

FUEL CELL POWER FOR A SUSTAINABLE PLANET

BALLARD[®]

POWER TO CHANGE THE WORLD

NOTICE OF ANNUAL MEETING,
MANAGEMENT PROXY CIRCULAR,
AND

2019 ANNUAL REPORT

ballard.com

CONTENTS

Notice of Annual Meeting.....	1
ESG Report	6
Management Proxy Circular	29
Matters to be Voted Upon	29
Voting Information	29
Corporate Governance	37
Executive Compensation	44
Equity-Based Compensation Plans.....	71
Additional Information	73
Defined Terms.....	74
Appendix “A” Board Mandate	A-1
Appendix “B” Description of Option Plan.....	B-1
Appendix “C” Description of SDP.....	C-1
Financial Information.....	D-1

ABOUT BALLARD POWER SYSTEMS

Ballard Power Systems’ (TSX and NASDAQ: BLDP) vision is to deliver fuel cell power for a sustainable planet. Ballard zero-emission PEM fuel cells are enabling electrification of mobility, including buses, commercial trucks, trains, marine vessels, passenger cars, forklift trucks and UAVs. To learn more about Ballard, please visit www.ballard.com.

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements concerning projected revenue growth, product shipments, the commissioning of the Weichai-Ballard joint venture facility, completion of the Marine Center of Excellence, implementation of government policy initiatives, competitiveness of hydrogen solutions with conventional options and anticipated reductions in total lifecycle costs for our products. These forward-looking statements reflect Ballard’s current expectations as contemplated under section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Any such statements are based on Ballard’s assumptions relating to its financial forecasts and expectations regarding its product development efforts, manufacturing capacity, and market demand. For a detailed discussion of the factors and assumptions that these statements are based upon, and factors that could

cause our actual results or outcomes to differ materially, please refer to Ballard’s most recent management discussion & analysis.

Other risks and uncertainties that may cause Ballard’s actual results to be materially different include general economic and regulatory changes, detrimental reliance on third parties, successfully achieving our business plans and achieving and sustaining profitability. For a detailed discussion of these and other risk factors that could affect Ballard’s future performance, please refer to Ballard’s most recent Annual Information Form. These forward-looking statements are provided to enable external stakeholders to understand Ballard’s expectations as at the date of this document and may not be appropriate for other purposes. Readers should not place undue reliance on these statements and Ballard assumes no obligation to update or release any revisions to them, other than as required under applicable legislation.



BALLARD POWER SYSTEMS INC.
9000 Glenlyon Parkway
Burnaby, British Columbia, Canada V5J 5J8
NOTICE OF ANNUAL MEETING

TO OUR SHAREHOLDERS:

Our 2020 Annual Meeting (the "Meeting") will be held on Wednesday, June 3, 2020 at 1:00 p.m. (Pacific Daylight Time). Given the COVID-19 pandemic, this year's Annual Meeting will be a completely virtual meeting of shareholders. You will be able to attend the Annual Meeting, vote and submit your questions during the Annual Meeting via live webcast by visiting www.virtualshareholdermeeting.com/BLDP2020. The Meeting will be held for the following purposes:

1. To receive our audited financial statements for the financial year ended December 31, 2019 and the report of our auditors thereon;
2. To elect our directors for the ensuing year;
3. To appoint our auditors for the ensuing year and to authorize our Audit Committee to fix the remuneration of the auditors;
4. To consider and, if thought appropriate, to approve a resolution, on an advisory basis, accepting the Corporation's approach to executive compensation; and
5. To transact such other business as may properly be brought before the Meeting or any adjournment thereof.

A detailed description of the matters to be dealt with at the Meeting and our 2019 Annual Report are included with this Notice. There will not be a management presentation at this year's meeting.

To participate in the Meeting, shareholders will need to visit www.virtualshareholdermeeting.com/BLDP2020 and log-in using the 16-digit control number included either on your proxy form or voting instruction form, as applicable. The Meeting platform is fully supported across browsers and devices running the most updated version of applicable software plug-ins. You should ensure you have a strong, preferably high-speed, internet connection wherever you intend to participate in the Meeting. The Meeting will begin promptly at 1:00 p.m. (Pacific Daylight Time) on Wednesday, June 3, 2020. Online check-in will begin starting 15 minutes prior, at 12:45 p.m. (PDT). You should allow ample time for online check-in procedures. The webcast Meeting allows you to attend the Meeting live, submit questions and submit your vote while the Meeting is being held if you have not done so in advance of the Meeting. For any technical difficulties experienced during the check-in process or during the Meeting, please call the number located on the virtual meeting page.

Guests will be able to attend the Meeting through the live webcast only, by joining the webcast as a guest www.virtualshareholdermeeting.com/BLDP2020. They will not be able to submit questions or vote.

DATED at Burnaby, British Columbia, April 6, 2020.

BY ORDER OF THE BOARD

"Kerry Hillier"

Kerry Hillier
Corporate Secretary
Ballard Power Systems Inc.



Letter from JAMES ROCHE
Chair of the Board

Fellow Shareholders:

Transformation is under way. Decarbonization is a global priority. With mounting public pressure to limit global warming, over 60 countries have announced net-zero emission targets by 2050. There is a growing realization that hydrogen can serve a critical role in a multidimensional strategy to address the climate crisis. There is increased understanding of hydrogen's ability to decarbonize sectors that are otherwise difficult to abate. Indeed, 18 countries, representing 70% of global GDP, have announced hydrogen roadmaps.

We know this transformation will not occur overnight. We also know this transformation presents high value, long-term opportunities for Ballard. As a result, our focus is resolutely on the long-term. In support of our strategic focus, we made important progress in 2019, executing against our business plan, while delivering financial performance consistent with management expectations.

The board was very active in 2019, including on strategy, performance management, talent management and succession, as well as oversight of key strategic partnerships, manufacturing capacity expansion, product cost reductions and progress with the Weichai-Ballard joint venture in China. The board visited our European facility in Hobro, Denmark to learn more about Ballard's European platform and exciting opportunities in the European market, including for fuel cell buses, marine applications and critical infrastructure backup power.

In early 2019, Kevin Jiang and Sherman Sun joined our board as Weichai nominees. This strengthened our board with valuable insights into China's dynamic heavy-duty motive market and the significant opportunities for our Weichai-Ballard joint venture. We also initiated two key governance measures in 2019. First, all material Weichai and Weichai-Ballard JV commercial arrangements require the approval of our Audit Committee. Second, we created a Commercial Committee, comprised of independent directors, to enable confidential and sensitive deliberations relating to strategic customers, suppliers and partners.

We believe increased investor interest in environmental, social and governance (ESG) issues, including the investment risks presented by climate change, will drive a profound global reassessment of risk, asset values and capital allocation. We expect ESG mandates to accelerate corporate behavior toward sustainable businesses and serve as a catalyst for the adoption of hydrogen and fuel cell technologies. This 2019 Annual Report includes expanded ESG disclosure, reflective of the critical importance we place on our own journey for improved ESG performance, disclosure and accountability.

As we start 2020, there are, of course, serious concerns about the overall global economy, compounded by the recent coronavirus. Notwithstanding near-term volatility, our long-term outlook remains positive.

On behalf of the board, I would like to thank all Ballard employees for their integrity, customer focus, innovation and commitment. I draw your attention to a subset of employees identified on page 28, who received special recognition as 2019 Ballard Impact Award winners. We also thank our shareholders for your continued support.

"James Roche"

JAMES ROCHE
Chair of the Board of Directors



***Letter from RANDY MACEWEN
President and Chief Executive Officer***

Fellow Shareholders,

2019 was a year that saw remarkable momentum across the entire hydrogen and fuel cell industry. At Ballard, we made important progress during 2019 that provides a strong set-up for 2020 and beyond.

In terms of financial performance, we generated revenue of \$106.3 million – up 10% and exceeding our full year outlook – and delivered gross margin of 21%, Adjusted EBITDA of (\$28.2) million, and ended 2019 with cash reserves of \$147.8 million.

We also delivered continued progress in the execution of our strategy. We launched our next-generation *LCSTM* fuel cell stack and *FCmoveTM* power module, offering significantly lower lifecycle cost and enhanced performance. We invested in advanced manufacturing and production capacity expansion in our Vancouver operations. We advanced on our product development, technology transfer and facility construction programs and activities with our Weichai-Ballard joint venture in China. We expect the joint venture facility to be commissioned by mid-year 2020. We announced our membership in the H2Bus Consortium in Europe as well as the creation of a Marine Center of Excellence at our Denmark facility. We ended 2019 with a 12-month order book of \$110.3 million for delivery in 2020.

In 2019, we also articulated our *e12345* corporate strategy, which is shorthand for:

- e*: engaging the e-mobility ecosystem
- 1*: Be number 1 in the world with the best PEM fuel cell technology and products (including best performance and value for target market customers)
- 2*: 2 growth platforms – Power Products and Technology Solutions
- 3*: 3 key geographic markets – China, Europe and California (with expectation to grow in other markets as they become attractive)
- 4*: 4 parts of the value chain – manufacture membrane electrode assemblies (MEAs) & plates, stacks, modules/systems, and deliver best-in-class service
- 5*: 5 key applications - bus, truck, rail, marine and passenger cars (secondary applications include material handling, stationary power and unmanned systems)

Our *e12345* strategy supports near-term commercialization, revenue and profitability, while also enabling future value based on longer-term market opportunities for the same core PEM fuel cell competencies, technologies, products and intellectual property.

In the context of our *e12345* strategy, recent developments in the hydrogen and fuel cell industry have generated remarkable momentum and underpin our high level of conviction that we have entered the *Hydrogen Decade*. There are six recent important industry developments that I would highlight.

First, there are a growing number of government policy initiatives that support decarbonization of energy, mobility and industry using hydrogen and fuel cells. Jim Roche already noted that 18 countries have declared hydrogen roadmaps. The Energy Ministerial also announced its “10-10-10” targets of 10 million fuel cell electric vehicles (FCEVs) and 10,000 hydrogen refueling stations within the next 10 years (by 2030). In addition, the EU set landmark Class 8 truck emission reduction targets of 15% by 2025 and 30% by 2030.

Second, blue chip mobility players announced large investments in fuel cell technologies. These investments suggest a new conviction level by corporations in the opportunity for fuel cells as a zero-emission electrification pathway for mobility. Indeed, since the closing of Ballard’s strategic collaboration with Weichai in late-2018, the industry has seen a domino effect with numerous follow-on strategic tie-ups, investments and announcements, including from Bosch, Cummins, CNH International, Daimler Trucks, Faurecia and Michelin, among others. The Hydrogen Council also grew, now with over 80 members that collectively represent total revenues of more than €18 trillion and about 6 million jobs around the world.

Third, 2019 saw a consolidated industry view that mass commercialization of on-road FCEVs will occur first in medium and heavy-duty motive use cases – including in bus, truck, train and marine – where there are zero-emission requirements for heavy payload, long range and rapid refueling. Many of these use cases also feature return-to-base duty cycles, where vehicles can be quickly refueled at a centralized hydrogen refueling station, consistent with the current user experience with legacy diesel. These use cases disproportionately contribute to emissions today. The consolidated industry view on the relative value proposition for FCEVs in these use cases was punctuated in two recent industry reports, both of which are available for download from the Ballard website (www.ballard.com).

On January 20th, 2020, the Hydrogen Council published a report prepared by McKinsey entitled “*Path to Hydrogen Competitiveness: a cost perspective*”. The report studied 35 different hydrogen use cases and forecasted that in 22 of these, the total cost of ownership will reach parity with other low-carbon alternatives, typically battery electric, by 2030 – and earlier in a number of cases. The report also forecasted that in nine of these 35 use cases, hydrogen solutions will be competitive with conventional options, typically internal combustion engine vehicles, by 2030. We believe these nine use cases are a direct bull’s-eye match with Ballard’s *e12345* strategy. The report also notes that, with smaller deployments hydrogen infrastructure is more costly, but as deployments scale, hydrogen infrastructure becomes lower cost per vehicle than battery recharging infrastructure. This is another major advantage for FCEVs in large fleets.

The Hydrogen Council report is consistent with a white paper jointly published by Deloitte China and Ballard on January 8th, 2020 entitled “*Fueling the Future of Mobility: Hydrogen and Fuel Cell Solutions for Transportation*”. The white paper forecasts that, in less than 10 years, it will become cheaper to run an FCEV than to run a battery electric vehicle (BEV) or internal combustion engine (ICE) vehicle for certain commercial applications.

The fourth important industry development relates to the growing number of deployments of FCEVs in select geographies around the globe. Industry reports indicate current global deployments of 32,000 fuel cell forklifts, 18,000 fuel cell passenger cars and over 6,000 fuel cell buses and commercial trucks. The world’s first fuel cell tram also entered service in China in 2019. In addition to China, we are seeing growth indicators in Europe for fuel cell buses, commercial trucks, train and marine applications. As a result, in 2019, we began construction of Ballard’s Marine Center of Excellence (MCoE) at our facility in Hobro, Denmark to enable a local focus on activities in the emerging European marine segment. We anticipate the MCoE being completed and operational in the first half of 2020.

Globally, including only fuel cell buses and commercial trucks, Ballard fuel cell technology and products have to date powered FCEVs for an industry-leading cumulative total of more than 30 million kilometers, equivalent to traveling around the globe 750 times. So, with technology readiness now proven, market discussions are pivoting to integration, packaging, industrialization, scaling and cost reduction.

The fifth key industry development relates to continuing fuel cell technology advancements and cost reduction. At Ballard, we have improved product performance while also reducing product cost by 65% during the past decade, without the benefit of commercial volumes. In mid-2019, we commercially launched our industry-leading *LCS*TM fuel cell stack and our 8th generation fuel cell module, the *FCmove*TM. We expect

this next-generation module to deliver a further 35% reduction in total lifecycle cost, while delivering technology advancements that deepen our customer value proposition. Looking forward over the next three years, we anticipate additional product cost reductions at the MEA, stack and module levels, driven by continued design improvements, manufacturing scale, supply chain activities, and advanced manufacturing initiatives. We will provide further details on these plans later this year.

The sixth key industry development – the growing ESG movement – was discussed in Jim’s letter.

In the context of these six industry developments, I see tremendous opportunity for Ballard to differentiate, serve our customers, inspire our employees and deliver long-term value for shareholders, all while moving closer to our vision: “*We deliver fuel cell power for a sustainable planet*”. This vision gets everyone at Ballard fired up each morning to make the company better every day. We thank our valued employees for their talent, passion and dedication. We also thank our customers and partners for their trust, business and collaboration.

We thank our shareholders for your confidence. We intend to continue earning your trust by delivering against our strategy, driving to profitability and increasing shareholder value and we look forward to reporting our progress over the coming year.

On a final note, we wish you and your families’ safety and health during this unprecedented COVID-19 pandemic.

"Randy MacEwen"

RANDY MACEWEN
President & CEO
Ballard Power Systems Inc.

An aerial photograph showing a vast, dense forest of green trees in the foreground and middle ground. In the background, a large, calm blue lake stretches across the horizon under a bright blue sky with scattered white clouds. A road with a few cars is visible on the right side of the image.

BALLARD
ENVIRONMENTAL,
SOCIAL AND
GOVERNANCE
(ESG) REPORT 2019



We are Ballard Power Systems.

Our zero emission technology plays an increasing role in the decarbonization of the global economy. Vehicles powered by our fuel cell products emit no GHGs, NO_x, SO_x or particulates during operation.

As the world moves toward a future of zero-emission mobility, we at Ballard are striving toward sustainability across the entire lifecycle of our products. Our company—in its management, research and development, manufacturing and shipping—is committed to becoming carbon-neutral by 2030.

About this report

This report focuses on the environmental and sustainability aspects of our offices, (which include our R&D and manufacturing/shipping facilities) in Burnaby, Canada and our European subsidiary in Hobro, Denmark. Our USA and China offices employ less than 20 people each, and are too small to have a material impact on our environmental footprint.

For any questions regarding this report or its contents please contact us at sustainability@ballard.com.

Our Global Impact

Globally, Ballard is a powerful force for the environment: fuel cell electric vehicles produce lower lifetime environmental impacts than internal combustion vehicles and battery electric vehicles. When they consume 'green' hydrogen (produced from renewable energy) we believe they are the most environmentally sustainable mobile energy source. We are continually working to reduce the total lifecycle emissions of our fuel cell products.

“At Ballard, we recognize the growing investor and stakeholder interest in our environmental, social and corporate governance (ESG) programs and performance, and we are proud to present our first annual ESG Report. This report sets benchmarks for future ESG reports, and marks a public commitment to transparency in reporting.”

Randy MacEwen, President and CEO



UN Sustainable Development Goals

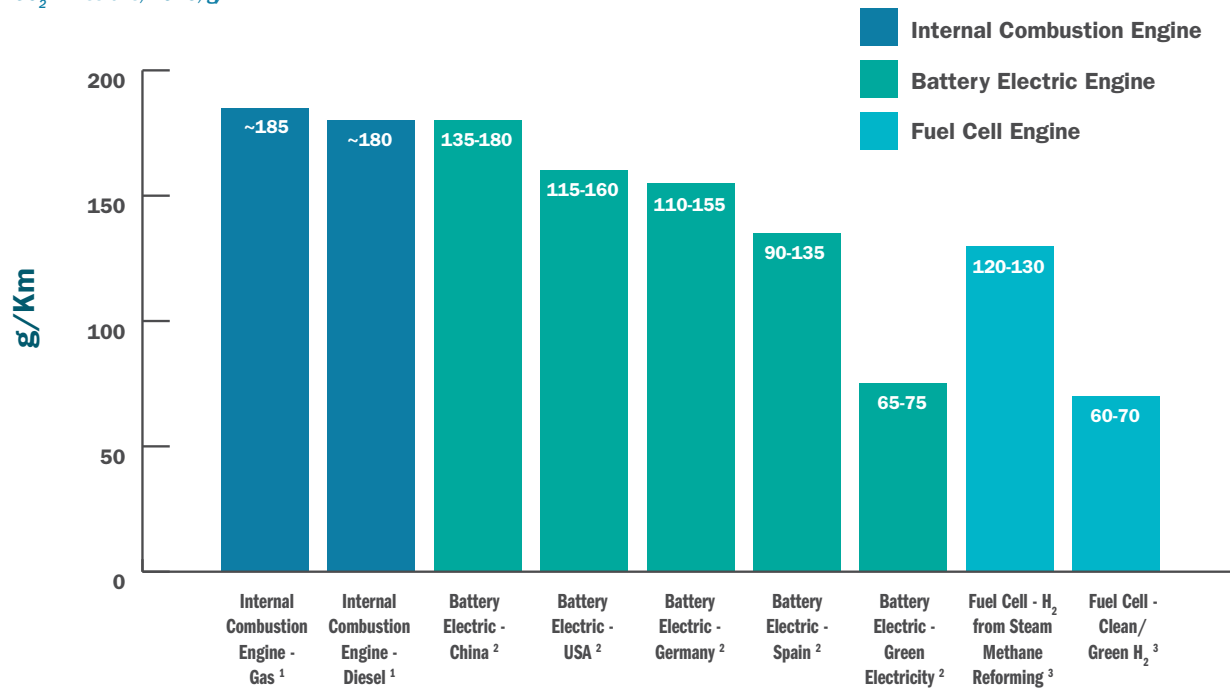
Guided by the United Nations' Sustainable Development Goals, we seek to improve our performance in:

1. Affordable and clean energy
2. Industry, innovation and infrastructure
3. Responsible consumption and production
4. Climate action



FCEVs can achieve very low CO₂ emissions if the whole lifecycle is considered¹

CO₂ Emissions, 2015, g/km



Footnote:

1. Includes: tank to wheel, car manufacturing, well to tank
2. Includes: battery manufacturing, car manufacturing, well to tank
3. Includes: fuel cell manufacturing, car manufacturing, well to tank

Our Environmental Commitments

Through 2020 and beyond we are committed to:

- improving our understanding of the climate impacts of our products and operations
- reducing our corporate and product carbon footprints
- reducing our waste and energy consumption
- responsible production



Learn more by downloading our brochure: *Hydrogen Fuel Cell Vehicles for a Sustainable Future*
<https://online.flippingbook.com/view/165111/12/>

Minimize Waste in Our Manufacturing

Our manufacturing practices are designed with sustainability as a core principle. We source our materials with care, and we apply the 3Rs, Reduce, Re-use and Recycle, to keep as much waste as possible from entering the landfill. Our proton exchange membrane (PEM) fuel cells are:

- Made from ethically sourced materials
- Made without any hazardous, banned or toxic substances
- Manufactured in a sustainable manner, considering factors such as energy efficiency and ethical labour
- Packaged as minimally as possible, using environmentally friendly materials
- Built for a long service life – our current generation of products are designed to exceed 30,000 hours of operation
- Refurbished and recycled at the end of life: to minimize waste, we rebuild and refurbish fuel cells to recover valuable precious metals

“Mission Carbon Zero”: Carbon Neutral by 2030

In 2019, we launched our “Mission Carbon Zero” initiative to evaluate and steadily reduce the environmental impact of our organization and our products with the goal of being carbon neutral by 2030. We are engaging in:

- an inventory of corporate emissions, to evaluate and track our annual carbon footprint
- Life-Cycle Assessments of our fuel cell stacks and heavy-duty power modules, to measure their carbon footprint “from cradle to gate” (until they leave our loading dock).

As we proceed, we are committed to informing our customers about the results of our Life-Cycle Assessments, and our progress toward Carbon Zero—and to defining long-term strategies to reduce and offset our emissions and other impacts.

Monitoring and Reducing GHG Emissions

In 2019, we conducted our first corporate greenhouse gas (GHG) inventory, which assessed the emissions generated by our business activities in Burnaby, Canada and Hobro, Denmark. The inventory, which was conducted by Offsetters Climate Solutions (an independent consultant firm specialized in carbon-management solutions), calculated the GHGs generated in our facilities, including the consumption of natural gas and electricity in our buildings; diesel and gasoline in company vehicles; and other emissions generated by commuting, air travel, shipping, and hydrogen use for our R&D and production activities.

The assessment, which adhered to the *Greenhouse Gas Protocol Corporate Accounting and Reporting Standard*, covered 2017 and 2018. It provides us with baseline data which helps us understand our climate impacts and identify opportunities for improvement. In future ESG reports, we expect to provide year-on-year metrics that include each previous year. Now that we have quantified our corporate emissions, we can address our climate impacts, and will prioritize reducing the largest sources first.

Ballard Canada’s 2017 & 2018 GHG Emissions Intensity

	2017 (tCO ₂ e/ employee)	2018 (tCO ₂ e/ employee)	Reduction Trends %
Scope 1			
Natural Gas	2.82	2.01	✓ 29%
Gasoline	0.0015	0.001	✓ 28%
Subtotal	2.82	2.01	✓ 29%
Scope 2			
Electricity	0.56	0.38	✓ 32%
Subtotal	0.56	0.38	✓ 32%
Scope 3			
Air Travel	2.03	2.12	▲ -4%
Employee Commute	1.18	1.15	✓ 3%
Paper	0.05	0.04	✓ 30%
Water	0.03	0.02	✓ 30%
Waste	0.02	0.01	✓ 30%
Hydrogen	3.04	2.14	✓ 20%
CO ₂ Purchased	0.025	0.017	✓ 20%
Hotels	0.05	0.04	✓ 20%
Shipping	1.25	1.34	▲ -7%
Subtotal	7.69	6.87	✓ 11%
Total GHG emissions	11.08	9.27	✓ 16%



In 2019 we conducted our first corporate greenhouse gas (GHG) inventory. Now that we have quantified our corporate emissions, we can address our climate impacts,

✓ 16%

Total greenhouse gas emissions per-employee are down 16% from 2017 to 2018

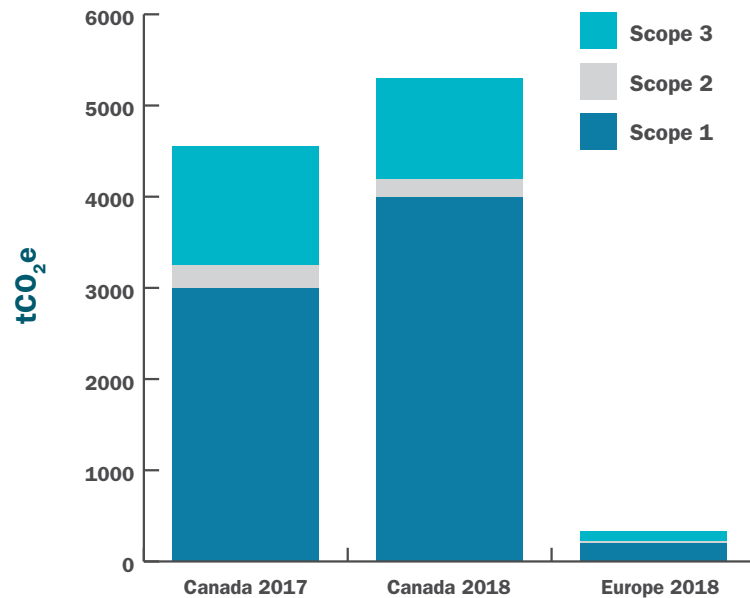


In future ESG reports, we hope to provide year-on-year metrics that include each previous year.

Overall, our carbon footprint increased by 19% from 2017 to 2018—but this should be seen in light of changes in our business mix and growth in our operation. While overall numbers increased, our per-employee emissions fell by 16%.

Moving forward, we intend to report our environmental impacts to the CDP (formerly the Carbon Disclosure Project), an international non-profit organization that has compiled the world’s largest, most comprehensive database of corporate climate impacts, risks and opportunities. The CDP shares its information to encourage corporate transparency and create momentum in tackling the climate crisis, and issues of deforestation and water security.

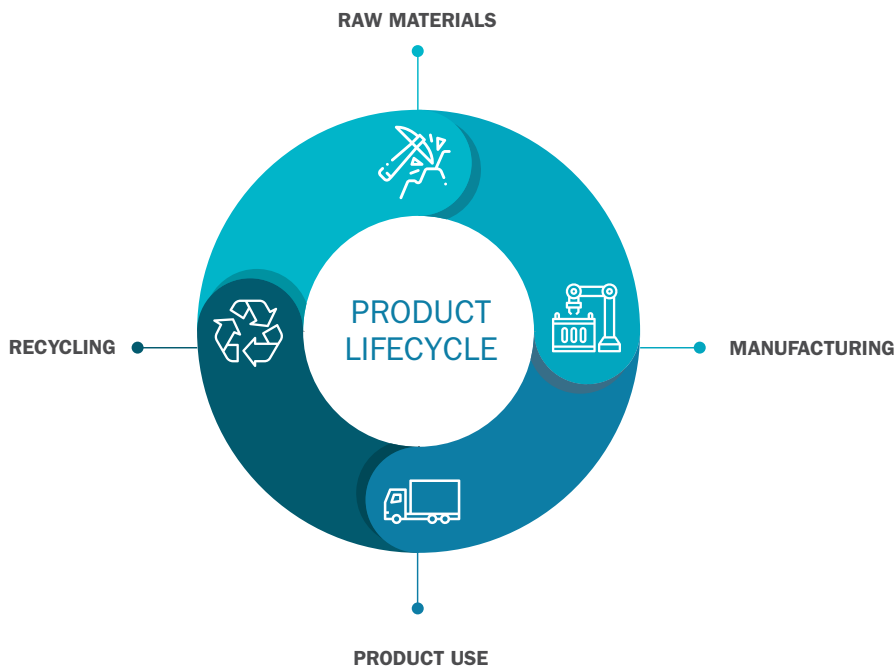
Ballard 2017 & 2018 GHG Emissions Intensity



CASE STUDY

The Life Cycle of a Ballard Fuel Cell

It is important to quantify, and where possible, minimize the greenhouse emissions (GHGs) associated with the production of hydrogen fuel cell technologies. To this end, we have completed Life Cycle Assessments (LCA) on some of our core products. We started our assessment with “cradle-to-gate”, that is covering a fuel cell module’s GHG profile from raw materials until it leaves our shipping dock.



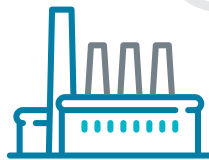
Life Cycle Assessment and Comparison

The Life Cycle Assessment for our FCveloCity® -HD85 fuel cell power module (the 85kW capacity module required for a fuel cell electric transit bus) determined that each module generates 6 tons of CO₂ (GHG emissions) during its production.

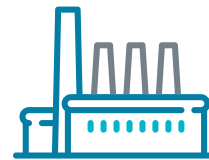
GHG Emissions Required to Produce Fuel Cell and Battery System for a Transit Bus

Based on average of 150kg of CO₂e per kWh for batteries⁽²⁾ and 70kg of CO₂ per kWh for FC system

13.5 tons of CO₂ GHG emissions to produce 50kWh battery with 85kW Fuel Cell system



52.2 tonnes of CO₂ GHG emissions to produce a 350kWh battery



In summary: there are 75% less emissions generated in the production of a fuel cell power train.

The highest GHG impacts arise in producing the metals—especially the aluminum and the platinum catalyst—arise for the membrane electrode assembly (MEA) and other components. The aluminum and platinum represent 68% of total embodied emissions.

When the power stack reaches end-of-life, we recycle 95% of the platinum catalyst. This is not factored into the LCA, but it would drastically reduce the overall GHG profile in a full “cradle-to-grave” assessment.

In 2020, we will undertake a limited study that compares life-cycle emissions from fossil-fuel powered vehicles to Ballard fuel cell powered vehicles.

Continually Reducing Energy Consumption

Throughout our facilities, we are committed to eliminating wasted energy, without negatively affecting our product development, testing, or manufacturing capacity.

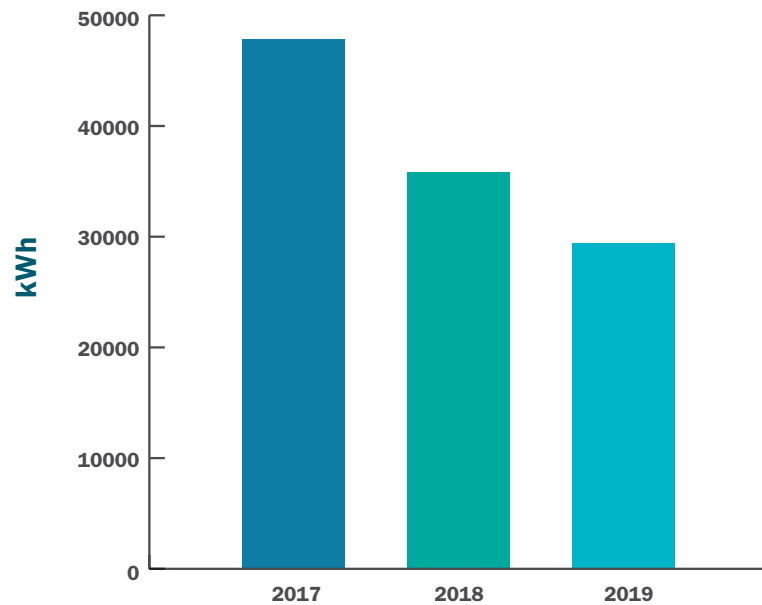
Working with BC Hydro (our provincial electrical utility) and others, we developed a target list of 42 initiatives for reducing our energy use. In 2017 and 2018, we focused on implementing those initiatives that would have the greatest impact. As a result, we reduced our electricity consumption by 2.4MWh—enough electricity to power 225 typical BC homes for an entire year.

In 2019, company growth resulted in a total increase in electric consumption. However our ongoing work on energy-conservation initiatives reduced our per-employee electrical consumption by 19%, compared to 2018.



We developed a target list of 42 initiatives for reducing our energy use.

Power Consumption per Employee in kWh



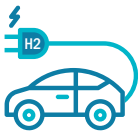
We reduced our electricity consumption by 2.4MWh—enough electricity to power 225 typical BC homes for an entire year.

Shrinking our Carbon Footprint: 2019 Initiatives

Through a series of initiatives we are reducing our carbon footprint across the company:



- **Reduced commuting:** we are promoting work-from-home, carpooling, and bike-to-work initiatives to reduce commuting and associated emissions.



- **Promoting zero-emission vehicles among staff:** to accelerate the adoption of ZEVs for daily use, we recently installed level 2 electric charging stations in our car park, and collaborated with Toyota to offer Ballard employees the opportunity to purchase Toyota's hydrogen fuel cell cars. There are now 10 zero emission fuel cell cars among Ballard staff.



- **Saving energy on lighting:** in our Burnaby facilities, we support the BC Hydro Lights Off campaign. In Denmark, our facilities have converted from conventional fluorescent lamps to LED lights.



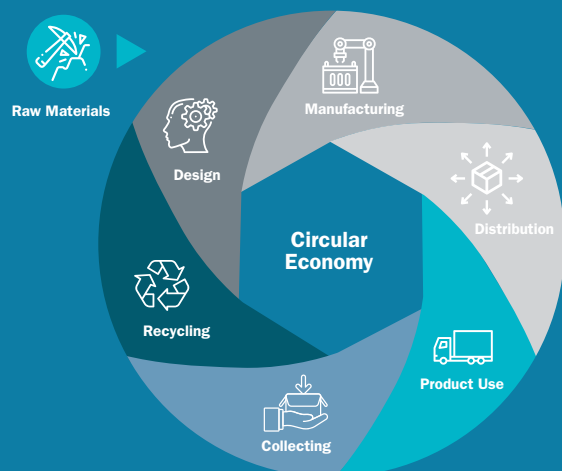
- **Recirculating hydrogen in fuel stack testing:** into our fuel cell stack test stations we have begun recirculating the hydrogen used in factory acceptance tests, making our fuel cell testing more sustainable.



- **Reducing electrical use in testing:** our fuel cell test stations now use regenerative load banks that feed electricity to our internal microgrid, which reduces our consumption of external electricity.

Toward a Circular Economy

Ballard is a supporter of the circular economy, an economy that builds economic, natural, and social capital by designing out waste and pollution, and keeping products and materials in use. We work to reduce waste in our operations, and to reuse the materials in our products when the products reach end-of-life.



Fuel Cell Refurbishing and Recycling

We seek to keep every Ballard fuel cell in use for as long as possible. When they ultimately reach end-of-life, we seek to keep them out of the landfill. Every year, we recycle and refurbish thousands of fuel cell stacks.

Each fuel cell stack is refurbished, re-using components as much as possible, to achieve the same performance specifications as new stacks. They are then shipped back to our customers.

- During the refurbishing process, we integrate a new membrane electrode assembly (MEA) with the re-used bipolar plates and hardware.
- Thanks to the use of carbon bipolar plates in our stack design, we can reuse each plate several times.
- Used MEAs are sent to a specialized facility that reclaims 95% of the platinum.

Reducing Raw Materials By Design

With every new generation of products, we seek to reduce the number of components, and the total weight of the fuel cell system. Our new FCmove™ heavy-duty fuel cell module is designed with 50% fewer components than earlier generations.



Thanks to the use of carbon bipolar plates in our stack design, we can reuse each plate several times



Used MEAs are sent to a specialized facility that reclaims 95% of the platinum

Waste Management

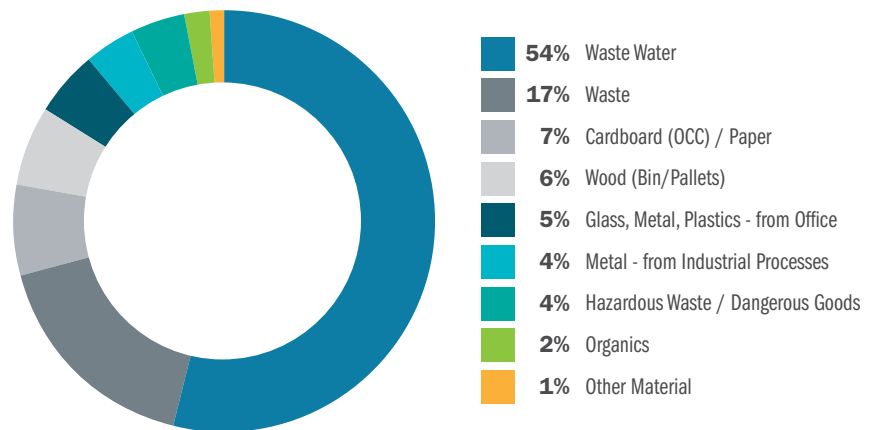
We are continuously improving our efforts to identify reusables and recyclables and minimize landfill waste. While our total waste increases as our business expands, our employees' ongoing efforts to reduce waste (and to separate waste from recyclables) have been successful. In 2019, the waste per person dropped by 20%, and the non-recyclable solid waste per person dropped by 7% compared to 2018.



In 2019, the non-recycled waste per person dropped by 20%

Waste	2017	2018	2019
Total waste (kg)	353554	511107	933002
Cardboard/other material waste* (kg)	93160	98639	75796
% of waste that is recycled	83%	70%	83%
% of waste that is hazardous**	1%	1%	4%

Recycling and Recovery by Material (kg) in 2019 – Ballard Canada



* We do not segregate our waste by process (i.e. packaging waste), we segregate it by recyclability class: i.e. wood, cardboard, hard plastic, soft plastic etc.

**For hazardous material removal, water treatment, and recycling, treatment and disposal, we engage Sumas Environmental, a licensed waste removal and treatment company.



We employ people in such diverse disciplines as electrochemistry, polymer chemistry, chemical, mechanical, electronic and electrical engineering, manufacturing, marketing, sales, business development, legal, finance, human resources, information technology and business management.

None of our employees in Canada, the United States, Denmark, or China are represented by labour unions. Each employee must agree to confidentiality provisions as part of the terms of his or her employment, and certain employees have also executed non-competition agreements.



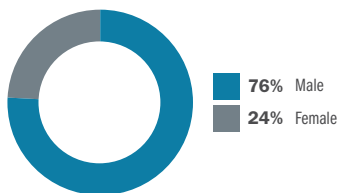
Globally, Ballard has a total of 703 employees in 4 regions

Total Number of Employees*

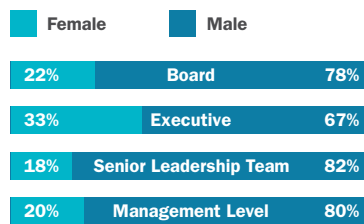
Canada	Europe	United States	China	Total
610	60	18	15	703

*As of December 31, 2019

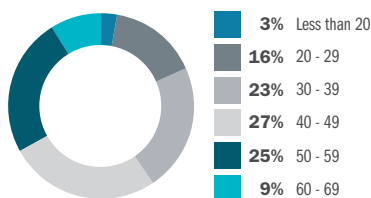
Workforce by Gender



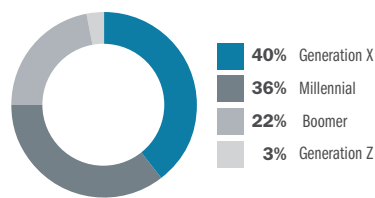
Leadership by Gender



Employees by Age



Employee by Generation





A Culture of Diversity and Inclusion

We are committed to an equal opportunity workplace with policies, procedures and practices that are without systemic barriers. We believe that all kinds of diversity, including age, gender, cultural background, etc. make for a stronger organization and that diversity partnered with inclusion provides a significant foundation to both attract and retain top talent.

In 2018, we released our Diversity & Inclusion Policy which helps to promote a working environment where differences are valued and respected, where everyone is treated equitably, fairly and with respect. We foster a culture of inclusion where there is a foundation of trust and respect and each member of the team feels psychologically safe to take risks, raise problems, ask questions, disagree and make mistakes.

Ballard has recently been named in the Globe & Mail “Women Lead Here” list, which identifies 73 Canadian companies at the forefront of women in leadership positions.

Employee Training and Leadership Development

Engaging and developing our people is a top priority. We see career growth and developmental opportunities as cornerstones of employee engagement. We encourage our employees to continue to learn and develop.

Each employee has regular career meetings with their manager. They create and follow their personal Development Goals and commit to continuous learning and innovation. We provide training programs in person and online, along with experiential learning, to help our employees expand and diversify their skills. To build future leaders and develop leadership capability across the organization, we offer a leadership development program and “emerging leader” workshops.

At Ballard, we embrace our responsibility to operate in a manner that protects the health, safety and well-being of our employees, contractors, visitors, and those in the communities where we operate. We engage, communicate regularly and listen to our employees concerns, we actively identify hazards and develop effective control measures. We are committed to continuously improving our H&S performance through a management system that aims to safeguard our people, our product and the public. Safety and health is part of our global commitment to doing business the right way, and we work to achieve a workplace culture in which safety and health are embraced by all.

Health and Safety

Our strong safety culture has delivered consistent results:

- in 2019 we had 3 LTIs (lost time incidents)
- the injury frequency (TRIFR) among R&D and manufacturing technicians was .5
- We set specific targets each year. We monitor and report on them regularly.

* TRIFR (Total Reportable Injury Frequency) is the number of injuries requiring treatment by a medical professional per 200,000 hours worked



In 2019 we had 3 LTIs
(lost time incidents)



The injury frequency
(TRIFR) among R&D
and manufacturing
technicians was .5

Our Vision

We deliver fuel cell power for a sustainable planet.

Our Mission

We use our fuel cell expertise to deliver valuable and innovative solutions to our customers globally, create rewarding opportunities for our team, provide extraordinary value to our shareholders and power the hydrogen society.

Our Values



Listen and Deliver

We listen to our customers, understand their business and deliver valuable and innovative solutions for lasting partnerships.



Quality Always

We deliver quality in everything we do.



Inspire Excellence

We live with integrity, passion, urgency, agility and humility.



Row Together

We achieve success through respect, trust and collaboration.



Own It

We step up, take ownership for our results and trust others to do the same.

Governance and Ethics at Ballard

Code of Conduct

Ballard is committed to integrity and strong corporate governance, which prioritizes transparency, accountability, ethical conduct and respect in the workplace. Everyone—directors, officers and employees—is required to adhere to our corporate Code of Conduct, and to confirm their understanding and acceptance of the code annually.

The Code of Conduct is available on our website: <http://ballard.com/investors/governance>.

Whistleblower Policy

Our whistleblower policy allows employees to anonymously and confidentially report any concerns, and we encourage employees to report any situation that appears to involve a breach of the company's ethical or legal obligations. We also encourage those outside our company to report any concerns.

To enable anonymous and confidential reports, we maintain a reporting website and toll-free phone numbers, through a third-party vendor.

Ethics and Anti-Corruption

Ethical conduct is expected of every Ballard board member, executive, employee and contractor. We have zero tolerance for corrupt activities of any kind, whether committed by employees or anyone acting on the company's behalf. All our employees and business partners must adhere at all times to our Anti-Corruption Policy and ethical, transparent business practices. Through our anti-bribery and corruption program, employees receive training in our policy and its operation.

Ethics and Our Supply Chain

We ensure that we procure products and services through suppliers that share our core values. All suppliers must comply with our statement of Supplier Conduct Principles. This document lays out our supplier requirements in health and safety, respect and dignity, forced or involuntary labour, child labour, hours of work and wages/benefits, non-discrimination, freedom of association, environmental protection, anti-corruption, business ethics, and compliance with applicable laws and regulations. We consider these principles in the supplier selection process, and ask suppliers to submit a declaration of compliance on an annual basis.

Our statement of Supplier Conduct Principles is available on our website: <https://www.ballard.com/about-ballard/suppliers>.

Political Contributions

Ballard does not make financial contributions to political causes. We may engage in lobbying activities to provide policymakers with data and insights to inform their decision-making regarding a sustainable clean energy sector and fuel cell business. Any lobbying activities must be conducted based on our corporate values of transparency, honesty, integrity and are conducted within the laws or guidelines of the relevant jurisdiction.

Board of Directors

Our board of directors is composed of nine committed and qualified professionals, who were elected in accordance with a majority voting policy. Eight members are considered independent. The Board oversees all matters important to the successful operation of the company including determining our strategic direction, risk management and approving capital allocation.

The board operates three committees:

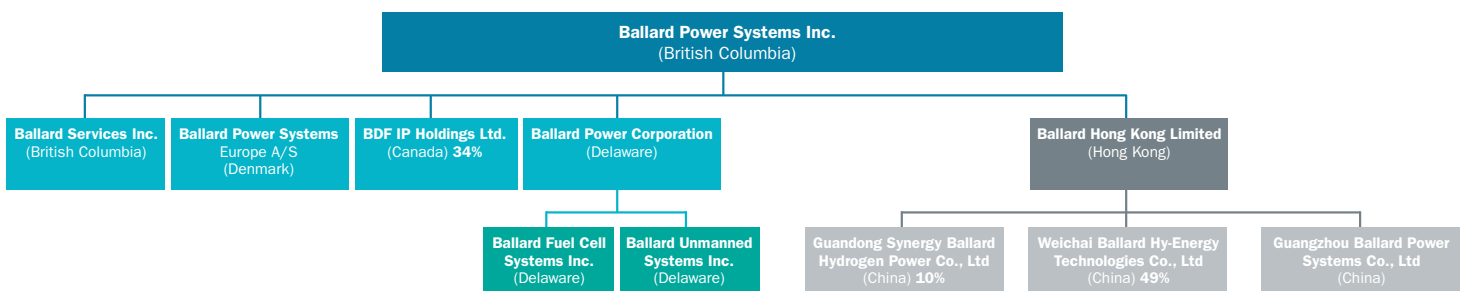
- Audit Committee
- Corporate Governance and Compensation Committee
- Commercial Committee

The Audit Committee is responsible for sustainability and reporting issues. More information on the board and corporate governance can be found on our website: <http://ballard.com/investors/governance>, and in the “Corporate Governance” section of our Management Proxy Circular.

The Ballard Board

Size of Board	9
Independent directors	8
Separate Chair and CEO	Yes
All committees independent	Yes
M/F directors	7 M 2 F
Board diversity policy	No
Annual director elections	Yes
Individual director elections	Yes
Majority voting policy	Yes
Board interlocks (#)	None
Limit on external board service of independent directors	Yes
Annual say on pay	Yes
Board, committee and director evaluations annually	Yes
Board orientation and education program	Yes
In-camera sessions at every board & committee meeting	Yes

Corporate Ownership and Structure



Unless otherwise indicated above, each entity is 100% owned. Ballard Power Systems Inc. holds all of the non-voting, participating shares of BDF IP Holdings LTD. and 34% of the voting, non-participating shares of the BDF IP Holdings Ltd., with each of Mercedes-Benz AG and Ford Motor Company holding 33% of the voting, non-participating shares of BDF IP Holdings Ltd.

References

1) Hydrogen Scaling Up report 2017 - Hydrogen Council
<https://hydrogencouncil.com/wp-content/uploads/2017/11/Hydrogen-scaling-up-Hydrogen-Council.pdf>

2) ICCT 2018 Effects of battery manufacturing on electric vehicle life-cycle greenhouse gas emissions - https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG_ICCT-Briefing_09022018_vF.pdf

2019 Ballard Impact Awards Recipients

Safety Award

The Preliminary Hazard Analysis (PHA) Chairs

Alex Barber, Marisa Menard, Harsimran Singh, Erin Rogers, Garth Currier

Innovation Award

MEA Sealing Technology Project

Kailyn Domican

Listen & Deliver Award

Production Leadership Team

Jane Calinisan, Alin Antonescu, Alberto Garcia, Leonardo Tobias, Nico Van Rooi, Leonardo Estrada

Quality Always Award

IT Helpdesk Team

Manolo Naagas, Alex Bunag, Dino De Guzman, Cory Purewal

Inspire Excellence Award

LCS MEA Production Roll Out

Emil Cretu

Row Together Award

HDv8 Prototype Kitting Team

Marc Brull, Norman Chor, Allan Callas, Johney Garcia, Paul Lam, Vahid Modares, Scott Sweeney, Sisimio Lumongsud, Renato Felix, Ellen Lindholm, Alan Li, John Wang, Mandy Tam, Patricia Chong, Marvio Longuinho, Lalaine Massing, Erid Mangmang, Maria Matos, Grace Valle, Zoltan Kollar, Rhealyn Orbon, Joseph Chou, Amy Xie, Gaspar Sanchez, Candice Burgers, Stephen Shen, Kevin Asperin, Eric Xie, Paul Mullin, Andy Chen, Isidio Jose Dos Santos Neto, Kevin Lin, Christian Tuazon, Erika Philco, Vivian Chang, Shoaib Khan, Michael Lou, Edith Hicks

Own It Award

Synergy JV Stack FAT Issue Resolution Team

Jason Chen, Mustafa Zaidi, Garth Currier

Accounts Payable Team

Janet Lee, Tracey Lu

POWER TO CHANGE THE WORLD®

MANAGEMENT PROXY CIRCULAR

dated as of April 6, 2020

MATTERS TO BE VOTED UPON

Registered Shareholders or their duly appointed proxyholders will be voting on:

- the election of directors to our Board;
- the re-appointment of our auditors and authorization for our Audit Committee to fix the remuneration of the auditors;
- on an advisory basis, the Corporation's approach to executive compensation; and
- such other business as may properly be brought before the meeting.

As of the date of this Circular, we know of no amendment, variation or other matter that may come before the Meeting other than the matters referred to in the Notice of Annual Meeting. If any other matter is properly brought before the Meeting, it is the intention of the persons named in the enclosed proxy to vote the proxy on that matter in accordance with their best judgment.

VOTING INFORMATION

SOLICITATION OF PROXIES

This Circular is furnished in connection with the solicitation of proxies by our management in connection with the Meeting to be held on Wednesday, June 3, 2020 at 1:00 p.m. (Pacific Daylight Time), or the date and place of any adjournment thereof. We are soliciting proxies primarily by mail, but our directors, officers and employees may solicit proxies personally, by telephone, by facsimile transmission or by other means of electronic communication. The cost of the solicitation will be borne by us. The approximate date on which this Circular and the related materials are first being sent to Registered Shareholders is April 26, 2020.

OBTAINING A PAPER COPY OF THE CIRCULAR AND FINANCIAL STATEMENTS

In lieu of mailing the Notice of Meeting, Circular and our audited financial statements and management's discussion and analysis for the year ended December 31, 2019, the Corporation is using notice-and-access to provide an electronic copy of these documents to registered shareholders and beneficial shareholders of the Corporation's Shares by posting them on www.ballard.com and on the Corporation's profile on www.SEDAR.com. For more information regarding notice-and-access, you may call toll free at 1-855-887-2244, from Canada or the United States.

If you wish to obtain a paper copy of these documents, you may call toll free at 1-877-907-7643, from Canada or the United States and enter the 16-digit control number located on your form of proxy or voting instruction form. If you do not have a control number please call toll free at 1-855-887-2243. You must call to request a paper copy by May 19, 2020 in order to receive a paper copy prior to the deadline for submission of your voting instructions or form of proxy. If your request is received on or after the date of the Meeting, then the documents will be sent to you within ten calendar days of your request. Ballard will provide a paper copy of the documents to any registered or beneficial shareholder upon request for a period of one year following the date of the filing of this Circular on www.SEDAR.com.

If you have standing instructions to receive paper copies of these documents and would like to revoke them, please call the individual who services your account.

Distribution of Meeting Materials to Beneficial Shareholders

The Corporation has distributed copies of the notice-and-access notice and VIF to the depositories and intermediaries for onward distribution to Beneficial Shareholders. Beneficial Shareholders who have previously provided standing instructions will receive a paper copy of the Notice of Meeting, Circular, financial statements and related management discussion and analysis. If you are a Beneficial Shareholder and the Corporation or its agent has sent these materials directly to you, your name and address and information

about your holdings and securities have been obtained in accordance with securities regulatory requirements from the intermediary holding on your behalf.

HOW TO VOTE

Shareholders are encouraged to vote in advance of the Meeting at www.proxyvote.com.

Even if you currently plan to participate in the Meeting, you should consider voting your shares by proxy in advance so that your vote will be counted if you later decide not to attend the Meeting or in the event that you are unable to access the Meeting for any reason.

Vote Options

VOTE BY INTERNET:

To vote by Internet, visit www.proxyvote.com or scan the QR Code to access the website. You will need your 16-digit control number located on the form of proxy/voting instruction form. Vote cut-off is 5:00 p.m. (PDT) on Monday, June 1, 2020.

VOTE BY MAIL:

Return the completed, signed and dated form of proxy/voting instruction form by mail in the business reply envelope to: Data Processing Centre, P.O. Box 3700 STN Industrial Park, Markham, ON L3R 9Z9.

VOTE BY TELEPHONE:

As an alternative, you may enter your vote instruction by telephone at 1-800-474-7493 (English) or 1-800-474-7501 (French). You will need your 16-digit control number located on the form of proxy/voting instruction form.

Appointee Instructions

You are encouraged to appoint yourself or such other person (other than the named proxyholders) online at www.proxyvote.com as this will reduce the risk of any mail disruptions in the current environment and will allow you to share the Appointee Information you have created with any other person you have appointed to represent you at the Meeting more easily. If you do not designate the Appointee Information when completing your form of proxy or voting information form or if you do not provide the exact Appointee Identification Number and Appointee Name to any other person (other than the named proxyholders) who has been appointed to access and vote at the Meeting on your behalf, that other person will not be able to access the Meeting and vote on your behalf.

You must provide your Appointee the **exact name and eight character Appointee Identification Number** to access the Meeting. Appointees can only be validated at the Meeting using the **exact name and eight character Appointee Identification Number** you enter.

If you do not create an eight character Appointee Identification Number, your appointee will not be able to access the Meeting.

Proxy Cut-off

You are encouraged to provide your voting instructions or appoint your proxyholder online at www.proxyvote.com in accordance with the instructions on the form of proxy by no later than 5:00 p.m. (PDT) on Monday, June 1, 2020, or if the meeting is adjourned, at least 48 hours (not including Saturdays, Sundays or statutory holidays in B.C.) prior to the reconvened meeting (the proxy cutoff). If you prefer, you may also complete and return your form of proxy to Broadridge at Data Processing Centre, P.O. Box 3700 STN Industrial Park, Markham, ON, L3R 9Z9. Broadridge must receive your completed form of proxy or voting instruction form prior to the proxy deadline.

Providing your voting instructions or voting by proxy cutoff will ensure your vote is counted at the meeting even if you later decide not to attend the meeting or are unable to access it in the event of technical

difficulties. If you attend and vote at the meeting during the live webcast, any proxy you have previously given will be revoked.

Changing your Voting Instructions

If you change your mind about how you want to vote your shares, you can revoke your proxy form or voting instruction form by voting again on the internet or by phone.

Registered shareholders can revoke their instructions by delivering a signed written notice executed by the Registered Shareholder or by his or her attorney authorized in writing or, where the Registered Shareholder is a company, by a duly authorized officer or attorney of that company, and delivered to:

- Broadridge Investor Communications Corporation at 2601 14th Avenue, Markham, Ontario L3R 0H9, at any time up to and including the last business day preceding the day of the Meeting;
- the registered office of the Corporation at any time up to and including the last business day preceding the day of the Meeting; or
- the chair of the Meeting on the day of the Meeting and before any vote in respect of which the proxy is to be used is taken.

Beneficial owners who are unable to vote on the internet or by phone should consult their intermediary if they wish to revoke their instructions.

A proxy may also be revoked in any other manner provided by law. Any revocation of a proxy will not affect a matter on which a vote is taken before such revocation.

VOTING OF SHARES AND EXERCISE OF DISCRETION BY PROXIES

If you complete and submit your proxy properly, then the proxyholder named in the accompanying form of proxy will vote or withhold from voting the Shares represented by the proxy in accordance with your instructions.

If you do not specify a choice on any given matter to be voted upon, your Shares will be voted in favour of such matter. The proxy grants the proxyholder the discretion to vote on amendments to or variations of matters identified in the Notice of Annual Meeting and with respect to other matters that may properly come before the Meeting.

VOTING SHARES AND PRINCIPAL SHAREHOLDERS

As of the Record Date of April 6, 2020, we had 243,604,121 Shares issued and outstanding, each carrying the right to one vote. On a show of hands, every individual who is present as a Registered Shareholder or as a representative of one or more corporate Registered Shareholders, or who is holding a proxy on behalf of a Registered Shareholder who is not present at the Meeting, will have one vote, and on a poll, every Registered Shareholder present in person or represented by proxy and every person who is a representative of one or more corporate Registered Shareholders, will have one vote for each Share recorded in the Registered Shareholder's name in the Corporation's central securities register.

As of the Record Date, Weichai Power Co., Ltd. ("**Weichai**") beneficially owns 46,131,712 Shares, representing 18.9% of all issued and outstanding Shares, each carrying the right to one vote. As of the Record Date, to the knowledge of our directors and executive officers, no other person beneficially owns, controls or directs, directly or indirectly, Shares carrying more than 10% of the voting rights attached to all issued and outstanding Shares carrying the right to vote in all circumstances.

INTEREST OF CERTAIN PERSONS OR COMPANIES IN MATTERS TO BE ACTED UPON



No one who has been a director, director nominee or executive officer of ours at any time since January 1, 2020, or any of his or her associates or affiliates, has any material interest, direct or indirect, by way of beneficial ownership of Shares or otherwise, in any matter to be acted on at the Meeting other than the election of directors.


ELECTION OF DIRECTORS


At the Meeting you will be asked to elect nine directors. All of our nominees are currently members of the Board. Each elected director will hold office until the end of our next annual shareholders' meeting (or if no director is then elected, until a successor is elected) unless the director resigns or is otherwise removed from office earlier. If any nominee for election as a director advises us that she or he is unable to serve as a director, the persons named in the enclosed proxy will vote to elect a substitute director at their discretion.


As part of the strategic transaction with Weichai announced on November 13, 2018, Weichai has the right to nominate two directors to Ballard's Board so long as Weichai holds at least 15% of Ballard's outstanding Shares.


The following information pertains to our nominees for election as directors at the Meeting, as of April 6, 2020.


 <p>Douglas P. Hayhurst Age: 73 B.C., Canada Director since: 2012 <i>Independent</i></p>	Mr. Hayhurst's principal occupation is corporate director. Previously, Mr. Hayhurst was executive Global Industry Leader with IBM Canada Business Consulting Services (<i>consulting services</i>) and with PricewaterhouseCoopers Management Consultants (<i>consulting services</i>). Prior to that, Mr. Hayhurst held various senior executive management roles with Price Waterhouse Canada including National Deputy Managing Partner (Toronto) and Managing Partner for British Columbia (Vancouver). Mr. Hayhurst received a Fellowship (FCA) from the Institutes of Chartered Accountants of British Columbia and of Ontario. He has completed the Directors Education Program of the Institute of Corporate Directors and has received his ICD.D designation.						
	Board and Committee Membership	Attendance		Other Public Board Memberships			
	Board Audit (Chair) Corporate Governance & Compensation	7 5 6	88% 100% 100%	<i>Current:</i> none <i>Previous:</i> Accend Capital Corporation; Canexus Corporation; Catalyst Paper Corporation ⁽¹⁾ ; Northgate Minerals Corporation			
	Securities Held⁽²⁾						
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾	Director Share Ownership Guidelines
		2020	5,000	208,282	213,282	\$2,535,923	Achieved
		2019	5,000	199,801	204,801	\$956,421	Achieved
 <p>Kui (Kevin) Jiang Age: 56 Shandong, China Director since: 2019 <i>Independent⁽⁴⁾</i> <i>(Weichai nominee)</i></p>	Mr. Jiang is President of Shandong Heavy Industry Group Co., Ltd. (<i>heavy machinery manufacturing</i>). He is also a non-executive director of Weichai Power Co., Ltd. (<i>diesel engine, powertrain and hydraulic products manufacturing</i>), a non-executive director of Sinotruk (Hong Kong) Limited, (<i>heavy-duty truck manufacturing</i>), a supervisor of KION Group AG (<i>intralogistics, warehouse solutions and industrial trucks</i>), and a director of the Power Solutions International Inc. (<i>cleantech engine and powertrain manufacturing</i>). Previously, Mr. Jiang was deputy general manager of Shandong Bulldozer General Factory (<i>heavy machinery manufacturing</i>); deputy general manager of Shantui Construction Machinery Import and Export Company (<i>heavy machinery</i>); a director and senior officer of Shantui Engineering Machinery Co., Ltd. (<i>heavy machinery</i>); deputy general manager of Shandong Engineering Machinery Group Co., Ltd. (<i>heavy machinery</i>); executive deputy general manager and vice chairman of Weichai Group Holdings Limited, (<i>diesel engine, powertrain and hydraulic products manufacturing</i>); and chairman of Shanzhong Jianji Co., Ltd. (<i>heavy machinery</i>). He is a senior engineer and holds an MBA degree.						
	Board and Committee Membership	Attendance		Other Public Board Memberships			
	Board	6	75%	<i>Current:</i> Weichai Power Co., Ltd.; Sinotruk (Hong Kong) Limited; KION Group AG (supervisor); Power Solutions International Inc.; Shantui Engineering Machinery Co., Ltd. <i>Previous:</i> none			
	Securities Held⁽²⁾						
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾	Director Share Ownership Guidelines⁽⁵⁾
		2020	0	0	0	0	N/A
		2019	0	0	0	0	N/A


 <p>Duy-Loan Le Age: 57 Texas, USA Director since: 2017 <i>Independent</i></p>	Ms. Le is President of DLE Management Consulting LLC (<i>management consulting services</i>), a position she has held since 2016. Previously, Ms. Le was an advanced technology ramp manager and a Senior Fellow at Texas Instruments Incorporated (<i>semiconductor design and manufacturing</i>) from 2002 to 2015; Program Manager and Fellow from 1998 to 2002; and Design Engineer and Manager from 1982 to 1998. Ms. Le is an inventor on 24 U.S. patents.					
	Board and Committee Membership		Attendance		Other Public Board Memberships	
	Board	8	100%	<i>Current:</i> National Instruments Inc.; Cree, Inc.; Atomera Incorporated <i>Previous:</i> none		
	Corporate Governance & Compensation	6	100%			
	Commercial	3	100%			
	Securities Held⁽²⁾					
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾
	2020	50,000	32,538	82,538	\$981,377	Achieved
	2019	50,000	23,785	73,785	\$344,576	Achieved


 <p>Randy MacEwen Age: 51 B.C., Canada Director since: 2014 <i>Non-Independent</i></p>	Mr. MacEwen is President and Chief Executive Officer of Ballard, a position he has held since October 2014. Previously, Mr. MacEwen was the founder and Managing Partner at NextCleanTech LLC (<i>consulting services</i>) from 2010 to 2014; and President & CEO and Executive Vice President, Corporate Development at Solar Integrated Technologies, Inc. (<i>solar</i>) from 2006 to 2009 and 2005 to 2006, respectively. Prior to that, Mr. MacEwen was Executive Vice President, Corporate Development at Stuart Energy Systems Corporation (<i>onsite hydrogen generation systems</i>) from 2001 to 2005; and an associate at Torys LLP (<i>law firm</i>) from 1997 to 2001.						
	Board and Committee Membership		Attendance		Other Public Board Memberships		
	Board	8	100%	<i>Current:</i> none <i>Previous:</i> Solar Integrated Technologies Inc.			
	Securities Held^(2, 6)						
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾	Director Share Ownership Guidelines⁽⁵⁾
		2020	413,110	148,046	561,156	\$6,672,145	N/A
		2019	318,310	148,046	466,356	\$2,177,883	N/A

 <p>Marty Neese Age: 57 California, USA Director since: 2015 <i>Independent</i></p>	Mr. Neese's principal occupation is corporate director. He is also co-founder of Nuvosil AS (<i>silicon recycling</i>). Previously, he was Chief Operating Officer of Velodyne LiDAR, Inc. (<i>autonomous vehicles</i>) from February 2017 to October 2017. Prior to that, Mr. Neese was Chief Operating Officer of SunPower Corporation (<i>solar power equipment and services</i>) from 2008 to 2017; responsible for Global Operations at Flextronics (<i>electronics manufacturing services</i>) from 2007 to 2008 following its acquisition of Solectron Corporation (<i>electronics manufacturing services</i>) where he was Executive Vice President from 2004 to 2007.						
	Board and Committee Membership		Attendance		Other Public Board Memberships		
	Board	8	100%	<i>Current:</i> none <i>Previous:</i> none			
	Commercial	3	100%				
	Securities Held⁽²⁾						
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾	Director Share Ownership Guidelines
		2020	0	67,013	67,013	\$796,785	On track
	2019	0	59,040	59,040	\$275,717	On track	

 James Roche Age: 57 Ontario, Canada Director since: 2015 <i>Independent</i>	Mr. Roche is founder, President and Chief Executive Officer of Stratford Managers Corporation (<i>management consulting services</i>), a position he has held since 2008. Prior to that, Mr. Roche was co-founder, President and Chief Executive Officer of Tundra Semiconductor (<i>semiconductor component manufacturer</i>) from 1995 to 2006 and founding member and executive at Newbridge Networks Corporation (<i>communications equipment manufacturer</i>) from 1986 to 1995.					
	Board and Committee Membership		Attendance		Other Public Board Memberships⁽¹⁾	
	Board (Chair)	8	100%	<i>Current:</i> none <i>Previous:</i> Wi-LAN Inc.; Tundra Semiconductor Corporation; Aztech Innovations Inc..		
	Audit	5	100%			
	Corporate Governance & Compensation	6	100%			
	Commercial	3	100%			
	Securities Held⁽²⁾					
	Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNs)⁽³⁾	Director Share Ownership Guidelines
	2020	50,000	79,380	129,380	\$1,538,328	On track
	2019	50,000	69,202	119,202	\$556,673	On track

 Shaojun (Sherman) Sun Age: 55 Shandong, China Director since: 2019 <i>Independent⁽⁴⁾</i> <i>(Weichai nominee)</i>	Mr. Sun is an Executive Director and Executive President of Weichai Power Co., Ltd. (<i>diesel engine, powertrain and hydraulic products manufacturing</i>), a director of Weichai Group Holdings Limited and chairman of Power Solutions International Inc. (<i>cleantech engine and powertrain manufacturing</i>). Previously, Mr. Sun was supervisor and chief engineer at Weifang Diesel Engine Factory (<i>diesel engine manufacturing</i>) and director of Torch Automobile Group Co., Ltd. (<i>heavy machinery and automotive manufacturing</i>). He holds doctorate degree in engineering.						
	Board and Committee Membership		Attendance		Other Public Board Memberships		
	Board	5	63%	<i>Current:</i> Weichai Power Co., Ltd.; Power Solutions International Inc. <i>Previous:</i> none			
	Corporate Governance & Compensation	5	83%				
	Securities Held⁽²⁾						
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNs)⁽³⁾	Director Share Ownership Guidelines⁽⁵⁾
		2020	0	0	0	0	N/A
	2019	0	0	0	0	N/A	

 Ian Sutcliffe Age: 67 Ontario, Canada Director since: 2013 <i>Independent</i>	Mr. Sutcliffe's principal occupation is corporate director. Mr. Sutcliffe has been a partner at Sutcliffe & Associates Management Consultants (<i>management consulting services</i>) since 1985. Previously, Mr. Sutcliffe was Executive Chair of PureFacts Financial Solutions (<i>financial software services</i>) from 2013 to 2016. Prior to that, he was co-CEO of PHEMI, Inc. (<i>medical software and IT infrastructure</i>) from 2010 to 2012; CEO, Chairman and independent director of BluePoint Data (<i>IT services</i>) from 2001 to 2011; and Vice Chair and CEO of BCS Global Networks Inc. (<i>video conferencing services</i>) from 2003 to 2004. Mr. Sutcliffe was independent director, IBM Canada Limited (<i>IT service management</i>) from 1998 to 2001. Mr. Sutcliffe was President of Mediconsult.com, Inc. (<i>internet health services</i>) from 1995 to 1999 and President and CEO from 1999 to 2001.					
	Board and Committee Membership		Attendance		Other Public Board Memberships	
	Board	8	100%	<i>Current:</i> none <i>Previous:</i> BluePoint Data Inc. ⁽¹⁾ ; BCS Global Networks Inc.		
	Audit	5	100%			
	Commercial	3	100%			
	Securities Held⁽²⁾					
		Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNs)⁽³⁾
	2020	10,000	97,959	107,959	\$1,283,633	On track
	2019	10,000	90,495	100,495	\$469,312	On track

 Janet Woodruff Age: 63 B.C., Canada Director since: 2017 Independent	Ms. Woodruff's principal occupation is corporate director. Previously, Ms. Woodruff served as acting CEO to the Transportation Investment Corporation (<i>transportation infrastructure management</i>) from 2014 to 2015, advisor to the board (2013-2014) and interim Chief Financial Officer (2012-2013). Prior to that, she was Vice President and Special Advisor to BC Hydro (<i>public utility</i>) from 2010 to 2011; Interim President (2009-2010) and Vice President, Corporate Services and Chief Financial Officer (2007-2008) of BC Transmission Corporation (<i>electricity transmission infrastructure</i>); and Chief Financial Officer and Vice President, Systems Development and Performance of Vancouver Coastal Health from 2003 to 2007.					
	Board and Committee Membership		Attendance		Other Public Board Memberships	
	Board	7	88%	<i>Current</i> ⁽⁷⁾ : Keyera Corporation; Altus Group Limited; Capstone Infrastructure Corporation; FortisBC Energy Inc. and FortisBC Inc. <i>Previous</i> : Nordion Inc. (formerly MDS Inc.); Pacific Northern Gas		
	Audit	5	100%			
	Corporate Governance & Compensation	6	100%			
	Securities Held⁽²⁾					
	Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDNS)⁽³⁾	Director Share Ownership Guidelines
	2020	0	31,220	31,220	\$371,206	On track
	2019	0	22,739	22,739	\$106,191	On track

- (1) Canadian securities legislation requires disclosure of any company that becomes insolvent while a director is a member of its board, or within one year from ceasing to act as a director. In this regard, Mr. Roche was Chair of Aonix Advanced Materials Corp. (a private company) when a bankruptcy order was issued against it under the *Bankruptcy and Insolvency Act (Canada)* on October 13, 2017. Mr. Hayhurst was a director of Catalyst Paper Corporation, which sought an Initial Order under the *Companies' Creditors Arrangement Act* on January 31, 2012. Mr. Ian Sutcliffe was a director of BluePoint Data Inc. on May 12, 2012 when the British Columbia Securities Commission issued a cease trade order against it for failure to file its financial statements and management's discussion and analysis related thereto for the year ended December 31, 2011. Mr. Sutcliffe resigned as a director on June 27, 2012, subsequent to which BluePoint sold its business and distributed the proceeds to its shareholders.
- (2) As of April 6, 2020 and April 8, 2019, respectively. The number of Shares shown as being held by each nominee constitute the number beneficially owned, or controlled or directed, directly or indirectly, by that nominee and such information has been provided to us by that nominee.
- (3) Based on a CDNS\$11.89 and CDNS\$4.67 closing Share price on the TSX as of April 6, 2020 and April 8, 2019, respectively.
- (4) Mr. Jiang and Mr. Sun, as Weichai nominees, are not considered independent under NASDAQ rules for the purposes of serving on the Audit Committee.
- (5) Directors who are shareholder nominees appointed pursuant to agreements with the Corporation are not subject to director share ownership guidelines. As President and CEO, Mr. MacEwen is subject to executive share ownership guidelines: see "Share Ownership Guidelines and Share Trading Policy" on page 58 and following for more details.
- (6) As President and CEO, Mr. MacEwen also holds PSUs and Options. See the Executive Compensation Tables on page 60 and following for more details.
- (7) Fortis BC Inc. and Fortis BC Energy Inc. are both wholly owned subsidiaries of Fortis Inc., but which have public debt securities outstanding. Capstone Infrastructure Corporation is a wholly owned subsidiary of Irving Infrastructure Corp., but which has preferred shares which are publicly traded on the TSX.

APPOINTMENT OF AUDITORS

Our Audit Committee has recommended that KPMG LLP, Chartered Accountants, of 777 Dunsmuir Street, Vancouver, British Columbia, be nominated at the Meeting for re-appointment as our external auditors. Our Audit Committee will fix the remuneration of our external auditors if authorized to do so by Shareholders at the Meeting. It is expected that representatives of KPMG LLP will be present at the Meeting. KPMG LLP were appointed as our external auditors in 1999. We comply with the requirement regarding the rotation of our audit engagement partner every five years. A new audit engagement partner will be appointed later in the year.

The following table shows the total fees we incurred with KPMG LLP in 2019 and 2018:

Type of Audit Fees	2019 (CDNS)	2018 (CDNS)
Audit Fees	\$566,500	\$516,800
Audit-Related Fees	Nil	Nil
Tax Fees	Nil	\$18,000
All Other Fees	Nil	Nil

For a more detailed description of the Audit Committee or to see the Audit Committee’s mandate, a copy of which is posted on our website (www.ballard.com), see the section entitled “Audit Committee Matters” in our Annual Information Form dated March 5, 2020, which section is incorporated by reference into this Circular.

ADVISORY VOTE ON APPROACH TO EXECUTIVE COMPENSATION

The Corporate Governance & Compensation Committee (“CGCC”) monitors developments and trends relating to best practices on corporate governance and executive compensation, including relating to “say-on-pay” in Canada and in the United States. In the United States, the SEC has established “say-on-pay” advisory shareholder vote requirements for certain issuers. Although the Corporation’s shares are traded on NASDAQ, Ballard is a “foreign private issuer” under applicable SEC rules and, accordingly, these requirements do not apply to the Corporation. Although “say-on-pay” shareholder votes have yet to be mandated in Canada, a number of larger issuers in Canada have voluntarily implemented such advisory votes. Ballard has also voluntarily implemented “say on pay” advisory votes. At the request of the Board, our Shareholders have passed resolutions, on an advisory basis, accepting the Corporation’s approach to executive compensation since 2011.

Over the past three years, the CGCC has continued to review and refine our executive compensation philosophy, executive compensation programs and executive compensation disclosure. In 2016, we revised our approach to executive compensation disclosure to make the disclosure clearer, more transparent and more communicative. We believe these efforts, along with improved corporate financial performance, led to an increase in our votes for our Say on Pay resolution, which passed by over 90% in each of 2017, 2018 and 2019, as compared to 72.5% in 2016.

The CGCC recommended to the Board that Ballard Shareholders again be provided the opportunity, on an advisory basis, to vote at the Meeting in respect of the Corporation’s approach to executive compensation. The CGCC also recommended that adoption by the Board of a formal “say-on-pay” policy should continue to be deferred until applicable Canadian securities regulatory authorities have set out the regulatory requirements applicable to the Corporation.

Accordingly, the Shareholders of the Corporation are able to vote at this Meeting, on an advisory and non-binding basis, “FOR” or “AGAINST” the Corporation’s current approach to executive compensation through the following resolution:

“RESOLVED, on an advisory basis and not to diminish the role and responsibilities of the Board of Directors of the Corporation, that the Shareholders accept the approach to executive compensation disclosed in the Corporation’s management proxy circular delivered in advance of the Corporation’s 2020 annual meeting of Shareholders.”

The Board believes that Shareholders should be well informed about and fully understand the objectives, philosophy and principles that it has used to make executive compensation decisions. For information regarding Ballard’s approach to executive compensation, Shareholders should review the section entitled “Executive Compensation – Compensation Discussion and Analysis” appearing below in this Circular.

Approval of the above advisory resolution will require an affirmative vote of a majority of the votes cast on the matter at the Meeting. Abstentions will have no effect and will not be counted as votes cast on the resolution. As the vote on this resolution is advisory, the results will not be binding on the Board or the CGCC. However, the Board and the CGCC will take the results of the advisory vote into account, as appropriate, as part of their ongoing review of the Corporation’s executive compensation objectives, philosophy, principles, policies and programs.

CORPORATE GOVERNANCE

Our Board and senior management consider good corporate governance to be central to our effective and efficient operation. We monitor corporate governance initiatives as they develop and benchmark industry practices to ensure that we are in compliance with applicable corporate governance rules.

Our corporate governance practices are reflected in our Corporate Governance Policies, which provide for board composition and director qualification standards, tenure and term limits, director responsibilities, the form and amount of director compensation, director orientation and continuing education, management succession planning and performance evaluation of the Board. A copy of our Corporate Governance Policies can be found on our website (<http://ballard.com/investors/governance>). We have also reviewed our internal control and disclosure procedures, and are satisfied that they are sufficient to enable our Chief Executive Officer and Chief Financial Officer to certify our interim and annual financial reports filed with Canadian securities regulatory authorities, and to certify our annual financial reports filed with the SEC.

In addition, we have set up a process for Shareholders to communicate to the Board, the details of which can be found on our website. A summary of shareholder feedback is provided to the Board through a quarterly report.

We believe that we comply with all applicable Canadian securities administrators (“CSA”) and NASDAQ corporate governance rules and guidelines. The CSA requires that listed corporations subject to *National Instrument 58-101 - Disclosure of Corporate Governance Practices* (“NI 58-101”) disclose their policies respecting corporate governance. We comply with NI 58-101, which addresses matters such as the constitution and independence of corporate boards, the functions to be performed by boards and their committees, and the effectiveness and education of board members. We are exempt from the NASDAQ corporate governance rule requiring that each NASDAQ quoted company has in place a minimum quorum requirement for shareholder meetings of 33 1/3% of the outstanding shares of the company’s voting common stock. Our by-laws currently provide that a quorum is met if holders of at least 25% of the votes eligible to be cast at a Shareholders’ meeting are present or represented by proxy at the meeting.

BOARD COMPOSITION AND NOMINATION PROCESS

All of our directors are independent except for Randy MacEwen, our President and Chief Executive Officer. “Independence” is judged in accordance with the provisions of the United States *Sarbanes-Oxley Act of 2002* (“Sarbanes-Oxley”), and as determined by the CSA and the NASDAQ. Mr. Jiang and Mr. Sun, as Weichai nominees, are not considered independent under NASDAQ rules for the purposes of serving on the Audit Committee. We conduct an annual review of the other corporate boards on which our directors sit, and have determined that currently there are no board interlocks with respect to our directors. The Board has also established a guideline for the maximum number of public company boards on which a director should sit. In 2019, this guideline was set at no more than five public company boards, including the Corporation's Board; and for directors who are CEOs (or hold similar positions), no more than two public company boards in addition to his/her own company’s board. In calculating service on public company boards, service on a board of a company affiliated with the director’s employer is not included. Currently all of our board members comply with this guideline.

The Board believes that its membership should be composed of highly qualified directors with diverse and complementary backgrounds, skills sets and experience bases and who demonstrate integrity and suitability for overseeing management. The CGCC and the Board have determined that the criteria to be considered when selecting directors and recommending their election by the Shareholders include the following:

- a) Direct experience in leading a business as a CEO or other senior executive
- b) Strategy development experience
- c) Sales/Marketing experience
- d) Finance/Accounting experience & education
- e) Product development and/or operations experience

- f) Corporate governance experience & education
- g) Early-Stage business commercialization experience
- h) CleanTech sector knowledge
- i) Asian market experience

The following table identifies some of the current skills and other factors considered as part of the competency matrix developed by the CGCC. Each director was asked to indicate the top three competencies which he/she believes they possess.

	Douglas P. Hayhurst	Kevin Jiang	Duy-Loan Le	Randy MacEwen	Marty Neese	James Roche	Sherman Sun	Ian Sutcliffe	Janet Woodruff
President/CEO Experience		✓		✓				✓	✓
Strategy	✓					✓	✓		
Sales/Marketing		✓						✓	
Finance/Accounting	✓								✓
Product Development			✓		✓	✓	✓		
Corporate Governance	✓								✓
Early Stage Business Commercialization			✓	✓		✓		✓	
Clean Technology				✓	✓				
Asian Markets		✓	✓		✓		✓		

In addition to these criteria, we also take into consideration other industry and business factors in determining the composition of our Board.

Our CGCC conducts an annual process under which an assessment is made of the skills, expertise and competencies of the directors and is compared to our needs and the needs of the Board. This process culminates in a recommendation to the Board of individual nominee directors for election at our annual Shareholders' meeting. To this end, the CGCC will, when identifying candidates to recommend for appointment or election to the Board:

- a) consider only candidates who are highly qualified based on their relevant experience, expertise, perspectives, and personal skills and qualities, and cultural fit;
- b) consider diversity criteria including gender, age, ethnicity and geographic background; and
- c) in addition to its own search, as and when appropriate from time to time, engage qualified independent external advisors to conduct a search for candidates who meet the Board's expertise, skills and diversity criteria.

Currently, we have two women serving on our board, a representation of 22%. As part of its approach to Board diversity, the Board has not established specific targets for any diversity criteria at this time. The CGCC will assess the effectiveness of this approach annually and recommend amendments to the Board, including the possible adoption of measurable objectives for achieving Board diversity, as appropriate. The Corporation is a member of the Canadian chapter of the 30% Club, a group whose aspirational goal is for 30% of board seats and C-Suites to be held by women by 2022.

TENURE AND TERM LIMITS

Directors are elected yearly at our annual Shareholders' meeting and serve on the Board until the following annual Shareholders' meeting, at which time they either stand for re-election or leave the Board. If no meeting is held, each director serves until his or her successor is elected or appointed, unless the director resigns earlier.

Independent directors are expected to serve on at least one Committee of the Board. The CGCC and Audit Committee are tasked with ensuring a rotation of Committee members and Chairs to broaden the experience and skills of each member of the Board, and ensure an appropriate mix of experience and expertise in respect of the various roles of the Board and its committees. A director may only serve on the Board for a maximum of 15 consecutive years. These provisions do not apply to the President & Chief Executive Officer in his/her role as a Board member.

DIRECTOR SHARE OWNERSHIP GUIDELINES

We have minimum share ownership guidelines that apply to our directors, other than management directors (Mr. MacEwen, who is subject to similar guidelines for our executive officers) and directors who are shareholder nominees appointed pursuant to agreements with the Corporation (Mr. Jiang and Mr. Sun, who are Weichai nominees).

All other directors are required to hold at least the number of Ballard Shares that has a value equivalent to three times the director's annual retainer. Directors have six years from the date that they are first elected to the Board to comply with this minimum share ownership guideline. In determining whether a director is in compliance with the minimum share ownership guidelines, any DSUs that a director receives as payment for all or part of their annual retainer will be credited towards calculating achievement of the minimum share ownership requirements.

The value of Shares and DSUs held by directors will be measured on or about December 31st of each year based on the purchase price actually paid by the director for such Shares, or the value of DSUs or Shares received by the director when issued to him or her by the Corporation, as applicable.

Any director who fails to comply with the minimum share ownership guidelines will not be eligible to stand for re-election. Currently, all of our directors have met or are on track to achieve these guidelines, as applicable.

BOARD MEETINGS

The Board meets on a regularly scheduled basis and directors are kept informed of our business and operations at meetings of the Board and its committees, and through reports by and discussions with management. In 2019, *in camera* sessions, chaired by the Chair of the Board, were held at each regularly scheduled Board meeting involving all of the independent directors without the presence of management. In addition, regular communications between the directors and management occur apart from regularly scheduled Board and committee meetings. The Board has set a minimum meeting attendance guideline of 75%. Non-compliance with this guideline by a director is one of the factors considered in his or her individual performance evaluation at the end of the year. In 2019, Mr. Sun did not achieve the minimum attendance guideline, partly as a result of his joining the Board in January 2019 with already existing conflicts for the board calendar.

ROLES AND RESPONSIBILITIES

The Board operates under a formal mandate (a copy of which is attached as Appendix "A" and is posted on our website (<http://ballard.com/investors/governance>)), which sets out its duties and responsibilities, including matters such as corporate strategy, fiscal management and reporting, selection of management, legal and regulatory compliance, risk management, external communications and performance evaluation. The Board has also established terms of reference for the Board Chair and for individual directors (copies of which are also posted on our website), which set out the directors' individual responsibilities and duties. Terms of reference are also established for the CEO. These terms of reference and our Corporate

Governance Policies serve as a code of conduct with which each director is expected to comply, and address matters such as conflicts of interest, the duties and standard of care of directors, the level of availability expected of directors, requirements for maximizing the effectiveness of Board and committee meetings, and considerations that directors are to keep in mind in order to make effective and informed decisions.

In addition, we have a Board-approved Code of Ethics, which applies to all members of the Board, as well as our officers and employees. A copy of the Code of Ethics can be found on our website (<http://ballard.com/investors/governance>). This document is reviewed annually and updated or revised as necessary. Annually, all of our regular full/part time and temporary employees of Ballard and our subsidiaries globally, and the board of directors, are required to formally acknowledge they have read, reviewed and comply with the Code of Ethics. A compliance report is then presented to the Audit Committee and Board.

The Chair of the Board is responsible for ensuring the appropriate organization, content and flow of information to the Board and that all concerns of the directors are addressed. The Chair of the Board reviews and sets the agenda for each Board meeting. The Chair of the Board is also responsible for organizing and setting the frequency of Board meetings and ensuring that Board meetings are conducted efficiently. The Chair of the Board is an independent director.

Each year, the Board identifies a list of focus priorities for the Board during the year. The CGCC and the Board regularly monitors the Board's progress against these priorities throughout the year.

BOARD ORIENTATION AND EDUCATION

We have established a formal director orientation and ongoing education program. Upon joining our Board, each director receives an orientation regarding our business. Such orientation includes site visits to our manufacturing facilities, presentations regarding our business, technology and products, and a manual that contains various reference documents and information. Continuing education is offered by way of ongoing circulation of informative materials aimed at topical subject matters, material industry developments, and management presentations at Board meetings, as well as guest speakers who are invited to speak to our Board on various topics. From time to time we have invited guest speakers to speak to our Board about the fuel cell industry, government regulation, regional markets, capital markets, corporate governance and risk management, and internal management representatives to speak about various issues, including relating to our industry, business, strategy, markets, customers, projects, technology, products, services, operations, employee relations, investor relations and risks. The orientation and ongoing educational presentations that are made by internal management provide an opportunity for Board members to meet and interact with members of our management team.

In May, several directors attended a hydrogen and fuel cell industry conference in Vancouver, Canada. In September 2019, the Board and senior management travelled to Ballard Europe A/S facilities in Denmark for meetings and presentations relating to the Corporation's strategy in Europe, as well as developments in the European marine and backup power segments. In addition to regular management presentations on business and operations, the Board also received educational presentations from management on hydrogen and fuel cell industry value chain and ecosystem, and technology relating to fuel cell components and manufacturing.

SHAREHOLDER FEEDBACK AND COMMUNICATION

We have an e-mail process for Shareholders to communicate with the Board, through the Chair of the Board. Shareholders who wish to send a message to the Chair of the Board can find the email address on our website (<http://ballard.com/contact-us>). In addition, a summary of shareholder feedback that is received by us is provided to the Board through a quarterly report.

BOARD AND DIRECTOR PERFORMANCE EVALUATIONS

Each year, the Board conducts an evaluation and review of its performance during the past year. The evaluation is conducted through a process determined from time to time by the CGCC which elicits responses from individual directors on a confidential basis regarding performance of the Board and

individual directors. The process may include the completion of a questionnaire by all of the directors as well as individual director self-evaluations and peer evaluations. The CGCC presents the summary results to the full Board, which then determines appropriate actions and changes to improve Board effectiveness.

COMMITTEES OF THE BOARD

The Board currently has three standing committees: (1) the Audit Committee; (2) the Corporate Governance & Compensation Committee (CGCC); and (3) the Commercial Committee. The Commercial Committee was established in 2019.

Each committee has been delegated certain responsibilities, performs certain advisory functions and either makes certain decisions or makes recommendations to the Board. Each committee chair reports on the activities of the committee to the Board following each committee meeting. The members of these committees are all independent.

The following chart sets out the current members of our standing committees:

	Audit Committee	Corporate Governance & Compensation Committee	Commercial Committee
Douglas P. Hayhurst	✓ (Chair)	✓	
Kevin Jiang			
Duy-Loan Le		✓	✓
Marty Neese			✓ (Chair)
James Roche	✓ ¹	✓ ¹	✓ ¹
Sherman Sun		✓	
Ian Sutcliffe	✓		✓
Janet Woodruff	✓	✓ (Chair)	

¹ As Chair of the Board Mr. Roche is an *ex officio* member of each of the committees and is entitled to vote at meetings.

After the Meeting, we will reconstitute all of the standing committees to reflect the newly elected Board.

Audit Committee

The Audit Committee is responsible for assisting the Board in fulfilling its oversight responsibilities regarding the integrity of the Corporation's accounting and financial reporting; the Corporation's systems of internal controls over financial reporting; the independence and performance of the Corporation's external and internal auditors; the identification and management of the Corporation's risks; the Corporation's whistleblower reporting processes; the Corporation's financial policies; and the review and approval of related party transactions.

The Audit Committee is responsible for recommending the appointment of our external auditors (for Shareholder approval at our annual general meeting), monitoring the external auditors' qualifications and independence, and determining the appropriate level of remuneration for the external auditors. The external auditors report directly to the Audit Committee. The Audit Committee also approves in advance, on a case-by-case basis, any services to be provided by the external auditors that are not related to the audit. The Audit Committee is also responsible for the appointment of our internal auditors (or persons responsible for the function), and directing, monitoring and providing guidance to the internal audit function and review the performance of the internal auditor at least annually.

The external auditors report directly to the Audit Committee. The Audit Committee is responsible for evaluating the effectiveness of the external audit and the external auditors and annually conducts a formal audit effectiveness assessment to drive continuous improvement in the external audit. The Audit Committee,

in coordination with Management and KPMG, continues to participate in the Canadian Public Accountability Board's audit quality indicators project. The project is aimed at improving audit quality through the use of quantitative measures to evaluate audit quality. Using the year-end audit quality indicators report, the Audit Committee will evaluate how to best integrate the indicators into its regular processes and into the external audit.

In addition, the Audit Committee is mandated to review all financial disclosure contained in prospectuses, annual reports, annual information forms, management proxy circulars and other similar documents. The Audit Committee reviews and approves, in advance, related party transactions (including transactions and agreements in respect of which a director or executive officer has a material interest) on a case-by-case basis.

For a more detailed description of the Audit Committee or to see the Audit Committee's mandate, see the section entitled "Audit Committee Matters" in our Annual Information Form dated March 5, 2020, which section is incorporated by reference into this Circular. The Audit Committee's mandate is also posted on our website (<http://ballard.com/investors/governance>).

The Audit Committee met five (5) times during 2019. The Audit Committee is constituted in accordance with SEC rules, applicable Canadian securities laws and applicable NASDAQ rules, and assists the Board in fulfilling its responsibilities by reviewing financial information, the systems of corporate controls and the audit process. The Audit Committee has at least two members, Douglas P. Hayhurst and Janet Woodruff, who qualify as audit committee financial experts under applicable securities regulations. All of the members of the Audit Committee are independent directors in accordance with the applicable Canadian and United States securities laws and exchange requirements and are financially literate.

Corporate Governance & Compensation Committee

The CGCC is responsible for the following:

- recommending the size of the Board and the formation and membership of committees of the Board;
- review and approval of all director nominations to the Board;
- determining director compensation;
- maintaining an ongoing education program for Board members;
- ensuring a formal process exists to evaluate the performance of the Board, Board committees, individual directors, and the Chair of the Board, and ensuring that appropriate actions are taken, based on the results of the evaluation, to improve the effectiveness of the Board;
- conducting succession planning for the Board; and
- monitoring corporate governance and making recommendations to enable the Board to comply with best corporate governance practices in Canada and the United States.

The CGCC is also responsible for:

- considering and authorizing the terms of employment and compensation of executive officers and providing advice on organizational and compensation structures in the various jurisdictions in which we operate;
- reviewing and setting the minimum share ownership requirement for directors and executive officers;
- reviewing all distributions under our equity-based compensation plans, and reviewing and approving the design and structure of, and any amendments to, those plans;
- ensuring appropriate CEO and senior management succession planning, recruitment, development, training and evaluation; and
- annually reviewing the performance objectives of our CEO and conducting his annual performance evaluation.

The CGCC has the authority to appoint compensation consultants, determine their level of remuneration, and oversee and terminate their services. Such consultants report directly to the CGCC.

The CGCC does not have a written policy regarding succession planning or recruitment of executive officers. However, the CGCC takes the same approach when identifying candidates for executive officers that it takes in respect of director candidates. The CGCC will, when identifying executive officer candidates:

- a) consider only candidates who are highly qualified based on their experience, expertise, perspectives, and personal skills and qualities; and
- b) consider diversity criteria including gender, age, ethnicity and geographic background.

The CGCC has not established targets for any diversity criteria for executive officers at this time. The CGCC and Board annually review executive succession plans and emerging leadership candidates, including a review of demographic information to ensure the correct focus on diversity. Individual development plans are established by management, including those for female leaders, and the Corporation has sponsored and supported participation in activities including the Minerva “Women in” annual luncheon series and Board-led career discussions. As of the Record Date, the corporation has two women executive officers.

The CGCC’s mandate is posted on our website (<http://ballard.com/investors/governance>). The mandate is reviewed annually and the CGCC’s performance is assessed annually through a process overseen by the Board.

The CGCC met six (6) times during 2019. Collectively, the CCGC members have extensive compensation-related experience as senior executives (past and present) and members of the board of directors and committees of other public and private corporations. The Board is confident that the CCGC collectively has the knowledge, experience and background to carry out the Committee’s mandate effectively and to make executive compensation decisions in the best interests of the Corporation and its Shareholders.

Commercial Committee

Following the investment by Weichai in the Corporation in late 2018, and the appointment of two Weichai nominees to the Board in early 2019, the Board established the Commercial Committee to oversee the management of the Corporation's business and affairs relating to certain existing or prospective key partners (which may include customers, suppliers, contract manufacturers, joint venture or other strategic partners) and commercially sensitive and/or proprietary information.

Members of the Commercial Committee must not, in the opinion of the Board: (i) have a direct or indirect material relationship with any key partner of the Corporation; or (ii) have a relationship with a key partner that could reasonably be expected to compromise any commercially sensitive and/or proprietary information of any other key partners or of the Corporation.

The Commercial Committee’s mandate is posted on our website (<http://ballard.com/investors/governance>).

The Commercial Committee met three (3) times in 2019.

EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

This section discusses the elements of compensation earned by our “Named Executive Officers” (or “NEOs”) as of December 31, 2019:

Randy MacEwen	Anthony Guglielmin	Robert Campbell	Kevin Colbow	Sarbjot Sidhu
President and Chief Executive Officer	Vice President and Chief Financial Officer	Vice President and Chief Commercial Officer	Vice President and Chief Technology Officer	Vice President, Operations

INTRODUCTION

The Corporation puts a considerable amount of effort into the development, and ongoing monitoring and management, of our executive compensation plan. This includes monitoring of industry best-practices, benchmarking against relevant comparators inside and outside the fuel cell industry sector, and the involvement of expert third parties to provide independent advice. We also solicit investor feedback on our executive compensation approach by providing an advisory “say-on-pay” vote.

Executive Compensation Program Highlights

Ballard’s executive compensation program is designed to attract the skillsets and experience needed to lead the development and execution of the Corporation’s strategy, to incent and reward executives appropriately for performance and risk management, to incent retention and to align executive compensation with long-term shareholder value. Our executive compensation program is comprised of the following elements:

- **Annual Base Salary** – set to reflect the size and scope of the role, as well as individual experience and performance, and market competitiveness;
- **Annual Performance Bonus** – expressed as a percentage of annual base salary and typically paid in cash (or a combination of cash and Deferred Share Units), annual performance bonus is determined based on achievement levels against a weighted mix of annual corporate performance goals and individual performance goals, both quantitative and qualitative – at the Board’s discretion;
- **Long-Term Incentive**
 - **Performance Share Units (PSUs)** – performance-based PSUs are typically awarded annually as a percentage of annual base salary, with equal thirds earned over three years, subject to the achievement of defined corporate performance objectives; PSUs are aligned with shareholder interests as vesting is dependent on corporate performance, retention over three years, and the realizable value of PSUs partly depends on our share price after vesting. In limited circumstances, such as new hire grants, PSUs may be awarded that are subject to time vesting only, typically over three years; these one-time awards are aligned with shareholder interests as the realizable value depends on our share price after vesting. For awards made in 2016 and after, we determined that PSU grants will cliff vest after three years.
 - **Stock Options** – stock options are awarded annually, vest rateably over three years and have a seven year term; stock options are aligned with shareholder interests as their realizable value depends on growth in our share price.

With these compensation elements, a significant proportion of compensation is put “at risk” (for NEOs, from 53% to 69% of total compensation) since it depends on successful corporate and individual performance as well as growth in Ballard’s share price – which effectively aligns executive compensation with shareholder interests.

To further align with the shareholder experience, our executive officers are required to comply with minimum share ownership requirements. Specifically, executive officers (other than the CEO) are required to hold 100% of their individual base salary in Shares or DSUs. The CEO is required to hold 300% of his base salary in Shares or DSUs. All executives have 5 years in which to meet this minimum share ownership requirement.

In setting, monitoring and managing executive compensation, the Corporation ensures careful consideration of the relevant factors impacting each element of the total compensation plan through a rigorous process, with appropriate oversight designed to pay appropriate short- and long-term incentive amounts that are strongly aligned with the creation of long-term value for shareholders.

All executives have entered into a standard executive employment agreement, each of which includes provisions dealing with termination (and, in certain cases, change of control), claw-back provisions and minimum shareholding provisions.

Significant Recent Program Changes

Executive Claw-Back Provisions

Since 2017, all Named Executive Officers have agreed to the following claw-back provision:

- Where there is a restatement of the financial results of the Corporation for any reason other than a restatement caused by a change in applicable accounting rules or interpretations, and, in connection with such restatement a senior officer engaged in gross negligence, fraud or willful misconduct, the Board may: (a) require that a senior officer return or repay to the Corporation, or reimburse the Corporation for, all or part of the after-tax portion of any excess compensation; and/or (b) cause all or part of any awarded and unpaid or unexercised performance-based compensation (whether vested or unvested) that constitutes excess compensation for a senior officer to be cancelled.

Executive Compensation Review

- In 2018 and 2019, the CGCC engaged with Willis Towers Watson in order to conduct a competitive review of compensation for the executive team, including, base salary, performance bonus incentive, target total cash (salary and target bonus) and long-term incentive awards. Data was sourced by Willis Towers Watson from a comparator group (updated list disclosed below) and Willis Towers Watson's General Industry Executive Compensation Survey. The CGCC considered the results of this review and the recommendations of Willis Towers Watson its determination of executive base compensation adjustments.
- In 2018, two changes were implemented relating to the structure and calculation of executive short-term incentive bonuses. The first is that the weighting between corporate and individual performance changed from 50% corporate and 50% individual performance weighting to 70% corporate and 30% individual. The second is that the bonus calculation would be determined by adding the corporate and individual scores together rather than multiplying them, as previously used. The new method puts greater emphasis on achievement of corporate objectives and provides a stronger alignment with teamwork.

Context of Our Executive Compensation Practices

There are a number of industry and business factors that present challenges to creating and implementing an effective executive compensation program, including the following:

- Despite our lengthy history, we are a pre-profit, publicly-listed company developing and commercializing new technology, products and services that are highly disruptive in our markets and disruptive to incumbent markets.
- Our business is complex and volatile:
 - We have a relatively complex business model for a company with our revenue base. Our business activities include technology and product development, commercialization of new

products in global markets, manufacturing operations, engineering services, sales and marketing for various market applications, and after-sales service support. We have operations and offices in Canada, the United States, Denmark, and China (and joint venture interests in China that require active oversight); and an international sales and service team. Many of our customers and markets are outside North America, which creates a degree of complexity, and requires us to recruit executives with wider skills and more international experience than may be the case for many companies our size.

- Setting longer-term performance targets in an early-stage business with significant volatility and market risks is particularly challenging. The CGCC seeks to balance setting concrete, challenging performance targets that reflect genuine progress in the business consistent with our strategy, which are also reasonably achievable and capable of dealing with the volatility and complexity of our business.
- While we may be considered an industrial products company, we also compete for talent in the technology industry, where there is a higher emphasis on equity to compensate key employees than general industry.
- We use equity incentives as a way to compete for talent with larger companies while conserving our shareholders' cash for investment in our business.
- Many of our competitors are headquartered in the United States and Europe and are subject to different market conditions relating to executive compensation than typical Canadian-headquartered companies.
- Our head office is located in Burnaby, British Columbia, which is a suburb of Vancouver. The Greater Vancouver Area has increasingly become a relatively high cost of living area.

The CGCC seeks to balance these factors, the expectations of our shareholders and the highest standards of governance. As our business becomes more robust and predictable through the execution of our strategy, the CGCC intends to continue to align compensation more predictably to performance, for example, through the use of performance metrics that demonstrate and measure our performance relative to comparator group companies.

Highlights of our Executive Compensation Philosophy

Our compensation philosophy focuses on creating shareholder value, paying for performance and effective risk management. Our objective is to pay competitively in the markets in which we compete for talent, while also aligning compensation with value created for shareholders.

We target our compensation at the 50th percentile of the market, with actual compensation varying above and below based on relative experience and on performance.

Objectives	How We Achieve It
Attract and retain	<ul style="list-style-type: none"> • Paying compensation, including salaries, which are competitive in the markets in which we compete for executive talent
Motivate	<ul style="list-style-type: none"> • Directly linking bonuses to annual performance measures that are tied to our corporate strategy to motivate short term performance • Delivering a majority of long-term incentives contingent on achieving sustained performance consistent with our corporate strategy
Align	<ul style="list-style-type: none"> • Delivering a significant portion of total compensation in long-term incentives that are tied to our creation of shareholder value, including share price performance • Requiring executive officers to maintain a meaningful equity ownership in Ballard

The Use of Benchmarking

Our overall compensation objective is to pay executives, on average, around the 50th percentile of our comparator group for achieving performance goals at the levels targeted by the Board. Over-achievement or under-achievement will result in actual payments for performance-based compensation being over or under the targeted amounts.

Benchmarking for a company of Ballard’s size and stage of business is particularly challenging as our industry is nascent and there are few direct comparables. Many of the direct competitors in our industry are private or smaller fuel cell companies that are publicly traded. By contrast, companies in broader comparator groups, such as industrials and technology companies, are often significantly larger revenue companies that provide similarly inappropriate benchmarks. In determining the appropriate comparator group, the CGCC considers several factors detailed below, including the labor markets in which we compete for executive talent.

In 2019, the CGCC, working with Willis Towers Watson, updated the comparator companies comprising the Corporation’s compensation comparator group to better reflect the Corporation’s current business size, complexity and market focus. A revised list of comparator companies was reviewed and accepted by the CGCC. The selected group of comparators includes a suitable mix of Canadian and United States companies exhibiting a mix of revenues, employee base, asset base, market capitalization, business complexity and market focus. This comparator group provides the primary source of compensation data used to review the competitiveness of our executive compensation. In addition, market survey data is used as a secondary source. The CGCC reviews and updates the composition of the comparator group annually.

Our current comparator group is:

Canada (8)	United States (7)
ATS Automation Tooling Systems Inc.	Allied Motion Technologies Inc.
Calian Group Ltd.	American Superconductor Corporation
Enghouse Systems Limited	Bloom Energy Corporation
EXFO Inc.	Enphase Energy Inc.
Kinaxis Inc.	nLIGHT, Inc.
Magellan Aerospace Corporation	Plug Power Inc.
Sierra Wireless, Inc.	Ultralife Corporation
Westport Fuel Systems Inc.	

The CGCC compares each executive officer’s annual salary, target annual incentive bonus and long-term incentive compensation value, both separately and in the aggregate, to amounts paid for similar positions at comparator group companies to the extent possible.

Market Analysis

In 2019, Willis Towers Watson assessed the market competitiveness of the compensation arrangements for Ballard’s executive team against the comparator group of companies, considering the market data in nominal dollars (US\$ = CDN\$) for target total direct compensation (salary + target bonus + long-term incentives). Based on this assessment, no changes were made to the compensation structure for 2019 as outlined below.

Compensation Framework for 2019

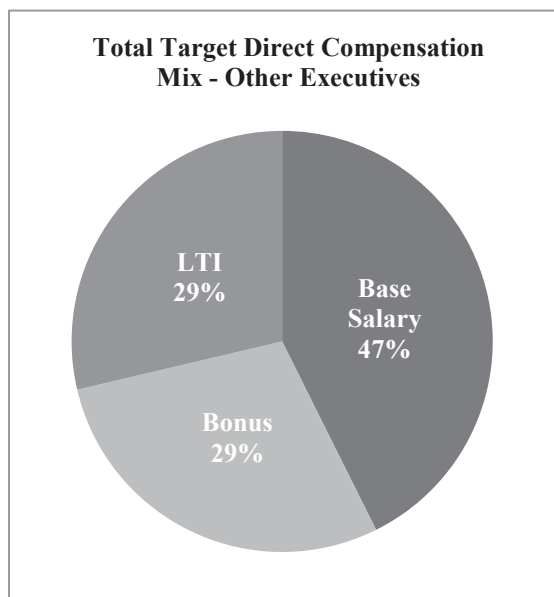
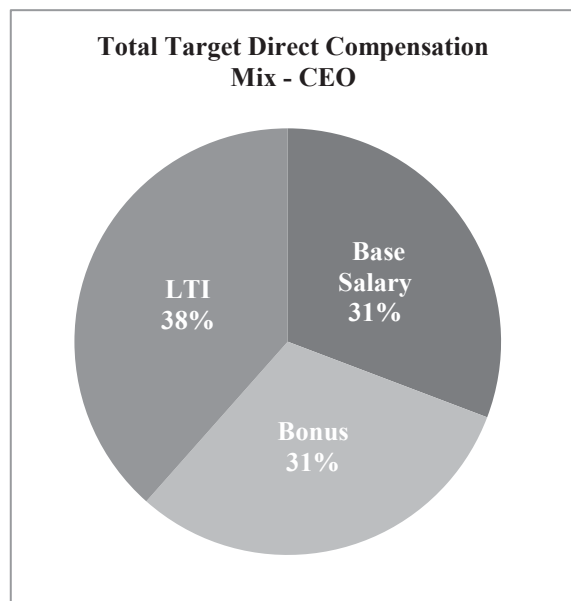
The compensation program for our executive officers has five primary components that deliver pay over the short- and long-term:

Element	Features	2019 Performance Measures
Base Salary	<ul style="list-style-type: none"> Set to reflect market conditions and the size and scope of the role, internal alignment, as well as individual experience and performance 	N/A
Annual Bonus	<ul style="list-style-type: none"> Paid annually in cash or DSUs Each executive has a specified target bonus expressed as a percentage of base salary Actual bonuses based on Corporate and Individual performance multipliers that range from 0% - 150% of target based on Corporate and Individual performance Outcomes are formula-driven subject to the Board’s overarching discretion 	<p>Corporate</p> <p><u>Quantitative (50%)</u></p> <ul style="list-style-type: none"> Revenue Gross margin \$ Cash flow from operations <p><u>Qualitative (50%)</u></p> <ul style="list-style-type: none"> Achieving Key Milestones for the Weichai-Ballard JV development program Signing Significant Strategic Agreement

Element	Features	2019 Performance Measures
Long-Term Incentive: Performance Share Units (PSUs)	<ul style="list-style-type: none"> Each executive has a specified target long-term incentive expressed as a percentage of base salary 75% of each executive’s target long-term incentive is awarded in the form of PSUs Annual awards earned in equal thirds based on annual achievement of Corporate objectives, with vesting after three years Payout can range from 0% - 150% of target award For special purposes (e.g. on-hire award), one-time awards vest in equal thirds over three year period 	<ul style="list-style-type: none"> Annual Revenue Gross Margin \$
Long-Term Incentive: Stock Options	<ul style="list-style-type: none"> Annual grants (25% of each executive’s target long-term incentive is awarded in the form of Stock Options) Exercise price equal to market price at grant Awards vest in equal amounts annually over three years Seven-year term 	<ul style="list-style-type: none"> N/A Option value contingent on share price growth

Executive Pay Mix and the Emphasis on “At Risk” Pay

We emphasize performance by linking a significant proportion of our executive officers’ total annual compensation to corporate and individual performance. For 2019, the amount of target annual compensation earned that was “at risk” was 69% for the CEO, and 59% for our other Named Executive Officers, in the form of variable and/or performance-related compensation as shown below (including annual bonus, PSUs and stock options). As such, executives will only receive value from those elements to the extent that the relevant performance conditions are met. With long-term incentive (LTI), values also aligned with share price performance.



Pay for Performance and Incentive Awards aligned with Shareholders Interests

The alignment between pay for performance for executive officers and Shareholder interests is clearly demonstrated as follows:

Annual Bonus Plan – Performance measures are substantially and directly linked to the Annual Operating Plan and achievement against those measures determines the size of the annual executive bonus award. When corporate performance is below the minimum level expected by the Board this amount could be zero. Equally, over achievement against the measures may result in payment of bonus greater than the targeted amount, up to a capped amount.

Long Term Incentive Plan –PSUs deliver compensation value to executives by tying the earning of PSUs (i.e. ability to receive value from units) to the extent that performance measures related to key business objectives are met, while the value of each vested unit changes in line with movements in the Corporation’s share price. Stock Options align pay with share price performance as the compensation realised is based solely on share price appreciation.

How Executive Compensation is Determined

The CGCC reviews and approves executive officers’ benefit policies and compensation plans, including our annual bonus plan and our long-term equity-based compensation plans. As part of its mandate, the CGCC:

- Approves and recommends to the Board the appointment of our executive officers;
- Reviews and approves the amount and form of their compensation, their development and succession plans, and any significant executive management changes;
- Retains independent compensation consultants for professional advice and as a source of competitive market information as required;
- Determines the annual compensation, sets the performance conditions relating to the annual bonus and long-term incentives, and determines the actual bonus payments in relation to our President and CEO. The President and CEO is not a member of the CGCC and does not participate in the portions of the CGCC discussions that relate directly to his personal compensation;
- Seeks the advice and recommendations of our President and CEO with respect to the compensation of our other executive officers including setting annual compensation, approving performance conditions and targets for short- and long-term incentive awards, and proposed long-term incentive awards and actual bonus payments; and
- Ensures 100% of CGCC meetings include an in-camera session, and our CGCC is advised by independent compensation counsel.

Annual Salary

The CGCC approves the annual salary of our executive officers. Salary guidelines and adjustments for our executive officers are considered with reference to:

- a) compensation benchmarking as set out above;
- b) the experience and qualifications of each executive officer;
- c) the individual performance of each executive officer; and
- d) the scope of responsibilities of each executive officer.

In 2019, based on the analysis and recommendations from Willis Towers Watson, the following base salaries were approved by the CGCC:

Randy MacEwen, President & CEO	\$577,500
Anthony Guglielmin, Vice President & CFO	\$358,750
Robert Campbell, Vice President & COO	\$358,750
Kevin Colbow, Vice President & CTO	\$275,000
Sarbjot Sidhu, Vice President, Operations	\$220,000

Annual Bonus for Executive Officers

In 2019, the annual target bonus was 100% of base salary for Mr. MacEwen, and 70% of base salary for Mr. Guglielmin and Mr. Campbell, which were unchanged from 2018. The annual target bonus for Dr. Colbow was increased from 55% in 2018 to 70% of base salary for 2019, reflecting the change in Dr. Colbow’s role from Vice President, Technology & Product Development to Vice President and Chief Technology Officer. For Ms. Sidhu, who was appointed Vice President, Operations in December 2018, her annual target bonus was established at 55% of base salary. Annual performance bonus payments for each of the executive officers are determined at the discretion of the CGCC and the Board with reference to (i) actual annual corporate performance against predetermined Corporate Scorecard goals, resulting in a Corporate Scorecard Multiplier, and (ii) actual annual individual executive performance against predetermined annual individual objectives, resulting in an Individual Performance Multiplier.

The Corporate Scorecard typically includes weighted quantitative financial objectives and weighted qualitative strategic objectives. The individual scorecard performance is determined by the achievement of the executive against a weighted individual scorecard with quantitative and qualitative goals that typically support and align with the Corporate Scorecard as well as the individual executive’s performance against the Corporation’s cultural values.

For a full discussion of annual incentive compensation for our President and CEO, see the section entitled “CEO Compensation”.

Methodology for Determining Annual Incentives

For 2019, the actual annual bonus for each executive officer is determined by the CGCC on the basis of the following formula:

$$\text{Actual Bonus} = \text{Annual Base Salary} \times \text{Target Bonus \%} \times \left(70\% \times \text{Corporate Scorecard Multiplier} + 30\% \times \text{Ind. Performance Multiplier} \right)$$

Corporate Scorecard Multiplier

The Corporate Scorecard Multiplier is determined on completion of each fiscal year by the CGCC and approved by the Board with reference to achievement against the corporate goals set out in a Corporate Performance Scorecard approved by the CGCC and the Board at the commencement of the year. Each corporate performance goal on the Corporate Performance Scorecard is assigned a relative weighting in terms of importance to the performance of the Corporation. The Corporate Performance Scorecard typically includes a mix of quantitative financial metrics and qualitative goals. The quantitative financial metrics typically include a threshold level of performance below which the contribution of that goal to the overall corporate scorecard multiplier is zero, and a maximum beyond which no further contribution to the corporate scorecard multiplier accrues. The financial metrics typically contain a “stretch” achievement component whereby 100% achievement of the pre-determined financial metrics against the Corporation’s annual operating plan goals equates to 50% payout with respect to such financial goals. This means that in order to achieve 100% payout against the financial targets in the Corporate Performance Scorecard, actual annual performance must exceed the annual operating plan.

For 2019, the Corporate Performance Scorecard reflected a balance of quantitative annual goals focused on delivery of the 2019 operating plan (50% of the scorecard) and qualitative goals focused on key strategic outcomes to be achieved during 2019 to better position the Corporation for longer term success (50% of the scorecard).

The quantitative annual goals related to annual revenue, gross margin contribution (in dollars) and cash flow from operations. The revenue, gross margin and cash flow from operations goals were weighted at 15%, 15% and 20% (respectively), representing a total of 50% of the 2019 Corporate Scorecard. The range of possible scoring against each of these quantitative goals was between 0% and 150% of achievement, with a 50% rating being achieved at the Corporation’s annual operating plan for 2019.

The two qualitative goals were each weighted at 25% (50% in total). The first qualitative goal was focused on the Corporation’s achievement against key milestones for the development program with Weichai Ballard Hy-Energy Technologies Co., Ltd. (the “**Weichai-Ballard JV**”). The second qualitative goal was focused on signing an agreement relating to a significant strategic transaction, major customer program or major commercial contract for a market outside of China that supports future scaling and profitability.

Based on the Corporation’s actual performance in 2019, the CGCC and Board assessed the Corporate Performance Scorecard as follows:

Component Weight	Performance Areas	Performance Highlights
Quantitative (50%)	Annual revenue	Over-achieved
	Annual gross margin dollar contribution	Partially achieved
	Annual cash flow from operations	Over-achieved
Qualitative (50%)	Achieve key milestones for the Weichai - Ballard Joint Venture development program	Over-achieved
	Signing significant strategic agreement	Partially achieved

The Corporation’s 2019 revenue of \$106.3 million exceeded the annual operating plan target, as did the defined metric of cash flow from operations. The 2019 gross margin contribution of \$22.6 million did not achieve 100% of the annual operating plan target.

The Corporation met or exceeded the key milestones for the Weichai-Ballard JV development program, with construction of the joint venture facility moving toward commissioning in 2020; and receiving purchase orders for fuel cell products from the Weichai-Ballard JV. The Corporation also signed several strategic agreements in 2019, including for the H2Bus Europe Consortium; a heavy-duty mining truck demonstration in South Africa with Anglo American; and a development agreement with Hydrogene de France for development and integration of multi-MW scale fuel cell system in South America.

Based on its review and assessment, the CGCC and Board determined the Corporate Scorecard Multiplier achievement for 2019 was 107.5%.

Individual Performance Multiplier

The individual performance multiplier is determined with reference to achievement against the individual goals set for each executive officer and demonstration of the Corporation’s cultural values. Individual goals are set for individual executive officers by the CEO and reviewed by the CGCC, and are based on agreed, objective and identifiable measures related to their roles, and aligned to the corporate performance goals. An individual performance multiplier greater than 100% may be awarded for superior performance against these

goals, with an individual performance multiplier of less than 100% being awarded for performance that does not achieve the goals.

In 2019, each Named Executive Officer had an individual multiplier of 125%. Our executive officers received their 2019 bonus in cash.

A summary of the Named Executive Officers' annual bonus payments for 2019 is as follows:

Name	Target Bonus (% of salary)	Corporate Score / Multiplier	Individual Score / Multiplier	Performance Bonus	Bonus paid as a % of Salary
CEO ⁽¹⁾	100%	107.5%	125%	\$641,962	113%
Other NEOs	55% - 70%	107.5%	125%	\$136,428 - \$283,143	62% - 80%

⁽¹⁾ A portion of Mr. MacEwen's bonus was earned and paid in United States dollars. The United States dollar amounts were converted into Canadian dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

Long Term Incentives

We provide our executive officers with equity-based long-term incentives through the Consolidated Share Option Plan (“**Option Plan**”) and the Consolidated Share Distribution Plan (“**SDP**”). Our equity-based long-term incentives typically take the form of Stock Options or PSUs. These plans are designed to align executive officer remuneration with performance and long-term shareholder value. They serve a vital role in retaining executives as value under the plans is only received over time.

Performance Share Units

Performance Share Units (PSUs) typically comprise 75% of the long-term incentive compensation provided to an executive. The number of PSUs awarded to each executive officer is usually determined in the first quarter of each financial year, as a percentage of base salary. The PSUs provide for earning of one third of the grant each year over a period of three years, subject to achievement of certain performance criteria (the “**PSU Scorecard**”) in each year.

PSU Scorecard	Earned PSUs
< 25%	0%
≥25% and <50%	50%
≥50% and ≤100%	100%
>100%	Up to 150%

Although PSUs are earned during each of the three years based on performance, they are also subject to a vesting time period. For awards made in 2016 and after, earned PSUs vest three years after the award grant date. For example, for PSUs granted in 2017, one third are earned in each of 2018, 2019 and 2020; all earned PSUs then vest in 2020. Redemption of vested PSUs may be satisfied either with Shares bought under the Market Purchase PSU Plan or by treasury Shares reserved under the SDP.

One-time PSU grants that are subject to time vesting only vest one third of the grant each year over a period of three years and are not subject to the PSU Scorecard.

Stock Options

Stock options are an integral part of each executive's annual compensation package and are granted annually in respect of approximately 25% of the long-term incentive compensation to be provided to an executive.

Under our Option Plan:

- a) the exercise price of each option is determined by the Board, but must not be less than the closing price per Share on the TSX or NASDAQ on the last trading day before the date the option is granted; and
- b) each option may be exercised by the holder in respect of up to one-third of the Shares subject to the option on or after the first, second and third anniversary of the effective date of the option on a cumulative basis.

Vested stock options may normally be exercised for a period of seven years from the grant date (the option “term”).

Target Value of LTI

The target value of long-term incentives granted to Named Executive Officers in 2019, and the composition of long-term incentives is set out in the table below.

Name	Target LTI (\$)	Total LTI Mix (%)	
		PSUs ¹	Stock Options ²
Mr. MacEwen	721,875	75%	25%
Mr. Guglielmin	251,125	75%	25%
Mr. Campbell	251,125	75%	25%
Dr. Colbow	192,500	75%	25%
Ms. Sidhu	121,000	75%	25%

1 Converted to a number of PSUs dividing the dollar value by the closing Share price on either the TSX or NASDAQ on the award date.

2 Converted to a number of options by dividing the dollar value by the Black-Scholes value of the option on the award date. The exercise price of these options was determined based on the closing Share price on the day prior to the award date.

This element of compensation supports the Corporation’s overall compensation objectives by linking our Shareholders’ interests with those of our executive officers, by providing our executive officers with compensation that is driven by the experience of our Shareholders in terms of our share price performance, and in the case of PSUs is further tied to the achievement of performance measures. In addition, we require our executive officers to comply with minimum share ownership guidelines that further align them with the Shareholders’ experience.

For 2019, the awards to our Named Executive Officers were as follows:

Name	Total LTI Granted (\$)	Number Granted		% of Base Salary
		PSUs	Stock Options	
Mr. MacEwen ¹	711,644	134,308	99,235	125%
Mr. Guglielmin	251,125	46,163	34,120	70%
Mr. Campbell	251,125	46,163	34,120	70%
Dr. Colbow	192,500	35,386	26,155	70%
Ms. Sidhu	121,000	22,243	16,440	55%

1 LTI is granted to Mr. MacEwen in \$USD, whereas target LTI value is calculated in \$CAD.

Units Granted

In 2019, PSUs were issued to the Named Executive Officers, including the President and CEO, using the methodology described above on the following dates and amounts:

March 15, 2019 284,262

Vesting Awards

In 2019, the following PSUs vested and were redeemed into Shares for the Named Executive Officers:

March 8, 2019, 442,358 PSUs vested and after statutory withholdings, 233,525 PSUs were redeemed into Shares, representing the 2016 annual PSU awards granted to Messrs. MacEwen, Guglielmin, Colbow, and Ms. Sidhu, a third of which were earned subject to the 2016, 2017, and 2018 PSU Scorecard achievements, which were 133.11%, 138.7%, and 61%, respectively.

On May 3, 2019, 26,944 PSUs vested and after statutory withholdings, 13,525 PSUs were redeemed into shares, representing one-third of Mr. Campbell's new hire PSU grant that is subject to time vesting only.

On December 6, 2019, 7,898 PSUs vested and after statutory withholdings, 3,964 PSUs were redeemed into shares, representing one-third of Ms. Sidhu's promotion PSU grant that is subject to time vesting only.

Earned Awards

In 2019, the performance criteria for the PSU Scorecard were scaled targets for annual revenue and gross margin dollars that were linked to the 2019 Annual Operating Plan but lower than the corresponding Corporate Scorecard targets. Revenue and gross margin performance were weighted equally under the PSU Scorecard.

Based on the Corporation's performance, the CGCC and Board approved a 2019 PSU Scorecard achievement of 123%. As a result, for outstanding PSU awards granted in 2017, 2018 and 2019 that are subject to it, 123% of the PSUs were earned. As noted above, these awards are subject to a 3-year cliff vesting period.

CEO Compensation

In April 2018, Mr. MacEwen transitioned onto Ballard's United States payroll system. His compensation was based on CDN \$550,000, converted to United States dollars and paid through the Ballard United States payroll system. In February 2019, Mr. MacEwen's base salary was adjusted to CDN \$577,500 (converted to United States dollars).

Mr. MacEwen's target bonus for 2019 was CDN\$577,500, which was 100% of his annual base salary. His actual bonus for 2019 was determined by the CGCC on the basis of corporate financial and operational performance reflected in the Corporate Performance Scorecard rating (70% weighting), plus performance relative to his individual goals for 2019 (30% weighting), as approved by the Board.

**Annual Bonus
Performance
Areas** **Outcome**

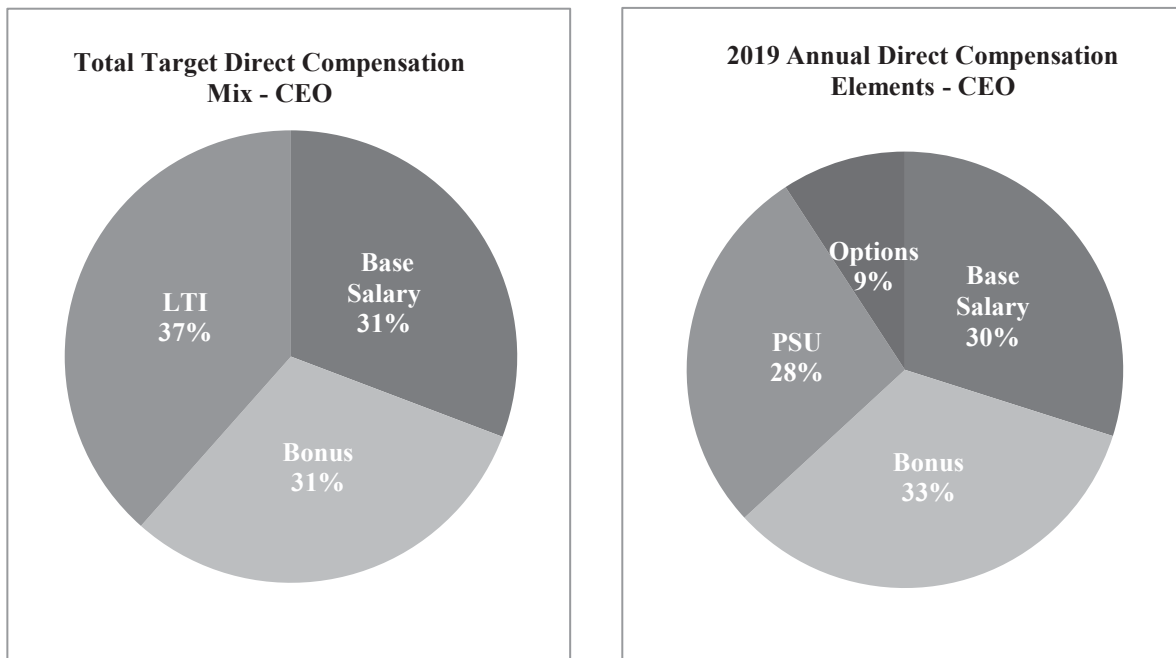
Corporate	Specific corporate quantitative and qualitative results are described in detail under “Corporate Scorecard Multiplier” In 2019, the corporate score was 107.5% of target
Individual	Mr. MacEwen’s individual objectives for 2019 were: <ol style="list-style-type: none"> <u>Sustainability</u> – Over-Achieved This objective focused on improving the Corporation’s positioning to achieve profitability and cash flow breakeven by strengthening the Company’s strategic positioning (including markets, customers, technology, products, competencies, assets) for long-term health, profitability, success and risk mitigation. <u>Strategy Development and Communications</u> – Over-Achieved This objective focused on improving the corporate strategy development process, including management and board engagement, as well as communication of strategy to various stakeholders. <u>Organizational Design and Development</u> – Over-Achieved This objective focused on continuous improvement on living our cultural values, improving the safety culture, knowledge sharing and how the organization works together, ensuring the continued development and strengthening of the Executive Team and organizational capabilities to support the strategic plan. <p>In 2019, Mr. MacEwen’s individual performance multiplier was 125% of target.</p>
Overall Outcome	Mr. MacEwen’s annual bonus award was CDN\$641,962 ¹ representing 113% of his target bonus, based on a corporate multiplier of 107.5% (weighted 30%) and an individual performance multiplier of 125% (weighted 70%).

Long-term Incentives	Type	Value	Features
Annual Award (\$721,875) ²	Stock Option	\$177,862	7-year term, with one-third of the options vesting at the end of each of the first three years
	PSU	\$533,782	3-year vesting with performance criteria

1 A portion of Mr. MacEwen’s bonus was earned and paid in United States dollars. The United States dollar amounts were converted into Canadian dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

2 The value of Mr. MacEwen’s long-term incentive awards was calculated in Canadian dollars, converted to United States dollars based on the prevailing exchange rate and paid in United States dollars. The corresponding United States dollar amounts were converted into Canadian dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

For the CEO, 69% of his target compensation is ‘at-risk’ (via the annual bonus plan and long term incentive awards): 61% of his target compensation is linked directly to performance goals (via annual bonus plan and PSUs); and 37% of his target compensation is linked to the performance of the Ballard common shares (via PSUs and Stock Option grants).



CEO Realized Pay

In 2019, actual CEO realized pay, as defined by the sum of base salary earned, annual bonus achieved plus the value of vested equity during the year equalled CDN\$2,576,543 in total.

Perquisites

In addition to cash and equity compensation, the Corporation provides Named Executive Officers with certain personal benefits, consistent with similar benefits coverage within the comparator group. These benefits include a car allowance, medical benefits program, long and short-term disability coverage, life insurance, an annual medical and a financial planning allowance.

Retirement Benefits

Executives are eligible to receive a matching contribution by the Corporation to their RRSP or 401K. Executives paid in Canada receive an RRSP contribution up to 50% of the maximum amount allowable under the *Income Tax Act* (Canada). Executives paid in the United States receive a 401K contribution up to 50% of the maximum amount allowable under the *Internal Revenue Code* (United States). Annual contributions are pro-rated for any partial year of employment.

In 2019

Mr. MacEwen received a 401K contribution equal to 50% of the allowable maximum under the *Internal Revenue Code* (United States), as he made an equivalent personal matching contribution.

Mr. Guglielmin, Dr. Colbow, Mr. Campbell and Ms. Sidhu received an RRSP contribution from the Corporation, equal to 50% of the maximum amount allowable under the *Income Tax Act* (Canada), as each of them made an equivalent personal matching contribution.

None of the Named Executive Officers participated in any Corporation-sponsored Defined Benefits Plan, Defined Contribution Plan, or Supplemental Executive Retirement Plan, nor did they receive contributions to any such plan on their behalf from the Corporation.

Share Ownership Guidelines and Share Trading Policy

Our minimum share ownership guidelines oblige each executive officer to own a minimum number of our Shares expressed as a multiple of base salary as set out below.

Position	Multiple of Base Salary
President and CEO	3.0x
Other Executives	1.0x

For the purposes of this section, the “fair market value” is defined as the closing price of our Shares as listed on the TSX on the date that the executive officer acquired the Common Shares, or DSUs were allocated to them. The CEO has met his minimum share ownership requirements: all other executive officers have met or are on track to meet the applicable guidelines. Executives have 5 years in which to meet these requirements.

Executives and directors are not permitted to hedge the market value of the Corporation securities granted to them as compensation or otherwise held, directly or indirectly, by them.

Compensation Risk Considerations

The CGCC and Board believe that the risk associated with our compensation practices is relatively low. Given the increased emphasis placed on ensuring that compensation practices do not encourage behaviours that expose the corporation to greater risk, the CGCC and Board continue to monitor this issue closely.

The CGCC and Board consider the risks associated with the Corporation’s compensation policies and practices are mitigated by:

- its evaluation of the impact of each compensation component on management behaviour:
 - total compensation levels are set relative to median of a comparator group of companies that are broadly comparable to the Corporation;
 - base salary is set relative to median and at levels which the CGCC considers unlikely to create inappropriate risks;
 - for short term cash incentives, the potential risks are evaluated as low as the plan uses multiple metrics in the Corporate Multiplier, both quantitative and qualitative (described above) and maximum earnings available under each component of the plan are capped;
 - the use of long-term incentives themselves minimizes short-term or inappropriate risk-taking by linking value to long-term share price performance, and
 - the long-term equity-based incentive programs are evaluated as low risk in structure, in part due to the mix of PSU and Option awards with overlapping terms and vesting / performance periods, and/or performance based vesting conditions that are generally consistent with public company risks;
- ensuring the CGCC and Board mandates reflect appropriate accountabilities, oversight and controls on the Corporation’s compensation policies and practices, especially as they relate to executive compensation; and
- working with management and/or external consultants to stress test each compensation component, to ensure boundary conditions are reasonable and do not produce unexpected or unintended financial windfalls.

The CGCC and Board have not identified any risks arising from the compensation policies and practices that are reasonably likely to have a material adverse effect on the Corporation.

Advisors to the Corporate Governance & Compensation Committee

Willis Towers Watson has been retained by the CGCC since 2008 to provide executive compensation benchmarking and general executive compensation, equity plan and Board compensation advisory services. As noted above, in 2019, Willis Towers Watson provided input into the Executive Compensation Review.

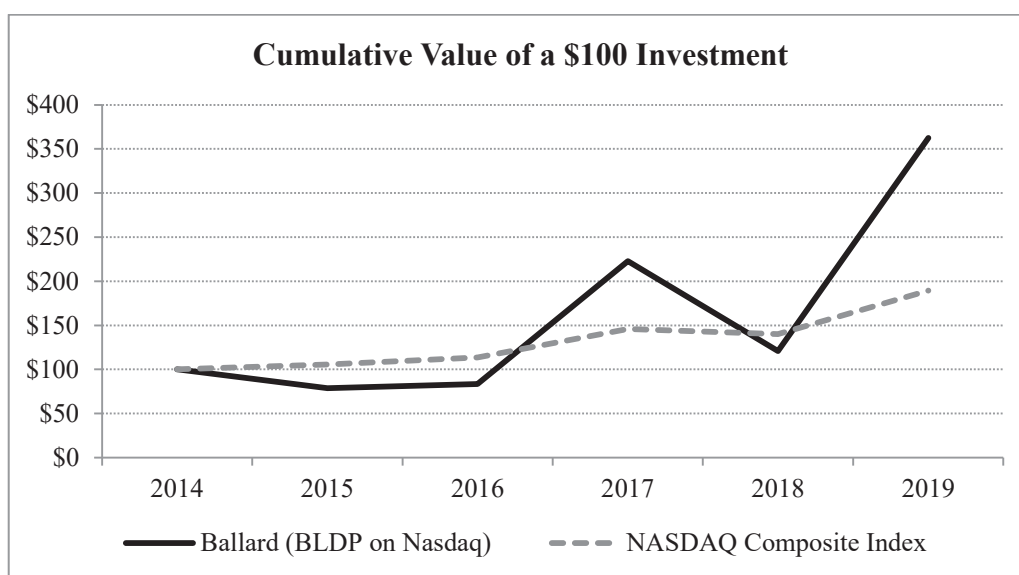
The following table sets out the fees paid to Willis Towers Watson during each of the three most recently completed financial years:

	Compensation-Related Fees	All Other Fees
2019	\$94,170	Nil
2018	\$7,905	Nil
2017	\$74,897	Nil

Performance Graph

The following graph compares the total cumulative return to a Shareholder who invested \$100 in our Shares on December 31, 2010, assuming reinvestment of dividends, with the total cumulative return of \$100 on the NASDAQ Composite Index for the last five years. NASDAQ data was selected because the majority of trading of Ballard's shares (typically >75%) occurs on this exchange.

(Dec 31)	2014	2015	2016	2017	2018	2019
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Ballard	100	79	83	223	121	363
NASDAQ Composite Index	100	106	114	146	140	189



The trend shown by this graph does not reflect the trend in the Corporation's compensation to its Named Executive Officers.

2020 Program Changes

The CGCC, with the assistance of Willis Towers Watson, made two changes to our executive compensation program effective for 2020.

Annual Bonus

For 2020, we have changed our approach to setting the Corporate Scorecard whereby achievement of the quantitative financial objectives measured against the Corporation's annual operation plan goals now equates to 100% bonus payout with respect to such financial objectives. Previously, achievement of the quantitative financial objectives measured against the annual operating plan resulted in a 50% bonus payout. The CGCC determined that this change more closely aligns with the Corporation's compensation philosophy on competitive compensation tied to performance and the bonus approach typically taken by our comparator companies.

Long-Term Incentive

For 2020, we increased the target value of the CEO's annual-long term incentive grant from 125% of base salary to 175% of base salary. The CGCC determined that this target value for the CEO's long-term incentive more closely aligned with market conditions as determined by reviewing CEO long-term incentive grants by our comparator companies.

Executive Compensation Tables

The following table summarizes the compensation paid for the fiscal years ended on December 31, 2017, December 31, 2018 and December 31, 2019 to our Named Executive Officers.

Summary Compensation Table							
Name and Principal Position	Year	Salary ⁽⁵⁾ (CDN\$)	Bonus ⁽⁶⁾ (CDN\$)	Long-Term Incentives		All Other Compensation ⁽⁹⁾ (CDN\$)	Total Compensation (CDN\$)
				Share-Based Awards ⁽⁷⁾ (CDN\$)	Option-Based Awards ⁽⁸⁾ (CDN\$)		
Randy MacEwen ^(1,2) President and Chief Executive Officer	2019	566,911	641,962	533,782	177,862	37,663	1,958,180
	2018	552,550	652,796	515,625	171,875	38,079	1,930,925
	2017	540,385	756,250	515,625	171,875	53,721	2,037,856
Anthony Guglielmin Vice President and Chief Financial Officer	2019	357,404	283,143	188,344	62,781	38,727	930,399
	2018	350,000	315,658	183,750	61,250	41,116	951,774
	2017	343,846	404,250	183,750	61,250	38,787	1,031,883
Robert Campbell ⁽³⁾ Vice President and Chief Commercial Officer	2019	357,404	283,143	188,344	62,781	31,071	922,743
	2018	350,000	298,161	183,750	61,250	80,155	973,316
	2017	222,115	125,000	389,750	238,075	24,087	999,027
Kevin Colbow Vice President and Chief Technology Officer	2019	270,385	217,044	144,375	48,125	29,929	709,858
	2018	250,000	167,428	103,500	34,500	26,955	582,383
	2017	240,385	189,062	103,125	34,375	21,300	588,247
Sarbjot Sidhu ⁽⁴⁾ Vice President, Operations	2019	220,000	136,428	90,750	30,250	29,496	506,924
	2018	162,327	79,967	120,750	113,450	17,655	494,149
	2017	143,567	106,310	30,000	27,974	16,688	324,539

(1) Mr. MacEwen was appointed President and Chief Executive Officer as of October 6, 2014. He is also a director, but receives no compensation for his service as a director.

(2) In April 2018, Mr. MacEwen transitioned onto Ballard's United States payroll system and from that date, Mr. MacEwen's compensation was paid in United States dollars. In 2019, his compensation was increased from CDN \$550,000 to CDN \$577,500 effective February 25, 2019. The portion of his compensation paid before that date was converted to United States dollars based on the prevailing exchange rate effective April 1, 2018; for the remainder of 2019, his compensation was converted to United States dollars based on the prevailing exchange rate effective February 25, 2019. The United States dollar amounts were converted into Canadian dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

- (3) Mr. Campbell was appointed Vice President and Chief Commercial Officer as of May 1, 2017, and received a pro rata portion of his \$350,000 annual salary in 2017.
- (4) Dr. Colbow was appointed Vice President and Chief Technology Officer on March 7, 2019. He previously served as Vice President, Technology & Product Development. Ms. Sidhu was promoted to the position of Vice President, Operations on December 1, 2018.
- (5) Salary of each of the Named Executive Officers was paid in Canadian dollars, with the exception of Mr. MacEwen effective April 1, 2018 (US\$436,488 for 2019 and US\$319,564 for 2018). The United States dollar amounts for 2019 were US\$436,488, US\$275,180, US\$275,180, US\$208,181, and US\$169,387 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2018 were US\$425,431, US\$269,480, US\$269,480, US\$192,485, and US\$124,982 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2017 were US\$416,065, US\$264,741, US\$171,016, US\$185,082, and US\$110,538 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The Canadian dollar amounts were converted into United States dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.
- (6) Bonus of each of the Named Executive Officers was paid in cash or DSUs. Cash bonus was paid in Canadian dollars with the exception of Mr. MacEwen's 2019 bonus and a portion of his 2018 bonus, which were paid in United States dollars (US\$494,273 for 2019 and US\$377,464 for 2018). The DSU amount is based on the grant date fair market value of the award, which equals the closing price of the Shares on the TSX on the date of issuance of the award.

The United States dollar amounts for 2019 were US\$494,273, US\$218,004, US\$218,004, US\$167,111, and US\$105,041 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. For 2019, the bonus for each of the Named Executive Officers was paid in cash. The United States dollar amounts for 2018 were US\$502,615, US\$243,038, US\$229,567, US\$128,910, and US\$61,570 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. For 2018, the bonus for each of the Named Executive Officers was paid in cash. The United States dollar amounts for 2017 were US\$582,268, US\$311,249, US\$96,243, US\$145,567, and US\$81,852 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. In 2017, Messrs. MacEwen, Guglielmin, Campbell, and Colbow elected to have 20%, 20%, 20%, and 50%, of their bonus paid as DSUs, respectively, with the remaining amount paid in cash. Ms. Sidhu's bonus was paid in cash in 2017. The Canadian dollar amounts were converted into United States dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019. The amounts of the bonus paid in cash and issued as DSUs including the number of DSUs issued to each Named Executive Officer in respect of the fiscal years ended December 31, 2019, December 31, 2018, and December 31, 2017 is as follows:

Bonus						
Named Executive Officer	Year	DSUs (#)	Fair Market Value of a Share (CDNS) ^(A)	DSU Total (CDNS)	Cash Total (CDNS)	Total Bonus (CDNS)
Randy MacEwen	2019	0	0	0	641,962	641,962
	2018	0	0	0	652,796	652,796
	2017	31,380	4.82	151,250	605,000	756,250
Anthony Guglielmin	2019	0	0	0	283,143	283,143
	2018	0	0	0	315,658	315,658
	2017	16,774	4.82	80,850	323,400	404,250
Robert Campbell	2019	0	0	0	283,143	283,143
	2018	0	0	0	298,161	298,161
	2017	5,187	4.82	25,000	100,000	125,000
Kevin Colbow	2019	0	0	0	217,044	217,044
	2018	0	0	0	167,428	167,428
	2017	19,612	4.82	94,531	94,531	189,062
Sarbjot Sidhu	2019	0	0	0	136,428	136,428
	2018	0	0	0	79,967	79,967
	2017	0	0	0	106,310	106,310

(A) The fair market value of a Share has been calculated using the Canadian dollar closing price of the Shares underlying the DSUs on the TSX on the date of issuance.

- (7) Represents the total fair market value of PSUs issued to each Named Executive Officer during the 2019, 2018, and 2017 fiscal years. This amount is based on the grant date fair market value of the award, which equals the closing price of the Shares on the TSX and NASDAQ on the date of issuance of the award. Fair value is determined in accordance with IFRS 2 of the International Financial Reporting Standards (accounting fair value) is recorded as compensation expense in the statement of operations over vesting periods of one to three years. There is no difference in Canadian dollars between the grant date fair market value of the award and the accounting fair value.

As noted above, a dollar value is approved for the long term incentive awarded to each executive and approximately 75% of this amount is awarded in the form of PSUs with the remaining 25% being awarded in the form of stock options in 2019, 2018, and 2017. The number of PSUs awarded is equal to the dollar amount of the award divided by the fair market value of the Shares at the time of issuance (based on the closing price of the Shares on the TSX and NASDAQ on the date of issuance). The number of PSUs issued to each Named Executive Officer in respect of the fiscal years ended December 31, 2019, December 31, 2018, and December 31, 2017 is as follows:

Share-Based Awards				
Named Executive Officer	Year	PSUs (#)	Fair Market Value of a Share (CDNS) ^(A)	Total (CDNS) ^(B)
Randy MacEwen	2019	134,308	3.97	533,782
	2018	106,976	4.82	515,625
	2017	187,222	2.75	515,625
Anthony Guglielmin	2019	46,163	4.08	188,344
	2018	38,122	4.82	183,750
	2017	63,821	2.88	183,750
Robert Campbell	2019	46,163	4.08	188,344
	2018	38,122	4.82	183,750
	2017 ^(C)	90,719	4.30	389,750
Kevin Colbow	2019	35,386	4.08	144,375
	2018	21,473	4.82	103,500
	2017	35,086	2.94	103,125
Sarbjot Sidhu	2019	22,243	4.08	90,750
	2018 ^(D)	29,919	4.04	120,750
	2017	11,236	2.67	30,000

(A) The fair market value of a Share has been calculated using the closing price of the Shares underlying the PSUs on the TSX or NASDAQ on the date of issuance. United States dollar amounts were converted to Canadian dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

(B) The United States dollar amounts for 2019 were US\$410,981, US\$145,014, US\$145,014, US\$111,160, and US\$69,872 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2018 were US\$397,001, US\$141,477, US\$141,477, US\$79,689, and US\$92,970 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2017 were US\$397,001, US\$141,477, US\$300,085, US\$79,401, and US\$23,098 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The Canadian dollar amounts were converted into United States dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

(C) Included in the PSUs issued to Mr. Campbell in 2017 was a \$350,000 grant of 80,831 PSUs (time vested only), which represented a new hire grant upon his appointment in May 2017.

(D) Included in the PSUs issued to Ms. Sidhu in 2018 was a \$90,750 grant of 23,695 PSUs (time vested only), which represented a promotion grant upon her appointment in December 2018.

(8) Represents the total of the fair market value of options to purchase our Shares issued under the Option Plan granted to each Named Executive Officer during each fiscal year. This amount is based on the grant date fair market value of the award determined using the Black-Scholes valuation model using the following key assumptions: expected life of 4 years, expected volatility of 57% and risk free interest rate of 2% for 2019; expected life of 4 years, expected volatility of 64% and risk free interest rate of 2% for 2018; and expected life of 4 years, expected volatility of 70% and risk free interest rate of 1% for 2017. Accounting fair value is recorded as compensation expense in the statement of operations over the vesting period. There is no difference in Canadian dollars between the grant date fair market value of the award determined using the Black-Scholes valuation model and accounting fair value determined in accordance with IFRS 2 of the International Financial Reporting Standards (accounting fair value).

As noted above, a dollar value is approved for the long term incentive awarded to each executive and approximately 75% of this amount is awarded in the form of PSUs with the remaining 25% being awarded in the form of stock options in 2019, 2018, and 2017. The number of stock options awarded is equal to the dollar amount of the award divided by the fair market value of the Shares at the time of issuance (based on the closing trading price of the Shares on the TSX on the day prior to issuance). The number of stock options issued to each Named Executive Officer in respect of the fiscal years ended December 31, 2019, December 31, 2018 and December 31, 2017 is as follows:

Option-Based Awards				
Named Executive Officer	Year	Shares Under Options (#)	Black-Scholes Value of Shares Underlying Options on Date of Grant (CDNS/Share) ^(A)	Fair Market Value (CDN\$) ^(B)
Randy MacEwen	2019	99,235	1.79	177,862
	2018	71,023	2.42	171,875
	2017	119,258	1.44	171,875
Anthony Guglielmin	2019	34,120	1.84	62,781
	2018	25,310	2.42	61,250
	2017	40,717	1.50	61,250
Robert Campbell	2019	34,120	1.84	62,781
	2018	25,310	2.42	61,250
	2017 ^(C)	106,400	2.24	238,075

Option-Based Awards				
Named Executive Officer	Year	Shares Under Options (#)	Black-Scholes Value of Shares Underlying Options on Date of Grant (CDNS/Share) ^(A)	Fair Market Value (CDNS) ^(B)
Kevin Colbow	2019	26,155	1.84	48,125
	2018	14,256	2.42	34,500
	2017	22,401	1.53	34,375
Sarbjot Sidhu	2019	16,440	1.84	30,250
	2018 ^(D)	56,621	2.00	113,450
	2017	20,000	1.40	27,974

(A) The fair market value of a Share has been calculated based on the Black-Scholes valuation model using the Canadian dollar closing price of the Shares underlying the options on the TSX on the date of issuance.

(B) The United States dollar amounts for 2019 were US\$136,944, US\$48,338, US\$48,338, US\$37,054, and US\$23,290 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2018 were US\$132,334, US\$47,159, US\$47,159, US\$26,563, and US\$87,350 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2017 were US\$132,332, US\$47,157, US\$183,302, US\$26,465, and US\$21,538 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The Canadian dollar amounts were converted into United States dollars for the purpose of this disclosure using the Bank of Canada rate of exchange on December 31, 2019.

(C) Included in the stock options issued to Mr. Campbell in 2017 was a grant of 100,000 stock options, which represented a new hire grant upon his appointment in May 2017.

(D) Included in the stock options issued to Ms. Sidhu in 2018 was a grant of 20,000 stock options in June 2018. In addition, a grant of 16,621 stock options, which represented a promotion grant upon her appointment in December 2018.

(9) All Other Compensation was paid in Canadian dollars with the exception of Other Compensation for Mr. MacEwen, which was paid in part in United States dollars (US\$28,999 for 2019 and US\$16,706 for 2018). The United States dollar amounts for 2019 were US\$28,999, US\$29,818, US\$23,924, US\$23,044, and US\$22,711 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2018 were US\$29,318, US\$31,657, US\$61,715, US\$20,753, and US\$13,594 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The United States dollar amounts for 2017 were US\$41,362, US\$29,862, US\$18,546, US\$16,400, and US\$12,850 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Ms. Sidhu, respectively. The Canadian dollar amounts were converted into United States dollars for the purpose of the table above using the Bank of Canada rate of exchange on December 31, 2019.

The value of the items included in this amount was based on the aggregate incremental cash cost to the Corporation. All Other Compensation, including the type and amount of each perquisite, the value of which exceeds 25% of the total value of perquisites reported for a Named Executive Officer, includes:

All Other Compensation					
Named Executive Officer	Year	Retirement Benefits (RRSP / 401k / Defined Benefits) (CDNS)	Insurance Premiums (CDNS)	Other ^(A) (CDNS)	Total (CDNS)
Randy MacEwen	2019	10,927	857	25,879	37,663
	2018	12,302	765	25,012	38,079
	2017	13,007	1,540	39,174	53,721
Anthony Guglielmin	2019	13,264	1,449	24,014	38,727
	2018	13,120	1,202	26,794	41,116
	2017	13,007	1,472	24,308	38,787
Robert Campbell	2019	13,264	1,449	16,358	31,071
	2018	13,120	1,268	65,767	80,155
	2017	8,504	882	14,701	24,087
Kevin Colbow	2019	13,264	1,440	15,225	29,929
	2018	12,939	1,116	12,900	26,955
	2017	11,346	954	9,000	21,300
Sarbjot Sidhu	2019	13,264	1,007	15,225	29,496
	2018	8,410	545	8,700	17,655
	2017	7,178	585	8,925	16,688

(A) Includes automobile allowances, temporary living and travel allowances, financial planning services and medical and health benefits. For Mr. Campbell, other compensation in 2018 also includes a \$50,000 cash award granted on his appointment in May 2017 that vested at the end of 2018.

INCENTIVE PLAN AWARDS

The following table sets forth all option-based and share-based awards granted to our Named Executive Officers that are outstanding as of December 31, 2019.

Outstanding Share-Based Awards and Option-Based Awards (as of December 31, 2019)

Named Executive Officer	Option-Based Awards				Share-Based Awards	
	Number of Securities Underlying Unexercised Options (#)	Option Exercise Price ⁽¹⁾ (CDN\$)	Option Expiration Date	Value of Unexercised In-The-Money Options ⁽²⁾ (CDN\$)	Number of PSUs That Have Not Vested (#)	Market or Payout Value of PSUs That Have Not Vested ⁽³⁾ (CDN\$)
Randy MacEwen	37,237 ⁽⁴⁾	2.67	Mar. 3, 2024	0	414,412	3,851,836
	7,548 ⁽⁵⁾	4.02	Jun. 9, 2024	26,468		
	71,023 ⁽⁶⁾	4.82	Mar. 1, 2025	105,586		
	99,235 ⁽⁴⁾	3.97	Mar. 18, 2026	0		
Anthony Guglielmin	28,743	2.98	Feb. 27, 2022	181,081	143,086	1,327,840
	47,524	1.80	Feb. 26, 2023	355,480		
	34,317 ⁽⁷⁾	2.67	Mar. 3, 2024	151,224		
	6,400 ⁽⁸⁾	4.02	Jun. 9, 2024	22,439		
	25,310 ⁽⁹⁾	4.82	Mar. 1, 2025	37,625		
34,120 ⁽⁴⁾	4.08	Mar. 18, 2026	0			
Robert Campbell	33,334 ⁽⁴⁾	4.33	May 2, 2024	0	116,152	1,077,891
	6,400 ⁽⁸⁾	4.02	Jun. 9, 2024	22,439		
	25,310 ⁽⁹⁾	4.82	Mar. 1, 2025	37,625		
	34,120 ⁽⁴⁾	4.08	Mar. 18, 2026	0		
Kevin Colbow	40,000	3.73	Feb. 27, 2021	222,000	89,119	827,023
	40,000	2.98	Feb. 27, 2022	252,000		
	24,752	1.80	Feb. 26, 2023	185,145		
	17,873 ⁽¹⁰⁾	2.67	Mar. 3, 2024	78,758		
	4,528 ⁽¹¹⁾	4.02	Jun. 9, 2024	15,875		
	14,256 ⁽¹²⁾	4.82	Mar. 1, 2025	21,194		
	26,155 ⁽⁴⁾	4.08	Mar. 18, 2026	0		
Sarbjot Sidhu	15,000	3.73	Feb. 27, 2021	83,250	54,679	507,422
	30,000	2.98	Feb. 27, 2022	189,000		
	30,000	1.80	Feb. 26, 2023	224,400		
	20,000 ⁽¹³⁾	2.67	Mar. 3, 2024	88,131		
	20,000 ⁽¹⁴⁾	4.82	Mar. 1, 2025	29,730		
	20,000 ⁽¹⁴⁾	3.63	Jun. 26, 2025	37,663		
	16,621 ⁽¹⁵⁾	3.83	Dec. 7, 2025	30,193		
	16,440 ⁽⁴⁾	4.08	Mar. 18, 2026	0		

⁽¹⁾ All figures are in Canadian dollars. Where options are exercisable in United States dollars, the exercise price has been converted to Canadian dollars using the Bank of Canada rate of exchange on December 31, 2019.

⁽²⁾ This amount is based on the difference between the closing price of the Shares underlying the options on the TSX or NASDAQ as at December 31, 2019, and the exercise price of the option. Where the difference is a negative number, the value is deemed to be 0.

⁽³⁾ This amount is calculated by multiplying the number of PSUs that have not vested by the closing price of the Shares underlying the PSUs on the TSX or NASDAQ as at December 31, 2019.

Such amounts may not represent the actual value of the PSUs which ultimately vest, as the value of the Shares underlying the PSUs may be of greater or lesser value and/or the exchange rate may be higher or lower on vesting. However, given that it would not be feasible for the Corporation to estimate, with any certainty, the market value of its Shares or the exchange rate on vesting, the Corporation has used the market value and exchange rate at the end of the most recently completed financial year for the purpose of calculating the amount disclosed.

⁽⁴⁾ Unvested options.

⁽⁵⁾ Comprising 5,032 vested and 2,516 unvested options.

⁽⁶⁾ Comprising 23,674 vested and 47,349 unvested options.

⁽⁷⁾ Comprising 22,878 vested and 11,439 unvested options.

⁽⁸⁾ Comprising 4,266 vested and 2,134 unvested options.

⁽⁹⁾ Comprising 8,436 vested and 16,874 unvested options.

⁽¹⁰⁾ Comprising 11,915 vested and 5,958 unvested options.

⁽¹¹⁾ Comprising 3,018 vested and 1,510 unvested options.

⁽¹²⁾ Comprising 4,752 vested and 9,504 unvested options.

⁽¹³⁾ Comprising 13,333 vested and 6,667 unvested options.

⁽¹⁴⁾ Comprising 6,666 vested and 13,334 unvested options.

⁽¹⁵⁾ Comprising 5,540 vested and 11,081 unvested options.

The following table sets forth the value of the incentive plan awards vested or earned during the year ended December 31, 2019 by our Named Executive Officers.

**Incentive Plan Awards – Value Vested or Earned During the Year
(2019)**

Named Executive Officer	Option-Based Awards – Value Vested During the Year ⁽¹⁾ (CDN\$)	Share-Based Awards – Value Vested During the Year ⁽²⁾ (CDN\$)	Non-equity incentive plan compensation – Value earned during the year (CDN\$)
Randy MacEwen	232,824	1,134,846	0
Anthony Guglielmin	73,279	351,446	0
Robert Campbell	10,751	123,404	0
Kevin Colbow	38,680	183,043	0
Sarbjot Sidhu	79,047	141,691	0

⁽¹⁾ This value was determined by calculating the difference between the market price of the underlying Shares on the TSX or NASDAQ on the vesting date and the exercise price of the options on the vesting date. Where the difference is a negative number the value is deemed to be 0.

⁽²⁾ This value was determined by calculating the dollar value realized by multiplying the number of Shares by the market value of the underlying Shares on the TSX or NASDAQ on the vesting date.

The number of options vesting to Named Executive Officers under the Option Plan during the most recently completed financial year is 252,756.

For a detailed description of the principal terms of our equity-based compensation plans, see “Equity-Based Compensation Plans”, below. As noted in the Outstanding Share-Based Awards and Option-Based Awards table, as at December 31, 2019, there were 817,448 PSUs awarded to Named Executive Officers that were still unvested. The performance criteria for each of these PSUs will be determined by the Board at the appropriate time, and they are set to vest (subject to the terms of the Consolidated Share Distribution Plan or Market Purchase PSU Plan) as follows:

Named Executive Officer	Number of PSUs That Have Not Vested	Vesting Date
Randy MacEwen	175,386	March 2, 2020
	11,648	June 8, 2020
	93,070	February 28, 2021
	134,308	March 15, 2022
Anthony Guglielmin	53,879	March 2, 2020
	9,878	June 8, 2020
	33,166	February 28, 2021
	46,163	March 15, 2022
Robert Campbell	26,944	May 1, 2020
	9,878	June 8, 2020
	33,167	February 28, 2021
	46,163	March 15, 2022
Kevin Colbow	28,062	March 2, 2020
	6,989	June 8, 2020
	18,682	February 28, 2021
	35,386	March 15, 2022
Sarbjot Sidhu	11,225	March 2, 2020
	7,898	December 6, 2020
	5,415	February 28, 2021
	7,899	December 6, 2021
	22,242	March 15, 2022

PENSION PLAN BENEFITS

None of the Named Executive Officers participate in a Corporation-sponsored Defined Benefits Plan or Defined Contribution Plan, nor do they receive contributions to any such plan on their behalf from the Corporation.

TERMINATION AND CHANGE OF CONTROL BENEFITS

Employment Contracts

Ballard employs a standard-form employment agreement which all of our Named Executive Officers have executed. These agreements have indefinite terms, provide for payments to be made on termination and otherwise include standard industry terms and conditions, including intellectual property, confidentiality, and non-competition and non-solicitation provisions in favour of Ballard.

The annual salary paid to each of our Named Executive Officers under their employment agreements for 2019 was as follows: CDN\$566,911 for Mr. MacEwen; CDN\$357,404 for Mr. Guglielmin; CDN\$357,404 for Mr. Campbell; CDN\$270,385 for Dr. Colbow; and CDN\$220,000 for Ms. Sidhu.

Pursuant to these employment agreements, a Named Executive Officer's employment terminates immediately, without any required period of notice or payment in lieu thereof, for just cause or upon the death of the executive. In every other circumstance for Mr. MacEwen and Mr. Guglielmin, other than on following a change of control, we are required to provide notice of up to 12 months plus one month for every year of employment completed with us, to a maximum of 24 months, or payment in lieu of such notice, consisting of the salary, target bonus and other benefits that would have been earned during such notice period. For Mr. Campbell, we are required to provide notice of up to 12 months plus one month for every year of employment completed with us, to a maximum of 18 months, or payment in lieu of such notice, consisting of the salary, target bonus and other benefits that would have been earned during such notice period. For Dr. Colbow, we are required to provide statutory notice plus one day for each month worked, or payment in lieu of such notice, consisting of the salary and other benefits that would have been earned during such notice period. For Ms. Sidhu, we are required to provide notice of 12 months plus an additional 3 months after 5 completed years of service, or payment in lieu of such notice, consisting of the salary and other benefits that would have been earned during such notice period.

The employment contracts for Mr. MacEwen, Mr. Guglielmin and Mr. Campbell contain change of control provisions that include a "double-trigger" in relation to a change of control – if the executive's employment is terminated (including a constructive dismissal) within two years following the date of a change of control, the executive is entitled to payment in lieu of a 24 month notice period. For these purposes, a "change of control" under the employment agreements is defined as occurring when:

- (a) a person or persons acting in concert acquires at least one-half of Ballard's shares;
- (b) the persons who comprise the Board of Ballard do not consist of a majority of persons who were previously directors of Ballard, or who were recommended to the Shareholders for election to the Board by a majority of the Directors;
- (c) there is a disposition of all or substantially all of Ballard's assets to an entity in which Ballard does not have a majority interest; or
- (d) Ballard is involved in any business combination that results in Ballard's Shareholders owning less than one-half of the voting shares of the combined entity.

In addition, all Named Executive Officers have agreed to the claw-back provision discussed previously.

Equity-Based Compensation Plans

The Option Plan provides that, if a participant ceases to be an employee of Ballard or its subsidiaries (other than by reason of death/disability or being retired), he or she will have up to 90 days, in the event of termination other than for just cause, or 30 days, in the event of voluntary resignation, in which to exercise his or her vested options (in each case subject to extension if the option would otherwise expire during, or within 9 business days after the end of, a blackout period). In the event of termination other than for just cause, the CEO has the discretion to extend the exercise period to up to one year after the optionee ceases to work for Ballard and to accelerate the vesting of unvested options that would have otherwise vested during that period in the next year (in effect, enabling the continuance of the options during a notice period).

All Ballard PSUs awarded under the SDP expire on the last day on which the participant works for Ballard or any of its subsidiaries (other than by reason of death/disability or being retired).

Under the SDP, DSUs will be redeemed for Shares by no later than December 31 of the first calendar year commencing after the holder's employment with Ballard and its subsidiaries is terminated; except in the case of US holders, whose DSUs will be redeemed for Shares approximately 6 months after termination of employment.

The Option Plan provides for the vesting of options upon an accelerated vesting event, which is defined as:

- (a) a person making a take-over bid that could result in that person or persons acting in concert acquiring more than 50% of Ballard's Shares;
- (b) any person or persons acting in concert acquiring more than 50% of Ballard's Shares;
- (c) there is a disposition of all or substantially all of Ballard's assets to an entity in which Ballard does not have a majority interest;
- (d) Ballard joins in any business combination that results in Ballard's Shareholders owning less than 50% of the voting shares of the combined entity; or
- (e) any other transaction is approved, a consequence of which is to privatize Ballard.

If an accelerated vesting event occurs, any outstanding option may be exercised at any time before the 60th day after such event.

Under the SDP, the occurrence of any of the accelerated vesting events described above triggers (subject to Board approval in the case of a take-over bid) the termination of the restriction period applicable to PSUs such that holders will become immediately entitled to receive Shares in respect of their PSUs (subject to satisfaction of any performance criteria or other conditions specified in the award).

The following table shows, for each Named Executive Officer, the amount such person would have been entitled to receive if on December 31, 2019: (1) their employment was terminated without just cause; (2) a change of control occurred; or, (3) their employment was terminated without just cause and that termination occurred following a change in control.

Named Executive Officer	Triggering Event (as of December 31, 2019)		
	Termination of Employment (CDN\$) ⁽¹⁾	Change of Control (CDN\$) ⁽³⁾	Termination of Employment following Change of Control (CDN\$) ⁽¹⁾
Randy MacEwen			
Severance	\$1,636,250	\$0	\$2,310,000
Other benefits	\$53,356	\$0	\$100,327
Accelerated vesting	\$0	\$3,983,890	\$0
Total	\$1,689,606	\$3,983,890	\$2,410,327
Anthony Guglielmin			
Severance	\$1,067,281	\$0	\$1,219,750
Other benefits	\$67,773	\$0	\$102,455
Accelerated vesting	\$0	\$2,075,689	\$0
Total	\$1,135,054	\$2,075,689	\$1,322,205
Robert Campbell			
Severance	\$711,521	\$0	\$1,219,750
Other benefits	\$36,250	\$0	\$87,143
Accelerated vesting	\$0	\$1,137,955	\$0
Total	\$747,771	\$1,137,955	\$1,306,893
Kevin Colbow			
Severance	\$583,721	\$0	\$583,721
Other benefits	\$34,994	\$0	\$34,994
Accelerated vesting	\$0	\$1,601,995	\$0
Total	\$618,715	\$1,601,995	\$618,715
Sarbjit Sidhu			
Severance	\$457,985	\$0	\$457,985
Other benefits	\$36,871	\$0	\$36,871
Accelerated vesting	\$0	\$1,189,789	\$0
Total	\$494,856	\$1,189,789	\$494,856

⁽¹⁾ All values are in Canadian dollars, unless otherwise stated

⁽²⁾ Based on accrued service to December 31, 2019.

⁽³⁾ All options and PSUs vest immediately upon a change of control. Value shown equals, in the case of PSUs, the price of the underlying Shares on December 31, 2019 multiplied by the number of PSUs. Value shown in the case of Options is the difference between the market price on December 31, 2019 and the exercise price for options, for those options where the market price on that date is greater than the exercise price.

DIRECTOR COMPENSATION

The CGCC is responsible for determining compensation for our Directors.

The CGCC ensures that the annual retainer paid to Directors is sufficient to allow the Corporation to attract and retain candidates with an appropriate level of skill and expertise. Consistent with past practice, the CGCC seeks to provide compensation for directors at approximately the 50th percentile of its comparator group of North American companies. The CGCC retains independent compensation consultants (Willis Towers Watson) for professional advice and as a source of competitive market information.

During 2018, the CGCC reviewed the director compensation program from the viewpoint of best governance trends and practices, the Board/Committee model currently employed at Ballard and the appropriate level of compensation for Directors as compared to the comparator group. The review did not result in any changes to the overall structure for director compensation in 2018.

The elements of director compensation for 2019 were:

- Flat Fee Structure for Board Chair.
- Annual Flat Fee Structure for directors. No additional meeting attendance fees for board or committee meetings.
- Additional annual retainer fees for committee Chairs.
- All retainer fees are paid in CDN\$, regardless of director’s country of residence.

Management directors (the President & CEO) and directors who are shareholder nominees appointed pursuant to agreements with the Corporation are not compensated by the Corporation for their service as directors. However, all directors are entitled to reimbursement for travel and other reasonable expenses incurred in connection with fulfilling their duties.

We remunerate all other directors for services to the Board, committee participation and special assignments. During 2018, the CGCC reviewed the director compensation program from the viewpoint of best governance trends and practices, the Board/Committee model currently employed at Ballard and the appropriate level of compensation for Directors as compared to the comparator group. The review resulted in an increase in the annual retainer for directors and setting an annual retainer for the Commercial Committee Chair.

The following table describes the compensation of independent directors in 2019:

2019 Compensation Elements	CDN\$
Annual Retainer (Non-Executive Chair of the Board)	\$150,000
Annual Retainer (Director)	\$110,000
Annual Retainer (Audit and CGCC Chairs)	\$15,000
Annual Retainer (Commercial Committee Chair)	\$7,500

If a meeting or group of meetings is held on a continent other than the continent on which a director (other than management or shareholder directors) is resident, that director will receive an additional fee of CDN\$2,250, in recognition of the additional time required to travel to and from the meeting or meetings.

In 2019, the following compensation was earned by the directors:

Director	Board Retainer (CDN\$)	Committee Chair Retainer (CDN\$)	Meeting Fees⁽¹⁾ (CDN\$)	Total Compensation (CDN\$)
Douglas P. Hayhurst	\$110,000	\$15,000	\$2,250	\$127,250
Duy-Loan Le	\$110,000	0	\$2,250	\$112,250
Marty Neese	\$110,000	\$7,500	\$2,250	\$119,750
Jim Roche	\$150,000	0	\$2,250	\$152,250
Ian Sutcliffe	\$110,000	0	\$2,250	\$112,250
Janet Woodruff	\$110,000	\$15,000	\$2,250	\$127,250

1. Directors attended a meeting in Europe in September 2019.

Retainers are paid 50% in DSUs and 50% in cash. Directors can elect to take 100% of their fees in the form of DSUs annually in support of their share ownership targets. The period over which share ownership targets

must be met (remaining at 3x annual retainer) was increased from 5 years to 6 years, recognizing the higher retainer level multiple to be achieved.

Directors are entitled to participate in the deferred share unit section for directors (the “**DSU Plan for Directors**”) in the SDP. Each DSU is convertible into one Share. The number of DSUs to be credited to a Director is determined quarterly by dividing the amount of the eligible remuneration to be deferred into DSUs by the fair market value per Share, being a price not less than the closing sale price at which the Shares are traded on the TSX (in respect of a DSU issued or to be issued to a person who is resident in any country other than the U.S.) or NASDAQ (in respect of a DSU issued or to be issued to a person who is resident in the U.S.) on the trading day before the relevant date. For the Directors, DSUs are credited to an account maintained for each eligible person by Ballard at the time specified by the Board. However, a DSU is not redeemed until the Director leaves the Board, and its value on redemption will be based on the value of our Shares at that time. The SDP or any successor plans will be used to satisfy the redemption of DSUs issued pursuant to the DSU Plan for Directors.

Directors have not been issued any stock options in the last 5 years, and there is no current intention to do so in the future.

INCENTIVE PLAN AWARDS

The following table sets forth all option-based and share-based awards granted to our non-executive directors that are outstanding as of December 31, 2019.

In 2003, we ceased the practice of annual grants of share options to our independent Directors.

Outstanding Share-Based Awards and Option-Based Awards (as of December 31, 2019)

Name	Option-Based Awards			
	Number of Securities Underlying Unexercised Options	Option Exercise Price ⁽¹⁾ (CDN\$)	Option Expiration Date	Value of Unexercised In-The-Money Options ⁽²⁾ (CDN\$)
Douglas P. Hayhurst	0	—	—	—
Kui (Kevin) Jiang	0	—	—	—
Duy-Loan Le	0	—	—	—
Marty Neese	0	—	—	—
James Roche	0	—	—	—
Shaojun (Sherman) Sun	0	—	—	—
Ian Sutcliffe	0	—	—	—
Janet Woodruff	0	—	—	—

⁽¹⁾ All figures are in Canadian dollars.

⁽²⁾ This amount is based on the difference between the closing price of the Shares underlying the options on the TSX as at December 31, 2019, and the exercise price of the option. Where the difference is a negative number the value is deemed to be 0.

No incentive plan awards vested for, or were earned by, our Directors during the year ended December 31, 2019.

Directors are not permitted to hedge the market value of the Corporation securities they hold.

EQUITY-BASED COMPENSATION PLANS

The Corporation adopted two equity-based compensation plans approved by our Shareholders at the 2009 Annual Meeting and most recently re-approved at the 2018 Annual Meeting⁽¹⁾:

- (a) a consolidated share option plan (the “**Option Plan**”); and
- (b) a consolidated share distribution plan (the “**SDP**”).

Copies of the Option Plan and SDP are posted on the Governance section of the Corporation’s website (<http://ballard.com/investors/governance>). For a detailed description of our equity-based compensation plans, see Appendix “B” and “C” of this Circular.

The following table sets out, as of December 31, 2019, the number of securities we are authorized to issue under our equity-based compensation plans and the relevant exercise prices at which such securities may be issued.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (#)	Weighted -Average Exercise Price of Outstanding Options, Warrants and Rights (CDNS)
Equity-based compensation plans approved by security holders	6,232,794 ⁽¹⁾	2.35
Equity-based compensation plans not approved by security holders	Nil	N/A
Total	6,232,794 ⁽¹⁾	2.35

⁽¹⁾ Shares issuable under the DSU Plan for Directors and the DSU Plan for Executive Officers (together, the “**DSU Plans**”) will be satisfied with Shares reserved under the SDP or any successor plan.

As of 2019, the Option Plan and SDP provide that the maximum number of the Corporation’s Shares available for issuance under them, in aggregate, cannot exceed 8.5% of the issued and outstanding Shares at the time of grant (prior to 2018, the cap was 10%). The following table summarizes the aggregate plan maximum, the outstanding securities awarded under the Option Plan and SDP, and the remaining securities available for grant for the fiscal years ended on December 31, 2019, December 31, 2018, and December 31, 2017. The percentages represent the number relative to the number of issued and outstanding shares for the each fiscal year.

	December 31, 2019		December 31, 2018		December 31, 2017	
	#	% ⁽¹⁾	#	% ⁽¹⁾	#	% ⁽¹⁾
Plan Maximum	19,933,718	8.50%	19,710,790	8.50%	17,806,267	10.00%
Securities Awarded under the Option Plan	4,116,149	1.76%	5,133,461	2.21%	4,828,173	2.71%
Securities Awarded under the SDP	2,116,645	0.90%	2,525,406	1.09%	2,539,981	1.43%
Remaining Securities Available for Grant	13,700,924	5.84%	12,051,923	5.20%	10,438,113	5.86%

⁽¹⁾ The Corporation also adopted a plan, administered by an independent trustee, for the purchase of Ballard Shares on the open market for the redemption of PSU awards (the “**Market Purchase PSU Plan**”). The independent trustee makes these open market purchases through the facilities of the TSX, and holds the purchased Shares in escrow until the restriction period is complete and any performance criteria have been satisfied. Shares purchased under this plan do not count against the rolling cap under the Option Plan or SDP.

Awards Subject to Multiplier

PSUs are earned one third of the grant each year over a period of three years, subject to achievement of certain performance criteria (the “**PSU Scorecard**”) in each year. The level of potential earned PSUs is based on performance against the PSU Scorecard in each year, as follows:

PSU Scorecard	PSU Vesting
< 25%	0%
≥25% and <50%	50%
≥50% and ≤100%	100%
>100%	Up to 150%

In limited circumstances, such as new hire grants, PSUs may be awarded that are subject to time vesting only, typically over three years. Such one-time PSU grants are not subject to the PSU Scorecard.

Options and DSUs issued under the Option Plan and SDP, respectively, are not subject to a multiplier.

Annual Burn Rate

The annual burn rate, representing the number of securities granted under the Option Plan and SDP, respectively, relative to the weighted average number of securities outstanding for the fiscal years ended on December 31, 2019, December 31, 2018, and December 31, 2017, are as follows:

Year	Annual Burn Rate	
	Option Plan	SDP
2019	0.57%	0.22%
2018	0.90%	0.42%
2017	0.85%	0.57%

INTEREST OF INFORMED PERSONS IN MATERIAL TRANSACTIONS

To the best of our knowledge, no informed person, proposed director or person who has been a director or executive officer of the Corporation (or any associate of affiliate of such persons) had any interest in any material transactions during the past year or has any interest in any material transaction to be considered at the Meeting, except as disclosed in this Circular.

INDEBTEDNESS OF DIRECTORS AND EXECUTIVE OFFICERS

In compliance with Sarbanes-Oxley, we do not make or arrange personal loans to directors or executive officers. As of April 8, 2019, our current or former directors, officers and employees have no outstanding indebtedness to the Corporation, its subsidiaries or to any other entity and which is guaranteed by the Corporation or its subsidiaries.

DIRECTORS’ AND OFFICERS’ LIABILITY INSURANCE

We purchase and maintain insurance for the benefit of our directors and officers for losses arising from claims against them for certain actual or alleged wrongful acts they may undertake while performing their director or officer function. The total annual premium in respect of our directors’ and officers’ liability insurance program was approximately US\$347,000 for 2019 and US\$265,000 for 2018. The aggregate maximum coverage provided by the policy for all claims, for both directors and officers, in any single policy year is US\$35 million. In addition to the payment of the premiums, we are accountable for the payment of the policy deductible of US\$0 to US\$500,000 per claim. We have also agreed to indemnify each of our directors and officers against all expenses, liability and loss, reasonably incurred or suffered, arising from the performance of his or her duties as an officer or director of Ballard.

ADDITIONAL INFORMATION

Additional information relating to us is included in the following public filings, which are incorporated by reference (the “**Incorporated Documents**”) into, and form an integral part of, this Circular:

- Annual Information Form dated March 5, 2020;
- Audited Annual Financial Statements for the year ended December 31, 2019 together with the auditors’ report thereon; and
- Management's Discussion and Analysis for the year ended December 31, 2019.

Copies of the Incorporated Documents and all our other public filings providing additional information relating to us may be obtained at www.sedar.com or www.sec.gov, or upon request and without further charge from either our Corporate Secretary, at 9000 Glenlyon Parkway, Burnaby, British Columbia, Canada V5J 5J8, or by calling our Investor Relations Department at (604) 454-0900.

PROPOSALS

Any Shareholder who intends to present a proposal at our 2020 annual Shareholders’ meeting must send the proposal to our Corporate Secretary at 9000 Glenlyon Parkway, Burnaby, British Columbia, Canada V5J 5J8. In order for the proposal to be included in the proxy materials we send to Shareholders for that meeting, the proposal:

- must be received by us no later than March 3, 2021; and
- must comply with the requirements of section 188 of the *Business Corporations Act (British Columbia)*.

We are not obligated to include any shareholder proposal in our proxy materials for the 2021 annual Shareholders’ meeting if the proposal is received after the March 3, 2021 deadline.

APPROVAL BY THE BOARD

Our Board has approved the contents and the sending of this Circular to the Shareholders of the Corporation.

BY ORDER OF THE BOARD

“*Kerry Hillier*”

Kerry Hillier
Corporate Secretary
Ballard Power Systems Inc.

Dated: April 6, 2020

DEFINED TERMS

In this management information circular (the Circular”):

“Ballard”, “Corporation”, “we”, “us” and “our” refer to Ballard Power Systems Inc.

“Beneficial Shareholders” means holders of our Shares that do not hold our Shares in their own name, but instead, whose Shares are held on the Record Date by a bank, trust company, securities broker or other nominee.

“Board” means the board of directors of Ballard.

“CDN\$” refers to Canadian currency.

“Equity-based Compensation Plans” means the Option Plan and the SDP.

“DSU” means deferred share unit.

“\$” or “dollars” refer to United States currency unless specifically stated otherwise.

“Meeting” means the 2020 annual meeting of our Registered Shareholders and includes any adjournment thereof, unless otherwise indicated.

“NASDAQ” means the NASDAQ Global Market.

“Option Plan” means the Corporation’s consolidated share option plan, the principal terms of which are set out in Appendix “B”.

“PSU” means performance share unit subject to time and performance vesting criteria, unless otherwise noted.

“Record Date” means 5:00 p.m. Pacific Daylight Time on April 6, 2020.

“Registered Shareholders” means registered holders of our Shares on the Record Date.

“SDP” means the Corporation’s consolidated share distribution plan, the principal terms of which are set out in Appendix “C”.

“SEC” means the U.S. Securities and Exchange Commission.

“Shares” means common shares without par value in the capital of Ballard.

“TSX” means the Toronto Stock Exchange.

“US\$” refers to United States currency.

APPENDIX “A” BOARD MANDATE

The board of directors (the “Board”) is responsible for the overall corporate governance of the Corporation. It oversees and directs the management of the Corporation’s business and affairs. In doing so, it must act honestly, in good faith, and in the best interests of the Corporation. The Board guides the Corporation’s strategic direction, evaluates the performance of the Corporation’s executive officers, monitors the Corporation’s financial results, and is ultimately accountable to the Corporation’s shareholders, employees, customers, suppliers, and regulators. Board members are kept informed of the Corporation’s operations at meetings of the Board and its committees, and through reports and analyses by, and discussions with, management. The Board manages the delegation of decision-making authority to management through Board resolutions under which management is given authority to transact business, but only within specific limits and restrictions.

In this Mandate, the “Corporation” means Ballard Power Systems Inc. and a “director” means a member of the Corporation’s board of directors (the “Board”). A “senior officer” means VP-level employees and executive officers of the Corporation. The “CEO” means the President & Chief Executive Officer of the Corporation.

COMPOSITION

- A. As stated in the Articles of the Corporation, the Board will be composed of no fewer than three directors.
- B. The Board will have a majority of independent directors. A director is considered “independent” if they do not have a material or pecuniary relationship with the Corporation or related entities (other than compensation received for their service as director) and otherwise meet the requirements for independence established by securities regulations and exchange requirements applicable to the Corporation from time to time.
- C. The Board will appoint its own Chair.

MEETINGS

- A. Meetings of the Board will be held as required, but at least four times a year. Any director may request a meeting of the Board be called by notifying the Board Chair.
- B. Notice of the time and place of each meeting will be given to each director either by telephone or other electronic means not less than 1 week before the time of the meeting. Meetings may be held at any time if all directors have waived or are deemed to have waived notice of the meeting. A director participating in a meeting will be deemed to have waived notice of the meeting.
- C. The CEO will have direct access to the Board and may request a meeting of the Board be called by notifying the Board Chair. The CEO will receive notice of every Board meeting and will normally be requested to attend, other than in cases where the Board wishes to meet in-camera. Other executives or employees of the Corporation will attend meetings of the Board at the request of the Chair.
- D. Meetings will be chaired by the Chair of the Board; or if the Chair is absent, by the CEO, if a director; or if the Chair and the CEO are absent, by a member chosen by the Board from among themselves.
- E. A director may participate in meetings of the Board or any committee of the Board in person, by telephone, or with the consent of the other directors at the meeting, by another communications medium, and a director participating in such a meeting by any such means is deemed to be present at that meeting.
- F. A majority of directors constitute a quorum necessary for the transaction of business at Board meetings. A quorum once established is maintained even if directors leave the meeting prior to conclusion.

- G. The Corporate Secretary or his or her nominee will act as Secretary to the Board.
- H. All decisions made by the Board may be made at a Board meeting or evidenced in writing and signed by all Board members, which will be fully effective as if it had been made or passed at a Board meeting.
- I. As part of every regularly-scheduled meeting, the Board will hold in-camera sessions with: (1) the CEO; (2) of the Board, without management or management directors present; and (3) of the independent directors of the Board, without non-independent directors present. The Board may also hold other in-camera sessions with such members of management present as the Board deems appropriate.

DUTIES AND RESPONSIBILITIES

A. Selection of Management

The Board is responsible for appointing the Chief Executive Officer (“CEO”), for monitoring and evaluating the CEO’s performance, and approving the CEO’s compensation. Upon recommendation of the CEO and the Corporate Governance & Compensation Committee, the Board is also responsible for appointing all other officers. The Board also ensures that adequate plans are in place for management development and succession and conducts an annual review of such plans.

B. Corporate Strategy

The Board is responsible for reviewing and approving the Corporation’s corporate mission statement and corporate strategy on a yearly basis, as well as determining the goals and objectives to achieve and implement the corporate strategy, while taking into account, among other things, the opportunities and risks of the business. Each year, the Board meets for a strategic planning session to set the plans for the upcoming year. In addition to the general management of the business, the Board expects management to achieve the corporate goals set by the Board, and the Board monitors the progress made against these goals.

In addition, the Board approves key transactions that have strategic impact to the Corporation, such as acquisitions, key collaborations, key supply arrangements, and strategic alliances. Through the delegation of signing authorities, the Board is responsible for setting out the types of transactions that require approval of the Board..

C. Fiscal Management and Reporting

The Board, through the Audit Committee, monitors the financial performance of the Corporation and must ensure that the financial results are reported: (a) to shareholders and regulators on a timely and regular basis; and (b) fairly and in accordance with applicable accounting principles. The Board must also ensure that all material developments of the Corporation are disclosed to the public on a timely basis in accordance with applicable securities regulations. The Board also reviews and approves the Corporation’s Annual Information Form and management information circular each year.

D. Legal Compliance

The Board is responsible for overseeing compliance with all relevant policies and procedures by which the Corporation operates, including the Corporation’s environmental, social and governance (“ESG”) initiatives, and ensuring that the Corporation operates at all times in compliance with all applicable laws and regulations, and to the highest ethical and moral standards.

E. Statutory Requirements

The Board is responsible for approving all matters that require Board approval as prescribed by applicable statutes and regulations, such as payment of dividends and issuances of shares. Management ensures that such matters are brought to the attention of the Board as they arise.

F. Formal Board Evaluation

The Board, through a process led by the Corporate Governance & Compensation Committee, conducts an annual evaluation and review of the performance of the Board, Board committees, and the Chair of the Board. The results of the evaluation and recommended improvements are discussed with the full Board. The Board also sets annual goals or focus priorities and tracks performance against them. In addition, each individual director's performance is evaluated and reviewed regularly.

G. Risk Management

The Board is responsible for identifying the Corporation's principal risks and ensuring the implementation of appropriate systems to manage these risks. The Board is also responsible for the integrity of the Corporation's internal controls and management information systems.

H. External Communications

The Board is responsible for overseeing the establishment, maintenance and annual review of the Corporation's external communications policies which address how the Corporation interacts with analysts and the public and which also contain measures for the Corporation to avoid selective disclosure. The Board is responsible for establishing a process for receiving shareholder feedback.

This page intentionally left blank.

APPENDIX “B” DESCRIPTION OF OPTION PLAN

All directors, officers and employees of Ballard and its subsidiaries are eligible to participate in the Option Plan.

As of April 6, 2020, the total number of Shares issued and reserved and authorized for issue under the Option Plan was 4,840,723 Shares, representing 2.0% of the issued and outstanding Shares as of that date.

The number of options granted under the Option Plan may adjust if any share reorganization, stock dividend or corporate reorganization occurs.

The Option Plan limits insider participation such that the number of Shares issued to insiders, within any one-year period, and issuable to insiders, at any time, under the plan and any other Ballard equity-based compensation arrangements, cannot exceed 8.5% of Ballard’s issued and outstanding Shares.

In any year, a non-executive Director’s participation in all Ballard equity-based compensation arrangements is limited to that number of shares (or that number of securities in respect of underlying shares) having a value of not more than CDN\$100,000 on the date of grant, excluding any securities issued in respect of the non-executive Director’s annual retainer.

Apart from the limits on Shares issued or issuable to insiders and to non-executive Directors, described above, the Option Plan does not restrict the number of Shares that can be issued to any one person or to Directors.

The exercise price of a Ballard option will be determined by the Board and is to be no less than the closing price per Share on the TSX (in respect of options issued to persons resident in any country other than the U.S.), or NASDAQ (in respect of options issued to persons resident in the U.S.), on the last trading day before the date the option is granted.

Ballard options may have a term of up to 10 years from the date of grant, and unless otherwise determined by the Board, will vest in equal amounts on the first, second and third anniversaries of the date of grant.

If an “accelerated vesting event” occurs, any outstanding option may be exercised at any time before the 60th day after such event. An accelerated vesting event occurs when: (a) a person makes a take-over bid that could result in that person or persons acting in concert acquiring more than 50% of Ballard’s Shares; (b) any person or persons acting in concert acquire more than 50% of Ballard’s Shares; (c) there is a disposition of all or substantially all of Ballard’s assets to an entity in which Ballard does not have a majority interest; (d) Ballard joins in any business combination that results in anyone other than Ballard’s shareholders owning more than 50% of the voting shares of the combined entity; or (e) any other transaction is approved, a consequence of which is to privatize Ballard.

The Option Plan also contains a “double trigger” in the event of a take-over. Accordingly, vesting will only be accelerated if the Board approves the acceleration. In such circumstances, the Board will also have the ability to make such changes as it considers fair and appropriate, including accelerating vesting, otherwise modifying the terms of options to assist the holder to tender into the take-over bid or terminating options which have not been exercised prior to the successful completion of the accelerated vesting event.

Under the Option Plan each option will expire (or no longer be capable of being exercised) on the earlier of:

- (a) the expiration date as determined by the Board, which date will not be more than 10 years from the date of grant; and
- (b) if the optionee is a director, officer or employee, the optionee ceases to hold such position, except that, an option will be capable of exercise, if the optionee ceases to be a director, officer or employee:
 - (i) because of his or her death, for one year after the optionee dies;
 - (ii) as a result of voluntary resignation, for 30 days after the last day on which the optionee ceases to be a director, or the officer or employee ceases to work for Ballard; or

- (iii) other than as a result of voluntary resignation (in the case of a director) or termination other than for just cause (in the case of an officer or employee), for 90 days after the last day on which the optionee ceases to be a director, or the officer or employee ceases to work for Ballard (although in these circumstances, the Chief Executive Officer has discretion to extend the exercise period to up to one year after the optionee ceases to work for Ballard).

In the event that the optionee dies, all previously unvested options vest and, in the circumstances described in (b)(iii) above, the Chief Executive Officer has discretion to accelerate the vesting of unvested options that would have otherwise vested in the next year. In the other circumstances described above, an option is only capable of being exercised in respect of options that were vested at the time the optionee ceased to be a director or ceased to work for Ballard.

In the event that an optionee becomes “totally disabled” (as defined in the Option Plan), his or her options will continue to vest and be exercisable as they would have had the optionee continued to be a director, officer or employee of Ballard.

Similarly, if an optionee becomes “retired” (as defined in the Option Plan), his or her options will continue to vest and be exercisable as they would have had the optionee continued to be a director, officer or employee of Ballard.

If an option would otherwise expire or cease to be exercisable during a blackout period or within nine business days after the end of a blackout period (that is, a period during which employees and/or directors cannot trade in securities of the Corporation because they may be in possession of insider information), the expiry date of the option is extended to the date which is 10 business days after the end of the blackout period.

The Board is entitled to make, at any time, and from time to time, and without obtaining shareholder approval, any of the following amendments:

- (a) amendments to the definitions and other amendments of a clerical nature;
- (b) amendments to any provisions relating to the granting or exercise of options, including but not limited to provisions relating to the vesting period, acceleration of vesting, term, extension of term, termination or expiry, amount and payment of the subscription price, vesting period, expiry or adjustment of options, provided that, without shareholder approval, such amendment does not entail:
 - (i) a change in the number or percentage of Shares reserved for issuance under the plan;
 - (ii) a reduction in the exercise price of an option held by an insider;
 - (iii) an extension of the expiry date of an outstanding option;
 - (iv) an increase to the maximum number of Shares that may be:
 - (A) issued to insiders within a one-year period; or
 - (B) issuable to insiders at any time,

under all of Ballard’s equity-based compensation arrangements, which could exceed 10% of the issued and outstanding Shares at that time;

- (v) an increase in the maximum number of securities that can be granted to directors (other than directors who are also officers) under all of Ballard’s equity-based compensation arrangements, which could exceed such number of securities in respect of which the underlying Shares have a Fair Market Value (as defined in the plan) on the date of grant of such securities of CDN\$100,000; or
- (vi) a change to the amendment provisions of the Option Plan;

- (c) the addition or amendment of terms relating to the provision of financial assistance to optionees or resulting in optionees receiving any Ballard securities, including pursuant to a cashless exercise feature;
- (d) any amendment in respect of the persons eligible to participate in the plan, provided that, without shareholder approval, such amendment does not permit non-employee directors to re-gain participation rights under the plan at the discretion of the Board if their eligibility to participate had previously been removed or increase limits previously imposed on non-employee director participation;
- (e) such amendments as are necessary for the purpose of complying with any changes in any relevant law, rule, regulation, regulatory requirement or requirement of any applicable stock exchange or regulatory authority; or
- (f) amendments to correct or rectify any ambiguity, defective provision, error or omission in the plan or in any agreement to purchase options.

Options are not assignable except as permitted by applicable regulatory authorities in connection with a transfer to an optionee's registered retirement savings plan or registered retirement income fund or to the personal representative of an optionee who has died.

This page intentionally left blank.

APPENDIX “C” DESCRIPTION OF SDP

The SDP is a single plan divided into the following three principal sections:

1. A deferred share unit section for senior executives (the “**DSU Plan for Executive Officers**”). Under the SDP, DSUs are granted at the election of each executive officer of Ballard who is eligible (as determined by the Board) in partial or full payment of his or her annual bonus, which otherwise is paid in Shares.
2. A deferred share unit section for directors (the “**DSU Plan for Directors**”). Under the DSU Plan for Directors, each independent outside director elects annually the proportion (0% to 100%) of his or her annual retainer that he or she wishes to receive in DSUs.

Under the SDP, DSUs are credited to an account maintained for each eligible person by Ballard. Each DSU is convertible into one Share. The number of DSUs to be credited to an eligible person is determined on the relevant date by dividing the amount of the eligible remuneration to be deferred into DSUs by the fair market value per Share, being a price not less than the closing sale price at which the Shares are traded on the TSX (in respect of a DSU issued to persons resident in any country other than the U.S.) or NASDAQ (in respect of a DSU issued to persons resident in the U.S.) on the trading day before the relevant date. In the case of the executive officers, the relevant date is set by the Board but if such date occurs during a trading blackout, the number of DSUs will be determined on the first trading day after the day on which the blackout is lifted. For directors, DSUs are credited at the time specified by the Board (currently DSUs are granted in equal instalments over the course of a year, at the end of each quarter).

On any date on which a dividend is paid on the Shares, an eligible person's account will be credited with the number of DSUs calculated by: (i) multiplying the amount of the dividend per Share by the aggregate number of DSUs that were credited to that account as of the record date for payment of the dividend; and (ii) dividing the amount obtained in (i) by the fair market value (determined as set out above) of Shares on the date on which the dividend is paid.

A departing director or executive officer may receive Shares in respect of the DSUs credited to that person's account (at the ratio of one Share per DSU, subject to the deduction of any applicable withholding tax in the case of an eligible person who is a United States citizen or resident for the purpose of United States tax). A DSU, however, cannot be redeemed until such time as the director leaves the Board or the executive officer ceases to work for Ballard, and its value on redemption will be based on the value of Shares at that time. All DSUs vest immediately as they are issued in respect of remuneration that would have otherwise been paid in Shares or cash. DSUs do not expire. Except in the case of death, DSUs can only be assigned with consent.

3. A performance share unit section (the “**PSU Plan**”). All employees (but not non-executive directors) are eligible to participate in the PSU Plan.

The vesting of PSUs issued under the SDP occurs up to three years from the date of issuance, subject to the achievement of any performance criteria which may be set by the Board and to earlier vesting upon the occurrence of any accelerated vesting event (as defined in the SDP). Each PSU is convertible into one Share, which will be issued under the SDP.

A “double trigger” is included in the event of a take-over. Accordingly, in the event of a take-over the accelerated vesting of a PSU (technically, the shortening of the restriction period) will only occur if the Board so determines. In such circumstances, the Board will also have the ability to make such changes as it considers fair and appropriate in the circumstances, including the date on which the restriction period ends or otherwise modifying the terms of PSUs to assist the holder to tender into the take-over bid. In addition, the Board has the discretion to deem performance criteria or other conditions to have been met on the occurrence of an accelerated vesting event.

If any performance criteria or other conditions specified in an award of PSUs is not met on or before the last day of the restriction period applicable to the relevant grant (usually three years less one day from the date of

grant), the PSUs will expire and the participant will no longer be entitled to receive any Shares upon conversion of those PSUs.

All PSUs awarded to a participant under the SDP will also expire on the last day on which the participant works for Ballard or any of its subsidiaries except that,

- (a) in the event of the participant's death or total disability, the performance criteria and conditions specified in the participant's award of PSUs will, unless otherwise specified in the award, be deemed satisfied and the PSUs will be converted into Shares; and
- (b) if the participant is retired, the vesting of PSUs will continue on the same terms as they would have had the participant continued to be an officer or employee of Ballard.

PSUs cannot be assigned other than by will or the laws of descent and distribution.

Under the SDP, the Board can elect to satisfy the conversion of PSUs through Ballard Shares purchased on the open market.

As of April 6, 2020, the total number of Shares issued and reserved and authorized for issue under the SDP was 1,851,427 Shares, representing 0.8% of the issued and outstanding Shares as of that date.

The SDP limits insider participation such that the number of Shares issued to insiders, within any one-year period, and issuable to insiders, at any time, under the plan and any other Ballard equity-based compensation arrangements, cannot exceed 10% of Ballard's issued and outstanding Shares.

Under the SDP, in any year, a non-executive Director's participation in all Ballard equity-based compensation arrangements is limited to that number of shares (or that number of securities in respect of underlying shares) having a value of not more than CDN\$100,000 on the date of grant, excluding any securities issued in respect of the non-executive Director's annual retainer.

The SDP does not limit the number of DSUs that can be issued to executive officers.

The SDP does not limit the number of PSUs that can be issued to any one participant.

Apart from the limits on Shares issued or issuable to insiders and non-executive Directors described above, the SDP does not restrict the number of Shares that can be issued to any one person, to executive officers or to Directors.

The SDP permits the Board, without obtaining shareholder approval, to amend any provision of the SDP and/or any PSU and/or DSU governed by it (whether outstanding or otherwise) (subject to any stock exchange or regulatory requirement at the time of any such amendment) including, without limitation, any of the following amendments:

- (a) amendments to the definitions and other amendments of a clerical nature;
- (b) amendments to any provisions relating to the issuance of Shares, granting or conversion of DSUs or PSUs, including but not limited to provisions relating to the term, termination, and number of DSUs or PSUs to be awarded, provided that, without shareholder approval, such amendment does not entail:
 - (i) a change in the number or percentage of Shares reserved for issuance under the plan;
 - (ii) a reduction of the issue price of the Shares issued under the plan or the cancellation and reissue of Shares;
 - (iii) a reduction to the fair market value used to calculate the number of DSUs to be awarded;
 - (iv) an extension of time for redemption of a DSU or an extension beyond the original restriction period of a PSU;
 - (v) an increase to the maximum number of Shares that may be:
 - (A) issued to insiders within a one-year period; or

- (B) issuable to insiders at any time,
under all of Ballard's equity-based compensation arrangements, which could exceed 10% of the issued and outstanding Shares at that time;
- (vi) an increase in the maximum number of securities that can be granted to directors (other than directors who are also officers) under all of Ballard's equity-based compensation arrangements, which could exceed such number of securities in respect of which the underlying Shares have a Fair Market Value (as defined in the plan) on the date of grant of such securities of CDN\$100,000;
- (vii) permitting DSUs or PSUs to be transferable or assignable other than for normal course estate settlement purposes; or
- (viii) a change to the amendment provisions of the plan;
- (c) any amendment in respect of the persons eligible to participate in the plan (or any part of it), provided that, without shareholder approval, such amendment does not permit non-employee directors to:
 - (i) participate as holders of PSUs at the discretion of the Board;
 - (ii) re-gain participation rights under any section of the plan at the discretion of the Board if their eligibility (as a class) to participate had previously been removed; or
 - (iii) increase limits previously imposed on non-employee director participation;
- (d) such amendments as are necessary for the purpose of complying with any changes in any relevant law, rule, regulation, regulatory requirement or requirement of any applicable stock exchange or regulatory authority; or
- (e) amendments to correct or rectify any ambiguity, defective provision, error or omission in the plan or in any option agreement, notice to redeem DSUs or PSU agreement.

This page intentionally left blank.

BALLARD POWER SYSTEMS INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
FOURTH QUARTER 2019

FUEL CELL POWER
FOR A SUSTAINABLE
PLANET

BALLARD®



Power to Change the World®

BALLARD®

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements about expected events and the financial and operating performance of Ballard Power Systems Inc. ("Ballard", "the Company", "the Corporation", "we", "us" or "our"). Forward-looking statements include any statements that do not refer to historical facts. Forward-looking statements are based on the beliefs of management and reflect our current expectations as contemplated under the safe harbor provisions of Section 21E of the United States Securities Exchange Act of 1934, as amended. Such statements include, but are not limited to, statements with respect to our objectives, goals, liquidity, sources of capital and our outlook including our estimated revenue and gross margins, cash flow from operations, Cash Operating Costs, EBITDA and Adjusted EBITDA (see Non-GAAP Measures), order backlog, order book of expected deliveries over the subsequent 12-months, future product costs and selling prices, future product sales and production volumes, expenses / costs, contributions and cash requirements to and from joint venture operations, our strategy, the markets for our products, and research and development activities, as well as statements with respect to our beliefs, plans, objectives, expectations, anticipations, estimates and intentions. Words such as "estimate", "project", "believe", "anticipate", "intend", "expect", "plan", "predict", "may", "should", "will", the negatives of these words or other variations thereof and comparable terminology are intended to identify forward-looking statements. These statements are not guarantees of future performance and involve assumptions, risks and uncertainties that are difficult to predict.

In particular, these forward-looking statements are based on certain factors and assumptions relating to our expectations with respect to new and existing customer and partner relationships, the generation of new sales, producing, delivering and selling the expected product and service volumes at the expected prices and controlling our costs. They are also based on a variety of general factors and assumptions including, but not limited to, our expectations regarding technology and product development efforts, manufacturing capacity and cost, product and service pricing, market demand, and the availability and prices of raw materials, labour and supplies. These assumptions have been derived from information available to the Company including information obtained by the Company from third parties. These assumptions may prove to be incorrect in whole or in part. In addition, actual results may differ materially from those expressed, implied, or forecasted in such forward-looking statements. Factors that could cause our actual results or outcomes to differ materially from the results expressed, implied or forecasted in such forward-looking statements include, but are not limited to: the condition of the global economy, including trade, public health (including the impact of the corona virus (COVID-19)) and other geopolitical risks; the rate of mass adoption of our products or related ecosystem, including the availability of cost-effective hydrogen; changes in product or service pricing or cost; changes in our customers' requirements, the competitive environment and/or related market conditions; the relative strength of the value proposition that we offer our customers with our products or services; changes in competitive technologies, including battery and fuel cell technologies; product safety, liability or warranty issues; challenges or delays in our technology and product development activities; changes in the availability or price of raw materials, labour and supplies; our ability to attract and retain business partners, suppliers, employees and customers; changing government or environmental regulations, including subsidies or incentives associated with the adoption of clean energy products, including hydrogen and fuel cells; our access to funding and our ability to provide the capital required for product development, operations and marketing efforts, working capital requirements, and joint venture capital contributions; our ability to protect our intellectual property; our ability to extract value from joint venture operations; currency fluctuations, including the magnitude of the rate of change of the Canadian dollar versus the U.S. dollar; potential merger and acquisition activities, including risks related to integration, loss of key personnel, disruptions to operations, costs of integration, and the integration failing to achieve the expected benefits of the transaction; the general assumption that none of the risks identified in the Risks and Uncertainties section of this report or in our most recent Annual Information Form will materialize. Readers should not place undue reliance on Ballard's forward-looking statements.

The forward-looking statements contained in this document speak only as of the date of this Management Discussion and Analysis ("MD&A"). Except as required by applicable legislation, Ballard does not undertake any obligation to release publicly any updates or revisions to these forward-looking statements to reflect events or circumstances after the date of this MD&A including the occurrence of unanticipated events.



MANAGEMENT'S DISCUSSION AND ANALYSIS

March 4, 2020

Section	Description
1. Introduction	1.1 Preparation of the MD&A 1.2 Management's Report on Disclosure Controls and Procedures and Internal Controls over Financial Reporting 1.3 Risks and Uncertainties
2. Core Strategy and Business	2.1 Core Business 2.2 Strategic Imperatives
3. Select Annual Financial Information and 2020 Business Outlook	3.1 Select Annual Financial Information 3.2 2019 Performance Compared to 2019 Business Outlook 3.3 2020 Business Outlook
4. Recent Developments (Including Contractual Updates)	4.1 Corporate 4.2 China 4.3 Europe 4.4 North America 4.5 Other
5. Results of Operations	5.1 Operating Segments 5.2 Summary of Key Financial Metrics – Three months ended December 31, 2019 5.3 Summary of Key Financial Metrics – Year ended December 31, 2019 5.4 Operating Expenses and Other Items – Three months and year ended December 31, 2019 5.5 Summary of Quarterly Results
6. Cash Flow, Liquidity and Capital Resources	6.1 Summary of Cash Flows 6.2 Cash Provided by (Used by) Operating Activities 6.3 Cash Provided by (Used by) Investing Activities 6.4 Cash Provided by (Used by) Financing Activities 6.5 Liquidity and Capital Resources
7. Other Financial Matters	7.1 Off Balance Sheet Arrangements and Contractual Obligations 7.2 Related Party Transactions 7.3 Outstanding Share and Equity Information
8. Accounting Matters	8.1 Overview 8.2 Critical Judgments in Applying Accounting Policies 8.3 Key Sources of Estimation Uncertainty 8.4 Recently Adopted Accounting Policy Changes 8.5 Future Accounting Policy Changes
9. Supplemental Non-GAAP Measures and Reconciliations	9.1 Overview 9.2 Cash Operating Costs 9.3 EBITDA and Adjusted EBITDA 9.4 Adjusted Net Loss



1. INTRODUCTION

1.1 Preparation of the MD&A

This discussion and analysis of financial condition and results of operations of Ballard Power Systems Inc. (“Ballard”, “the Company”, “we”, “us” or “our”) is prepared as at March 4, 2020 and should be read in conjunction with our audited consolidated financial statements and accompanying notes for the year ended December 31, 2019. The results reported herein are presented in U.S. dollars unless otherwise stated and have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board. Additional information relating to the Company, including our Annual Information Form, is filed with Canadian (www.sedar.com) and U.S. securities regulatory authorities (www.sec.gov) and is also available on our website at www.ballard.com.

1.2 Management’s Report on Disclosure Controls and Procedures and Internal Controls over Financial Reporting

Disclosure controls and procedures

Our disclosure controls and procedures are designed to provide reasonable assurance that relevant information is gathered and reported to senior management, including the Chief Executive Officer (“CEO”) and the Chief Financial Officer (“CFO”), on a timely basis so that appropriate decisions can be made regarding public disclosures.

As of the end of the period covered by this report, we evaluated, under the supervision and with the participation of management, including the CEO and the CFO, the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a–15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (“Exchange Act”). The CEO and CFO have concluded that as of December 31, 2019, our disclosure controls and procedures were effective to ensure that information required to be disclosed in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified therein, and accumulated and reported to management to allow timely discussions regarding required disclosure.

Internal control over financial reporting

The CEO and CFO, together with other members of management, are responsible for establishing and maintaining adequate internal control over the Company’s financial reporting. Internal control over financial reporting is designed under our supervision, and overseen by the Company’s board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS.

There are inherent limitations in the effectiveness of internal control over financial reporting, including the possibility that misstatements may not be prevented or detected. Accordingly, even effective internal controls over financial reporting can provide only reasonable assurance with respect to financial statement preparation. Furthermore, the effectiveness of internal controls can change with circumstances.

Management, including the CEO and CFO, have evaluated the effectiveness of internal control over financial reporting, as defined in Rules 13a–15(f) of the Exchange Act, in relation to criteria described in *Internal Control–Integrated Framework (2013)* issued by the



Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on this evaluation, management has determined that internal control over financial reporting was effective as of December 31, 2019.

KPMG LLP, our independent registered public accounting firm, has audited our consolidated financial statements and expressed an unqualified opinion thereon. KPMG LLP has also expressed an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2019.

Changes in internal control over financial reporting

During the year ended December 31, 2019, there were no changes in internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting. Our design of disclosure controls and procedures and internal controls over financial reporting includes controls, policies and procedures covering all of our subsidiaries including Ballard Power Systems Europe A/S, Ballard Unmanned Systems Inc. (re-named from Protonex Technology Corporation as of January 1, 2019), and Guangzhou Ballard Power Systems Co., Ltd.

1.3 Risks and Uncertainties

An investment in our common shares involves risk. Investors should carefully consider the risks and uncertainties described below and in our Annual Information Form. The risks and uncertainties described in our Annual Information Form are not the only ones that we face. Additional risks and uncertainties, including those that we do not know about now or that we currently deem immaterial, may also adversely affect our business. For a more complete discussion of the risks and uncertainties which apply to our business and our operating results, please see our Annual Information Form and other filings with Canadian (www.sedar.com) and U.S. (www.sec.gov) securities regulatory authorities.

A summary of our identified risks and uncertainties are as follows:

- We may not be able to successfully execute our business plan;
- In our Heavy-Duty Motive market, we depend on a limited number of customers for a majority of our revenues and are subject to risks associated with early stage market activities related to fuel cell bus, truck, rail and marine applications;
- In our Heavy-Duty Motive market, we depend on Chinese customers for a significant portion of our revenues and we are subject to risks associated with economic conditions and government practices in China;
- In our Heavy-Duty Motive market, a significant amount of operations are conducted by joint ventures in China that we cannot operate solely for our benefit;
- In our Technology Solutions market, we depend on a limited number of customers for a majority of our revenues and are subject to risks related to the continued commitment of these customers to their fuel cell programs, including, in the case of one significant customer, to that customer’s continued commitment to the commercialization of fuel cell passenger cars;
- In our Material Handling market, we depend on a single customer for the majority of our revenues and are subject to risks from that customer’s internal stack development and commercialization plans;



- Emerging diseases, like COVID-19, may adversely affect our operations, our suppliers, our customers, or our joint ventures in China.
- We expect our cash reserves will be reduced due to future operating losses, working capital requirements, capital expenditures, capital contributions to our joint venture(s) in China and potential acquisitions and other investments by our business, and we cannot provide certainty as to how long our cash reserves will last or that we will be able to access additional capital when necessary;
- Potential fluctuations in our financial and business results make forecasting difficult and may restrict our access to funding for our commercialization plan;
- We are dependent upon Original Equipment Manufacturers and Systems Integrators to purchase certain of our products;
- Our technology and products may not meet the market requirements, including relating to performance, integration and / or cost;
- We may not be able to sell our products on a commercially viable basis on the timetable we anticipate, or at all;
- A mass market for our products may never develop or may take longer to develop than we anticipate;
- We are subject to risks inherent in international operations, including restrictions on the conversion of currencies and restrictions on repatriation of funds, including out of China;
- We have limited experience manufacturing fuel cell products on a commercial basis and our experience has been limited to relatively low production volumes;
- Warranty claims, product performance guarantees, or indemnification claims could negatively impact our gross margins and financial performance;
- We could be adversely affected by risks associated with acquisitions and investments;
- We depend on our intellectual property, and our failure to protect that intellectual property could adversely affect our expected future growth and success;
- We may experience cybersecurity threats to our information technology infrastructure and systems, and unauthorized attempts to gain access to our proprietary or confidential information, as may our customers, suppliers, subcontractors and joint venture partners;
- Global macro-economic conditions are beyond our control and may have an adverse impact on our business or on our key suppliers and / or customers;
- We currently face and will continue to face significant competition, and many current and future competitors may have significantly more resources;
- We could lose or fail to attract the personnel necessary to operate our business;
- Public Policy and regulatory changes could hurt the market for our products and services;
- We are dependent on third party suppliers for the supply of key materials and components for our products and services;
- Exchange rate fluctuations are beyond our control and may have a material adverse effect on our business, operating results, financial condition and profitability;
- Commodity price fluctuations are beyond our control and may have a material adverse



effect on our business, operating results, financial condition and profitability;

- We could be liable for environmental damages resulting from our research, development or manufacturing operations;
- If completed, potential merger and acquisition activity may fail to achieve the expected benefits of the transaction, including potential disruptions to operations, higher than anticipated costs and efforts to integrate, and loss of key personnel; and
- Our products use flammable fuels and some generate high voltages, which could subject our business to product safety, liability or other claims.

2. CORE BUSINESS AND STRATEGY

2.1 Core Business

At Ballard, our vision is to deliver fuel cell power for a sustainable planet. We are recognized as a world leader in proton exchange membrane (“PEM”) fuel cell power system development and commercialization.

Our principal business is the design, development, manufacture, sale and service of PEM fuel cell products for a variety of applications, focusing on our power product markets of Heavy-Duty Motive (consisting of bus, truck, rail and marine applications), Portable Power / UAV, Material Handling and Backup Power, as well as the delivery of Technology Solutions, including engineering services, technology transfer, and the license and sale of our extensive intellectual property portfolio and fundamental knowledge for a variety of PEM fuel cell applications.

A fuel cell is an environmentally clean electrochemical device that combines hydrogen fuel with oxygen (from the air) to produce electricity. The hydrogen fuel can be obtained from natural gas, kerosene, methanol or other hydrocarbon fuels, or from water through electrolysis. Ballard’s PEM fuel cell products typically feature high fuel efficiency, relatively low operating temperature, high durability, low noise and vibration, compact size, quick response to changes in electrical demand, and modular design. Embedded in each Ballard fuel cell product lies a stack of unit cells designed with our proprietary PEM fuel cell technology, which include membrane electrode assemblies, catalysts, plates, and other key components, and draw on intellectual property from our patent portfolio, together with our extensive experience and know-how, in key areas of PEM fuel cell stack design, operation, production processes and systems integration.

We are based in Canada, with head office, research, technology and product development, testing, manufacturing and service facilities in Burnaby, British Columbia. We also have a sales, assembly, service and research and development facility in Hobro, Denmark; a sales, assembly, research and development facility in Southborough, Massachusetts; and a sales, service, quality and supply chain office in Guangzhou, Guangdong Province, China.

We also have a non-controlling, 49% interest, in Weichai Ballard Hy-Energy Technologies Co., Ltd. (“Weichai Ballard JV”), located in Weifang, Shandong Province, China. Weichai Ballard JV will manufacture Ballard’s next-generation LCS fuel cell stack and LCS-based power modules for bus, commercial truck and forklift applications with certain exclusive rights in China.

In addition, we have a non-controlling 10% interest in Guangdong Synergy Ballard Hydrogen Power Co., Ltd. (“Synergy Ballard JVCo”), located in Yunfu, Guangdong Province,



China. Synergy Ballard JVCo manufactures fuel cell stacks utilizing our FCvelocity®-9SSL fuel cell stack technology for use primarily in fuel cell engines assembled in China to provide propulsion power for zero-emission fuel cell electric buses and commercial vehicles with certain exclusive rights in China.

2.2 Strategic Imperatives

We strive to build value for our shareholders by developing, manufacturing, selling and servicing zero-emission, industry-leading PEM fuel cell technology products and services to meet the needs of our customers in select target markets.

We continue to execute on our e12345 strategy. **e12345** is shorthand for:

- Engaging the **e**-mobility ecosystem;
- Be number **1** in the world with best PEM fuel cell technology and products (best performance and value for our target markets);
- **2** growth platforms - Power Products and Technology Solutions;
- **3** key geographic markets - Europe, China, and California (key markets, with expectation to grow and opportunities in other markets as they become attractive, such as Japan, Korea, Australia, Canada);
- **4** parts of the value chain - MEAs & plates, stacks, modules/systems, service; and
- **5** key applications - bus, truck, rail, marine and passenger cars (secondary applications are material handling, stationary power and unmanned systems).

Our e12345 strategy supports commercialization, revenue and profitability, while also enabling future value based on longer-term market opportunities for our technology, products and intellectual property.

Our two-pronged approach is to build shareholder value through the sale and service of power products and the delivery of technology solutions. In power product sales, our focus is on meeting the power needs of our customers by delivering high value, high reliability, high quality and innovative PEM fuel cell products. Through technology solutions, our focus is on enabling our customers to solve their technical and business challenges and accelerate the adoption of fuel cell technology by delivering customized, high value, bundled technology solutions, including specialized engineering services, access to our intellectual property portfolio and know-how through licensing or sale, and by providing technology component supply.

Starting in 2015, we increased our efforts on growing our business in China. China represents a potentially unique opportunity for zero and low-emission motive solutions, given the convergence of macro trends that include:

- continued urbanization of China's population;
- continued infrastructure development and build-out of mass urban transportation;
- the large size of the Chinese vehicle market;
- rapid adoption of electric vehicles in China;
- serious air quality challenges in a number of Chinese cities;
- a Chinese government mandate to address climate change; and
- strong national and local government commitment supporting the adoption and commercialization of fuel cells in new-energy vehicle transportation applications.



As part of our strategy, we have been working to develop a local fuel cell supply chain and related ecosystem to address new-energy bus and commercial vehicle markets in China. We believe this strategy aligns with current and expected local content requirements for government subsidies supporting the adoption of fuel cell electric vehicles (“FCEVs”). Key elements of our strategy include adopting a business model in which we seek to mitigate market adoption risk and capital investment by engaging partnerships with local companies that are well positioned in their respective market.

We have established and are pursuing technology transfer and licensing opportunities with Chinese partners in order to localize the manufacture of Ballard-designed fuel cell modules and fuel cell stacks for heavy-duty motive applications in China, including bus, commercial vehicles, material handling and light-rail applications.

We also structure our business model in China to protect our core intellectual property. For example, we currently do not provide technology transfer and licensing relating to the manufacture of our proprietary membrane electrode assemblies (“MEAs”), a key high value technology component in our fuel cell stacks. We currently plan to continue to conduct research and development of MEAs and manufacture our MEAs in our head office facilities in Burnaby, Canada.

We continue to make significant investment in next generation products and technology, including MEAs, stacks, modules, and systems integration, as well as advanced manufacturing processes, technologies and equipment. We also continue to make significant investment in technology and product cost reduction and in production capacity expansion.

3. SELECT ANNUAL FINANCIAL INFORMATION AND 2020 BUSINESS OUTLOOK

3.1 Select Annual Financial Information

Results of Operations	Year ended,		
	2019	2018	2017
(Expressed in thousands of U.S. dollars, except per share amounts and gross margin %)			
Revenues	\$ 106,327	\$ 96,586	\$ 121,288
Gross margin	\$ 22,595	\$ 29,674	\$ 41,600
Gross margin %	21%	31%	34%
Total Operating Expenses	\$ 49,988	\$ 50,472	\$ 46,477
Cash Operating Costs ⁽¹⁾	\$ 40,587	\$ 42,982	\$ 39,053
Adjusted EBITDA ⁽¹⁾	\$ (28,182)	\$ (13,465)	\$ 3,324
Net loss	\$ (39,050)	\$ (27,322)	\$ (8,048)
Net loss per share	\$ (0.17)	\$ (0.15)	\$ (0.05)
Adjusted Net Loss ⁽¹⁾	\$ (37,050)	\$ (23,364)	\$ (5,190)
Adjusted Net Loss per share ⁽¹⁾	\$ (0.16)	\$ (0.13)	\$ (0.03)
Financial Position	At December 31,		
(expressed in thousands of U.S. dollars)	2019	2018	2017
Total assets	\$ 340,319	\$ 346,100	\$ 177,657
Cash, cash equivalents and short-term investments	\$ 147,792	\$ 192,235	\$ 60,255

¹ Cash Operating Costs, Adjusted EBITDA, Adjusted Net Loss and Adjusted Net Loss per share are non-GAAP measures. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. See reconciliation to GAAP in the Supplemental Non-GAAP Measures section.



3.2 2019 Performance compared to 2019 Business Outlook

Given the early stage of hydrogen fuel cell market development and adoption and the uncertainty of timing in contract awards and program deliveries for 2019, we did not provide specific financial performance guidance for 2019, consistent with the Company's past approach. Our qualitative outlook expectations for 2019 are further detailed in the 2019 Outlook section of our 2018 year-end MD&A. Included in that outlook was that we expected total revenue in 2019 to be relatively flat compared to 2018 (revenue of \$96.6 million), coincident with a strengthening of the prospects for long-term growth.

Actual revenues in 2019 of \$106.3 million exceeded this revenue outlook by 10%, or \$9.7 million, primarily as a result of higher than expected Heavy-Duty Motive revenues in the fourth quarter of 2019.

As expected, during 2019 we continued to focus on the execution of the collaboration agreement with Weichai Power Co. Ltd. ("Weichai"); make further penetration of the European and California markets in certain Heavy and Medium Duty Motive applications; and make additional investment in talent, technology, products and customer experience. In particular:

- In China, the proportion of total revenue generated in 2019 from the Heavy-Duty Motive market in China was slightly lower than in 2018. The collaboration agreement with Weichai that closed in the fourth quarter of 2018 represented a critical step in positioning the Company with strong players in China's Heavy-Duty Motive industry and in preparing for the effective delivery of zero-emission fuel cell solutions based on Ballard's next-generation FCgen®-LCS fuel cell stack and FCgen®LCS-based power modules. The collaboration with Weichai is expected to increase corporate revenue through the transfer of LCS technology and module designs and the sale of MEAs to Weichai Ballard JV in which Ballard has a 49% minority position.

During 2019, we made total capital contributions to Weichai Ballard JV of approximately \$21 million, including \$14.5 million which was contributed in the first quarter of 2019 and \$6.4 million contributed in the fourth quarter of 2019. We anticipate making additional contributions beyond 2019 in order to continue to fund our pro rata ownership share of Weichai Ballard JV's operations. In addition, we had expected to record equity investment losses in joint venture and associates of approximately (\$12) million to (\$15) million in 2019 primarily in connection with our investment in the operations of Weichai Ballard JV. Actual equity investment losses in 2019 of approximately (\$11) million were better than expected due primarily to better than expected financial results of Synergy Ballard JVCo in the fourth quarter of 2019.

- In Europe, the proportion of total revenue generated from the European market increased slightly in 2019, relative to 2018, largely offsetting the proportionate decline in Heavy-Duty Motive revenue from China as we continued execution of the automotive program with AUDI AG ("Audi"), and delivered a number of modules to support fuel cell electric buses ("FCEBs") for deployment in Germany under the Joint Initiative for Hydrogen Vehicles across Europe ("JIVE") funding program.
- In North America, we saw increased market activity in California for FCEVs, which we believe will result in additional module purchase orders. In addition, we delivered a



higher volume of fuel cell stack sales in 2019 for Material Handling applications than in 2018. However, this increase in Material Handling revenues was more than offset by a significant decline in Portable Power / UAV revenues 2019, relative to 2018, as a result of the disposition of our Power Manager assets in October 2018.

- In Technology Solutions, revenue increased in 2019, as compared to 2018, supported primarily by ongoing work on the automotive program with Audi and the technology transfer program with Weichai Ballard JV. This increase in overall Technology Solutions revenue more than offset the overall decline in Heavy Duty Motive revenue.

3.3 2020 Business Outlook

We intend to maintain focus throughout 2020 on Heavy-Duty and Medium-Duty Motive applications in the bus, commercial truck, train and marine markets in order to increase adoption in our key markets of China, Europe and California. We continue to invest in next generation products and technology, including MEAs, stacks, modules, and systems integration, as well as advanced manufacturing processes, technologies and equipment. We also continue to invest in technology and product cost reduction and in production capacity expansion.

Our 2020 Business Outlook does not reflect any impact of the corona virus (COVID-19). It is currently too early to accurately project any impact, since the duration and scope of the outbreak is not yet known with any certainty. If the outbreak continues for an extended period of time, Ballard and Weichai Ballard JV may experience supply chain disruptions, a decline in sales activities, and reductions in operations and workforce.

Consistent with the Company's practice, and in view of the early stage of hydrogen fuel cell market development and adoption, we are not providing specific financial performance guidance for 2020. However, directionally we expect total revenue of approximately \$130 million in fiscal 2020, compared to total revenue of \$106.3 million in fiscal 2019, as commercial activities increase in our target geographic territories. This growth is expected to primarily result from commercial progress in the Heavy Duty Motive market, underpinned by increasing demand for FCEVs in China and Europe. Our 12-month Order Book of approximately \$110 million at the end of 2019, together with a robust sales pipeline, establishes a strong foundation for projected growth in full year 2020 revenue.

In support of our 2020 Business Outlook:

- In China, we expect the Weichai Ballard JV facility to be commissioned and operating by mid-year 2020. We also expect delivery of MEAs to Weichai Ballard JV for the production of next-generation LCS fuel cell stacks and FCmove™ fuel cell modules. During 2020, we have a commitment to make capital contributions totaling approximately \$20 million towards our pro rata ownership share of Weichai Ballard JV. This is in addition to \$20.9 million contributed in 2019 and \$14.6 million contributed in 2018, as part of our total capital contribution commitment of approximately \$78 million. We also expect to report equity investment losses in joint venture and associates of approximately \$10 million to \$15 million in fiscal 2020 primarily in connection with the operations of Weichai Ballard JV.
- In Europe, we plan to continue to execute on our automotive program with Audi, and to



deliver a significant number of modules to support FCEBs in a number of countries. We also expect increased market activity for FCEBs which can be expected to result in additional module purchase orders.

- In North America, we expect continued market activity in California for FCEBs and fuel cell-powered trucks, which can be expected to result in additional module purchase orders. In addition, we expect a volume contraction of fuel cell stack sales for forklift applications.
- In Technology Solutions, revenue is expected to be relatively flat in 2020, compared to 2019, primarily reflecting ongoing work on our technology transfer programs with Audi and Weichai Ballard JV. In addition to the Audi and Weichai Ballard JV programs, Technology Solutions engineering services activity is expected with existing and new customers in a variety of markets.

We intend to establish an at-the-market equity program (“ATM Program”) and to issue up to \$75 million of common shares from treasury to the public from time to time at the Company’s discretion, subject to favorable market conditions. The ATM Program will be conducted under our existing \$150 million Base Shelf Prospectus and will be used to fund growth and strategic opportunities.

Our 2020 revenue outlook is supported by our 12-month Order Book of approximately \$110 million which is derived from our Order Backlog of approximately \$179 million as of December 31, 2019. Our Order Backlog represents the estimated aggregate value of orders at a given time for which customers have made contractual commitments and our 12-month Order Book represents the aggregate expected value of that portion of the Order Backlog that the Company expects to deliver in the subsequent 12-month period.

Our revenue outlook for 2020 is based on our internal forecast which reflects an assessment of overall business conditions and takes into account actual sales and financial results in the first two months of 2020; sales orders received for units and services expected to be delivered in the remainder of 2020; an estimate with respect to the generation of new sales and the timing of deliveries in each of our markets for the balance of 2020; and assumes an average U.S. dollar exchange rate in the mid \$0.70’s in relation to the Canadian dollar for 2020.

The primary risk factors to our business outlook expectations for 2020 are customer, production, or program delays or cancellations in delivering against existing power products and technology solutions orders and delays from forecast in terms of closing and delivering expected sales primarily in our Heavy-Duty Motive market including expected sales to Weichai Ballard JV and Synergy Ballard JVCo and the timing of sales of that inventory by those respective joint ventures to end-customers in China; adverse macro-economic conditions including trade, public health (including the impact of the corona virus (COVID-19)), and other geopolitical risks; changes in government subsidy and incentive programs; inadequate investment in hydrogen infrastructure and / or excessive hydrogen fuel costs, all of which could negatively impact our customers’ access to capital and the success of their program plans which could adversely impact our business; disruptions in our Heavy-Duty market due to delays of supply of key materials and components from third party suppliers; disruptions in our Technology Solutions market as a result of our significant reliance on a limited number of customers including Audi and Weichai Ballard JV in this platform, which



are reliant on their internal commercialization plans and budget requirements; disruptions in our Technology Solutions market as a result of delays in achieving program milestones; disruptions in the Material Handling market as a result of our reliance on a single customer in this market and that customer's internal stack development and commercialization plans; and fluctuations in the Canadian dollar relative to the U.S. dollar, as a significant portion of our Technology Solutions revenues (including the technology development and engineering services agreement with Audi) are priced in Canadian dollars.

Our Order Backlog and our 12-month Order Book are currently comprised of a relatively limited number of contracts and a relatively limited number of customers. Given the relative immaturity of our industry and customer deployment programs, our Order Backlog and 12-month Order Book are potentially vulnerable to risk of cancellation, deferral or non-performance by our customers for a variety of reasons including: risks related to continued customer commitment to a fuel cell program; risks related to customer liquidity; credit risks; risks related to changes, reductions or eliminations in government policies, subsidies and incentives; risks related to slower market adoption; risks related to vehicle integration challenges; risks related to the development of effective hydrogen refueling infrastructure; risks related to the ability of our products to meet evolving market requirements; and supplier-related risks.

Furthermore, potential fluctuations in our financial results make financial forecasting difficult. In addition, due to the early stage of development of the market for hydrogen fuel cell products, it is difficult to accurately predict future revenues, cash flows or results of operations on a quarterly basis. The Company's revenues, cash flows and other operating results can vary significantly from quarter to quarter. As a result, quarter-to-quarter comparisons of revenues, cash flows and other operating results may not be meaningful; instead, we believe our operating performance should be assessed over a number of quarters and years. It is likely that in one or more future quarters, financial results will fall below the expectations of securities analysts and investors and the trading price of the Company's shares may be materially and adversely affected as a result.

4. RECENT DEVELOPMENTS (Including Contractual Updates)

4.1 Corporate

Ballard Included in S&P / TSX Composite

On September 13, 2019, the Company was included in the S&P/TSX Composite Index. Approximately 240 of the 1,500 companies listed on the TSX are included in the S&P/TSX Composite Index. Inclusion in the S&P/TSX Composite Index can be expected to positively impact index fund purchases of Ballard shares and may increase the Company's visibility and liquidity within the Canadian market.

Ballard's 3-Year Share Price Performance Positions the Company in TSX's Inaugural "TSX30"

On September 26, 2019, the Company was recognized by the Toronto Stock Exchange for its strong 3-year share price performance and named to the inaugural TSX30. The TSX30 program recognizes the top 30 performers on the Toronto Stock Exchange over the period July 2016 to June 2019, based on share price appreciation.

The TSX30 program considers all companies that have been listed on the Toronto Stock Exchange for at least 3-years, with a closing dividend-adjusted share price of at least



Canadian \$0.50 and a market capitalization of at least Canadian \$50 million as at June 30th, 2016. Of the 583 companies that met these criteria, the 30 companies with greatest share price appreciation over the period from July 1st, 2016 to June 30th, 2019 have been named to the inaugural TSX30 program.

Development of 8th Generation Zero-Emission Fuel Cell Module for Heavy-Duty Motive Market

On June 10, 2019, we unveiled our 8th generation high performance fuel cell module, the FCmove™-HD, at the UITP Global Public Transport Summit in Stockholm, Sweden. The FCmove™-HD fuel cell module is the first in a family of FCmove™ products expected to be introduced by Ballard and is specifically designed to meet the requirements of transit bus operators. Future FCmove™ products are expected to offer various power outputs to suit a broad range of commercial vehicles including trucks, coaches and trains.

Benefits of FCmove™-HD, compared to the prior generation heavy-duty fuel cell module, are expected to include lower lifecycle cost, improved reliability, simplified system integration, improved freeze start capability, and higher temperature operation. Ballard will continue to support the Company's existing customers that are using its prior generation FCveloCity® fuel cell modules.

Development of Next Generation Zero-Emission Fuel Cell Stack for Heavy-Duty Motive Applications

On September 18, 2018, we unveiled our next-generation high performance liquid-cooled fuel cell stack, the FCgen®-LCS ("LCS"), at the IAA Commercial Vehicles Trade Fair and Convention in Hannover, Germany. The FCgen®-LCS features important design and performance enhancements, while also offering a reduction in total-cost-of-ownership. This stack will be a core technology component of Ballard's FCmove™-HD power modules.

Benefits of the FCgen®-LCS, compared to the prior generation liquid-cooled fuel cell stack, are expected to include lower cost, improved durability, high power density, improved freeze start capability, higher tolerance to operating conditions, simplified systems integration, and improved sustainability. Ballard will continue to support the Company's existing customers where prior generation FCvelocity®-9SSL fuel cell stack technology is used.

4.2 China

Weichai Power Co., Ltd. and Weichai Ballard Hy-Energy Technologies Co., Ltd.

On November 13, 2018, we announced the closing of a strategic collaboration transaction with Weichai, initially disclosed on August 29, 2018. Ballard's strategic collaboration with Weichai includes the following key elements:

- Equity Investment – an equity investment in Ballard made by Weichai in the amount of \$163.6 million, representing a 19.9% interest in the Company, through the subscription and purchase of 46.1 million shares from treasury at a price of \$3.54, which reflected a 15% premium to the 30-day VWAP of \$3.08 on August 29, 2018.

In addition, Zhongshan Broad-Ocean Motor Co., Ltd. ("Broad-Ocean" – a current Ballard strategic investor and Chinese partner) – invested a further \$20.2 million, through the



subscription and purchase of 5.7 million shares from treasury at the same price of \$3.54 to maintain its 9.9% ownership position in Ballard.

As a result, the Weichai investment and the incremental Broad-Ocean equity investments in Ballard generated total gross proceeds of \$183.8 million. The Weichai investment and the Broad-Ocean incremental investment are subject to 2-year “standstill” and resale restrictions (subject to customary exceptions). For so long as Weichai holds at least 15% of Ballard’s outstanding shares, it will have the right to nominate two directors to Ballard’s board of directors. On January 1, 2019, the Company appointed Mr. Jiang Kui (also known as Mr. Kevin Jiang) and Mr. Sun Shaojun (also known as Mr. Sherman Sun) to the Company’s Board of Directors and expanded Ballard’s Board of Directors from seven members to nine members.

Weichai has also agreed that, in the event of a third-party offer to buy Ballard, Weichai will have the right to make a superior proposal or otherwise must vote its shares in accordance with the Ballard board recommendation.

- China Joint Venture and Technology Transfer Agreement – Weichai and Ballard have established a joint venture company in Shandong Province to support China’s Fuel Cell Electric Vehicle market, with Weichai holding a controlling ownership interest of 51% and Ballard holding a 49% ownership position. The joint venture, Weichai Ballard Hy-Energy Technologies Co., Ltd. (“Weichai Ballard JV”) was established in the fourth quarter of 2018 with Weichai making an initial capital contribution in 2018 of RMB 102 million and Ballard making an initial capital contribution of \$14.3 million (RMB 98 million equivalent). In the first and fourth quarters of 2019, Weichai made its planned second and third capital contributions totaling RMB 149.2 million and Ballard made its planned second and third capital contributions totaling \$20.9 million (RMB 143.3 million equivalent). Weichai and Ballard will fund pro rata shares of the Weichai Ballard JV based on an agreed business plan. Weichai holds three of five Weichai Ballard JV board seats and Ballard holds two, with Ballard having certain shareholder protection provisions.

The Weichai Ballard JV will manufacture Ballard’s next-generation LCS fuel cell stack and LCS-based power modules for bus, commercial truck and forklift applications with exclusive rights in China and will pay Ballard a total of \$90 million under a program to develop and transfer technology to the Weichai Ballard JV in order to enable these manufacturing activities. Revenue earned from the \$90 million Weichai Ballard JV technology transfer agreement (\$5.6 million in the fourth quarter of 2019; \$22.5 million in fiscal 2019; \$1.2 million in the fourth quarter of 2018 and in fiscal 2018) is recorded as Technology Solutions revenues. During the fourth quarter of 2018, we received an initial 10% or \$9.0 million prepayment from Weichai Ballard JV for this program with additional amounts paid to us as program milestones are successfully completed. We retain an exclusive right to the developed technologies outside China, subject to certain restrictions on sublicensing outside China. The Weichai Ballard JV will also purchase MEAs for LCS fuel cell stacks exclusively from Ballard under a long-term supply agreement.

- Fuel Cell Sales – Weichai has indicated that it intends to build and supply at least 2,000 fuel cell modules using Ballard technology by 2021 for commercial vehicles in China. Specific terms related to the source and scope of supply, product mix, pricing and timing



of shipments are subject to future agreement between the parties and the Weichai Ballard JV.

On May 1, 2019, we announced that we have reached agreement with Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China. The order has a total value of approximately \$44 million to Ballard. Once assembled by Weichai Ballard JV, final modules will be sold to Weichai to support initial deployments against Weichai's commitment to supply a minimum of 2,000 fuel cell modules for commercial FCEVs in China. All products and components to be supplied by Ballard, as well as related applications engineering support, are planned for delivery through 2020, and will be based on Ballard's next-generation LCS stack technology. During the second quarter of 2019, we received initial prepayments of \$7.5 million from Weichai Ballard JV for this order with additional amounts paid to us as product is delivered. Revenue earned from these agreements (\$13.2 million in the fourth quarter of 2019; \$14.7 million in fiscal 2019 and to date) is recorded as Heavy-Duty Motive revenues.

On December 16, 2019, we announced the receipt of an additional purchase order from Weichai Ballard JV for the delivery of MEAs valued at approximately \$19 million, expected to be delivered in 2020 under a long-term MEA supply agreement. Revenue earned from this agreement (nil million in fiscal 2019) will be recorded as Heavy-Duty Motive revenues.

The Weichai Ballard JV production facility, located in Shandong Province, China, is expected to be commissioned and operational in the first half of 2020. Once operational, the Weichai Ballard JV production facility will begin the manufacture of next-generation LCS fuel cell stacks and LCS-based modules to power FCEVs for the China market. The Weichai Ballard JV is expected to have initial production capacity of 20,000 fuel cell stacks, or 10,000 modules, based on a two-shift operation.

Guangdong Synergy Ballard Hydrogen Power Co., Ltd.

During 2017, the FCvelocity®-9SSL fuel cell stack joint venture operation in the city of Yunfu in China's Guangdong Province commenced operations. Ballard has a non-controlling 10% interest in the joint venture, called Guangdong Synergy Ballard Hydrogen Power Co., Ltd. ("Synergy Ballard JVCo"), together with our partner Guangdong Nation Synergy Hydrogen Power Technology Co., Ltd. (a member of the "Synergy Group") who has a 90% interest. The fuel cell stacks manufactured by Synergy Ballard JVCo are expected to be used primarily in fuel cell engines assembled in China to provide propulsion power for zero-emission fuel cell electric buses and commercial vehicles in China. The Synergy Ballard JVCo operation is designed to achieve an annualized production capacity of approximately 20,000 fuel cell stacks.

The joint venture transaction and related sales agreements, which closed on October 25, 2016 (originally announced on July 18, 2016), contemplated Ballard's exclusive supply of MEAs for each fuel cell stack manufactured by Synergy Ballard JVCo, with minimum annual MEA volume commitments and a contemplated minimum sales value on a "take or pay" basis to Ballard of at least \$150 million over the initial 5-year term from 2017 to 2021. However, as a result of various Chinese market circumstances, including fluctuating new energy vehicle subsidies, slower than anticipated build-out and operation of hydrogen refueling infrastructure and slower than anticipated market adoption, as well as a result of inventory build-up, liquidity and other challenges at Synergy Ballard JVCo, Synergy Ballard



JVCo did not meet its “take or pay” purchase commitments under the MEA supply agreement in the third and fourth quarters of 2018, nor did it make the contractual pre-payments required to enable any significant MEA shipments in the first quarter of 2019. As a result, during 2018 we removed all MEA supply agreement “take or pay” purchase commitments from our Order Backlog and 12-month Order Book. During the third quarter of 2019, we signed definitive agreements with Synergy Ballard JVCo amending the existing Stack Assembly License Agreement and MEA Long-Term Supply Agreement, which included a mutual release of the remaining purchase commitment under the above noted \$150 million “take or pay” MEA purchase commitment. The definitive agreements, which were entered into effective July 19, 2019, did not impact any amount recorded in the June 30, 2019 and September 30, 2019 consolidated financial statements.

During the second quarter of 2019, we agreed to a new MEA equipment supply agreement with Synergy Ballard JVCo with a contemplated value of approximately \$8 million to Ballard in 2019. Revenue earned from MEA and other supply agreements with Synergy Ballard JVCo (\$6.5 million in the fourth quarter of 2019; \$8.7 million in fiscal 2019; \$0.8 million in the fourth quarter of 2018; \$17.5 million in fiscal 2018; \$14.9 million in fiscal 2017) is recorded as Heavy-Duty Motive revenues.

Synergy Ballard JVCo retains an exclusive right to manufacture and sell FCvelocity®-9SSL stacks in China until September 30, 2026. Exclusivity is subject to Synergy Ballard JVCo maintaining certain performance criteria, including compliance with: a code of ethics; Ballard’s quality policies and branding practices; payment terms; certain intellectual property covenants; achievement of certain minimum annual MEA volume commitments through 2026; and certain financing conditions.

Ballard has the exclusive right to purchase FCvelocity®-9SSL fuel cell stacks and sub-components from Synergy Ballard JVCo for sale outside China. Ballard contributed approximately \$1.0 million for our 10% interest in Synergy Ballard JVCo in 2017, currently recognized at nil value. We have no obligation to provide future funding to Synergy Ballard JVCo.

Zhongshan Broad-Ocean Motor Co., Ltd.

As noted above, on November 13, 2018 Broad-Ocean invested a further \$20.2 million, through the subscription and purchase of 5.7 million shares from treasury at the same price of \$3.54 per share as paid by Weichai to maintain its 9.9% ownership position in Ballard. Broad-Ocean and Ballard have an Investor Rights Agreement under which Ballard granted Broad-Ocean certain anti-dilution rights to maintain its 9.9% ownership interest. Broad-Ocean has no special right to appoint nominees to Ballard’s board of directors.

On April 6, 2017, we announced the closing of a transaction (the “Broad-Ocean Program”) previously announced on February 16, 2017, relating to technology transfer, licensing and supply arrangements with Broad-Ocean for the assembly and sale of FCveloCity® 30-kilowatt (kW) and 85kW fuel cell engines in China. Under the Broad-Ocean Program, Broad-Ocean can manufacture fuel cell modules in three strategic regions in China, including Shanghai. The Broad-Ocean Program and future amounts payable to Ballard are dependent on the attainment of certain commissioning milestones by Broad-Ocean. Each Ballard-designed fuel cell engine assembled by Broad-Ocean is required to utilize FCvelocity®-9SSL fuel cell stacks. Stack supply is expected to be provided by Synergy Ballard JVCo with



Ballard being the exclusive supplier of MEAs for stacks manufactured by Synergy Ballard JVCo.

On December 6, 2017, we announced that a subsidiary of Broad-Ocean called Shanghai Edrive Co. Ltd. ("Shanghai Edrive") had commissioned a fuel cell engine manufacturing facility located in the City of Shanghai, China, enabling Shanghai Edrive to assemble Ballard FCveloCity® 30-kilowatt (kW) fuel cell engines under the Broad-Ocean Program. Revenue earned from the Broad-Ocean Program (nil million in the fourth quarter and in fiscal 2019; \$0.1 million in the fourth quarter of 2018; \$3.5 million in fiscal 2018) is recorded as Technology Solutions revenues.

As a result of our introduction of our next-generation LCS fuel cell stack and LCS-based power modules into China with Weichai Ballard JV, we continue to engage with Broad-Ocean on how to proceed with the Broad-Ocean Program. However, at this time it is expected that Broad-Ocean will ultimately discontinue the Broad-Ocean Program.

4.3 Europe

AdKor GMBH and SFC ENERGY AG

On January 14, 2020, we announced the signing of Equipment Sales Agreements for the provision of an initial 500 FCgen®-1020ACS fuel cell stacks to adKor GmbH ("adKor") and SFC Energy AG ("SFC Energy"), to be integrated into adKor's Jupiter backup power systems for deployment at radio tower sites in Germany through the end of 2021. Contracts have been awarded to adKor for the supply of fuel cell backup power systems to support an initial tranche of 500 radio tower sites in Germany – with the potential for a total of up to 1,500 radio tower sites – and adKor has sub-contracted a portion of the work to SFC Energy. As a result, adKor and SFC Energy have signed development partnership and licensing agreements, will share production activities for the supply of Jupiter systems and are developing product line extensions. Revenue earned from these agreements will be recorded as Backup Power revenues.

HDF Energy

On December 10, 2019, we announced the signing of a Product Development Agreement with Hydrogene de France ("HDF Energy"), an Independent Power Producer dedicated to renewable power generation, for the development and integration of a multi-megawatt (MW) scale fuel cell system into HDF Energy's Renewstable® power plant designed for stationary power applications. HDF Energy's Renewstable® power plant is a multi-MW baseload system enabling large-scale storage of intermittent renewable wind or solar energy in the form of hydrogen – through the process of electrolysis – as well as electricity generation using that hydrogen feedstock together with a fuel cell system. In the initial HDF Energy project an installation is planned in French Guiana, an overseas region of France located off the northern Atlantic coast of South America, under the Centrale Electricité de l'Ouest Guyanais ("CEOG") project.

Subject to certain conditions, the collaboration contemplates a future technology transfer of Ballard's new MW-scale containerized PEM fuel cell system to HDF Energy with an exclusive royalty-bearing, non-transferable, multi-year global license for the manufacture and sale of MW-scale fuel cell systems for Renewstable® power plant systems. The collaboration also contemplates Ballard supplying LCS fuel cell stacks for these systems based on an exclusive



long-term supply agreement. HDF Energy is planning to establish a manufacturing facility in Bordeaux, France. The transaction is subject to completion of definitive agreements and is reliant in part on the CEOG project, which is subject to customary conditions for multi-year programs of this scope, including but not limited to permitting and regulatory approvals, financings and project execution activities.

Van Hool NV

On December 17, 2019, we announced that 8 ExquiCity tram-buses built by Van Hool NV ("Van Hool"), a bus OEM and Ballard partner headquartered in Belgium, and powered by 8 Ballard FCveloCity®-HD 100-kilowatt fuel cell modules have been inaugurated at a ceremony in Pau, France and are now in revenue service in Pau's Bus Rapid Transit System. Ballard initially announced a Letter of Intent in September, 2017 and shipped modules to Van Hool in 2018. These fuel cell-powered tram-buses were subsequently delivered to Pau in 2019 and are being operated by the SMTU-PPP (Syndicat Mixte de Transports urbains – Pau Portes des Pyrénées) and the STAP (Société de Transport de l'Agglomération Paloise). The clean energy hybrid tram-buses use fuel cells for primary power and lithium batteries for additional power when needed, with the only emission being water vapour. The tram-bus deployment in Pau is partially funded by Europe's FCH-JU program. GNVERT, a subsidiary of ENGIE, constructed and operates the hydrogen refueling station for the tram-buses.

On December 4, 2019, we announced the receipt of a purchase order from Van Hool for 20 FCveloCity®-HD 85-kilowatt (kW) fuel cell modules to power buses in Groningen, the Netherlands, under the JIVE2 funding program. Ballard plans to deliver the 20 FCveloCity®-HD 85kW modules in 2020. These are expected to power 20 Van Hool A330 model Fuel Cell Electric Buses (FCEBs) that are planned for deployment with Qbuzz, the transit agency for the city of Groningen, by the end of 2020. Europe's Joint Initiative For Hydrogen Vehicles Across Europe ("JIVE") funding programs are intended to pave the way to commercialization of fuel cell electric buses by coordinating procurement activities to unlock economies-of-scale and reduce costs as well as supporting new hydrogen refueling stations.

On May 1, 2018, we announced the receipt of a purchase order from Van Hool for 40 FCveloCity®-HD 85 kilowatt fuel cell modules to power buses under the JIVE funding programs. During 2018 and through 2019, Ballard completed its delivery requirements to Van Hool on this 40-module purchase order and a subsequent follow-on purchase order as Van Hool continues its delivery of buses to the Regionalverkehr Köln GmbH transit agency in Cologne, Germany and the WSW mobil GmbH transit agency in Wuppertal, Germany.

Revenue earned from all supply agreements with Van Hool (\$0.7 million in the fourth quarter of 2019; \$5.1 million in fiscal 2019; \$2.3 million in the fourth quarter of 2018; \$3.5 million in fiscal 2018) is recorded as Heavy-Duty Motive revenues.

BEHALA Berliner Hafen-und

On October 2, 2019, we announced receipt of a purchase order for 3 of our FCveloCity® 100 kilowatt (kW) fuel cell modules from Berlin-based BEHALA, a port and logistics specialist, to power the world's first zero-emission push boat. The boat, to be named Elektra, will be used primarily to transport goods between Berlin and Hamburg as well as on inner-city transport routes in Berlin.

Ballard plans to work with BEHALA and other consortium partners to assist in the design, construction and deployment of the Elektra, with construction of the almost 20 meter long



and 8.2 meter wide push boat scheduled to begin this month at the Hermann Barthel shipyard in Derben, Germany, and completion expected by end-2020. Propulsion power for the Elektra will be provided by the Ballard fuel cell modules along with modular batteries (2.507 kWh capacity). Ballard intends to ship 3 of its FCveloCity® 100kW fuel cell modules in 2020 and will also support integration, commissioning and testing during the demonstration phase of the project. While the Elektra is under construction, electricity and hydrogen infrastructure is planned to be installed in the vessel's inland waterways operating area. Revenue earned from this agreement will be recorded as Heavy-Duty Motive revenues.

Provision of Fuel Cell Modules for Buses in Europe as a Member of New H2 Bus Consortium

On June 3, 2019, we announced that Ballard is a founding member of the new H2Bus Consortium, whose members are working together to deploy 1,000 zero-emission fuel cell electric buses ("FCEBs") and related infrastructure in European cities at commercially competitive rates. An initial 600 FCEBs are being supported by a €40 million grant from the EU's Connecting European Facilities (CEF) program, with buses expected to be deployed in certain European markets, including Denmark and the U.K. by 2023.

In addition to Ballard, initial H2Bus Consortium members included Everfuel, WrightBus, Hexagon Composites, Nel Hydrogen, and Ryse Hydrogen, all suppliers in the hydrogen fuel cell electric bus value chain. The H2Bus hydrogen fuel cell electric bus solution is expected to be the most cost effective true zero-emission option available, with a target single-decker bus price below €375,000, target hydrogen cost between €5 and €7 per kilogram and target bus service cost of €0.30 per kilometer.

WrightBus was expected to integrate Ballard's 8th-generation heavy duty power module, the FCmove™ (unveiled on June 8, 2019), into H2Bus Consortium buses. However, in September 2019 WrightBus entered into administration under U.K. insolvency laws.

Since then, Bamford Bus Company has announced that they have formally acquired certain assets of WrightBus as of October 22, 2019 and have recommenced operations with the intent to supply fuel cell buses to H2Bus and other projects. The H2Bus Consortium remains in discussion with Bamford Bus related to fulfilling the commitments of the H2 Bus Consortium.

WrightBus

As noted above, WrightBus entered administration in September 2019 under U.K. insolvency laws due to an inability to pay its debts. As a result, we (i) recognized a net (\$1.5) million impairment loss on trade receivables in the third quarter of 2019 for amounts owed to us for product shipments no longer expected to be collected; and (ii) removed (\$1.8) million from our 12-month Order Book and our Order Backlog as of September 30, 2019 for product orders received but no longer expected to be delivered.

Revenue earned from agreements with WrightBus prior to their entering administration (nil million in the fourth quarter of 2019; \$1.7 million in fiscal 2019; \$0.6 million in fiscal 2018) is recorded as Heavy-Duty Motive revenues.

Solaris Bus & Coach S.A.

On July 29, 2019, we announced a purchase order from Solaris Bus & Coach S.A.



("Solaris"), a leading European bus and trolleybus manufacturer and Ballard partner headquartered in Bolechowo, Poland, for 12 FCmove™-HD fuel cell modules to power 12 buses to be deployed with SASA Bolzano, the public transport operator in Bolzano, Italy under the JIVE funding program. The 12 FCmove™-HD modules are expected to ship in 2020 and the buses are expected to be deployed with SAS Bolzano by 2021. Revenue earned from this agreement will be recorded as Heavy-Duty Motive revenues.

Establishment of Fuel Cell Center of Excellence in Europe for Marine Market Applications

On April 4, 2019, we announced that our subsidiary, Ballard Power Systems Europe A/S, is establishing a Marine Center of Excellence ("Marine CoE") dedicated to fuel cell marine applications at the Company's engineering, manufacturing and service facility in Hobro, Denmark. The Marine CoE will design and manufacture heavy duty fuel cell modules to address zero-emission powertrain requirements for the marine industry.

A new motive fuel cell system manufacturing hall was constructed at the Hobro location in 2019 with annual production capacity of more than 15 megawatts (MW) of fuel cell modules. Fuel cell module development work at the Marine CoE will be based on Ballard's new FCgen®-LCS fuel cell stack and our new FCmove™-HD fuel cell module, and will be designed to meet European marine certification requirements.

Norled A/S

On April 9, 2019, we announced that our subsidiary, Ballard Power Systems Europe A/S, has signed an Equipment Supply Agreement (ESA) with Norled A/S, one of Norway's largest ferry and express boat operators, to provide two of the Company's next-generation 200 kilowatt (kW) modules that will be used to power a hybrid ferry planned to begin operating in 2021. The Ballard modules will be designed and manufactured at the Company's new Marine CoE at its facility in Hobro, Denmark. The Norled vessel – which has carrying capacity for up to 299 passengers and 80 cars – is expected to be the first liquid hydrogen fuel cell-powered ferry in commercial operation globally. Revenue earned from this agreement will be recorded as Heavy-Duty Motive revenues.

ABB Marine & Ports

On May 22, 2019, we announced a collaboration with ABB and other consortium partners in the Flagships project to develop and launch a zero-emission river push boat, planned for deployment in France in 2021 to push river barges. Ballard is planning to deliver two of its next-generation 200-kilowatt fuel cell modules in 2020, which will provide propulsion power for the vessel. The river push boat will be owned and operated by Sogestran Group subsidiary Compagnie Fluviale de Transport (CFT) on the Rhône river in France, with the objective of demonstrating that fuel cell-powered propulsion offers a cost-effective and practical zero-emission solution for owners and builders of mid-sized vessels carrying more than 100 passengers or the equivalent freight volumes inland or coastally.

Eniig and Fibia A/S

On February 5, 2019, we announced that our subsidiary, Ballard Power Systems Europe A/S, has signed Framework Agreements for the provision of FCgen®-H2PM direct hydrogen backup power systems with Eniig and Fibia A/S, operators of fiber optic broadband networks



in Denmark. Revenue earned from these agreements is recorded as Backup Power revenues.

Audi AG

On June 11, 2018, we announced the signing of a 3.5 year extension to our technology solutions contract with AUDI AG (“Audi”), part of the Volkswagen Group, extending the program to August 2022. The aggregate value of the contract extension is expected to be Canadian \$80 to \$130 million (approximately \$62 to \$100 million), subject to certain rights by Audi to reduce the program scope and value. The program, through a series of technical milestone awards, will support Audi through its small series production launch and encompasses automotive fuel cell stack development as well as system design support activities. Ballard is focused on the design and manufacture of world-leading, next-generation fuel cell stacks for use in Audi’s demonstration car program. Ballard engineers are leading critical areas of fuel cell product design – including the MEA, plate and stack components – along with certain testing and integration work.

Ballard signed an initial 4 year contract with Volkswagen AG in March 2013, followed by a 2 year extension in February 2015. Audi assumed leadership of the program in 2016. Revenue earned from this and other agreements with Audi (\$9.2 million in the fourth quarter of 2019; \$26.7 million in fiscal 2019; \$8.8 million in the fourth quarter of 2018; \$26.6 million in fiscal 2018) is recorded as Technology Solutions revenues.

Siemens AG

On November 14, 2017, we announced the signing of a multi-year Development Agreement with Siemens AG (“Siemens”) for the development of a zero-emission fuel cell engine to power Siemens’ Mireo light rail train. The Development Agreement has a contemplated value of approximately \$9.0 million to Ballard over 3 years. Under the terms of the Development Agreement, Ballard will develop a 200 kilowatt fuel cell engine for integration into Siemens’ new Mireo train platform. Initial deployments of the fuel cell-powered Mireo train are planned for 2021. Revenue earned from this agreement (\$0.7 million in the fourth quarter of 2019; \$3.2 million in fiscal 2019; \$0.2 million in the fourth quarter of 2018; \$1.8 million in fiscal 2018) is recorded as Technology Solutions revenue.

4.4 North America

Divestiture of Power Manager assets

On October 5, 2018, we closed a transaction to divest certain assets of the Company’s subsidiary, Ballard Unmanned Systems Inc. (formerly named Protonex Technology Corporation) (“Ballard Unmanned Systems”) related to the Power Manager business to Revision Military Ltd. (“Revision”). At closing, Ballard received initial consideration of approximately \$4.1 million, paid in \$2.0 million cash and a \$2.1 million note receivable payable in 2019 (collected in full in September 2019), and may receive up to a further \$11.25 million, based on achievement of specific sales objectives during a 12-month earn-out period. Ballard has retained certain Ballard Unmanned Systems assets related to fuel cell propulsion systems for unmanned vehicles, under the Ballard brand. We decided to divest the Power Manager assets as they were considered to be no longer aligned with Ballard’s strategic fuel cell focus, while retaining Ballard Unmanned Systems assets related



to the unmanned systems market.

During the fourth quarter of 2018, we recorded a loss on sale of assets of (\$4.0) million on the divestiture of the Power Manager assets after estimating the amount of variable consideration included in the transaction price that is constrained to be \$2.0 million, as opposed to the above noted maximum possible earn-out amount of \$11.25 million. During the first quarter of 2019, we recorded an additional loss on sale of assets of (\$2.0) million after adjusting the estimated amount of variable consideration from \$2.0 million to nil. During October 2019, the estimated amount of variable consideration was confirmed as nil as Revision failed to meet the minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to us.

4.5 Other

Anglo American

On October 29, 2019, we announced receipt of a purchase order for the sale of nine FCveloCity®-HD 100 kilowatt (kW) fuel cell modules to Anglo American, the world's largest platinum group metals mining company and a strategic investor in Ballard. Eight of the FCveloCity®-HD modules are expected to power a retrofitted Ultra heavy-duty mining truck in a demonstration project during 2020 at one of Anglo American's mining operations in South Africa with the ninth module maintained as a spare. Revenue earned from this agreement will be recorded as Heavy-Duty Motive revenues.

Nisshinbo Holdings

On February 21, 2018, we announced the receipt of a follow-on purchase order from Nisshinbo Holdings ("Nisshinbo") to progress a Technology Solutions program to the next stage that was initially announced on September 17, 2017. On September 17, 2017, we received a purchase order from Nisshinbo to engage in a multi-year Technology Solutions program to assess the potential development of fuel cell stacks using a Non Precious Metal Catalyst ("NPMC") for use in commercial material handling applications. With successful completion of this initial assessment, this next stage will focus on certain performance and power density enhancements to support development of low cost NPMC-based fuel cell stacks again for material handling applications. Revenue earned from this order and other related agreements with Nisshinbo (\$0.4 million in the fourth quarter of 2019; \$1.1 million in fiscal 2019; \$0.4 million in the fourth quarter of 2018; \$1.3 million in fiscal 2018), is recorded as Technology Solutions revenues.

Nisshinbo has been a strategic supplier of compression molded bipolar flow field carbon plates to Ballard for over 20 years. In November 2015, Nisshinbo also became a strategic equity investor in Ballard.

Other

On February 14, 2018, we announced that the signing of a Technology Solutions program with an unnamed strategic customer to develop a next generation air-cooled fuel cell stack. The multi-year program has an initial value to Ballard of approximately \$4.2 million. A key objective of the Technology Solutions program is to design and validate an ultra-high durability, high performance air-cooled fuel cell stack for uses in a number of target market applications, including certain material handling applications, with a target operating lifetime



of 20,000 hours. A key market opportunity will be the integration of the next generation stacks into fuel cell systems for class 3 lift trucks, such as pallet jacks, deployed in high throughput distribution centers and warehouse operations. Other potential applications include systems for stationary continuous and backup power. Revenue earned from this agreement (\$0.2 million in the fourth quarter of 2019; \$1.5 million in fiscal 2019; \$0.9 million in the fourth quarter of 2018; \$1.9 million in fiscal 2018) is recorded as Technology Solutions revenues.

5. RESULTS OF OPERATIONS

5.1 Operating Segments

We report our results in the single operating segment of Fuel Cell Products and Services. Our Fuel Cell Products and Services segment consists of the sale and service of PEM fuel cell products for our power product markets of Heavy-Duty Motive (consisting of bus, truck, rail and marine applications), Portable Power / UAV, Material Handling and Backup Power, as well as the delivery of Technology Solutions, including engineering services, technology transfer and the license and sale of our extensive intellectual property portfolio and fundamental knowledge for a variety of fuel cell applications.

As a result of the sale of our Power Manager assets in the fourth quarter of 2018, we renamed the former Portable Power market as the Portable Power / UAV market. As the sale of the Power Manager assets is not presented as a discontinued operation, the Portable Power / UAV market includes revenues associated with our power manager business prior to its sale in October 2018, and product and service revenues generated from the retained Ballard Unmanned Systems assets related primarily to fuel cell propulsion systems for unmanned systems.

5.2 Summary of Key Financial Metrics – Three Months Ended December 31, 2019 *Revenue and gross margin*

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
Fuel Cell Products and Services	2019	2018	\$ Change	% Change	
Heavy-Duty Motive	\$ 21,392	\$ 10,629	\$ 10,763	101%	
Portable Power / UAV	126	371	(245)	(66%)	
Material Handling	1,932	3,202	(1,270)	(40%)	
Backup Power	2,005	1,366	639	47%	
Technology Solutions	16,428	12,909	3,519	27%	
Revenues	41,883	28,477	13,406	47%	
Cost of goods sold	33,235	21,285	11,950	56%	
Gross Margin	\$ 8,648	\$ 7,192	\$ 1,456	20%	
Gross Margin %	21%	25%	n/a	(4 pts)	

Fuel Cell Products and Services Revenues of \$41.9 million for the fourth quarter of 2019 increased 47%, or \$13.4 million, compared to the fourth quarter of 2018. The 47% increase was driven by significantly higher Heavy-Duty Motive revenues as more moderate increases in Technology Solutions and Backup Power revenues were partially offset by declines in Material Handling and Portable Power / UAV revenues.

Heavy-Duty Motive revenues of \$21.4 million increased \$10.8 million, or 101%, due



primarily to higher shipments of a variety of fuel cell products to customers in China. Heavy-Duty Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying customer requirements and various fuel cell products, including numerous power configurations required by our customers (and the resulting impact on selling price) of our fuel cell modules, fuel cell stacks, MEAs, and related component and parts kits. Heavy-Duty Motive revenues of \$21.4 million in the fourth quarter of 2019 include \$13.2 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; \$6.5 million to Synergy Ballard JVCo for shipments of MEAs for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; \$0.7 million to Van Hool for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their bus program; and \$1.0 million for a variety of fuel cell products to a variety of customers around the world. Heavy-Duty Motive revenues of \$10.6 million in the fourth quarter of 2018 include \$0.8 million to Synergy Ballard JVCo for shipments of MEAs; \$2.8 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products primarily to customers in China; \$3.5 million to New Flyer and \$2.3 million to Van Hool for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their respective bus programs; and \$1.2 million for a variety of fuel cell products to a variety of customers around the world.

Technology Solutions revenues of \$16.4 million increased by \$3.5 million, or 27%, due primarily to amounts earned on the Weichai Ballard JV technology transfer program as Audi program revenues were relatively flat period to period. Revenues of \$16.4 million in the fourth quarter of 2019 were from a variety of customer programs including revenue from the Audi program of \$9.2 million; the Weichai Ballard JV technology transfer program of \$5.6 million; the Siemens development program of \$0.7 million; the Nisshinbo program of \$0.4 million; the program with the unnamed strategic customer of \$0.2 million; and \$0.3 million from a variety of other customer programs. Revenue in the fourth quarter of 2018 of \$12.9 million were also from a variety of customer programs including revenue from the Audi program of \$8.8 million; the Weichai Ballard JV technology transfer program of \$1.2 million; the Siemens development program of \$0.2 million; the Nisshinbo program of \$0.4 million; the program with the unnamed strategic customer of \$0.9 million; the Broad-Ocean technology transfer program of \$0.1 million; and \$1.3 million from a variety of other customer programs. Audi program revenues were nominally impacted in the fourth quarter of 2019, as compared to the fourth quarter of 2018, as a result of nominally higher Canadian dollar, relative to the U.S. dollar, as the Audi Agreement is priced in Canadian dollars. The underlying costs to satisfy the Audi Agreement are primarily denominated in Canadian dollars.

Material Handling revenues of \$1.9 million decreased (\$1.3) million, or (40%), primarily as a result of lower shipments to Plug Power.

Backup Power revenues of \$2.0 million increased \$0.6 million, or 47%, due primarily to an increase in hydrogen-based backup power product and service revenues in Europe as a result of higher shipments of FCgen®-H2PM direct hydrogen backup power systems to Eniig and Fibia A/S, operators of fiber optic broadband networks in Denmark.

Portable Power / UAV revenues of \$0.1 million decreased (\$0.2) million, or (66%), primarily as a result of lower UAV service revenues.



Fuel Cell Products and Services gross margins were \$8.6 million, or 21% of revenues, for the fourth quarter of 2019, compared to \$7.2 million, or 25% of revenues, for the fourth quarter of 2018. The increase in gross margin of \$1.5 million, or 20%, was driven primarily by the 47% increase in total revenues, partially offset by a shift to lower overall margin product and service revenue mix resulting in a (4) percentage point decrease in gross margin as a percent of revenues.

Gross margin in the fourth quarter of 2019 was also negatively impacted as a result of net inventory adjustments of (\$1.6) million related primarily to excess and impaired inventory; and was positively impacted by net warranty adjustments of \$1.0 million related primarily to contractual expirations and reduced service costs. Gross margin in the fourth quarter of 2018 was negatively impacted as a result of net inventory adjustments of (\$0.7) million related primarily to excess and impaired inventory.

Cash Operating Costs

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
	2019	2018	\$ Change	% Change	
Research and Product Development (cash operating cost)	\$ 7,699	\$ 5,718	\$ 1,981	35%	
General and Administrative (cash operating cost)	3,400	3,514	(114)	(3%)	
Sales and Marketing (cash operating cost)	2,457	1,965	492	25%	
Cash Operating Costs	\$ 13,556	\$ 11,197	\$ 2,359	21%	

Cash Operating Costs and its components of Research and Product Development (cash operating cost), General and Administrative (cash operating cost), and Sales and Marketing (cash operating cost) are non-GAAP measures. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. See the reconciliation of Cash Operating Costs to GAAP in the Supplemental Non-GAAP Measures and Reconciliations section and the reconciliation of Research and Product Development (cash operating cost), General and Administrative (cash operating cost), and Sales and Marketing (cash operating cost) to GAAP in the Operating Expense section. Cash Operating Costs adjusts operating expenses for stock-based compensation expense, depreciation and amortization, impairment losses on trade receivables, restructuring charges, the impact of unrealized gains or losses on foreign exchange contracts, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures and Reconciliations) for the fourth quarter of 2019 were \$13.6 million, an increase of \$2.4 million, or 21%, compared to the fourth quarter of 2018. The \$2.4 million, or 21%, increase was driven by higher research and product development cash operating costs of \$2.0 million and by higher sales and marketing cash operating costs of \$0.5 million, partially offset by decreases in general and administrative cash operating costs of (\$0.1) million. The \$2.4 million, or 21% increase in cash operating costs in the fourth quarter of 2019 was driven primarily by higher program development and engineering expenses in Denmark by Ballard Power Systems Europe A/S related primarily to Marine market applications, by increased expenditure on research and technology development activities in Canada related to the ongoing improvement of all of our fuel cell products and by higher sales and marketing labour and business development expenses related to the 47% increase in quarterly revenues.

Adjusted EBITDA

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
	2019	2018	\$ Change	% Change	
Adjusted EBITDA	\$ (7,432)	\$ (5,194)	\$ (2,238)	(43%)	

EBITDA and Adjusted EBITDA are non-GAAP measures. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. See reconciliation of Adjusted EBITDA to GAAP in the Supplemental Non-GAAP Measures and Reconciliations section. Adjusted EBITDA adjusts EBITDA for stock-based compensation expense, transactional gains and losses, asset impairment charges, unrealized gains or losses on foreign exchange contracts, finance and other income, and acquisition costs.

Adjusted EBITDA (see Supplemental Non-GAAP Measures and Reconciliations) for the fourth



quarter of 2019 was (\$7.4) million, compared to (\$5.2) million for the fourth quarter of 2018. The (\$2.2) million increase in Adjusted EBITDA loss was driven primarily by higher equity in loss of investment in joint venture and associates of (\$1.8) million primarily attributed to the ongoing establishment of operations of Weichai Ballard JV, which commenced startup late in the fourth quarter of 2018. In addition, Adjusted EBITDA in the fourth quarter of 2019 was negatively impacted by the increase in Cash Operating Costs of (\$2.4) million. These negative impacts were partially offset by the increase in gross margin of \$1.5 million as a result of the 47% increase in total revenues partially offset by the impact of the (4) point reduction in gross margin as a percent of revenues.

Net loss

	Three months ended December 31,			
	2019	2018	\$ Change	% Change
Net loss	\$ (10,273)	\$ (11,475)	\$ 1,202	10%

Net loss for the fourth quarter of 2019 was (\$10.3) million, or (\$0.04) per share, compared to a net loss of (\$11.5) million, or (\$0.06) per share, in the fourth quarter of 2018. The \$1.2 million decrease in net loss in the fourth quarter of 2019 was driven primarily by a decrease in loss on sale of assets of \$4.0 million, and by higher finance and other income of \$0.6 million primarily as a result of lower foreign exchange losses. These loss improvements in the fourth quarter of 2019 were partially offset by the increase in Adjusted EBITDA loss of (\$2.2) million including higher equity in loss of investment in joint venture and associates of (\$1.9) million, and by an increase in finance expense of (\$0.2) million and an increase in depreciation and amortization expense of (\$1.1) million primarily as a result of the adoption of *IFRS 16 Leases* on January 1, 2019.

As noted above, net loss in the fourth quarter of 2018 was negatively impacted by a loss on sale of assets of (\$4.0) million related to an initial impairment charge arising from the divestiture of our Power Manager assets. Excluding the impact primarily of transactional gains and losses, Adjusted Net Loss (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter 2019 was (\$10.3) million, or (\$0.04) per share, compared to (\$7.5) million, or (\$0.04) per share, for the fourth quarter of 2018.

Cash provided by (used in) operating activities

	Three months ended December 31,			
	2019	2018	\$ Change	% Change
Cash provided by (used in) operating activities	\$ 4,108	\$ 188	\$ 3,920	2081%

Cash provided by operating activities in the fourth quarter of 2019 was \$4.1 million, consisting of net working capital inflows of \$8.0 million, partially offset by cash operating losses of (\$3.9) million. Cash provided by operating activities in the fourth quarter of 2018 was \$0.2 million, consisting of net working capital inflows of \$4.6 million, partially offset by cash operating losses of (\$4.4) million. The \$3.9 million increase in cash provided by operating activities in the fourth quarter of 2019, as compared to the fourth quarter of 2018, was driven by primarily by the relative decrease in working capital requirements of \$3.4 million, combined with the relative improvement in cash operating losses of \$0.5 million.



The relative \$0.5 million decrease in cash operating losses in the fourth quarter of 2019 was negatively impacted by the increase in Adjusted EBITDA loss of (\$2.2) million. However, this net (loss) increase in the fourth quarter of 2019 was offset by the impact of several items included in Adjusted EBITDA loss but excluded from cash operating losses (or vice-versa) including: higher equity investment losses in joint venture and associates of \$1.9 million, higher impairment losses on trade receivables of \$0.2 million, higher finance and other income of \$0.6 million due primarily to lower foreign exchange losses, and lower income tax expense of \$0.1 million related to withholding taxes on certain commercial contracts primarily in China.

The total change in working capital of \$8.0 million in the fourth quarter of 2019 was driven primarily by lower inventory of \$5.9 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth quarter of 2019, and by higher accounts payable and accrued liabilities of \$7.4 million primarily as a result of the timing of supplier payments and annual compensation awards. These fourth quarter of 2019 inflows were partially offset by higher accounts and contract receivables of (\$4.0) million primarily as a result of the timing of revenue recognition and the related customer collections, and by lower deferred revenue of (\$3.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period.

This compares to a total change in working capital of \$4.6 million in the fourth quarter of 2018 which was driven by higher deferred revenue of \$8.5 million due primarily to a \$9.0 million program prepayment received from Weichai Ballard JV, by lower inventory of \$3.7 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth quarter of 2018, and by higher accrued warranty obligations of \$1.6 million primarily on increased Heavy-Duty Motive product shipments. These fourth quarter 2018 inflows were partially offset by higher accounts receivable of (\$9.8) million primarily as a result of the timing of revenues and the related customer collections.

5.3 Summary of Key Financial Metrics – Year Ended December 31, 2019

Revenue and gross margin

		Year ended December 31,			
<i>(Expressed in thousands of U.S. dollars)</i>					
Fuel Cell Products and Services	2019	2018	\$ Change	% Change	
Heavy-Duty Motive	\$ 35,363	\$ 39,464	\$ (4,101)	(10%)	
Portable Power / UAV	604	7,109	(6,505)	(92%)	
Material Handling	10,758	8,010	2,748	34%	
Backup Power	2,982	2,426	556	23%	
Technology Solutions	56,620	39,577	17,043	43%	
Revenues	106,327	96,586	9,741	10%	
Cost of goods sold	83,732	66,912	16,820	25%	
Gross Margin	\$ 22,595	\$ 29,674	\$ (7,079)	(24%)	
Gross Margin %	21%	31%	n/a	(10 pts)	

Fuel Cell Products and Services Revenues of \$106.3 million for 2019 increased 10%, or \$9.7 million, compared to 2018. The 10% increase was driven by higher Technology Solutions, Material Handling and Backup Power revenues which more than offset declines in Portable Power / UAV and Heavy-Duty Motive revenues.



Technology Solutions revenues of \$56.6 million increased by \$17.0 million, or 43%, due primarily to amounts earned on the Weichai Ballard JV technology transfer program as Audi program revenues were relatively flat period to period. Revenue of \$56.6 million in 2019 were from a variety of customer programs including revenue from the Audi program of \$26.7 million; the Weichai Ballard JV technology transfer program of \$22.5 million; the Siemens development program of \$3.2 million; the Nisshinbo program of \$1.1 million; the program with the unnamed strategic customer of \$1.5 million; and \$1.6 million from a variety of other customer programs. Revenue in 2018 of \$39.6 million were also from a variety of customer programs including revenue from the Audi program of \$26.6 million; the Weichai Ballard JV technology transfer program of \$1.2 million; the Siemens development program of \$1.8 million; the Nisshinbo program of \$1.3 million; the program with the unnamed strategic customer of \$1.9 million; the Broad-Ocean technology transfer program of \$3.5 million; and \$3.3 million from a variety of other customer programs. Audi program revenues were also negatively impacted by approximately (\$0.5) million in 2019, as compared to 2018, as a result of an approximate (2%) lower Canadian dollar, relative to the U.S. dollar, as the Audi Agreement is priced in Canadian dollars. The underlying costs to satisfy the Audi Agreement are primarily denominated in Canadian dollars.

Heavy-Duty Motive revenues of \$35.4 million decreased (\$4.1) million, or (10%), due primarily to lower MEA shipments to Synergy Ballard JVCo of (\$8.8) million, partially offset by increased shipments of a variety of fuel cell products primarily to other customers in China and Europe. Heavy-Duty Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying customer requirements and various fuel cell products, including numerous power configurations required by our customers (and the resulting impact on selling price) of our fuel cell modules, fuel cell stacks, MEAs, and related component and parts kits. Heavy-Duty Motive revenues of \$35.4 million in 2019 include \$14.7 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; \$8.7 million to Synergy Ballard JVCo for shipments of MEAs for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; \$5.1 million to Van Hool and \$1.7 million to WrightBus for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their respective bus programs; and \$5.2 million for a variety of fuel cell products to a variety of customers around the world. Heavy-Duty Motive revenues of \$39.5 million in 2018 include \$17.5 million to Synergy Ballard JVCo for shipments of MEAs; \$6.9 million to New Flyer and \$3.5 million to Van Hool for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their respective bus programs; \$2.3 million for shipments of FCveloCity®-HD7 200-kilowatt fuel cell modules to CRRC Sifang for their tram project; \$5.9 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products primarily to customers in China; and \$3.4 million for a variety of fuel cell products to a variety of customers around the world.

Material Handling revenues of \$10.8 million increased \$2.7 million, or 34%, primarily as a result of higher shipments to Plug Power.

Backup Power revenues of \$3.0 million increased \$0.6 million, or 23%, due primarily to an increase in hydrogen-based backup power product and service revenues in Europe as a result of higher shipments of FCgen®-H2PM direct hydrogen backup power systems to Eniig and Fibia A/S, operators of fiber optic broadband networks in Denmark.



Portable Power / UAV revenues of \$0.6 million decreased (\$6.5) million, or (92%), as a result of lower revenues generated by Ballard Unmanned Systems primarily as a result of the disposition of our Power Manager assets in October 2018.

Fuel Cell Products and Services gross margins were \$22.6 million, or 21% of revenues, for 2019, compared to \$29.7 million, or 31% of revenues, for 2018. The decline in gross margin of (\$7.1) million, or (24%), was driven primarily by a shift to lower overall margin product and service revenue mix resulting in a (10) percentage point decrease in gross margin as a percent of revenues, which more than offset the positive impact of the 10% increase in total revenues.

Gross margin in 2019 was also negatively impacted by significantly lower shipments of MEAs to Synergy Ballard JVCo, by significantly lower revenues generated by Ballard Unmanned Systems as a result of the disposition of our Power Manager assets in the fourth quarter of 2018, and by increased costs in the year on milestone attainment on certain technology solutions contracts. Gross margin in 2018 also benefited from an increase in higher margin Heavy-Duty Motive revenues, and by improved manufacturing overhead and related cost absorption as a result of improved scale and efficiency.

Gross margin in 2019 was also negatively impacted by net inventory adjustments of (\$2.4) million related primarily to excess and impaired inventory; and positively impacted by net warranty adjustments of \$1.0 million related primarily to contractual expirations and lower expected service costs. Gross margin in 2018 was negatively impacted by net inventory adjustments of (\$1.0) million related primarily to excess and impaired inventory; and negatively impacted by net warranty adjustments of (\$0.9) million related primarily to higher expected Heavy-Duty Motive service costs.

Cash Operating Costs

		Year ended December 31,			
		2019	2018	\$ Change	% Change
<i>(Expressed in thousands of U.S. dollars)</i>					
Research and Product Development (cash operating cost)	\$	21,936	\$ 23,755	\$ (1,819)	(8%)
General and Administrative (cash operating cost)		11,408	11,705	(297)	(3%)
Sales and Marketing (cash operating cost)		7,243	7,522	(279)	(4%)
Cash Operating Costs	\$	40,587	\$ 42,982	\$ (2,395)	(6%)

Cash Operating Costs and its components of Research and Product Development (cash operating cost), General and Administrative (cash operating cost), and Sales and Marketing (cash operating cost) are non-GAAP measures. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. See the reconciliation of Cash Operating Costs to GAAP in the Supplemental Non-GAAP Measures and Reconciliations section and the reconciliation of Research and Product Development (cash operating cost), General and Administrative (cash operating cost), and Sales and Marketing (cash operating cost) to GAAP in the Operating Expense section. Cash Operating Costs adjusts operating expenses for stock-based compensation expense, depreciation and amortization, impairment losses on trade receivables, restructuring charges, the impact of unrealized gains or losses on foreign exchange contracts, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures and Reconciliations) for 2019 were \$40.6 million, a decrease of (\$2.4) million, or (6%), compared to 2018. The (\$2.4) million, or (6%), decrease was driven by lower research and product development cash operating costs of (\$1.8) million, combined with decreases in general and administrative cash operating costs of (\$0.3) million and decreases in sales and marketing cash operating costs of (\$0.3) million. The (\$2.4) million, or (6%) decrease in cash operating costs in 2019 was driven primarily by lower expenses in Ballard Unmanned Systems as a result of the disposition of our Power Manager assets and associated personnel in October 2018,



combined with lower labour costs in Canada as a result of an approximate (2%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. These cost reductions were partially offset by higher program development and engineering expenses in Denmark by Ballard Power Systems Europe A/S related primarily to Marine market applications.

Although we have also increased our gross investment and expenditure on research and product development activities in Canada related to the ongoing improvement of all of our fuel cell products and the design and development of our next generation fuel cell products, including our new 8th generation high performance fuel cell module, the FCmove™-HD, and our new high performance liquid-cooled fuel cell stack, the FCgen®-LCS, this higher investment has been primarily offset by increased allocation of the gross research and product development expense to cost of goods sold as a result of increased work performed on revenue producing Technology Solutions projects.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)

	Year ended December 31,			
	2019	2018	\$ Change	% Change
Adjusted EBITDA	\$ (28,182)	\$ (13,465)	\$ (14,717)	(109%)

EBITDA and Adjusted EBITDA are non-GAAP measures. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. See reconciliation of Adjusted EBITDA to GAAP in the Supplemental Non-GAAP Measures and Reconciliations section. Adjusted EBITDA adjusts EBITDA for stock-based compensation expense, transactional gains and losses, asset impairment charges, unrealized gains or losses on foreign exchange contracts, finance and other income, and acquisition costs.

Adjusted EBITDA (see Supplemental Non-GAAP Measures and Reconciliations) for 2019 was (\$28.2) million, compared to (\$13.5) million for 2018. The (\$14.7) million increase in Adjusted EBITDA loss was driven primarily by higher equity in loss of investment in joint venture and associates of (\$9.9) million primarily attributed to the ongoing establishment of operations of Weichai Ballard JV. In addition, Adjusted EBITDA in 2019 was negatively impacted by the (\$7.1) million decrease in gross margin as a result of the impact of the (10) point reduction in gross margin as a percent of revenues which more than offset the benefit of the 10% increase in overall revenues, and by an increase in other operating expenses of (\$1.3) million primarily as a result of impairment losses on trade receivables for amounts owed to us for product shipments to WrightBus. These negative impacts were partially offset by the decrease in Cash Operating Costs of \$2.4 million.

In addition and as noted above, operating costs in 2019 were impacted by the positive impact of a weaker Canadian dollar, relative to the U.S. dollar, as compared to 2018. As a significant amount of our net operating costs (primarily labour) are denominated in Canadian dollars, gross margin, operating expenses and Adjusted EBITDA are impacted by changes in the Canadian dollar relative to the U.S. dollar. As the Canadian dollar relative to the U.S. dollar was approximately (2%), or (3) basis points, lower in 2019 as compared to 2018, positive foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately \$1.8 million. A \$0.01 decrease in the Canadian dollar, relative to the U.S. dollar, positively impacts annual Adjusted EBITDA by approximately \$0.6 million.

Net loss

(Expressed in thousands of U.S. dollars)

	Year ended December 31,			
	2019	2018	\$ Change	% Change
Net loss	\$ (39,050)	\$ (27,323)	\$ (11,727)	(43%)



Net loss for 2019 was (\$39.1) million, or (\$0.17) per share, compared to a net loss of (\$27.3) million, or (\$0.15) per share, in 2018. The (\$11.7) million increase in net loss in 2019 was driven primarily by the increase in Adjusted EBITDA loss of (\$14.7) million including higher equity in loss of investment in joint venture and associates of (\$9.9) million, and by an increase in finance expense of (\$0.9) million and an increase in depreciation and amortization expense of (\$2.5) million primarily as a result of the adoption of *IFRS 16 Leases* on January 1, 2019. These loss increases in 2019 were partially offset by higher finance and other income of \$3.3 million primarily as a result of higher interest income earned on our cash balances, and by a decline in loss on sale of assets of \$2.1 million.

As noted above, net loss in 2019 was negatively impacted by a loss on sale of assets of (\$2.0) million related to an additional impairment charge arising from the divestiture of our Power Manager assets to Revision in October 2017. Net loss in 2018 was negatively impacted by an initial loss on sale of assets of (\$4.0) million related to the divestiture of our Power Manager assets. Excluding the impact primarily of transactional gains and losses, Adjusted Net Loss (see Supplemental Non-GAAP Measures and Reconciliations) in 2019 was (\$37.1) million, or (\$0.16) per share, compared to (\$23.4) million, or (\$0.13) per share, for 2018.

Cash provided by (used in) operating activities

(Expressed in thousands of U.S. dollars)

	Year ended December 31,			
	2019	2018	\$ Change	% Change
Cash provided by (used in) operating activities	\$ (14,230)	\$ (31,688)	\$ 17,458	55%

Cash used in operating activities in 2019 was (\$14.2) million, consisting of cash operating losses of (\$14.1) million and net working capital outflows of (\$0.1) million. Cash used in operating activities in 2018 was (\$31.7) million, consisting of cash operating losses of (\$14.4) million combined with net working capital outflows of (\$17.3) million. The \$17.5 million decline in cash used in operating activities in 2019, as compared to 2018, was driven by relative decline in working capital requirements of \$17.2 million, combined with the relative decrease in cash operating losses of \$0.3 million.

The relative \$0.3 million decrease in cash operating losses in 2019 was negatively impacted by the increase in Adjusted EBITDA loss of (\$14.7) million. However, this net (loss) increase in 2019 was offset by the impact of several items included in Adjusted EBITDA loss but excluded from cash operating losses (and vice-versa) including: higher equity investment losses in joint venture and associates of \$9.9 million, higher impairment losses on trade receivables of \$1.7 million, higher finance and other income of \$3.3 million due primarily to higher investment income, and lower income tax expense of \$0.4 million related to withholding taxes on certain commercial contracts primarily in China.

The total change in working capital of (\$0.1) million in 2019 was driven by higher accounts and contract receivables of (\$14.5) million primarily as a result of the timing of revenue recognition and the related customer collections, by higher inventory of (\$0.8) million primarily to support expected Heavy-Duty Motive shipments in the first quarter of 2020, and by higher prepaid expenses of (\$0.8) million as we made supplier payment deposits primarily on certain inventory purchases. These 2019 outflows were partially offset by



higher deferred revenue of \$3.5 million as we collected net pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, by higher accounts payable and accrued liabilities of \$11.1 million primarily as a result of the timing of supplier payments and annual compensation awards, and by higher accrued warranty obligations of \$1.4 million primarily on Heavy-Duty Motive product shipments.

This compares to a total change in working capital of (\$17.3) million in 2018 which was driven by higher inventory of (\$12.9) million primarily to support expected Heavy-Duty Motive shipments in 2019 and which were negatively impacted by higher MEA inventory as a result of minimal shipments to Synergy Ballard JVCo in the third and fourth quarters of 2018 as a result of them not making required prepayments under the MEA supply agreement, by higher accounts receivable of (\$11.7) million primarily as a result of the timing of revenues and the related customer collections, and by lower accounts payable and accrued liabilities of (\$5.6) million as a result of the timing of supplier payments and annual compensation awards. These 2018 outflows were partially offset by higher deferred revenue of \$8.6 million due primarily to a \$9.0 million program prepayment received from Weichai Ballard JV, and by higher accrued warranty obligations of \$3.9 million primarily on Heavy-Duty Motive product shipments.

5.4 Operating Expenses and Other Items – Three Months and Year ended December 31, 2019

Research and product development expenses

(Expressed in thousands of U.S. dollars)

Research and product development	2019	Three months ended December 31,		
		2018	\$ Change	% Change
Research and product development expense	\$ 9,374	\$ 6,423	\$ 2,951	46%
Less: Depreciation and amortization expense	\$ (1,278)	\$ (490)	\$ (788)	(161%)
Less: Stock-based compensation expense	\$ (397)	\$ (215)	\$ (182)	(85%)
Research and Product Development (cash operating cost)	\$ 7,699	\$ 5,718	\$ 1,981	35%

(Expressed in thousands of U.S. dollars)

Research and product development	2019	Year ended December 31,		
		2018	\$ Change	% Change
Research and product development expense	\$ 26,928	\$ 27,039	\$ (111)	-%
Less: Depreciation and amortization expense	\$ (3,542)	\$ (2,158)	\$ (1,384)	(64%)
Less: Stock-based compensation expense	\$ (1,450)	\$ (1,126)	\$ (324)	(29%)
Research and Product Development (cash operating cost)	\$ 21,936	\$ 23,755	\$ (1,819)	(8%)

Research and Product Development (cash operating cost) is a non-GAAP measure. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. Research and Product Development (cash operating cost) adjusts Research and product development expense for depreciation and amortization expense and stock-based compensation expense. See the reconciliation of the adjustments to Research and product development expense in the table above.

Research and product development expenses for the three months ended December 31, 2019 were \$9.4 million, an increase of \$3.0 million, or 46%, compared to the corresponding period of 2018. Excluding depreciation and amortization expense of (\$1.3) million and (\$0.5) million, respectively, in each of the periods, and excluding stock-based compensation expense of (\$0.4) million and (\$0.2) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$7.7 million in the fourth quarter of 2019, an increase of \$2.0 million, or 35%, compared to the fourth quarter of 2018.



The \$2.0 million, or 35%, increase in research and development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter of 2019, as compared to the fourth quarter of 2018, was driven primarily by higher program development and engineering expenses in Denmark by Ballard Power Systems Europe A/S related primarily to Marine market applications, combined with increased expenditure on research and technology development activities in Canada related to the ongoing improvement of all of our fuel cell products and new technology and product development.

Research and product development expenses for the year ended December 31, 2019 were \$26.9 million, a decrease of (\$0.1) million compared to the corresponding period of 2018. Excluding depreciation and amortization expense of (\$3.5) million and (\$2.2) million, respectively, in each of the periods, and excluding stock-based compensation expense of (\$1.5) million and (\$1.1) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$21.9 million in 2019, a decrease of (\$1.8) million, or (8%), compared to 2018.

The (\$1.8) million, or (8%), decline in research and development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in 2019, as compared 2018, were driven primarily by lower program development and engineering expenses in Ballard Unmanned Systems as a result of the disposition of our Power Manager assets and associated personnel in October 2018, combined with lower labour costs in Canada as a result of an approximate (2%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. These cost reductions were partially offset by higher program development and engineering expenses in Denmark by Ballard Power Systems Europe A/S related primarily to Marine market applications.

Although we have also increased our gross investment and expenditure on research and product development activities in Canada related to the ongoing improvement of all of our fuel cell products and the design and development of our next generation fuel cell products, including our new 8th generation high performance fuel cell module, the FCmove™-HD, and our new high performance liquid-cooled fuel cell stack, the FCgen®-LCS, this higher investment has been primarily offset by increased allocation of the gross research and product development expense to cost of goods sold as a result of increased work performed on revenue producing Technology Solutions projects. Labour and material costs incurred on revenue producing engineering services contracts are reallocated from gross research and product development expenses to cost of goods sold.

Government funding recoveries were also higher in 2019, as compared to 2018, and are attributable primarily to government funding recoveries earned in Denmark by Ballard Power Systems Europe A/S for work performed a variety of European programs. Government funding recoveries are reflected as a cost offset against gross research and product development expenses.

Depreciation and amortization expense included in research and product development expense for the three months and year ended December 31, 2019 was \$1.3 million and \$3.5 million, respectively, compared to \$0.5 million and \$2.2 million, respectively, for the corresponding periods of 2018. Depreciation and amortization expense relates primarily to amortization expense on our intangible assets and depreciation expense on our research



and product development facilities and equipment. Depreciation and amortization expense has increased in 2019 primarily as a result of increased investment in testing, lab and quality inspection equipment including the acquisition of certain strategic assets of AFCC in July 2018.

Stock-based compensation expense included in research and product development expense for the three months and year ended December 31, 2019 was \$0.4 million and \$1.5 million, compared to \$0.2 million and \$1.1 million, respectively, for the corresponding periods of 2018.

General and administrative expenses

(Expressed in thousands of U.S. dollars)

General and administrative	2019	Three months ended December 31,		
		2018	\$ Change	% Change
General and administrative expense	\$ 3,892	\$ 4,479	\$ (587)	(13%)
Less: Depreciation and amortization expense	\$ (284)	\$ (302)	\$ 18	6%
Less: Stock-based compensation expense	\$ (442)	\$ (213)	\$ (229)	(107%)
Add: Impact of unrealized gains (losses) on foreign exchange contracts	\$ 234	\$ (450)	\$ 684	152%
General and Administrative (cash operating cost)	\$ 3,400	\$ 3,514	\$ (114)	(3%)

(Expressed in thousands of U.S. dollars)

General and administrative	2019	Year ended December 31,		
		2018	\$ Change	% Change
General and administrative expense	\$ 13,212	\$ 14,760	\$ (1,548)	(10%)
Less: Depreciation and amortization expense	\$ (1,137)	\$ (1,254)	\$ 117	9%
Less: Stock-based compensation expense	\$ (1,472)	\$ (1,231)	\$ (241)	(20%)
Add: Impact of unrealized gains (losses) on foreign exchange contracts	\$ 805	\$ (570)	\$ 1,375	241%
General and Administrative (cash operating cost)	\$ 11,408	\$ 11,705	\$ (297)	(3%)

General and Administrative (cash operating cost) is a non-GAAP measure. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. General and Administrative (cash operating cost) adjusts General and administrative expense for depreciation and amortization expense, stock-based compensation expense and the impact of unrealized gains or losses on foreign exchange contracts. See the reconciliation of the adjustments to General and administrative expense in the table above.

General and administrative expenses for the three months ended December 31, 2019 were \$3.9 million, a decrease of (\$0.6) million, or (13%), compared to the corresponding period of 2018. Excluding depreciation and amortization expense of (\$0.3) million in each of the periods, excluding stock-based compensation expense of (\$0.4) million and (\$0.2) million, respectively, in each of the periods, and excluding the impact of unrealized gains (losses) on foreign exchange contracts of \$0.2 and (\$0.5) million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$3.4 million in the fourth quarter of 2019, a decrease of (\$0.1) million, or (3%), compared to the fourth quarter of 2018.

The (\$0.1) million, or (3%), decline in general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter of 2019, as compared to the fourth quarter of 2018, were driven primarily by lower realized losses on



our foreign exchange contracts which are designed as a hedge against our Canadian dollar labour costs.

General and administrative expenses for the year ended December 31, 2019 were \$13.2 million, a decrease of (\$1.5) million, or (10%), compared to the corresponding period of 2018. Excluding depreciation and amortization expense of (\$1.1) million and (\$1.3) million, respectively, in each of the periods, excluding stock-based compensation expense of (\$1.5) million and (\$1.2) million, respectively, in each of the periods, and excluding the impact of unrealized gains (losses) on foreign exchange contracts of \$0.8 and (\$0.6) million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$11.4 million in 2019, a decrease of (\$0.3) million, or (3%), compared to 2018.

The respective (\$0.3) million, or (3%), decline in general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in 2019, as compared to 2018, were driven primarily by lower general and administrative expenses in Ballard Unmanned Systems as a result of the disposition of our Power Manager assets and associated personnel in October 2018, and by lower labour costs in Canada as a result of an approximate (2%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. These cost reductions in 2019 were partially offset by increased contract administration costs in Denmark by Ballard Power Systems Europe A/S.

Depreciation and amortization expense included in general and administrative expense for the three months and year ended December 31, 2019 was \$0.3 million and \$1.1 million, respectively, compared to \$0.3 million and \$1.3 million, respectively, for the corresponding periods of 2018. Depreciation and amortization expense relates primarily to our office and information technology intangible assets including our recent investment in a new ERP system.

Stock-based compensation expense included in general and administrative expense for the three months and year ended December 31, 2019 was \$0.4 million and \$1.5 million, respectively, compared to \$0.2 million and \$1.2 million, respectively, for the corresponding periods of 2018.

The impact of unrealized gains (losses) on foreign exchange contracts included in general and administrative expense for the three months and year ended December 31, 2019 was \$0.2 million and \$0.8 million, respectively, compared to (\$0.5) million and (\$0.6) million, respectively, for the corresponding periods of 2018. We use forward foreign exchange contracts to manage our exposure to currency rate fluctuations. We record these contracts at their fair value as of the balance sheet date as either assets or liabilities with any changes in fair value in the period recorded in profit or loss (general and administrative expense) as these contracts are not designated or qualified under hedge accounting criteria. At December 31, 2019, we had outstanding foreign exchange currency contracts to purchase a total of Canadian \$16.8 million at an average rate of 1.3232 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian \$0.3 million at December 31, 2019. This compares to outstanding foreign exchange currency contracts to purchase a total of Canadian \$17.4 million at December 31, 2018, resulting in an unrealized loss of Canadian (\$0.8) million at December 31, 2018.



Sales and marketing expenses

(Expressed in thousands of U.S. dollars)

Sales and marketing	Three months ended December 31,			
	2019	2018	\$ Change	% Change
Sales and marketing expense	\$ 2,637	\$ 2,033	\$ 604	30%
Less: Depreciation and amortization expense	\$ (8)	\$ -	\$ (8)	(100%)
Less: Stock-based compensation expense	\$ (172)	\$ (68)	\$ (104)	(153%)
Sales and Marketing (cash operating cost)	\$ 2,457	\$ 1,965	\$ 492	25%

(Expressed in thousands of U.S. dollars)

Sales and marketing	Year ended December 31,			
	2019	2018	\$ Change	% Change
Sales and marketing expense	\$ 7,915	\$ 8,068	\$ (153)	(2%)
Less: Depreciation and amortization expense	\$ (33)	\$ -	\$ (33)	(100%)
Less: Stock-based compensation expense	\$ (639)	\$ (546)	\$ (93)	(17%)
Sales and Marketing (cash operating cost)	\$ 7,243	\$ 7,522	\$ (279)	(4%)

Sales and Marketing (cash operating cost) is a non-GAAP measure. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. Sales and Marketing (cash operating cost) adjusts Sales and marketing expense for depreciation and amortization expense and stock-based compensation expense. See the reconciliation of the adjustments to Sales and marketing expense in the table above.

Sales and marketing expenses for the three months ended December 31, 2019 were \$2.6 million, an increase of \$0.6 million, or 30%, compared to the corresponding period of 2018. Excluding stock-based compensation expense of (\$0.2) million and (\$0.1) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$2.5 million in the fourth quarter of 2019, an increase of \$0.5 million, or 25%, compared to the fourth quarter of 2018.

The \$0.5 million, or 25%, increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter of 2019, as compared to the fourth quarter of 2018, was driven primarily by higher sales and marketing labour and business development expenses related to the 47% increase in quarterly revenues.

Sales and marketing expenses for the year ended December 31, 2019 were \$7.9 million, a decrease of (\$0.2) million, or (2%), compared to the corresponding period of 2018. Excluding stock-based compensation expense of (\$0.6) million and (\$0.5) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were \$7.2 million in 2019, a decrease of (\$0.3) million, or (4%), compared to 2018.

The (\$0.3) million, or (4%), decline in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in 2019, as compared to 2018, were driven primarily by lower sales and marketing expenses in Ballard Unmanned Systems as a result of the disposition of our Power Manager assets and associated personnel in October 2018, combined with lower labour costs in Canada as a result of an approximate (2%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. These declines were partially offset by higher sales and marketing labour and business development expenses related to the 10% increase in annual revenues.



Stock-based compensation expense included in sales and marketing expense for the three months and year ended December 31, 2019 was \$0.2 million and \$0.6 million, respectively, relatively consistent with the corresponding periods of 2018.

Other expense for the three months and year ended December 31, 2019 was \$0.2 million and \$1.9 million, respectively, compared to \$0.5 million and \$0.6 million, respectively, for the corresponding periods of 2018. The following table provides a breakdown of other expense for the reported periods:

	Three months ended December 31,			
	2019	2018	\$ Change	% Change
Impairment loss (recovery) on trade receivables	\$ 251	\$ 68	\$ 183	269%
Restructuring expense (recovery)	(3)	438	(441)	(101%)
Acquisition charges	-	-	-	-
Other expenses (recovery)	\$ 248	\$ 506	\$ (258)	(51%)

	Year ended December 31,			
	2019	2018	\$ Change	% Change
Impairment loss (recovery) on trade receivables	\$ 1,787	\$ 98	\$ 1,689	1,723%
Restructuring expense	146	507	(361)	(71%)
Acquisition charges	-	-	-	-
Other expenses (recovery)	\$ 1,933	\$ 605	\$ 1,328	220%

Net impairment loss (recovery) on trade receivables for the three months and year ended December 31, 2019 was \$0.3 million and \$1.8 million, respectively, and primarily represents amounts owed to us totaling \$1.5 million for product shipments sold to WrightBus that are no longer expected to be collected. During September 2019 WrightBus entered administration under U.K. insolvency laws due to an inability to pay its debts. In the event that we are able to recover on an impaired trade receivable through legal or other means, the recovered amount is recognized in the period of recovery as a reversal of the impairment loss.

Restructuring expenses of \$0.5 million for the year ended December 31, 2018 relate primarily to a change in operations leadership combined with severance obligations paid to departed employees at Ballard Unmanned Systems as a result of the disposition of our Power Manager assets and associated personnel.

Finance income (loss) and other for the three months and year ended December 31, 2019 was \$0.6 million and \$2.9 million, respectively, compared to nil million and (\$0.4) million, respectively, for the corresponding periods of 2018. The following tables provide a breakdown of finance and other income (loss) for the reported periods:



<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,		
	2019	2018	\$ Change	% Change
Employee future benefit plan expense	\$ (40)	\$ (58)	\$ 18	31%
Pension administration expense	(107)	(104)	(3)	(3%)
Investment and other income (loss)	598	617	(19)	(3%)
Foreign exchange gain (loss)	124	(469)	593	126%
Finance income (loss) and other	\$ 575	\$ (14)	\$ 589	4,207%

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,		
	2019	2018	\$ Change	% Change
Employee future benefit plan expense	\$ (208)	\$ (226)	\$ 18	8%
Pension administration expense	(120)	(117)	(3)	(3%)
Investment and other income (loss)	3,599	972	2,627	270%
Foreign exchange gain (loss)	(420)	(1,078)	658	61%
Finance income (loss) and other	\$ 2,851	\$ (449)	\$ 3,300	735%

Employee future benefit plan expense for the years ended December 31, 2019 and 2018 were (\$0.2) million in each of the periods and primarily represent the excess of expected interest cost on plan obligations in excess of the expected return on plan assets related to a curtailed defined benefit pension plan for certain former United States employees. Pension administration expense for the years ended December 31, 2019 and 2018 were (\$0.1) million in each of the periods and represent administrative costs incurred in managing the plan.

Investment and other income for the three months and year ended December 31, 2019 were \$0.6 million and \$3.6 million, respectively, compared to \$0.6 million and \$1.0 million, respectively, for the corresponding periods of 2018. Amounts were earned primarily on our cash and cash equivalents and have increased relatively proportionately with the increase in our overall cash balances.

Foreign exchange gains (losses) for the three months and year ended December 31, 2019 were \$0.1 million and (\$0.4) million, respectively, compared to (\$0.5) million and (\$1.1) million, respectively, for the corresponding periods of 2018. Foreign exchange gains and losses are attributable primarily to the effect of the changes in the value of the Canadian dollar, relative to the U.S. dollar, on our Canadian dollar-denominated net monetary position. Foreign exchange gains and losses impacted by the conversion of Ballard Power Systems Europe A/S' assets and liabilities from the Danish Kroner to the U.S. dollar at exchange rates in effect at each reporting date are recorded in other comprehensive income (loss).

Finance expense for the three months and year ended December 31, 2019 was (\$0.4) million and (\$1.4) million, respectively, compared to (\$0.1) million and (\$0.5) million, respectively, for the corresponding periods of 2018. As a result of the adoption of *IFRS 16 Leases* on January 1, 2019, Finance expense for 2019 represents the interest expense incurred on all of our right-of-use assets with a lease term of greater than 12-months, including our head office building, manufacturing facility, and related storage facilities in Burnaby, British Columbia, as well as similar right-of-use assets in all of our



subsidiaries. Finance expense for 2018 was limited primarily to the lease expense on our head office building in Burnaby, British Columbia.

IFRS 16 Leases replaces *IAS 17 Leases* introduces a single lessee accounting model and requires a lessee to recognize assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognize a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. The most significant effect of the new standard is the lessee's recognition of the initial present value of unavoidable future lease payments as right-of-use lease assets and lease liabilities on the statement of financial position, including those for most leases that would currently be accounted for as operating leases.

Equity in income (loss) of investment in joint venture and associates for the three months and year ended December 31, 2019 was (\$3.0) million and (\$11.1) million, respectively, compared to (\$1.1) million and (\$1.2) million, respectively, in the corresponding periods of 2018. Equity in loss of investment in joint venture and associates relates to the pickup of 49% of the net income (loss) of Weichai Ballard JV as a result of our 49% ownership position, and 10% of the net income (loss) of Synergy Ballard JVCo as a result of our 10% ownership position. Both of these investments in China are accounted for using the equity method of accounting. The significant increase in the loss of investment in joint venture and associates in 2019 is due primarily to the increase in net loss in Weichai Ballard JV as they expense as incurred the ongoing \$90 million technology transfer agreement with Ballard as research and product development expense as they commence the establishment of operations. Weichai Ballard JV will manufacture Ballard's next-generation LCS fuel cell stack and LCS-based power modules for bus, commercial truck and forklift applications with exclusive rights in China.

Loss on sale of assets for the year ended December 31, 2019 were (\$2.0) million, compared to (\$4.0) million for the corresponding period of 2018. During the three months ended December 31, 2018, we recorded a loss on sale of assets of (\$4.0) million on the divestiture of our Power Manager assets after estimating the amount of variable consideration included in the transaction price that is constrained to be \$2.0 million, as opposed to the maximum possible earn-out amount of \$11.25 million. During the three months ended March 31, 2019, we recorded an additional loss on sale of assets of (\$2.0) million after adjusting the estimated amount of variable consideration from \$2.0 million to nil. During October 2019, the estimated amount of variable consideration was confirmed as nil as Revision failed to meet the minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to us.

Income tax expense for the year ended December 31, 2019 was (\$0.1) million, compared to (\$0.4) million for the corresponding period of 2018. Income tax expense relates primarily to withholding taxes in China deducted from proceeds earned on certain Chinese commercial contracts.



5.4 Summary of Quarterly Results

The following table provides summary financial data for our last eight quarters:

	Quarter ended,			
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019
<i>(Expressed in thousands of U.S. dollars, except per share amounts and weighted average shares outstanding which are expressed in thousands)</i>				
Revenues	\$ 41,883	\$ 24,785	\$ 23,651	\$ 16,008
Net loss	\$ (10,273)	\$ (9,782)	\$ (6,971)	\$ (12,024)
Net loss per share attributable to Ballard, basic and diluted	\$ (0.04)	\$ (0.04)	\$ (0.03)	\$ (0.05)
Weighted average common shares outstanding	233,969	232,810	232,469	232,012
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
Revenues	\$ 28,477	\$ 21,574	\$ 26,445	\$ 20,090
Net loss	\$ (11,475)	\$ (6,024)	\$ (4,323)	\$ (5,500)
Net loss per share attributable to Ballard, basic and diluted	\$ (0.06)	\$ (0.03)	\$ (0.02)	\$ (0.03)
Weighted average common shares outstanding	207,047	179,153	178,727	178,186

Summary of Quarterly Results: There were no significant seasonal variations in our quarterly results. Variations in our net loss for the above periods were affected primarily by the following factors:

- **Revenues:** Variations in fuel cell product and service revenues reflect the demand and timing of our customers' fuel cell vehicle, bus and fuel cell product deployments as well as the demand and timing of their engineering services projects. Variations in fuel cell product and service revenues also reflect the timing of work performed and the achievements of milestones under long-term fixed price contracts.
- **Operating expenditures:** Operating expenses were negatively impacted in the third quarter of 2019 by net impairment losses on trade receivables of (\$1.5) million for amounts owed to us for product shipments sold to WrightBus that are no longer expected to be collected. Operating expenses were negatively impacted in the fourth quarter of 2018 by restructuring expenses of (\$0.4) million related to a change in operations leadership combined with severance obligations paid to departed employees at Ballard Unmanned Systems as a result of the disposition of the Power Manager assets and associated personnel. Operating expenses also include the impact of changes in the value of the Canadian dollar, versus the U.S. dollar, on our Canadian dollar denominated expenditures.
- **Net loss:** Net loss for the first quarter of 2019 and the fourth quarter of 2018 was negatively impacted by a loss on sale of assets of (\$2.0) million and (\$4.0) million, respectively, as a result of the divestiture of our Power Manager assets to Revision on October 5, 2018. Net loss for the four quarters of 2019 was negatively impacted by equity in loss of investment in joint venture and associates as a result of the commencement of operations of Weichai Ballard JV



6. CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

6.1 Summary of Cash Flows

Cash and cash equivalents were \$147.8 million at December 31, 2019, compared to \$192.2 million at December 31, 2018. The (\$44.4) million decrease in cash and cash equivalents in 2019 was driven by net losses (excluding non-cash items) of (\$14.1) million, net working capital outflows of (\$0.1) million, equity investments in Weichai Ballard JV of (\$20.9) million, purchases of property, plant and equipment of (\$13.9) million, and by finance lease repayments of (\$2.1) million. These 2019 outflows were partially offset by net proceeds received from share purchase option exercises of \$4.6 million, and by final net proceeds received of \$2.1 million on the repayment of the promissory note from Revision owing as a result of the divestiture of our Power Manager assets on October 5, 2018.

6.2 Cash Provided by (Used by) Operating Activities

For the three months ended December 31, 2019, cash provided by operating activities was \$4.1 million, consisting of net working capital inflows of \$8.0 million, partially offset by cash operating losses of (\$3.9) million. For the three months ended December 31, 2018, cash provided by operating activities was \$0.2 million, consisting of net working capital inflows of \$4.6 million, partially offset by cash operating losses of (\$4.4) million. The \$3.9 million increase in cash provided by operating activities in the fourth quarter of 2019, as compared to the fourth quarter of 2018, was driven by relative decrease in working capital requirements of \$3.4 million, combined with the relative improvement in cash operating losses of \$0.5 million.

The relative \$0.5 million decrease in cash operating losses in the fourth quarter of 2019 was negatively impacted by the increase in Adjusted EBITDA loss of (\$2.2) million. However, this net (loss) increase in the fourth quarter of 2019 was offset by the impact of several items included in Adjusted EBITDA loss but excluded from cash operating losses (or vice-versa) including: higher equity investment losses in joint venture and associates of \$1.9 million, higher impairment losses on trade receivables of \$0.2 million, higher finance and other income of \$0.6 million due primarily to lower foreign exchange losses, and lower income tax expense of \$0.1 million related to withholding taxes on certain commercial contracts primarily in China.

In the fourth quarter of 2019, net working capital inflows of \$8.0 million were driven primarily by lower inventory of \$5.9 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth quarter of 2019, and by higher accounts payable and accrued liabilities of \$7.4 million primarily as a result of the timing of supplier payments and annual compensation awards. These fourth quarter of 2019 inflows were partially offset by higher accounts and contract receivables of (\$4.0) million primarily as a result of the timing of revenue recognition and the related customer collections, and by lower deferred revenue of (\$3.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period.

This compares to a total change in working capital of \$4.6 million in the fourth quarter of 2018 which was driven by higher deferred revenue of \$8.5 million due primarily to a \$9.0 million program prepayment received from Weichai Ballard JV, by lower inventory of \$3.7 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth



quarter of 2018, and by higher accrued warranty obligations of \$1.6 million primarily on increased Heavy-Duty Motive product shipments. These fourth quarter of 2018 inflows were partially offset by higher accounts receivable of (\$9.8) million primarily as a result of the timing of revenues and the related customer collections.

For the year ended December 31, 2019, cash used in operating activities in 2019 was (\$14.2) million, consisting of cash operating losses of (\$14.1) million and net working capital outflows of (\$0.1) million. For the year ended December 31, 2018, cash used in operating activities in 2018 was (\$31.7) million, consisting of cash operating losses of (\$14.4) million combined with net working capital outflows of (\$17.3) million. The \$17.5 million decline in cash used in operating activities in 2019, as compared to 2018, was driven by relative decline in working capital requirements of \$17.2 million, combined with the relative decrease in cash operating losses of \$0.3 million.

The relative \$0.3 million decrease in cash operating losses in 2019 was negatively impacted by the increase in Adjusted EBITDA loss of (\$14.7) million. However, this net (loss) increase in 2019 was offset by the impact of several items included in Adjusted EBITDA loss but excluded from cash operating losses (and vice-versa) including: higher equity investment losses in joint venture and associates of \$9.9 million, higher impairment losses on trade receivables of \$1.7 million, higher finance and other income of \$3.3 million due primarily to higher investment income, and lower income tax expense of \$0.4 million related to withholding taxes on certain commercial contracts primarily in China.

In 2019, net working capital outflows of (\$0.1) million were driven by higher accounts and contract receivables of (\$14.5) million primarily as a result of the timing of revenue recognition and the related customer collections, by higher inventory of (\$0.8) million primarily to support expected Heavy-Duty Motive shipments in the first quarter of 2020, and by higher prepaid expenses of (\$0.8) million as we made supplier payment deposits primarily on certain inventory purchases. These 2019 outflows were partially offset by higher deferred revenue of \$3.5 million as we collected net pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, by higher accounts payable and accrued liabilities of \$11.1 million primarily as a result of the timing of supplier payments and annual compensation awards, and by higher accrued warranty obligations of \$1.4 million primarily on Heavy-Duty Motive product shipments.

This compares to a total change in working capital of (\$17.3) million in 2018 which was driven by higher inventory of (\$12.9) million primarily to support expected Heavy-Duty Motive shipments in 2019 and which were negatively impacted by higher MEA inventory as a result of minimal shipments to Synergy Ballard JVCo in the third and fourth quarters of 2018 as a result of them not making required prepayments under the MEA supply agreement, by higher accounts receivable of (\$11.7) million primarily as a result of the timing of revenues and the related customer collections, and by lower accounts payable and accrued liabilities of (\$5.6) million as a result of the timing of supplier payments and annual compensation awards. These 2018 outflows were partially offset by higher deferred revenue of \$8.6 million due primarily to a \$9.0 million program prepayment received from Weichai Ballard JV, and by higher accrued warranty obligations of \$3.9 million primarily on Heavy-Duty Motive product shipments.



6.3 Cash Provided by (Used by) Investing Activities

Investing activities resulted in net cash outflows of (\$11.6) million and (\$32.7) million, respectively, for the three months and year ended December 31, 2019, compared to net cash outflows of (\$14.9) million and (\$23.1) million, respectively for the corresponding periods of 2018.

Investing activities in 2019 of (\$32.7) million consist primarily of investments in associated companies of (\$20.9) million paid as planned for the second and third equity contributions in our 49% investment in Weichai Ballard JV, by capital expenditures of (\$13.9) million incurred primarily for production and test equipment, partially offset by net proceeds received on sale of assets of \$2.1 million from the repayment of the promissory note from Revision in the third quarter of 2019 owing as a result of the divestiture of our Power Manager assets on October 5, 2018.

Investing activities in 2018 of (\$23.1) million consist primarily of investments in associated companies of (\$14.6) million paid as an initial equity contribution in our 49% investment in Weichai Ballard JV, and capital expenditures of (\$9.9) million incurred primarily for production and test equipment including the acquisition of certain strategic assets of AFCC in the third quarter of 2018 for approximately Canadian (\$6) million. These 2018 investments were partially offset by initial net proceeds received of \$1.3 million related to the sale of our Power Manager assets to Revision.

6.4 Cash Provided by (Used by) Financing Activities

Financing activities resulted in net cash inflows of \$1.8 million and \$2.6 million, respectively, for the three months and year ended December 31, 2019, compared to net cash inflows of \$183.6 million and \$186.1 million, respectively, for the corresponding periods of 2018.

Financing activities in 2019 of \$2.6 million consist of proceeds from share purchase options of \$4.6 million, partially offset by finance lease payments of (\$2.1) million.

Financing activities in 2018 of \$186.1 million consist of net proceeds of \$183.7 million received from the Weichai and Broad-Ocean strategic equity investments in Ballard, proceeds from share purchase warrant exercises of \$1.4 million, proceeds from share purchase option exercises of \$1.6 million, partially offset by finance lease payments of (\$0.6) million.

6.5 Liquidity and Capital Resources

At December 31, 2019, we had total liquidity of \$147.8 million. We measure liquidity as our net cash position, consisting of the sum of our cash, cash equivalents and short-term investments of \$147.8 million, net of amounts drawn on our \$7 million Canadian demand revolving facility ("Operating Facility") of nil. The Operating Facility is available to be used in helping to finance our short term working capital requirements and is secured by a hypothecation of our cash, cash equivalents and short-term investments.

We also have a \$1.8 million Canadian capital leasing facility ("Leasing Facility") which is available to be used to finance the acquisition and / or lease of operating equipment and is secured by a hypothecation of our cash, cash equivalents and short-term investments. As of December 31, 2019, nothing was outstanding on the Leasing Facility.



Our liquidity objective is to maintain cash balances sufficient to fund at least six quarters of forecasted cash used by operating activities and expected joint venture capital contributions at all times. Our strategy to attain this objective is to continue our drive to attain profitable operations that are sustainable by executing a business plan that continues to focus on Fuel Cell Products and Services revenue growth, improving overall gross margins, maintaining discipline over Cash Operating Costs, managing working capital requirements, and securing additional financing to fund our operations as needed until we do achieve profitable operations that are sustainable. We believe that we currently have adequate liquidity in cash and working capital to achieve our liquidity objective.

Failure to achieve or maintain this liquidity objective could have a material adverse effect on our financial condition and results of operations including our ability to continue as a going concern. There are also various risks and uncertainties affecting our ability to achieve this liquidity objective including, but not limited to, the market acceptance and rate of commercialization of our products, the ability to successfully execute our business plan, and general global economic conditions, certain of which are beyond our control. While we continue to make significant investments in product development and market development activities necessary to commercialize our products, make increased investments in working capital as we grow our business, and make ongoing capital contributions in support of our investment in Weichai Ballard JV, our actual liquidity requirements will also vary and will be impacted by our relationships with our lead customers and strategic partners including their ability to successfully finance and fund their operations and programs and agreements with us, our success in developing new channels to market and relationships with customers, our success in generating revenue growth from near-term product, service and licensing opportunities, our success in managing our operating expense and working capital requirements, foreign exchange fluctuations, and the progress and results of our research, development and demonstration programs.

We may also choose to pursue additional liquidity through the issuance of debt or equity in private or public market financings. To enable the timely issuance of equity securities in the public market, Ballard has a shelf prospectus ("Base Shelf Prospectus") on file with the securities regulators in Canada, expiring in July 2020. The Base Shelf Prospectus was filed in each of the provinces and territories of Canada, except Quebec, and a corresponding shelf registration statement on Form F-10 ("Registration Statement") was also filed with the United States Securities and Exchange Commission ("SEC"). These filings enable offerings of securities up to an aggregate initial offering price of \$150 million at any time during the 25-month period that the Prospectus remains effective.

We intend to establish an at-the-market equity program ("ATM Program") and to issue up to \$75 million of common shares from treasury to the public from time to time at the Company's discretion, subject to favorable market conditions. The ATM Program will be conducted under our existing \$150 million Base Shelf Prospectus and will be used to fund growth and strategic opportunities.

No assurance can be given that any such additional liquidity will be available or that, if available, it can be obtained on terms favorable to the Company. If any securities are offered under the Base Shelf Prospectus and/or Registration Statement, the terms of any such securities and the intended use of the net proceeds resulting from such offering would



be established at the time of any offering and would be described in a Prospectus supplement filed with applicable Canadian securities regulators and/or the SEC, respectively, at the time of such an offering.

7. OTHER FINANCIAL MATTERS

7.1 Off-Balance Sheet Arrangements and Contractual Obligations

Periodically, we use forward foreign exchange contracts to manage our exposure to currency rate fluctuations. We record these contracts at their fair value as either assets or liabilities on our balance sheet. Any changes in fair value are either (i) recorded in other comprehensive income if formally designated and qualified under hedge accounting criteria; or (ii) recorded in profit or loss (general and administrative expense) if either not designated, or not qualified, under hedge accounting criteria. At December 31, 2019, we had outstanding foreign exchange currency contracts to purchase a total of Canadian \$16.8 million at an average rate of 1.3232 Canadian per U.S dollar, resulting in an unrealized gain of Canadian \$0.3 million at December 31, 2019. The outstanding foreign exchange currency contracts have not been designated under hedge accounting.

At December 31, 2019, we did not have any other material obligations under guarantee contracts, retained or contingent interests in transferred assets, outstanding derivative instruments or non-consolidated variable interests.

At December 31, 2019, we had the following contractual obligations and commercial commitments (including capital contribution commitments to Weichai Ballard JV):

Contractual Obligations	Total	Payments due by period,			
		Less than one year	1-3 years	4-5 years	After 5 years
Finance leases	\$ 24,847	\$ 3,723	\$ 7,357	\$ 7,446	\$ 6,321
Asset retirement obligations	1,914	-	-	-	1,914
Capital contributions to Weichai Ballard JV	42,746	19,526	23,220	-	-
Total contractual obligations	\$ 69,507	\$ 23,249	\$ 30,577	\$ 7,446	\$ 8,235

In addition, we have outstanding commitments of \$7.8 million at December 31, 2019 related primarily to purchases of property, plant and equipment. Capital expenditures and expenditures on other intangible assets pertain to our regular operations and are expected to be funded through cash on hand.

In connection with the acquisition of intellectual property from UTC in 2014, we have a royalty obligation in certain circumstances to pay UTC a portion of any future intellectual property sale and licensing income generated from certain of our intellectual property portfolio for a period of 15-years expiring in April 2029. No royalties were paid to UTC in the years ended December 31, 2019 and 2018.

As of December 31, 2019, we retain a previous funding obligation to pay royalties of 2% of revenues (to a maximum of Canadian \$5.4 million) on sales of certain fuel cell products for commercial distributed utility applications. No royalties have been incurred to date as a result of this agreement.

We also retain a previous funding obligation to pay royalties of 2% of revenues (to a



maximum of Canadian \$2.2 million) on sales of certain fuel cell products for commercial transit applications. No royalties have been incurred to date as a result of this agreement.

In the ordinary course of business or as required by certain acquisition or disposition agreements, we are periodically required to provide certain indemnities to other parties. At December 31, 2019, we have not accrued any significant amount owing, or receivable, as a result of any indemnity agreements undertaken in the ordinary course of business.

7.2 Related Party Transactions

Related parties include our 49% owned equity accounted investee, Weichai Ballard JV, and our 10% owned equity accounted investee, Synergy Ballard JVCo. Transactions between us and our subsidiaries are eliminated on consolidation. For the three months and year ended December 31, 2019 and 2018, related party transactions and balances with Weichai Ballard JV and Synergy Ballard JVCo total as follows:

<i>(Expressed in thousands of U.S. dollars)</i>	Three Months Ended December 31,	
Transactions with related parties	2019	2018
Revenues	\$ 25,372	\$ 2,060
Cost of goods sold and operating expense	\$ -	\$ -

<i>(Expressed in thousands of U.S. dollars)</i>	Year Ended December 31,	
Transactions with related parties	2019	2018
Revenues	\$ 45,863	\$ 18,795
Cost of goods sold and operating expense	\$ -	\$ -

<i>(Expressed in thousands of U.S. dollars)</i>	As at Dec 31,	As at Dec 31,
Balances with related parties	2019	2018
Accounts receivable	\$ 10,122	\$ 1,604
Investments	\$ 21,642	\$ 13,989
Deferred revenue	\$ (11,903)	\$ (10,896)

We also provide key management personnel, being board directors and executive officers, certain benefits, in addition to their salaries. Key management personnel also participate in the Company's share-based compensation plans. Key management personnel compensation is summarized in note 27 to our annual consolidated financial statements for the year ended December 31, 2019.

7.3 Outstanding Share and Equity Information

As at March 4, 2020	
Common share outstanding	234,645,476
Warrants outstanding	-
Options outstanding	3,979,999
DSU's outstanding	811,378
RSU's / PSU's outstanding (subject to vesting and performance criteria)	1,305,265



8. ACCOUNTING MATTERS

8.1 Overview

Our consolidated financial statements are prepared in accordance with IFRS, which require us to make estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from those estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

8.2 Critical Judgments in Applying Accounting Policies

Critical judgments that we have made in the process of applying our accounting policies and that have the most significant effect on the amounts recognized in the consolidated financial statements is limited to our assessment of our ability to continue as a going concern (See Note 2 (e) to our annual consolidated financial statements).

Our significant accounting policies are detailed in note 4 to our annual consolidated financial statements for the year ended December 31, 2019 except as described below. These changes in accounting policies are also expected to be reflected in the Company's consolidated financial statements as at and for the year ending December 31, 2020.

Effective January 1, 2019, we have adopted *IFRS 16 Leases* and *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments*. The effect of initially applying *IFRS 16 Leases* had a significant impact on our financial statements which is detailed below, whereas the adoption of *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* did not have a significant impact on our financial statements. A number of other new standards and interpretations are also effective from January 1, 2019 but they did not have a significant impact on our financial statements. Changes to significant accounting policies are detailed below and in note 4 to our annual consolidated financial statements.

8.3 Key Sources of Estimation Uncertainty

The following are key assumptions concerning the future and other key sources of estimation uncertainty that have a significant risk of resulting in a material adjustment to the reported amount of assets, liabilities, income and expenses within the next financial year.

REVENUE RECOGNITION

Revenues are generated primarily from product sales, the license and sale of intellectual property and fundamental knowledge, and the provision of engineering services and technology transfer services. Product revenues are derived primarily from standard product sales contracts and from long-term fixed price contracts. Intellectual property and fundamental knowledge license revenues are derived primarily from standard licensing and technology transfer agreements. Engineering service and technology transfer service revenues are derived primarily from cost-plus reimbursable contracts and from long-term fixed price contracts.

Revenue is recognized when a customer obtains control of the goods or services. Determining the timing of the transfer of control, at a point in time or over time, requires judgment.



On standard product sales contracts, revenues are recognized when customers obtain control of the product, that is when transfer of title and risks and rewards of ownership of goods have passed, and when obligation to pay is considered certain. Invoices are generated and revenue is recognized at that point in time. Provisions for warranties are made at the time of sale. Revenue recognition for standard product sales contracts does not usually involve significant estimates.

On standard licensing and technology transfer agreements, revenues are recognized on the transfer of rights to a licensee, when it is determined to be distinct from other performance obligations, and if the customer can direct the use of, and obtain substantially all of the remaining benefits from the license as it exists at the time of transfer. In other cases, the proceeds are considered to relate to the right to use the asset over the license period and the revenue is recognized over that period. If it is determined that the license is not distinct from other performance obligations, revenue is recognized over time as the customer simultaneously receives and consumes the benefit. Revenue recognition for standard license and sale agreements does not usually involve significant estimates.

On cost-plus reimbursable contracts, revenues are recognized as costs are incurred, and include applicable fees earned as services are provided. Revenue recognition for cost-plus reimbursable contracts does not usually involve significant estimates.

On long-term fixed price contracts, the customer controls all of the work in progress as the services are being provided. This is because under these contracts, the deliverables are made to a customer's specification, and if a contract is terminated by the customer, then the Company is entitled to reimbursement of the costs incurred to date plus the applicable gross margin. Therefore, revenue from these contracts and the associated costs are recognized as the costs are incurred over time. On long-term fixed price contracts, revenues are recognized over time using cumulative costs incurred to date relative to total estimated costs at completion to measure progress towards satisfying performance obligations. Generally, revenue is recognized by multiplying the expected consideration by the ratio of cumulative costs incurred to date to the sum of incurred and estimated costs for completing the performance obligation. The cumulative effect of changes to estimated revenues and estimated costs for completing a contract are recognized in the period in which the revisions are identified. In the event that the estimated costs for completing the contract exceed the expected revenues on a contract, such loss is recognized in its entirety in the period it becomes known. Deferred revenue (i.e. contract liabilities) represents cash received from customers in excess of revenue recognized on uncompleted contracts.

- The determination of expected costs for completing a contract is based on estimates that can be affected by a variety of factors such as variances in the timeline to completion, the cost of materials, the availability and cost of labour, as well as productivity.
- The determination of potential revenues includes the contractually agreed amount and may be adjusted based on the estimate of our attainment on achieving certain defined contractual milestones. Management's estimation is required in determining the amount of consideration for which the Company expects to be entitled and in determining when a performance obligation has been met.

Estimates used to determine revenues and costs of long-term fixed price contracts involve



uncertainties that ultimately depend on the outcome of future events and are periodically revised as projects progress. There is a risk that a customer may ultimately disagree with management's assessment of the progress achieved against milestones, or that our estimates of the work required to complete a contract may change.

During the three months and year ended December 31, 2019 and 2018, there were no material adjustments to revenues relating to revenue recognized in a prior period.

ASSET IMPAIRMENT

The carrying amounts of our non-financial assets other than inventories are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. For goodwill and intangible assets that have indefinite useful lives, the recoverable amount is estimated at least annually.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing 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. In assessing fair value less costs to sell, the price that would be received on the sale of an asset in an orderly transaction between market participants at the measurement date is estimated. For the purposes of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other groups of assets. The allocation of goodwill to cash-generating units reflects the lowest level at which goodwill is monitored for internal reporting purposes. Many of the factors used in assessing fair value are outside the control of management and it is reasonably likely that assumptions and estimates will change from period to period. These changes may result in future impairments. For example, our revenue growth rate could be lower than projected due to economic, industry or competitive factors, or the discount rate used in our value in use model could increase due to a change in market interest rates. In addition, future goodwill impairment charges may be necessary if our market capitalization decreased due to a decline in the trading price of our common stock, which could negatively impact the fair value of our business.

An impairment loss is recognized if the carrying amount of an asset or its cash-generating unit exceeds its estimated recoverable amount. Impairment losses are recognized in net loss. Impairment losses recognized in respect of the cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units, and then to reduce the carrying amounts of the other assets in the unit on a pro-rata basis.

An impairment loss in respect of goodwill is not reversed. In respect of other assets, impairment losses recognized in prior periods are assessed at each reporting date for any indications that the cumulative loss has decreased or no longer exists. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

We perform the annual review of goodwill as at December 31 of each year, more often if



events or changes in circumstances indicate that it might be impaired. Under IFRS, the annual review of goodwill requires a comparison of the carrying value of the asset to the higher of (i) value in use; and (ii) fair value less costs to sell. Value in use is defined as the present value of future cash flows expected to be derived from the asset in its current state. As of December 31, 2019, our consolidated goodwill balance of \$40.3 million relates solely to our Fuel Cell Products and Services segment. Based on the impairment test performed as at December 31, 2019, we have concluded that no goodwill impairment charge is required for the year ending December 31, 2019. Details of our 2019 goodwill impairment tests are as follows:

- One of the methods used to assess the recoverable amount of the goodwill is a fair value, less costs to sale, test. Our fair value test is in effect a modified market capitalization assessment, whereby we calculate the fair value of the Fuel Cell Products and Services segment by first calculating the value of the Company at December 31, 2019 based on the average closing share price in the month of December, add a reasonable estimated control premium to determine the Company's enterprise value on a controlling basis after adjusting for excess cash balances, and then deducting the estimated costs to sell from this enterprise value to arrive at the fair value of the Fuel Cell Products and Services segment. As a result of this assessment, we have determined that the fair value of the Fuel Cell Products and Services segment exceeds its carrying value as of December 31, 2019 indicating that no impairment charge is required for 2019.
- In addition to this fair value test, we also performed a value in use test on our Fuel Cell Products and Services segment that compared the carrying value of the segment to the present value of future cash flows expected to be derived from the segment. The principal factors used in this discounted cash flow analysis requiring significant estimation are the projected results of operations, the discount rate based on the weighted average cost of capital, and terminal value assumptions. Our value in use assessment resulted in an estimated fair value for the Fuel Cell Products and Services segment that is consistent with that as determined under the above fair value, less costs to sell, assessment. As a result of this assessment, we have determined that the fair value of the Fuel Cell Products segment exceeds its carrying value by a significant amount as of December 31, 2019 indicating that no impairment charge is required in 2019.

In addition to the above goodwill impairment test, we perform a quarterly assessment of the carrying amounts of our non-financial assets (other than inventories) to determine whether there is any indication of impairment. During the three months and year ended December 31, 2018, we recorded a loss on sale of assets of (\$4.0) million on the divestiture of our Power Manager assets after estimating the amount of variable consideration included in the transaction price that is constrained to be \$2.0 million, as opposed to the maximum possible earn-out amount of \$11.25 million. During the three months ended March 31, 2019, we recorded an additional loss on sale of assets of (\$2.0) million after adjusting the estimated amount of variable consideration from \$2.0 million to nil. During October 2019, the estimated amount of variable consideration was confirmed as nil as Revision failed to meet the minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to us.



WARRANTY PROVISION

A provision for warranty costs is recorded on product sales at the time of shipment. In establishing the accrued warranty liabilities, we estimate the likelihood that products sold will experience warranty claims and the cost to resolve claims received.

In making such determinations, we use estimates based on the nature of the contract and past and projected experience with the products. Should these estimates prove to be incorrect, we may incur costs different from those provided for in our warranty provisions. During the three months and year ended December 31, 2019, we recorded provisions to accrued warranty liabilities of \$1.9 million and \$3.9 million, respectively, for new product sales, compared to \$2.1 million and \$4.4 million for the three months and year ended December 31, 2018.

We review our warranty assumptions and make adjustments to accrued warranty liabilities quarterly based on the latest information available and to reflect the expiry of contractual obligations. Adjustments to accrued warranty liabilities are recorded in cost of product and service revenues. As a result of these reviews and the resulting adjustments, our warranty provision and cost of revenues for the three months and year ended December 31, 2019 were adjusted downwards by \$1.0 million in each of the periods, compared to adjustments upwards of nil million and (\$0.9) million, respectively, for the three months and year ended December 31, 2018.

INVENTORY PROVISION

In determining the lower of cost and net realizable value of our inventory and establishing the appropriate provision for inventory obsolescence, we estimate the likelihood that inventory carrying values will be affected by changes in market pricing or demand for our products and by changes in technology or design which could make inventory on hand obsolete or recoverable at less than cost. We perform regular reviews to assess the impact of changes in technology and design, sales trends and other changes on the carrying value of inventory. Where we determine that such changes have occurred and will have a negative impact on the value of inventory on hand, appropriate provisions are made. If there is a subsequent increase in the value of inventory on hand, reversals of previous write-downs to net realizable value are made. Unforeseen changes in these factors could result in additional inventory provisions, or reversals of previous provisions, being required. During the three months and year ended December 31, 2019, net negative inventory adjustments of (\$1.6) million and (\$2.4) million, respectively, were recorded as a recovery (charge) to cost of product and service revenues, compared to net negative inventory adjustments of (\$0.7) million and (\$1.0) million, respectively, for the three months and year ended December 31, 2018.

FINANCIAL ASSETS INCLUDING IMPAIRMENT OF TRADE RECEIVABLES

A financial asset is classified as measured at: amortized cost; fair value through other comprehensive income ("FVOCI") or fair value through profit or loss ("FVTPL"). The classification of financial assets is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. Derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never separated. Instead, the hybrid financial instrument as a whole is assessed for classification.



The Company's financial assets which consist primarily of cash and cash equivalents, trade and other receivables, and contract assets, are classified at amortized cost.

An 'expected credit loss' ("ECL") model applies to financial assets measured at amortized cost and debt investments at FVOCI, but not to investments in equity instruments. The Company's financial assets measured at amortized cost and subject to the ECL model consist primarily of trade receivables and contract assets.

In applying the ECL model, loss allowances are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- Lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

We have elected to measure loss allowances for trade receivables and contract assets at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, we consider reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on our historical experience and informed credit assessment and including forward-looking information.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that we expect to receive). ECLs are discounted at the effective interest rate of the financial asset. At each reporting date, we assess whether financial assets carried at amortized cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. Impairment (losses) recoveries related to trade receivables and contract assets are presented separately in the statement of profit or loss. During the three months and year ended December 31, 2019, net impairment (charges) on trade receivables and contract assets of (\$0.3) million and (\$1.8) million, respectively, were recorded in other operating expenses, compared to nominal amounts for the three months and year ended December 31, 2018. Net impairment (charges) in 2019 of (\$1.8) million include ECL's of (\$0.3) million.

LEASES

We apply judgment in determining whether a contract contains an identified asset. The identified asset should be physically distinct or represent substantially all of the capacity of the asset, and should provide the right to substantially all of the economic benefits from the use of the asset. We also apply judgment in determining whether or not we have the right to control the use of the identified asset. We have that right when we have the decision-making rights that are most relevant to changing how and for what purpose the asset is used. In rare cases where the decisions about how and for what purpose the asset is used are predetermined, we have the right to direct the use of the asset if we have the right to operate the asset or if the asset is designed in a way that predetermines how and for what



purpose the asset will be used.

We apply judgment in determining the incremental borrowing rate used to measure our lease liability for each lease contract, including an estimate of the asset-specific security impact. The incremental borrowing rate should reflect the interest that would have to be paid to borrow at a similar term and with a similar security.

The lease liability is subsequently increased by the interest cost on the lease liability and decreased by lease payments made. It is re-measured when there is a change in future lease payments arising from a change in an index or rate, a change in the estimate of the amount expected to be payable under a residual value guarantee, or as appropriate, changes in the assessment of whether a purchase or extension option is reasonably certain to be exercised or a termination option is reasonably certain not to be exercised.

We have applied judgment to determine the lease term for some lease contracts in which we are a lessee that include renewal options. At lease commencement, we assess whether it is reasonably certain to exercise any of the extension options based on the expected economic return from the lease. We periodically reassess whether we are reasonably certain to exercise the options and account for any changes at the date of the reassessment. The assessment of whether we are reasonably certain to exercise such options impacts the lease term which significantly affects the amount of lease liabilities and right-of-use assets recognized. We estimate the lease term by considering the facts and circumstances that can create an economic incentive to exercise an extension option, or not exercise a termination option. Certain qualitative and quantitative assumptions are made when deriving the value of the economic incentive.

EMPLOYEE FUTURE BENEFITS

The present value of our defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that have terms to maturity approximating the terms of the related pension liability. Determination of benefit expense requires assumptions such as the discount rate to measure obligations, expected plan investment performance, expected healthcare cost trend rate, and retirement ages of employees. Actual results will differ from the recorded amounts based on these estimates and assumptions.

INCOME TAXES

We use the asset and liability method of accounting for income taxes. Under this method, deferred income taxes are recognized for the deferred income tax consequences attributable to differences between the financial statement carrying values of assets and liabilities and their respective income tax bases (temporary differences) and for loss carry-forwards. The resulting changes in the net deferred tax asset or liability are included in income.

Deferred tax assets and liabilities are measured using enacted, or substantively enacted, tax rates expected to apply to taxable income in the years in which temporary differences are expected to be recovered or settled. The effect on deferred income tax assets and liabilities, of a change in tax rates, is included in income in the period that includes the substantive enactment date. Deferred income tax assets are reviewed at each reporting period and are reduced to the extent that it is no longer probable that the related tax benefit will be



realized. In circumstances in which there is uncertainty over income tax treatments for current and / or deferred tax liabilities and asset, we contemplate whether uncertain tax treatments should be considered separately, or together as a group, based on which approach provides better predictions of the resolution. We then determine if it is probable that the tax authorities will accept the uncertain tax treatment; and if it is not probable that the uncertain tax treatment will be accepted, we measure the tax uncertainty based on the most likely amount of expected value, depending on whichever method better predicts the resolution of the uncertainty.

As of December 31, 2019 and 2018, we have not recorded any deferred income tax assets on our consolidated statement of financial position.

8.4 Recently Adopted Accounting Policy Changes

Effective January 1, 2019, we have adopted *IFRS 16 Leases* and *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments*. The effect of initially applying *IFRS 16 Leases* had a significant impact on our financial statements which is detailed below, whereas the adoption of *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* did not have a material impact on our financial statements. A number of other new standards and interpretations were also effective from January 1, 2019 but they did not have a material impact on our financial statements.

IFRS 16 – LEASES

IFRS 16 Leases replaced *IAS 17 Leases and the related interpretations* and introduces a single lessee accounting model and requires a lessee to recognize assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognize a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. This standard substantially carried forward the lessor accounting requirements of *IAS 17 Leases*, while requiring enhanced disclosures to be provided by lessors. Other areas of the lease accounting model have been impacted, including the definition of a lease.

The most significant effect of the new standard is the lessee's recognition of the initial present value of unavoidable future lease payments as right-of-use lease assets and lease liabilities on the statement of financial position, including those for most leases that would currently be accounted for as operating leases. Both leases with durations of 12 months or less and leases for low-value assets may be exempted.

The presentation on the statement of income and other comprehensive income required by the new standard results in the presentation of most lease expenses as depreciation of right-of-use lease assets and financing costs arising from lease liabilities, rather than as a part of operating expenses; reported results from operating activities are thus higher under the new standard. Relative to the results of applying *IAS 17 Leases*, although actual cash flows will be unaffected, the lessee's statement of cash flows reflect increases in cash flows from operating activities offset equally by decreases in cash flows from financing activities. This is the result of the presentation of the payments of the "principal" component of leases that were accounted for as operating leases as a cash flow use within financing activities under *IFRS 16 Leases*.



We have adopted *IFRS 16 Leases* using the modified retrospective approach from January 1, 2019, and therefore have not restated comparatives for the 2018 reporting period, as permitted under the specific transitional provisions in the standard. The reclassifications and the adjustments arising from the new leasing rules are therefore recognized in retained earnings at January 1, 2019.

We have also elected not to reassess whether a contract is, or contains a lease at the date of initial application on January 1, 2019. Instead, for contracts entered into before January 1, 2019, we have relied on our assessment made applying *IAS 17 Leases and IFRIC 4 Determining whether an Arrangement contains a Lease*. The definition of a lease under *IFRS 16 Leases* was applied only to contracts entered into or changed on or after January 1, 2019. On adoption of IFRS 16, we 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 Corporation's incremental borrowing rate as of January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

We also used the following practical expedients when applying *IFRS 16 Leases* to leases previously classified as operating leases under *IAS 17 Leases*:

- Applied a single discount rate to a portfolio of leases with reasonably similar characteristics;
- Reliance on previous assessments on whether leases are onerous;
- Applied the exemption not to recognize right-of-use assets and liabilities for leases with less than 12 months of lease term;
- The exclusion of initial direct costs for the measurement of the right-of-use asset at the date of initial application; and
- The use of hindsight in determining the lease term where the contract contains options to extend or terminate the lease.

For leases previously classified as finance leases, we recognized the carrying amount of the lease asset and lease liability immediately before transition as the carrying amount of the right of use asset and the lease liability at the date of initial application. The measurement principles of *IFRS 16 Leases* are only applied after that date.

Under *IFRS 16 Leases*, we are required to assess the classification of a sub-lease with reference to the right-of-use asset, not the underlying asset. On transition, we concluded that sub-lease contracts previously classified as operating leases under *IAS 17 Leases* are also operating leases under *IFRS 16 Leases*.

Under IFRS 16 Leases, we continue to account for the sale-and-leaseback transaction for the manufacturing, research and office facility in Burnaby, BC completed in 2010 as a sale-and-leaseback transaction. At the time of the transaction, it was concluded that the building component of the sale-and-leaseback qualified as a finance lease and the land component was bifurcated and treated as an operating lease. As such, there is no adjustment to the right-of-use asset and the related lease liability of the building component upon transition. However, as the land component now meets the definition of a right-of-use asset under



IFRS 16, the land component of the sale-and-leaseback transaction has now been accounted for as a finance lease with the land component now recognized as a right-of-use asset with a related lease liability recognized.

As a result of applying *IFRS 16 Leases*, in relation to the leases that were previously classified as operating leases, we recognized \$11.4 million of additional right-of-use assets, net of deferred lease inducements of \$2.3 million and trade and other payables of \$0.3 million, and \$14.0 million of additional lease liabilities as at January 1, 2019.

IFRIC 23 – UNCERTAINTY OVER INCOME TAX TREATMENTS

IFRIC Interpretation 23 Uncertainty over Income Tax Treatments provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. The Interpretation requires:

- An entity to contemplate whether uncertain tax treatments should be considered separately, or together as a group, based on which approach provides better predictions of the resolution;
- An entity to determine if it is probable that the tax authorities will accept the uncertain tax treatment; and
- If it is not probable that the uncertain tax treatment will be accepted, measure the tax uncertainty based on the most likely amount of expected value, depending on whichever method better predicts the resolution of the uncertainty.

The adoption of *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* did not have a significant impact on the Company's financial statements.

8.5 Future Accounting Policy Changes

The following is an overview of accounting standard changes that we will be required to adopt in future years. We do not expect to adopt any of these standards before their effective dates and we continue to evaluate the impact of these standards on our consolidated financial statements.

AMENDMENTS TO REFERENCES TO THE CONCEPTUAL FRAMEWORK IN IFRS STANDARDS

On March 29, 2018, the IASB issued a revised version of its *Conceptual Framework for Financial Reporting* ("the Framework") that underpins IFRS Standards. The IASB also issued *Amendments to References to the Conceptual Framework in IFRS Standards* ("the Amendments") to update references in IFRS Standards to previous versions of the Conceptual Framework.

Some Standards include references to the 1989 and 2010 versions of the Framework. The IASB has published a separate document which contains consequential amendments to affected Standards so that they refer to the new Framework, with the exception of IFRS 3 Business Combinations which continues to refer to both the 1989 and 2010 Frameworks.

Both documents are effective from January 1, 2020 with earlier application permitted. The Company intends to adopt the Amendments in its financial statements for the annual period beginning on January 1, 2020. The adoption of the Amendments is not expected to have a material impact on the Company's financial statements.



DEFINITION OF A BUSINESS (AMENDMENTS TO IFRS 3)

On October 22, 2018, the IASB issued amendments to *IFRS 3 Business Combinations* that seek to clarify whether a transaction results in an asset or a business acquisition.

The amendments include an election to use a concentration test. This is a simplified assessment that results in an asset acquisition if substantially all of the fair value of the gross assets is concentrated in a single identifiable asset or a group of similar identifiable assets. If a preparer chooses not to apply the concentration test, or the test is failed, then the assessment focuses on the existence of a substantive process.

The amendments apply to businesses acquired in annual reporting periods beginning on or after January 1, 2020 with earlier adoption permitted. The Company intends to adopt the amendments in its financial statements for the annual reporting period beginning on January 1, 2020. The adoption of the amendments to IFRS 3 is not expected to have a material impact on the Company's financial statements.

DEFINITION OF MATERIAL (AMENDMENTS TO IAS 1 and IAS 8)

On October 31, 2018 the IASB refined its definition of material and removed the definition of material omissions or misstatements from *IAS 8*.

The definition of material has been aligned across *IFRS Standards and the Conceptual Framework for Financial Reporting*. The amendments provide a definition and explanatory paragraphs in one place. Pursuant to the amendments, information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.

The amendments are effective for annual periods beginning on or after January 1, 2020 with earlier adoption permitted. The Company intends to adopt the amendments in its financial statements for the annual reporting period beginning on January 1, 2020. The adoption of the amendments to IAS 1 and IAS 8 are not expected to have a material impact on the Company's financial statements.

9. SUPPLEMENTAL NON-GAAP MEASURES AND RECONCILIATIONS

9.1 Overview

In addition to providing measures prepared in accordance with GAAP, we present certain supplemental non-GAAP measures. These measures are Cash Operating Costs (including its components of research and product development (operating cost), general and administrative (operating cost) and sales and marketing (operating cost)), EBITDA and Adjusted EBITDA, and Adjusted Net Loss. These non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore are unlikely to be comparable to similar measures presented by other companies. We believe these measures are useful in evaluating the operating performance of the Company's ongoing business. These measures should be considered in addition to, and not as a substitute for, operating expenses, net income, cash flows and other measures of financial performance and liquidity reported in accordance with GAAP. The calculation of these non-GAAP measures have been made on a consistent basis for all periods presented.



9.2 Cash Operating Costs

This supplemental non-GAAP measure is provided to assist readers in determining our operating costs on an ongoing cash basis. We believe this measure is useful in assessing performance and highlighting trends on an overall basis.

We also believe Cash Operating Costs is frequently used by securities analysts and investors when comparing our results with those of other companies. Cash Operating Costs differs from the most comparable GAAP measure, operating expenses, primarily because it does not include stock-based compensation expense, depreciation and amortization, impairment losses or recoveries on trade receivables, restructuring charges, acquisition costs, the impact of unrealized gains and losses on foreign exchange contracts, and financing charges. The following tables show a reconciliation of operating expenses to Cash Operating Costs for the three months and year ended December 31, 2019 and 2018:

<i>(Expressed in thousands of U.S. dollars)</i>			
Cash Operating Costs	Three months ended December 31,		
	2019	2018	\$ Change
Total Operating Expenses	\$ 16,151	\$ 13,441	\$ 2,710
Stock-based compensation expense	(1,011)	(496)	(515)
Impairment recovery (losses) on trade receivables	(251)	(68)	(183)
Acquisition and integration costs	-	-	-
Restructuring (charges) recovery	3	(438)	441
Impact of unrealized gains (losses) on foreign exchange contracts	234	(450)	684
Depreciation and amortization	(1,570)	(792)	(778)
Cash Operating Costs	\$ 13,556	\$ 11,197	\$ 2,359

<i>(Expressed in thousands of U.S. dollars)</i>			
Cash Operating Costs	Year ended December 31,		
	2019	2018	\$ Change
Total Operating Expenses	\$ 49,988	\$ 50,472	\$ (484)
Stock-based compensation expense	(3,561)	(2,902)	(659)
Impairment recovery (losses) on trade receivables	(1,787)	(98)	(1,689)
Acquisition and integration costs	-	-	-
Restructuring (charges) recovery	(146)	(507)	361
Impact of unrealized gains (losses) on foreign exchange contracts	805	(570)	1,375
Depreciation and amortization	(4,712)	(3,413)	(1,299)
Cash Operating Costs	\$ 40,587	\$ 42,982	\$ (2,395)

The components of Cash Operating Costs of research and product development (cash operating cost), general and administrative (cash operating cost), and sales and marketing (cash operating cost) differ from their respective most comparable GAAP measure of research and product development expense, general and administrative expense, and sales and marketing expense, primarily because they do not include stock-based compensation expense and depreciation and amortization expense. A reconciliation of these respective operating expenses to the respective components of Cash Operating Costs for the three months and year ended December 31, 2019 and 2018 is included in Section 5.4 Operating Expenses and Other Items.



A breakdown of total stock-based compensation expense for the three months and year ended December 31, 2019 and 2018 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>			
	Three months ended December 31,		
Stock-based compensation expense	2019	2018	\$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	397	215	182
General and administrative expense	442	213	229
Sales and marketing expense (recovery)	172	68	104
Stock-based compensation expense	\$ 1,011	\$ 496	\$ 515

<i>(Expressed in thousands of U.S. dollars)</i>			
	Year ended December 31,		
Stock-based compensation expense	2019	2018	\$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	1,450	1,126	324
General and administrative expense	1,472	1,231	241
Sales and marketing expense (recovery)	639	545	94
Stock-based compensation expense	\$ 3,561	\$ 2,902	\$ 659

A breakdown of total depreciation and amortization expense for the three months and year ended December 31, 2019 and 2018 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>			
	Three months ended December 31,		
Depreciation and amortization expense	2019	2018	\$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	\$ 703	\$ 386	\$ 317
Research and product development expense	1,278	490	788
General and administrative expense	284	302	(18)
Sales and marketing expense	8	-	8
Depreciation and amortization expense	\$ 2,273	\$ 1,178	\$ 1,095

<i>(Expressed in thousands of U.S. dollars)</i>			
	Year ended December 31,		
Depreciation and amortization expense	2019	2018	\$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	\$ 2,802	\$ 1,603	\$ 1,199
Research and product development expense	3,542	2,158	1,384
General and administrative expense	1,137	1,254	(117)
Sales and marketing expense	33	-	33
Depreciation and amortization expense	\$ 7,514	\$ 5,015	\$ 2,499

9.3 EBITDA and Adjusted EBITDA

These supplemental non-GAAP measures are provided to assist readers in determining our operating performance. We believe this measure is useful in assessing performance and highlighting trends on an overall basis. We also believe EBITDA and Adjusted EBITDA are



frequently used by securities analysts and investors when comparing our results with those of other companies. EBITDA differs from the most comparable GAAP measure, net loss, primarily because it does not include finance expense, income taxes, depreciation of property, plant and equipment, and amortization of intangible assets. Adjusted EBITDA adjusts EBITDA for stock-based compensation expense, transactional gains and losses, asset impairment charges, finance and other income, the impact of unrealized gains and losses on foreign exchange contracts, and acquisition costs. The following tables show a reconciliation of net loss to EBITDA and Adjusted EBITDA for the three months and year ended December 31, 2019 and 2018:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,		
EBITDA and Adjusted EBITDA	2019	2018	\$ Change	
Net loss	\$ (10,273)	\$ (11,475)	\$ 1,202	
Depreciation and amortization	2,273	1,178	1,095	
Finance expense	352	121	231	
Income taxes	14	68	(54)	
EBITDA	\$ (7,634)	\$ (10,108)	\$ 2,474	
Stock-based compensation expense	1,011	496	515	
Acquisition and integration costs	-	-	-	
Finance and other (income) loss	(575)	13	(588)	
Impairment charges on intangible assets and property, plant and equipment	-	-	-	
Loss (gain) on sale of assets	-	3,955	(3,955)	
Impact of unrealized (gains) losses on foreign exchange contracts	(234)	450	(684)	
Adjusted EBITDA	\$ (7,432)	\$ (5,194)	\$ (2,238)	

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,		
EBITDA and Adjusted EBITDA	2019	2018	\$ Change	
Net loss	\$ (39,050)	\$ (27,323)	\$ (11,727)	
Depreciation and amortization	7,514	5,015	2,499	
Finance expense	1,434	503	931	
Income taxes	20	370	(350)	
EBITDA	\$ (30,082)	\$ (21,435)	\$ (8,647)	
Stock-based compensation expense	3,561	2,902	659	
Acquisition and integration costs	-	-	-	
Finance and other (income) loss	(2,851)	449	(3,300)	
Impairment charges on intangible assets and property, plant and equipment	-	-	-	
Loss (gain) on sale of assets	1,995	4,049	(2,054)	
Impact of unrealized (gains) losses on foreign exchange contracts	(805)	570	(1,375)	
Adjusted EBITDA	\$ (28,182)	\$ (13,465)	\$ (14,717)	

9.4 Adjusted Net Loss

This supplemental non-GAAP measure is provided to assist readers in determining our financial performance. We believe this measure is useful in assessing our actual performance by adjusting our results from continuing operations for transactional gains and losses and impairment losses. Adjusted Net Loss differs from the most comparable GAAP measure, net loss, primarily because it does not include transactional gains and losses,



asset impairment charges, and acquisition costs. The following table shows a reconciliation of net loss to Adjusted Net Loss for the three months and year ended December 31, 2019 and 2018:

<i>(Expressed in thousands of U.S. dollars)</i>			
Adjusted Net Loss	Three months ended December 31,		
	2019	2018	\$ Change
Net loss	\$ (10,273)	\$ (11,475)	\$ 1,202
Acquisition and integration costs	-	-	-
Impairment charges (recovery) on intangible assets and property, plant and equipment	-	-	-
Loss on sale of assets	-	3,957	(3,957)
Adjusted Net Loss	\$ (10,273)	\$ (7,518)	\$ (2,755)
Adjusted Net Loss per share	\$ (0.04)	\$ (0.04)	\$ (0.00)

<i>(Expressed in thousands of U.S. dollars)</i>			
Adjusted Net Loss	Year ended December 31,		
	2019	2018	\$ Change
Net loss	\$ (39,050)	\$ (27,323)	\$ (11,727)
Acquisition and integration costs	-	-	-
Impairment charges (recovery) on intangible assets and property, plant and equipment	-	-	-
Loss on sale of assets	2,000	3,957	(1,957)
Adjusted Net Loss	\$ (37,050)	\$ (23,366)	\$ (13,684)
Adjusted Net Loss per share	\$ (0.16)	\$ (0.13)	\$ (0.03)



Consolidated Financial Statements
(Expressed in U.S. dollars)

BALLARD POWER SYSTEMS INC.

Years ended December 31, 2019 and 2018

MANAGEMENT’S REPORT

Management’s Responsibility for the Financial Statements and Report on Internal Control over Financial Reporting

The consolidated financial statements contained in this Annual Report have been prepared by management in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board. The integrity and objectivity of the data in these consolidated financial statements are management’s responsibility. Management is also responsible for all other information in the Annual Report and for ensuring that this information is consistent, where appropriate, with the information and data contained in the consolidated financial statements.

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external reporting purposes in accordance with IFRS. Internal control over financial reporting may not prevent or detect fraud or misstatements because of limitations inherent in any system of internal control. Management has assessed the effectiveness of the Corporation’s internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and concluded that the Corporation’s internal control over financial reporting was effective as of December 31, 2019. In addition, management maintains disclosure controls and procedures to provide reasonable assurance that material information is communicated to management and appropriately disclosed. Some of the assets and liabilities include amounts, which are based on estimates and judgments, as their final determination is dependent on future events.

The Board of Directors oversees management’s responsibilities for financial reporting through the Audit Committee, which consists of eight directors who are independent and not involved in the daily operations of the Corporation. The Audit Committee meets on a regular basis with management and the external and internal auditors to discuss internal controls over the financial reporting process, auditing matters and financial reporting issues. The Audit Committee is responsible for appointing the external auditors (subject to shareholder approval), and reviewing and approving all financial disclosure contained in our public documents and related party transactions.

The external auditors, KPMG LLP, have audited the financial statements and expressed an unqualified opinion thereon. KPMG has also expressed an unqualified opinion on the effective operation of the internal controls over financial reporting as of December 31, 2019. The external auditors have full access to management and the Audit Committee with respect to their findings concerning the fairness of financial reporting and the adequacy of internal controls.

“RANDALL MACEWEN”

“TONY GUGLIELMIN”

RANDALL MACEWEN
President and
Chief Executive Officer
March 4, 2020

TONY GUGLIELMIN
Vice President and
Chief Financial Officer
March 4, 2020



KPMG LLP Chartered Professional Accountants PO Box 10426 777 Dunsmuir Street Vancouver BC V7Y 1K23 Canada	Telephone (604) 691-3000 Fax (604) 691-3031 Internet www.kpmg.ca
---	---

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Ballard Power Systems Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of Ballard Power Systems Inc. (the Corporation) as of December 31, 2019 and 2018, the related consolidated statements of loss and comprehensive income (loss), changes in equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as of December 31, 2019 and 2018, and the results of its operations and its cash flows for the years then ended, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Corporation's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 4, 2020 expressed an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 3(a) to the consolidated financial statements, the Company has changed its accounting policy for leases as of January 1, 2019 due to the adoption of IFRS 16, *Leases*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. KPMG Canada provides services to KPMG LLP.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Evaluation of the estimate of costs to complete engineering and technology transfer services for long-term fixed-price contracts

As discussed in Notes 4(j), 5(a) and 21 to the consolidated financial statements, the Corporation recognizes engineering and technology transfer service revenues from long-term fixed-price contracts over time by multiplying the expected consideration from the contract by the ratio of the cumulative costs incurred to date to the sum of incurred and estimated costs for completing the contract. Engineering and technology transfer service revenues from long-term fixed-price contracts are inherently uncertain in that revenue from these contracts is fixed while the estimates of costs required to complete these contracts are subject to significant variability. Engineering and technology transfer service revenues from long-term fixed-price contracts totaled \$59.1 million for the year ended December 31, 2019.

We identified the evaluation of the estimate of costs to complete engineering and technology transfer services for long-term fixed-price contracts as a critical audit matter. A higher degree of auditor judgment was required to evaluate the key assumptions used to estimate costs to complete the contracts, including the labour hours and cost of materials to complete the contracts.

The primary procedures we performed to address this critical audit matter included the following. We tested internal controls over the Corporation's process to estimate costs to complete the contracts, including controls related to the development of the key assumptions noted above. We evaluated the Corporation's ability to estimate costs to complete the contracts by comparing actual labour hours and cost of materials incurred to satisfy the performance obligation to historical estimates prepared by the Corporation. For a selection of customer contracts, we interviewed operational personnel of the Corporation to evaluate progress to date, the estimate of costs to complete the contracts, and factors impacting the amount of labour hours and cost of materials to complete the contracts. We evaluated contract progress by inspecting correspondence between the Corporation and the customer and evaluated the labour hours and cost of materials to complete the contracts for consistency with the status of delivery and the underlying contractual terms. We compared the Corporation's current estimate of costs to complete the contracts to those estimated in prior periods and investigated changes during the period. We compared labour hours and cost of materials incurred subsequent to the Corporation's year-end date to assess the consistency with the estimated costs for the period.

//s// KPMG LLP

We have served as the Corporation's auditor since 1999.

Chartered Professional Accountants

Vancouver, Canada
March 4, 2020



KPMG LLP
Chartered Professional Accountants
PO Box 10426 777 Dunsmuir Street
Vancouver BC V7Y 1K23
Canada

Telephone (604) 691-3000
Fax (604) 691-3031
Internet www.kpmg.ca

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Ballard Power Systems Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Ballard Power Systems Inc.'s (the Corporation) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statement of financial position of the Corporation as of December 31, 2019 and 2018, the related consolidated statements of loss and comprehensive income (loss), changes in equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements), and our report dated March 4, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's Responsibility for the Financial Statements and Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the Corporation's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

//s// KPMG LLP

Chartered Professional Accountants

Vancouver, Canada
March 4, 2020

BALLARD POWER SYSTEMS INC.
Consolidated Statement of Financial Position
(Expressed in thousands of U.S. dollars)

	Note	December 31, 2019	December 31, 2018
Assets			
Current assets:			
Cash and cash equivalents		\$ 147,792	\$ 192,235
Trade and other receivables	7	49,316	38,524
Inventories	8	30,098	29,311
Prepaid expenses and other current assets		2,320	1,523
Total current assets		<u>229,526</u>	261,593
Non-current assets:			
Property, plant and equipment	9	42,836	21,620
Intangible assets	10	5,687	8,285
Goodwill	11	40,287	40,287
Investments	12	21,647	13,994
Other non-current assets		336	321
Total assets		<u>\$ 340,319</u>	<u>\$ 346,100</u>
Liabilities and Equity			
Current liabilities:			
Trade and other payables	14	\$ 31,427	\$ 21,154
Deferred revenue	15	20,156	16,681
Provisions and other current liabilities	16	10,488	9,243
Current lease liability	17	2,445	631
Total current liabilities		<u>64,516</u>	47,709
Non-current liabilities:			
Non-current lease liability	17	17,306	5,064
Deferred gain on finance lease liability	17	2,150	2,566
Provisions and other non-current liabilities	16	1,688	3,862
Employee future benefits	18	4,396	4,299
Total liabilities		<u>90,056</u>	63,500
Equity:			
Share capital	19	1,182,660	1,174,889
Contributed surplus	19	290,640	291,260
Accumulated deficit		(1,223,850)	(1,184,400)
Foreign currency reserve		813	851
Total equity		<u>250,263</u>	282,600
Total liabilities and equity		<u>\$ 340,319</u>	<u>\$ 346,100</u>

See accompanying notes to consolidated financial statements.

Approved on behalf of the Board:

"Doug Hayhurst"
Director

"Jim Roche"
Director

BALLARD POWER SYSTEMS INC.Consolidated Statement of Loss and Comprehensive Income (Loss)
For the year ended December 31

(Expressed in thousands of U.S. dollars, except per share amounts and number of shares)

	Note	2019	2018
Revenues:			
Product and service revenues	21	\$ 106,327	\$ 96,586
Cost of product and service revenues		83,732	66,912
Gross margin		22,595	29,674
Operating expenses:			
Research and product development		26,928	27,039
General and administrative		13,212	14,760
Sales and marketing		7,915	8,068
Other expense	23	1,933	605
Total operating expenses		49,988	50,472
Results from operating activities		(27,393)	(20,798)
Finance income (loss) and other	24	2,851	(449)
Finance expense	24	(1,434)	(503)
Net finance income (loss)		1,417	(952)
Loss on sale of assets	25	(1,995)	(4,049)
Equity in loss of investment in joint venture and associates	12 & 27	(11,059)	(1,154)
Loss before income taxes		(39,030)	(26,953)
Income tax expense	26	(20)	(370)
Net loss		(39,050)	(27,323)
Other comprehensive income (loss):			
<i>Items that will not be reclassified to profit or loss:</i>			
Actuarial gain (loss) on defined benefit plans	18	(400)	305
		(400)	305
<i>Items that may be reclassified subsequently to profit or loss:</i>			
Foreign currency translation differences		(38)	647
		(38)	647
Other comprehensive income (loss), net of tax		(438)	952
Total comprehensive loss		\$ (39,488)	\$ (26,371)
Basic and diluted loss per share			
Loss per share		\$ (0.17)	\$ (0.15)
Weighted average number of common shares outstanding		232,820,675	185,836,596

See accompanying notes to consolidated financial statements.

BALLARD POWER SYSTEMS INC.

Consolidated Statement of Changes in Equity

(Expressed in thousands of U.S. dollars except per share amounts and number of shares)

Ballard Power Systems Inc. Equity							
	Number of shares	Share capital	Contributed surplus	Accumulated deficit	Foreign currency reserve	Total equity	
Balance, December 31, 2017	178,062,667	\$ 986,497	\$ 290,536	\$ (1,157,382)	\$ 204	\$ 119,855	
Net loss	—	—	—	(27,323)	—	(27,323)	
Private placement (note 19)	51,831,659	183,672	—	—	—	183,672	
DSUs redeemed (note 19)	154,752	356	(792)	—	—	(436)	
RSUs redeemed (note 19)	149,980	338	(802)	—	—	(464)	
Options exercised (note 19)	945,022	2,592	(964)	—	—	1,628	
Warrants exercised (note 19)	747,563	1,434	—	—	—	1,434	
Share-based compensation (note 19)	—	—	3,282	—	—	3,282	
Other comprehensive income:							
Defined benefit plan actuarial gain	—	—	—	305	—	305	
Foreign currency translation for foreign operations	—	—	—	—	647	647	
Balance, December 31, 2018	231,891,643	\$ 1,174,889	\$ 291,260	\$ (1,184,400)	\$ 851	\$ 282,600	
Net loss	—	—	—	(39,050)	—	(39,050)	
RSUs redeemed (note 19)	387,686	548	(1,582)	—	—	(1,034)	
Options exercised (note 19)	2,234,997	7,223	(2,599)	—	—	4,624	
Share-based compensation (note 19)	—	—	3,561	—	—	3,561	
Other comprehensive loss:							
Defined benefit plan actuarial loss	—	—	—	(400)	—	(400)	
Foreign currency translation for foreign operations	—	—	—	—	(38)	(38)	
Balance, December 31, 2019	234,514,326	\$ 1,182,660	\$ 290,640	\$ (1,223,850)	\$ 813	\$ 250,263	

See accompanying notes to consolidated financial statements.

BALLARD POWER SYSTEMS INC.
Consolidated Statement of Cash Flows
For the year ended December 31

(Expressed in thousands of U.S. dollars)

	Note	2019	2018
Cash provided by (used in):			
Operating activities:			
Net loss for the year		\$ (39,050)	\$ (27,323)
Adjustments for:			
Depreciation and amortization		7,514	5,015
Impairment loss on trade receivables	23	1,787	98
Unrealized (gain)/loss on forward contracts		(805)	570
Equity in loss of investment in joint venture and associates	12 & 27	11,059	1,154
Loss on sale of assets	25	1,995	4,049
(Gain) loss on decommissioning liabilities		119	(85)
Amortization of deferred lease inducement		—	(476)
Employee future benefits	18	208	226
Employee future benefits plan contributions	18	(511)	(536)
Share-based compensation	19	3,561	2,902
		<u>(14,123)</u>	<u>(14,406)</u>
Changes in non-cash working capital:			
Trade and other receivables		(14,494)	(11,702)
Inventories		(787)	(12,932)
Prepaid expenses and other current assets		(812)	426
Trade and other payables		11,083	(5,573)
Deferred revenue		3,475	8,607
Warranty provision		1,428	3,892
		<u>(107)</u>	<u>(17,282)</u>
Cash used in operating activities		<u>(14,230)</u>	<u>(31,688)</u>
Investing activities:			
Additions to property, plant and equipment	9	(13,934)	(9,854)
Net proceeds on sale of property, plant and equipment	25	2,137	1,345
Investment in joint venture and associates	12	(20,949)	(14,606)
Cash used in investing activities		<u>(32,746)</u>	<u>(23,115)</u>
Financing activities:			
Principal payments of lease liabilities	17	(2,053)	(598)
Net proceeds on issuance of share capital from share option exercises	19	4,624	1,628
Net proceeds on issuance of share capital from warrant exercises	19	—	1,434
Net proceeds on issuance of share capital from private placement	19	—	183,672
Cash provided by financing activities		<u>2,571</u>	<u>186,136</u>
Effect of exchange rate fluctuations on cash and cash equivalents held		(38)	647
Increase (decrease) in cash and cash equivalents		(44,443)	131,980
Cash and cash equivalents, beginning of year		192,235	60,255
Cash and cash equivalents, end of year		147,792	192,235

Supplemental disclosure of cash flow information (note 28).

See accompanying notes to consolidated financial statements.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

1. Reporting entity:

The principal business of Ballard Power Systems Inc. (the "Corporation") is the design, development, manufacture, sale and service of proton exchange membrane ("PEM") fuel cell products for a variety of applications, focusing on the power product markets of Heavy-Duty Motive (consisting of bus, truck, rail and marine applications), Portable Power / Unmanned Aerial Vehicle ("UAV"), Material Handling and Backup Power, as well as the delivery of Technology Solutions, including engineering services, technology transfer and the license and sale of the Corporation's extensive intellectual property portfolio and fundamental knowledge for a variety of PEM fuel cell applications. A fuel cell is an environmentally clean electrochemical device that combines hydrogen fuel with oxygen (from the air) to produce electricity.

The Corporation is a company domiciled in Canada and its registered office is located at 9000 Glenlyon Parkway, Burnaby, British Columbia, Canada, V5J 5J8. The consolidated financial statements of the Corporation as at and for the year ended December 31, 2019 comprise the Corporation and its subsidiaries (note 4(a)).

2. Basis of preparation:**(a) Statement of compliance:**

These consolidated financial statements of the Corporation have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

The consolidated financial statements were authorized for issue by the Board of Directors on March 4, 2020.

Details of the Corporation's significant accounting policies are included in note 4.

This is the first set of the Corporation's annual financial statements in which *IFRS 16 Leases* and *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* have been applied. Changes to significant accounting policies are described in note 3.

(b) Basis of measurement:

The consolidated financial statements have been prepared on the historical cost basis except for the following material items in the statement of financial position:

- Financial assets classified as measured at: amortized cost; fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVTPL); and
- Employee future benefits liability is recognized as the net of the present value of the defined benefit obligation, less the fair value of plan assets.

(c) Functional and presentation currency:

These consolidated financial statements are presented in U.S. dollars, which is the Corporation's functional currency.

(d) Use of estimates:

The preparation of the consolidated financial statements in conformity with IFRS requires the Corporation's management to make estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

2. Basis of preparation (cont'd):

(d) Use of estimates (cont'd):

Significant areas having estimation uncertainty include revenue recognition, asset impairment, warranty provision, inventory provision, impairment loss (recoveries) on trade receivables, employee future benefits, and income taxes. These estimates and judgments are discussed further in note 5.

(e) Future operations:

The Corporation is required to assess its ability to continue as a going concern or whether substantial doubt exists as to the Corporation's ability to continue as a going concern into the foreseeable future. The Corporation has forecast its cash flows for the foreseeable future and despite the ongoing volatility and uncertainties inherent in the business, the Corporation believes it has adequate liquidity in cash and working capital to finance its operations. The Corporation's ability to continue as a going concern and realize its assets and discharge its liabilities and commitments in the normal course of business is dependent upon the Corporation having adequate liquidity and achieving profitable operations that are sustainable. There are various risks and uncertainties affecting the Corporation including, but not limited to, the market acceptance and rate of commercialization of the Corporation's products, the ability of the Corporation to successfully execute its business plan, and general global economic conditions, certain of which are beyond the Corporation's control.

The Corporation's strategy to mitigate these risks and uncertainties is to continue its drive to attain profitable operations that are sustainable by executing a business plan that continues to focus on revenue growth, improving overall gross margins, maintaining discipline over operating expenses, managing working capital requirements, and securing additional financing to fund operations as needed until the Corporation does achieve profitable operations that are sustainable. Failure to implement this plan could have a material adverse effect on the Corporation's financial condition and or results of operations.

3. Changes in accounting policies:

The Corporation has consistently applied the accounting policies set out in note 4 to all periods presented in these consolidated financial statements, except as described below. The Corporation has adopted *IFRS 16 Leases* and *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments*, effective January 1, 2019. The effect of applying *IFRS 16 Leases* had a significant impact on the financial statements which is detailed below, whereas the adoption of *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* did not have a significant impact on the Corporation's financial statements. A number of other new standards and interpretations are also effective from January 1, 2019 but they did not have a significant impact on the Corporation's financial statements.

Due to the transition methods chosen by the Corporation in applying these standards, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

(a) *IFRS 16 LEASES*

The Corporation has adopted *IFRS 16 Leases* using the modified retrospective approach from January 1, 2019, and therefore has not restated comparatives for the 2018 reporting period, as permitted under the specific transitional provisions in the standard. The reclassifications and the adjustments arising from the new leasing rules are therefore recognized in retained earnings at January 1, 2019. There was no adjustment to retained earnings as a result of this change in accounting policy.

The Corporation has 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 Corporation relied on its assessment made applying *IAS 17 Leases* and *IFRIC 4 Determining Whether an Arrangement Contains a Lease ("IFRIC 4")*. The definition of a lease under *IFRS 16 Leases* was applied only to contracts entered into or changed on or after January 1, 2019.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

3. Changes in accounting policies (cont'd):**(a) IFRS 16 LEASES (cont'd)**

On adoption of *IFRS 16 Leases*, the Corporation recognized lease liabilities in relation to leases which had previously been classified as "operating lease" under the principles of *IAS 17 Leases*. These liabilities were measured at the present value of the remaining lease payments, discounted using the Corporation's incremental borrowing rate as of January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

The Corporation used the following practical expedients when applying *IFRS 16 Leases* to leases previously classified as operating leases under *IAS 17 Leases*:

- Applied a single discount rate to a portfolio of leases with reasonably similar characteristics;
- Relied on previous assessments on whether leases are onerous;
- Applied the exemption not to recognize right-of-use assets and liabilities for leases with less than 12 months of lease term;
- Excluded initial direct costs for the measurement of the right-of-use asset at the date of initial application;
- Applied hindsight in determining the lease term where the contract contains options to extend or terminate the lease.

For leases previously classified as finance leases, the Corporation recognized the carrying amount of the lease asset and lease liability immediately before transition as the carrying amount of the right-of-use asset and the lease liability at the date of initial application. The measurement principles of *IFRS 16 Leases* are only applied after that date.

Under *IFRS 16 Leases*, the Corporation is required to assess the classification of a sub-lease with reference to the right-of-use asset, not the underlying asset. On transition, the Corporation concluded that sub-lease contracts previously classified as operating leases under *IAS 17 Leases* are also operating leases under *IFRS 16 Leases*.

Under *IFRS 16 Leases*, the Corporation continues to account for the sale-and-leaseback transaction for the manufacturing, research and office facility in Burnaby, BC completed in 2010 as a sale-and-leaseback transaction. At the time of the transaction, it was concluded that the building component of the sale-and-leaseback qualified as a finance lease and the land component was bifurcated and treated as an operating lease. As such, there is no adjustment to the right-of-use asset and the related lease liability of the building component upon transition. However, as the land component now meets the definition of a right-of-use asset under *IFRS 16 Leases*, the land component of the sale-and-leaseback transaction has now been accounted for as a finance lease with the land component now recognized as a right-of-use asset with a related lease liability recognized.

On transition to *IFRS 16 Leases*, the Corporation recognized additional right-of-use assets and lease liabilities, and reduced prepaid expenses, accrued liabilities and deferred lease inducements. The impact on transition is summarized below.

	January 1, 2019
Right-of-use assets	\$ 11,434
Prepaid expenses	(20)
Accrued liabilities	282
Deferred lease inducements	2,292
Lease liability	(13,988)

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

3. Changes in accounting policies (cont'd):

When measuring lease liabilities for leases that were classified as operating leases, the Corporation discounted lease payments using its incremental borrowing rate at January 1, 2019. The weighted-average rate applied is 7%.

	January 1, 2019
Operating lease commitment disclosed as at December 31, 2018	\$ 17,770
Discounted using the lessee's incremental borrowing rate as at the date of initial application	14,110
Add: Finance lease liabilities previously recognized as at December 31, 2018	5,695
Less: Short term leases not recognized under IFRS 16	(122)
Lease liability recognized as at January 1, 2019	\$ 19,683

(b) IFRIC INTERPRETATION 23 UNCERTAINTY OVER INCOME TAX TREATMENTS

IFRIC Interpretation 23 Uncertainty over Income Tax Treatments provides guidance on the accounting for current and deferred tax liabilities and assets in circumstances in which there is uncertainty over income tax treatments. The Interpretation requires:

- An entity to contemplate whether uncertain tax treatments should be considered separately, or together as a group, based on which approach provides better predictions of the resolution;
- An entity to determine if it is probable that the tax authorities will accept the uncertain tax treatment; and
- If it is not probable that the uncertain tax treatment will be accepted, measure the tax uncertainty based on the most likely amount of expected value, depending on whichever method better predicts the resolution of the uncertainty.

The adoption of *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments* did not have a significant impact on the Corporation's financial statements.

4. Significant accounting policies:

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements, unless otherwise indicated. Certain prior year comparative figures have been reclassified to comply with current year presentation.

(a) Basis of consolidation:

The consolidated financial statements include the accounts of the Corporation and its principal subsidiaries as follows:

	Percentage ownership	
	2019	2018
Guangzhou Ballard Power Systems Co., Ltd.	100 %	100 %
Ballard Hong Kong Ltd.	100 %	100 %
Ballard Unmanned Systems (formerly named Protonex Technology Corporation)	100 %	100 %
Ballard Services Inc.	100 %	100 %
Ballard Fuel Cell Systems Inc.	100 %	100 %
Ballard Power Systems Europe A/S	100 %	100 %
Ballard Power Corporation	100 %	100 %

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):**(a) Basis of consolidation (cont'd):**

The Corporation also has a non-controlling, 49% interest, in Weichai Ballard Hy-Energy Technologies Co., Ltd ("Weichai Ballard JV") and a non-controlling, 10% interest, in Guangdong Synergy Ballard Hydrogen Power Co., Ltd ("Synergy Ballard JVCo"). Both of these associated companies are accounted for using the equity method of accounting.

Subsidiaries are entities controlled by the Corporation. The Corporation controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. Intercompany balances and transactions are eliminated in the consolidated financial statements.

(i) Weichai Ballard JV

On November 13, 2018, the Corporation, through Ballard Hong Kong Ltd ("BHKL"), entered into an agreement with Weichai Power Co., Ltd ("Weichai Power") to create a new limited liability company based in China called Weichai Ballard Hy-Energy Technologies Co., Ltd ("Weichai Ballard JV"). The purpose of Weichai Ballard JV is to manufacture the Corporation's next-generation liquid-cooled fuel cell stack ("LCS") and LCS-based power modules for bus, commercial truck and forklift applications with certain exclusive rights in China. Under the agreement, Weichai is to contribute RMB 561,000,000 (\$80,560,000 equivalent at December 31, 2019 exchange rate) and the Corporation is to contribute RMB 539,000,000 (\$77,976,000 equivalent at December 31, 2019 exchange rate) representing 51% and 49% of the registered capital in Weichai Ballard JV, respectively. The parties will make these contributions in cash over a four year period and are not obligated to contribute any additional capital in excess of the amounts noted above.

During 2018, the Corporation made an initial capital contribution of \$14,286,000 (RMB 98,000,000 equivalent). During 2019, the Corporation made two additional capital contributions totalling \$20,944,000 (RMB 143,325,000 equivalent). Weichai Power and the Corporation are committed to fund pro rata shares of Weichai Ballard JV based on an agreed business plan. Weichai Power holds three of five Weichai Ballard JV board seats and the Corporation holds two, with the Corporation having certain shareholder protection provisions. Weichai Ballard JV is not controlled by the Corporation and therefore is not consolidated. The Corporation's 49% investment in Weichai Ballard JV is accounted for using the equity method of accounting.

(ii) Guangzhou Ballard Power Systems

On January 10, 2017, the Corporation incorporated Guangzhou Ballard Power Systems Co., Ltd. ("GBPS"), a 100% wholly foreign-owned enterprise ("WFOE") in China to serve as the Corporation's operations entity for all of China.

(iii) Ballard Power Systems Europe

On January 5, 2017, the Corporation purchased the remaining 43% interest in its European subsidiary, Ballard Power Systems Europe A/S ("BPSE"), held by Dansk Industri Invest A/S for a nominal value, thus resulting in the Corporation now owning 100% of BPSE.

(iv) Synergy Ballard JVCo

On September 26, 2016, the Corporation, through BHKL, entered into a joint venture agreement with Guangdong Nation Synergy Hydrogen Power Technology Co., Ltd ("Synergy") to create a new limited liability company based in China called Guangdong Synergy Ballard Hydrogen Power Co., Ltd ("Synergy Ballard JVCo"). The purpose of Synergy Ballard JVCo is to manufacture fuel cell stacks utilizing the Corporation's FCvelocity®-9SSL fuel cell stack technology for use primarily in fuel cell engines assembled in China to provide propulsion power for zero-emission fuel cell electric buses and commercial vehicles with certain exclusive rights in China.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(a) Basis of consolidation (cont'd):

(iv) Synergy Ballard JVCo (cont'd)

In setting up the joint venture, as specified in the Equity Joint Venture Agreement ("EJV") dated September 26, 2016, Synergy contributed RMB 60,300,000 (\$9,000,000) and the Corporation contributed RMB 6,700,000, (\$971,000) in March 2017 representing 90% and 10% of the registered capital in Synergy Ballard JVCo, respectively. The parties made their contributions in cash and the Corporation is not obligated to contribute any additional capital in excess of the amounts noted above. Synergy Ballard JVCo is not controlled by the Corporation and therefore is not consolidated. The Corporation's 10% investment in Synergy Ballard JVCo is accounted for using the equity method of accounting.

(v) Ballard Hong Kong Ltd

On July 19, 2016, the Corporation incorporated Ballard Hong Kong Ltd ("BHKL"), a 100% owned holding company in Hong Kong, China.

(vi) Ballard Unmanned Systems

On October 1, 2015, the Corporation acquired Ballard Unmanned Systems (formerly named Protonex Technology Corporation ("Protonex") prior to January 1, 2019), a designer and manufacturer of advanced power management products and portable fuel cell solutions.

(b) Foreign currency:

(i) Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of the Corporation and its subsidiaries at the exchange rate in effect at the transaction date. Monetary assets and liabilities denominated in other than the functional currency are translated at the exchange rates in effect at the balance sheet date. The resulting exchange gains and losses are recognized in earnings. Non-monetary assets and liabilities denominated in other than the functional currency that are measured at fair value are translated to the functional currency at the exchange rate at the date that the fair value was determined. Non-monetary items that are measured in terms of historical cost in other than the functional currency are translated using the exchange rate at the date of the transaction.

(ii) Foreign operations

The assets and liabilities of foreign operations are translated to the presentation currency using exchange rates at the reporting date. The income and expenses of foreign operations are translated to the presentation currency using exchange rates at the dates of the transactions. Foreign currency differences are recognized in other comprehensive income.

(c) Financial instruments:

(i) Financial assets

The Corporation initially recognizes loans and receivables and deposits on the date that they originated and all other financial assets on the trade date at which the Corporation becomes a party to the contractual provisions of the instrument. The Corporation derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers substantially all the risks and rewards of ownership of the financial asset.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(c) Financial instruments (cont'd):

Financial assets at fair value through profit or loss

Financial assets are classified as measured at: amortized cost; fair value through other comprehensive income ("FVOCI") or fair value through profit or loss ("FVTPL"). The classification of financial assets is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. Derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never separated. Instead, the hybrid financial instrument as a whole is assessed for classification. The Corporation's financial assets which consist primarily of cash and cash equivalents, trade and other receivables, and contract assets are classified at amortized cost.

The Corporation also periodically enters into foreign exchange forward contracts and platinum futures contracts to limit its respective exposure to foreign currency rate fluctuations and platinum price fluctuations. These derivatives are recognized initially at fair value and are recorded as either assets or liabilities based on their fair value. Subsequent to initial recognition, these derivatives are measured at fair value and changes to their value are recorded through profit or loss.

(ii) Financial liabilities

Financial liabilities comprise the Corporation's trade and other payables. The financial liabilities are initially recognized on the date they are originated and are derecognized when the contractual obligations are discharged or cancelled or expire. These financial liabilities are recognized initially at fair value and subsequently are measured at amortized costs using the effective interest method, when materially different from the initial amount. Fair value is determined based on the present value of future cash flows, discounted at the market rate of interest.

(iii) Share capital

Share capital is classified as equity. Incremental costs directly attributable to the issue of shares and share options are recognized as a deduction from equity. When share capital is repurchased, the amount of the consideration paid, including directly attributable costs, is recognized as a deduction from equity. Repurchased shares are classified as treasury shares and are presented as a deduction from equity. When treasury shares are subsequently reissued, the amount received is recognized as an increase in equity, and the resulting surplus or deficit on the transaction is transferred to or from retained earnings.

(d) Inventories:

Inventories are recorded at the lower of cost and net realizable value. The cost of inventories is based on the first-in first-out principle, and includes expenditures incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes materials, labor and appropriate share of production overhead based on normal operating capacity. Costs of materials are determined on an average per unit basis.

Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. In establishing any impairment of inventory, management estimates the likelihood that inventory carrying values will be affected by changes in market demand, technology and design, which would impair the value of inventory on hand.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(e) Property, plant and equipment:

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost less accumulated depreciation and any accumulated impairment losses. The cost of self-constructed assets includes the cost of materials, costs directly attributable to bringing the assets to a working condition for their intended use, and the costs of dismantling and removing items and restoring the site on which they are located. If significant parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

(ii) Subsequent expenditures

Subsequent expenditures are capitalized only if it is probable that the future economic benefits associated with the expenditures will flow to the Corporation.

(iii) Depreciation

Depreciation is calculated to write-off the cost of items of property, plant and equipment less their estimated residual values using the straight-line method over their estimated useful lives, and is generally recognized in profit or loss.

The estimated useful lives of property, plant and equipment for current and comparative periods are as follows:

Computer equipment	3 to 10 years
Furniture and fixtures	5 to 10 years
Leasehold improvements	The shorter of initial term of the respective lease and estimated useful life
Production and test equipment	4 to 15 years

Leased assets are depreciated over the shorter of the lease term or their useful lives unless it is reasonably certain that the Corporation will obtain ownership by the end of the lease term.

Right-of-use asset - Property	2 to 15 years
Right-of-use asset - Office equipment	2 to 5 years
Right-of-use asset - Vehicle	5 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(f) Leases:

IFRS 16 Leases introduced a single, on-balance sheet accounting model for lessees. As a result, the Corporation, as a lessee, has recognized right-of-use assets representing its rights to use the underlying assets, and lease liabilities representing its obligation to make lease payments. Lessor accounting remains similar to previous accounting policies.

The Corporation has applied *IFRS 16 Leases* using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under *IAS 17 Leases* and *IFRIC 4*. The details of accounting policies under *IAS 17 Leases* and *IFRIC 4* are disclosed separately if they are different from those under *IFRS 16 Leases* and the impact of changes is disclosed in note 3.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(f) Leases (cont'd)

Accounting policy applicable from January 1, 2019

At inception of a contract, the Corporation assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Corporation assesses whether:

- the contract involves the use of an identified asset - this may be specified explicitly or implicitly, and should be physically distinct or represent substantially all of the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified;
- the Corporation has the right to obtain substantially all of the economic benefits from use of the asset throughout the period of use; and
- the Corporation has the right to direct the use of the asset. The Corporation has this right when it has the decision-making rights that are most relevant to changing how and for what purpose the asset is used. In rare cases where all the decisions about how and for what purpose the asset is used are predetermined, the Corporation has the right to direct the use of the asset if either:
 - the Corporation has the right to operate the asset; or
 - the Corporation designed the asset in a way that predetermines how and for what purpose it will be used.

This policy is applied to contracts entered into, or changed, on or after January 1, 2019.

i. As a Lessee

The Corporation recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Corporation's incremental borrowing rate. Generally, the Corporation uses its incremental borrowing rate as the discount rate.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(f) Leases (cont'd)

Lease payments included in the measurement of the lease liability comprise:

- Fixed payments, including in-substance fixed payments;
- Variable lease payments that depend on an index or a rate, initially measured using the index or rate at the commencement date;
- Amounts expected to be payable under a residual value guarantee; and
- The exercise price under a purchase option that the Corporation is reasonably certain to exercise, lease payments in an optional renewal period if the Corporation is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the Corporation is reasonably certain not to terminate early.

The lease liability is subsequently measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Corporation's estimate of the amount expected to be payable under a residual value guarantee or if the Corporation changes its assessment of whether it will exercise a purchase, extension or termination option. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

The Corporation presents right-of-use assets in 'Property, plant and equipment' and lease liabilities in 'Lease liability' in the statement of financial position.

The Corporation has elected not to recognize right-of-use assets and lease liabilities for short-term leases of properties, equipment and vehicles that have a lease term of 12 months or less. The Corporation recognizes the lease payments associated with these leases as an operating expense on a straight-line basis over the lease term.

ii. As a Lessor

When the Corporation is an intermediate lessor, it accounts for its interests in the head lease and the sub-lease separately. It assesses the lease classification of a sub-lease with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset, and makes an overall assessment of whether the lease transfers to the lessee substantially all of the risks and rewards of ownership incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease. As part of this assessment, the Corporation considers certain indicators such as whether the lease is for the major part of the economic life of the asset.

The Corporation recognizes lease payments received under operating leases as income on a straight-line basis over the lease term in operating expense.

The accounting policies applicable to the Corporation as a lessor in the comparative period were not different from *IFRS 16 Leases*. However, when the Corporation was an intermediate lessor the sub-leases were classified with reference to the underlying asset.

Accounting policy applicable before January 1, 2019

Leases where the Corporation assumes substantially all the risks and rewards of ownership are classified as finance leases. Upon initial recognition the leased asset is measured at an amount equal to the lower of its fair value and the present value of the minimum lease payments. Subsequent to initial recognition, the asset is accounted for in accordance with the accounting policy applicable to that asset. Other leases are operating leases and not recognized in the statement of financial position.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(f) Leases (cont'd)

Minimum lease payments made under finance leases are apportioned between finance expense and reduction of the outstanding liability. Finance expense is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Payments made under operating leases are recognized in income on a straight-line basis over the term of the lease. Lease incentives received are recognized as a reduction to the lease expense over the term of the lease.

(g) Goodwill and intangible assets:

(i) Recognition and measurement

Goodwill	Goodwill arising on the acquisition of subsidiaries is measured at cost less accumulated impairment losses.
Research and development	Expenditure on research activities is recognized in profit or loss as incurred. Development expenditure is capitalized only if the expenditure can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable and the Corporation intends to and has sufficient resources to complete development and to use or sell the asset. Otherwise, it is recognized in profit or loss as incurred. Subsequent to initial recognition, development expenditure is measured at cost less accumulated amortization and any accumulated impairment losses.
Intangible assets	Intangible assets, including patents, know-how, in-process research and development, trademarks and service marks and software systems that are acquired or developed by the Corporation and have finite useful lives are measured at cost less accumulated amortization and any accumulated impairment losses.

(ii) Subsequent expenditure

Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditures, including expenditures on internally generated goodwill, are recognized in profit or loss as incurred.

(iii) Amortization

Amortization is calculated to write-off the cost of intangible assets less their estimated residual values using the straight-line method over their estimated useful lives, and is recognized in profit or loss. Goodwill is not amortized.

The estimated useful lives for current and comparative periods are as follows:

Internally generated fuel cell intangible assets	3 to 5 years
Patents, know-how and in-process research & development	5 to 20 years
ERP management reporting software system	5 to 10 years
Trademarks and service marks	15 years
Domain names	15 years
Customer base and relationships	10 years
Acquired non-compete agreements	1 year

Amortization methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(h) Impairment:

(i) Financial assets

An 'expected credit loss' ("ECL") model applies to financial assets measured at amortized cost and debt investments at FVOCI, but not to investments in equity instruments. The Corporation's financial assets measured at amortized cost and subject to the ECL model consist primarily of trade receivables and contract assets.

In applying the ECL model, loss allowances are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

The Corporation has elected to measure loss allowances for trade receivables and contract assets at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Corporation considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on historical experience and informed credit assessment and including forward-looking information.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that we expect to receive). ECLs are discounted at the effective interest rate of the financial asset. At each reporting date, we assess whether financial assets carried at amortized cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. Impairment (losses) recoveries related to trade receivables and contract assets are presented separately in the statement of profit or loss.

(ii) Non-financial assets

The carrying amounts of the Corporation's non-financial assets other than inventories are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. For goodwill and intangible assets that have indefinite useful lives, the recoverable amount is estimated annually.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing 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. Fair value less costs to sell is defined as the estimated price that would be received on the sale of the asset in an orderly transaction between market participants at the measurement date. For the purposes of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other groups of assets.

The allocation of goodwill to cash-generating units reflects the lowest level at which goodwill is monitored for internal reporting purposes.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(h) Impairment (cont'd):

(ii) Non-financial assets (cont'd)

An impairment loss is recognized if the carrying amount of an asset or its cash-generating unit exceeds its estimated recoverable amount. Impairment losses are recognized in net loss. Impairment losses recognized in respect of the cash generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units, and then to reduce the carrying amounts of the other assets in the unit on a pro-rata basis.

An impairment loss in respect of goodwill is not reversed. In respect of other assets, impairment losses recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

(i) Provisions:

A provision is recognized if, as a result of a past event, the Corporation has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risk specific to the liability. The unwinding of the discount is recognized as a finance expense.

Warranty provision

A provision for warranty costs is recorded on product sales at the time the sale is recognized. In establishing the warranty provision, management estimates the likelihood that products sold will experience warranty claims and the estimated cost to resolve claims received, taking into account the nature of the contract and past and projected experience with the products.

Decommissioning liabilities

Legal obligations to retire tangible long-lived assets are recorded at the net present value of the expected costs of settlement at acquisition with a corresponding increase in asset value. These include assets leased under operating leases. The liability is accreted over the life of the asset to the ultimate settlement amount and the increase in asset value is depreciated over the remaining useful life of the asset.

(j) Revenue recognition:

The Corporation generates revenues primarily from product sales, the license and sale of intellectual property and fundamental knowledge, and the provision of engineering services and technology transfer services. Product revenues are derived primarily from standard product sales contracts and from long-term fixed price contracts. Intellectual property and fundamental knowledge license revenues are derived primarily from standard licensing and technology transfer agreements. Engineering service and technology transfer services revenues are derived primarily from cost-plus reimbursable contracts and from long-term fixed price contracts.

Revenue is recognized when a customer obtains control of the goods or services. Determining the timing of the transfer of control, at a point in time or over time, requires judgment. On standard product sales contracts, revenues are recognized when customers obtain control of the product, that is when transfer of title and risks and rewards of ownership of goods have passed and when obligation to pay is considered certain. Invoices are generated and revenue is recognized at that point in time. Provisions for warranties are made at the time of sale.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):**(j) Revenue recognition (cont'd):**

On standard licensing and technology transfer agreements, revenues are recognized on the transfer of rights to a licensee, when it is determined to be distinct from other performance obligations, and if the customer can direct the use of, and obtain substantially all of the remaining benefits from the license as it exists at the time of transfer. In other cases, the proceeds are considered to relate to the right to use the asset over the license period and the revenue is recognized over that period. If it is determined that the license is not distinct from other performance obligations, revenue is recognized over time as the customer simultaneously receives and consumes the benefit.

On cost-plus reimbursable contracts, revenues are recognized as costs are incurred, and include applicable fees earned as services are provided.

On long-term fixed price contracts, the customer controls all of the work in progress as the services are being provided. This is because under these contracts, the deliverables are made to a customer's specification, and if a contract is terminated by the customer, then the Corporation is entitled to reimbursement of the costs incurred to date plus the applicable gross margin. Therefore, revenue from these contracts and the associated costs are recognized as the costs are incurred over time.

On long-term fixed price contracts, revenues are recognized over time using cumulative costs incurred to date relative to total estimated costs at completion to measure progress towards satisfying performance obligations. Generally, revenue is recognized by multiplying the expected consideration by the ratio of cumulative costs incurred to date to the sum of incurred and estimated costs for completing the performance obligation. The cumulative effect of changes to estimated revenues and estimated costs for completing a contract are recognized in the period in which the revisions are identified. In the event that the estimated costs exceed the expected revenues on a contract, such loss is recognized in its entirety in the period it becomes known.

Deferred revenue (i.e. contract liabilities) represents cash received from customers in excess of revenue recognized on uncompleted contracts.

(k) Finance income and expense:

Finance income comprises interest income on funds invested, gains on the disposal of available-for-sale financial assets and changes in the fair value of financial assets at fair value through profit or loss. Interest income is recognized as it accrues in income, using the effective interest method.

Finance expense comprise interest expense on capital leases, unwinding of the discount on provisions, changes in the fair value of financial assets at fair value through profit or loss and impairment losses recognized on financial assets. Foreign currency gains and losses are reported on a net basis.

(l) Income taxes:

The Corporation follows the asset and liability method of accounting for income taxes. Under this method, deferred income taxes are recognized for the deferred income tax consequences attributable to differences between the financial statement carrying values of assets and liabilities and their respective income tax bases (temporary differences) and for loss carry forwards. The resulting changes in the net deferred tax asset or liability are included in income.

Deferred tax assets and liabilities are measured using enacted, or substantively enacted, tax rates expected to apply to taxable income in the years in which temporary differences are expected to be recovered or settled. The effect on deferred income tax assets and liabilities, of a change in tax rates, is included in income in the period that includes the substantive enactment date. Deferred income tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(m) Employee benefits:

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which an entity pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts.

Obligations for contributions to defined contribution pension plans are recognized as an employee benefit expense in profit or loss in the periods during which services are rendered by employees. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available. Contributions to a defined contribution plan that are due more than 12 months after the end of the period in which the employees render the service are discounted to their present value.

Defined benefit plans

A defined benefit plan is a post-employment pension plan other than a defined contribution plan. The Corporation's net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value. Any unrecognized past service costs and the fair value of any plan assets are deducted. The discount rate is the yield at the reporting date on AA credit-rated bonds that have maturity dates approximating the terms of the Corporation's obligations and that are denominated in the same currency in which the benefits are expected to be paid. The calculation is performed annually by a qualified actuary using the projected unit credit method.

When the calculation results in a benefit to the Corporation, the recognized asset is limited to the total of any unrecognized past service costs and the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. In order to calculate the present value of economic benefits, consideration is given to any minimum funding requirements that apply to any plan in the Corporation. An economic benefit is available to the Corporation if it is realizable during the life of the plan, or on settlement of the plan liabilities.

The Corporation recognizes all remeasurements arising from defined benefit plans, which comprise actuarial gains and losses, immediately in other comprehensive income. Remeasurements recognized in other comprehensive income are not recycled through profit or loss in subsequent periods.

Other long-term employee benefits

The Corporation's net obligation in respect of long-term employee benefits other than pension plans is the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any related assets is deducted. The discount rate is the yield at the reporting date on AA credit-rated bonds that have maturity dates approximating the terms of the Corporation's obligations. The calculation is performed using the projected unit credit method. Any actuarial gains and losses are recognized in other comprehensive income or loss in the period in which they arise.

Termination benefits

Termination benefits are recognized as an expense (restructuring expense recorded in other operating expense) when the Corporation is committed demonstrably, without realistic possibility of withdrawal, to a formal detailed plan to either terminate employment before the normal retirement date, or to provide termination benefits as a result of an offer made to encourage voluntary redundancy. Termination benefits for voluntary redundancies are recognized as an expense if the Corporation has made an offer of voluntary redundancy, it is probable that the offer will be accepted, and the number of acceptances can be estimated reliably. If benefits are payable more than 12 months after the reporting period, then they are discounted to their present value.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

4. Significant accounting policies (cont'd):

(m) Employee benefits (cont'd):

Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided.

A liability is recognized for the amount expected to be paid under short-term cash bonus or profit sharing plans if the Corporation has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

(n) Share-based compensation plans:

The Corporation uses the fair-value based method of accounting for share-based compensation for all awards of shares and share options granted. The resulting compensation expense, based on the fair value of the awards granted, excluding the impact of any non-market service and performance vesting conditions, is charged to income over the period that the employees unconditionally become entitled to the award, with a corresponding increase to contributed surplus.

Fair values of share options are calculated using the Black-Scholes valuation method as of the grant date and adjusted for estimated forfeitures. For awards with graded vesting, the fair value of each tranche is calculated separately and recognized over its respective vesting period. Non-market vesting conditions are considered in making assumptions about the number of awards that are expected to vest. At each reporting date, the Corporation reassesses its estimates of the number of awards that are expected to vest and recognizes the impact of any revision in the income statement with a corresponding adjustment to contributed surplus.

The Corporation issues shares and share options under its share-based compensation plans as described in note 19. Any consideration paid by employees on exercise of share options or purchase of shares, together with the amount initially recorded in contributed surplus, is credited to share capital.

(o) Earnings (loss) per share:

Basic earnings (loss) per share is computed using the weighted average number of common shares outstanding during the period, adjusted for treasury shares. Diluted earnings per share is calculated using the treasury stock method.

Under the treasury stock method, the dilution is calculated based upon the number of common shares issued should deferred share units ("DSUs"), restricted share units ("RSUs"), and "in the money" options, if any, be exercised. When the effects of outstanding stock-based compensation arrangements would be anti-dilutive, diluted loss per share is not calculated.

(p) Government assistance and investment tax credits:

Government assistance and investment tax credits are recorded as either a reduction of the cost of the applicable assets, or credited against the related expense incurred in the statement of comprehensive loss, as determined by the terms and conditions of the agreements under which the assistance is provided to the Corporation or the nature of the expenditures which gave rise to the credits. Government assistance and investment tax credit receivables are recorded when their receipt is reasonably assured.

(q) Segment reporting:

An operating segment is a component of the Corporation that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Corporation's other components. Segment results include items directly attributable to a segment as well as those that can be allocated on a reasonable basis. Unallocated items comprise mainly corporate assets, head office expenses, and income tax assets and liabilities.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

5. Critical judgments in applying accounting policies and key sources of estimation uncertainty:

Critical judgments in applying accounting policies:

Critical judgments that management has made in the process of applying the Corporation's accounting policies and that have the most significant effect on the amounts recognized in the consolidated financial statements are limited to management's assessment of the Corporation's ability to continue as a going concern (note 2(e)).

Key sources of estimation uncertainty:

The following are key assumptions concerning the future and other key sources of estimation uncertainty that have significant risk of resulting in a material adjustment to the reported amount of assets, liabilities, income and expenses within the next fiscal year.

(a) Revenue recognition:

On long-term fixed price contracts, revenues are recorded over time using costs incurred to date relative to total estimated costs at completion to measure progress towards satisfying performance obligations. Revenue is recognized by multiplying the expected consideration by the ratio of cumulative costs incurred to date to the sum of incurred and estimated costs for completing the performance obligation. The cumulative effect of changes to expected revenues and expected costs for completing a contract are recognized in the period in which the revisions are identified. If the expected costs exceed the expected revenues on a contract, such loss is recognized in its entirety in the period it becomes known.

- (i) The determination of expected costs for completing a contract is based on estimates that can be affected by a variety of factors such as variances in the timeline to completion, the cost of materials, the availability and cost of labour, as well as productivity.
- (ii) The determination of potential revenues includes the contractually agreed amount and may be adjusted based on the estimate of the Corporation's attainment on achieving certain defined contractual milestones. Management's estimation is required in determining the amount of consideration to which the Corporation expects to be entitled and in determining when a performance obligation has been met.

Estimates used to determine revenues and costs of long-term fixed price contracts involve uncertainties that ultimately depend on the outcome of future events and are periodically revised as projects progress. There is a risk that a customer may ultimately disagree with management's assessment of the progress achieved against milestones, or that the Corporation's estimates of the work required to complete a contract may change.

(b) Asset impairment:

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing 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. In assessing fair value less costs to sell, the price that would be received on the sale of an asset in an orderly transaction between market participants at the measurement date is estimated. For the purposes of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other groups of assets. The allocation of goodwill to cash-generating units reflects the lowest level at which goodwill is monitored for internal reporting purposes. Many of the factors used in assessing fair value are outside the control of management and it is reasonably likely that assumptions and estimates will change from period to period.

These changes may result in future impairments. For example, the revenue growth rate could be lower than projected due to economic, industry or competitive factors, or the discount rate used in the value in use model could increase due to a change in market interest rates. In addition, future goodwill impairment charges may be necessary if the market capitalization decreased due to a decline in the trading price of the Corporation's common stock, which could negatively impact the fair value of the Corporation's operating segments.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

5. Critical judgments in applying accounting policies and key sources of estimation uncertainty (cont'd):

(c) Warranty provision:

A provision for warranty costs is recorded on product sales at the time of shipment. In establishing the warranty provision, management estimates the likelihood that products sold will experience warranty claims and the cost to resolve claims received. In making such determinations, the Corporation uses estimates based on the nature of the contract and past and projected experience with the products. Should these estimates prove to be incorrect, the Corporation may incur costs different from those provided for in the warranty provision. Management reviews warranty assumptions and makes adjustments to the provision at each reporting date based on the latest information available, including the expiry of contractual obligations. Adjustments to the warranty provision are recorded in cost of product and service revenues.

(d) Inventory provision:

In determining the lower of cost and net realizable value of inventory and in establishing the appropriate provision for inventory obsolescence, management estimates the likelihood that inventory carrying values will be affected by changes in market pricing or demand for the products and by changes in technology or design which could make inventory on hand obsolete or recoverable at less than the recorded value. Management performs regular reviews to assess the impact of changes in technology and design, sales trends and other changes on the carrying value of inventory. Where it is determined that such changes have occurred and will have a negative impact on the value of inventory on hand, appropriate provision are made.

If there is a subsequent increase in the value of inventory on hand, reversals of previous write-downs to net realizable value are made. Unforeseen changes in these factors could result in additional inventory provisions, or reversals of previous provisions, being required.

(e) Financial assets including impairment of trade receivables:

An ECL model applies to financial assets measured at amortized cost, contract assets and debt investments at FVOCI, but not to investments in equity instruments. The Corporation's financial assets that are measured at amortized cost and subject to the ECL model consist primarily of trade receivables and contract assets.

In applying the ECL model, loss allowances are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

The Corporation has elected to measure loss allowances for trade receivables and contract assets at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Corporation considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Corporation's historical experience and informed credit assessment and including forward-looking information.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Corporation expects to receive). ECLs are discounted at the effective interest rate of the financial asset. At each reporting date, the Corporation assesses whether financial assets carried at amortized cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. Impairment (losses) recoveries related to trade receivables and contract assets are presented separately in the statement of profit or loss.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

5. Critical judgments in applying accounting policies and key sources of estimation uncertainty (cont'd):

(f) Employee future benefits:

The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that have terms to maturity approximating the terms of the related pension liability. Determination of benefit expense requires assumptions such as the discount rate to measure obligations, expected plan investment performance, expected healthcare cost trend rate, and retirement ages of employees. Actual results will differ from the recorded amounts based on these estimates and assumptions.

(g) Income taxes:

Deferred tax assets and liabilities are measured using enacted, or substantively enacted, tax rates expected to apply to taxable income in the years in which temporary differences are expected to be recovered or settled. The effect on deferred income tax assets and liabilities of a change in tax rates is included in income in the period that includes the substantive enactment date. Management reviews the deferred income tax assets at each reporting period and records adjustments to the extent that it is no longer probable that the related tax benefit will be realized.

6. Recent accounting pronouncements and future accounting policy changes:

The following is an overview of accounting standard changes that the Corporation will be required to adopt in future years. The Corporation expects to adopt these standards as at their effective dates and will continue to evaluate the impact of these standards on the consolidated financial statements.

(a) Amendments to References to the Conceptual Framework in IFRS Standards

On March 29, 2018 the IASB issued a revised version of its *Conceptual Framework for Financial Reporting* (“the Framework”) that underpins IFRS Standards. The IASB also issued *Amendments to References to the Conceptual Framework in IFRS Standards* (“the Amendments”) to update references in IFRS Standards to previous versions of the Conceptual Framework.

Some Standards include references to the 1989 and 2010 versions of the Framework. The IASB has published a separate document which contains consequential amendments to affected Standards so that they refer to the new Framework, with the exception of *IFRS 3 Business Combinations* which continues to refer to both the 1989 and 2010 Frameworks.

Both documents are effective from January 1, 2020 with earlier application permitted. The Corporation intends to adopt the Amendments in its financial statements for the annual period beginning on January 1, 2020. The adoption of the Amendments is not expected to have a material impact on the Corporation's financial statements.

(b) Definition of a Business (Amendments to *IFRS 3 Business Combinations*)

On October 22, 2018 the IASB issued amendments to *IFRS 3 Business Combinations*, that seek to clarify whether a transaction results in an asset or a business combination.

The amendments include an election to use a concentration test. This is a simplified assessment that results in an asset acquisition if substantially all of the fair value of the gross assets is concentrated in a single identifiable asset or a group of similar identifiable assets. If a preparer chooses not to apply the concentration test, or the test is failed, then the assessment focuses on the existence of a substantive process.

The amendments apply to businesses acquired in annual reporting periods beginning on or after January 1, 2020 with earlier adoption permitted. The Corporation intends to adopt the amendments in its financial statements for the annual reporting period beginning on January 1, 2020. The adoption of the Amendments is not expected to have a material impact on the Corporation's financial statements.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

6. Recent accounting pronouncements and future accounting policy changes (cont'd):(c) Definition of Material (Amendments to *IAS 1* and *IAS 8*)

On October 31, 2018 the IASB refined its definition of material and removed the definition of material omissions or misstatements from *IAS 8*.

The definition of material has been aligned across *IFRS Standards and the Conceptual Framework for Financial Reporting*. The amendments provide a definition and explanatory paragraphs in one place. Pursuant to the amendments, information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.

The amendments are effective for annual periods beginning on or after January 1, 2020 with earlier adoption permitted. The Corporation intends to adopt the amendments in its financial statements for the annual reporting period beginning on January 1, 2020. The adoption of the Amendments is not expected to have a material impact on the Corporation's financial statements.

7. Trade and other receivables:

	December 31, 2019	December 31, 2018
Trade accounts receivable	\$ 27,009	\$ 21,724
Other receivables	3,345	7,706
Contract assets	18,962	9,094
	\$ 49,316	\$ 38,524

Contract assets primarily relate to the Corporation's rights to consideration for work completed but not billed as at December 31, 2019 for engineering services and technology transfer services.

	December 31, 2019
Contract assets	
At January 1, 2019	\$ 9,094
Additions to contract assets	32,137
Invoiced during the year	(22,269)
At December 31, 2019	\$ 18,962

Information about the Corporation's exposure to credit and market risks, and impairment losses for trade receivables and contract assets is included in note 30.

8. Inventories:

	December 31, 2019	December 31, 2018
Raw materials and consumables	\$ 12,848	\$ 15,547
Work-in-progress	9,848	10,034
Finished goods	3,222	1,460
Service inventory	4,180	2,270
	\$ 30,098	\$ 29,311

In 2019, the amount of raw materials and consumables, finished goods and work-in-progress recognized as cost of product and service revenues amounted to \$47,559,000 (2018 - \$39,647,000).

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

8. Inventories (cont'd):

In 2019, the write-down of inventories to net realizable value amounted to \$2,985,000 (2018 - \$1,300,000) and the reversal of previously recorded write-downs amounted to \$609,000 (2018 - \$409,000), resulting in a net write-down of \$2,376,000 (2018 - \$891,000). In addition, \$143,000 of inventory write down was charged to program expense (2018 – \$nil). Write-downs and reversals are included in either cost of product and service revenues, or research and product development expense, depending on the nature of inventory.

9. Property, plant and equipment:

	December 31, 2019	December 31, 2018
Property, plant and equipment owned	\$ 27,746	\$ 21,620
Right-of-use assets	15,090	—
	\$ 42,836	\$ 21,620

Property, plant and equipment owned:

	December 31, 2019	December 31, 2018
Net carrying amounts		
Building	\$ —	\$ 5,007
Computer equipment	1,427	1,639
Furniture and fixtures	51	67
Leasehold improvements	1,260	1,019
Production and test equipment	25,008	13,888
	\$ 27,746	\$ 21,620

Cost	December 31, 2018	Additions	Disposals	Reclass to Right- of-use assets	Effect of movements in exchange rates	December 31, 2019
Building under finance lease	\$ 12,180	\$ —	\$ —	\$ (12,180)	\$ —	\$ —
Computer equipment	5,584	214	(63)	4	(6)	5,733
Furniture and fixtures	1,103	1	—	(4)	(2)	1,098
Leasehold improvements	7,936	630	—	—	(7)	8,559
Production and test equipment	43,310	13,089	(716)	—	(2)	55,681
	\$ 70,113	\$ 13,934	\$ (779)	\$ (12,180)	\$ (17)	\$ 71,071

Accumulated depreciation	December 31, 2018	Depreciation	Disposals	Reclass to Right- of-use	Effect of movements in exchange	December 31, 2019
Building under finance lease	\$ 7,173	\$ —	\$ —	\$ (7,173)	\$ —	\$ —
Computer equipment	3,945	422	(63)	4	(2)	4,306
Furniture and fixtures	1,036	16	—	(4)	(1)	1,047
Leasehold improvements	6,917	389	—	—	(7)	7,299
Production and test equipment	29,422	1,969	(716)	—	(2)	30,673
	\$ 48,493	\$ 2,796	\$ (779)	\$ (7,173)	\$ (12)	\$ 43,325

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

9. Property, plant and equipment (cont'd):

Cost	December 31, 2017	Additions	Disposals	Effect of movements in exchange rates	December 31, 2018
Building under finance lease	\$ 12,180	\$ —	\$ —	\$ —	\$ 12,180
Computer equipment	4,787	1,016	(215)	(4)	5,584
Furniture and fixtures	1,190	6	(87)	(6)	1,103
Leasehold improvements	8,246	71	(363)	(18)	7,936
Production and test equipment	36,431	8,932	(2,047)	(6)	43,310
	\$ 62,834	\$ 10,025	\$ (2,712)	\$ (34)	\$ 70,113

Accumulated depreciation	December 31, 2017	Depreciation	Disposals	Effect of movements in exchange rates	December 31, 2018
Building under finance lease	\$ 6,361	\$ 812	\$ —	\$ —	\$ 7,173
Computer equipment	3,767	383	(200)	(5)	3,945
Furniture and fixtures	1,035	60	(54)	(5)	1,036
Leasehold improvements	6,622	524	(211)	(18)	6,917
Production and test equipment	29,735	1,299	(1,607)	(5)	29,422
	\$ 47,520	\$ 3,078	\$ (2,072)	\$ (33)	\$ 48,493

During the year ended December 31, 2018, the Corporation had cash additions of \$9,854,000 and non-cash additions of \$171,000 related to an adjustment for asset retirement obligations. The Corporation also disposed of certain property, plant and equipment totaling \$495,000 primarily related to Ballard Unmanned Systems' Power Manager business (note 25).

Right-of-use assets

The Corporation leases certain assets under lease agreements, comprising primarily of leases of land and buildings, office equipment and vehicles (note 17).

Right-of-use assets	December 31, 2019	December 31, 2018
Net carrying amounts		
Property	\$ 14,921	\$ —
Equipment	67	—
Vehicle	102	—
	\$ 15,090	\$ —

Cost	January 1, 2019	Additions	Effect of movements in exchange rates	December 31, 2019
Property	\$ 23,427	\$ 1,147	\$ (6)	\$ 24,568
Equipment	76	13	(5)	84
Vehicle	111	31	—	142
	\$ 23,614	\$ 1,191	\$ (11)	\$ 24,794

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

9. Property, plant and equipment (cont'd):

	January 1, 2019	Depreciation	Effect of movements in exchange	December 31, 2019
Accumulated depreciation				
Property	\$ 7,173	\$ 2,474	\$ —	\$ 9,647
Equipment	—	22	(5)	17
Vehicle	—	40	—	40
	\$ 7,173	\$ 2,536	\$ (5)	\$ 9,704

10. Intangible assets:

	December 31, 2019	December 31, 2018
Intellectual property acquired from UTC	\$ 970	\$ 1,417
Intellectual property acquired from H2 Logic A/S	—	43
Intellectual property acquired from Ballard Unmanned Systems (formerly Protonex)	630	787
Internally generated fuel cell intangible assets	168	1,199
ERP management reporting software system	3,912	4,825
Intellectual property acquired by Ballard Power Systems Europe	7	14
	\$ 5,687	\$ 8,285

Intangible assets	Cost	Accumulated amortization	Net carrying amount
Balance			
At January 1, 2018	\$ 69,547	\$ 51,597	\$ 17,950
Amortization expense	—	2,354	(2,354)
Disposals	(9,138)	(1,827)	(7,311)
At December 31, 2018	60,409	52,124	8,285
Amortization expense	—	2,598	(2,598)
At December 31, 2019	\$ 60,409	\$ 54,722	\$ 5,687

Amortization expense on intangible assets is allocated to research and product development expense or general and administration expense depending upon the nature of the underlying assets. In 2019, amortization of \$2,598,000 (2018 - \$2,354,000) was recorded.

During the year ended December 31, 2018, the Corporation disposed of intangible assets of \$7,311,000 related to Ballard Unmanned Systems' (formerly Protonex) Power Manager business (note 25).

11. Goodwill:

For the purpose of impairment testing, goodwill is allocated to the Corporation's cash-generating units which represent the lowest level within the Corporation at which the goodwill is monitored for internal management purposes, which is not higher than the Corporation's operating segments (note 29).

Fuel Cell Products and Services

As of December 31, 2019, the aggregate carrying amount of the Corporation's goodwill is \$40,287,000 (2018 - \$40,287,000).

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

11. Goodwill (cont'd):

The impairment testing requires a comparison of the carrying value of the asset to the higher of (i) value in use; and (ii) fair value less costs to sell. Value in use is defined as the present value of future cash flows expected to be derived from the asset in its current state.

The Corporation's fair value test is a modified market capitalization assessment, whereby the fair value of the Fuel Cell Products and Services segment is determined by first calculating the value of the Corporation at December 31, 2019 based on the average closing share price in the month of December, adding a reasonable estimated control premium to determine the Corporation's enterprise value on a controlling basis after adjusting for excess cash balances, and deducting the estimated costs to sell to arrive at the fair value of the Fuel Cell Products and Services segment. Based on the fair value test, the Corporation has determined that the fair value of the Fuel Cell Products and Services segment exceeds its carrying value as of December 31, 2019.

In addition to the fair value test, the Corporation also performed a value in use test on the Fuel Cell Products and Services segment, comparing the carrying value of the segment to the present value of future cash flows expected to be derived from the segment. The principal factors used in the discounted cash flow analysis requiring significant estimation are the projected results of operations, the discount rate based on the weighted average cost of capital and terminal value assumptions. The value in use assessment resulted in an estimated fair value for the Fuel Cell Products and Services segment that is consistent with the conclusion determined under the fair value, less costs to sell, assessment.

As the recoverable amount of the Fuel Cell Products and Services segment was determined to be greater than its carrying amount, no impairment loss was recorded in 2019 or 2018.

12. Investments:

	December 31, 2019	December 31, 2018
Investment in Synergy Ballard JVCo (note 4)	\$ —	\$ —
Investment in Weichai Ballard JV (note 4)	21,642	13,989
Other	5	5
	\$ 21,647	\$ 13,994

For the year ended December 31, 2019, the Corporation recorded \$11,059,000 (2018 - \$1,154,000) in equity loss of investment in JV and associates, comprising of equity loss in Weichai Ballard JV of \$10,580,000 (2018 - \$617,000) and equity loss in Synergy Ballard JVCo of \$479,000 (2018 - \$537,000).

Investment in Weichai Ballard JV

	December 31, 2019	December 31, 2018
Investment in Weichai Ballard JV		
Beginning balance	\$ 13,989	\$ —
Capital contribution to JV	20,944	14,286
Incorporation costs	4	320
Recognition (deferral) of 49% profit on inventory sold (not yet sold) to third party, net	(2,715)	—
Equity in loss	(10,580)	(617)
Ending balance	\$ 21,642	\$ 13,989

Weichai Ballard JV is an associate in which the Corporation has significant influence and a 49% ownership interest. During the year ended December 31, 2019, the Corporation made committed capital contributions of \$20,944,000 (RMB 143,325,000 equivalent) (2018 - \$14,286,000 (RMB 98,000,000 equivalent)) to Weichai Ballard JV.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

12. Investments (cont'd):

The following tables summarize the financial information of Weichai Ballard JV as included in its own financial statements as of December 31, 2019, adjusted for foreign exchange differences, the application of the Corporation's accounting policies, and the Corporation's incorporation costs.

	December 31, 2019	December 31, 2018
Percentage ownership interest (49%)		
Current assets	\$ 48,836	\$ 28,963
Non-current assets	15	—
Current liabilities	(553)	(1,123)
Non-current liabilities	(534)	—
Net assets (100%)	47,764	27,840
Corporation's share of net assets (49%)	23,404	13,642
Incorporation costs	324	320
Effects of movements in exchange rates	(2,086)	27
Carrying amount of investment in Weichai Ballard JV	\$ 21,642	\$ 13,989

	December 31, 2019	December 31, 2018
Revenue (100%)	\$ 6,950	\$ —
Net loss (100%)	\$ 21,591	\$ 1,259
Corporation's share of net loss (49%)	\$ 10,580	\$ 617

At December 31, 2019, as specified in the Equity Joint Venture Agreement, the Corporation is committed to capital contributions to Weichai Ballard JV as follows:

Less than one year (RMB 135,975,000)	\$ 19,526
One to three years (RMB 161,700,000)	23,220
Total capital contributions	\$ 42,746

Investment in Synergy Ballard JVCo

	December 31, 2019	December 31, 2018
Investment in Synergy Ballard JVCo		
Beginning balance	\$ —	\$ 676
Recognition (deferral) of 10% profit on inventory sold (not yet sold) to third party, net	479	(139)
Equity in loss	(479)	(537)
Ending balance	\$ —	\$ —

Synergy Ballard JVCo is an associate in which the Corporation has significant influence and a 10% ownership interest. During the year ended December 31, 2019, the Corporation made committed capital contributions of \$nil (2018 - \$nil) to Synergy Ballard JVCo.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

13. Bank facilities:

The Corporation has certain bank facilities available to it, which are secured by a hypothecation of the Corporation's cash and cash equivalents.

Operating Facility

The Corporation has a demand revolving facility ("Operating Facility") in which an operating line of credit of up to CDN \$7,000,000 is made available to be drawn upon by the Corporation. The Operating Facility can be utilized to finance the short-term working capital requirements of the business. Outstanding amounts are charged interest at the bank's prime rate minus 0.50% per annum and are repayable on demand by the bank.

At December 31, 2019, \$nil (2018 - \$nil) was outstanding on the Operating Facility.

Leasing Facility

The Corporation also has a CDN \$1,830,770 capital leasing facility ("Leasing Facility") which can be utilized to finance the acquisition and lease of operating equipment. Interest is charged on outstanding amounts at the bank's prime rate per annum and is repayable on demand by the bank in the event of certain conditions.

At December 31, 2019, \$nil (2018 - \$nil) was outstanding on the Leasing Facility which is included in lease liability (note 17).

Forward Contract Facility

The Corporation also has a Canadian dollar credit facility ("EncoreFX Facility") that allows the Corporation to purchase forward foreign exchange contracts of up to \$30,000,000 with an aggregate out-the-money mark-to-market limit of \$1,500,000.

Periodically, the Corporation uses forward foreign exchange contracts to manage exposure to currency rate fluctuations. These contracts are recorded at their fair value as either assets or liabilities on the balance sheet. Any changes in fair value are either (i) recorded in the statement of comprehensive income if formally designated and qualified under hedge accounting criteria; or (ii) recorded in the statement of operations if either not designated, or not qualified, under hedge accounting criteria.

At December 31, 2019, the Corporation had outstanding foreign exchange currency contracts to purchase a total of CDN \$16,800,000 (2018 – CDN \$17,400,000) at an average rate of 1.32 CDN per U.S. dollar, resulting in an unrealized gain of CDN \$306,000 at December 31, 2019 (2018 – unrealized loss of CDN \$777,000). The unrealized gain on forward foreign exchange contracts is presented in prepaid expenses and other current assets on the balance sheet.

The outstanding foreign exchange currency contracts are not qualified under hedge accounting.

14. Trade and other payables:

	December 31, 2019	December 31, 2018
Trade accounts payable	\$ 14,884	\$ 6,924
Compensation payable	12,596	8,505
Other liabilities	3,559	5,327
Taxes payable	388	398
	\$ 31,427	\$ 21,154

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

15. Deferred revenue:

Deferred revenue (i.e. contract liabilities) represents cash received from customers in excess of revenue recognized on uncompleted contracts.

	December 31, 2019	December 31, 2018
Deferred revenue		
Beginning Balance	\$ 16,681	\$ 8,082
Additions to deferred revenue	41,197	19,353
Revenue recognized during the year	(37,722)	(10,754)
Ending Balance	\$ 20,156	\$ 16,681

16. Provisions and other liabilities:

	Restructuring provision	Warranty provision	Other liabilities	Total
Balance				
At January 1, 2018	\$ 248	\$ 5,199	\$ 4,253	\$ 9,700
Provisions made during the year	509	5,474	(63)	5,920
Provisions used/paid during the year	(560)	(1,409)	—	(1,969)
Provisions reversed/expired during the year	(2)	(208)	—	(210)
Effect of movements in exchange rates	(4)	(4)	(328)	(336)
At December 31, 2018	191	9,052	3,862	13,105
Provisions made during the year	104	3,855	40	3,999
Provisions used/paid during the year	(289)	(1,458)	—	(1,747)
Provisions reversed/expired during the year	(2)	(967)	(2,292)	(3,261)
Effect of movements in exchange rates	4	(2)	78	80
At December 31, 2019	\$ 8	\$ 10,480	\$ 1,688	\$ 12,176

At December 31, 2018				
	\$	\$	\$	\$
Current	191	9,052	—	9,243
Non-current	—	—	3,862	3,862
	\$ 191	\$ 9,052	\$ 3,862	\$ 13,105

At December 31, 2019				
	\$	\$	\$	\$
Current	8	10,480	—	10,488
Non-current	—	—	1,688	1,688
	\$ 8	\$ 10,480	\$ 1,688	\$ 12,176

Restructuring provision

During 2018, restructuring charges relate primarily to a change in operations leadership combined with severance obligations paid to departed employees at Ballard Unmanned Systems as a result of the disposition of the Power Manager assets and associated personnel (note 25).

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

16. Provisions and other liabilities (cont'd):*Warranty provision*

The Corporation recorded \$3,855,000 (2018 - \$4,414,000) of warranty provisions related to new product sales. This was offset by warranty expenditures of \$1,458,000 (2018 - \$1,409,000) and downward warranty adjustments of \$967,000 (2018 - \$852,000 upward warranty adjustments), due primarily to contractual expirations and changes in estimated and actual costs to repair. The remaining \$2,000 (2018 - \$4,000) decrease to the warranty provision related to the effect of movements in exchange rates.

Other liabilities: Decommissioning liabilities

A provision for decommissioning liabilities has been recorded for the Corporation's head office building in Burnaby, British Columbia and is related to estimated site restoration obligations at the end of the lease term. The Corporation has made certain modifications to the leased building to facilitate the manufacturing and testing of its fuel cell products. Consequently, the site restoration obligations relate primarily to dismantling and removing various manufacturing and test equipment and restoring the infrastructure of the leased building to its original state of when the lease was entered into.

Due to the long-term nature of the liability, the most significant uncertainty in estimating the provision is the costs that will be incurred. The Corporation has determined a range of reasonably possible outcomes of the total costs for the head office building. In determining the fair value of the decommissioning liabilities, the estimated future cash flows have been discounted at 1.68% per annum (2018 - 2.18%).

The Corporation performed an assessment of the estimated cash flows required to settle the obligations for the building as of December 31, 2019. Based on the assessment, no increase in the provision (2018 - \$171,000) was recorded against decommissioning liabilities, in addition to accretion costs of \$40,000 (2018 - \$36,000).

The total undiscounted amount of the estimated cash flows required to settle the obligation for the building is \$1,914,000 (2018 - \$1,825,000) which is expected to be settled at the end of the lease term in 2025.

Other liabilities: Deferred lease inducement

A lease extension and modification agreement was signed in December 2017 for the second building that eliminated the decommissioning liability at the end of the new 10 year lease term. The contractual elimination of the decommissioning liability of \$2,292,000 for the second building was being treated as a lease inducement and was originally deferred and amortized on a straight-line basis over the amended 10 year lease term, commencing January 2018.

At January 1, 2019, this deferred lease inducement was reclassified to right-of-use assets as per *IFRS 16 Leases* (notes 3, 4, and 9).

17. Lease liability:

The Corporation leases certain assets under lease agreements. The lease liability consists primarily of leases of land and buildings, office equipment and vehicles. The leases have interest rates ranging from 3.90% to 9.45% per annum and expire between May 2020 and December 2027.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

17. Lease liability (cont'd):

	December 31, 2019	December 31, 2018
Property	\$ 2,382	\$ 631
Equipment	24	—
Vehicle	39	—
Lease Liability, Current	\$ 2,445	\$ 631
Property	\$ 17,200	\$ 5,064
Equipment	45	—
Vehicle	61	—
Lease Liability, Non-current	\$ 17,306	\$ 5,064
Lease Liability	\$ 19,751	\$ 5,695

The Corporation is committed to minimum lease payments as follows:

Maturity Analysis	December 31, 2019
Less than one year	\$ 3,723
Between one and five years	14,803
More than five years	6,321
Total undiscounted lease liabilities	\$ 24,847

The adoption of *IFRS 16 Leases* had the following impact for the year ended December 31, 2019.

Amounts recognized in profit or loss	December 31, 2019
Interest on lease liabilities	\$ 1,383
Income from sub-leasing right-of-use assets	\$ 1,556
Expenses relating to short-term leases	\$ 179
Amounts recognized in the statement of cash flows	
Interest paid	\$ 1,383
Principal payments of lease liabilities	\$ 2,053
Expenses relating to short-term leases	\$ 179
Total cash outflow for leases	\$ 3,615

Deferred gains were also recorded on closing of the finance lease agreement and are amortized over the lease term. At December 31, 2019, the outstanding deferred gain was \$2,150,000 (2018 – \$2,566,000).

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

18. Employee future benefits:

	December 31, 2019	December 31, 2018
Net defined benefit pension plan liability	\$ 4,308	\$ 4,215
Net other post-retirement benefit plan liability	88	84
Employee future benefits	\$ 4,396	\$ 4,299

The Corporation maintains a defined benefit pension plan covering existing and former employees in the United States. The benefits under the pension plan are based on years of service and salary levels accrued as of December 31, 2009. In 2009, amendments were made to the defined benefit pension plan to freeze benefits accruing to employees at their respective years of service and salary levels obtained as of December 31, 2009. Certain employees in the United States are also eligible for post-retirement healthcare, life insurance, and other benefits.

The Corporation accrues the present value of its obligations under employee future benefit plans and related costs, net of the present value of plan assets.

The measurement date used to determine pension and other post-retirement benefit obligations and expense is December 31 of each year. The most recent actuarial valuation of the employee future benefit plans for funding purposes was as of January 1, 2019. The next actuarial valuation of the employee future benefit plans for funding purposes is expected to be performed as of January 1, 2020.

The Corporation expects contributions of approximately \$600,000 to be paid to its defined benefit plans in 2020.

The following tables reconcile the opening balances to the closing balances for the net defined benefit liability and its components for the two plans. The expense recognized in profit or loss is recorded in finance income (loss) and other.

	Defined benefit obligation		Fair value of plan assets		Net defined benefit liability	
	2019	2018	2019	2018	2019	2018
Defined benefit pension plan						
Balance at January 1	\$ 16,255	\$ 17,603	\$ (12,040)	\$ (12,809)	\$ 4,215	\$ 4,794
Included in profit or loss						
Current service cost	37	57	—	—	37	57
Interest cost (income)	661	621	(493)	(455)	168	166
Benefits payable	—	—	—	—	—	—
	698	678	(493)	(455)	205	223
Included in other comprehensive income						
Remeasurements loss (gain):						
Actuarial loss (gain) arising from:						
Demographic assumptions	(236)	(49)	—	—	(236)	(49)
Financial assumptions	2,343	(1,331)	—	—	2,343	(1,331)
Experience adjustment	(131)	(2)	—	—	(131)	(2)
Return on plan assets excluding interest income	—	—	(1,593)	1,075	(1,593)	1,075
Plan expenses	(35)	(35)	35	35	—	—
	1,941	(1,417)	(1,558)	1,110	383	(307)
Other						
Contributions paid by the employer	—	—	(495)	(495)	(495)	(495)
Benefits paid	(622)	(609)	622	609	—	—
	(622)	(609)	127	114	(495)	(495)
Balance at December 31	\$ 18,272	\$ 16,255	\$ (13,964)	\$ (12,040)	\$ 4,308	\$ 4,215

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

18. Employee future benefits (cont'd):

Other post-retirement benefit plan	Defined benefit obligation		Fair value of plan assets		Net defined benefit liability	
	2019	2018	2019	2018	2019	2018
Balance at January 1	\$ 84	\$ 120	\$ —	\$ —	\$ 84	\$ 120
Included in profit or loss						
Interest cost (income)	3	3	—	—	3	3
	3	3	—	—	3	3
Included in other comprehensive income						
Remeasurements loss (gain):						
Actuarial loss (gain) arising from:						
Demographic assumptions	—	—	—	—	—	—
Financial assumptions	7	(5)	—	—	7	(5)
Experience adjustment	10	7	—	—	10	7
	17	2	—	—	17	2
Other						
Contributions paid by the employer	—	—	(16)	(41)	(16)	(41)
Benefits paid	(16)	(41)	16	41	—	—
	(16)	(41)	—	—	(16)	(41)
Balance at December 31	\$ 88	\$ 84	\$ —	\$ —	\$ 88	\$ 84

Included in other comprehensive income (loss)	December 31, 2019	December 31, 2018
Defined benefit pension plan actuarial gain (loss)	\$ (383)	\$ 307
Other post-retirement benefit plan actuarial gain (loss)	(17)	(2)
	\$ (400)	\$ 305

Pension plan assets comprise:

	2019	2018
Cash and cash equivalents	2 %	3 %
Equity securities	61 %	59 %
Debt securities	37 %	38 %
Total	100 %	100 %

The significant actuarial assumptions adopted in measuring the fair value of benefit obligations at December 31 were as follows:

	2019		2018	
	Pension plan	Other benefit plan	Pension plan	Other benefit plan
Discount rate	3.16 %	2.84 %	4.16 %	3.96 %
Rate of compensation increase	n/a	n/a	n/a	n/a

The significant actuarial assumptions adopted in determining net expense for the years ended December 31 were as follows:

	2019		2018	
	Pension plan	Other benefit plan	Pension plan	Other benefit plan
Discount rate	4.16 %	2.84 %	3.60 %	3.96 %
Rate of compensation increase	n/a	n/a	n/a	n/a

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

18. Employee future benefits (cont'd):

The assumed health care cost trend rates applicable to the other post-retirement benefit plan at December 31 were as follows:

	2019	2018
Initial medical/dental health care cost trend rate	n/a	n/a
Cost trend rate declines to medical and dental	n/a	n/a
Year that the medical rate reaches the rate it is assumed to remain at	2024	2023
Year that the dental rate reaches the rate it is assumed to remain at	2019	2018

A one-percentage-point change in assumed health care cost trend rates would not have a material impact on the Corporation's financial statements.

19. Equity:

	December 31, 2019	December 31, 2018
Share-based Compensation		
Option Expense	\$ 1,926	\$ 1,676
DSU Expense	281	307
DSU Expense Adjustment	—	(45)
RSU Expense	1,354	964
Total Share-based Compensation (included in net loss)	\$ 3,561	\$ 2,902
2018 DSU Expense (issued in 2019) (note 20 (e))	—	380
Total Share-based Compensation (per statement of equity)	\$ 3,561	\$ 3,282

(a) Share capital:*Authorized and issued:*

Unlimited number of common shares, voting, without par value.

Unlimited number of preferred shares, issuable in series.

Private placement:

On November 13, 2018, the Corporation closed a private placement strategic equity investment with Weichai Power of 46,131,712 common shares and with Broad-Ocean Motor Co., Ltd. of a further 5,699,947 common shares issued from treasury at \$3.5464 per share for gross proceeds of \$163,602,000 and \$20,214,000, respectively.

Gross Offering proceeds (51,831,659 shares at \$3.5464 per share)	\$	183,816
Less: Share issuance costs		(144)
Net Offering proceeds	\$	183,672

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

19. Equity (cont'd):

(b) Share Purchase Warrants:

Warrants Outstanding	Exercise price of \$1.50	Exercise price of \$2.00	Total Warrants
At January 1, 2018	122,563	662,500	785,063
Warrants exercised in 2018	(122,563)	(625,000)	(747,563)
Warrants expired in 2018	—	(37,500)	(37,500)
At December 31, 2018	—	—	—

During 2019, nil (2018 - 747,563) warrants were exercised for an equal amount of common shares for net proceeds of \$nil (2018 - \$1,434,000).

At December 31, 2019 and 2018, nil share purchase warrants were issued and outstanding.

(c) Share options:

The Corporation has options outstanding under a consolidated share option plan. All directors, officers and employees of the Corporation, and its subsidiaries, are eligible to participate in the share option plans although as a matter of policy, options are currently not issued to directors. Option exercise prices are denominated in either Canadian or U.S. dollars, depending on the residency of the recipient. Canadian dollar denominated options have been converted to U.S. dollars using the year-end exchange rate for presentation purposes.

All options have a term of seven years from the date of grant unless otherwise determined by the board of directors. One-third of the options vest and may be exercised, at the beginning of each of the second, third, and fourth years after granting.

As at December 31, options outstanding from the consolidated share option plan were as follows:

Balance	Options for common shares	Weighted average exercise price
At January 1, 2018	4,828,173	\$ 2.01
Options granted	1,675,640	3.27
Options exercised	(945,022)	1.66
Options forfeited	(400,663)	2.22
Options expired	(24,667)	1.35
At December 31, 2018	5,133,461	2.45
Options granted	1,317,521	3.19
Options exercised	(2,234,997)	2.12
Options forfeited	(94,336)	2.46
Options expired	(5,500)	1.26
At December 31, 2019	4,116,149	\$ 2.87

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

19. Equity (cont'd):

(c) Share options (cont'd):

The following table summarizes information about the Corporation's share options outstanding as at December 31, 2019:

Range of exercise price	Options outstanding			Options exercisable	
	Number outstanding	Weighted average remaining contractual life (years)	Weighted average exercise price	Number exercisable	Weighted average exercise price
\$0.83 - \$1.46	303,096	3.1	\$ 1.36	303,096	\$ 1.36
\$1.68 - \$2.36	969,041	3.3	2.16	624,061	2.22
\$2.79 - \$3.09	820,692	4.6	2.89	299,322	2.87
\$3.14 - \$4.61	2,023,320	5.7	3.43	188,991	3.70
	4,116,149	4.7	\$ 2.87	1,415,470	\$ 2.37

During 2019, 2,234,997 options were exercised for an equal amount of common shares for proceeds of \$4,624,000. During 2018, 945,022 options were exercised for an equal amount of common shares for proceeds of \$1,628,000.

During 2019, options to purchase 1,317,521 common shares were granted with a weighted average fair value of \$1.40 (2018 – 1,675,640 options and \$1.70 fair value). The granted options vest annually over three years.

The fair values of the options granted were determined using the Black-Scholes valuation model under the following weighted average assumptions:

	2019	2018
Expected life	4 years	4 years
Expected dividends	Nil	Nil
Expected volatility	57 %	64 %
Risk-free interest rate	2 %	2 %

As at December 31, 2019, options to purchase 4,116,149 common shares were outstanding (2018 – 5,133,461). During 2019, compensation expense of \$1,926,000 (2018 – \$1,676,000) was recorded in net loss based on the grant date fair value of the awards recognized over the vesting period.

(d) Share distribution plan:

The Corporation has a consolidated share distribution plan that permits the issuance of common shares for no cash consideration to employees of the Corporation to recognize their past contribution and to encourage future contribution to the Corporation. At December 31, 2019, there were 13,700,924 (2018 – 12,051,923) shares available to be issued under this plan.

During 2018 and 2019, no shares were issued under this plan and therefore no compensation expense was recorded against income.

(e) Deferred share units:

Deferred share units ("DSUs") are granted to the board of directors and executives. Eligible directors must elect to receive at least half of their annual retainers and executives may elect to receive all or part of their annual bonuses in DSUs. Each DSU is redeemable for one common share in the capital of the Corporation after the director or executive ceases to provide services to the Corporation. Shares will be issued from the Corporation's share distribution plan.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

19. Equity (cont'd):

(e) Deferred share units (cont'd):

Balance	DSUs for common shares
At January 1, 2018	865,344
DSUs granted	179,469
DSUs exercised	(297,600)
At December 31, 2018	747,213
DSUs granted	64,165
DSUs exercised	—
At December 31, 2019	811,378

During 2019, \$281,000 of compensation expense was recorded in net loss relating to 64,165 DSUs granted during the year.

During 2018, \$307,000 of compensation expense was recorded in net loss relating to 91,361 DSUs granted during the year. For the remaining 88,108 DSUs granted during the year, estimated compensation expense of \$380,000 was recorded in net income in 2017. Upon the issuance of the DSUs in 2018, a \$45,000 adjustment increasing net income was recorded.

During 2019, nil DSUs (2018 – 297,600) were exercised, net of applicable taxes, which resulted in the issuance of nil common shares (2018 – 154,752), resulting in an impact on equity of \$nil (2018 - \$436,000).

As at December 31, 2019, 811,378 deferred share units were outstanding (2018 – 747,213).

(f) Restricted share units:

Restricted share units (“RSUs”) are granted to employees and executives. Each RSU is convertible into one common share. The RSUs vest after a specified number of years from the date of issuance, and under certain circumstances, are contingent on achieving specified performance criteria. A performance factor adjustment is made if there is an over-achievement (or under-achievement) of specified performance criteria, resulting in additional (or fewer) RSUs being converted.

The Corporation has two plans under which RSUs may be granted, the consolidated share distribution plan and the market purchase RSU plan. Awards under the consolidated share distribution plan (note 19(d)) are satisfied by the issuance of treasury shares on maturity. Awards granted under the market purchase RSU Plan are satisfied by shares purchased on the open market by a trust established for that purpose. No common shares were repurchased in 2019 and 2018.

Balance	RSUs for common shares
At January 1, 2018	1,674,637
RSUs granted	379,257
RSU performance factor adjustment	218,213
RSUs exercised	(290,820)
RSUs forfeited	(203,095)
At December 31, 2018	1,778,192
RSUs granted	449,625
RSU performance factor adjustment	(192,016)
RSUs exercised	(730,536)
RSUs forfeited	—
At December 31, 2019	1,305,265

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

19. Equity (cont'd):

(f) Restricted share units (cont'd):

During 2019, 449,625 RSUs were issued (2018 – 379,257). The fair value of RSU grants is measured based on the stock price of the shares underlying the RSU on the date of grant. During 2019, compensation expense of \$1,354,000 (2018 - \$964,000) was recorded in net loss.

During 2019, 730,536 RSUs (2018 – 290,820) were exercised, net of applicable taxes, which resulted in the issuance of 387,686 common shares (2018 – 149,980), resulting in an impact on equity of \$1,034,000 (2018 - \$464,000).

As at December 31, 2019, 1,305,265 RSUs were outstanding (2018 – 1,778,192).

20. Commitments and contingencies:

In connection with the acquisition of intellectual property from UTC in April 2014, the Corporation retains a royalty obligation in certain circumstances to pay UTC a portion of any future intellectual property sale and licensing income generated from certain of the Corporation's intellectual property portfolio for a period of 15 years expiring in April 2029. No royalties were paid to UTC in the years ended December 31, 2019 and December 31, 2018.

The Corporation retains a previous funding obligation to pay royalties of 2% of revenues, to a maximum of \$4,613,000 (CDN \$5,351,000), on sales of certain fuel cell products for commercial distributed utility applications. As of December 31, 2019, no royalties have been incurred to date for this agreement.

The Corporation also retains a previous funding obligation to pay royalties of 2% of revenues, to a maximum of \$1,896,000 (CDN \$2,200,000), on sales of certain fuel cell products for commercial transit applications. As of December 31, 2019, no royalties have been incurred to date for this agreement.

At December 31, 2019, the Corporation has outstanding commitments aggregating up to a maximum of \$7,790,000 relating primarily to purchases of property, plant and equipment.

The Corporation is committed to capital contributions to Weichai Ballard JV over a three year period (note 12). The Corporation is also committed to minimum lease payments (note 17).

21. Disaggregation of revenue:

The Corporation's operations and main revenue streams are the same as those described in note 4. The Corporation's revenue is derived from contracts with customers.

In the following table, revenue is disaggregated by geographical market, by market application, and by timing of revenue recognition.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

21. Disaggregation of revenue (cont'd):

	December 31, 2019	December 31, 2018
Geographical markets		
China	\$ 47,132	\$ 30,791
Europe	41,856	37,590
North America	14,266	23,871
Other	3,073	4,334
	\$ 106,327	\$ 96,586
Market application		
Heavy Duty Motive	35,363	39,464
Portable Power	604	7,109
Material Handling	10,758	8,010
Back Up Power	2,982	2,426
Technology Solutions	56,620	39,577
	\$ 106,327	\$ 96,586
Timing of revenue recognition		
Products transferred at a point in time	47,250	53,729
Products and services transferred over time	59,077	42,857
	\$ 106,327	\$ 96,586

22. Personnel expenses:

Personnel expenses are included in cost of product and service revenues, research and product development expense, general and administrative expense, sales and marketing expense, and other expense.

	December 31, 2019	December 31, 2018
Salaries and employee benefits	\$ 54,794	\$ 46,381
Share-based compensation (note 19)	3,561	2,902
	\$ 58,355	\$ 49,283

23. Other operating expense:

	December 31, 2019	December 31, 2018
Net impairment loss on trade receivables	\$ 1,537	\$ 98
Impairment loss allowance	250	—
Total impairment loss on trade receivables	1,787	98
Restructuring costs	146	507
	\$ 1,933	\$ 605

Net impairment loss on trade receivables of \$1,537,000 for the year ended December 31, 2019 (2018 - \$98,000) relates primarily to amounts owed to the Corporation for product sales in previous periods no longer expected to be collected as a customer in Europe has entered into administration under U.K. insolvency laws due to an inability to pay its debts. In the event that the Corporation recovers any amounts previously recorded as impairment losses, the recovered amount will be recognized as a reversal of the impairment loss in the period of recovery.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

23. Other operating expense (cont'd):

For the year ended December 31, 2019, the Corporation recorded an impairment loss allowance of \$250,000 (2018 - \$nil). Information about the Corporation's exposure to credit and market risks, and impairment losses for trade receivables and contract assets is included in note 30.

During 2019, restructuring charges of \$146,000 relate primarily to cost reduction initiatives. During 2018, restructuring charges of \$507,000 related primarily to a change in operations leadership combined with severance obligations paid to departed employees at Ballard Unmanned Systems as a result of the disposition of the Power Manager assets and associated personnel (note 25).

24. Finance income and expense:

	2019	2018
Employee future benefit plan expense (note 18)	\$ (208)	\$ (226)
Pension administration expense	(120)	(117)
Investment and other income	3,710	1,034
Other income (loss)	(111)	(62)
Foreign exchange gain (loss)	(420)	(1,078)
Finance income (loss) and other	\$ 2,851	\$ (449)
Finance expense	\$ (1,434)	\$ (503)

25. Loss on sale of assets:

	2019	2018
Loss on sale of Power Manager assets	\$ (2,000)	\$ (3,957)
Loss on sale of SOFC assets	—	(94)
Gain on miscellaneous disposals	5	2
	\$ (1,995)	\$ (4,049)

	2019	2018
Cash proceeds received on sale of Power Manager assets	\$ 2,132	\$ 2,000
Less: Disposition costs	—	(707)
Net cash proceeds received on sale of Power Manager assets	\$ 2,132	\$ 1,293
Cash proceeds received on sale of SOFC assets	—	50
Cash proceeds from miscellaneous disposals	5	2
Net cash proceeds received on sale of assets	\$ 2,137	\$ 1,345

Loss on sale of Power Manager assets

During the year ended December 31, 2018, the Corporation divested certain assets of its subsidiary, Ballard Unmanned Systems Inc. related to the Power Manager business to Revision Military Ltd. ("Revision"), a private U.S. based company. At closing, the Corporation received initial consideration of approximately \$4,132,000, paid in \$2,000,000 cash and a \$2,132,000 note receivable (collected in full in September 2019), and could have received up to a further \$11,250,000, based on achievement of specific sales objectives during a 12-month earn-out period. The Corporation retained certain assets related to fuel cell propulsion systems for unmanned vehicles under the Ballard brand and divested its Power Manager assets as they were considered to be no longer aligned with the Corporation's strategic fuel cell focus.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

25. Loss on sale of assets (cont'd):

During the year ended December 31, 2018, the Corporation recorded a loss on sale of assets of \$3,957,000 on the divestiture of the Power Manager assets after estimating the amount of variable consideration included in the transaction price that is constrained to be \$2,000,000, as opposed to the above noted maximum possible earn-out amount of \$11,250,000. During the three months ended March 31, 2019, the Corporation recorded an additional loss on sale of assets of \$2,000,000 after adjusting the estimated amount of variable consideration from \$2,000,000 to \$nil. During October 2019, the estimated amount of variable consideration was confirmed as \$nil as Revision failed to meet the minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to the Corporation.

Various miscellaneous disposals also occurred during the year ended December 31, 2019, resulting in a net gain on sale of property, plant and equipment of \$5,000 partially offsetting the loss on sale of assets above, resulting in a net loss on sale of assets of \$1,995,000. The proceeds on disposal of these miscellaneous items of \$5,000 and the repayment of \$2,132,000 on the above note receivable result in net proceeds on sale of property, plant, and equipment of \$2,137,000.

26. Income taxes:

(a) Current tax expense:

The components of income tax benefit (expense) included in the determination of the profit (loss) from continuing operations comprise of:

	2019	2018
Current tax expense		
Current period income tax	\$ 9	\$ 51
Withholding tax	11	319
Total current tax expense	\$ 20	\$ 370
Deferred tax expense		
Origination and reversal of temporary differences	\$ (16,287)	\$ 1,834
Adjustments for prior periods	2,715	(1,138)
Change in unrecognized deductible temporary differences	13,572	(696)
Total deferred tax expense	\$ —	\$ —
Total income tax expense	\$ 20	\$ 370

The Corporation's effective income tax rate differs from the combined Canadian federal and provincial statutory income tax rate for companies. The principal factors causing the difference are as follows:

	2019	2018
Net loss before income taxes	\$ (39,030)	\$ (26,953)
Expected tax recovery at 27.00% (2018 – 27.00%)	\$ (10,538)	\$ (7,277)
Increase (reduction) in income taxes resulting from:		
Non-deductible expenses (non-taxable income)	(73)	1,009
Investment tax credits earned	(3,126)	(2,439)
Foreign tax rate differences	1,304	227
Change in unrecognized deductible temporary differences	12,442	8,531
Other	11	319
Income taxes	\$ 20	\$ 370

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

26. Income taxes (cont'd):

(b) Unrecognized deferred tax liabilities:

At December 31, 2019, the Corporation did not have any deferred tax liabilities resulting from taxable temporary differences related to unremitted earnings of controlled subsidiaries.

(c) Unrecognized deferred tax asset:

At December 31, 2019, the Corporation did not recognize any deferred tax assets resulting from the following deductible temporary differences for financial statement and income tax purposes.

	2019	2018
Scientific research expenditures	\$ 97,340	\$ 83,661
Accrued warranty provision	6,600	10,197
Share issuance costs	238	668
Losses from operations carried forward	115,977	107,339
Investment tax credits	34,341	30,231
Property, plant and equipment and intangible assets	193,336	174,006
	\$ 447,832	\$ 406,102

Deferred tax assets have not been recognized in respect of these deductible temporary differences because it is not currently probable that future taxable profit will be available against which the Corporation can utilize the benefits.

The Corporation has available to carry forward the following as at December 31:

	2019	2018
Canadian scientific research expenditures	\$ 97,340	\$ 83,661
Canadian losses from operations	34,847	33,801
Canadian investment tax credits	34,341	30,231
German losses from operations for corporate tax purposes	525	553
U.S. federal losses from operations	51,696	45,140
Denmark losses from operations	26,405	25,757
Hong Kong losses from operations	33	24

The Canadian scientific research expenditures may be carried forward indefinitely. The Canadian losses from operations may be used to offset future Canadian taxable income and expire over the period from 2031 to 2039.

The German, Hong Kong and Denmark losses from operations may be used to offset future taxable income in Germany, Hong Kong and Denmark for corporate tax and trade tax purposes and may be carried forward indefinitely.

The U.S. federal losses from operations incurred prior to January 1, 2018 may be used to offset future U.S. taxable income and expire over the period from 2021 to 2037 and may be carried forward indefinitely for losses incurred after January 1, 2018.

The Canadian investment tax credits may be used to offset future Canadian income taxes otherwise payable and expire over the period from 2020 to 2039.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

27. Related party transactions:

Related parties include shareholders with a significant ownership interest in the Corporation, including its subsidiaries and affiliates, and the Corporation's equity accounted investees: Weichai Ballard JV and Synergy Ballard JVCo (note 12).

For the year ended December 31, 2019 and 2018, related party transactions and balances with the Corporation's 49% owned equity accounted investee, Weichai Ballard JV, were as follows:

Balances with related party - Weichai Ballard JV		2019	2018
Trade and other receivables	\$	10,057	\$ 1,123
Investments		21,642	13,989
Deferred revenue		11,857	8,875
Transactions during the year with related party - Weichai Ballard JV		2019	2018
Revenues	\$	37,197	\$ 1,248

For the year ended December 31, 2019 and 2018, related party transactions and balances with the Corporation's 10% owned equity accounted investee, Synergy Ballard JVCo, were as follows:

Balances with related party - Synergy Ballard JVCo		2019	2018
Trade and other receivables	\$	65	\$ 481
Investments		—	—
Deferred revenue		46	2,021
Transactions during the year with related party - Synergy Ballard JVCo		2019	2018
Revenues	\$	8,666	\$ 17,547

The Corporation provides key management personnel, being board directors and executive officers, certain benefits, in addition to their salaries. Key management personnel also participate in the Corporation's share-based compensation plans (note 19).

In addition to cash and equity compensation, the Corporation provides the executive officers with certain personal benefits, including car allowance, medical benefit program, long and short-term disability coverage, life insurance and an annual medical, financial planning allowance and relocation allowances and services as necessary.

The employment agreements for the executive officers are substantially the same with slight variations by individual. The maximum obligation that is required to be provided in the event of termination is notice of 12 months plus one month for every year of employment completed with the Corporation, or payment in lieu of such notice, consisting of the salary, bonus and other benefits that would have been earned during such notice period. If there is a change of control, and if the executive officer's employment is terminated, including a constructive dismissal, within 2 years following the date of a change of control, the executive officer is entitled to a payment equivalent to payment in lieu of a 24 month notice period. The minimum obligation that is required is limited to that required by employment standards legislation plus one day for every full month of employment since hire date, with no distinction made for a change of control situation.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

27. Related party transactions (cont'd):

Key management personnel compensation is comprised of:

	2019	2018
Salaries and employee benefits	\$ 3,098	\$ 2,869
Post-employment retirement benefits	56	49
Termination benefits	—	12
Share-based compensation (note 19)	1,651	1,353
	\$ 4,805	\$ 4,283

28. Supplemental disclosure of cash flow information:

Non-cash financing and investing activities:	2019	2018
Compensatory shares	\$ 548	\$ 693
Recognition (write-down) of constrained earn-out receivable on sale of assets (note 25)	(2,000)	2,000
Recognition of right-of-use assets (note 4)	11,434	—
Recognition of additional lease liabilities (note 4)	(13,988)	—

29. Operating segments:

The Corporation operates in a single segment, Fuel Cell Products and Services, which consists of the design, development, manufacture, sale and service of PEM fuel cell products for a variety of applications, focusing on the power product markets of Heavy-Duty Motive (consisting of bus, truck, rail and marine applications), Portable Power / UAV, Material Handling and Backup Power, as well as the delivery of Technology Solutions, including engineering services, technology transfer and the licensing and sale of the Corporation's extensive intellectual property portfolio and fundamental knowledge for a variety of PEM fuel cell applications.

As a result of the sale of the Power Manager assets (note 25) in 2018, the Corporation has renamed the former Portable Power market as the Portable Power / UAV market. As the sale of the Power Manager assets is not presented as a discontinued operation, the Portable Power / UAV market includes revenues associated with the Power Manager business prior to its sale, and product and service revenues generated from the retained Ballard Unmanned Systems assets related primarily to fuel cell propulsion systems for unmanned systems.

In 2019, revenues included sales to two individual customers of \$37,932,000 and \$26,164,000, respectively, which each exceeded 10% of total revenue. In 2018, revenues included sales to two individual customers of \$26,587,000, and \$17,547,000, respectively, which each exceeded 10% of total revenue.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

29. Operating segments (cont'd):

Revenues from continuing operations by geographic area, which are attributed to countries based on customer location for the years ended December 31, are as follows:

Revenues	2019	2018
China	\$ 47,132	\$ 30,791
Germany	30,604	28,685
U.S.	13,500	23,505
Belgium	5,408	3,531
UK	2,794	1,431
Japan	2,743	3,901
Denmark	1,701	1,889
Canada	766	366
Norway	478	187
Switzerland	359	—
France	287	276
Taiwan	216	287
Netherlands	115	892
Finland	65	198
Spain	20	168
Other countries	139	479
	\$ 106,327	\$ 96,586

Non-current assets by geographic area are as follows:

Non-current assets	December 31, 2019	December 31, 2018
Canada	\$ 82,665	\$ 65,346
U.S.	4,836	4,880
China	21,663	14,012
Denmark	1,629	269
	\$ 110,793	\$ 84,507

30. Financial instruments:

(a) Fair value:

The Corporation's financial instruments consist of cash and cash equivalents, trade and other receivables, investments, and trade and other payables. The fair values of cash and cash equivalents, trade and other receivables, and trade and other payables approximate their carrying values because of the short-term nature of these instruments.

Fair value measurements recognized in the statement of financial position must be categorized in accordance with the following levels:

- (i) Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities;
- (ii) Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices);
- (iii) Level 3: Inputs for the asset or liability that are not based on observable market data (unobservable inputs).

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

30. Financial instruments (cont'd):

(b) Financial risk management:

The Corporation primarily has exposure to foreign currency exchange rate risk, commodity risk, interest rate risk, and credit risk.

Foreign currency exchange rate risk

Foreign currency exchange rate risk is the risk that the fair value of deferred cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Corporation is exposed to currency risks primarily due to its holdings of Canadian dollar denominated cash equivalents and its Canadian dollar denominated purchases and accounts payable. Substantially all receivables are denominated in U.S. dollars.

The Corporation limits its exposure to foreign currency risk by holding Canadian denominated cash and cash equivalents in amounts up to 100% of forecasted twelve month Canadian dollar net expenditures and up to 50% of the following twelve months of forecasted Canadian dollar net expenditures, thereby creating an economic hedge. Periodically, the Corporation also enters into forward foreign exchange contracts to further limit its exposure. At December 31, 2019, the Corporation held Canadian dollar denominated cash and cash equivalents of CDN \$15,916,000 and outstanding forward foreign exchange contracts to sell a total of CDN \$16,800,000 in 2020 at an average rate of CDN \$1.32 to US \$1.00.

The following exchange rates applied during the year ended December 31, 2019:

	\$U.S. to \$1.00 CDN	\$CDN to \$1.00 U.S.
January 1, 2019 Opening rate	\$0.734	\$1.363
December 31, 2019 Closing rate	\$0.770	\$1.299
Fiscal 2019 Average rate	\$0.754	\$1.327

Based on cash and cash equivalents and forward foreign exchange contracts held at December 31, 2019, a 10% increase in the Canadian dollar against the U.S. dollar, with all other variables held constant, would result in an increase in foreign exchange gains of approximately \$2,518,000 recorded against net income.

If the Canadian dollar weakened 10% against the U.S. dollar, there would be an equal, and opposite impact, on net income. This sensitivity analysis includes foreign currency denominated monetary items, and adjusts their translation at year-end, for a 10% change in foreign currency rates.

Commodity risk

Commodity risk is the risk of financial loss due to fluctuations in commodity prices, in particular, for the price of platinum and palladium, which are key components of the Corporation's fuel cell products. Platinum and palladium are scarce natural resources and therefore the Corporation is dependent upon a sufficient supply of these commodities. To manage its exposure to commodity price fluctuations, the Corporation may include platinum and or palladium pricing adjustments directly into certain significant customer contracts, and may also periodically enter into platinum and or palladium forward contracts. At December 31, 2019, there were no outstanding forward platinum contracts under the Forward Contract Facility.

Interest rate risk

Interest rate risk is the risk that the fair value of deferred cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Corporation is exposed to interest rate risk arising primarily from fluctuations in interest rates on its cash and cash equivalents. The Corporation limits its exposure to interest rate risk by continually monitoring and adjusting portfolio duration to align to forecasted cash requirements and anticipated changes in interest rates.

BALLARD POWER SYSTEMS INC.

Notes to Consolidated Financial Statements

Years ended December 31, 2019, and 2018

(Tabular amounts expressed in thousands of U.S. dollars, except per share amounts and numbers of shares)

30. Financial instruments (cont'd):

(b) Financial risk management (cont'd)

Interest rate risk (cont'd)

Based on cash and cash equivalents at December 31, 2019, a 0.25% decline in interest rates, with all other variables held constant, would result in a decrease in investment income of \$369,000. If interest rates had been 0.25% higher, there would be an equal and opposite impact on net income.

Credit risk

Credit risk is the risk of financial loss to the Corporation if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Corporation's receivables from customers.

The carrying amounts of financial assets and contract assets represent the maximum credit exposure.

Impairment loss on financial assets and contract assets recognized in profit and loss of \$1,787,000 (2018 - \$98,000) were comprised of realized impairment loss recognized during the year of \$1,537,000 (2018 - \$98,000) and an impairment loss allowance of \$250,000 (2018 - \$nil).

The Corporation's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the factors that may influence the credit risk of its customer base, including the default risk associated with the industry and country in which customers operate. Details of concentration of revenue are included in note 21.

The Corporation limits its exposure to credit risk from trade receivables and contract assets by contracting prepayments (from 50% to 100%) from certain customers.

The Corporation determines probability of default based on the following common credit risk characteristics: geographic region, age of customer relationship, and duration of remaining contract. The Corporation calculates probability of default using a forecasted default rate over the next twelve months for the automotive and manufacturing industries, ranging from 0.8% to 1.2%, depending on the individual assessment by customer. The loss given default is assumed to be 100% due to the Corporation's position as an unsecured creditor.

The movement in the allowance for impairment in respect of trade receivables and contract assets during the year was as follows.

	December 31, 2019	December 31, 2018
Impairment loss allowance		
Beginning Balance	\$ —	\$ —
Net measurement of loss allowance	250	—
Ending Balance	\$ 250	\$ —

This page intentionally left blank.



CORPORATE INFORMATION

CORPORATE OFFICES

Ballard Power Systems Inc.
Corporate Headquarters
9000 Glenlyon Parkway
Burnaby, BC Canada V5J 5J8
T: 604.454.0900
F: 604.412.4700

TRANSFER AGENT

**Computershare Trust
Company of Canada**
Shareholder Services Department
510 Burrard Street
Vancouver, BC Canada V6C 3B9
T: 1.800.564.6253
F: 1.866.249.7775

STOCK LISTING

Ballard's common shares are listed on the Toronto Stock Exchange and on the NASDAQ Global Market under the trading symbol BLDP.

INVESTOR RELATIONS

To obtain additional information, please contact:

Ballard Power Systems
Investor Relations
9000 Glenlyon Parkway
Burnaby, BC Canada V5J 5J8
T: 604.412.3195
E: investors@ballard.com
W: www.ballard.com

EXECUTIVE MANAGEMENT

Randy MacEwen
President & Chief Executive Officer

Tony Guglielmin
Vice President & Chief Financial Officer

Robert Campbell
Vice President & Chief Commercial Officer

Kevin Colbow
Vice President, Technology and Product Development

Jan Laishley
Vice President, Human Resources

Jyoti Sidhu
Vice President, Operations

INDEPENDENT AUDITORS

KPMG LLP
Vancouver, BC Canada

LEGAL COUNSEL

Canada:
Stikeman Elliott, LLP
Vancouver, BC Canada

United States:
Dorsey & Whitney LLP
Seattle, WA USA

Intellectual Property:
Seed Intellectual Property
Law Group, LLC
Seattle, WA USA

BOARD OF DIRECTORS

Douglas P. Hayhurst
Corporate Director
British Columbia, Canada

Kevin Jiang
Corporate Director
Shandong, China

Duy-Loan Le
Corporate Director
Texas, USA

R. Randall MacEwen
President &
Chief Executive Officer
British Columbia, Canada

Marty Neese
Corporate Director
California, USA

James Roche
Chairman of the Board
Ontario, Canada

Sherman Sun
Corporate Director
Shandong, China

Ian Sutcliffe
Corporate Director
Ontario, Canada

Janet Woodruff
Corporate Director
British Columbia, Canada

BALLARD®

www.ballard.com

