Note	2019 $M	2018 $M	2017 $M
Net income for the year		**4.2**	14.6	11.5
Other comprehensive (loss) / income movements				
Items that may be reclassified to the consolidated income statement:				
Exchange differences on translation of foreign operations		**(0.6)**	(4.9)	11.6
Fair value movements in cash flow hedges		**0.3**	(0.6)	3.1
Transfers to consolidated income statement on cash flow hedges		**0.1**	(0.1)	0.6
Deferred income taxes on cash flow hedges		**(0.1)**	0.1	(0.6)
Hedge accounting income / (loss) adjustments		**0.3**	(0.6)	3.1
Total hedge accounting and translation of foreign operations movements		**(0.3)**	**(5.5)**	**14.7**
Items that will not be reclassified to the consolidated income statement:				
Remeasurement of defined benefit retirement plans	30	**(2.3)**	9.6	9.5
Deferred income taxes on retirement benefits remeasurements	23	**0.6**	(2.0)	(5.2)
Retirement benefits changes		**(1.7)**	7.6	4.3
Total other comprehensive (loss) / income movements for the year		**(2.0)**	2.1	19.0
Total comprehensive income for the year		**2.2**	16.7	30.5
Attributed to:				
Equity shareholders		**2.2**	16.7	30.5

LUXFER HOLDINGS PLC
CONSOLIDATED BALANCE SHEET

	Note	December 31, 2019 $M	December 31, 2018 $M
ASSETS			
Non-current assets			
Property, plant and equipment	11	**98.2**	101.6
Right-of-use assets	26	**14.5**	—
Intangible assets	12	**72.9**	74.3
Investments	14	**2.3**	1.6
Deferred income tax assets	23	**16.5**	19.9
		204.4	197.4
Current assets			
Inventories	15	**94.5**	93.6
Trade and other receivables	16	**66.3**	64.0
Income tax receivable		**1.2**	0.4
Cash and cash equivalents	18	**10.3**	14.1
Held-for-sale assets	17	**3.9**	10.7
		176.2	182.8
TOTAL ASSETS		**380.6**	380.2
EQUITY AND LIABILITIES			
Capital and reserves			
Ordinary share capital	19	**26.6**	26.6
Deferred share capital	19	**149.9**	149.9
Share premium account	19	**74.5**	65.7
Treasury shares	19	**(4.0)**	(4.3)
Retained earnings		**309.1**	320.2
Own shares held by ESOP	19	**(1.7)**	(2.2)
Share based compensation reserve		**(6.9)**	(0.4)
Hedging reserve		**—**	(0.8)
Translation reserve		**(51.8)**	(51.2)
Merger reserve		**(333.8)**	(333.8)
Total equity		**161.9**	169.7
Non-current liabilities			
Bank and other loans	21	**91.0**	74.6
Retirement benefits	30	**35.2**	40.0
Operating lease liability	26	**11.7**	—
Deferred income tax liabilities	23	**1.0**	2.4
Deferred contingent consideration	25	**—**	0.5
Provisions	22	**0.9**	0.8
Trade and other payables	24	**0.6**	0.5
		140.4	118.8
Current liabilities			
Trade and other payables	24	**63.7**	73.9
Current income tax liabilities		**0.4**	1.6
Deferred contingent consideration	25	**0.5**	0.4
Operating lease liability	26	**3.3**	—
Provisions	22	**10.4**	9.8
Overdrafts	18	**—**	3.5
Held-for-sale liabilities	17	**—**	2.5
		78.3	91.7
Total liabilities		**218.7**	210.5
TOTAL EQUITY AND LIABILITIES		**380.6**	380.2

THE FINANCIAL STATEMENTS ON PAGES 64 TO 124 WERE APPROVED BY THE BOARD ON MAY 6, 2020 AND SIGNED ON ITS BEHALF:

A. Maskara

Alok Maskara,

May 6, 2020

Company Registration no. 03690830

LUXFER HOLDINGS PLC
CONSOLIDATED CASH FLOW STATEMENT

	Note	2019 $M	2018 $M	2017 $M
RECONCILIATION OF CASH FLOWS FROM CONTINUING OPERATING ACTIVITIES				
Net income for the year		**4.2**	14.6	11.5
Adjustments to reconcile net income for the year to net cash flows from continuing operating activities:				
Income taxes	10	**7.3**	(1.3)	0.4
Depreciation and amortization	4	**15.3**	19.7	19.0
Lease right-of-use asset depreciation	26	**3.7**	—	—
Loss on disposal of property, plant and equipment	4	**0.2**	0.3	0.1
Gain on disposal of business	6	**(2.9)**	—	—
Profit on sale of redundant site	6	**—**	—	(0.4)
Share based compensation charges / (credits) net of cash settlement		**0.1**	(2.5)	1.7
Net interest costs	8, 9	**5.8**	5.0	6.7
Non-cash restructuring charges				
Property, plant and equipment impairment	11	**6.1**	11.5	5.0
Intangible assets impairment	12	**0.4**	2.8	2.0
Investment impairment	14	**—**	2.5	2.2
Other non-cash restructuring charges		**0.1**	1.0	1.8
Curtailment and past service (credits) / charges on retirement benefits obligations	6	**(2.7)**	2.2	—
IAS 19R retirement benefits finance charge	9	**1.4**	1.3	1.8
Acquisitions and disposals costs / (gains)	6	**4.3**	4.3	(1.3)
Unwind of discount on deferred contingent consideration from acquisitions	9	**0.2**	(0.2)	0.2
Share of results of joint ventures and associates	14	**(0.7)**	(0.4)	(0.1)
Changes in operating assets and liabilities:				
(Increase) / decrease in receivables		**(2.6)**	5.9	(9.1)
Decrease / (increase) in inventories		**0.3**	(15.3)	5.0
(Decrease) / increase in payables		**(18.0)**	9.5	9.7
Movement in retirement benefits obligations		**(6.9)**	(7.2)	(8.0)
Movement in provisions		**0.7**	6.5	1.1
Income taxes paid		**(6.1)**	(2.9)	(4.1)
NET CASH FLOWS FROM CONTINUING OPERATING ACTIVITIES		**10.2**	**57.3**	**45.2**
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property, plant and equipment		**(13.9)**	(13.9)	(9.6)
Purchases of intangible assets		**(0.1)**	(0.2)	(1.7)
Proceeds from sale of business		**4.4**	—	—
Receipts from sales of property, plant and equipment		**1.2**	—	0.1
Investment in joint ventures and associates		**—**	3.5	(1.0)
Interest income received from joint ventures and associates		**—**	—	0.1
Net cash flows on purchase of businesses	25	**(0.5)**	1.9	(5.6)
Acquisition and disposal costs paid	25	**—**	—	(0.4)
NET CASH FLOWS USED IN INVESTING ACTIVITIES		**(8.9)**	(8.7)	(18.1)
NET CASH FLOWS BEFORE FINANCING ACTIVITIES		**1.3**	48.6	27.1
CASH FLOWS FROM FINANCING ACTIVITIES				
Interest and similar finance costs paid on banking facilities		**(1.3)**	(0.8)	(1.9)
Interest paid on Loan Notes		**(3.4)**	(3.8)	(4.3)
Bank interest received		**0.1**	0.1	0.2
Net drawdown / (repayment) on banking facilities		**17.5**	(36.3)	(13.4)
Extension to long term debt—financing costs		**—**	—	(1.2)
Payments made in respect of leases	26	**(4.1)**	—	—
Dividends paid	20	**(13.6)**	(13.4)	(13.3)
Proceeds from issue of shares		**3.5**	6.6	—
Treasury shares cash movements		**—**	—	0.3
NET CASH FLOWS USED IN FINANCING ACTIVITIES		**(1.3)**	(47.6)	(33.6)
NET INCREASE / (DECREASE) IN CASH AND CASH EQUIVALENTS		**—**	**1.0**	**(6.5)**
Net foreign exchange differences		**(0.3)**	0.5	2.0
Net cash and cash equivalents at January 1	18	**10.6**	9.1	13.6
Net cash and cash equivalents at December 31	18	**10.3**	10.6	9.1

LUXFER HOLDINGS PLC
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

		Equity attributable to the equity shareholders of the parent							
	Note	Ordinary share capital $M	Deferred share capital $M	Share premium account $M	Treasury shares $M	Retained earnings $M	Own shares held by ESOP $M	Other Reserves[1] $M	Total equity $M
At January 1, 2017		**25.3**	**150.9**	**56.4**	**(7.1)**	**308.1**	**(0.5)**	**(391.2)**	**141.9**
Net income for the year		—	—	—	—	11.5	—	—	11.5
Currency translation differences		—	—	—	—	—	—	11.6	11.6
Increase in fair value of cash flow hedges		—	—	—	—	—	—	3.1	3.1
Transfer to consolidated income statement on cash flow hedges		—	—	—	—	—	—	0.6	0.6
Remeasurement of defined benefit retirement plans		—	—	—	—	9.5	—	—	9.5
Deferred income taxes on items taken to other comprehensive income	23	—	—	—	—	(5.2)	—	(0.6)	(5.8)
Total comprehensive loss for the year		—	—	—	—	**15.8**	—	**14.7**	**30.5**
Equity dividends	20	—	—	—	—	(13.3)	—	—	(13.3)
Equity settled share based compensation charges		—	—	—	—	—	—	2.6	2.6
Purchase of shares into ESOP	19	—	—	—	0.8	—	(0.8)	—	—
Utilization of treasury shares	19	—	—	—	0.5	0.1	—	(0.6)	—
Utilization of shares from ESOP	19	—	—	—	—	0.1	0.3	(0.4)	—
Deferred income taxes on items taken to equity		—	—	—	—	**0.6**	—	—	**0.6**
Other changes in equity in the year		—	—	—	**1.3**	**(12.5)**	**(0.5)**	**1.6**	**(10.1)**
At December 31, 2017		**25.3**	**150.9**	**56.4**	**(5.8)**	**311.4**	**(1.0)**	**(374.9)**	**162.3**
Net income for the year		—	—	—	—	14.6	—	—	14.6
Currency translation differences		—	—	—	—	—	—	(4.9)	(4.9)
Decrease in fair value of cash flow hedges		—	—	—	—	—	—	(0.6)	(0.6)
Transfer to consolidated income statement on cash flow hedges		—	—	—	—	—	—	(0.1)	(0.1)
Remeasurement of defined benefit retirement plans		—	—	—	—	9.6	—	—	9.6
Deferred income taxes on items taken to other comprehensive income	23	—	—	—	—	(2.0)	—	0.1	(1.9)
Total comprehensive income for the year		—	—	—	—	**22.2**	—	**(5.5)**	**16.7**
Issue of new shares		1.3	—	—	—	—	(1.3)	—	—
Cancellation of deferred shares		—	(1.0)	1.0	—	—	—	—	—
Shares sold from ESOP		—	—	6.2	—	—	0.4	—	6.6
Equity dividends	20	—	—	—	—	(13.4)	—	—	(13.4)
Equity settled share based compensation charges		—	—	—	—	—	—	(2.5)	(2.5)
Utilization of treasury shares	19	—	—	—	0.1	—	—	(0.1)	—
Transfer of treasury shares to ESOP	19	—	—	—	1.4	—	(1.4)	—	—
Utilization of shares from ESOP	19	—	—	2.1	—	—	1.1	(3.2)	—
Deferred income taxes on items taken to equity		—	—	—	—	—	—	—	—
Other changes in equity in the year		**1.3**	**(1.0)**	**9.3**	**1.5**	**(13.4)**	**(1.2)**	**(5.8)**	**(9.3)**
At December 31, 2018		**26.6**	**149.9**	**65.7**	**(4.3)**	**320.2**	**(2.2)**	**(386.2)**	**169.7**
Net income for the year		—	—	—	—	4.2	—	—	4.2
Currency translation differences		—	—	—	—	—	—	(0.6)	(0.6)
Increase in fair value of cash flow hedges		—	—	—	—	—	—	0.3	0.3
Transfer to consolidated income statement on cash flow hedges		—	—	—	—	—	—	0.1	0.1
Remeasurement of defined benefit retirement plans		—	—	—	—	(2.3)	—	—	(2.3)
Deferred income taxes on items taken to other comprehensive income	23	—	—	—	—	0.6	—	(0.1)	0.5
Total comprehensive income for the year		—	—	—	—	**2.5**	—	**(0.3)**	**2.2**
Shares sold from ESOP		—	—	3.3	—	—	0.2	—	3.5
Equity dividends	20	—	—	—	—	(13.6)	—	—	(13.6)
Equity settled share based compensation charges		—	—	—	—	—	—	4.1	4.1
Utilization of treasury shares	19	—	—	—	0.3	—	—	(0.1)	0.2
Utilization of shares from ESOP	19	—	—	5.5	—	—	0.3	(10.0)	(4.2)
Other changes in equity in the year		—	—	**8.8**	**0.3**	**(13.6)**	**0.5**	**(6.0)**	**(10.0)**
At December 31, 2019		**26.6**	**149.9**	**74.5**	**(4.0)**	**309.1**	**(1.7)**	**(392.5)**	**161.9**

(1) Other reserves include a hedging reserve of nil (2018: a loss of $0.8 million and 2017: a loss of $0.2 million), a translation reserve of $51.8 million deficit (2018: deficit of $51.2 million and 2017: deficit of $46.3 million), a merger reserve of $333.8 million deficit (2018 and 2017: $333.8 million deficit) and a share based compensation reserve of $6.9 million deficit (2018: deficit of $0.4 million and 2017: reserve of $5.4 million).

1. Accounting policies

Basis of preparation and statement of compliance with IFRS

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union (E.U.) as they apply to the consolidated financial statements of the Group and interpretations issued by IFRS Interpretation Committee, and with the Companies Act 2006 as applicable to companies using IFRS, for the year ended December 31, 2019. The consolidated financial statements have been prepared on a historical cost basis, except where IFRS requires or permits fair value measurement.

The directors have a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future. In assessing the appropriateness of adopting the going concern basis in the preparation of these financial statements, cash forecasts and projections have been prepared to June 2021. The outbreak of the COVID-19 pandemic has necessitated that these projections address a number of different scenarios of increasing severity in order to confirm that, under each one, the Group can continue to operate as a going concern. These scenarios included assessing the impact of a significant reduction of sales in all areas of the Group. In each scenario assessed, there was sufficient headroom in our covenant compliance which would enable the Group to drawdown on the RCF and not impact the Group's ability to continue as a going concern. Therefore the directors continue to apply the going concern basis for accounting in the preparation of the consolidated financial statements.

For the purpose of the accompanying consolidated financial statements, subsequent events have been evaluated through to May 6, 2020, which is the date the consolidated financial statements were authorized by the Board. The consolidated financial statements were issued on May 6, 2020.

Basis of consolidation

The consolidated financial statements comprise the financial statements of Luxfer Holdings PLC and its subsidiaries (the "Group") at December 31 each year. The financial statements of the subsidiaries are prepared for the same reporting year as the parent company, using consistent accounting policies. All inter-company balances and transactions, including unrealized profits arising from intra-Group transactions, have been eliminated in full.

Subsidiaries are consolidated from the date on which control is transferred to the Group and cease to be consolidated from the date on which control is transferred out of the Group.

The accounting policies which follow, set out those polices which apply in preparing the consolidated financial statements for the years ended December 31, 2017, December 31, 2018 and December 31, 2019.

Parent Company Guarantee

In accordance with S479A of the Companies Act 2006, Luxfer Holdings PLC has provided a parent company guarantee for the below listed subsidiaries, meaning that for the year ended December 31, 2019, they are exempt from audit.

Name of Company	Company registered number
Biggleswick Limited	03349880
Lumina Trustee Limited	06055812
Luxfer Gas Cylinders China Holdings Limited	05165622
Luxfer Group Limited	03944037
Luxfer Group 2000 Limited	04027006
Luxfer Group Services Limited	03981395
Luxfer Magtech International Limited	02891444
Luxfer Overseas Holdings Limited	03081726

Presentation currency

The consolidated financial statements are presented in U.S. dollars and all values are rounded to the nearest $0.1 million except when otherwise indicated. The books of the Group's non-U.S. entities are converted to U.S. dollars at each reporting period date in accordance with the accounting policy below.

The functional currency of the holding company Luxfer Holdings PLC and its U.K. subsidiaries remains GBP sterling, being the most appropriate currency for those particular operations.

Business combinations and goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value, and the amount of any non-controlling interest in the acquiree. The choice of measurement of non-controlling interest, either at fair value or at the proportionate share of the acquiree's identifiable net assets, is determined on a transaction by transaction basis. Acquisition costs are expensed as incurred.

Goodwill is initially measured at cost, being the excess of the aggregate of the acquisition-date fair value of the consideration transferred and the amount recognized for the non-controlling interest over the net identifiable amounts of the assets acquired and the liabilities assumed in exchange for the business combination. After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to the Group's cash generating units that are expected to benefit from the combination. .

Goodwill arising on acquisitions before the date of transition to IFRS has been retained at the previous U.K. GAAP amounts subject to being tested for impairment at that date and in subsequent years.

A bargain purchase is measured at cost being the excess of the net identifiable amounts of the assets acquired and the liabilities assumed in exchange for the business combination over the aggregate of the acquisition-date fair value of the consideration transferred and the amount recognized for the non-controlling interest. Any amount of a bargain purchase is recognized immediately as income.

Contingent consideration arising as a result of a business combination is recognized at fair value at the acquisition date. Subsequent changes in the fair value of contingent consideration classified as an asset or liability are accounted for in accordance with the relevant IFRS standards.

Other intangible assets

Other intangible assets excluding development costs, are measured initially at purchase cost, or where acquired in a business combination at fair value, and are amortized on a straight-line basis over their estimated useful lives as shown in the table below.

Research expenditure is expensed as incurred. Internal development expenditure is charged as administrative costs to the consolidated income statement in the year it is incurred unless it meets the recognition criteria of IAS 38 "Intangible Assets". Where the recognition criteria are met, intangible assets are capitalized and amortized over their estimated useful economic lives from product launch, as shown in the table below. Intangible assets relating to products in development are subject to impairment testing at each balance sheet date or earlier upon indication of impairment.

Technology and patents	14 – 20 years
Tradenames and trademarks	20 – 25 years
Customer relationships	10 – 15 years
Backlogs and non-compete agreements	5 – 6 years
Development costs	5 – 10 years
Software	4 – 7 years

The carrying values are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Reviews are made annually of the estimated remaining lives and residual values of the patents and trademarks.

Revenue

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. The majority of the Company's contracts have a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and, therefore, not distinct. There is no variable consideration or obligations for returns, refunds, and no other related obligations in the Company's contracts.

Payment terms and conditions vary by contract type and may include a requirement of payment in advance. In instances where the timing of revenue recognition differs from the timing of invoicing, the Company has determined its contracts do not include a significant financing component.

The Company's revenue is primarily derived from the following sources and is recognized when or as the Company satisfies a performance obligation by transferring a good or service to a customer.

Product revenues

We recognize revenue when it is realized or realizable and has been earned. Revenue is recognized when persuasive evidence of an arrangement exists, shipment or delivery has occurred (depending on the terms of the sale), which is when the transfer of product or control occurs, our price to the buyer is fixed or determinable, and the ability to collect is reasonably assured.

Royalties

Royalty revenue is recognized on an accrual basis in accordance with the substance of the relevant agreements, provided that it is probable that the economic benefits will flow to the Group and the amount of revenue can be measured reliably.

Tooling revenue

Revenue from certain long-term tooling contracts is recognized over the contractual period under the cost-to-cost measure of progress as this is when the benefit is received by the customer. Incremental direct costs associated with the contract include, direct labor hours, direct raw material costs and other associated costs. Under this method, sales and gross profit are recognized as work is performed either based on the relationship between the actual costs incurred and the total estimated costs at completion ("the cost-to-cost method") or based on efforts for measuring progress towards completion in situations in which this approach is more representative of the progress on the contract than the cost-to-cost method. We record costs and earnings in excess of billings on uncompleted contracts within *Trade and other receivables* and billings in excess of costs and earnings on uncompleted contracts within *Trade and other payables* in the Consolidated Balance Sheets. Where customer acceptance is on final completion and handover of the tool, revenue is recognized at the point the customer accepts ownership of the tool.

Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and any impairment in value. Depreciation is initially calculated on a straight-line basis over the estimated useful life of the particular asset. As a result of the complexity of our manufacturing process, there is a wide range of plant and equipment in operation. The rate of annual charge is summarized as follows:

Freehold buildings	3% – 10%
Leasehold land and buildings	The lesser of life of lease or freehold rate
Plant and equipment	4% – 30%
Including:	
Heavy production equipment (including casting, rolling, extrusion and press equipment)	4% – 6%
Chemical production plant and robotics	10% – 15%
Other production machinery	10% – 20%
Furniture, fittings, storage and equipment	10% – 30%

Freehold land is not depreciated.

Reviews are made annually of the estimated remaining lives and residual values of individual productive assets, taking account of commercial and technological obsolescence as well as normal wear and tear.

For any individual asset the carrying value is reviewed for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. If any such indication exists and where the carrying value exceeds the estimated recoverable amount, the asset is written-down to its recoverable amount. The recoverable amount of property, plant and equipment is the greater of the fair value less costs of disposal and the value in use. In assessing the value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs. Impairment losses are recognized in the consolidated income statement as part of the profit or loss on operations before taxation.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying value of the item) is included in the consolidated income statement in the year the item is derecognized.

Maintenance costs in relation to an item of property, plant and equipment are expensed as incurred.

Inventories

Inventories are stated at the lower of cost and net realizable value. Raw materials are valued on a first-in, first-out basis. Strategic purchases of inventories in order to secure supply and reduce the impact of price volatility on the cost of inventories are valued on an average cost basis. Work in progress and finished goods costs comprise direct materials and, where applicable, direct labor costs, an apportionment of production overheads and any other costs that have been incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price less all estimated costs of completion and costs to be incurred in selling and distribution. Inventories are reviewed on a regular basis, and we will make allowance for excess or obsolete inventories and write-down to net realizable value based primarily on committed sales prices and our estimates of expected and future product demand and related pricing.

Held-for-sale assets / liabilities

In accordance with IFRS 5, assets and liabilities held-for-sale are written down to their fair value less costs to sell and classified as held-for-sale on the face of the balance sheet. Impairments recognised on the assets and liabilities will be taken to the income statement and presented within restructuring and other expense.

If an asset or liability is no longer available for sale, then they will be reclassified within their relevant asset or liability financial statement line and held at amortized cost.

Foreign currencies

Transactions in currencies other than an operation's functional currency are initially recorded in the functional currency at the rate of exchange prevailing on the dates of transactions. At each balance sheet date, the foreign currency monetary assets and liabilities are translated into the functional currency at the rates prevailing on the balance sheet date.

All differences are taken to the consolidated income statement with the exception of differences on foreign currency borrowings that provide a hedge against a net investment in a foreign entity. These are taken directly to equity until the disposal of the net investment, at which time they are recognized in the consolidated income statement. Tax charges and credits attributable to exchange differences on those borrowings are also dealt with in equity.

On consolidation, the assets and liabilities of the Group's foreign operations are translated at exchange rates prevailing on the balance sheet date. Income and expense items are translated at the average exchange rates for the period. Exchange differences that arise, if any, are classified as equity and transferred to the Group's translation reserve. Such translation differences are recognized in the consolidated income statement in the period in which the operation is disposed or partially disposed.

Income taxes

Current income taxes

Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted, or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Current income taxes relating to items recognized directly in equity is recognized in equity and not in the consolidated income statement. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred income taxes

Deferred income taxes are the future income taxes expected to be payable or recoverable on differences between the carrying values of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit, and are accounted for using the balance sheet liability method. Deferred income tax liabilities are generally recognized for all taxable temporary differences. Deferred income tax assets are recognized to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilized. Such assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the tax profit nor the accounting profit.

Deferred income tax liabilities are recognized for taxable temporary differences arising on investments in subsidiaries, investments in associates, and interests in joint ventures, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

The carrying value of a deferred income tax asset is reviewed at each balance sheet date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred income taxes are calculated at the tax rate that is expected to apply in the period when the liability is settled or the asset is realized based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date. Deferred income taxes are charged or credited to the consolidated income statement, except when it relates to items charged or credited directly to equity, in which case the deferred income taxes are also dealt with in equity.

Leases

The Group leases various buildings, equipment and vehicles. Rental contracts are typically made for fixed periods of 12 months to 10 years, but may have extension options. Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants other than the security interests in the leased assets that are held by the lessor. Leased assets may not be used as security for borrowing purposes.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payment that are based on an index or a rate, initially measured using the index or rate as at the commencement date
- amounts expected to be payable by the group under residual value guarantees
- the exercise price of a purchase option if the group is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the group exercising that option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability. The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be readily determined, which is generally the case for leases in the Group, the lessee's incremental borrowing rate is used, being the rate that the individual lessee would have to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions.

The group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset. Lease payments are allocated between principal and finance cost.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Right-of-use assets are generally depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life. Payments associated with short-term leases of equipment and vehicles and all leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT equipment and small items of office furniture.

Retirement benefits costs

In respect of defined benefit plans, obligations are measured at the present value whilst plan assets are recorded at fair value. The cost of providing benefits is determined using the Projected Unit Credit Method, with actuarial valuations being carried out at each balance sheet date.

The charge to the consolidated income statement is based on an actuarial calculation of the Group's portion of the annual expected costs of the benefit plans and the net interest cost, which is calculated by applying the discount rate to the net defined benefit obligation, taking into account contributions and benefits paid. Remeasurements are recognized in the statement of comprehensive income.

When a settlement or curtailment occurs the obligation and related plan assets are remeasured using current actuarial assumptions and the resultant gain or loss recognized in the consolidated income statement in the period in which the settlement or curtailment occurs.

Payments to defined contribution plans are charged as an expense as they fall due.

Provisions

Provisions are recognized when the Group has a present obligation as a result of a past event, it is probable that a transfer of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

Share based compensation

The cost of equity settled transactions is recognized, based upon the fair value at grant date, together with a corresponding increase in the share based compensation reserve in equity, over the period in which the performance or service conditions are fulfilled. The cumulative expense recognized for equity settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Group's best estimate of the number of equity instruments that will ultimately vest. The consolidated income statement expense or credit for a period represents the movement in cumulative expense recognized at the beginning and end of that period.

Separate disclosure of expenses or income

Certain items of expense or income are presented separately based on management's judgment that they need to be disclosed by virtue of their size, nature or incidence in order to provide a proper understanding of our results of operations and financial condition. Such items of expense or income incurred during a period are disclosed under identifiable headings in the consolidated income statement and further explained in Note 6 to the consolidated financial statements. Examples of such items include but are not limited to:

- Restructuring of the activities of the Group and reversals of any provisions for the costs of restructuring;
- write-downs of inventories to net realizable value or of property, plant and equipment to recoverable amount, as well as reversals of such write-downs;
- disposals of items of property, plant and equipment;
- disposals of investments and subsidiaries;
- discontinued operations;
- litigation settlements; and
- other material reversals of provisions.

The nature of the items of expense or income is considered to determine whether the item should be presented as part of operating profit or loss or as other expenses or income. The adjusted earnings per share calculations, presented by the Group exclude the impact of these items. Management believes that the use of adjusted measures such as this provides additional useful information on underlying trends to shareholders.

Cash and cash equivalents

Cash and cash equivalents in the balance sheet comprise cash at bank and in hand and short-term deposits with an original maturity date of three months or less. For the purpose of the consolidated cash flow statement, cash and cash equivalents consist of cash and cash equivalents as defined above, but net of bank overdrafts.

Interest in joint ventures

The Group has applied IFRS 11 to all joint arrangements. Under IFRS 11, investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method of accounting. Under the equity method of accounting, interests in joint ventures are initially recognized at cost and adjusted thereafter to recognize the Group's share of the post-acquisition profits or losses and movements in other comprehensive income.

When the Group's share of losses in a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the Group's net investment in the joint ventures), the Group does not recognize further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the joint ventures.

The Group determines at each reporting date whether there is any objective evidence that the investment in the joint venture is impaired. If the investment is impaired, the Group calculates the amount of impairment as the difference between the recoverable amount of the joint venture and its carrying value and recognizes the amount as 'restructuring and other expense' in the consolidated income statement.

Gains or losses resulting from upstream and downstream transactions between the Group and its joint venture are recognized in the Group's consolidated financial statements only to the extent of unrelated investor's interests in the joint venture. Unrealized losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

Interest in associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method of accounting, the investment is initially recognized at cost, and the carrying value is increased or decreased to recognize the investor's share of the profit or loss and movements in other comprehensive income of the investee after the date of acquisition.

If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognized in other comprehensive income is reclassified to profit or loss where appropriate.

The Group's share of post-acquisition profit or loss is recognized in the consolidated income statement, and its share of post-acquisition movements in other comprehensive income is recognized in other comprehensive income with a corresponding adjustment to the carrying value of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including other unsecured receivables, the Group does not recognize further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognizes the amount as 'restructuring and other expense' in the consolidated income statement.

Gains or losses resulting from upstream and downstream transactions between the Group and its associate are recognized in the Group's consolidated financial statements only to the extent of unrelated investor's interests in the associates. Unrealized losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

Dilution gains and losses arising in investments in associates are recognized in the consolidated income statement.

Financial assets and liabilities

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument. For hedges of foreign currency purchases, the Group enters into hedge relationships where the critical terms of the hedging instrument match exactly with the terms of the hedged item. The Group therefore performs a qualitative assessment of effectiveness. If changes in circumstances affect the terms of the hedged item such that the critical terms no longer match exactly with the critical terms of the hedging instrument, the Group uses the hypothetical derivative method to assess effectiveness.

In hedges of foreign currency purchases, ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated, or if there are changes in the credit risk of a country or the derivative counterparty. As all critical terms matched during the year, the economic relationship was 100% effective.

Trade and other receivables

Trade receivables are recognized initially at the amount of consideration that is unconditional, unless they contain significant financing components, in which case they are recognised at fair value. The group holds the trade receivables with the objective of collecting the contractual cash flows, and so it measures them subsequently at amortized cost using the effective interest method.

The group applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss rates for the contract assets.

The expected loss rates are based on the payment profiles of sales over a period of 36 months before 31 December 2019 and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward looking information on macroeconomic factors affecting the ability of the customers to settle the receivables.

Trade receivables and contract assets are written off where there is no reasonable expectation of recovery.

The maximum exposure at the end of the reporting period is the carrying amount of these receivables.

Bank and other loans

Bank and other loans are recorded at the fair value of the proceeds received net of directly attributable transaction costs. Issue costs relating to revolving credit facilities are charged to the consolidated income statement over the estimated life of the facility on a periodic basis and are added to the carrying value of the facility. Issue costs relating to fixed term loans are charged to the consolidated income statement using the effective interest method and are added to the carrying value of the fixed term loan.

Trade payables

Trade payables are not interest bearing and are stated at their nominal value.

Derivative financial instruments

The Group uses derivative financial instruments such as foreign currency contracts to hedge its risks associated with foreign currency fluctuations. Such derivative financial instruments are stated at fair value.

Hedges are classified as cash flow hedges when they hedge exposure to variability in cash flows either attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction.

In relation to cash flow hedges to hedge the foreign currency risk of firm commitments which meet the conditions for special hedge accounting, the portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized directly in equity and the ineffective portion is recognized in the consolidated income statement.

In relation to derivative financial instruments used to hedge a forecast transaction, the portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized directly in equity and the ineffective portion is recognized in the consolidated income statement. Amounts taken to equity are transferred to the consolidated income statement when the hedged transaction affects profit or loss.

Financial liabilities and equity instruments

Financial liabilities and equity instruments issued by the Group are recorded at the proceeds received, net of direct issue costs.

Financial liabilities and equity instruments are all instruments that are issued by the Group as a means of raising finance, including shares, loan notes, debentures, debt instruments and options and warrants that give the holder the right to subscribe for or obtain financial liabilities and equity instruments.

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. All equity instruments are included in shareholders' funds. The finance costs incurred in respect of an equity instrument are charged directly to the consolidated income statement. Other instruments are classified as financial liabilities if they contain a contractual obligation to transfer economic benefits.

Critical accounting judgments and key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing a material adjustment to the carrying values of assets and liabilities within the next financial year, are discussed below. The judgments used by management in the application of the Group's accounting policies in respect of these key areas of estimation are considered to be the most significant. The below policies include both elements of judgments and estimates.

Impairment of non-financial assets

The Group assesses whether there are any indicators of impairment for all non-financial assets at each reporting date. Goodwill is tested for impairment annually and at other times when such indicators exist. Other non-financial assets are tested for impairment when there are indicators that the carrying value may not be recoverable. Further details are given in Note 13.

When value in use calculations are undertaken, management must estimate the expected future cash flows from the asset or cash generating unit, including suitable sales growth and terminal growth rates, and choose a suitable discount rate in order to calculate the present value of those cash flows. Details regarding goodwill and assumptions used in carrying out the impairment review are given in Note 13.

Pensions

Determining the present value of future obligations of pensions requires an estimation of future mortality rates, future salary increases, future pension increases, future inflation increases and discount rates. These assumptions are determined in association with qualified actuaries. Due to the long-term nature of these plans, such estimates are subject to significant uncertainty. The pension liabilities at December 31, 2019 are $35.2 million (2018: $40.0 million). Further details are given in Note 30.

Deferred income taxes

Deferred income tax assets are recognized for unabsorbed tax losses and unutilized capital allowances to the extent that it is probable that taxable profit will be available against which the losses and capital allowances can be utilized. Judgment is required to determine the amount of deferred income tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies. Further details are given in Note 23.

Impact of COVID-19 on the Financial Statements

In March 2020, the World Health Organization characterized the coronavirus ("COVID-19") a pandemic. The rapid spread of the pandemic and the continuously evolving responses to combat it have had an increasingly negative impact on the global economy. In view of the rapidly changing business environment, unprecedented market volatility and heightened degree of uncertainty resulting from COVID-19, we are currently unable to fully determine its future impact on our business. However, we are monitoring the progression of the pandemic and its potential effect on our financial position, results of operations and cash flows. Any such impact has been treated as a non-adjusting post balance sheet event for the purpose of considering the carrying values of assets included in the balance sheet as at 31 December 2019.

In relation to liquidity, the Company has access to a large revolving credit facility and has performed stress testing on financial covenants using current forecast information and has not identified any liquidity concerns.

Changes in accounting policies

The accounting policies adopted are consistent with those of the previous financial year except for the following new and amended standards and interpretations during the year that are applicable to the Group. Adoption of these revised standards and interpretations did not have any significant effect on the consolidated financial statements of the Group, except IFRS 16.

International Financial Reporting Standards		Effective date
IFRS 16	Leases	January 1, 2019
IFRIC 23	Uncertainty over income tax treatments	January 1, 2019
IAS 19	Employee Benefits (amendments)	January 1, 2019

IFRS 16 - Leases

The Company has adopted IFRS 16 Leases retrospectively from 1 January 2019, but has not restated comparatives for the 2018 reporting period, as permitted under the specific transition provisions in the standard. The reclassifications and the adjustments arising from the new leasing rules are therefore recognized in the opening balance sheet on 1 January 2019. On adoption of IFRS 16, the Company recognized lease liabilities in relation to leases which had previously been classified as ‘operating leases’ under the principles of IAS 17 Leases. These liabilities were measured at the present value of the remaining lease payments, discounted using the lessee’s incremental borrowing rate as of 1 January 2019. The weighted average lessee’s incremental borrowing rate applied to the lease liabilities on 1 January 2019 was 4.46%.

Practical expedients

In applying IFRS 16 for the first time, the group has used the following practical expedients permitted by the standard:

- applying a single discount rate to a portfolio of leases with reasonably similar characteristics
- relying on previous assessments on whether leases are onerous as an alternative to performing an impairment review – there were no onerous contracts as at 1 January 2019
- accounting for operating leases with a remaining lease term of less than 12 months as at 1 January 2019 as short-term leases
- excluding initial direct costs for the measurement of the right-of-use asset at the date of initial application, and
- using hindsight in determining the lease term where the contract contains options to extend or terminate the lease. The group has also elected not to reassess whether a contract is, or contains a lease at the date of initial application. Instead, for contracts entered into before the transition date the group relied on its assessment made applying IAS 17 and Interpretation 4 Determining whether an Arrangement contains a Lease.

Measurement of lease liability

	$M
Operating leases disclosed as at December 31, 2018	27.4
Impact of discounting at Group's incremental borrowing rate	(7.5)
Less short-term and low-value leases not recognized as a liability	(1.8)
Lease liability recognized as at January 1, 2019	**18.1**
Of which are:	
Current lease liabilities	3.3
Non-current lease liabilities	14.8

See note 26 for further disclosure.

New standards and amendments to standards not applied

The IASB has issued the following amendments to standards with a mandatory effective date on or after January 1, 2020:

International Financial Reporting Standards		Mandatory effective date
IAS 1	Presentation of financial statements (amendments)	No earlier than January 1, 2020
IAS 8	Accounting polices, changes in accounting estimates and errors (amendments)	No earlier than January 1, 2020
IFRS 3	Business combination (amendments)	No earlier than January 1, 2020
IFRS 10	Consolidated financial statements (amendments)	No earlier than January 1, 2020
IAS 28	Investments in associates and joint ventures (amendments)	No earlier than January 1, 2020

The Group applies International Financial Reporting Standards (IFRS) as adopted by the E.U. as they apply to the consolidated financial statements of the Group and interpretations issued by IFRS Interpretation Committee, and with the Companies Act 2006 as applicable to companies using IFRS, for the year ended December 31, 2019.

The directors do not expect that the adoption of the standards listed above will have a material impact on the consolidated financial statements of the Group in future periods.

2. Revenue

Disaggregated revenue disclosures for the fiscal years ended December 31, 2019, December 31, 2018, and December 31, 2017 are presented below.

	Net sales by end-market								
	2019			2018			2017		
	$M	$M	$M	$M	$M	$M	$M	$M	$M
	Gas Cylinders	Elektron	Total	Gas Cylinders	Elektron	Total	Gas Cylinders	Elektron	Total
General industrial	**46.0**	**111.7**	**157.7**	50.7	123.9	174.6	49.6	95.6	145.2
Transportation	**83.8**	**59.5**	**143.3**	79.0	72.8	151.8	63.8	66.5	130.3
Defense and emergency	**73.5**	**45.1**	**118.6**	79.3	49.4	128.7	76.5	54.1	130.6
Healthcare	**20.3**	**3.6**	**23.9**	29.1	3.7	32.8	30.3	4.9	35.2
	223.6	**219.9**	**443.5**	238.1	249.8	487.9	220.2	221.1	441.3

	Net sales by geographic destination					
	2019		2018		2017	
	$M	Percent	$M	Percent	$M	Percent
United States	**239.4**	***54.0%***	249.2	*51.1%*	224.1	*50.8%*
U.K.	**35.5**	***8.0%***	47.6	*9.8%*	40.4	*9.2%*
Germany	**22.0**	***5.0%***	42.0	*8.6%*	36.8	*8.3%*
Italy	**22.6**	***5.1%***	23.3	*4.8%*	19.0	*4.3%*
France	**16.5**	***3.7%***	17.0	*3.4%*	16.0	*3.6%*
Top five countries	**336.0**	***75.8%***	379.1	*77.7%*	336.3	*76.2%*
Rest of Europe	**38.4**	***8.7%***	33.2	*6.8%*	31.1	*7.0%*
Asia Pacific	**47.6**	***10.7%***	53.0	*10.9%*	47.5	*10.8%*
Other [1]	**21.5**	***4.8%***	22.6	*4.6%*	26.4	*6.0%*
	443.5		487.9		441.3	

The Company's performance obligations are satisfied over time as work progresses or at a point in time. Design and tooling arrangements are the only contracts for which revenue is recognized over time. Revenue from these sources combined accounted for less than 2% of the Company's revenue for the fiscal years ended December 31, 2019, and December 31, 2018, respectively. All consideration from contracts with customers is included in these amounts.

The following table provides information about contract receivables, contract assets and contract liabilities from contracts with customers:

In millions	December 31, 2019	December 31, 2018
Contract receivables	**$ 1.7**	$ 1.5
Contract assets	**1.3**	2.1
Contract liabilities	**(0.5)**	(1.1)

[1] Other includes Canada, South America, Latin America and Africa.

Contract assets consist of $1.3 million accrued unbilled amounts relating to tooling revenue and are recognized in *prepayments and accrued income* in the consolidated balance sheet. Of the $2.1 million contract assets recognized as of December 31, 2018, $2.0 million were billed to customers and transferred to receivables as of December 31, 2019. Contract assets recognized as of December 31, 2017 of $4.6 million, were billed to customers and transferred to receivables in the fiscal year ending December 31, 2018.

Contract liabilities of $0.5 million consist of advance payments and billing above costs incurred and are recognized as *accruals and deferred income*. Significant changes in contract liabilities balances during the year are as follows:

In millions	**2019**	2018
As at January 1,	$ **(1.1)**	$ (0.9)
(Payments received) / amounts billed	**(0.9)**	(3.8)
(Costs incurred) / revenue recognized	**1.5**	3.6
As at December 31,	$ **(0.5)**	$ (1.1)

3. Segmental Information

We classify our operations into two core business segments, Gas Cylinders and Elektron, based primarily on shared economic characteristics for the nature of the products and services; the nature of the production processes; the type or class of customer for their products and services; the methods used to distribute their products or provide their services; and the nature of the regulatory environment. The Company has six identified business units, which aggregate into the two reportable segments. Luxfer Gas Cylinders and Luxfer Superform aggregate into the Gas Cylinders segment, and Luxfer MEL Technologies, Luxfer Magtech, Luxfer Graphic Arts and Luxfer Czech Republic[1] aggregate into the Elektron segment. A summary of the operations of the segments is provided below:

Gas Cylinders segment
Our Gas Cylinders segment manufactures and markets specialized products using aluminum, titanium and carbon composites, including pressurized cylinders for use in various applications including self-contained breathing apparatus (SCBA) for firefighters, containment of oxygen and other medical gases for healthcare, alternative fuel vehicles, and general industrial. The segment also forms lightweight aluminum and titanium panels into highly complex shapes that are used mainly in the transportation industry.

Elektron segment
Our Elektron segment focuses on specialty materials based primarily on magnesium and zirconium, with key product lines including advanced lightweight magnesium alloys with a variety of uses across a variety of industries; magnesium powders for use in countermeasure flares, as well as heater meals; photoengraving plates for graphic arts; and high-performance zirconium-based materials and oxides used as catalysts and in the manufacture of advanced ceramics, fiber-optic fuel cells, and many other performance products.

Other
Other primarily represents unallocated corporate expense and includes non-service related defined benefit pension cost / credit and, in 2017, the cost of converting our ADR structure to a direct listing of our ordinary shares.

Management monitors the operating results of its reportable segments separately for the purpose of making decisions about resource allocation and performance assessment. Segment performance is evaluated by the chief operating decision maker, who is responsible for allocating resources and assessing performance of the operating segments and has been identified as the CEO, using adjusted EBITA[2] and adjusted EBITDA, which is defined as segment income and is based on operating income adjusted for share based compensation charges; loss on disposal of property, plant and equipment, restructuring charges; impairment charges; acquisition and disposal related gains and costs; other charges and depreciation and amortization.

Unallocated assets and liabilities include those which are held on behalf of the Group and cannot be allocated to a segment, such as taxation, investments, cash, retirement benefits obligations, bank and other loans and holding company assets and liabilities.

Financial information by reportable segment for the years ended December 31, is included in the following summary:

	Net Sales			Adjusted EBITDA[3]		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Gas Cylinders segment	**$ 223.6**	$ 238.1	$ 220.2	**$ 23.3**	$ 23.4	$ 17.3
Elektron segment	**219.9**	249.8	221.1	**44.8**	56.2	44.5
Consolidated	**$ 443.5**	$ 487.9	$ 441.3	**$ 68.1**	$ 79.6	$ 61.8

[1] The Luxfer Czech Republic business unit was sold at the end of the Second Quarter of 2019.

[2] Adjusted EBITA is adjusted EBITDA less depreciation and loss on disposal of property, plant and equipment.

[3] 2019 and 2018 adjusted EBITDA is calculated on a US GAAP basis, our primary GAAP. A reconciliation can be found in our FORM 10-K filed with the SEC on March 9, 2020.

	Depreciation and amortization			Restructuring and other expense		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Gas Cylinders segment	**$ 5.6**	$ 7.8	$ 7.6	**$ 23.6**	$ 22.3	$ 6.6
Elektron segment	**9.7**	11.9	11.4	**7.8**	6.6	12.7
Unallocated	**$ —**	$ —	$ —	**—**	—	2.3
Consolidated	**$ 15.3**	$ 19.7	$ 19.0	**$ 31.4**	$ 28.9	$ 21.6

	Total assets			Total liabilities		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Gas Cylinders segment	**$ 148.5**	$ 137.4	$ 150.5	**$ 55.1**	$ 45.4	$ 22.6
Elektron segment	**197.9**	205.3	207.6	**34.0**	32.4	22.3
Unallocated	**34.2**	37.5	44.5	**129.6**	132.7	195.5
	$ 380.6	$ 380.2	$ 402.6	**$ 218.7**	$ 210.5	$ 240.4

	Capital expenditure		
In millions	**2019**	**2018**	**2017**
Gas Cylinders segment	**$ 3.9**	$ 2.8	$ 4.9
Elektron segment	**10.9**	11.0	6.0
Unallocated	**—**	0.3	—
	$ 14.8	$ 14.1	$ 10.9

	Non-current assets		
In millions	**2019**	**2018**	**2017**
United States	**122.8**	130.6	138.4
United Kingdom	**68.5**	50.5	74.3
Rest of Europe	**1.0**	6.4	14.2
Canada	**11.5**	9.6	4.1
Asia Pacific	**0.6**	0.3	0.3
	204.4	197.4	231.3

4. Operating profit

Operating profit for continuing activities is stated after charging/ (crediting):

	2019 $M	2018 $M	2017 $M
Research and development expenditure charged to the consolidated income statement	**5.7**	6.4	6.9
Development capital expenditure included within non-current assets (Note 12)	**—**	—	0.9
Total research and development expenditure	**5.7**	6.4	7.8
Less development expenditure capitalized within non-current assets	**—**	—	(0.9)
Net research and development	**5.7**	6.4	6.9
Depreciation of property, plant and equipment (Note 11)	**13.1**	17.1	16.7
Right-of-use asset depreciation	**3.7**	—	—
Amortization of intangible assets (Note 12)	**2.2**	2.6	2.3
Loss on disposal of property, plant and equipment	**0.2**	0.3	0.1
Operating lease expense (Note 26)	**—**	4.8	5.1
Restructuring and other expense (Note 6)	**31.4**	28.9	21.6
Staff costs (Note 7)	**142.1**	131.7	121.3
Cost of inventories recognized as expense	**276.8**	298.2	282.9

5. Fees payable to auditors

The total remuneration of the Group's auditors, PricewaterhouseCoopers LLP and other member firms of PricewaterhouseCoopers International Limited, for services provided to the Group during the years ended December 31, 2019, December 31, 2018 and December 31, 2017 is analyzed below.

	2019 $M	2018 $M	2017 $M
Fees payable to auditors for the audit of the consolidated financial statements and its subsidiaries	**1.6**	1.5	1.3
Fees payable to auditors for non-audit services:			
Accounting advisory services	**—**	0.4	0.1
Total fees payable	**1.6**	1.9	1.4

Accounting advisory services fees incurred in 2018 related to the aborted acquisition and the completed US GAAP conversion project (2017: $0.1 million).

The audit fee for the company financial statements of Luxfer Holdings PLC was $0.1 million (2018: $0.1 million and 2017: $0.1 million).

6. Other (expense) / income items

	2019 $M	2018 $M	2017 $M
(a) Profit on sale of redundant site			
Credited to operating profit:			
Profit on sale of redundant site	—	—	0.4
	—	—	0.4
(b) Changes to defined benefit pension plans			
Credited / (charged) to operating profit:			
Changes to defined benefit pension plans	**2.7**	(2.2)	—
	2.7	(2.2)	—
(c) Restructuring and other expense			
Charged to operating profit:			
Rationalization of operations	**(22.4)**	(17.8)	(12.1)
Patent infringement litigation costs	**—**	—	(3.5)
Direct listing costs	**—**	—	(2.3)
Asset impairments	**(6.5)**	(11.1)	(3.7)
Environmental remediation costs	**(2.5)**	—	—
	(31.4)	(28.9)	(21.6)
(d) Net (loss) / gain on acquisitions and disposals			
(Charged)/credited to non-operating profit:			
Merger and acquisition costs	**(4.4)**	(3.7)	(0.9)
Gain on disposal of business	**2.9**	—	—
Gain on bargain purchase	**—**	—	1.2
Remeasurement of deferred contingent consideration	**0.1**	(0.6)	1.0
	(1.4)	(4.3)	1.3

Profit on sale of redundant site

In 2017, a credit of $0.4 million was recognized in relation to a provision that was no longer required. The provision was held pending completion of remediation works at the former Redditch site, which was sold during 2016 to a company that specializes in remediating contaminated land. Given the remediation works were completed at the end of March 2017, it was appropriate to release the provision.

Changes to defined benefit pension plans

During 2019, a $2.7 million credit has been recognized in relation to special events occurring in the US and France. There was a $1.8 million curtailment gain on the French plan as a result of the redundancy exercise which took place in June 2019. There was also a $0.9 million gain on the US plan as a result of offering deferred members the opportunity to receive a lump sum in respect of their benefits in the Plan. Lump sums of $2.7 million were paid out and $3.6 million of defined benefit obligation was extinguished.

During 2018, a $2.2 million charge has been recognized in relation to the expected future costs of equalizing Guaranteed Minimum Pensions (GMPs) in the U.K. plan, following a High Court ruling in the U.K.

Rationalization of operations

In 2019, $21.5 million of costs were incurred in relation to rationalization cost in the Gas Cylinders Division and $0.9 million in the Elektron Division. $21.4 million of the charge in the Gas Cylinders Division was in relation to the the closure of the Company's French site. There is an expectation that further costs will be incurred in, but not beyond 2020. $0.6 million of the charge in the Elektron Division relates to one-time employee benefits following the decision to scale down production at one of our Luxfer Magtech sites in 2019 and further closure costs in relation to the previously announced rationalization of Elektron's Graphic Arts operations. There were other simplification costs of $0.4 million across both divisions.

In 2018, $14.4 million of costs were incurred in relation to rationalization costs in the Gas Cylinders Division and $3.4 million in the Elektron Division. The charge in the Gas Cylinders Division was predominantly in relation to the Company's announcement that it was under consultation to close its French site, and includes one-time employee benefits, asset write-downs and associated legal and professional fees. There is an expectation that approximately $7.0 million of additional costs will be incurred in 2019. Of the charge in the Elektron Division, $2.0 million related to redundancy costs and a property impairment charge as a result of the rationalization of Elektron's Graphic Arts operations and $1.4 million related to a previously announced plant closure affecting Elektron's Magtech business unit.

In 2017, $6.6 million of costs were incurred in relation to rationalization costs in the Gas Cylinders Division and $5.5 million in the Elektron Division. $2.2 million of the charge in the Gas Cylinders Division was in relation to an impairment of the investment in our associate, Sub 161 Pty Limited, $2.1 million was incurred following the decision to discontinue our Advanced Oxygen System (AOS) product line and $1.0 million following the announcement to exit our Luxfer HEI business. These were offset in part by a $0.4 million credit relating to sales of inventory that was previously written down as part of the closure of our German operation in 2015. In the Elektron Division, $1.7 million of the charge related to the rationalization of its Magtech operations, which includes $1.3 million in relation to the write down of land and buildings. Separately, we have recorded $0.6 million related to an onerous communications contract. There was also a Group-wide effort to reduce headcount and streamline management that has resulted in a $1.5 million and $3.0 million charge within the Gas Cylinders and Elektron Divisions respectively. Other rationalization costs of $0.4 million has been incurred, split evenly between the two Divisions.

Patent infringement litigation costs

In February 2018, the Company reached an out-of-court settlement with regards to the patent infringement litigation action taken against a competitor with us agreeing to pay an amount equivalent to $1.6 million. The settlement has been recognized as an accrual at December 31, 2017. Additionally, our litigation costs incurred during 2017 were $1.9 million, resulting in a total charge of $3.5 million all relating to the Elektron Division.

Direct listing costs

In 2017, $2.3 million of costs were incurred in relation to professional fees in connection with our project of converting our ADR listing to a direct listing of our ordinary shares. The project was successfully implemented in December 2017.

Asset impairments

In 2019, an impairment charge of $2.1 million has been recognized in respect of the Gas Cylinders Division and $4.4 million within the Elektron Division. Within the Gas Cylinders Division, the charge predominantly relates to our Superform business following a downturn affecting European luxury automotive sales. Within the Elektron Division, the $4.4 million relates to the write down of land and buildings following the decision to scale down production at one of our Luxfer Magtech sites.

In 2018, an impairment charge of $8.0 million has been recognized in respect of the Gas Cylinders Division and $3.1 million within the Elektron Division. Within the Gas Cylinders Division the charge predominantly relates to a $5.5 million charge related to our Superform business and $2.4 million in write-downs related to the step-acquisition of our Luxfer Holdings, NA LLC joint venture. Within the Elektron Division, $1.3 million resulted from the decision to sell our Czech business and $1.8 million write-off of previously capitalized development costs in relation to a re-evaluation of our product portfolio.

In 2017, a charge of $3.7 million has been recognized in relation to non-current asset impairments within the Elektron Division. $2.2 million of this charge relates to our Czech business, $0.9 million in relation to our North America business and $0.6 million in relation to our U.K. business.

Environmental remediation costs

In 2019, a $2.5 million charge has been recognized as the result of the Company's decision to commence a project to remove low-level naturally occurring radioactive material (NORM) from a redundant building at Elektron's Manchester, UK site. The work represents remediation of a legacy environmental issue and was expected to complete in the second quarter of 2020, although with the current COVID-19 pandemic, this is now expected to be early 2021, but with no significant further costs envisioned.

Merger and acquisition costs

In 2019, acquisition and disposal related costs of $1.4 million have been incurred. This amount includes a $3.5 million charge in relation to the reimbursement of costs and $0.9 million of professional and legal fees incurred in connection with the terminated Neo acquisition, partially offset by a $2.9 million gain from the sale of Magnesium Elektron CZ s.r.o in the second quarter of 2019 and a $0.1 million credit on the remeasurement of the deferred contingent consideration.

In millions		**2019**
Cash proceeds	**$**	**5.9**
Less:		
Cash held in business		**(1.3)**
Purchase price adjustment		**(0.2)**
Net proceeds	**$**	**4.4**
Net assets less cash		**(3.6)**
Gain on disposal	**$**	**0.8**
Disposal costs		**(0.4)**
Realized translation gain on disposal		**2.5**
Net gain on disposal	**$**	**2.9**

In 2018, acquisition costs of $3.7 million related to legal and professional fees in connection with the aborted acquisition of Neo Performance Materials.

In 2017, acquisition costs of $0.5 million has been recognized in relation to the acquisition of the Specialty Metals business of ESM Group Inc. In addition, as part of the acquisition, an environmental provision of $0.4 million has been established, with funds placed in escrow, to clean up low level chemical contamination on the land acquired, with any remaining funds remitted to the seller.

Gain on bargain purchase

In 2017, the Group acquired the trade and assets of the Specialty Metals business of ESM Group Inc., for a total consideration of $4.6 million. The fair value of the net assets acquired has been assessed at $5.8 million, with a gain on bargain purchase of $1.2 million recognized. Further details are given in Note 25.

Remeasurement of deferred contingent consideration

In 2019, a $0.1 million credit (2018: $0.6 million credit, 2017: $1.0 million credit) was recognized in relation to the revaluation of deferred contingent consideration, arising from the acquisition of the legacy businesses of Luxfer Magtech Inc. which was acquired in 2014.

7. Staff Costs

	2019 $M	2018 $M	2017 $M
Wages and salaries	**108.8**	103.3	96.1
Social security costs	**7.8**	11.6	11.0
Retirement benefits costs	**4.9**	5.0	4.8
IAS 19R retirement benefits finance charge	**1.4**	1.3	1.8
Redundancy costs: Continuing activities	**14.7**	5.7	4.5
Share based compensation charges (Note 32)	**4.5**	4.8	3.1
	142.1	131.7	121.3

The average monthly number of employees during the year was made up as follows:

	2019 No.	2018 No.	2017 No.
Production and distribution	**1,415**	1,387	1,397
Sales and administration	**189**	199	204
Research and development	**45**	55	57
	1,649	1,641	1,658

The compensation of the members of our Board of Directors (each, a "director") was:

	2019 $M	2018 $M	2017 $M
Remuneration (short-term benefits)	**1.6**	2.4	2.0
Social security costs	**0.1**	0.1	0.3
Post-retirement benefits	**0.2**	0.2	0.2
Compensation for loss of office	**—**	—	0.3
Total short-term and post-retirement benefits	**1.9**	2.7	2.8

In 2019, compensation of key management personnel for the period they served on the Executive Leadership Team, (including directors) was $4.4 million (2018: $6.3 million and 2017: $4.7 million) for short-term employee benefits, $1.0 million (2018: $2.8 million and 2017: $1.4 million) for long-term incentive plans and $0.4 million (2018: $0.4 million and 2017: $0.3 million) for post-employment benefits. Social security costs were incurred of $0.2 million (2018: $0.4 million and 2017: $0.5 million).

Details of the share awards granted are included in the Remuneration Report in Outstanding Share Awards During 2019, on pages 44 to 45 of the Remuneration Report.

Further details of directors' remuneration are included in the Remuneration Report on pages 35 to 54.

During 2019 and 2018, one director was a member of the Group's U.S. registered defined contribution plan. During 2018 and 2017, one of the directors was a member of the Group's U.K. registered defined contribution and defined benefit pension arrangements, another director was a participant in the unfunded unregistered unsecured retirement benefits arrangement accrued by the Company and another director was a member of the Group's U.S. registered defined contribution plan.

Directors' interests and related party transactions

No directors had a material interest in, nor were they a party to, any contract or arrangement to which the parent company, Luxfer Holdings PLC (the "Company") or any of its subsidiaries is or was party to either during the year or at the end of the year, with the following exceptions: in the case of the executive director his individual service contract and the Luxfer Holdings PLC Long-Term Umbrella Incentive Plan; in the case of the non-executive directors their engagement letters or the contract for services under which their services as a director of the Company are provided; in the case of the executive director and the chairman, the Luxfer Holdings PLC Non-Executive Directors Equity Incentive Plan. Information regarding the share options exercised during the year is included within the Remuneration Report. See Note 33 for related party transactions.

8. Finance income

	2019 $M	2018 $M	2017 $M
Bank interest received	**0.1**	0.1	0.2
Other interest received	**—**	0.4	0.3
Total finance income	**0.1**	0.5	0.5

9. Finance costs

	2019 $M	2018 $M	2017 $M
Bank and other loan interest payable	**4.7**	5.0	6.3
Amortization of issue costs	**0.5**	0.5	0.6
Lease interest payable	**0.7**	—	—
Foreign exchange loss on financing activities	**—**	—	0.3
IAS 19R retirement benefits finance charge	**1.4**	1.3	1.8
Unwind of discount on deferred contingent consideration from acquisitions	**0.2**	0.2	0.2
Total finance costs	**7.5**	7.0	9.2

10. Income tax expense / (credit)

(a) Analysis of taxation charge for the year

	2019 $M	2018 $M	2017 $M
Current income taxes:			
U.K. corporation tax	**0.6**	0.2	—
Adjustments in respect of previous years	**0.1**	—	(0.3)
	0.7	0.2	(0.3)
Non-U.K. tax	**3.8**	5.7	6.3
Adjustments in respect of previous years	**(0.4)**	0.2	(0.8)
Total current tax charge	**4.1**	6.1	5.2
Deferred income taxes:			
Origination and reversal of temporary differences	**3.5**	(4.0)	(5.3)
Adjustments in respect of previous years	**(0.3)**	(3.4)	0.5
Total deferred income taxes charge / (credit)	**3.2**	(7.4)	(4.8)
Tax charge / (credit) on profit on operations	**7.3**	(1.3)	0.4

The income taxes charges relate to continuing activities.

(b) Factors affecting the taxation charge for the year

The tax assessed for the year differs from the standard rate of 19% (2018: 19% and 2017: 19.25%) for corporation tax in the U.K.

The differences are explained below:

	2019 $M	2018 $M	2017 $M
Profit on operations before taxation	**11.5**	13.3	11.9
Profit on operations at 2019 standard rate of corporation tax in the U.K. of 19% (2018: 19% and 2017: 19.25%)	**2.2**	2.5	2.3
Effects of:			
Non-deductible expenses	**3.1**	0.1	0.1
Unprovided deferred income taxes	**1.6**	(0.8)	0.3
Foreign tax rate differences	**1.0**	0.1	4.3
Effect of U.S. tax reform	**—**	—	(6.0)
Adjustments in respect of previous years	**(0.6)**	(3.2)	(0.6)
Tax expense / (credit)	**7.3**	(1.3)	0.4

The 2019 deferred tax charge includes a non-cash accounting adjustment in respect of previous years of $0.3 million, which predominantly results from a re-evaluation of the availability of historic tax losses to offset future taxable profits, partially offset by the re-evaluation of the deductibility of share-based compensation expense.

The 2018 deferred tax credit includes a non-cash accounting adjustment in respect of previous years of $3.4 million, which predominantly results from a re-evaluation of the availability of historic tax losses to offset future taxable profits, as well as additional tax credits linked to recently granted patents.

(c) Factors that may affect future taxation charge

At December 31, 2019, the Group had carried forward tax losses of $94.9 million (U.K.: $32.8 million, non-U.K.: $62.1 million). Carried forward tax losses for 2018 were $81.0 million (U.K.: $38.8 million, non-U.K.: $42.2 million) and for 2017 were $81.9 million (U.K.: $43.6 million, non-U.K.: $38.3 million). To the extent that these losses are not already recognized as deferred income taxes assets, and available to offset against future taxable profits, it is expected that the future effective tax rate would be below the standard rate in the country where the profits are offset. The Group has unrecognized deferred tax assets relating to certain trading and capital losses and other temporary timing difference of $14.9 million (2018: $15.0 million, 2017: $13.3 million), potentially available for offset against future profits.

Changes to the U.K. corporation tax rates were substantively enacted as part of Finance Bill 2017 (on September 6, 2016) to reduce the main rate down to 17% from April 1, 2020. Deferred taxes at the balance sheet date have been measured using the enacted tax rates and reflected in the Group's consolidated financial statements at December 31, 2019. It was however subsequently announced in the U.K. government's Finance Bill in March 2020 that the U.K. corporation tax rate would remain at 19% after April 1, 2020.

11. Property, plant and equipment

	Freehold $M	Long leasehold $M	Short leasehold $M	Plant and equipment $M	Total $M
Cost:					
At January 1, 2018	62.4	6.2	12.2	296.0	**376.8**
Additions	0.7	0.9	0.4	11.9	**13.9**
Disposals	(2.9)	—	(1.1)	(2.7)	**(6.7)**
Transfers - Held for sale	(13.6)	—	—	(13.8)	**(27.4)**
Transfers	(2.2)	0.6	2.8	(1.2)	**—**
Exchange difference	(1.0)	(0.3)	(0.2)	(10.6)	**(12.1)**
At December 31, 2018	43.4	7.4	14.1	279.6	**344.5**
Additions	0.1	—	0.1	14.6	**14.8**
Disposals	(0.6)	—	(0.2)	(4.9)	**(5.7)**
Transfers	2.7	1.1	(2.6)	(1.2)	**—**
Exchange difference	2.2	0.3	0.1	6.0	**8.6**
At December 31, 2019	47.8	8.8	11.5	294.1	**362.2**
Accumulated depreciation and impairment:					
At January 1, 2018	32.5	3.5	6.7	208.6	**251.3**
Provided during the year	2.1	0.4	0.8	13.8	**17.1**
Impairment	3.5	—	—	8.0	**11.5**
Disposals	(2.9)	—	(0.8)	(2.7)	**(6.4)**
Transfers - Held for sale	(8.1)	—	—	(13.1)	**(21.2)**
Transfers	(1.4)	0.7	—	0.7	**—**
Exchange difference	(0.8)	(0.2)	—	(8.4)	**(9.4)**
At December 31, 2018	24.9	4.4	6.7	206.9	**242.9**
Provided during the year	1.4	0.4	0.8	10.5	**13.1**
Impairment	1.5	—	0.3	4.3	**6.1**
Disposals	(0.6)	—	(0.2)	(4.7)	**(5.5)**
Transfers	2.2	0.4	(0.1)	(2.5)	**—**
Exchange difference	1.8	0.2	—	5.4	**7.4**
At December 31, 2019	31.2	5.4	7.5	219.9	**264.0**
Net book values:					
At December 31, 2019	16.6	3.4	4.0	74.2	**98.2**
At December 31, 2018	18.5	3.0	7.4	72.7	**101.6**
At January 1, 2018	29.9	2.7	5.5	87.4	**125.5**

As at December 31, 2019 and December 31, 2018, no assets were held under finance leases.

Impairment of property, plant and equipment

$4.4 million of the impairment in 2019 relates to the Elektron Division following the decision to scale down production at one of our Luxfer Magtech sites. $1.6 million of the impairment relates to our Superform business within the Gas Cylinders Division following a downturn affecting European luxury automotive sales and $0.1 million in relation to other business units within the Division.

$5.1 million of the impairment in 2018 relates to Luxfer France, as a result of the announced rationalization. $4.4 million relates to the write-down of fixed assets within our Superform business as a result of the present value of the free cash flows not covering the enterprise value of the operating segment. $0.5 million relates to the write of Czech assets which are held for sale - see note 17 and $1.5 million relating to properties within the Elektron Division which have been written down to fair value less costs to sell and subsequently transferred to held-for-sale. All impairments are disclosed within restructuring and other expenses within the income statement.

Long and short leasehold

The long and short leasehold costs relate to leasehold property improvements.

12. Intangible assets

	Goodwill $M	Customer related $M	Technology and trading related $M	Development costs $M	Software $M	Total $M
Cost:						
At January 1, 2018	79.4	13.4	8.6	7.4	3.4	**112.2**
Additions	—	—	—	—	0.2	**0.2**
Disposals	—	—	—	—	(0.5)	**(0.5)**
Exchange difference	(2.6)	—	(0.4)	(0.3)	(0.3)	**(3.6)**
At December 31, 2018	76.8	13.4	8.2	7.1	2.8	**108.3**
Additions	—	—	—	—	0.1	**0.1**
Disposals	—	—	—	(1.8)	(0.5)	**(2.3)**
Exchange difference	1.6	—	0.3	0.1	0.1	**2.1**
At December 31, 2019	78.4	13.4	8.5	5.4	2.5	**108.2**
Accumulated amortization and impairment:						
At January 1, 2018	19.8	2.9	3.0	2.8	2.0	**30.5**
Provided during the year	—	0.9	0.4	0.8	0.5	**2.6**
Disposals	—	—	—	—	(0.5)	**(0.5)**
Impairment	1.0	—	—	1.8	—	**2.8**
Exchange difference	(0.9)	—	(0.2)	(0.2)	(0.1)	**(1.4)**
At December 31, 2018	19.9	3.8	3.2	5.2	1.9	**34.0**
Provided during the year	—	0.9	0.4	0.6	0.3	**2.2**
Disposals	—	—	—	(1.8)	(0.5)	**(2.3)**
Impairment	—	—	—	0.4	—	**0.4**
Exchange difference	0.6	—	0.1	0.2	0.1	**1.0**
At December 31, 2019	20.5	4.7	3.7	4.6	1.8	**35.3**
Net book values:						
At December 31, 2019	57.9	8.7	4.8	0.8	0.7	**72.9**
At December 31, 2018	56.9	9.6	5.0	1.9	0.9	**74.3**
At January 1, 2018	59.6	10.5	5.6	4.6	1.4	**81.7**

Customer related intangibles include customer relationships, order backlogs and non-compete agreements. Technology and trading related intangibles include technology, patents, trade names and trademarks.

Development costs include $0.8 million (2018: $1.9 million) relating to internally generated intangible assets, all other intangible assets are externally generated.

Impairment of intangible assets

The $0.4 million impairment of development costs in 2019 is in relation to the write down of Superform assets in the Gas Cylinders Division following a downturn affecting European luxury automotive sales.

The $1.0 million impairment of goodwill in 2018 is in relation to the write down of Superform goodwill in the Gas Cylinders Division, following our annual impairment review. The $1.8 million impairment of development costs has resulted from a review of our magnesium alloys product portfolio in the Elektron Division.

13. Impairment of goodwill

Goodwill acquired in a business combination is allocated, at acquisition, to the cash-generating units (CGUs) that are expected to benefit from the business combination. The six identified CGUs (Luxfer Gas Cylinders, Luxfer Superform, Luxfer MEL Technologies, Luxfer Magtech, Luxfer Graphic Arts and Luxfer Czech Republic) represent the lowest level within the Group at which goodwill is monitored for internal management reporting purposes. The six CGUs are aggregated to form the Group's two defined reportable divisions: Gas Cylinders Division and Elektron Division. The table below summarizes the carrying value of goodwill by division:

	Gas Cylinders Division	Elektron Division	Total
	$M	$M	$M
At January 1, 2018	20.5	39.1	**59.6**
Impairment	(1.0)	—	**(1.0)**
Exchange difference	(1.0)	(0.7)	**(1.7)**
At December 31, 2018	18.5	38.4	**56.9**
Exchange difference	0.7	0.3	**1.0**
At December 31, 2019	19.2	38.7	**57.9**

The Gas Cylinders Division goodwill of $19.2 million (2018: $18.5 million) relates wholly to the goodwill attributable to our Luxfer Gas Cylinders operations. The goodwill attributable to our Luxfer Superform division in the current and prior year is nil as a result of being written off in 2018 as part of our annual impairment review. The Elektron Division goodwill of $38.7 million (2018: $38.4 million) included goodwill attributable to our Luxfer MEL Technologies operations of $5.2 million (2018: $5.0 million) and goodwill attributable to our Luxfer Magtech operations of $33.5 million (2018: $33.4 million); no goodwill is allocated to Luxfer Graphic Arts or Luxfer Czech Republic (2018). The goodwill figure was allocated based on which operating segments historical acquisitions were allocated to and the value of the acquired goodwill on those historical acquisitions.

The Group tests goodwill annually for impairment, or more frequently if there are indications that goodwill might be impaired. The recoverable amount of each of the cash-generating units has been determined based on a value-in-use calculation using a discounted cash flow method. The cash flows were derived from a 3-year business plan prepared at a detailed level by each CGU. The results of these plans were then extrapolated to give a terminal value based on a growth rate of 2.3% (2018: 2.2%). The 3-year business plans were driven by detailed sales forecasts by product type and best estimate of future demand by end market, using current margins. The cash flows included allowance for capital maintenance costs, along with working capital requirements based on the projected level of sales. A pre-tax discount rate of between 8.3% and 9.0% was used for the individual CGUs (2018: between 8.0% and 9.8% for all CGUs), which was considered a best estimate for the risk-adjusted cost of capital for the CGUs. The long-term projections assumed product prices and costs were at current levels, but the exchange rates used were USD:GBP of $1.28 and USD:EUR of $1.16.

14. Investments

	Shares in joint ventures	Loans to joint ventures and associates	Total
	$M	$M	$M
At January 1, 2018	2.9	6.3	**9.2**
Loan repayment	—	(3.5)	**(3.5)**
Loan forgiveness	—	(2.1)	**(2.1)**
Impairment	(1.6)	(0.9)	**(2.5)**
Share of results	0.4	—	**0.4**
Exchange difference	(0.1)	0.2	**0.1**
At December 31, 2018	1.6	—	**1.6**
Share of results	0.7	—	**0.7**
At December 31, 2019	**2.3**	—	**2.3**

Investment in joint ventures and associates

At December 31, 2019, the Group had the following joint ventures and associates which affect the profit of the Group. Unless otherwise stated, the Group's joint ventures and associates have share capital which consists solely of ordinary shares and are indirectly held, and the country of incorporation or registration is also their principal place of operation.

Name of company	Country of incorporation	Holding	Proportion of voting rights and shares held	Classification	Nature of business
Luxfer Uttam India Private Limited	India	Ordinary shares	51.0%	Joint venture	Engineering
Nikkei-MEL Co. Limited	Japan	Ordinary shares	50.0%	Joint venture	Distribution
Sub161 Pty Limited	Australia	Ordinary shares	26.4%	Associate	Engineering

On December 28, 2018, the Company acquired the residual 51% of Luxfer Holdings NA LLC, in return for the forgiveness of the JV partner's share on a loan from Luxfer Holdings PLC, being $2.1 million. As a consequence of the transaction we fully impaired our equity investment (from a pre-acquisition value of $1.6 million) and partially impaired the loan to the joint venture by $0.8 million; the combined effect resulting in a net charge of $2.4 million being recognized in the consolidated income statement, within *restructuring and other expense*.

During 2018, a further impairment of $0.1 million (2017: $2.2 million) was recognized in relation to the Sub161 Pty Limited investment.

The main trading activity in 2019 was in Luxfer Uttam India Private Limited and Nikkei MEL Co. Limited. In 2018 there was also trading activity in relation to Luxfer Holdings NA, LLC.

The share of profits of all joint ventures and associates was $0.7 million (2018: $0.4 million), with no items recognized in other comprehensive income in 2019 or 2018.

The Group has looked in detail at the ownership agreements of its joint ventures and associates in order to determine the level of control that it has. The Group has determined that it has joint control of its joint ventures mainly based upon the number of members on each company board of directors and their associated voting rights. In relation to the associate undertaking, the Group has significant influence but not joint control based on the proportion of directors on the company board and associated voting rights. The Group therefore accounts for all material joint ventures and associates on an equity basis.

Related party transactions with joint ventures and associates have been disclosed in Note 33 to the Group's consolidated financial statements.

15. Inventories

	December 31, 2019 $M	December 31, 2018 $M
Raw materials and consumables	**33.4**	30.5
Work in progress	**32.2**	33.1
Finished goods and goods for resale	**28.9**	30.0
	94.5	93.6

Inventories above are disclosed net of any provisions for obsolete and excess inventories. The provision against obsolete and excess inventories at December 31, 2019 was $10.5 million (2018: $8.0 million). The cost of inventories recognized as an expense during the year was $276.8 million (2018: $298.2 million). The cost of inventories written-off during 2019 was $0.4 million (2018: $0.5 million).

16. Trade and other receivables

	December 31, 2019 $M	December 31, 2018 $M
Current Assets		
Trade receivables	**52.4**	49.8
Amounts owed by joint ventures and associates	**2.7**	0.9
Other receivables	**4.2**	5.5
Prepayments and accrued income	**6.7**	7.7
Derivative financial instruments	**0.3**	0.1
	66.3	64.0

Trade receivables are non-interest bearing and are generally on 30-90 day terms. Trade receivables above are disclosed net of any provisions for doubtful receivables of $1.3 million due to credit risk. The following table provides information about the exposure to credit risk and expected credit losses for trade receivables (including amounts owed by joint ventures and associates) as at December 31, 2019 based on aging profile:

Trade receivables and amounts owed by joint ventures and associates	Default rate [1] %	Gross carrying amount $M	Lifetime expected credit loss $M
Current (not past due)	—%	40.9	—
1-30 days past due	—%	9.2	—
31-60 days past due	—%	2.5	—
61-90 days past due	1.5%	1.2	—
91-120 days past due	15.0%	1.1	0.1
> 120 days past due	100.0%	1.4	1.2
		56.3	**1.3**

[1] Default rate is applied to uninsured trade receivables and amounts owed by joint ventures and associates.

At December 31, 2019, trade receivables with a nominal value of $1.3 million (2018: $2.4 million) were impaired and fully provided for. Movements in the provision for impairment of trade receivables and amounts owed by joint ventures and associates were as follows:

	2019 $M	2018 $M
At January 1	**2.4**	4.1
Charge in the year	**1.2**	0.4
Utilized in the year	**(2.0)**	(2.2)
Exchange difference	**(0.3)**	0.1
At December 31	**1.3**	2.4

17. Held-for-sale assets and liabilities

In 2019, there was one building valued at $3.7 million, within our Elektron Segment classified as held-for-sale assets, presented within current assets. The building was classified as held-for-sale in 2018, as the expectation was that the building would be sold in 2019. There are conditions attached to the sale which the Company expects to be met in 2020 and as such the building continues to be classified as held-for-sale.

There is also $0.2 million of inventory which has been reclassified as held-for-sale assets, in relation to one of our operations within our Gas Cylinders Segment.

During 2018, two buildings valued at $4.7 million, within our Elektron Segment were classified as held-for-sale assets. The buildings were part of separate site closures announced in 2017 (Riverhead, NY) and early 2018 (Findlay, OH) and were readily available for sale at December 31, 2018. The buildings were impaired to their fair value less costs to sell, with the impairment ($1.1 million) disclosed within restructuring and other expense in the consolidated income statement in 2017. The property at Findlay, OH, was sold during the first half of 2019; the site at Riverhead, NY is now expected to be sold during 2020 and is included within held-for-sale assets.

The Company was actively marketing and was in negotiations with a third party during the fourth quarter of 2018 with a view to selling its Magnesium Elektron CZ s.r.o. subsidiary, which is involved in magnesium recycling and based in the Czech Republic. This led to the business being classified as held-for-sale and written down to fair value less costs to sell. An offer was received and subsequently accepted in February 2019. The $1.2 million charge is presented within restructuring and other expense in the consolidated income statement and has been allocated to property, plant and equipment and inventory.The transaction was completed in the first half of 2019.

The respective assets and liabilities of the above disposal groups have been reclassified as held-for-sale within other current assets and other current liabilities per the table below.

Reclassified to held-for-sale assets and liabilities	December 31, 2019 $M	December 31, 2018 $M
Property, plant and equipment	**3.7**	6.2
Inventories	**0.2**	2.2
Trade and other receivables	—	2.3
Held-for-sale assets	**3.9**	**10.7**
Reclassified to held-for-sale liabilities		
Trade and other payables	**—**	2.5
Held-for-sale liabilities	**—**	**2.5**

As a result of items reclassified to held-for-sale, there has been no reclassification of items from other comprehensive income to the income statement.

18. Cash and cash equivalents

	December 31, 2019	December 31, 2018
	$M	$M
Cash at bank and in hand	**10.3**	14.1
Overdrafts	**—**	(3.5)
	10.3	10.6

Included within the cash at bank and in hand balance is $0.1 million (2018: $0.3 million) cash held in escrow, as restricted cash as described further in Note 25.

19. Share capital

(a) ***Ordinary share capital***

	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
	No.	No.	$M	$M
Authorized:				
Ordinary shares of £0.50 each	**40,000,000**	40,000,000	**35.7** (1)	35.7 (1)
Deferred ordinary shares of £0.0001 each	**761,835,338,444**	761,845,318,444	**149.9** (1)	149.9 (1)
	761,875,338,444	761,885,318,444	**185.6** (1)	185.6 (1)
Allotted, called up and fully paid:				
Ordinary shares of £0.50 each	**29,000,000**	29,000,000	**26.6** (1)	26.6 (1)
Deferred ordinary shares of £0.0001 each	**761,835,338,444**	761,835,338,444	**149.9** (1)	149.9 (1)
	761,864,338,444	761,864,338,444	**176.5** (1)	176.5 (1)

(1) The Group's ordinary and deferred share capital are shown in U.S. dollars at the exchange rate prevailing at the month end spot rate at the time of the share capital being issued. This rate at the end of February 2007 was $1.9613:£1 when the first 20,000,000 shares were issued; the rate at the end of October 2012 was $1.6129:£1 when 7,000,000 shares were issued; the rate at the end of March 2013 was $1.5173:£1 when 1,924 shares were issued; the rate at the end of January 2014 was $1.6487:£1 when 12,076 shares were issued; the rate at the end of May 2014 was $1.6760:£1 when 24,292 shares were issued; the rate at the end of August 2014 was $1.6580:£1 when 58,399 shares were issued; the rate at the end of February 2015 was $1.5436:£1 when 8,563 shares were issued; the rate at the end of March 2015 was $1.4847:£1 when 3,866 shares were issued; the rate at the end of June 2015 was $1.5715:£1 when 27,679 shares were issued; and the rate at the end of August 2018 was $1.2843:£1 when 1,863,201 shares were issued.

The rights of the shares are as follows:

Ordinary shares of £0.50 each

The ordinary shares carry no entitlement to an automatic dividend but rank pari passu in respect of any dividend declared and paid. The ordinary shares were allotted and issued to satisfy share awards which vested under the Group's share award and share incentive plans.

At December 31, 2019, there were 27,431,283 (2018: 28,376,729) ordinary shares of Luxfer Holdings PLC listed on the New York Stock Exchange (NYSE).

Deferred ordinary shares of £0.0001 each

The deferred shares have no entitlement to dividends or to vote. On a winding up (but not otherwise) the holders of the deferred shares shall be entitled to the repayment of the paid up nominal amount of the deferred shares, but only after any payment to the holders of ordinary shares of an amount equal to 100 times the amount paid up on such ordinary shares.

(b) ***Share premium account***

	$M
At January 1, 2018	56.4
Cancellation of deferred shares	1.0
Shares sold from ESOP	6.2
Utilization of shares	2.1
At December 31, 2018	**65.7**
Shares sold from ESOP	3.3
Utilization of shares	5.5
At December 31, 2019	**74.5**

The share premium account is used to record the excess of proceeds over nominal value on the issue of shares. Share issue costs directly related to the issue of shares are deducted from share premium.

(c) ***Treasury shares***

	$M
At January 1, 2018	(5.8)
Transfer of treasury shares into ESOP	1.4
Utilization of treasury shares	0.1
At December 31, 2018	**(4.3)**
Utilization of treasury shares	0.3
At December 31, 2019	**(4.0)**

In June 2015, the Board announced a share buy-back program of up to $10 million, to cover the needs of employee share plans. Shareholder approval for this program was granted at the 2014 Annual General Meeting (for repurchases up to an aggregate amount of 2,700,000 ordinary shares or ADSs).

During 2019 and 2018 no ordinary shares were repurchased under the share buy-back program. At December 31, 2019, there were 352,499 (2018: 378,201) treasury shares held at a cost of $4.0 million (2018: $4.3 million).

(d) ***Own shares held by ESOP***

	$M
At January 1, 2018	**(1.0)**
Issue of new shares	(1.3)
Shares sold from ESOP	0.4
Transfer of treasury shares into ESOP	(1.4)
Utilization of ESOP shares	1.1
At December 31, 2018	**(2.2)**
Shares sold from ESOP	0.2
Utilization of ESOP shares	0.3
At December 31, 2019	**(1.7)**

At December 31, 2019, there were 1,216,220 ordinary shares of £0.50 each (2018: 1,621,301 ordinary shares of £0.50 each) held by The Luxfer Group Employee Share Ownership Plan (the "ESOP").

20. Dividends paid and proposed

	2019 $M	2018 $M	2017 $M
Dividends declared and paid during the year:			
Interim dividend paid February 1, 2017 ($0.125 per ordinary share)	**—**	—	3.3
Interim dividend paid May 3, 2017 ($0.125 per ordinary share)	**—**	—	3.3
Interim dividend paid August 2, 2017 ($0.125 per ordinary share)	**—**	—	3.3
Interim dividend paid November 1, 2017 ($0.125 per ordinary share)	**—**	—	3.4
Interim dividend paid February 7, 2018 ($0.125 per ordinary share)	**—**	3.4	—
Interim dividend paid May 2, 2018 ($0.125 per ordinary share)	**—**	3.3	—
Interim dividend paid August 1, 2018 ($0.125 per ordinary share)	**—**	3.3	—
Interim dividend paid November 7, 2018 ($0.125 per ordinary share)	**—**	3.4	—
Interim dividend paid February 6, 2019 ($0.125 per ordinary share)	**3.4**	—	—
Interim dividend paid May 1, 2019 ($0.125 per ordinary share)	**3.4**	—	—
Interim dividend paid August 7, 2019 ($0.125 per ordinary share)	**3.4**	—	—
Interim dividend paid November 6, 2019 ($0.125 per ordinary share)	**3.4**	—	—
	13.6	13.4	13.3

	2019 $M	2018 $M	2017 $M
Dividends declared and paid after December 31 (not recognized as a liability at December 31):			
Interim dividend paid February 7, 2018: ($0.125 per ordinary share)	**—**	—	3.4
Interim dividend paid February 6, 2019: ($0.125 per ordinary share)	**—**	3.4	—
Interim dividend paid February 5, 2020: ($0.125 per ordinary share)	**3.4**	—	—
Interim dividend paid May 6, 2020: ($0.125 per ordinary share)	**3.4**		
	6.8	3.4	3.4

21. Bank and other loans

	December 31, 2019 $M	December 31, 2018 $M
Loan Notes due 2021—gross	**25.0**	25.0
Unamortized finance costs	**—**	—
Loan Notes due 2021—net	**25.0**	25.0
Loan Notes due 2023—gross	**25.0**	25.0
Unamortized finance costs	**(0.1)**	(0.1)
Loan Notes due 2023—net	**24.9**	24.9
Loan Notes due 2026—gross	**25.0**	25.0
Unamortized finance costs	**(0.3)**	(0.3)
Loan Notes due 2026—net	**24.7**	24.7
Revolving credit facility—gross	**17.5**	—
Unamortized finance costs	**(1.1)**	—
Revolving credit facility—net	**16.4**	—
	91.0	74.6
Included in current liabilities	**—**	—
Included in non-current liabilities	**91.0**	74.6
	91.0	74.6

In 2018, the unamortized finance costs associated with the revolving credit facility of $1.4 million was disclosed within other receivables as the balance on the revolving credit facility was nil

On July 31, 2017, an extension to the Senior Facilities Agreement was agreed which provides $150 million in committed debt facilities, in the form of a multi-currency revolving credit facility, with an additional $50 million of uncommitted facilities through an accordion facility. The Senior Facilities Agreement was due to mature in April 2019, but has now been extended until the end of July 2022. Finance costs of $1.2 million were capitalized following this extension and were deemed to be a modification of the existing facility. The Senior Facility Agreement bears interest equal to a margin based upon the Group's leverage plus either EURIBOR or LIBOR, depending on the currency drawn down.

The weighted-average interest rate on the revolving credit facility was 2.47% and 3.58% in 2019 and 2018 respectively. Unamortized finance costs of $1.4 million in relation to the revolving credit facility were reclassified to trade and other receivables in 2018.

The maturity profile of the Group's undiscounted contractual payments is disclosed in Note 28.

22. Provisions

	Rationalization and redundancy	Employee benefits	Environmental provisions	Total
	$M	$M	$M	$M
At January 1, 2018	**2.1**	**1.1**	**0.7**	**3.9**
Charged to consolidated income statement	10.7	0.5	—	**11.2**
Cash payments	(3.5)	(0.8)	(0.2)	**(4.5)**
At December 31, 2018	**9.3**	**0.8**	**0.5**	**10.6**
Charged to consolidated income statement	18.5	0.1	2.5	**21.1**
Cash payments	(19.6)	—	(0.8)	**(20.4)**
At December 31, 2019	**8.2**	**0.9**	**2.2**	**11.3**
At December 31, 2019				
Included in current liabilities	8.2	—	2.2	**10.4**
Included in non-current liabilities	—	0.9	—	**0.9**
	8.2	**0.9**	**2.2**	**11.3**
At December 31, 2018				
Included in current liabilities	9.3	—	0.5	**9.8**
Included in non-current liabilities	—	0.8	—	**0.8**
	9.3	**0.8**	**0.5**	**10.6**

Rationalization and redundancy

At December 31, 2019, the Group had $8.2 million of provisions relating to redundancy and the rationalization of its operations (2018: $9.3 million). $0.4 million (2018: $0.8 million) and $7.8 million (2018: $8.5 million) of this provision related to the Elektron and Gas Cylinders divisions respectively,

Employee benefits

At December 31, 2019, the Group had $0.9 million of employee benefit liabilities (in addition to retirement benefits), as calculated on an actuarial basis, relating to a provision for workers' compensation in the U.S. (2018: $0.8 million).

Environmental provisions

At December 31, 2019, the Group had environmental provisions totaling $2.2 million relating to environmental clean-up costs (2018: $0.5 million). $2.1 million relates to a provision to remove low-level naturally occurring radioactive material (NORM) fro a redundant building at Elektron's Manchester, UK site. The remaining $0.1 million relates to a provision for disbursement of environmental liabilities as part of the acquisition of the trade and assets of the Specialty Metals business of ESM Group Inc.

23. Deferred income taxes

	Accelerated tax depreciation $M	Other temporary differences $M	Tax losses $M	Retirement benefit obligations $M	Total $M
At January 1, 2018	**(5.7)**	**2.0**	**5.4**	**10.9**	**12.6**
Credited / (charged) to consolidated income statement	2.9	1.6	4.4	(1.5)	**7.4**
Credited / (charged) to other comprehensive income	—	0.1	—	(2.0)	**(1.9)**
Exchange difference	—	0.1	(0.3)	(0.4)	**(0.6)**
At December 31, 2018	**(2.8)**	**3.8**	**9.5**	**7.0**	**17.5**
Charged to consolidated income statement	(0.3)	0.1	(1.0)	(2.0)	**(3.2)**
(Charged) / credited to other comprehensive income	—	(0.1)	—	0.6	**0.5**
Exchange difference	—	0.1	0.4	0.2	**0.7**
At December 31, 2019	**(3.1)**	**3.9**	**8.9**	**5.8**	**15.5**

The amount of deferred income taxes accounted for in the Group balance sheet, after the offset of balances within countries for financial reporting purposes, comprised the following deferred income tax assets and liabilities:

	December 31, 2019 $M	December 31, 2018 $M
Deferred income tax liabilities	**(1.0)**	(2.4)
Deferred income tax assets	**16.5**	19.9
Net deferred income tax assets	**15.5**	17.5

At the balance sheet date, the Group has unrecognized deferred income tax assets relating to certain trading and capital losses and other temporary differences of $14.9 million (2018: $15.0 million) potentially available for offset against future profits. No deferred income tax assets have been recognized in respect of this amount because of the unpredictability of future qualifying profit streams in the relevant entities. Of the total unrecognized deferred income tax assets of $14.9 million (2018: $15.0 million), $13.7 million (2018: $14.0 million) relates to losses that can be carried forward indefinitely under current legislation and the remaining $1.2 million (2018: $1.0 million) are due to expire between 2023 and 2034.

At the balance sheet date, there were unremitted earnings of overseas subsidiaries and joint ventures and associates of $47.2 million (2018: $42.4 million), for which there are no deferred income tax liabilities recognized or unrecognized (2018: $nil).

The 2019 deferred tax charge includes a non-cash accounting adjustment in respect of previous years of $0.3 million, which predominantly results from a re-evaluation of the availability of historic tax losses to offset future taxable profits, partially offset by the re-evaluation of the deductibility of share-based compensation expense.

The 2018 deferred tax credit includes a non-cash accounting adjustment in respect of previous years of $3.4 million, which predominantly results from a re-evaluation of the availability of historic tax losses to offset future taxable profits, as well as additional tax credits linked to recently granted patents.

24. Trade and other payables

	December 31, 2019 $M	December 31, 2018 $M
Non-current Liabilities		
Accruals and deferred income	**0.6**	0.5
	0.6	0.5
Current Liabilities		
Trade payables	**36.4**	36.9
Other taxation and social security	**0.1**	1.6
Accruals and deferred income	**26.8**	35.0
Interest payable	**0.4**	0.4
	63.7	73.9

The directors consider that the carrying value of trade payables approximates to their fair value.

25. Acquisitions

On December 28, 2018, Luxfer Holdings NA LLC (a 49% owned VIE joint venture) disposed of the assets and selected liabilities of Gas Transport Leasing LLC (its wholly-owned subsidiary) with the remaining 51% of Luxfer Holdings NA LLC simultaneously acquired by the Company. The disposal of the assets and selected liabilities to the JV partner was for consideration of $2.2 million. The Company acquired the residual 51% of Luxfer Holdings NA LLC, in return for the forgiveness of the JV partner's share on a loan from Luxfer Holdings PLC, being $2.1 million. The fair value of the net assets of Luxfer Holdings NA LLC at the acquisition date was assessed as $4.0 million, valuing the residual 51% stake at $2.1 million, resulting in no goodwill being recognized on the step acquisition.

The principal assets acquired include cash of $2.7 million (including $2.2 million from the sale of the leasing business), inventory ($1.1 million), accounts and other receivables ($0.8 million), property, plant and equipment ($0.2 million), with accounts payable of $0.8 million. There were no identified intangibles. As a consequence of the transaction we fully impaired our equity investment (from a pre-acquisition fair value of $1.6 million) and partially impaired the loan to the joint venture; the combined effect resulting in a net charge of $2.4 million being recognized in the consolidated statement of income, within impairment charges. At December 31, 2018, Luxfer Holdings NA LLC is 100% owned by the Company and is a fully consolidated subsidiary. As the acquisition occurred very close to the year end date, no revenue or earnings are recorded in the consolidated income statement for the reporting period.

On December 5, 2017, the Group acquired the trade and assets of the Specialty Metals business of ESM Group Inc., incorporating a manufacturing facility in Saxonburg PA. The plant manufactures a range of magnesium-based chips, granules, ground powders and atomized powders. The acquired business was integrated with Luxfer’s existing business that currently offers similar products under the Luxfer Magtech brand. On closing, an initial consideration of $4.3 million was paid as well as an amount placed in general escrow of $0.3 million as deferred consideration. An additional $0.4 million, which was not included as part of the purchase consideration, was placed in escrow for disbursement of environmental liabilities.

The fair value of net assets acquired was assessed as $5.8 million, resulting in a gain on bargain purchase of $1.2 million, which was recorded in the consolidated statement of income within net (loss) / gain on acquisitions and disposals. The principal assets acquired were land and buildings, $2.0 million, plant and equipment, $3.2 million and inventory, $0.7 million, with assumed liabilities of $0.1 million. No separately identifiable intangibles were identified. The gain on bargain purchase resulted because the Specialty Metals business was not considered to be part of ESM Group's core business activities as it has adopted a strategy to focus on its steel industry customers. In implementing this strategy, ESM Group was eager to divest this non-core business, which was reflected in the transaction price. The Group believes that it can extract additional value from the site due to synergies with our existing Luxfer Magtech business.

In addition to the purchase consideration, $0.5 million of acquisition-related costs were incurred and a $0.4 million provision was set up for the disbursement of the environmental liabilities.

Deferred contingent consideration

The deferred contingent consideration is in relation to the acquisition of Truetech and Innotech, (Luxfer Magtech) is linked to the future profitability of the company and where appropriate will be payable annually from 2015 to 2020. The deferred contingent consideration is shown in the balance sheet at December 31, 2019 at $0.5 million (2018: $0.6 million), following a remeasurement of deferred contingent consideration at the year-end based upon the estimated future cash flows and the weighted probability of those cash flows being achieved, resulting in a credit to the consolidated income statement of $0.1 million (2018: $0.6 million debit), net of an unwind of discount on deferred contingent consideration of $0.2 million (2018: $0.2 million). The consideration is payable in 2020 and is therefore disclosed within current liabilities; the 2018 amount was split between current liabilities $0.4 million and non-current liabilities $0.5 million within the balance sheet. The potential undiscounted future payment has been estimated at $0.5 million (2018: $0.9 million). The maximum undiscounted amount payable under the sale agreement is $10.0 million (2018: $10.0 million).

	December 31, 2019 $M	December 31, 2018 $M
Net cash flows on purchase of business:		
Included in net cash flows from investing activities:		
Deferred consideration paid	(0.5)	(0.8)
Cash acquired	—	2.7
Net cash flows on purchase of business	(0.5)	1.9

26. Leases

Right-of-use assets

	Land and buildings $M	Motor vehicles $M	Equipment $M	Total $M
Cost:				
At January 1, 2019	$ —	$ —	$ —	**$ —**
Opening balance	16.4	0.2	1.5	**18.1**
Additions	—	—	0.1	**0.1**
At December 31, 2019	$ 16.4	$ 0.2	$ 1.6	**$ 18.2**
Accumulated depreciation:				
At January 1, 2019	$ —	$ —	$ —	**$ —**
Charge for the year	3.0	0.1	0.6	**3.7**
At December 31, 2019	$ 3.0	$ 0.1	$ 0.6	**$ 3.7**
Net book values:				
At December 31, 2019	**$ 13.4**	**$ 0.1**	**$ 1.0**	**$ 14.5**

Lease liability

	December 31, 2019 $M	December 31, 2018 $M
The present value of lease liabilities is as follows:		
Within 12 months	$ 3.3	—
1 - 5 years	6.0	—
> 5 years	5.7	—
Total	**$ 15.0**	—

The total cash outflow for leases in 2019 was $4.1 million and total expense was $4.2 million.

Prior to adopting IFRS 16 on January 1, 2019, the total rentals under operating leases were as follows:

	December 31, 2018 $M	December 31, 2017 $M
Operating lease commitments - Group as a lessee		
Minimum lease payments under operating leases recognized in the consolidated income statement	4.8	5.1

Supplemental balance sheet information

	December 31, 2019
Weighted average remaining lease terms (years)	16.2
Weighted average discount rate	4.46%

27. Commitments and contingencies

Capital commitments

At December 31, 2019, the Group had capital expenditure commitments of $1.0 million (2018: $2.5 million and 2017: $0.6 million) for the acquisition of new plant and equipment.

Committed banking facilities

At December 31, 2019 and 2018 the Company had committed banking facilities of $150.0 million. The facilities were for providing loans, with a separate facility for letters of credit which at December 31, 2019, was £1.0 million ($1.3 million), 2018 was £7.0 million ($8.9 million). Of the committed facilities, $17.5 million was drawn, no loans were drawn and no letters of credit were utilized at December 31, 2019, $3.5 million, nil and nil for 2018. The Company also has two separate bonding facilities for bank guarantees, one denominated in GBP sterling of £4.5 million ($5.9 million), 2018: £3.0 million ($3.8 million), of which £1.5 million ($2.0 million) (2018: £1.5 million / $1.9 million) was utilized at December 31, 2019 and one denominated in USD of $0.4 million which was fully utilized at December 31, 2019.

Contingencies

During February 2014, a cylinder was sold to a long term customer and ruptured at one of their gas facilities. As a result of this rupture, three people were noted to have minor injuries such as loss of hearing. There was no major damage to assets of the customer. A claim has been launched by the three people who were injured in the incident. We have reviewed our quality control checks from around the time which the cylinder was produced and no instances of failures have been noted. It has also been noted by the investigator that the customer has poor quality and safety checks. As a result we do not believe that we are liable for the incident, and therefore, do not currently expect this case to have a material impact on the Company's financial position or results of operations.

28. Financial risk management objectives and policies

The Group's financial instruments comprise bank and other loans, senior loan notes, derivatives and trade payables. Other than derivatives, the main purpose of these financial instruments is to raise finance for the Group's operations. The Group also has various financial assets such as trade receivables and cash and cash equivalents, which arise directly from its operations.

A Treasury Committee, chaired by the Chief Financial Officer, oversees the implementation of the Group's hedging policies, including the risk management of currency and aluminum risks and the use of derivative financial instruments.

It is not the Group's policy or business activity to trade in derivatives. They are only used to hedge underlying risks occurring as part of the Group's normal operating activities.

The main risks arising from the Group's financial instruments are cash flow interest rate risk, liquidity risk, foreign currency translation and transaction risk, aluminum price risk and credit risk on trade receivables.

The Group regularly enters into forward currency contracts to manage currency risks and when considered suitable will use other financial derivatives to manage commodity and interest rate risks.

Interest rate risk

The Group has exposure to variable interest rates when it draws down on the revolving credit facilities. As a result of this exposure, the Group may decide to hedge interest payable based on a combination of forward rate agreements, interest rate caps and swaps. It has also used fixed rate debt within its financing structure to mitigate volatility in interest rate movements.

Total debt and debt funding to joint ventures and associates, at December 31, 2019, all related to fixed interest rate debt and so there was no interest rate risk at that date.

Liquidity risk

To understand and monitor cash flows, the Group uses a combination of a short-term rolling six week cash forecast, based on expected daily liquidity requirements and longer term monthly rolling forecasts, covering forecast periods of between 6 and 18 months forward. The Group also prepares, at least annually, a longer-term strategic cash forecast. Together this system of control is used to ensure the Group can fund its ongoing operations, including working capital, capital expenditure and interest payments and to ensure that bank covenant targets will be met. Short and medium term changes in liquidity needs are funded from the Group's revolving bank facility, as disclosed in Note 21, which provides the ability to draw down and repay funds on a daily basis. In monitoring liquidity requirements and planning its working capital and capital expenditure programs, the Group aims to maintain a sufficiently prudent level of headroom against its banking facilities and forecast covenant position as protection against any unexpected or sudden market shocks.

The Group also uses forecasts to manage the compliance with any associated covenant tests in relation to the Group's financing arrangements. The Group is subject to maintaining net debt to EBITDA levels of below three times, EBITDA to net interest above four times, and a number of other debt service tests which include EBITDA, taxation, capital expenditure and pension payments.

The Group has been in compliance with the covenants under the Loan Notes due 2018, 2021, 2023 and 2026 and the banking facilities throughout all of the quarterly measurement dates from and including September 30, 2011 to December 31, 2019.

The maturity of the Group's liabilities is also monitored to ensure sufficient funds remain available to meet liabilities as they fall due. The table below summarizes the maturity profile of the Group's financial liabilities at December 31, based on contractual payments.

	December 31, 2019				December 31, 2018			
	Within 12 months	1-5 years	> 5 years	Total	Within 12 months	1-5 years	> 5 years	Total
	$M	$M	$M	$M	$M	$M	$M	$M
Loan Notes due 2021	—	25.0	—	25.0	—	25.0	—	25.0
Loan Notes due 2023	—	25.0	—	25.0	—	25.0	—	25.0
Loan Notes due 2026	—	—	25.0	25.0	—	—	25.0	25.0
Revolving credit facility	—	17.5	—	17.5	—	—	—	—
Lease liability	3.3	6.0	5.7	15.0	—	—	—	—
Deferred contingent consideration	0.5	—	—	0.5	0.4	0.5	—	0.9
Trade payables	36.4	—	—	36.4	36.9	—	—	36.9
Accruals and deferred income	26.8	0.6	—	27.4	35.0	0.5	—	35.5
Interest payable	0.4	—	—	0.4	0.4	—	—	0.4
Current income tax	0.1	—	—	0.1	1.6	—	—	1.6
Overdrafts	—	—	—	—	3.5	—	—	3.5
	67.5	74.1	30.7	172.3	77.8	51.0	25.0	153.8

The table below summarizes the maturity profile of the Group's financial liabilities at December 31 based on contractual undiscounted payments. Interest rates on the Group's variable rate debt have been based on a forward curve.

	December 31, 2019	December 31, 2018
	$M	$M
Undiscounted contractual maturity of financial liabilities:		
Amounts payable:		
Within 12 months	**72.5**	81.3
1-5 years	**86.5**	61.7
> 5 years	**36.8**	28.1
	195.8	171.1
Less: future finance charges	**(23.5)**	(17.3)
	172.3	153.8

Capital risk management

The capital structure of the Group consists of shareholders' equity, debt and cash and cash equivalents. For the foreseeable future, the Board will maintain a capital structure that supports the Group's strategic objectives through:

- Managing funding and liquidity;
- Optimizing shareholder return; and
- Maintaining a strong, investment-grade credit rating

The Group monitors its adjusted EBITDA, for continuing activities to net debt ratio, adjusted net income and adjusted diluted earnings per share in its primary GAAP, that being US GAAP. These KPIs and reconciliations to GAAP measures can be found in our Form 10-K, filed with the SEC on March 9, 2020.

Credit risk

The Group only provides trade credit to creditworthy third parties. Credit checks are performed on new and existing customers along with monitoring payment histories of customers. Outstanding receivables from customers are closely monitored to ensure they are paid when due, with both outstanding overdue days and total days of sales outstanding reported as a business unit key performance measure. Where possible sales are also protected through the use of credit insurance. At December 31, 2019, the Group has a provision for bad and doubtful debtors of $1.3 million (2018: $2.4 million) and a charge of $1.2 million (2018: $0.4 million) has been made to the consolidated income statement in relation to bad debts recognized in 2019.

The analysis of trade receivables that were past due but not impaired is as follows:

	Total	Neither past due nor impaired	Past due but not impaired				
			< 31 days	31-60 days	61-90 days	91-120 days	> 120 days
	$M	$M	$M	$M	$M	$M	$M
At December 31, 2019	**52.4**	**39.3**	**9.2**	**2.5**	**0.3**	**0.9**	**0.2**
At December 31, 2018	49.8	37.6	7.5	3.4	0.8	0.5	—

The Group also monitors the spread of its customer base with the objective of trying to minimize exposure at a Group and divisional level to any one customer. The top 10 customers in 2019 represented 27% (2018: 25% and 2017: 25%) of total revenue. There were no customers in 2019, 2018 or 2017 that represented over 10% of total revenue.

Exchange rate risks

The largest risk is from our operations in the U.K., which in 2019 generated sales revenue of $156.0 million. Fluctuations in exchange rates, particularly between the U.S. dollar and GBP sterling (which has been subject to significant fluctuations), can have a material effect on our consolidated income statement and consolidated balance sheet. In 2019, movements in the average U.S. dollar exchange rate had a negative impact on revenue of $9.5 million; in 2018, movements in the average U.S. dollar exchange rate had a positive impact on revenue of $6.4 million. Changes in translation exchange rates increased net assets by $3.1 million in 2019, compared to a decrease of $6.4 million in 2018.

Commodity price risks

The Group is exposed to a number of commodity price risks, including primary aluminum, magnesium, rare earth chemicals, zircon sand and other zirconium basic compounds. All have been subject to substantial increases in recent years. Historically the two largest exposures to the Group have been the prices of aluminum and magnesium and the Group will spend annually approximately $80 million to $100 million on these two raw materials.

*A*luminum is traded on the London Metal Exchange ("LME") and therefore the Group is able to use LME derivative contracts to hedge a portion of its price exposure. In 2019 the Group purchased approximately 12,000 (2018: 11,500) metric tons of primary aluminum. The processed waste can be sold as scrap aluminum at prices linked to the LME price. Based on the 2019 level of aluminum purchases, a $100 increase in the LME price of aluminum would increase our Gas Cylinders segment's costs by approximately $1.2 million.

In the long-term, the Group has sought to recover the cost of increased commodity costs through price increases and surcharges. Any hedging of aluminum risk is performed to protect the Group against short-term fluctuations in aluminum costs.

In 2019 the Group purchased approximately 5,000 metric tons of primary magnesium. Magnesium is not traded on the LME so we are not able to maintain a hedge position of its price exposure.

The Group purchases various rare earth chemicals which it uses in the production of various materials produced by its Elektron division and when these chemicals became subject to significant price volatility it used surcharges on its products to maintain its product margins.

29. Financial instruments

The following disclosures relating to financial instruments have been prepared on a basis which excludes short-term debtors and creditors which have resulted from the Group's operating activities.

(a) Financial instruments of the Group

The financial instruments of the Group other than short-term debtors and creditors and non-current derivative financial instruments were as follows:

Financial instruments - measured at amortized cost	Book value December 31, 2019 $M	Fair value December 31, 2019 $M	Book value December 31, 2018 $M	Fair value December 31, 2018 $M
Financial assets:				
Cash at bank and in hand	**10.3**	**10.3**	14.1	14.1
Financial liabilities[(1)]:				
Loan Notes due 2021[(2)]	**25.0**	**25.0**	25.0	25.1
Loan Notes due 2023[(2)]	**25.0**	**25.9**	25.0	25.9
Loan Notes due 2026[(2)]	**25.0**	**26.2**	25.0	26.4
Revolving credit facility	**17.5**	**17.5**	—	—
Overdrafts	**—**	**—**	3.5	3.5
Deferred contingent consideration	**0.5**	**0.5**	0.9	0.9

(1) The financial instruments included in financial liabilities are shown gross of unamortized finance costs.
(2) The fair value of these financial instruments is calculated by discounting the future cash flows, including interest payments due.

All financial assets mature within one year. The maturity of the financial liabilities is disclosed in Note 28.

At December 31, 2019, the amount drawn in bank and other loans was $92.5 million (2018: $75.0 million), of which $75.0 million was denominated in U.S. dollars (2018: $75.0 million) with the remainder being denominated in GBP sterling.

Derivative financial instruments - measured at fair value through profit or loss	Book value December 31, 2019 $M	Fair value December 31, 2019 $M	Book value December 31, 2018 $M	Fair value December 31, 2018 $M
Held to hedge purchases and sales by trading businesses:				
Forward foreign currency exchange rate contracts	**(0.3)**	**(0.3)**	(0.1)	(0.1)

The fair value calculations were performed on the following basis:

Cash at bank and in hand / overdrafts

The carrying value approximates to the fair value as a result of the short-term maturity of the instruments.

Bank loans

At December 31, 2019, bank and other loans of $92.5 million (2018: $75.0 million) were outstanding. At December 31, 2019, bank and other loans are shown net of issue costs of $1.5 million (2018: $0.4 million) and these issue costs are to be amortized to the expected maturity of the facilities. In 2018, a further $1.4 million of issue costs are recognized within other receivables in relation to the revolving credit facility. At December 31, 2019, $17.5 million (2018: none) of the total $92.5 million (2018: $75.0 million) bank and other loans was variable interest rate debt and subject to floating interest rate risk, with the remainder being fixed rate debt.

Forward foreign currency exchange rate contracts

The fair value of these contracts was calculated by determining what the Group would be expected to receive or pay on termination of each individual contract by comparison to present market prices.

LME derivative contracts

The fair value of these contracts is calculated by valuing the contracts against the equivalent forward rates quoted on the LME. There were no outstanding contracts at December 31, 2019 (2018: none).

Deferred contingent consideration

Disclosure of the basis of calculation of the fair value of deferred contingent consideration is included within Note 25 of the consolidated financial statements.

Fair value hierarchy

At December 31, 2019, the Group used the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

Level 1: quoted (unadjusted) prices in active markets for identical assets or liabilities.

Level 2: other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly.

Level 3: techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data.

	December 31, 2019 $M	Level 1 $M	Level 2 $M	Level 3 $M
Net derivative financial (assets) / liabilities at fair value through profit or loss:				
Forward foreign currency exchange rate contracts	**(0.3)**	—	(0.3)	—
Interest bearing loans and borrowings:				
Loan Notes due 2021	**25.0**	—	25.0	—
Loan Notes due 2023	**25.9**	—	25.9	—
Loan Notes due 2026	**26.2**	—	26.2	—
Other financial liabilities:				
Deferred contingent consideration	**0.5**	—	—	0.5

During the year ended December 31, 2019, there were no transfers between Level 1 and Level 2 fair value measurements.

The following table presents the changes in Level 3 instruments for the year ended December 31, 2019 and 2018.

	2019 $M	2018 $M
Balance at January 1	**0.9**	1.0
Payments made during year	**(0.5)**	(0.8)
New deferred consideration	**—**	—
Unwind of discount on deferred consideration	**0.2**	0.2
Remeasurement of deferred consideration	**(0.1)**	0.5
Balance at December 31	**0.5**	0.9
Total losses for the year included in profit and loss for assets held at the end at December 31	**0.1**	0.7
Change in unrealized losses for the year included in profit and loss for assets held at the end at December 31	**0.1**	0.7

The deferred contingent consideration relates to estimations of amounts payable in the future regarding acquisitions made in prior years. This is based upon an estimate of the future profitability of the businesses versus targets agreed upon as part of the acquisitions.

(b) Interest rate risks

Interest rate risk profile on financial assets

This table shows the Group's financial assets at December 31, which are cash and cash equivalents. These assets are all subject to floating interest rate risk.

Cash by currency:	December 31, 2019 $M	December 31, 2018 $M
U.S. dollar	**6.1**	4.7
GBP sterling	**1.9**	3.7
Euro	**0.2**	2.6
Australian dollar	**0.6**	0.6
Chinese renminbi	**1.1**	1.1
Czech koruna	**—**	0.2
Canadian dollar	**0.3**	1.2
Japanese yen	**0.1**	—
	10.3	14.1

Overdraft by currency:	December 31, 2019 $M	December 31, 2018 $M
GBP sterling	**—**	(3.5)
	—	(3.5)

The Group earns interest on cash balances through either deposit accounts or placing funds on money markets at short-term fixed rates. In all cases, with the exception of the restricted cash of $0.1 million, interest earned is at approximately ICELIBOR rates during the year.

Interest rate risk profile on financial liabilities

The following table sets out the carrying value, by original maturity, of the Group's financial instruments that were exposed to both fixed and variable interest rate risk. The carrying values include interest payments to be made and interest rates on the Group's variable rate debt have been based on a forward curve.

	December 31, 2019				December 31, 2018			
	Within 12 months $M	1-5 years $M	> 5 years $M	Total $M	Within 12 months $M	1-5 years $M	> 5 years $M	Total $M
Floating interest rate risk:								
Revolving credit facility (including interest payments)	1.0	19.0	—	**20.0**	—	—	—	**—**
Fixed interest rate risk:								
Loan Notes due 2021 (including interest payments)	0.9	25.7	—	**26.6**	0.9	26.6	—	**27.5**
Loan Notes due 2023 (including interest payments)	1.2	28.0	—	**29.2**	1.2	29.3	—	**30.5**
Loan Notes due 2026 (including interest payments)	1.2	5.0	26.9	**33.1**	1.2	5.0	28.1	**34.3**
	4.3	**77.7**	**26.9**	**108.9**	**3.3**	**60.9**	**28.1**	**92.3**

(c) Hedging activities

Forward foreign currency exchange contracts

The Group utilizes forward foreign currency exchange contracts to hedge significant future transactions and cash flows to manage its exchange rate exposures. The contracts purchased are primarily denominated in GBP sterling, U.S. dollars, Euros and Australian dollars. The Group is also exposed to a number of other currencies like Japanese yen and Canadian dollars with hedges against these on a more ad hoc basis, when exposures are more significant.

At December 31, 2019, the fair value of forward foreign currency exchange contracts deferred in equity was nil (2018: loss of $0.4 million and 2017: loss of $0.7 million). During 2019, a loss of $0.1 million (2018: gain of $0.1 million and 2017: loss of $0.6 million) has been transferred to the consolidated income statement in respect of contracts that have matured in the year.

At December 31, 2019 and 2018, the Group held various forward foreign currency exchange contracts designated as hedges in respect of forward sales for U.S. dollars, euros and Japanese yen for the receipt of GBP sterling or euros. The Group also held forward foreign currency exchange contracts designated as hedges in respect of forward purchases for U.S. dollars, euros and Canadian dollars by the sale of GBP sterling. The contract totals in GBP sterling and Euros, range of maturity dates and range of exchange rates are disclosed overleaf, with the value denominated in GBP sterling given that this is the currency the majority of the contracts are held in.

December 31, 2019

Sales hedges	**U.S. dollars**	**Euros**	**Japanese Yen**
Contract totals/£m	0.1	7.6	0.1
Maturity dates	01/20	01/20 to 03/20	01/20
Exchange rates	1.2914	€1.1551 to €1.1750	JPY 142.86

Purchase hedges	U.S. dollars	Euros	Canadian dollars
Contract totals/£m	1.3	0.8	7.0
Maturity dates	03/20	03/20	01/20
Exchange rates	1.3228	1.1663	$1.7137 to $1.7664

December 31, 2018

Sales hedges	U.S. dollars	Euros
Contract totals/£m	4.8	7.2
Maturity dates	01/19 to 07/19	01/19 to 07/19
Exchange rates	$1.2519 to $1.3419	€1.0949 to €1.1702

Purchase hedges	U.S. dollars	Euros	Canadian dollars	Czech koruna
Contract totals/£m	7.5	1.7	2.9	0.1
Maturity dates	01/19 to 07/19	01/19 to 06/19	01/19 to 03/19	01/19
Exchange rates	$1.2609 to $1.3380	€1.1074 to €1.1221	$1.7039 to $1.7416	CZK 28.4490

Aluminum commodity contracts

The Group did not hold any forward aluminum commodity contracts at December 31, 2019 or December 31, 2018.

Forward interest rate agreements

The Group did not hold any forward interest rate agreements at December 31, 2019 or December 31, 2018.

LME derivative contracts

At December 31, 2019, the Group has hedged nil metric tons of aluminum for supply in 2019. The fair value of LME derivative contracts deferred in equity was nil (2018: nil and 2017: gain of $1.2 million).

(d) Foreign currency translation risk disclosures

Exchange gains and losses arising on the translation of the Group's non-U.S. assets and liabilities are classified as equity and transferred to the Group's translation reserve. In 2019, a loss of $0.6 million (2018: loss of $4.9 million and 2017: gain of $11.6 million) was recognized in translation reserves.

(e) Undrawn committed facilities

At December 31, 2019 and 2018 the Company had committed banking facilities of $150.0 million. The facilities were for providing loans, with a separate facility for letters of credit which at December 31, 2019, was £1.0 million ($1.3 million), 2018 was £7.0 million ($8.9 million). Of the committed facilities, $17.5 million was drawn, no loans were drawn and no letters of credit were utilized at December 31, 2019, $3.5 million, nil and nil for 2018. The Company also has two separate bonding facilities for bank guarantees, one denominated in GBP sterling of £4.5 million ($5.9 million), 2018: £3.0 million ($3.8 million), of which £1.5 million ($2.0 million) (2018: £1.5 million / $1.9 million) was utilized at December 31, 2019 and one denominated in USD of $0.4 million which was fully utilized at December 31, 2019.

30. Retirement benefits

The Group has defined benefit pension plans in the U.K., the U.S. and France. The levels of funding are determined by periodic actuarial valuations. The assets of the plans are generally held in separate trustee-administered funds. The Group also operates defined contribution plans in the U.K., the U.S., Australia and Canada.

Remeasurements are recognized in full in the period in which they occur. The liability recognized in the balance sheet represents the present value of the defined benefit obligation, as reduced by the fair value of plan assets. The cost of providing benefits is determined using the Projected Unit Credit Method.

The principal defined benefit pension plan in the Group is the U.K. Luxfer Group Pension Plan ("the Plan"), which closed to new members in 1998, new employees then being eligible for a defined contribution plan. With effect from April 2004, the Plan changed from a final salary to a career average revalued earnings benefit scale. In August 2005, a plan specific earnings cap of £60,000 per annum subject to inflation increases was introduced, the figure had risen to £76,000 in 2015. In October 2007, the rate of the future accrual for pension was reduced and a longevity adjustment was introduced to mitigate against the risk of further unexpected increases in life expectancies. In 2015, following a consultation with the Trustees and members, it was agreed the Plan would close to future accrual of benefits effective from April 5, 2016 and for the purpose of increasing pensions in payment, to use the Consumer Prices Index ("CPI") as the reference index in place of the Retail Prices Index ("RPI") where applicable. The remaining active members, numbering approximately 160, were transferred into a defined contribution plan. The weighted average duration of the expected benefit payments from the Plan is around 16 years. The pension cost of the Plan is assessed in accordance with the advice of an independent firm of professionally qualified actuaries, Lane Clark & Peacock LLP. The Plan is registered with HMRC for tax purposes, operates separately from the Group and is managed by an independent set of Trustees. The Plan operates under U.K. trust law and the trust is a separate legal entity from the Group. The Plan is governed by an independent board of Trustees, composed of two member nominated Trustees and four company appointed Trustees.

The Trustees are required by law to act in the best interests of scheme members and are responsible for setting certain policies (e.g. investment funding) together with the Company. A schedule of payments provides for deficit funding, which comprises a shortfall-correction contribution totaling £3.9 million to be paid in the Plan year commencing 6 April 2018 and annual contributions of £4.1 million paid in each Plan year thereafter until 31 December 2023.

The Group's other arrangements are less significant than the Luxfer Group Pension Plan, the largest being the BA Holdings, Inc. Pension Plan in the U.S. In December 2005, this plan was closed to further benefit accrual with members being offered contributions to that Company's 401(k) plan. At January 1, 2016, the U.S. pension plans (BA Holdings, Inc. Pension Plan and Luxfer Hourly Pension Plan) merged into one plan.

The total charge to the Group's consolidated income statement for 2019 for retirement benefits was a cost of $3.9 million (2018: cost of $8.6 million, 2017: cost of $6.6 million).

The movement in the pension liabilities is shown below:

	2019 $M	2018 $M
Balance at January 1	**40.0**	55.3
Charged / (credited) to the consolidated income statement:		
Past service cost	**—**	2.2
Settlement gain	**(0.9)**	—
Curtailment credit	**(1.8)**	—
Current service cost	**0.1**	0.1
Net interest on net liability	**1.4**	1.3
Administrative costs	**0.9**	0.7
Total charge for defined contribution plans	**4.2**	4.3
Cash contributions	**(12.1)**	(12.2)
Charged / (credited) to the consolidated statement of comprehensive income	**2.3**	(9.6)
Exchange difference	**1.1**	(2.1)
Balance at December 31	**35.2**	40.0

The financial assumptions used in the calculations were:

	Projected Unit Credit Valuation					
	U.K.			Non-U.K.		
	2019 %	2018 %	2017 %	2019 %	2018 %	2017 %
Discount rate	**2.10**	2.90	2.40	**3.10**	4.20	3.60
Retail Price Inflation	**2.90**	3.30	3.10	**—**	—	—
Inflation related assumptions:						
Consumer Price Inflation	**2.00**	2.20	2.10	**n/a**	n/a	n/a
Pension increases—pre 6 April 1997	**1.80**	2.00	1.90	**n/a**	n/a	n/a
—1997 - 2005	**2.10**	2.20	2.10	**n/a**	n/a	n/a
—post 5 April 2005	**1.70**	1.80	1.70	**n/a**	n/a	n/a

Other principal actuarial assumptions:	2019 Years	2018 Years
Life expectancy of male / female in the U.K. aged 65 at accounting date	**21.5 / 24.2**	21.4 / 24.1
Life expectancy of male / female in the U.K. aged 65 at 20 years after accounting date	**22.8 / 25.7**	22.8 / 25.7

Investment strategies

For the principal defined benefit plan in the Group and the U.K., the Luxfer Group Pension Plan, the assets are invested in a diversified range of asset classes and include matching assets (comprising fixed interest and index linked bonds and swaps) and growth assets (comprising all other assets). The Trustees have formulated a de-risking strategy to help control the short term risks of volatility associated with holding growth assets. The Trustees also monitor the cost of a buy-in to secure pensioner liabilities with an insurance company to ensure they and the Company are able to act if such an opportunity arises. Other options to progressively reduce the scale of the liabilities are discussed between the Trustees and the Company.

Risk exposures

The Group is at risk of adverse experience relating to the defined benefit plans.

The plans hold a high proportion of assets in equity and other growth investments, with the intention of growing the value of assets relative to liabilities. The Group is at risk if the value of liabilities grows at a faster rate than the plans assets, or if there is a significant fall in the value of these assets not matched by a fall in the value of liabilities. If these events occurred, this would be expected to lead to an increase in the Group's future cash contributions.

Special events

In 2019, a redundancy exercise took place in France which impacted the French pension plans. This resulted in a curtailment gain of $1.8m and triggered immediate recognition of the unamortized net actuarial losses of $0.3m.

Also in 2019, the U.S. plan offered deferred members the opportunity to receive a lump sum in respect of their benefits in the Plan. As a result, on 20 December 2019 lump sums totaling $2.7m were paid out. The defined benefit obligation extinguished in this event was valued at $3.6m by the local actuary at this date based on the 2019 year-end discount rate of 3.1% pa. This triggered a settlement gain of $0.9 million

In October 2018, following a High Court ruling in the U.K., a $2.2 million allowance in relation to the expected future costs of equalizing Guaranteed Minimum Pensions (GMPs) in the U.K. Plan has been included in the obligations on the balance sheet at December 31, 2018 and recognized as a cost in the consolidated income statement in *changes to defined benefit pension plans*.

In 2015, following a consultation with the Trustees and members, it was agreed that the Luxfer Group Pension Plan in the U.K. would close to future accrual of benefits effective from April 5, 2016 and for the purpose of increasing pensions in payment, to use CPI as the reference index in place of RPI where applicable.

The amounts recognized in the consolidated income statement in respect of the pension plans were as follows:

	2019	2019	2019	2018	2018	2018	2017	2017	2017
	U.K.	Non-U.K.	Total	U.K.	Non-U.K.	Total	U.K.	Non-U.K.	Total
	$M	$M	$M	$M	$M	$M	$M	$M	$M
In respect of defined benefit plans:									
Current service cost	**—**	**0.1**	**0.1**	—	0.1	0.1	—	0.1	0.1
Net interest on net liability	**1.1**	**0.3**	**1.4**	1.0	0.3	1.3	1.4	0.4	1.8
Administrative expenses	**0.5**	**0.4**	**0.9**	0.3	0.4	0.7	0.2	0.5	0.7
Past service cost	**—**	**—**	**—**	2.2	—	2.2	—	—	—
Settlement gain	**—**	**(0.9)**	**(0.9)**	—	—	—	—	—	—
Curtailment credit	**—**	**(1.8)**	**(1.8)**	—	—	—	—	—	—
Total charge for defined benefit plans	**1.6**	**(1.9)**	**(0.3)**	3.5	0.8	4.3	1.6	1.0	2.6
In respect of defined contribution plans:									
Total charge for defined contribution plans	**2.1**	**2.1**	**4.2**	2.2	2.1	4.3	1.9	2.1	4.0
Total charge for pension plans	**3.7**	**0.2**	**3.9**	5.7	2.9	8.6	3.5	3.1	6.6

Of the total charge for the year, charges of $4.3 million and $0.9 million (2018: $4.4 million and $0.7 million: 2017: $4.1 million and $0.7 million); have been included in cost of sales and administrative costs, respectively; a credit of $2.7 million, (2018: cost of $2.2 million and 2017: nil) has been recognized as changes to defined benefit pension plans in the consolidated income statement and a charge of $1.4 million (2018: $1.3 million and 2017: $1.8 million) has been included in finance costs.

For the year, the amount of loss recognized in the Consolidated Statement of Comprehensive Income is $2.3 million (2018: gain of $9.6 million and 2017: gain of $9.5 million).

The actual return of the plans assets was a gain of $51.7 million (2018: loss of $15.0 million and 2017: gain of $33.2 million).

The value of the plans assets and liabilities were:

	2019 U.K. $M	2019 Non-U.K. $M	2019 Total $M	2018 U.K. $M	2018 Non-U.K. $M	2018 Total $M
Assets in active markets:						
Equities and growth funds	**146.8**	**26.2**	**173.0**	173.1	20.6	193.7
Government bonds	**52.7**	**—**	**52.7**	46.7	—	46.7
Corporate bonds	**129.1**	**16.2**	**145.3**	63.6	18.0	81.6
Cash	**0.1**	**—**	**0.1**	—	—	—
Total market value of assets	**328.7**	**42.4**	**371.1**	283.4	38.6	322.0
Present value of plan liabilities	**(359.2)**	**(47.1)**	**(406.3)**	(315.2)	(46.8)	(362.0)
Deficit in the plans	**(30.5)**	**(4.7)**	**(35.2)**	(31.8)	(8.2)	(40.0)
Related deferred income tax assets	**5.0**	**0.8**	**5.8**	5.6	1.4	7.0
Net pension liabilities	**(25.5)**	**(3.9)**	**(29.4)**	(26.2)	(6.8)	(33.0)

The plans do not invest directly in property occupied by the Group or in financial securities issued by the Group.

Analysis of movement in the present value of the defined benefit obligations:

	2019 U.K. $M	2019 Non-U.K. $M	2019 Total $M	2018 U.K. $M	2018 Non-U.K. $M	2018 Total $M
At January 1	**315.2**	**46.8**	**362.0**	369.7	53.1	422.8
Service cost	**—**	**0.1**	**0.1**	—	0.1	0.1
Interest on obligation	**9.2**	**1.9**	**11.1**	8.5	1.8	10.3
Actuarial losses / (gains) on financial assumptions	**39.6**	**6.4**	**46.0**	(22.6)	(3.6)	(26.2)
Actuarial losses on demographic assumptions	**—**	**(0.5)**	**(0.5)**	(6.2)	(2.3)	(8.5)
Actuarial (gains) / losses on plan experience	**(1.2)**	**—**	**(1.2)**	1.1	—	1.1
Exchange difference	**10.0**	**—**	**10.0**	(19.6)	(0.1)	(19.7)
Benefits paid	**(13.6)**	**(2.2)**	**(15.8)**	(17.9)	(2.2)	(20.1)
Past service cost	**—**	**—**	**—**	2.2	—	2.2
Curtailment credit	**—**	**(5.4)**	**(5.4)**	—	—	—
At December 31	**359.2**	**47.1**	**406.3**	315.2	46.8	362.0

The defined benefit obligation comprises $0.2 million (2018: $1.9 million) arising from unfunded plans and $406.1 million (2018: $360.1 million) from plans that are funded.

The sensitivities regarding the principal assumptions used to measure the present value of the defined benefit obligations are set out below:

Assumption	Change in assumption	Impact on total defined benefit obligations
Discount rate	Increase/decrease by 1.0%	Decrease/increase by 17%
CPI inflation (and related increases)	Increase/decrease by 1.0%	Increase/decrease by 10%
Post retirement mortality	Increase by 1 year	Increase by 4%

The sensitivities have been calculated to show the movement in the total defined benefit obligation in isolation, assuming no other changes in market conditions at the accounting date. In practice, for example, a change in discount rate is likely to be associated with a movement in the value of the invested assets held by the plans.

Analysis of movement in the present value of the fair value of plan assets:

	2019 U.K. $M	2019 Non-U.K. $M	2019 Total $M	2018 U.K. $M	2018 Non-U.K. $M	2018 Total $M
At January 1	**283.5**	**38.5**	**322.0**	326.3	41.2	367.5
Interest on plan assets	**8.0**	**1.7**	**9.7**	7.5	1.5	9.0
Actuarial gains / (losses)	**36.5**	**5.5**	**42.0**	(20.3)	(3.7)	(24.0)
Exchange difference	**8.9**	**—**	**8.9**	(17.6)	—	(17.6)
Contributions from employer	**5.9**	**2.0**	**7.9**	5.8	2.1	7.9
Administrative expenses	**(0.5)**	**(0.4)**	**(0.9)**	(0.3)	(0.4)	(0.7)
Benefits paid	**(13.6)**	**(2.2)**	**(15.8)**	(17.9)	(2.2)	(20.1)
Settlement	**—**	**(2.7)**	**(2.7)**	—	—	—
At December 31	**328.7**	**42.4**	**371.1**	283.5	38.5	322.0

The estimated amount of employer contributions expected to be paid to the defined benefit pension plans for the year ending December 31, 2020 is $5.9 million (2019: $7.9 million actual employer contributions).

31. The Luxfer Group Employee Share Ownership Plan

The trust

In 1997, the Group established an employee benefit trust ("the ESOP") with independent Trustees, to purchase and hold shares in the Group in trust to be used to satisfy options granted to eligible senior employees under the Group's share plans established from time to time.

The ESOP was established with the benefit of a gift equivalent to the set up and running costs. Purchase monies and costs required by the ESOP Trustees to purchase shares for and under the provisions of the trust are provided by way of an interest free loan from a Group subsidiary. The loan is repayable, in normal circumstances, out of monies received from senior employees when they exercise options granted to them over shares. Surplus shares are held by the ESOP Trustees to satisfy future option awards. The ESOP Trustees have waived their right to receive dividends on shares held in trust. The Remuneration Committee is charged with determining which senior employees are to be granted options and in what number subject to the relevant plan rules.

The current plan

The current share option plan, implemented by the Group in February 2007 is The Luxfer Holdings Executive Share Option Plan ("the Plan"), which consists of two parts. Part A of the Plan is approved by HM Revenue & Customs and Part B is unapproved. Options can be exercised at any time up to the tenth anniversary of their grant subject to the rules of the relevant part of the Plan. As a result of the I.P.O. all leaver restrictions over the shares were released. There are no other performance criteria attached to the options.

Movements in the year

The movement in the number of shares held by the Trustees of the ESOP and the number of share options held over those shares are shown below:

	Number of shares held by ESOP Trustees	
	£0.0001 deferred shares	**£0.50 ordinary shares**
At January 1, 2019	15,977,968,688	1,621,301
Shares utilized during the year	—	(253,881)
Shares transferred from ESOP during the year	—	(151,200)
At December 31, 2019	**15,977,968,688**	**1,216,220**

At December 31, 2019, the loan outstanding from the ESOP was $0.6 million (2018: $2.0 million).

The market value of each £0.50 ordinary share held by the ESOP at December 31, 2019 was $18.51 (2018: $17.63).

32. Share based compensation

Luxfer Holdings PLC Long-Term Umbrella Incentive Plan and Luxfer Holdings PLC Non-Executive Directors Equity Incentive Plan

As an important retention tool and to align the long-term financial interests of our management with those of our shareholders, the Group adopted the Luxfer Holdings PLC Long-Term Umbrella Incentive Plan (the "LTiP") for the Group's senior employees, and the Luxfer Holdings PLC Non-Executive Directors Equity Incentive Plan (the "Director EIP") for the Non-Executive Directors.

The equity or equity-related awards under the LTiP and the Director EIP are based on the ordinary shares of the Group. The Remuneration Committee administers the LTiP and have the power to determine to whom the awards will be granted, the amount, type and other terms. Awards granted under the LTIP generally vest one-third each year over a three-year period, subject to continuous employment and certain other conditions, with the exercise period expiring five years after grant date. Awards granted under the Director EIP are non-discretionary, are purely time-based and vest over one year, with settlement occurring immediately on vesting.

Share option and restricted stock awards

In March 2019, a combined 196,320 of Restricted Stock Unite and Options over ordinary shares were granted under the LTIP, which were all time-based awards vesting over four years and expiring two years later. In May 2019, a combined 3,981 of restricted Stock Units and Options over ordinary shares were granted under the Director EIP, which were all time-based awards that would fully vest one year later. In December 2019, a combined 6,000 of Restricted Stock Units and Options over ordinary shares were granted under the LTIP, which were all time-based awards, vesting over four years and expiring two years later.

In March 2018, a combined 432,600 of Restricted Stock Units and Options over ordinary shares were granted under the LTIP, which were all time-based awards vesting over three years and expiring two years later. In April 2018, a combined 11,936 of Restricted Stock Units and Options over ordinary shares were granted under the Director EIP, of which 2,000 would vest over three years and 9,936 would fully vest one year later. The Director EIP are all time-based awards.

In January 2018, Heather Harding was granted share options in respect of her appointment to the role of Chief Financial Officer. These time-, and performance-based options were outside the terms of reference of the LTIP but granted in accordance with the provisions of the Remuneration Policy. The details of the awards are as follows:

The Remuneration Committee determined that the new Chief Financial Officer should acquire 21,000 nominal cost RSUs to vest over three years.

Performance-based awards amounting to 30,000 shares should be made to the new Chief Financial Officer which would vest upon achievement of attaining a specified adjusted diluted EPS target at each annual measurement date. Three levels of target were set:

• The lower target must be achieved by the measurement date at the end of 2020 and will result in the vesting of 5,000 shares.

• The mid-point target must be achieved by the measurement date at the end of 2022 and will result in the vesting of a further 10,000 shares.

• The top target must be achieved by the measurement date at the end of 2024 and will result in the vesting of a further 15,000 shares.

These awards have vested in full at the maximum level as all performance criteria were confirmed as having been met by the Remuneration Committee in the first quarter of 2019.

In March 2017, a combined 139,800 of Restricted Stock Units and Options over ordinary shares were granted under the LTiP, which were all time-based awards vesting over three years and expiring two years later. Following the Annual General Meeting on May 23, 2017, a combined 21,814 of Restricted Stock Units and Options over ordinary shares were granted under the Director EIP, which were all time-based awards which will be fully vested and settled one year later in May 2018.

In May 2017 Alok Maskara was granted share options in respect of his appointment to the role of Chief Executive Officer. These time, and performance-based options were outside the terms of reference of the LTIP but granted in accordance with the provisions of the Remuneration Policy. The details of the awards are as follows:

(i) The Remuneration Committee determined that the new Chief Executive Officer should acquire a minimum quantity of 22,500 shares within twelve months of appointment. Upon the Chief Executive Officer acquiring the shares, the Company matched the purchase by granting an award over 45,000 nominal cost RSUs, to vest over three years.

(ii) A one-off share award to the new CEO, outside the terms of the LTIP, over 60,000 time-based nominal cost RSUs, to vest over four years.

(iii) Performance-based Awards made to the new Chief Executive Officer vest upon achievement of attaining a specified adjusted diluted EPS target at each annual measurement date. Three levels of targets were set:

• The lower target must be achieved by the measurement date at the end of 2020 and will result in the vesting of 30,000 shares.

• The mid-point target must be achieved by the measurement date at the end of 2022 and will result in the vesting of a further 40,000 shares.

• The top target must be achieved by the measurement date at the end of 2024 and will result in the vesting of a further 50,000 shares.

These awards have vested in full at the maximum level as all performance criteria were confirmed as having been met by the Remuneration Committee in the first quarter of 2019.

Total share-based compensation expense for 2019, 2018 and 2017 was as follows:

	2019 $M	2018 $M	2017 $M
Other share based compensation charges	**4.5**	4.8	2.2
Restructuring share based compensation charges	**—**	—	0.9
	4.5	4.8	3.1

There were no cancellations or modifications to the awards in 2019, 2018 or 2017.

Cash received from option exercises for the years ended December 31, 2019, 2018 and 2017 was $0.5 million, $0.5 million and $0.9 million, respectively. The actual tax benefit realized for the tax deductions from option exercises totaled $0.9 million, $0.2 million and $0.3 million in 2019, 2018 and 2017, respectively.

The following table illustrates the number of, and movements in, share options during the year, with each option relating to 1 ordinary share:

	2019 Number	2019 Weighted average exercise price	2018 Number	2018 Weighted average exercise price
At January 1	849,062	$2.10	1,182,315	$6.42
Granted during the year	212,419	$0.90	510,536	$0.67
Exercised during the year	(491,216)	$2.65	(833,360)	$7.43
Accrued dividend awards	13,838	$0.72	18,776	$0.66
Lapsed during the year	(116,741)	$2.43	(29,205)	$0.67
At December 31	**467,362**	**$0.75**	849,062	$2.10

The weighted average fair value of options granted in 2019, 2018 and 2017 was estimated to be $17.65, $11.02 and $9.82 per share, respectively. The total intrinsic value of options that were exercised during 2019, 2018 and 2017 was $11.2 million, $9.3 million and $1.4 million, respectively. At December 31, 2019, the total unrecognized compensation cost related to share options was $2.7 million (2018: $3.8 million). This cost is expected to be recognized over a weighted average period of 1.3 years.

The following table illustrates the assumptions used in deriving the fair value of share options during the year:

	2019	2018
Dividend yield (%)	**2.10**	4.00
Expected volatility range (%)	**35.06 - 44.20**	22.65 - 35.77
Risk-free interest rate (%)	**0.74 - 2.52**	0.12 - 2.57
Expected life of share options range (years)	**0.50 - 4.00**	0.50 - 6.00
Weighted average exercise price ($)	**$1.00**	$0.65
Model used	**Black-Scholes & Monte-Carlo**	Black-Scholes & Monte-Carlo

The expected life of the share options is based on historical data and current expectations and is not necessarily indicative of exercise patterns that may occur. The expected volatility reflects the assumption that the historical volatility over a period similar to the life of the options is indicative of future trends, which may not necessarily be the actual outcome.

Employee share incentive plans

The Group operates an all-employee share incentive plan in its U.K. and U.S. operations and will look to implement plans in other geographic regions.

33. Related party transactions

Joint venture in which the Company is a venturer

During 2019, the Group maintained its 51% investment in the equity of the joint venture, Luxfer Uttam India Private Limited. During 2019, the Gas Cylinders segment made $6.4 million (2018: $1.7 million) of sales to the joint venture. At December 31, 2019, the gross amounts receivable from the joint venture amounted to $2.9 million (2018: $1.1 million) and the net amounts receivable amounted to $2.7 million (2018: $0.9 million). In addition, in 2018 we transferred goods to Luxfer Uttam on extended credit terms with a sales value of $1.6 million (2017: $nil), where we did not deem it to be probable that we would collect the consideration. In accordance with IFRS 15*, Revenue from Contracts with Customers*, we did not recognize any revenue in relation to this transaction in 2018, however, this revenue was recognized, in full, during 2019.

During 2019, the Group also maintained its 50% investment in the equity of the joint venture, Nikkei-MEL Company Limited. During 2019, the Elektron segment made $0.7 million of sales to the joint venture (2018: $0.9 million). At December 31, 2019, the gross and net amounts receivable from the joint venture amounted to $0.1 million (2018: nil).

The Company held 49% of the equity in Luxfer Holdings NA, LLC up to December 20, 2018 after which the Company acquired the remaining 51% equity stake with the entity fully consolidated at December 31, 2018 (see note 25 *Acquisitions*). During 2018 the Company made $0.6 million of sales to the joint venture and received $0.4 million interest income. All sales to the joint venture were made on similar terms to arm's length transactions.

Associates in which the Company holds an interest

During 2019, the Group maintained its 26.4% equity of the associate, Sub161 Pty Limited. During 2019, the Group made $nil sales (2018: nil) to the associate. At December 31, 2019, the amounts receivable from the associate denominated in Australian dollars was $nil (2018: nil).

Transactions with other related parties

At December 31, 2019, the directors and key management comprising the members of the Executive Leadership Team, owned 377,424 £0.50 ordinary shares (2018: 237,161 £0.50 ordinary shares) and held awards over a further 302,752 £0.50 ordinary shares (2018: 600,528 £0.50 ordinary shares).

During the years ended December 31, 2019 and December 31, 2018, share options held by members of the Executive Leadership Team were exercised; information relating to these exercises is disclosed in the Remuneration Report on pages 35 to 54.

Cherokee Properties Inc. represents a related party due to its association with Chris Barnes, who was until July 2019 the president of one of our operating segments and is the president of Cherokee Properties Inc. During 2019, we engaged with Cherokee Properties Inc. for rental and associated costs regarding our manufacturing site in Madison, IL for the value of $1.1 million (2018: $1.0 million).

Other than the transactions with the joint ventures and associates disclosed above and key management personnel disclosed above, no other related party transactions have been identified.

34. Post Balance Sheet Events

In March 2020, the Company received a litigation claim from former employees of the now closed French site totaling $2.1 million. The closure of the site took place in June 2019, meaning that the $2.1 million claim has been recognized in 2019 within *current provisions* on the balance sheet and *Restructuring and other expense* in the income statement.

As referred in Note 1, we are carefully monitoring the situation concerning COVID-19 and any impact it may have on the business. Any such impact has been treated as a non-adjusting post balance sheet event for the purpose of considering the carrying values of assets included in the balance sheet as at 31 December 2019.

LUXFER HOLDINGS PLC

COMPANY BALANCE SHEET

All amounts in millions

	Note	At December 31, 2019 £M	At December 31, 2018 £M
ASSETS			
Non-current assets			
Investments	37	**331.4**	334.0
Deferred income taxes	38	**7.5**	7.8
		338.9	341.8
Current assets			
Trade and other receivables	39	**2.6**	2.0
Cash and cash equivalents	40	**—**	1.7
		2.6	3.7
TOTAL ASSETS		**341.5**	345.5
EQUITY AND LIABILITIES			
Capital and reserves			
Ordinary share capital	41	**14.5**	14.5
Deferred share capital	41	**76.2**	76.2
Share premium account	41	**49.4**	42.5
Treasury shares	41	**(2.6)**	(2.8)
Retained earnings		**139.8**	152.1
Own shares held by ESOP	41	**(1.2)**	(1.6)
Share based compensation reserve	41	**(5.4)**	(0.6)
Capital and reserves attributable to the Company's equity shareholders		**270.7**	280.3
Total equity		**270.7**	280.3
Non-current liabilities			
Bank and other loans	42	**18.8**	19.5
Retirement benefits	46	**23.1**	24.8
		41.9	44.3
Current liabilities			
Trade and other payables	43	**28.9**	20.9
Total liabilities		**70.8**	65.2
TOTAL EQUITY AND LIABILITIES		**341.5**	345.5

The Group has taken advantage of the exemption provided under Section 408 of the Companies Act 2006 not to present Luxfer Holding PLC's Company income statement. Net loss for the year was £0.6 million (2018: income of £18.2 million)

THE FINANCIAL STATEMENTS ON PAGES 125 TO 141 WERE APPROVED BY THE BOARD ON MAY 6, 2020 AND SIGNED ON ITS BEHALF:

A. Maskara

Alok Maskara

May 6, 2020

Company Registration no. 03690830

LUXFER HOLDINGS PLC

COMPANY CASH FLOW STATEMENT

All amounts in millions

	Note	2019 £M	2018 £M
CASH FLOWS FROM OPERATING ACTIVITIES			
Net (loss) / income for the year		**(0.6)**	18.2
Adjustments to reconcile net (loss) / income for the year to net cash flows from continuing operating activities:			
Deferred income taxes		**0.7**	(0.4)
Share based compensation charges net of cash settlement		**(0.1)**	(1.5)
Impairment of loans to joint ventures		**—**	0.7
Net interest		**(3.8)**	(2.1)
Dividends received		**—**	(14.2)
Exchange difference charged / (credited) to income statement		**1.7**	(2.4)
Changes in operating assets and liabilities:			
(Increase) / decrease in receivables		**(0.6)**	2.6
Increase in payables		**5.3**	15.9
Movement in retirement benefits obligations		**(3.8)**	(3.7)
NET CASH FLOWS (USED IN) / FROM OPERATING ACTIVITIES		**(1.2)**	**13.1**
CASH FLOWS FROM INVESTING ACTIVITIES			
Dividends received		**—**	14.2
Intercompany loans: debt funding		**1.6**	(9.8)
Intercompany loans: interest received		**6.5**	6.2
NET CASH FLOWS FROM INVESTING ACTIVITIES		**8.1**	10.6
NET CASH FLOWS BEFORE FINANCING		**6.9**	23.7
FINANCING ACTIVITIES			
Interest and similar finance costs paid on banking facilities		**—**	(1.1)
Interest paid on Loan Notes		**(0.7)**	(0.7)
Repayment on banking facilities		**—**	(16.3)
Dividends paid		**(10.7)**	(9.9)
Shares sold from ESOP		**2.8**	5.3
NET CASH FLOWS USED IN FINANCING ACTIVITIES		**(8.6)**	(22.7)
NET (DECREASE) / INCREASE IN CASH AND CASH EQUIVALENTS		**(1.7)**	1.0
Net foreign exchange differences		**—**	(0.1)
Cash and cash equivalents at January 1	40	**1.7**	0.8
Cash and cash equivalents at December 31	40	**—**	1.7

LUXFER HOLDINGS PLC

COMPANY STATEMENT OF CHANGES IN EQUITY

All amounts in millions

		Equity attributable to the equity shareholders of the parent							
	Note	Ordinary share capital £M	Deferred share capital £M	Share premium account £M	Treasury shares £M	Retained earnings £M	Own shares held by ESOP £M	Share based compensation reserve £M	Total equity £M
At January 1, 2018		**13.5**	**76.9**	**35.3**	**(4.0)**	**139.2**	**(0.8)**	**3.5**	**263.6**
Net income for the year		—	—	—	—	18.2	—	—	18.2
Remeasurement of defined benefit retirement plan		—	—	—	—	5.6	—	—	5.6
Deferred income taxes on items taken to other comprehensive income		—	—	—	—	(1.0)	—	—	(1.0)
Total comprehensive income for the year		**—**	**—**	**—**	**—**	**22.8**	**—**	**—**	**22.8**
Equity dividends		—	—	—	—	(9.9)	—	—	(9.9)
Equity settled share based compensation charges	41	—	—	—	—	—	—	(1.6)	(1.6)
Shares sold from ESOP	41	—	—	5.0	—	—	0.4	—	5.4
Transfer from treasury shares to ESOP	41	—	—	—	1.0	—	(1.0)	—	—
Utilization of treasury shares	41	—	—	0.1	0.2	—	—	(0.3)	—
Utilization of ESOP shares	41	—	—	1.4	—	—	0.8	(2.2)	—
Additional shares issued 02 August 2018		1.0	—	—	—	—	(1.0)	—	—
Cancellation of deferred shares		—	(0.7)	0.7	—	—	—	—	—
Other changes in equity in the year		**1.0**	**(0.7)**	**7.2**	**1.2**	**(9.9)**	**(0.8)**	**(4.1)**	**(6.1)**
At December 31, 2018		**14.5**	**76.2**	**42.5**	**(2.8)**	**152.1**	**(1.6)**	**(0.6)**	**280.3**
Net loss for the year		**—**	**—**	**—**	**—**	**(0.6)**	**—**	**—**	**(0.6)**
Remeasurement of defined benefit retirement plan		**—**	**—**	**—**	**—**	**(1.4)**	**—**	**—**	**(1.4)**
Deferred income taxes on items taken to other comprehensive income		**—**	**—**	**—**	**—**	**0.4**	**—**	**—**	**0.4**
Total comprehensive loss for the year		**—**	**—**	**—**	**—**	**(1.6)**	**—**	**—**	**(1.6)**
Equity dividends paid		**—**	**—**	**—**	**—**	**(10.7)**	**—**	**—**	**(10.7)**
Equity settled share based compensation charges	41	**—**	**—**	**—**	**—**	**—**	**—**	**3.1**	**3.1**
Shares sold from ESOP	41	**—**	**—**	**2.6**	**—**	**—**	**0.2**	**—**	**2.8**
Utilization of treasury shares	41	**—**	**—**	**0.1**	**0.2**	**—**	**—**	**—**	**0.3**
Utilization of ESOP shares	41	**—**	**—**	**4.2**	**—**	**—**	**0.2**	**(7.9)**	**(3.5)**
Other changes in equity in the year		**—**	**—**	**6.9**	**0.2**	**(10.7)**	**0.4**	**(4.8)**	**(8.0)**
At December 31, 2019		**14.5**	**76.2**	**49.4**	**(2.6)**	**139.8**	**(1.2)**	**(5.4)**	**270.7**

35. Significant accounting policies

Authorization of financial statements

The Company financial statements for the year ended December 31, 2019 were authorized for issue by the Board of Directors on May 6, 2020 and the balance sheet was signed on the Board's behalf by A. Maskara. Luxfer Holdings PLC is a company incorporated and domiciled in England and Wales.

Basis of preparation

The Company financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the EU ("Adopted IFRSs") and interpretations issued by the IFRS Interpretation Committee, and as such comply with Article 4 of the EU IAS regulation and the Companies Act 2006 as applicable to companies reporting under IFRS.

The accounting policies set out in this note to the financial statements have been applied in preparing these financial statements and comparative information.

The Company financial statements have been prepared on a historical cost basis, except where IFRS requires or permits fair value measurement, and are presented in GBP, the functional currency of the Company.

The directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. In assessing the appropriateness of adopting the going concern basis in the preparation of these financial statements, cash forecasts and projections have been prepared to June 2021. The outbreak of the COVID-19 pandemic has necessitated that these projections address a number of different scenarios of increasing severity in order to confirm that, under each one, the Group can continue to operate as a going concern. These scenarios included assessing the impact of a significant reduction of sales. In each scenario assessed, there was sufficient headroom in our covenant compliance which would enable the Group to drawdown on the RCF and therefore not impact the Company's ability to continue as a going concern. Therefore the directors continue to apply the going concern basis for accounting in the preparation of the Company financial statements.

Investments

Investments in subsidiary undertakings are stated at cost less, where appropriate, provisions for impairment.

Loans to subsidiary undertakings and joint ventures are initially recorded at fair value; they are then subsequently carried at amortised cost. The loans are interest bearing.

The Company grants share-based payments to the employees of subsidiary companies. Each period the fair value of the employee services received by the subsidiary as a capital contribution from the Company is reflected as an addition to investments.

The Company has applied IFRS 9 and the expected credit loss model when valuing its loans to investments.

Functional and presentational currency

Items included in the financial statements of the Company are measured using the currency of the primary economic environment in which the entity operates ("the functional currency"), which is GBP sterling. The presentational currency of the Company is GBP sterling.

Other accounting policies

As applicable, the accounting policies of the Company follow those of the Group set out in Note 1 to the consolidated financial statements. The critical accounting judgments and key sources of estimation uncertainty applicable for the Company financial statements are impairment of non-financial assets, pensions and deferred income taxes.

36. Directors' interests

Disclosure of individual directors' remuneration, share interests, share options, long-term incentive schemes, pension contributions and pension entitlements required by the Companies Act 2006 are shown within the Remuneration Report on pages 35 to 54 and form part of these financial statements.

37. Investments

	Investments in subsidiary undertakings	Loans to subsidiary undertakings	Capital contributions	Loans to joint ventures	Total
	£M	£M	£M	£M	£M
Cost and net book value:					
At January 1, 2018	218.0	92.3	4.5	3.5	318.3
Additions	—	11.4	2.7	—	14.1
Transfers	—	3.0	—	(3.0)	—
Impairment of loans to joint ventures	—	—	—	(0.7)	(0.7)
Repaymant of loans to subs	—	(1.6)	—	—	(1.6)
Exchange difference	—	3.7	—	0.2	3.9
At December 31, 2018	**218.0**	**108.8**	**7.2**	**—**	**334.0**
Additions	—	—	1.3	—	1.3
Repayment of loans to subs	—	(1.6)	—	—	(1.6)
Exchange difference	—	(2.3)	—	—	(2.3)
At December 31, 2019	**218.0**	**104.9**	**8.5**	**—**	**331.4**

Details of the investments in which the Group or the Company holds share capital at 31 December, 2019, are as follows:

Name of company	Country of incorporation	Holding	Proportion of voting rights and shares held	Nature of business
BA Holdings, Inc.*	U.S. [3]	Common stock	100%	Holding company
Biggleswick Limited *	England and Wales[2]	Ordinary shares	100%	Non trading
Luxfer Group Services Limited *	England and Wales[2]	Ordinary shares	100%	Property Services
Lumina Trustee Limited [1]	England and Wales[2]	Ordinary shares	100%	Trustee company
Luxfer Australia Pty Limited *	Australia[6]	Ordinary shares	100%	Distribution
Luxfer Gas Cylinders Limited *	England and Wales[2]	Ordinary shares	100%	Engineering
Luxfer Gas Cylinders China Holdings Limited *	England and Wales[2]	Ordinary shares	100%	Holding company
Luxfer Gas Cylinders (Shanghai) Co., Limited *	Republic of China[7]	Ordinary shares	100%	Manufacturing
Luxfer Group Limited	England and Wales[2]	Ordinary shares	100%	Holding company
Luxfer Group 2000 Limited	England and Wales[2]	Ordinary shares	100%	Holding company
Luxfer, Inc.*	U.S. [3]	Common stock	100%	Engineering
Luxfer Overseas Holdings Limited *	England and Wales[2]	Ordinary shares	100%	Holding company
Magnesium Elektron Limited *	England and Wales[2]	Ordinary shares	100%	Manufacturing
MEL Chemicals, Inc.*	U.S.[8]	Common stock / Preference shares	100%	Manufacturing
Magnesium Elektron North America, Inc. *	U.S.[5]	Common stock	100%	Manufacturing
Niagara Metallurgical Products Limited *	Canada[9]	Common stock	100%	Manufacturing
Reade Manufacturing, Inc.*	U.S.[5]	Common stock	100%	Manufacturing
Luxfer Gas Cylinders S.A.S. *	France[4]	Ordinary shares	100%	Engineering
Luxfer Canada Limited *	Canada[10]	Common stock	100%	Engineering
Luxfer Germany GmbH *	Germany[11]	Ordinary shares	100%	Engineering
Luxfer Magtech Inc.*	U.S.[5]	Common stock	100%	Manufacturing
Luxfer Magtech International Limited *	England and Wales[2]	Common stock	100%	Manufacturing
GTM Technologies, LLC *	U.S.[14]	Capital Interest	100%	Engineering

Name of company	Country of incorporation	Holding	Proportion of voting rights and shares held	Nature of business
Other Investments				
Luxfer Uttam India Private Limited *	India[12]	Ordinary shares	51%	Engineering
Nikkei-MEL Co Limited *	Japan[13]	Ordinary shares	50%	Distribution
Sub161 Pty Limited *	Australia[15]	Ordinary shares	26.4%	Engineering

All shareholdings stated are valid for both 2019 and 2018

Subsidiary undertakings are all held directly by the Company unless indicated.
[*] Held by a subsidiary undertaking.
[1] Acts as bare trustee in connection with the 2007 share capital reorganisation.
[2] Registered address: Lumns Lane, Manchester, M27 8LN, England.
[3] Registered address: 1679 S. Dupont Hwy, Ste 100, Dover, DE 199091, U.S.
[4] Registered address: 7 Rue de l'Industrie, 63360 Gerzat, France.
[5] Registered address: The Corporation Trust Company, Corporate Trust Center, 1209 Orange Street, Wilmington, DE 19801, U.S.
[6] Registered address: Unit 4, 171-175 Newton Road, Wetherill Park, NSW 2164, Australia.
[7] Registered address: No. 123, Lane 150, Pingbei Road, Minghang District, Shanghai, PRC 201109, China.
[8] Registered address: c/o CT Corporation, 830 Bear Tavern Road, Trenton, NJ 08628, U.S.
[9] Registered address: David Toswell of Blake, Cassels & Graydon LLP, 1114 Harvest Drive, Pickering, ON, L1X 1B6, Canada.
[10] Registered address: (Torys) 525-8th Avenue S.W, 46th Floor, Eighth Avenue Place East, Calgary, Alberta, T2P 1G1, Canada.
[11] Registered address: Am Alten Stadtpark 37, 44791 Bochum, Germany.
[12] Registered address: 90/5 Okhla Industrial Area, Phase-1, New Delhi - 110020, Delhi, India
[13] Registered address: NYK Tennoz Building, 2-20 Higashi-Shinagawa 2-chome, Shinagawa-ku, Tokyo, 140-8628, Japan
[14] Registered address: Corporation Service Comp., 2711 Centerville Road, Suite 400, Wilmington, County of New Castle, DE 19808, USA
[15] Registered address: 112 Bluestone Circuit, Seventeen Mile Rocks, QLD 4073, Australia

38. Deferred income taxes

	Tax losses and other timing differences £M	Retirement benefit obligations £M	Total £M
At January 1, 2018	2.5	5.9	**8.4**
Credited/(charged) to income statement	0.7	(0.3)	**0.4**
Charged to other comprehensive income	—	(1.0)	**(1.0)**
At December 31, 2018	3.2	4.6	**7.8**
Credited/(charged) to income statement	0.3	(1.0)	**(0.7)**
Credited to other comprehensive income	—	0.4	**0.4**
At December 31, 2019	**3.5**	**4.0**	**7.5**

At the balance sheet date, the Company has no unrecognized deferred income tax assets relating to losses (2018: nil). A deferred tax asset of £3.5 million (2018: £3.2 million) has been recognized in relation to timing differences and losses, to the extent that it is deemed probable that sufficient taxable profit will be available against which the losses may be utilized.

39. Trade and other receivables

	December 31, 2019	December 31, 2018
	£M	£M
Amounts owed by Group undertakings	**1.9**	0.9
Other debtors	**0.7**	1.1
	2.6	2.0

The amounts owed by Group undertakings are unsecured, repayable on demand and no interest is charged.

The other debtors balance relates to unamortized finance costs attributed to the revolving credit facility. As the facility was nil at the year end, these finance costs have been reclassified from bank and other loans into other debtors.

40. Cash and cash equivalents

	December 31, 2019	December 31, 2018
	£M	£M
Cash at bank and in hand	**—**	1.7

During 2019 cash was swept into a concentration account held within a subsidiary undertaking. Cash at bank and in hand earns interest at floating rates based on daily bank deposit rates. The directors consider that the carrying value of cash and cash equivalents approximates to their fair value.

41. Share capital and Reserves

(a) Ordinary share capital

	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
	No.	No.	£M	£M
Authorized:				
Ordinary shares of £0.50 each	**40,000,000**	40,000,000	**20.0**	20.0
Deferred ordinary shares of £0.0001 each	**761,845,338,444**	761,845,318,444	**76.2**	76.2
	761,885,338,444	761,885,318,444	**96.2**	96.2
Allotted, called up and fully paid:				
Ordinary shares of £0.50 each	**29,000,000**	29,000,000	**14.5**	14.5
Deferred ordinary shares of £0.0001 each	**761,835,338,444**	761,835,338,444	**76.2**	76.2
	761,864,338,444	761,864,338,444	**90.7**	90.7

The rights of the shares are as follows:

Ordinary shares of £0.50 each

The ordinary shares carry no entitlement to an automatic dividend but rank *pari passu* in respect of any dividend declared and paid. The ordinary shares were allotted and issued to satisfy share awards which vested under the Company's share award and share incentive plans.

Deferred ordinary shares of £0.0001 each

The deferred shares have no entitlement to dividends or to vote. On a winding up (but not otherwise) the holders of the deferred shares shall be entitled to the repayment of the paid up nominal amount of the deferred shares, but only after any payment to the holders of ordinary shares of an amount equal to 100 times the amount paid up on such ordinary shares.

(b) Share premium account

	£M
At January 1, and December 31, 2018	42.5
Shares sold from ESOP	2.6
Utilization of treasury shares	0.1
Utilization of ESOP shares	4.2
At December 31, 2019	**49.4**

The share premium account is used to record the excess of proceeds over nominal value on the issue of shares. Share issue costs directly related to the issue of shares are deducted from share premium.

(c) Treasury shares

	£M
At January 1, 2018	(4.0)
Transfer of treasury shares into ESOP	1.0
Utilization of treasury shares	0.2
At December 31, 2018	(2.8)
Utilization of treasury shares	0.2
At December 31, 2019	**(2.6)**

In June 2015, the Board announced a share buy-back program of up to $10 million, to cover the needs of employee share plans. Shareholder approval for this program was granted at the 2014 Annual General Meeting (for repurchases up to an aggregate amount of 2,700,000 ordinary shares).

At December 31, 2019, there were 352,499 treasury shares held at a cost of £2.6 million (2018: 378,201 treasury shares held at a cost of £2.8 million).

(d) Own shares held by ESOP

	£M
At January 1, 2018	(0.8)
Transfer of treasury shares into ESOP	(1.0)
Utilization of ESOP shares	0.8
Additional shares issued	(1.0)
Shares sold from ESOP	0.4
At December 31, 2018	(1.6)
Utilization of ESOP shares	0.2
Shares sold from ESOP	0.2
At December 31, 2019	**(1.2)**

At December 31, 2019, there were 1,216,220 ordinary shares of £0.50 each (2018: 1,621,301 ordinary shares of £0.50 each) held by The Luxfer Group Employee Share Ownership Plan.

(e) Share based compensation reserve

	£M
At January 1, 2018	3.5
Equity settled share based compensation charges	(1.6)
Utilization of treasury shares	(0.3)
Utilization of ESOP shares	(2.2)
At December 31, 2018	(0.6)
Equity settled share based compensation charges	3.1
Utilization of ESOP shares	(7.9)
At December 31, 2019	**(5.4)**

The share based compensation reserve is used to recognize the fair value of options and performance shares granted under IFRS 2. For further information refer to Notes 19 and 32 in the consolidated financial statements.

42. Bank and other loans

	December 31, 2019	December 31, 2018
Non-current	**£M**	**£M**
Loan Notes due 2021 - gross	18.9	19.6
Unamortized finance costs	(0.1)	(0.1)
Loan Notes due 2021 - net	**18.8**	19.5

The seven-year private placement will be repayable in full in 2021, bears interest at 3.67% and is unsecured. At December 31, 2019, the total amount outstanding on the Loan Notes due 2021 was £18.9 million, which is shown in bank and other loans net of unamortized finance costs of £0.1 million.

At December 31, 2019, there were £0.7 million of unamortized finance costs attributed to the revolving credit facility. As the facility was transferred to a subsidiary undertaking during 2019, these finance costs have been reclassified into other debtors.

The maturity profile of the Group's undiscounted contractual payments is disclosed in Note 28 in the consolidated financial statements.

43. Trade and other payables

	December 31, 2019	December 31, 2018
	£M	**£M**
Amounts owed to Group undertakings	**28.7**	18.5
Accruals	**0.2**	2.4
	28.9	20.9

The amounts owed to Group undertakings are unsecured, repayable on demand and no interest is charged.

44. Financial instruments

The following disclosures relating to financial instruments have been prepared on a basis which excludes short-term debtors and creditors which have resulted from the Company's operating activities.

(a) Financial instruments of the Company

The financial instruments of the Company other than short-term debtors and creditors were as follows:

Financial instruments:	Book value December 31, 2019 £M	Fair value December 31, 2019 £M	Book value December 31, 2018 £M	Fair value December 31, 2018 £M
Financial assets:				
Loans to subsidiary undertakings	**104.9**	**104.9**	108.8	108.8
Cash at bank and in hand	**—**	**—**	1.7	1.7
Financial liabilities[1]:				
Loan Notes due 2021	**18.9**	**19.0**	19.6	19.7

(1) The financial instruments included in financial liabilities are shown gross of unamortized finance costs. The fair value of these financial instruments is calculated by discounting the future cash flows, including interest payments due.

All financial assets mature within one year; however, there is no current intention to seek repayment of loans to subsidiary undertakings. The maturity of the financial liabilities is disclosed in Note 28 in the consolidated financial statements.

At December 31, 2019 the amount drawn in bank and other loans was £18.9 million (2018: £19.6 million), denominated in U.S. dollars.

The fair value calculations were performed on the following basis:

Loans to subsidiary undertakings and joint ventures

The carrying value approximates to the fair value.

Cash at bank and in hand

The carrying value approximates to the fair value as a result of the short-term maturity of the instruments.

Bank loans

At December 31, 2019, bank and other loans of £18.9 million (2018: £19.6 million) were outstanding. At December 31, 2019, bank and other loans are shown net of issue costs of £0.1 million and these issue costs are to be amortized to the expected maturity of the facilities. There were also £0.7 million of unamortized finance costs attributed to the revolving credit facility. At December 31, 2019, the entire £18.9 million of bank and other loans was fixed rate debt.

Fair value hierarchy

At December 31, 2019, the Company used the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

Level 1: quoted (unadjusted) prices in active markets for identical assets or liabilities.

Level 2: other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly.

Level 3: techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data.

	December 31, 2019	Level 1	Level 2	Level 3
	£M	£M	£M	£M
Interest bearing loans and borrowings:				
Loan Notes due 2021	**19.0**	—	19.0	—

During the year ended December 31, 2019, there were no transfers between Level 1 and Level 2 fair value measurements.

(b) Interest rate risks

Interest rate risk profile on financial assets

This table shows the Company's financial assets at December 31, which are cash and cash equivalents. These assets are all subject to floating interest rate risk.

	December 31, 2019	December 31, 2018
Cash by currency:	£M	£M
U.S. dollar	—	1.6
GBP sterling	—	0.1
	—	1.7

The Company earns interest on cash balances through either deposit accounts or placing funds on money markets at short-term fixed rates. In all cases, interest earned is at approximately LIBOR rates during the year.

Interest rate risk profile on financial liabilities

The following table sets out the carrying value, by original maturity, of the Company's financial instruments that were exposed to both fixed and variable interest rate risk. The carrying values include interest payments to be made and interest rates on the Company's variable rate debt have been based on a forward curve.

	At December 31, 2019				At December 31, 2018			
	Within 12 months	1 to 5 years	> 5 years	Total	Within 12 months	1 to 5 years	> 5 years	Total
Fixed interest rate risk:	£M	£M	£M	£M	£M	£M	£M	£M
Loan Notes due 2021 (including interest payments)	**0.7**	**19.4**	—	**20.1**	0.7	20.8	—	21.5
	0.7	**19.4**	—	**20.1**	0.7	20.8	—	21.5

(c) Un-drawn committed facilities

At December 31, 2019, the Group had committed banking facilities of $150.0 million (£113.5 million). The facilities were for providing loans and overdrafts, with a separate facility for letters of credit which at December 31, 2019 was £1.0 million ($1.3 million). Of the committed facilities, $17.5 million (£13.2 million) was drawn, no loans were drawn across the Group and $nil for letters of credit were utilized.

At December 31, 2018, the Group had committed banking facilities of $150.0 million (£117.6 million). The facilities were for providing loans and overdrafts, with a separate facility for letters of credit which at December 31, 2018 was £7.0 million ($8.9 million). Of the committed facilities, no loans were drawn across the Group and $nil for letters of credit were utilized.

45. Financial risk management objectives and policies

The Company's financial instruments comprise bank and other loans and cash and cash equivalents. The main risks arising from the Company's financial instruments are cash flow interest rate risk, foreign currency translation risk, credit risk and capital risk management.

Interest rate risk

The Company has exposure to variable interest rates when it draws down on the revolving credit facilities. As a result of this exposure, the Company may decide to hedge interest payable based on a combination of forward rate agreements. The balance on the Revolving Credit Facility as at December 31, 2019 was nil and therefore no risk identified.

Foreign currency translation risk

The Company is exposed to translation risk on both its consolidated income statement, based on average exchange rates, and its balance sheet with regards to period end exchange rates. The net exposure to USD loans at December 31, 2019 was £18.9 million translated at an exchange rate of $1.3212. A $0.10 change in exchange rates would change the net exposure by approximately £1.3 million.

Credit risk

The Company is exposed to credit risk on the loans which have been provided to subsidiary undertakings and joint ventures. The total exposure regarding these loans is £104.9 million. None of the loans are past due or are been deemed impaired.

Capital risk management

The capital structure of the Company consists of shareholders' equity, debt and cash and cash equivalents. For the foreseeable future, the Board will maintain a capital structure for the Company that supports the Group's strategic objectives through:

- Managing funding and liquidity; and
- Maintaining a strong, investment-grade credit rating.

Net debt reconciliation

	Cash at bank and in hand	Bank and other loans	Finance costs in other debtors	Total
	£M	£M	£M	£M
Net debt at January 1, 2018	(0.8)	32.8	—	32.0
Cash flows	(0.9)	(14.7)	—	(15.6)
Other non-cash movements	—	1.4	(1.1)	0.3
Net debt at January 1, 2019	(1.7)	19.5	(1.1)	16.7
Cash flows	1.7	—	—	1.7
Other non-cash movements	—	(0.7)	0.4	(0.3)
Net debt at December 31, 2019	**—**	**18.8**	**(0.7)**	**18.1**

46. Retirement benefits

The Company is a member of the Luxfer Group Pension Plan (“the Plan”), a defined benefit scheme in the U.K. The levels of funding are determined by periodic actuarial valuations. The assets of the Plan are generally held in separate trustee administered funds.

Remeasurements are recognised in full in the period in which they occur. The liability recognized in the balance sheet represents the present value of the defined benefit obligation, as reduced by the fair value of plan assets. The cost of providing benefits is determined using the Projected Unit Credit Method.

The full deficit relating to the Plan has been included in the Company statement of financial position. This is because there is no allocation of the deficit between the various subsidiary companies. The Directors consider the sponsor to be the ultimate parent company in the Group.

The Plan closed to new members in 1998, new employees then being eligible for a defined contribution plan. With effect from April 2004, the Plan changed from a final salary to a career average revalued earnings benefit scale. In August 2005, a plan specific earnings cap of £60,000 per annum subject to inflation increases was introduced, the figure has risen to £76,000 in 2015. In October 2007, the rate of the future accrual for pension was reduced and a longevity adjustment was introduced to mitigate against the risk of further unexpected increases in life expectancies. In 2015, following a consultation with the trustees and members, it was agreed the Plan would close to future accrual of benefits effective from April 5, 2016 and for the purpose of increasing pensions in payment, to use the Consumer Prices Index (“CPI”) as the reference index in place of the Retail Prices Index (“RPI”) where applicable. The weighted average duration of the expected benefit payments from the plan is around 18 years. The pension cost of the Plan is assessed in accordance with the advice of an independent firm of professionally qualified actuaries, Lane Clark & Peacock LLP. The Plan is registered with HMRC for tax purposes, operates separately from the Company and is managed by an independent set of trustees. The Plan operates under UK trust law and the trust is a separate legal entity from the Company. The Plan is governed by a Board of Trustees, composed of two member nominated Trustees and four company appointed Trustees.

The Trustees are required by law to act in the best interests of scheme members and are responsible for setting certain policies (e.g. investment funding) together with the Company. A schedule of payments provides for deficit funding, which is based upon minimum annual contributions of £3.8 million per year, together with additional variable contributions based on 15% of net earnings of Luxfer Holdings PLC between £12.0 million and £24.0 million, and 10% of net earnings of Luxfer Holdings PLC in excess of £24.0 million.

The total charge to the Company’s income statement for 2019 for retirement benefits was £1.2 million (2018: charge of £2.6 million).

The movement in the pension liabilities is shown below:

	2019 £M	2018 £M
Balance at January 1	**24.8**	**32.1**
Charged/(credited) to the income statement		
Net interest on net liability	**0.7**	**0.7**
Administrative expenses	**0.5**	**0.2**
Past service cost	**—**	**1.7**
Cash contributions	**(4.3)**	**(4.3)**
Charged / (credited) to the statement of comprehensive income	**1.4**	**(5.6)**
Balance at December 31	**23.1**	24.8

The financial assumptions used in the calculations were:

	Projected Unit Credit Valuation	
	United Kingdom	
	2019 %	2018 %
Discount rate	**2.10**	**2.90**
Retail Price Inflation	**2.90**	**4.90**
Inflation related assumptions:		
Consumer Price Inflation	**2.00**	**2.20**
Pension increases—pre 6 April 1997	**1.80**	**2.00**
—1997 - 2005	**2.10**	**2.20**
—post 5 April 2005	**1.70**	**1.80**

Other principal actuarial assumptions:	2019 Years	2018 Years
Life expectancy of male in the U.K. aged 65 at accounting date	**21.5**	21.4
Life expectancy of male in the U.K. aged 65 at 20 years after accounting date	**22.8**	22.8

Investment strategies

For the Plan, the assets are invested in a diversified range of asset classes and include matching assets (comprising fixed interest and index linked bonds and swaps) and growth assets (comprising all other assets). The Trustees have formulated a de-risking strategy to help control the short term risks of volatility associated with holding growth assets. The Trustees also monitor the cost of a buy-in to secure pensioner liabilities with an insurance company to ensure they are able to act if such an opportunity arises. Other options to progressively reduce the scale of the liabilities are discussed between the Trustees and the Company.

Risk exposures

The Company is at risk of adverse experience relating to the defined benefit plan.

The Plan holds a high proportion of assets in equity and other growth investments, with the intention of growing the value of assets relative to liabilities. The Company is at risk if the value of liabilities grows at a faster rate than the plan assets, or if there is a significant fall in the value of these assets not matched by a fall in the value of liabilities. If these events occurred, this would be expected to lead to an increase in the Company's future cash contributions.

The amounts recognized in the income statement in respect of the pension plan were as follows:

	2019 £M	2018 £M
In respect of defined benefit plan:		
Net interest on net liability	**0.7**	0.7
Administrative expenses	**0.5**	0.2
Past service cost	**—**	1.7
Total charge for defined benefit plan	**1.2**	2.6

For the year, the amount of charge recognised in the Statement of Comprehensive Income is £1.4 million (2018: gain of £5.6 million).

The actual return on the plan assets was a gain of £28.6 million (2018: gain of £15.2 million).

The value of the plan assets and liabilities were:

	2019 £M	2018 £M
Assets in active markets:		
Equities and growth funds	**111.1**	135.7
Government bonds	**39.9**	36.6
Corporate bonds	**97.7**	48.3
Cash	**0.1**	0.1
Total market value of assets	**248.8**	220.7
Present value of plan liabilities	**(271.9)**	(245.5)
Deficit in the Plan	**(23.1)**	(24.8)
Related deferred income tax assets	**4.0**	4.6
Net pension liabilities	**(19.1)**	(20.2)

The Plan does not invest directly in property occupied by the Company or in financial securities issued by the Company.

Analysis of movement in the present value of the defined benefit obligations:

	2019 £M	2018 £M
At January 1	**245.5**	**271.8**
Service cost	**—**	**1.7**
Interest on obligation	**7.0**	**6.4**
Actuarial losses / (gains)	**30.0**	**(20.9)**
Benefits paid	**(10.6)**	**(13.5)**
At December 31	**271.9**	245.5

The sensitivities regarding the principal assumptions used to measure the present value of the defined benefit obligations are set out below:

Assumption	**Change in assumption**	**Impact on total defined benefit obligations**
Discount rate	Increase/decrease by 1.0%	Decrease/increase by 18%
CPI inflation (and related increases)	Increase/decrease by 1.0%	Increase/decrease by 10%
Post retirement mortality	Increase by 1 year	Increase by 4%

The sensitivities have been calculated to show the movement in the total defined benefit obligation in isolation, assuming no other changes in market conditions at the accounting date. In practice, for example, a change in discount rate is likely to be associated with a movement in the value of the invested assets held by the Plan.

Analysis of movement in the present value of the fair value of plan assets:

	2019 £M	2018 £M
At January 1	**220.7**	239.7
Interest on plan assets	**6.3**	5.6
Actuarial gains / (losses)	**28.6**	(15.2)
Contributions from employers	**4.3**	4.3
Administrative expenses	**(0.5)**	(0.2)
Benefits paid	**(10.6)**	(13.5)
At December 31	**248.8**	220.7

The estimated amount of employer contributions expected to be paid to the defined benefit pension plan for the year ending December 31, 2019 is £4.3 million (2018: £4.3 million actual employer contributions).

47. Related party transactions

During 2019, the Company has made the following transactions and has the following outstanding balances at December 31, 2019 with related parties:

	Income	Expenditure	Balances outstanding		
Name of related party	**Interest £M**	**Management recharges £M**	**Investments £M**	**Trade and other receivables £M**	**Trade and other payables £M**
Luxfer Group Limited	0.4	(0.4)	5.0	—	(28.7)
MEL Chemicals, Inc.	0.3	—	5.3	—	—
Luxfer Overseas Holdings Limited	0.4	—	10.0	—	—
BA Holdings, Inc.	1.5	—	24.2	0.4	—
Magnesium Elektron North America, Inc.	0.4	—	7.7	0.1	—
Magnesium Elektron Limited	0.2	—	4.7	0.2	—
Luxfer Group 2000 Limited	0.6	—	14.3	0.4	—
Luxfer Holdings NA, LLC	0.1	—	—	—	—
Luxfer Magtech Inc.	2.6	—	31.3	0.7	—
Luxfer Gas Cylinders Limited	0.1	—	2.4	0.1	—

Of the balances outstanding held within investments, these balances are all interest bearing and are based on market rates of interest.

Included within trade and other payables is a loan from Luxfer Group Limited for £28.6 million. This loan is non-interest bearing, unsecured and is repayable on demand.

During 2018, the Company has made the following transactions and has the following outstanding balances at December 31, 2018 with related parties:

	Income	Expenditure	Balances outstanding		
Name of related party	**Interest £M**	**Management recharges £M**	**Investments £M**	**Trade and other receivables £M**	**Trade and other payables £M**
Luxfer Group Limited	0.4	(0.7)	5.0	—	(18.5)
MEL Chemicals, Inc.	0.3	—	5.5	—	—
Luxfer Overseas Holdings Limited	0.4	—	10.0	—	—
BA Holdings, Inc.	1.1	—	25.1	0.1	—
Magnesium Elektron North America, Inc.	0.4	—	8.0	0.1	—
Magnesium Elektron Limited	0.2	—	4.7	0.1	—
Luxfer Group 2000 Limited	0.5	—	14.2	0.3	—
Luxfer Holdings NA, LLC	0.3	—	1.5	—	—
Luxfer Magtech Inc.	2.5	—	32.4	0.1	—
Luxfer Gas Cylinders Limited	0.1	—	2.4	—	—

Included within trade and other receivables is a loan to Luxfer Group Limited for £17.4 million. This loan is non-interest bearing, unsecured and is repayable on demand.

In addition to the transactions above, share based compensation recharges have been made to Luxfer Gas Cylinders Limited, Luxfer Group Limited and Magnesium Elektron Limited for £0.1 million, £1.0 million, £1.2 million, £1.0 million and £0.2 million respectively (2018: Luxfer, Inc., Luxfer Gas Cylinders Limited, Luxfer Group Limited, BA Holdings, Inc. and Magnesium Elektron Limited for £0.7 million, £0.2 million, £1.2 million, £1.0 million and £0.4 million respectively). These amounts are recognised as capital contributions in the year.

Other than the transactions mentioned above, no other related party transactions have been identified.

48. Post balance sheet events

As referred in Note 1, we are carefully monitoring the situation concerning COVID-19 and any impact it may have on the business. Any such impact has been treated as a non-adjusting post balance sheet event for the purpose of considering the carrying values of assets included in the balance sheet as at 31 December 2019.