FUEL CELL POWER FOR A SUSTAINABLE PLANET

Power to Change the World®

NOTICE OF ANNUAL MEETING, MANAGEMENT PROXY CIRCULAR, AND

2018 ANNUAL REPORT

CELEBRATING
40 YEARS

CONTENTS

Notice of Annual Meeting 1
Sustainability Report 5
Management Proxy Circular 8
Matters to be Voted Upon 8
Voting Information 8
Corporate Governance 15
Executive Compensation 23
Equity-Based Compensation Plans 50
Additional Information 52
Defined Terms 54
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) provides clean energy products that reduce customer costs and risks, and helps customers solve difficult technical challenges or address new business opportunities. 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, gross margin, Adjusted EBITDA, cash operating expenses product sales and market adoption of fuel cell electric vehicles. 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 2019 Annual Meeting (the "Meeting") will be held at our corporate head office facilities at 9000 Glenlyon Parkway, Burnaby, British Columbia, on Tuesday, June 4, 2019 at 1:00 p.m. (Pacific Daylight Time) for the following purposes:

1. To receive our audited financial statements for the financial year ended December 31, 2018 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 2018 Annual Report are included with this Notice.

If you are unable to attend the Meeting in person and wish to ensure that your shares will be voted at the Meeting, you must complete, date and execute the enclosed form of proxy and deliver it in accordance with the instructions set out in the form of proxy and in the Management Proxy Circular accompanying this Notice, so that it is received by Computershare Investor Services Inc. no later than close of business (Pacific Daylight Time) on Friday, May 31, 2019.

If you plan to attend the Meeting you must follow the instructions set out in the form of proxy and in the Management Proxy Circular to ensure that your shares will be voted at the Meeting.

DATED at Burnaby, British Columbia, April 8, 2019.

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:

2018 was another year of measured progress for Ballard in the rapidly evolving PEM fuel cell industry. While financial performance was below expectations, management achieved significant progress on our long-term strategy, while strengthening our balance sheet.

The board had a busy 2018, including activities relating to corporate strategy, the Weichai Power strategic collaboration, divestiture of our Power Manager business, talent development, succession planning, oversight of operating activities and performance management. The board also traveled to Weifang, Shandong Province, China in support of the company's long-term strategic collaboration with Weichai.

We continued our board renewal process. As planned, having reached the director term limit, Ian Bourne did not stand for re-election at our 2018 Annual General Meeting. The entire board and management team wish to thank Ian for his outstanding leadership, guidance and mentorship during his tenure as board Chair. Consistent with the terms of our strategic collaboration with Weichai, we added two new board members, expanding the board from seven to nine members. Mr. Jiang Kui (Mr. Kevin Jiang) and Mr. Sun Shaojun (Mr. Sherman Sun) were appointed to the Ballard board effective January 1st, 2019. Both Kevin and Sherman have been long-standing executives with the Weichai group of companies and will provide valuable insights and counsel to our board in terms of the China market as well as Weichai's capabilities and relationships throughout the powertrain and vehicle manufacturing value chain.

There are positive signals implying attractive long-term growth in the hydrogen and fuel cell industry. The macro trends of climate change, air quality and electrification of propulsion systems support our strategy. Target markets are increasingly showing real signs of commitment to clean energy solutions, initially focused on Heavy and Medium Duty Motive transportation applications. Your company is well-positioned to leverage these opportunities for future growth.

On behalf of my board colleagues, I would like to extend our appreciation to Ballard employees for their continued integrity, customer focus, innovation and commitment to doing the right things in our business, day in and day out. I would also draw your attention to a subset of employees identified on page 7, who received special recognition as 2018 Ballard Impact Award winners. On behalf of the board we also thank our shareholders for your continued support.

"*James Roche*"

JAMES ROCHE
Chair of the Board of Directors

Letter from R. RANDALL MACEWEN
President and Chief Executive Officer

Fellow Shareholders,

2018 was an important year for the hydrogen and fuel cell industry. There is mounting evidence that the shift to zero-emission transportation is accelerating and that fuel cell electric vehicles (FCEVs) will play an integral role. The macro drivers of climate change, air quality and electrification are global and converging. Governments across the planet are considering decarbonisation of energy, transportation and industry.

We believe there are large and attractive addressable markets and use cases for zero-emission Heavy and Medium Duty Motive applications – such as city buses, coaches, delivery trucks, drayage trucks, long-haul trucks, train, tram and certain marine applications – where FCEVs will offer a strong value proposition. These heavy vehicles typically require long daily range and fast refueling. We expect early adoption markets where the value proposition is strongest and where the barriers to hydrogen refueling infrastructure are lowest, such as centralized depot refueling.

These market segments are now bracing for a shift away from pure diesel vehicles into alternative powertrain systems. We view these markets as ripe for disruption. Increasingly, others are joining the chorus and starting to voice their agreement. We are seeing the early signs of disruption with regulators, transit operators, fleet operators and OEMs in the bus, commercial truck and train markets. Change is being led, in part, by certain local governments and cities in Europe, China and California, which are indicating plans to limit or ban diesel vehicle usage.

The Hydrogen Council has set targets for 350,000 fuel cell commercial trucks, 50,000 fuel cell buses and thousands of fuel cell trains in the year 2030. The Hydrogen Council also targets 12-to-20 million commercial fuel cell trucks, 5 million fuel cell buses and 20% of certain trains to be fuel cell powered in the year 2050.

At the same time as the macro backdrop continues to advance, your company made significant strategic progress in 2018. Last June, we celebrated the 25th anniversary of the public listing of our shares on the Toronto Stock Exchange. And, as Ballard turns 40 years old in 2019, we started the year with our strongest strategic positioning in our history. With the emerging recognition of the value proposition of FCEVs, customer engagement is soaring. Ballard is working every day to fulfill our customers' needs for PEM fuel cell power products and technology solutions. We are working on the successful launch and commercialization of our next-generation PEM fuel cell stack and module, raising the bar again on industry-leading performance. We entered into a landmark strategic alliance with Weichai in 2018, setting the stage for a strong growth platform in the large China market. We deepened our important technology relationship with Audi, signing a multi-year extension to our Technology Solutions program into 2022. We are working hard to support Audi in the small series production launch of its first fuel cell consumer car. Ballard continued to refine our business portfolio, divesting non-core and underperforming assets, including our Power Manager business.

In 2018, we generated revenue of US$96.6 million, gross margin of 31% and Adjusted EBITDA of US($13.5) million. Importantly, we ended the year with US$192.2 million in cash reserves – giving us a fortified balance sheet.

As a result, Ballard offers a unique investment thesis – a play on the electrification theme in the light, medium and heavy duty motive applications space, where FCEVs offer a compelling value proposition for select use cases.

As we look ahead over the next few years, we see sustained investment to drive adoption and market share in target markets. We expect continued early-stage momentum in the adoption of fuel cell power solutions, particularly for Heavy and Medium Duty Motive applications, including bus, truck, rail and marine. We expect growth in China, Europe and California. These opportunities will set the stage for long-term commercialization and return on investment for Ballard.

Looking out over the next 5-to-10 years, we envision:

- further legislative restrictions on internal combustion engines in city centers
- improved reliability and significant cost reductions in fuel cell engines and vehicles
- more than 100,000 commercial FCEVs in operation globally
- growing market share of fuel cell passenger cars, supported by adoption of ride sharing and autonomous drive technologies
- scaled deployment of next generation, purpose-built fuel cell-powered material handling equipment
- early commercialization of certain off-highway, marine, aerospace and drone applications

Ballard intends to maintain our leadership position as markets evolve over this time horizon. Our strategy is to continue to invest in talent, technology, products, customer experience and brand.

At Ballard, our vision is simple – *We deliver fuel cell power for a sustainable planet*. This vision energizes our dedicated team of professionals. Our employees globally live by our cultural values of *Safety, Innovation, Listen and Deliver, Quality Always, Inspire Excellence, Row Together,* and *Own It*. Our team's collective expertise, experience, innovation, passion, grit and commitment to put our customers at the center of our decision-making drives our business forward each day.

We express our deep appreciation to our valued customers and partners for their trust, business and collaboration. We are privileged to have a growing list of remarkable customers, partners and strategic investors, including ABB, Alexander Dennis Ltd., Anglo American Platinum, Audi, Broad Ocean Motor, Dongfeng, ElDorado, Eniig, FAW, Fibia, Hexagon, Hyster-Yale, Kenworth, King Long, KION, Nel, New Flyer, Nisshinbo, Plug Power, ReFire, Siemens, Sinohytec, Solaris, Synergy, Toyota, Van Hool, VDL, Volkswagen, Weichai, Wrightbus and many others.

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

"*R. Randall MacEwen*"

R. RANDALL MACEWEN
President & CEO

Ballard Power Systems Inc.

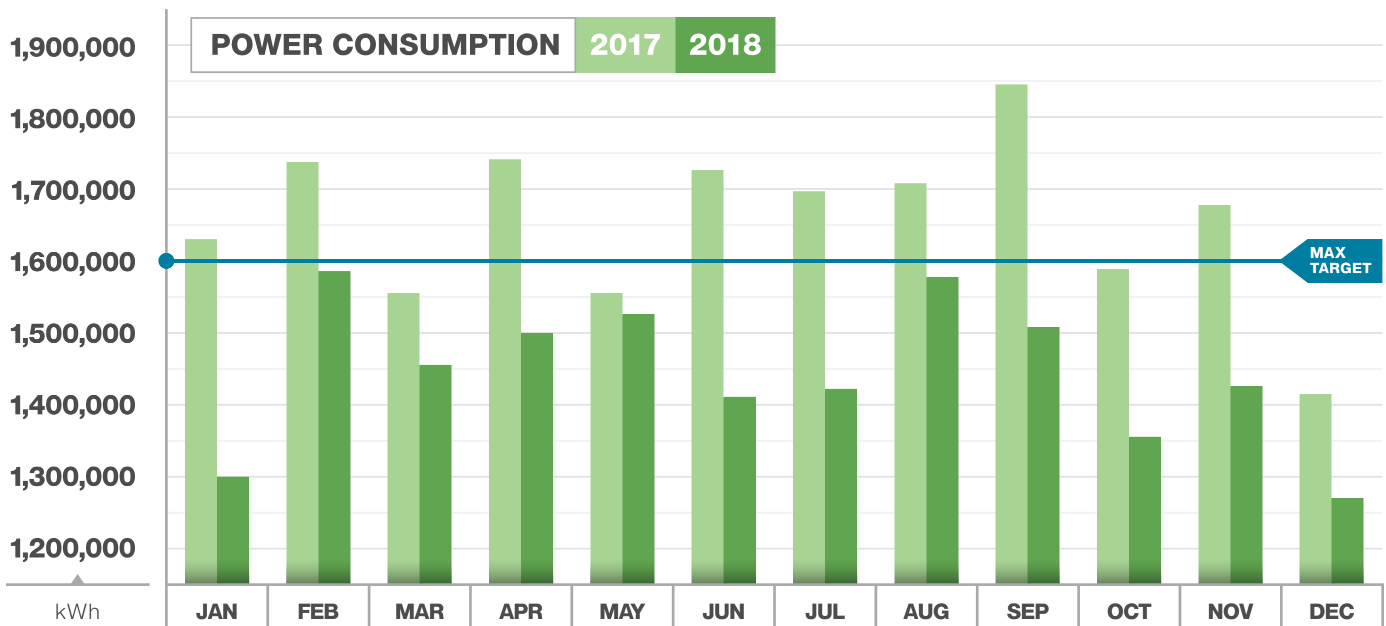
BALLARD®

2018 SUSTAINABILITY REPORT

For the past several years Ballard has been actively pursuing sustainability efforts that reduce our carbon footprint in product development, testing and manufacturing facilities co-located with our corporate headquarters in Burnaby, British Columbia (a portion of our product development and testing operation is depicted in the photograph to the right). Our sustainability activities have, to this point, been primarily in two areas – energy management and recycling.

ENERGY MANAGEMENT

Ballard has worked with our power provider – BC Hydro – and with other regional cohorts to share best-practices for the reduction of electricity consumption. We have developed a target list of 42 initiatives designed to achieve this goal through the elimination of wasted energy, with no impact on our product development, testing or manufacturing capacity. Through the implementation of just a portion of these initiatives in the 2017-18 period, electricity consumption was reduced in 2018 by 2.4MWh, enough electricity to power 225 typical homes in the Province of British Columbia for an entire year.



RECYCLING ACTIVITIES

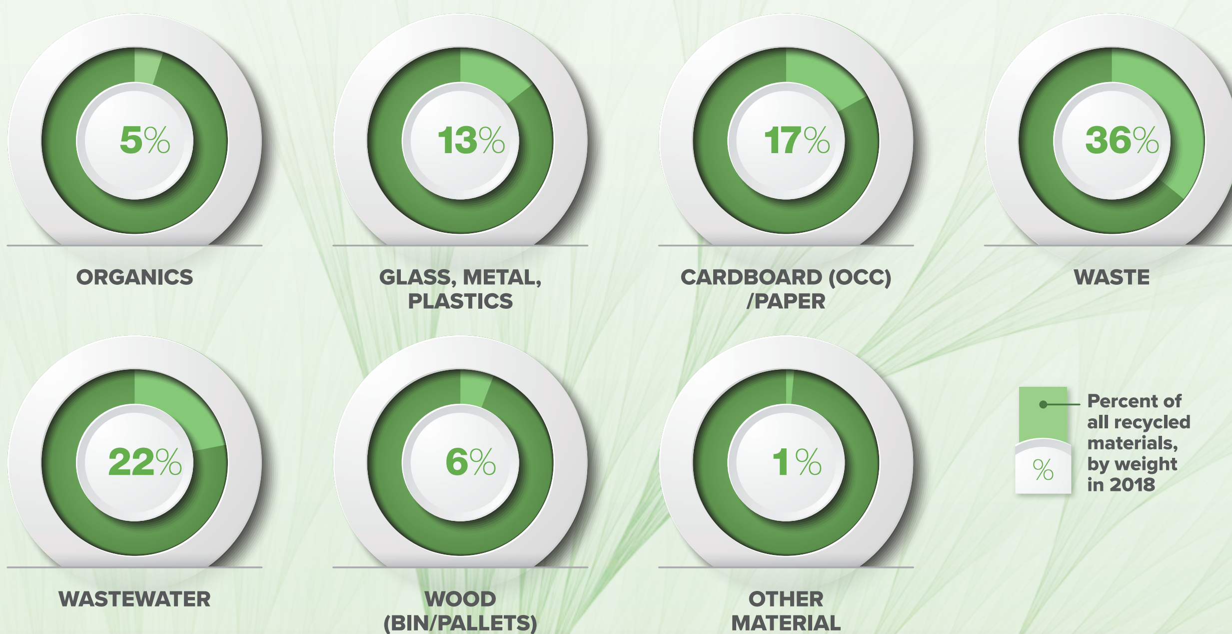
Fuel Cell Products

Ballard has developed expertise, through more than 30 years of innovation, in recycling fuel cell product components. We effectively refurbish, reuse and reclaim these components so that our products not only meet a zero-emission standard when used by customers in the field, but also meet a zero-waste standard in the manufacturing process.

A fuel cell stack reaches its end-of-life when the membrane electrode assembly, or MEA, wears out – typically in 5 to 10 years. At that point, Ballard refurbishes each stack by reusing the plates and hardware together with our latest generation MEA. We then reclaim approximately 95% of the platinum, a valuable precious metal, from each of the used MEAs and reuse it in the manufacture of new stacks. With more than 30,000 stacks shipped to customers over the years, we now refurbish several thousand each year. Ballard is also certified under ISO 14001, the international standard for effective environmental management systems.

Manufacturing Materials

As depicted in the chart below, we recycle various materials used in our operations, from organics and glass to wood. Over the 2017-18 period, more than 1.2 million kilograms (over 2.6 million lbs.) of materials have been recycled. As one example, the 27,000 kilograms (59,500 lbs.) of glass, metal and plastics recycled in 2018 alone are enough to manufacture 38 passenger cars!



MOVING FORWARD

We are working to expand existing sustainability initiatives, including the addition of water and natural gas waste reduction plans and expansion of existing initiatives to all corporate manufacturing locations. We have also formed an internal cross-functional team that will be responsible for corporate-wide planning and execution of an exhaustive sustainability plan, and we look forward to communicating progress to all shareholders in our next Annual Report.

2018 Ballard Impact Awards Recipients

Safety Award

Occupational Safety Standard of Excellence (OSSE)

Kaki Chan

Innovation Award

HDV8 Design Team

Gener Arciaga, Nate MacRostie, George Skinner, Wendy Cellik, Ben Greenough, Ian Milne, Stefan Strbac, Norm Cook, Tegan Harrower, Terry Moreau, Chris Strohhacker, Bahram Dashtimoghaddam, Zoltan Kollar, Steve Gabrys, Nicolae Mosoiu, Scott Sweeney, Joel Lancaster, David Myers, Kenneth Wang, Mike Ebbehoj, TJ Lawy, Ed Peters, Ian Eldergill, Cathy Li, Wade Popham, Lisa Zeng, Stam Liu, Alex Robinson, James Kirker, Sanjiv Kumar, Don Lines, Mike Padmore, Paul Paterson, Jeff Pledger, Jeff Riha, Grace Valle, Semen Foudimov, Kyle Fritzke, Alex Degraaf, Robert Yachuk, Luke Damron, Jaedyn Foley, Darrell Klammer, Stephen Linsley, Sorin Popa, Mitchell Pozar

Listen & Deliver Award

Flexible Benefits Program Roll Out

Harsimran Kapoor and Dayna Sandher

Quality. Always Award

Audit Excellence

Jyoti Sidhu, Sentayehu Kebede, Lynette McHugh, Cara Startek, Paul Beattie, Ian Eldergill, Joanna Kolodziej, Steve Gabrys, Shoaib Khan, Neil Black, Jeff Glandt, Evelyn Lai, Antonio Lee, Tim Naylor, Silvano Pozzi, James Wong, Leonardo Estrada, Jane Calinisan, Edith Hicks, Kevin Colbow, Seungsoo Jung, Lee Sweetland, Antonio Lee, Jan Laishley, Harsimran Kapoor, Kailyn Domican, Andrew Desouza, Shanna Knights, Grace Valle, Brenda Chen, Sonia Cheung, Laura Stolar, Garth Currier, Lisa Li, Jacqueline Ricafrente, Ron Mah, Lars Husted, Carmen Cheung, Warren Williams, Paul Louw, David Musil, Neil Blackadar, Alan Young, Noosha Mirzalou, Milena Cabral, Nico Van Rooi, Jefferson Casauay, David Lo, Greg Iuzzolino

Inspire Excellence Award

Challenge Solving Innovation Sessions Contributors

Soroush Mohammadjafaryvahed, Ales Horky, Terry Moreau, Brooks Friess, Greg Afonso, Perry Ho

Own it Award

China Service and Application Engineering Excellence

Ethan Zhang and Jack Fang

Row Together Award

MD30 Support

Patricia Chong, Christian Tuazon, Paul Lam, Bahram Dashtimoghaddam, Lisa Li, Gener Arciaga, Jeff Riha, Ashkan Soheili, Steve Gabrys, Carmen Cheung, Grace Valle, Ethan Zhang, Stephen Shen, Lewis Liu, Jack Fang, Wei Ye, Donald Guan, Byron Somerville, Norman Woo, Bruce Yu, Leanne Feng, Jason Cox, Vincent Liu, Brock Pang, Gihan Wickremasuriya, Mandy Tam, Andy Chen, Shoaib Khan, Michael Liou, Alan Li, Hyeseon Oh, Howard Tseng, Jyoti Sidhu, Norman Chor

POWER TO CHANGE THE WORLD®

MANAGEMENT PROXY CIRCULAR

dated as of April 8, 2019

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 Management Proxy 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 Management Proxy Circular is furnished in connection with the solicitation of proxies by our management in connection with the Meeting to be held on Tuesday, June 4, 2019 at 1:00 p.m. (Pacific Daylight Time) in Burnaby, BC, 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 Management Proxy Circular and the related materials are first being sent to Registered Shareholders is April 26, 2019.

OBTAINING A PAPER COPY OF MANAGEMENT PROXY CIRCULAR AND FINANCIAL STATEMENTS

In lieu of mailing the Notice of Meeting, Management Proxy Circular and our audited financial statements and management's discussion and analysis for the year ended December 31, 2018, 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. You must call to request a paper copy by May 22, 2019 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 Management Proxy Circular on www.SEDAR.com.

If you have standing instructions to receive paper copies of these documents and would like to revoke them, you may call toll free at 1-877-907-7643, from Canada or the United States.

HOW TO VOTE

Only Registered Shareholders or their duly appointed proxyholders are permitted to vote at the Meeting. Beneficial Shareholders are not permitted to vote at the Meeting as only proxies from Registered Shareholders can be recognized and voted at the Meeting. You may vote as follows:

Registered Shareholders: If you are a Registered Shareholder you may vote by attending the Meeting in person, or if you do not plan to attend the Meeting, by completing the proxy and delivering it according to the instructions contained in the form of proxy and this Management Proxy Circular.

Beneficial Shareholders: If you are a Beneficial Shareholder you may only vote by carefully following the instructions on the voting instruction form or proxy form ("**VIF**") provided to you by your stockbroker or financial intermediary. If you do not follow the special procedures described by your stockbroker or financial intermediary, you will not be entitled to vote.

Should a Beneficial Shareholder who receives a VIF wish to attend the Meeting or have someone else attend on his or her behalf, the Beneficial Shareholder may request a legal proxy as set forth in the VIF, which will grant the Beneficial Shareholder or his/her nominee the right to attend and vote at the Meeting.

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 Shareholder. Beneficial shareholders who have previously provided standing instructions will receive a paper copy of the Notice of Meeting, Management Proxy 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.

EXECUTION AND REVOCATION OF PROXIES

A Registered Shareholder or the Registered Shareholder's attorney authorized in writing or, where the Registered Shareholder is a company, a duly authorized officer or attorney of that company, must execute the proxy. In order to be effective, completed proxies must be deposited at the office of the registrar and transfer agent for the Shares, being Computershare Investor Services Inc. ("**Computershare**"), Proxy Dept., 100 University Avenue, 9th Floor, Toronto Ontario, M5J 2Y1 (Fax: within North America: 1-866-249-7775; outside North America: 1-416-263-9524), not less than 48 hours (excluding Saturdays and holidays) before the time of the Meeting. The individuals named as proxyholders in the accompanying form of proxy are directors and officers of Ballard. **A Registered Shareholder desiring to appoint a person or company (who need not be a shareholder) to represent him or her at the Meeting, other than the persons or companies named in the enclosed proxy, may do so by inserting the name of such other person or company in the blank space provided in the proxy.**

A proxy may be revoked by 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:

- Computershare, at the address or fax number set out above, 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.

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 deposit 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 8, 2019, we had 232,343,296 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 19.9% 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

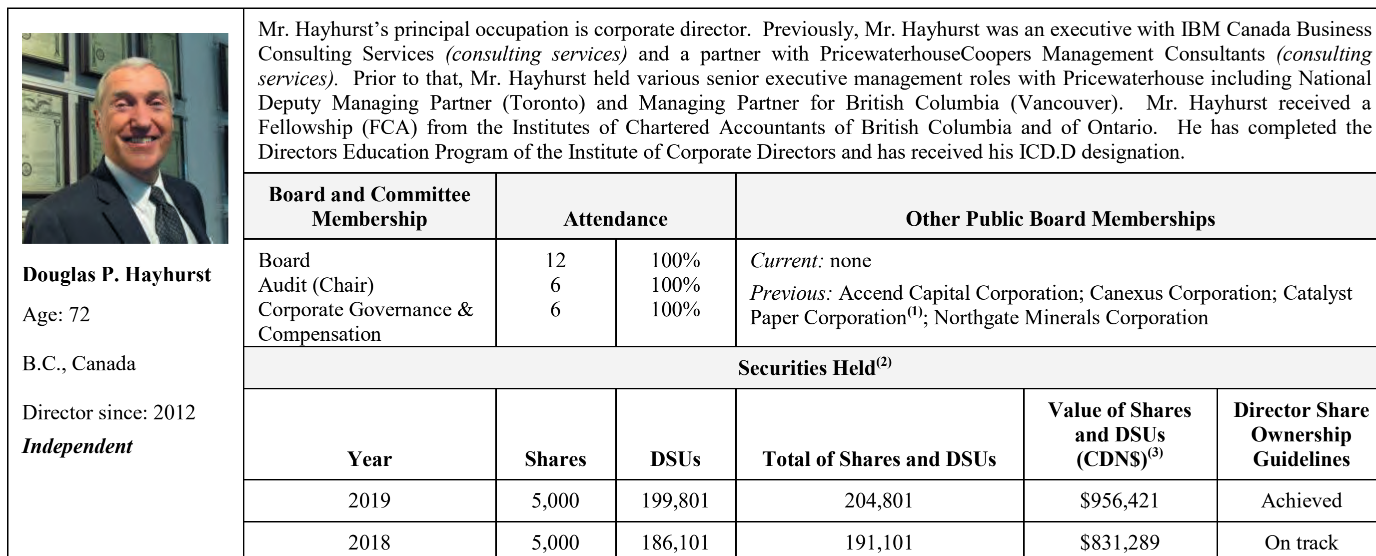
No one who has been a director, director nominee or executive officer of ours at any time since January 1, 2019, or any of his or her associates or affiliates, has any material interest, direct or indirect, by way of beneficial ownership of Shares or otherwise, in any matter to be acted on at the Meeting 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 he or she 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. Mr. Jiang and Mr. Sun were nominated to the Board by Weichai and were appointed as of January 1, 2019.

The following information pertains to our nominees for election as directors at the Meeting, as of April 8, 2019.



Douglas P. Hayhurst

Age: 72

B.C., Canada

Director since: 2012

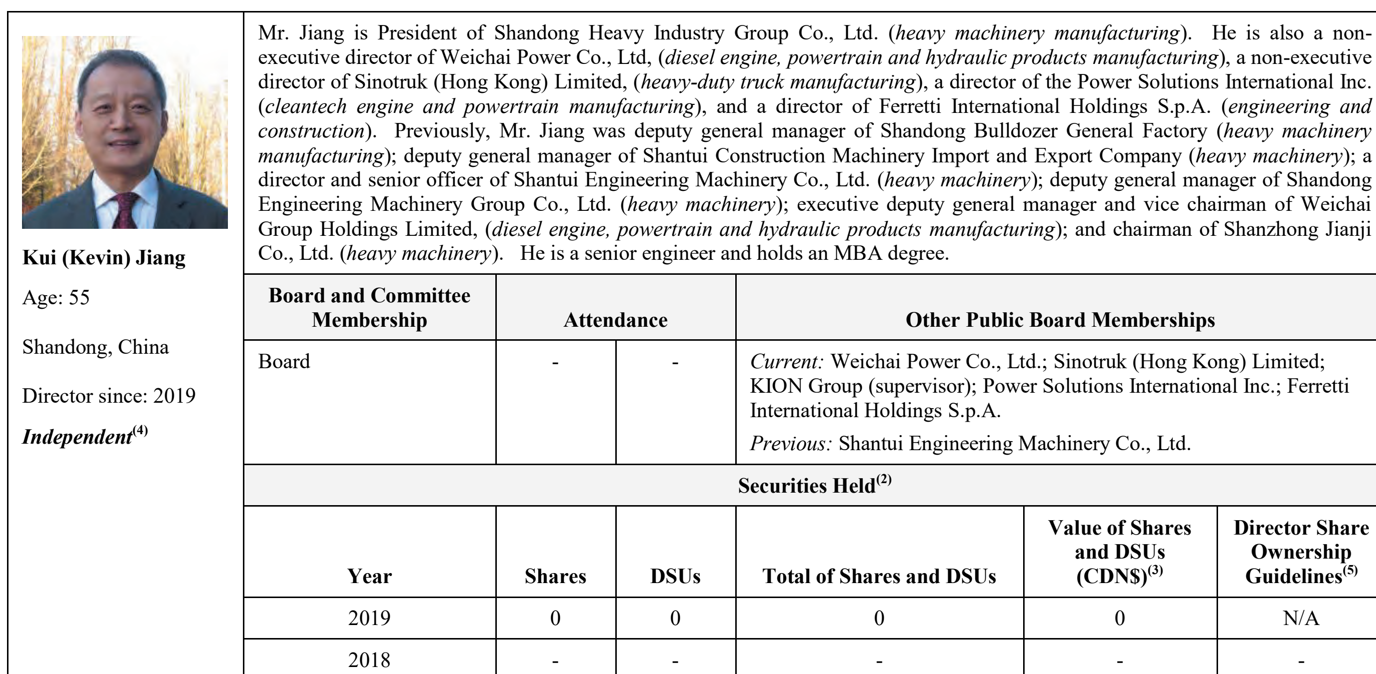
Independent

Mr. Hayhurst's principal occupation is corporate director. Previously, Mr. Hayhurst was an executive with IBM Canada Business Consulting Services *(consulting services)* and a partner with PricewaterhouseCoopers Management Consultants *(consulting services)*. Prior to that, Mr. Hayhurst held various senior executive management roles with Pricewaterhouse 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	12 6 6	100% 100% 100%	*Current:* none *Previous:* 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 (CDN$)[(3)]	Director Share Ownership Guidelines
2019	5,000	199,801	204,801	$956,421	Achieved
2018	5,000	186,101	191,101	$831,289	On track



Kui (Kevin) Jiang

Age: 55

Shandong, China

Director since: 2019

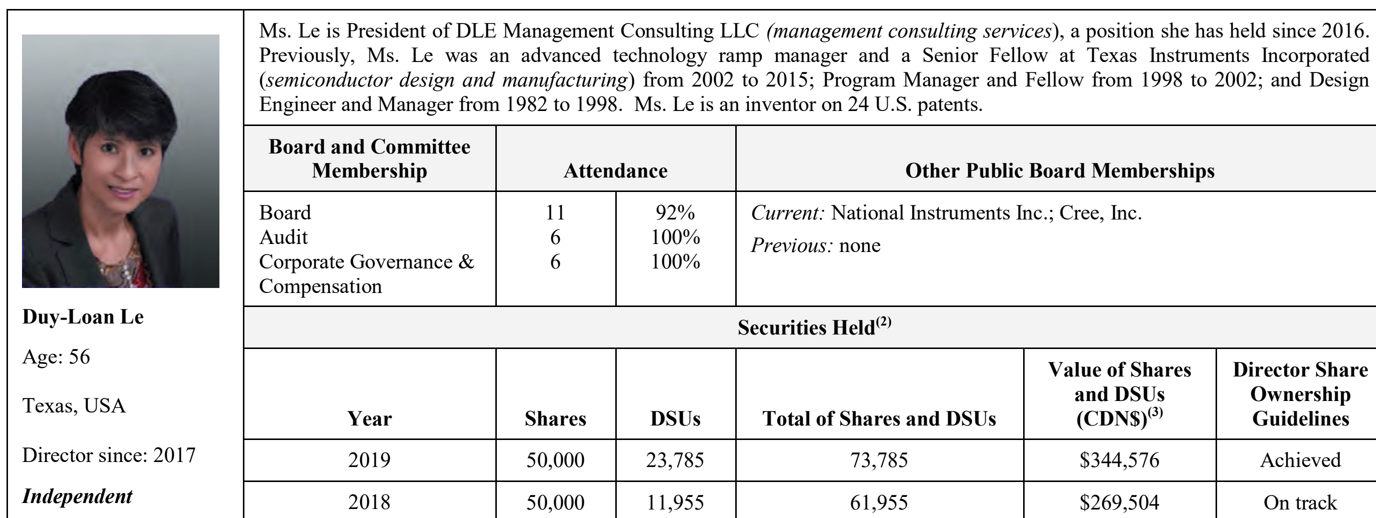
Independent[(4)]

Mr. Jiang is President of Shandong Heavy Industry Group Co., Ltd. (*heavy machinery manufacturing*). He is also a non-executive director of Weichai Power Co., Ltd, (*diesel engine, powertrain and hydraulic products manufacturing*), a non-executive director of Sinotruk (Hong Kong) Limited, (*heavy-duty truck manufacturing*), a director of the Power Solutions International Inc. (*cleantech engine and powertrain manufacturing*), and a director of Ferretti International Holdings S.p.A. (*engineering and construction*). Previously, Mr. Jiang was deputy general manager of Shandong Bulldozer General Factory (*heavy machinery manufacturing*); deputy general manager of Shantui Construction Machinery Import and Export Company (*heavy machinery*); a director and senior officer of Shantui Engineering Machinery Co., Ltd. (*heavy machinery*); deputy general manager of Shandong Engineering Machinery Group Co., Ltd. (*heavy machinery*); executive deputy general manager and vice chairman of Weichai Group Holdings Limited, (*diesel engine, powertrain and hydraulic products manufacturing*); and chairman of Shanzhong Jianji Co., Ltd. (*heavy machinery*). He is a senior engineer and holds an MBA degree.

Board and Committee Membership	Attendance		Other Public Board Memberships
Board	-	-	*Current:* Weichai Power Co., Ltd.; Sinotruk (Hong Kong) Limited; KION Group (supervisor); Power Solutions International Inc.; Ferretti International Holdings S.p.A. *Previous:* Shantui Engineering Machinery Co., Ltd.

Securities Held[(2)]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[(3)]	Director Share Ownership Guidelines[(5)]
2019	0	0	0	0	N/A
2018	-	-	-	-	-



Duy-Loan Le

Age: 56

Texas, USA

Director since: 2017

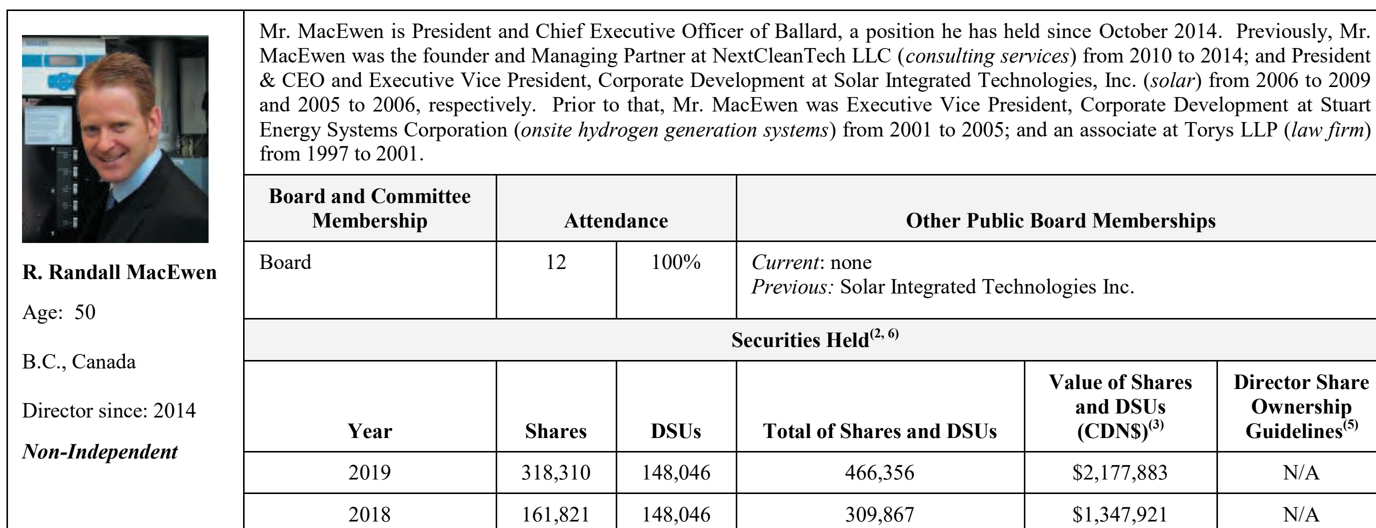
Independent

Ms. Le is President of DLE Management Consulting LLC *(management consulting services*), a position she has held since 2016. Previously, Ms. Le was an advanced technology ramp manager and a Senior Fellow at Texas Instruments Incorporated (*semiconductor design and manufacturing*) 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 Audit Corporate Governance & Compensation	11 6 6	92% 100% 100%	*Current:* National Instruments Inc.; Cree, Inc. *Previous:* none

Securities Held[(2)]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[(3)]	Director Share Ownership Guidelines
2019	50,000	23,785	73,785	$344,576	Achieved
2018	50,000	11,955	61,955	$269,504	On track



R. Randall MacEwen

Age: 50

B.C., Canada

Director since: 2014

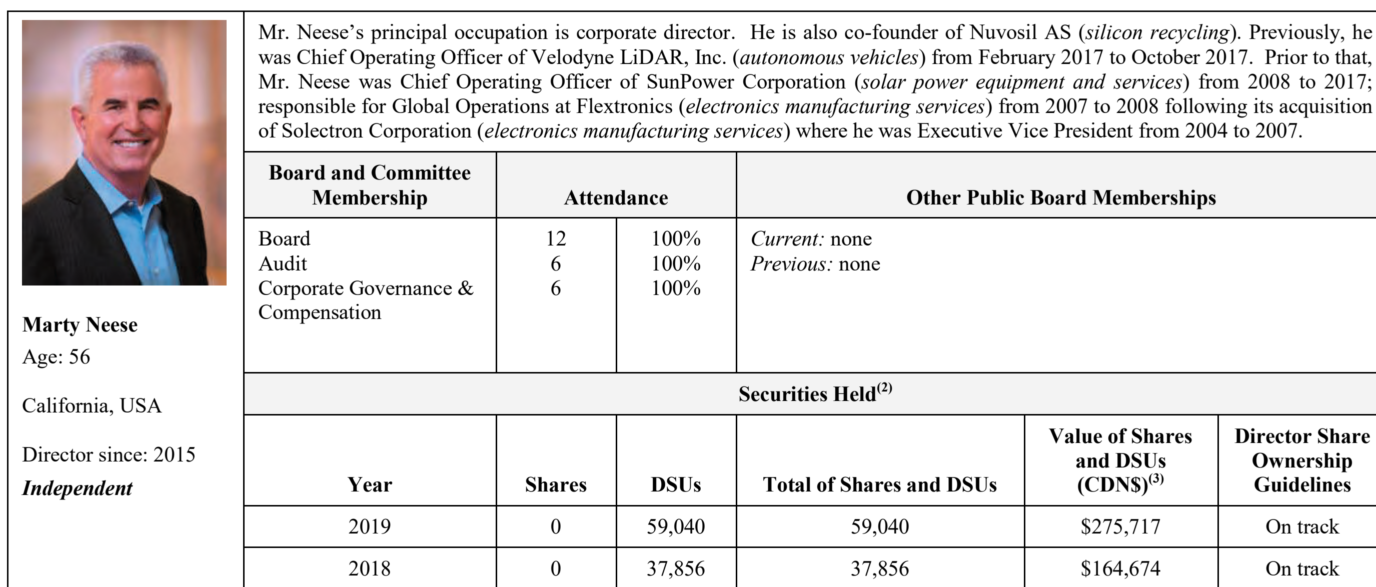
Non-Independent

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 (*consulting services*) from 2010 to 2014; and President & CEO and Executive Vice President, Corporate Development at Solar Integrated Technologies, Inc. (*solar*) 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 (*onsite hydrogen generation systems*) from 2001 to 2005; and an associate at Torys LLP (*law firm*) from 1997 to 2001.

Board and Committee Membership	Attendance		Other Public Board Memberships
Board	12	100%	*Current*: none *Previous:* Solar Integrated Technologies Inc.

Securities Held[2, 6]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines[5]
2019	318,310	148,046	466,356	$2,177,883	N/A
2018	161,821	148,046	309,867	$1,347,921	N/A



Marty Neese

Age: 56

California, USA

Director since: 2015

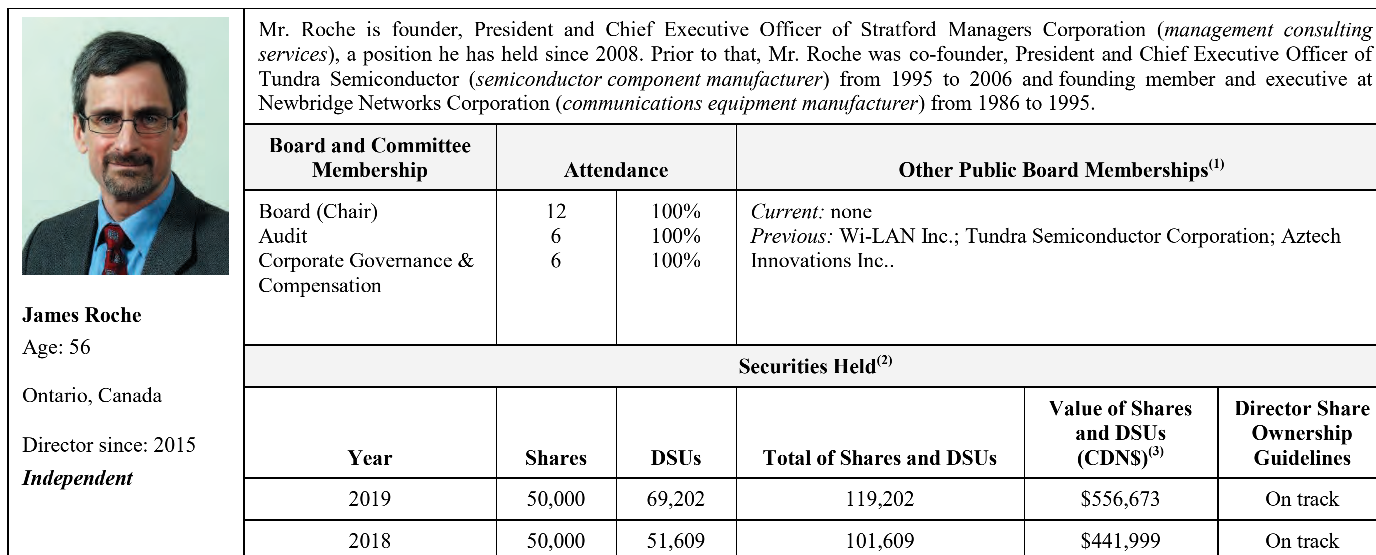
Independent

Mr. Neese's principal occupation is corporate director. He is also co-founder of Nuvosil AS (*silicon recycling*). Previously, he was Chief Operating Officer of Velodyne LiDAR, Inc. (*autonomous vehicles*) from February 2017 to October 2017. Prior to that, Mr. Neese was Chief Operating Officer of SunPower Corporation (*solar power equipment and services*) from 2008 to 2017; responsible for Global Operations at Flextronics (*electronics manufacturing services*) from 2007 to 2008 following its acquisition of Solectron Corporation (*electronics manufacturing services*) where he was Executive Vice President from 2004 to 2007.

Board and Committee Membership	Attendance		Other Public Board Memberships
Board Audit Corporate Governance & Compensation	12 6 6	100% 100% 100%	*Current:* none *Previous:* none

Securities Held[2]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines
2019	0	59,040	59,040	$275,717	On track
2018	0	37,856	37,856	$164,674	On track



James Roche

Age: 56

Ontario, Canada

Director since: 2015

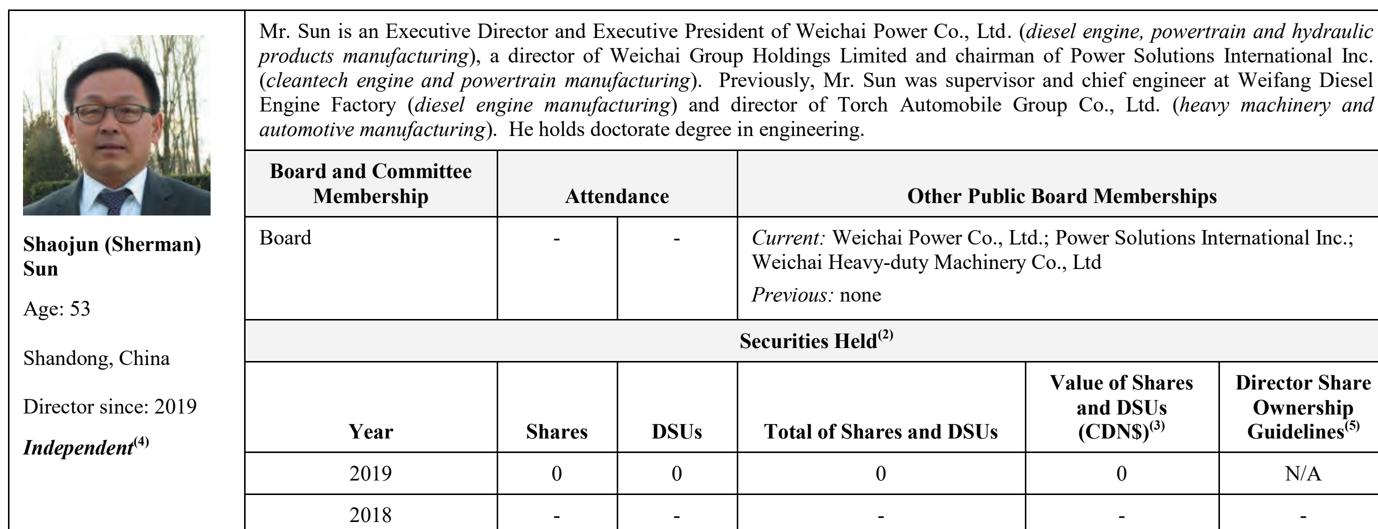
Independent

Mr. Roche is founder, President and Chief Executive Officer of Stratford Managers Corporation (*management consulting services*), a position he has held since 2008. Prior to that, Mr. Roche was co-founder, President and Chief Executive Officer of Tundra Semiconductor (*semiconductor component manufacturer*) from 1995 to 2006 and founding member and executive at Newbridge Networks Corporation (*communications equipment manufacturer*) from 1986 to 1995.

Board and Committee Membership	Attendance		Other Public Board Memberships[1]
Board (Chair) Audit Corporate Governance & Compensation	12 6 6	100% 100% 100%	*Current:* none *Previous:* Wi-LAN Inc.; Tundra Semiconductor Corporation; Aztech Innovations Inc..

Securities Held[2]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines
2019	50,000	69,202	119,202	$556,673	On track
2018	50,000	51,609	101,609	$441,999	On track



Shaojun (Sherman) Sun

Age: 53

Shandong, China

Director since: 2019

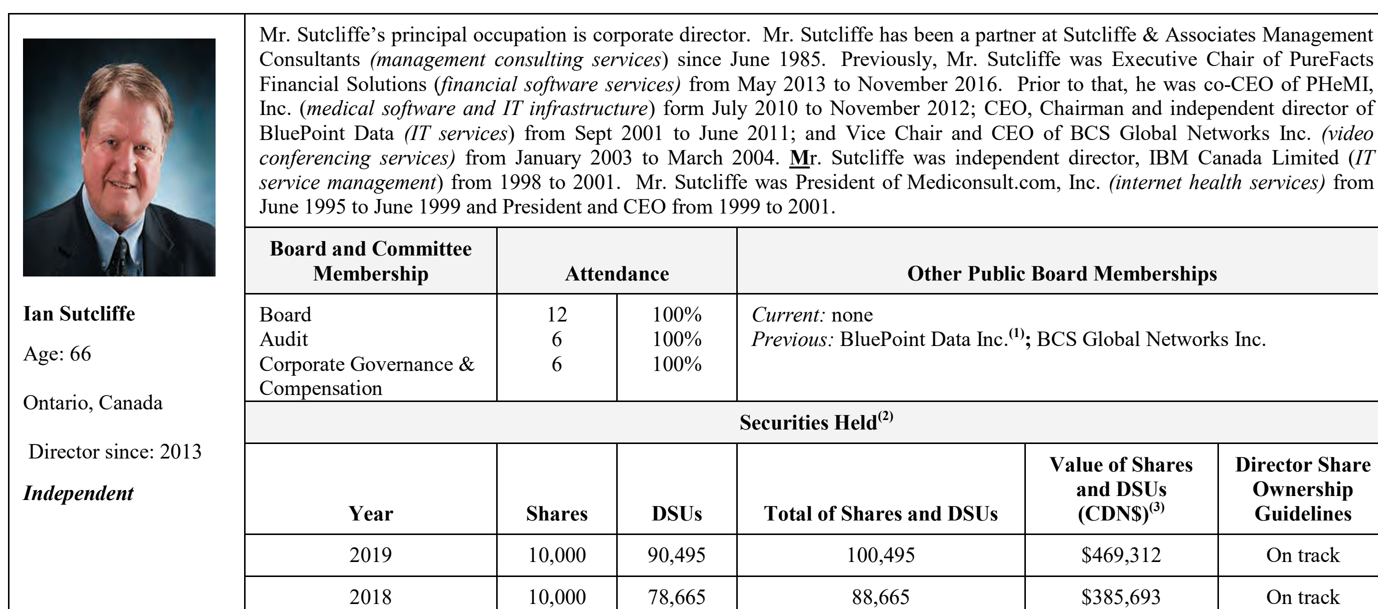
Independent[4]

Mr. Sun is an Executive Director and Executive President of Weichai Power Co., Ltd. (*diesel engine, powertrain and hydraulic products manufacturing*), a director of Weichai Group Holdings Limited and chairman of Power Solutions International Inc. (*cleantech engine and powertrain manufacturing*). Previously, Mr. Sun was supervisor and chief engineer at Weifang Diesel Engine Factory (*diesel engine manufacturing*) and director of Torch Automobile Group Co., Ltd. (*heavy machinery and automotive manufacturing*). He holds doctorate degree in engineering.

Board and Committee Membership	Attendance		Other Public Board Memberships
Board	-	-	*Current:* Weichai Power Co., Ltd.; Power Solutions International Inc.; Weichai Heavy-duty Machinery Co., Ltd *Previous:* none

Securities Held[2]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines[5]
2019	0	0	0	0	N/A
2018	-	-	-	-	-



Ian Sutcliffe

Age: 66

Ontario, Canada

Director since: 2013

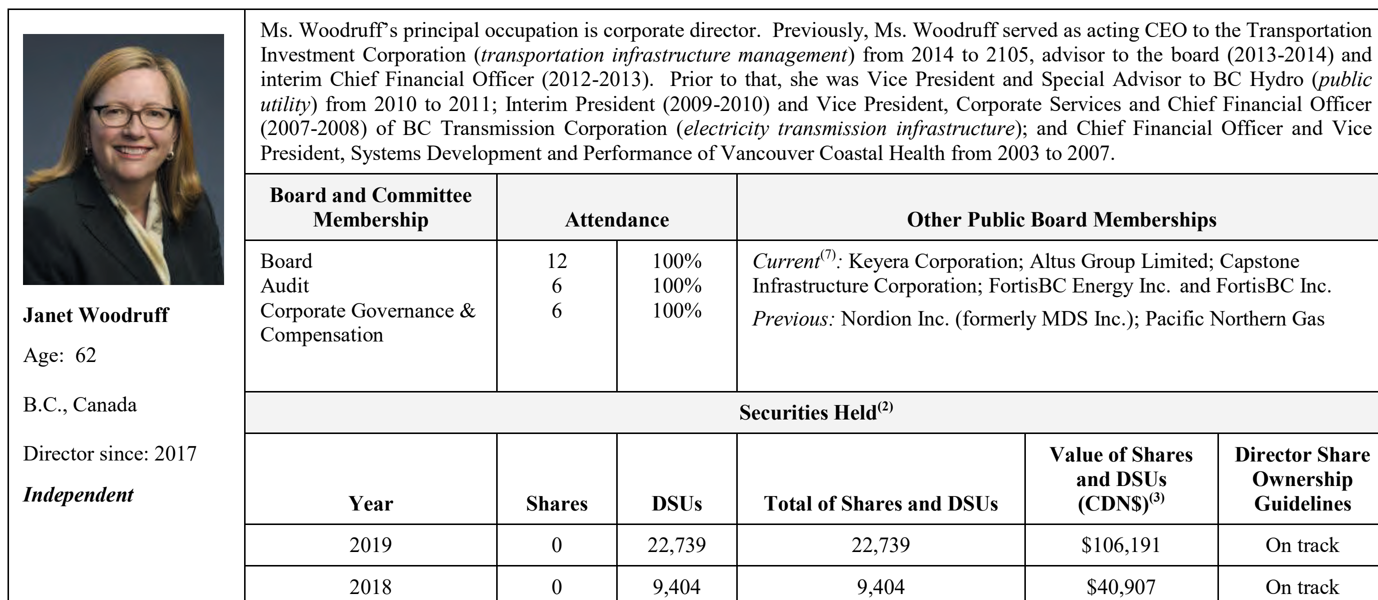
Independent

Mr. Sutcliffe's principal occupation is corporate director. Mr. Sutcliffe has been a partner at Sutcliffe & Associates Management Consultants *(management consulting services*) since June 1985. Previously, Mr. Sutcliffe was Executive Chair of PureFacts Financial Solutions (*financial software services)* from May 2013 to November 2016. Prior to that, he was co-CEO of PHeMI, Inc. (*medical software and IT infrastructure*) form July 2010 to November 2012; CEO, Chairman and independent director of BluePoint Data *(IT services*) from Sept 2001 to June 2011; and Vice Chair and CEO of BCS Global Networks Inc. *(video conferencing services)* from January 2003 to March 2004. Mr. Sutcliffe was independent director, IBM Canada Limited (*IT service management*) from 1998 to 2001. Mr. Sutcliffe was President of Mediconsult.com, Inc. *(internet health services)* from June 1995 to June 1999 and President and CEO from 1999 to 2001.

Board and Committee Membership	Attendance		Other Public Board Memberships
Board Audit Corporate Governance & Compensation	12 6 6	100% 100% 100%	*Current:* none *Previous:* BluePoint Data Inc.[1]; BCS Global Networks Inc.

Securities Held[2]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines
2019	10,000	90,495	100,495	$469,312	On track
2018	10,000	78,665	88,665	$385,693	On track



Janet Woodruff

Age: 62

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 (*transportation infrastructure management*) from 2014 to 2105, 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 (*public utility*) from 2010 to 2011; Interim President (2009-2010) and Vice President, Corporate Services and Chief Financial Officer (2007-2008) of BC Transmission Corporation (*electricity transmission infrastructure*); 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 Audit Corporate Governance & Compensation	12 6 6	100% 100% 100%	*Current*[7]*:* Keyera Corporation; Altus Group Limited; Capstone Infrastructure Corporation; FortisBC Energy Inc. and FortisBC Inc. *Previous:* Nordion Inc. (formerly MDS Inc.); Pacific Northern Gas

Securities Held[2]

Year	Shares	DSUs	Total of Shares and DSUs	Value of Shares and DSUs (CDN$)[3]	Director Share Ownership Guidelines
2019	0	22,739	22,739	$106,191	On track
2018	0	9,404	9,404	$40,907	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 8, 2019 and April 9, 2018, 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 CDN$4.67 and CDN$4.35 closing Share price on the TSX as of April 8, 2019 and April 9, 2018, respectively.

(4) Mr. Jiang and Mr. Sun are not independent under NASDAQ corporate governance rules and guidelines for the purposes of serving on the Audit Committee.

(5) Management directors and 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 38 and following for more details.

(6) As President and CEO, Mr. MacEwen also holds PSUs and Options. See the Executive Compensation Tables on page 40 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. The current audit engagement partner at KPMG LLP may continue in his role until the end of 2021.

The following table shows the total fees we incurred with KPMG LLP in 2018 and 2017:

Type of Audit Fees	**2018 (CDN$)**	**2017 (CDN$)**
Audit Fees	$516,800	$543,000
Audit-Related Fees	Nil	Nil
Tax Fees	$18,000	Nil
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 7, 2019, which section is incorporated by reference into this Management Proxy 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 and 2018, 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 2019 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 Management Proxy Circular.

Approval of the above 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 provides 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 Randall 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 experience

f) Corporate governance experience & education

g) Early-Stage business commercialization experience

h) CleanTech sector knowledge

i) Asian market experience

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.

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	R. Randall 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 Commercial-ization			✓	✓		✓		✓	
Clean Technology				✓	✓				
Asian Markets		✓	✓		✓		✓		

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 such guidelines for our executive officers) and directors who are shareholder nominees appointed pursuant to agreements with the Corporation (Mr. Jiang and Mr. Sun).

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 share ownership guideline 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 operations at meetings of the Board and its committees, and through reports by and discussions with management. In 2018, *in camera* sessions, chaired by the Chair of the Board, were held after each regularly scheduled Board meeting involving all of the independent directors without the presence of management. In addition, 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.

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 employees in Sales & Marketing, Finance & Administration, Supply Chain, Customer Service and Quality, and all management employees and officers, 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 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 October 2018, the Board and senior management travelled to China for meetings, presentations and site visits with representatives of Weichai Power Co., Ltd, to visit their facilities and discuss the strategic collaboration with them.

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. Given a number of considerations including: the size and composition of the Board; considerations relating to the efficiency and effectiveness of the Board and committees; and the flat retainer fee structure used for compensating the Board, the Audit Committee and CGCC were represented by all directors other than the CEO in 2018. In 2019, with the addition of the Weichai nominees, Mr. Jiang and Mr. Sun, and the establishment of the Commercial Committee, the board revaluated committee memberships.

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[1]			
Duy-Loan Le		✓	✓
Marty Neese			✓ (Chair)
James Roche	✓[2]	✓[2]	✓[2]
Sherman Sun[3]		✓	
Ian Sutcliffe	✓		✓
Janet Woodruff	✓	✓ (Chair)	

1 Mr. Jiang joined the board on January 1, 2019.

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

3 Mr. Sun joined the board on January 1, 2019.

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 met six (6) times during 2018. 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.

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 7, 2019, which section is incorporated by reference into this Management Proxy Circular. A copy of the Audit Committee's mandate is also posted on our website (http://ballard.com/investors/governance).

Corporate Governance & Compensation Committee

The CGCC met six (6) times during 2018. 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.

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.

A copy of 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.

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.

A copy of the Commercial Committee's mandate is posted on our website (http://ballard.com/investors/governance).

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, 2018:

Randall MacEwen	**Anthony Guglielmin**	**Robert Campbell**	**Kevin Colbow**	**David Whyte**
President and Chief Executive Officer	Vice President and Chief Financial Officer	Vice President and Chief Commercial Officer	Vice President, Technology & Product Development	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, which we introduced in 2011.

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, and to incent retention and 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 vest after three years.
  - **Stock Options** – stock options are awarded annually, vest 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 70% of total compensation), since it depends on successful performance and growth in Ballard's share price – both of which effectively align 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 are required to hold between 100%

and 300% of their individual base salary in Shares or DSUs, depending on their level within the Corporation. They 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 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.

In recruiting our CEO in October 2014, we were mindful to adopt best practices, including claw-back provisions, and provisions dealing with termination and change of control, as well as to align the total compensation package at a level appropriate for the Corporation's size and stage of development.

Significant Recent Program Changes

Executive Claw-Back Provisions

As of 2017, all Named Executive Officers 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 2017, the CGCC engaged with Willis Towers Watson in order to conduct a competitive review of the compensation structure for the executive team, including, base salary, performance bonus incentive, target total cash (salary and target bonus), long-term incentive awards and total direct compensation (including theoretical value of long-term incentives). 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. As a result of this review, certain structural changes and compensation values were made to the Corporation's executive compensation program in 2017 to strengthen the Corporation's executive compensation program, better align the program with current practices, standardize certain program components, and adjust compensation based on the peer group data.
- 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 an international sales and service team. Many of our customers and markets are outside North America, which creates a degree of complexity, and requiring us to recruit executives with wider skills and 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 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 peer 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	• Paying compensation, including salaries, which are competitive in the markets in which we compete for executive talent
Motivate	• 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	• 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 smaller, niche fuel cell companies. By contrast, companies in broader comparator groups, such as industrials and technology companies, are often significantly larger 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 2018 and early 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 (5)	United States (8)
Calian Group Ltd.	AeroVironment Inc.
EXFO Inc.	Allied Motion Technologies Inc.
Hydrogenics Corp.	American Superconductor Corporation
Sierra Wireless Inc.	Capstone Turbine Corporation
Westport Fuel Systems	Fuel Cell Energy Inc.
	Plug Power Inc.
	Maxwell Technologies, Inc.
	Ultralife Corporation

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.

Market Analysis

In 2017, Willis Towers Watson conducted a review and assessed the market competitiveness of the compensation arrangements for Ballard's executive team against the comparator group of companies in similar industries, considering the market data in nominal dollars (US$ = CDN$) for target total direct compensation (salary + target bonus + long-term incentives). Based on this review, the CGCC implemented the compensation structure outlined below.

Compensation Framework for 2018

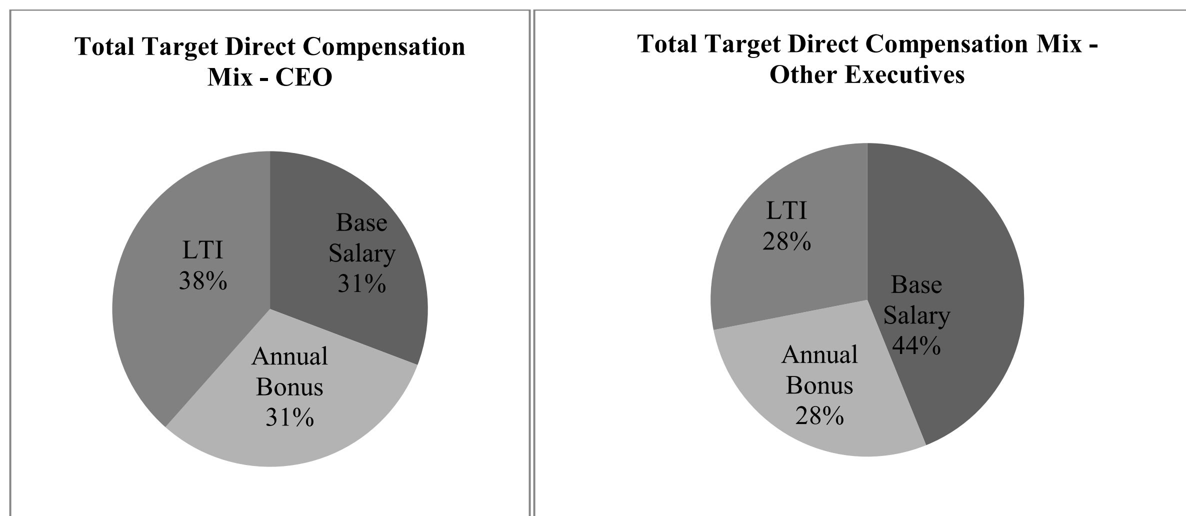
The compensation program for our executive officers has five primary components that deliver pay over the short- and long-term:

Element	Features	2018 Performance Measures
Base Salary	• 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	• Paid annually in cash or DSUs • Each executive has a specified target bonus expressed as a percentage of his or her 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	Corporate Quantitative (60%) • Revenue • Gross margin $ • Cash flow from operations Qualitative (40%) • Achieving Key Milestones for Stack and Module Development • Signing Major Strategic Agreement

Element	Features	2018 Performance Measures
Long-Term Incentive: **Performance Share Units (PSUs)**	• 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	• Annual Revenue • Gross Margin $
Long-Term Incentive: **Stock Options**	• 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	• 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 2018, an average of 58% of the target annual compensation earned by each of our Named Executive Officers was "at risk", 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 2017, based on the analysis and recommendations from Willis Towers Watson, the following base salaries were approved by the CGCC and remained in place through 2018:

Randall MacEwen, President & CEO	$550,000
Anthony Guglielmin, Vice President & CFO	$350,000
Robert Campbell, Vice President & COO	$350,000
Kevin Colbow, Vice President, Technology & Product Development	$250,000
David Whyte, Vice President, Operations	$230,000

Annual Bonus for Executive Officers

In 2018, the annual target bonus was unchanged from 2017, at 100% of base salary for Mr. MacEwen; 70% of base salary for Mr. Guglielmin and Mr. Campbell; and 55% of base salary for Dr. Colbow and Mr. Whyte. 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 2018, the actual annual bonus for each executive officer is determined by the CGCC on the basis of the following formula:

Actual Bonus = Annual Base Salary X Target Bonus % X (70% X Corporate Scorecard Multiplier + 30% X Ind. Performance Multiplier)

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 2018, the Corporate Performance Scorecard reflected a balance of quantitative annual goals focused on delivery of the 2018 operating plan (60% of the scorecard) and qualitative goals focused on key strategic outcomes to be achieved during 2018 to better position the Corporation for longer term success (40% of the scorecard).

The quantitative annual goals related to annual revenue, gross margin contribution (in dollars) and cash flow from operations. Each of the revenue, gross margin and cash flow from operations goals were weighted at 20% each, representing a total of 60% of the 2018 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 2018.

The 2018 Corporate Scorecard included two qualitative goals, each weighted at 20% (40% in total). The first qualitative goal was focused on the Corporation's achievement against key milestones on its LCS stack and HDV8 module technology development strategy. The second qualitative goal was focused on signing an agreement relating to a significant strategic transaction, major customer program or major commercial contract that accelerates future scaling and profitability.

Based on the Corporation's actual performance in 2018, the CGCC and Board assessed the Corporate Performance Scorecard as follows:

Component Weight	Performance Areas	Performance Highlights
Quantitative (60%)	Annual revenue	Under-achieved
	Annual gross margin dollar contribution	Under-achieved
	Annual cash flow from operations	Under-achieved
Qualitative (40%)	Achieve Key technology milestones for stack and module development	Substantially achieved
	Signing Major Strategic Agreement	Over-achieved

The Corporation underachieved each of the three quantitative goals in 2018. The Corporation's 2018 annual revenue, gross margin dollar contribution and cash flow from operations did not meet the minimum targets for bonus payout for these goals. The underperformance was partly due to significantly reduced sales to our Synergy Ballard joint venture in China under our MEA supply agreement.

The Corporation substantially achieved its 2018 corporate goal relating to the key 2018 milestones for the development programs for both its next generation heavy-duty motive stack (LCS) and its next generation heavy-duty motive module (HDv8). Almost all key technical, product performance, product cost and commercial delivery milestones were fully achieved; and the remaining milestones were substantially or partially achieved.

The Corporation over-achieved its 2018 corporate goal relating to signing a major agreement (strategic transaction, major customer program or major commercial contract). In June 2018, the Corporation entered into a multi-year extension to its technology solutions contract with Audi AG to support its small series production launch of fuel cell passenger cars. The program extension through August 2022 has an aggregate value expected to be CDN$80-to-$130 million.

Based on its review and assessment, the CGCC and Board determined the Corporate Scorecard Multiplier achievement for 2018 was 46%.

One-Time Special Bonus

The CGCC and Board also determined to grant an incremental special bonus pool of US$2.5 million (the "**Special Bonus**") for eligible Ballard employees, including executive officers, in recognition of the Corporation's successful closing in November 2018 of the strategic collaboration with Weichai. The strategic collaboration with Weichai includes the following key components:

- *Equity Investment*: an equity investment in the Corporation by Weichai in the amount of $163.6 million, representing a 19.9% equity interest in the Corporation, with a purchase price per Share that represented a 15% premium to the 30-day volume weighted average price. In addition, Broad-Ocean Motor, an existing Ballard strategic investor and Chinese partner, also invested a further $20.2 million at the same price to maintain its 9.9% ownership position in the Corporation. As a result the total investment by Weichai and Broad-Ocean generated total gross proceeds of $183.8 million.
- *Joint Venture and Technology Transfer Program*: Weichai and the Corporation also established a joint venture company, Weichai Ballard Hy-Energy Technologies Co., Ltd. (the "**Weichai-Ballard JV**"), in Shandong, China in the fourth quarter of 2018. Weichai holds a controlling ownership interest of 51% and Ballard holds an initial 49% ownership position. The Weichai-Ballard JV will manufacture our next-generation LCS fuel cell stack and LCS-based power modules for bus, commercial truck and forklift applications with exclusive rights in China. The Weichai-Ballard JV will pay us $90 million under a program to develop and transfer technology to enable these manufacturing activities. The Corporation will retain an exclusive right to the developed technologies outside China.
- *2,000 Fuel Cell Bus Program*: Weichai has agreed to supply a minimum of 2,000 fuel cell modules for commercial vehicles in China by 2021. This is the largest planned commercial fuel cell vehicle deployment announced globally. Specific terms related to the potential supply of fuel cell power modules for commercial vehicles, including scope, product mix, pricing and timing of shipments, are under discussion between Weichai and the Corporation.

Given the intensity and complexity of the discussions between the Corporation and Weichai throughout 2018, the successful closing of the collaboration in 2018, and the strategic importance of the collaboration to the Corporation's positioning in China, the CGCC and the Board approved the Special Bonus.

Individual Performance Multiplier

The individual performance multiplier is determined with reference to achievement against the individual goals set for each executive officer. 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 2018, individual multipliers for each Named Executive Officer ranged from 100%-135%. Our executive officers received their 2018 bonus in cash.

A summary of the Named Executive Officers' annual bonus payments for 2018 is as follows:

Name	Target Bonus (% of salary)	Corporate Score / Multiplier	Individual Score / Multiplier	Performance Bonus	Special Bonus[(1)]	Total Bonus	Bonus paid as a % of Salary
CEO[(2)]	100%	46%	120%	$391,091	$286,391	$677,482	118%
Other NEOs	55% - 70%	46%	100% - 135%	$78,000 - $178,000	$52,000 - $138,000	$130,000 - $316,000	57% - 90%

(1) Special Bonus relating to the Weichai strategic collaboration, discussed above.
(2) A portion of Mr. MacEwen's bonus was earned and paid in United States dollars (US$217,942 and US$159,522 for the performance bonus and Special Bonus, respectively). 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, 2018.

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 2016, one third are earned in each of 2017, 2018 and 2019; all earned PSUs then vest in 2019. 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 2018, and the composition of long-term incentives is set out in the table below.

		Total LTI Mix (%)	
Name	**Target LTI ($)**	**PSUs[1]**	**Stock Options[2]**
Mr. MacEwen	687,500	75%	25%
Mr. Guglielmin	245,000	75%	25%
Mr. Campbell	245,000	75%	25%
Dr. Colbow	137,500	75%	25%
Mr. Whyte	126,500	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 2018 the awards to our Named Executive Officers were as follows:

		Number Granted	
Name	**Total LTI Granted ($)**	**PSUs**	**Stock Options**
Mr. MacEwen	687,500	106,976	71,023
Mr. Guglielmin	245,000	38,122	25,310
Mr. Campbell	245,000	38,122	25,310
Dr. Colbow	138,000	21,473	14,256
Mr. Whyte	127,000	19,761	13,120

Units Granted

In 2018, PSUs were issued to the Named Executive Officers, including the President and CEO, using the methodology described above on the following dates and amounts:

February 28, 2018 224,454

Vesting Awards

In 2018, the following PSUs vested and were redeemed into Shares for the Named Executive Officers:

On March 2, 2018, 107,479 PSUs vested and after statutory withholdings, 53,952 PSUs were redeemed into Shares, representing 138.7% of one-third of the 2015 annual PSU awards granted to Messrs. MacEwen, Guglielmin, Colbow, and Whyte that were subject to the 2017 PSU Scorecard achievement.

On May 7, 2018, 26,943 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.

Earned Awards

In 2018, the performance criteria for the PSU Scorecard were scaled targets for annual revenue and gross margin dollars that were linked to the 2018 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 approved a 2018 PSU Scorecard achievement of 61%.

In March 2019, the Board determined, based on the 2018 PSU Scorecard achievement, that for outstanding PSU awards granted in 2016, 2017 and 2018 that are subject to it, 61% of the PSUs were earned. As noted above, these awards are subject to a 3-year vesting period.

CEO Compensation

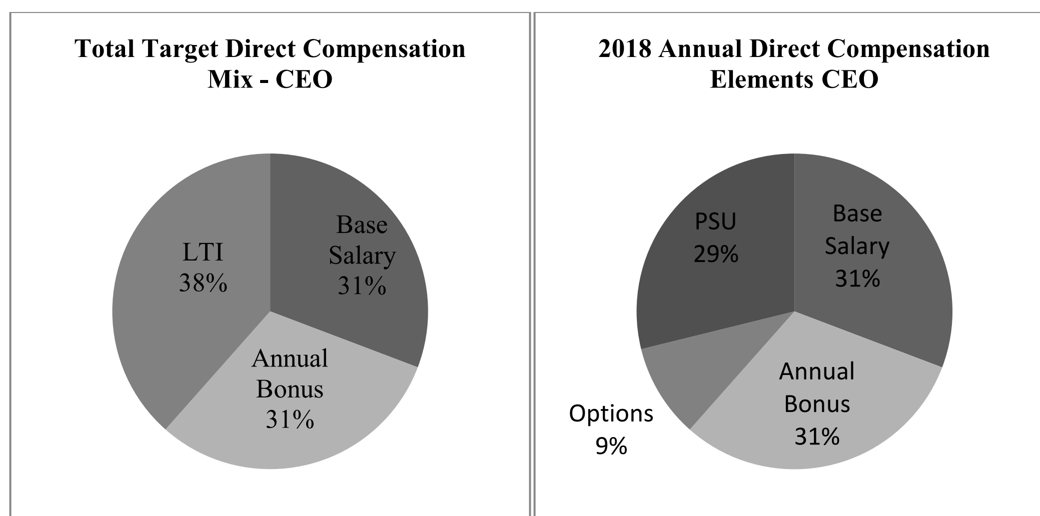
Mr. MacEwen was appointed President & CEO on October 6, 2014 with a base salary set at CDN$500,000 per year. As noted above, Mr. MacEwen's base salary was adjusted to CDN $550,000 in 2017 and remained at this level in 2018. In April 2018, Mr. MacEwen transitioned onto Ballard's United States payroll system. His compensation continues to be based on CDN $550,000 and is converted to United States dollars and paid through the Ballard United States payroll system.

Mr. MacEwen's target bonus for 2018 was CDN$550,000 based on an amount equal to 100% of his annual base salary. His actual bonus for 2018 was determined by the CGCC on the basis of corporate financial and operational performance reflected in the Corporate Performance Scorecard rating, plus performance relative to his individual goals for 2018, 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 2018, the corporate score was 46% of target**
Individual	Mr. MacEwen's individual objectives for 2018 were based on: • Building a Sustainable Business Platform – Over Achieved • Strategy Development and Communications – Substantially Achieved • Organizational Design and Development– Over Achieved The objective relating to building a sustainable platform focused on improving the Company's positioning to achieve future long-term profitability and cash flow breakeven by strengthening strategic positioning (including markets, customers, technology, products, competencies, assets) for long-term health, profitability, success and risk mitigation. The objective relating to strategy development and communications focused on improving the corporate strategy development process, including management and board engagement, as well as communication of strategy to various stakeholders. The objective relating to organizational design and development 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. **In 2018, Mr. MacEwen's individual performance multiplier was 120% of target.**
Overall Outcome	Mr. MacEwen's annual bonus award was CDN$391,091 representing 71% of his target bonus, based on a corporate multiplier of 46% and an individual performance multiplier of 120%. In addition, Mr. MacEwen received a Special Bonus award of CDN$286,391, resulting in a total bonus award of CDN$677,482.

Long-term Incentives	Type	Value	Features
Annual Award ($687,500)	Stock Option	$171,875	7-year term, with one-third of the options vesting at the end of each of the first three years
	PSU	$515,625	3-year vesting with performance criteria

For the CEO, 69% of his target compensation is 'at-risk' (via the annual bonus plan and long term incentive awards). 60% of his target compensation is linked directly to performance goals (via annual bonus plan and PSUs). 38% of his target compensation is linked to the performance of the Ballard common shares (via PSUs and Stock Option grants).



CEO Realized Pay

In 2018, 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$1,797,080 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 2018, Mr. MacEwen received an RRSP contribution from the Corporation, equal to 50% of the maximum amount allowable under the *Income Tax Act* (Canada), as he made an equivalent personal matching contribution. The contribution amount was pro-rated for the period January to March. 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. The contribution amount was pro-rated for the period April to December.

In 2018, Mr. Guglielmin, Dr. Colbow, Mr. Campbell and Mr. Whyte 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.

In 2018, 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. All 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 peer 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 2018, Willis Towers Watson provided input into the Executive Compensation Review.

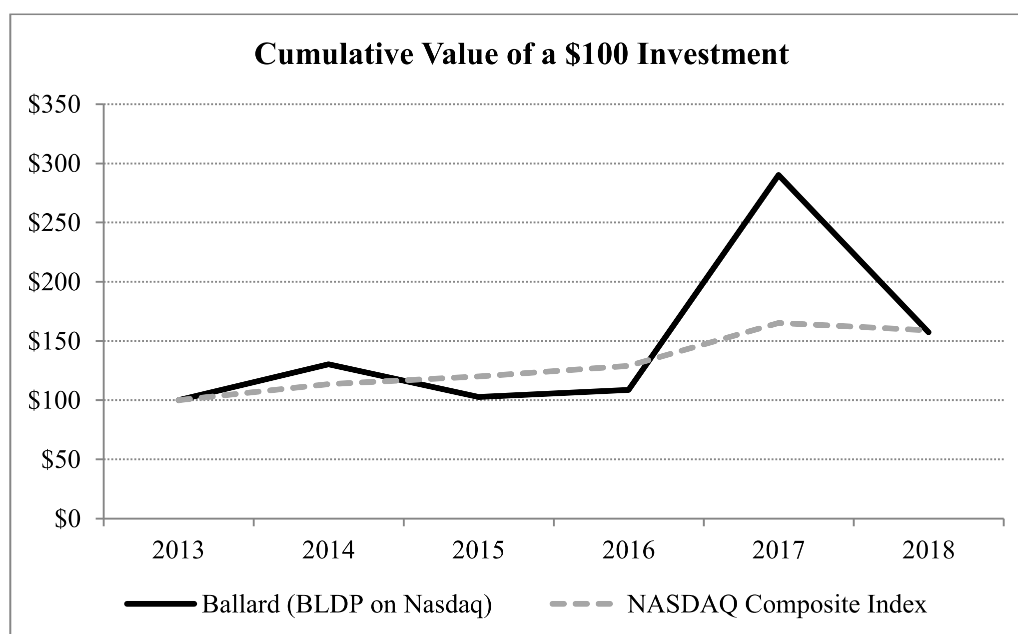
The following table sets out the fees paid to Willis Towers Watson during each of the two most recently completed financial years:

	Compensation-Related Fees	All Other Fees
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)	2013 ($)	2014 ($)	2015 ($)	2016 ($)	2017 ($)	2018 ($)
Ballard	100	130	103	109	290	157
NASDAQ Composite Index	100	113	120	129	165	159



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

Executive Compensation Tables

The following table summarizes the compensation paid for the fiscal years ended on December 31, 2016, December 31, 2017 and December 31, 2018 to our Named Executive Officers.

Summary Compensation Table

Name and Principal Position	Year	Salary[5] (CDN$)	Bonus[6] (CDN$)	Long-Tern Incentives		All Other Compensation[9] (CDN$)	Total Compensation (CDN$)
				Share-Based Awards[7] (CDN$)	Option-Based Awards[8] (CDN$)		
Randall MacEwen[1, 2]	2018	573,449	677,482	515,625	171,875	39,171	1,977,602
President and Chief Executive Officer	2017	540,385	756,250	515,625	171,875	53,721	2,037,856
	2016	500,000	530,000	468,750	156,250	58,971	1,713,971
Anthony Guglielmin	2018	350,000	315,658	183,750	61,250	41,116	951,774
Vice President and Chief Financial Officer	2017	343,846	404,250	183,750	61,250	38,787	1,031,883
	2016	318,000	314,820	144,000	48,000	37,159	861,979
Robert Campbell[3]	2018	350,000	298,161	183,750	61,250	80,155	973,316
Vice President and Chief Commercial Officer	2017	222,115	125,000	389,750	238,075	24,087	999,027
	2016	0	0	0	0	0	0
Kevin Colbow	2018	250,000	167,428	103,500	34,500	26,955	582,383
Vice President, Technology and Product Development	2017	240,385	189,062	103,125	34,375	21,300	588,247
	2016	194,118	146,801	75,000	25,000	19,278	460,197
David Whyte[4]	2018	230,000	131,389	95,250	31,750	30,517	518,906
Vice President, Operations	2017	217,500	146,108	94,875	31,625	19,854	509,962
	2016	162,022	102,449	75,000	25,000	17,384	381,855

(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. His compensation continues to be based on CDN $550,000 and was converted to United States dollars effective April 1, 2018, based on the prevailing exchange rate. From that date, Mr. MacEwen's compensation was 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, 2018.

(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) Mr. Whyte retired from the Corporation in December 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$319,564). The United States dollar amounts for 2018 were US$420,356, US$256,561, US$256,561, US$183,258, and US$168,597 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2017 were US$396,119, US$252,050, US$162,817, US$176,210, and US$159,434 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2016 were US$366,515, US$233,104, US$0, US$142,294, and US$118,767 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, 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, 2018. In 2018 Mr. Whyte departed his position. In connection with the departure, the total of salary and benefits continuance was $191,500.

(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 a portion of Mr. MacEwen's 2018 bonus, which was paid in United States dollars (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 2018 were US$496,615, US$231,387, US$218,561, US$122,730, and US$96,312 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, 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$554,354, US$296,328, US$91,629, US$138,588, and US$107,102 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. In 2017, Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte elected to have 20%, 20%, 20%, 50%, and 50% of their bonus paid as DSUs, respectively, with the remaining amount paid in cash. The United States dollar amounts for 2016 were US$388,506, US$230,773, US$0, US$107,610, and US$75,098 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. In 2016, the bonus for each of the Named Executive Officers was paid in cash. 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, 2018. 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, 2018, December 31, 2017, and December 31, 2016 is as follows:

Bonus						
Named Executive Officer	Year	DSUs (#)	Fair Market Value of a Share (CDN$)[(A)]	DSU Total (CDN$)	Cash Total (CDN$)	Total Bonus (CDN$)
Randall MacEwen	2018	0	0	0	677,482	677,482
	2017	31,380	4.82	151,250	605,000	756,250
	2016	0	0	0	530,000	530,000
Anthony Guglielmin	2018	0	0	0	315,658	315,658
	2017	16,774	4.82	80,850	323,400	404,250
	2016	0	0	0	314,820	314,820
Robert Campbell	2018	0	0	0	298,161	298,161
	2017	5,187	4.82	25,000	100,000	125,000
	2016	0	0	0	0	0
Kevin Colbow	2018	0	0	0	167,428	167,428
	2017	19,612	4.82	94,531	94,531	189,062
	2016	0	0	0	146,801	146,801
David Whyte	2018	0	0	0	131,389	131,389
	2017	15,156	4.82	73,054	73,054	146,108
	2016	0	0	0	102,449	102,449

(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 2018, 2017, and 2016 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 2018, 2017, and 2016. 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, 2018, December 31, 2017, and December 31, 2016 is as follows:

Share-Based Awards				
Named Executive Officer	Year	PSUs (#)	Fair Market Value of a Share (CDN$)[(B)]	Total (CDN$)[(C)]
Randall MacEwen	2018	106,976	4.82	515,625
	2017	187,222	2.75	515,625
	2016	260,417	1.80	468,750
Anthony Guglielmin	2018	38,122	4.82	183,750
	2017	63,821	2.88	183,750
	2016	80,000	1.80	144,000
Robert Campbell	2018	38,122	4.82	183,750
	2017[(A)]	90,719	4.30	389,750
	2016	0	0	0
Kevin Colbow	2018	21,473	4.82	103,500
	2017	35,086	2.94	103,125
	2016	41,667	1.80	75,000
David Whyte	2018	19,761	4.82	95,250
	2017	33,034	2.87	94,875
	2016	41,667	1.80	75,000

(A) 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.

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

(C) The United States dollar amounts for 2018 were US$377,969, US$134,694, US$134,694, US$75,869, and US$69,821 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2017 were US$377,969, US$134,694, US$285,699, US$75,593, and US$69,546 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2016 were US$343,608, US$105,556, US$0, US$54,977, and US$54,977 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, 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, 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 65% and risk free interest rate of 2% for 2018; expected life of 4 years, expected volatility of 70% and risk free interest rate of 1% for 2017; and expected life of 4 years, expected volatility of 77% and risk free interest rate of 1% for 2016. 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 2018, 2017, and 2016. 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, 2018, December 31, 2017 and December 31, 2016 is as follows:

Option-Based Awards				
Named Executive Officer	**Year**	**Shares Under Options (#)**	**Black-Scholes Value of Shares Underlying Options on Date of Grant (CDN$/Share)[(B)]**	**Fair Market Value (CDN$)[(C)]**
Randall MacEwen	2018	71,023	2.42	171,875
	2017	119,258	1.44	171,875
	2016	154,702	1.01	156,250
Anthony Guglielmin	2018	25,310	2.42	61,250
	2017	40,717	1.50	61,250
	2016	47,524	1.01	48,000
Robert Campbell	2018	25,310	2.42	61,250
	2017[(A)]	106,400	2.24	238,075
	2016	0	0	0
Kevin Colbow	2018	14,256	2.42	34,500
	2017	22,401	1.53	34,375
	2016	24,752	1.01	25,000
David Whyte	2018	13,120	2.42	31,750
	2017	21,073	1.50	31,625
	2016	24,752	1.01	25,000

(A) 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.

(B) 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.

(C) The United States dollar amounts for 2018 were US$125,990, US$44,898, US$44,898, US$25,289, and US$23,274 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2017 were US$125,988, US$44,896, US$174,515, US$25,196, and US$23,181 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2016 were US$114,536, US$35,185, US$0, US$18,325, and US$18,325 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, 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, 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$16,706). The United States dollar amounts for 2018 were US$28,714, US$30,139, US$58,756, US$19,758, and US$22,370 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2017 were US$39,379, US$28,431, US$17,657, US$15,613, and US$14,553 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, respectively. The United States dollar amounts for 2016 were US$43,227, US$27,238, US$0, US$14,131, and US$12,743 for Messrs. MacEwen, Guglielmin, Campbell, Colbow, and Whyte, 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, 2018.

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) (CDN$)	Insurance Premiums (CDN$)	Other[(A)] (CDN$)	Total (CDN$)
Randall MacEwen	2018 2017 2016	12,756 13,007 12,685	795 1,540 1,314	25,620 39,174 44,972	39,171 53,721 58,971
Anthony Guglielmin	2018 2017 2016	13,120 13,007 12,685	1,202 1,472 1,203	26,794 24,308 23,271	41,116 38,787 37,159
Robert Campbell	2018 2017 2016	13,120 8,504 0	1,268 882 0	65,767 14,701 0	80,155 24,087 0
Kevin Colbow	2018 2017 2016	12,939 11,346 9,641	1,116 954 637	12,900 9,000 9,000	26,955 21,300 19,278
David Whyte	2018 2017 2016	11,058 10,000 8,023	806 854 529	18,653 9,000 8,832	30,517 19,854 17,384

(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, 2018.

Outstanding Share-Based Awards and Option-Based Awards (as of December 31, 2018)

	Option-Based Awards				Share-Based Awards	
Named Executive Officer	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$)
Randall MacEwen	200,000 93,563 154,702[(5)] 111,710[(6)] 7,548[(7)] 71,023[(4)]	2.98 2.98 1.80 2.67 4.02 4.82	Feb. 27, 2022 Feb. 27, 2022 Feb. 26, 2023 Mar. 3, 2024 Jun. 9, 2024 Mar. 1, 2025	60,000 28,069 152,638 22,714 0 0	641,101	2,102,811
Anthony Guglielmin	75,000 29,947 28,743 47,524[(8)] 34,317[(9)] 6,400[(10)] 25,310[(4)]	1.22 3.73 2.98 1.80 2.67 4.02 4.82	Mar. 8, 2020 Feb. 27, 2021 Feb. 27, 2022 Feb. 26, 2023 Mar. 3, 2024 Jun. 9, 2024 Mar. 1, 2025	154,500 0 8,623 46,889 6,978 0 0	209,325	686,586
Robert Campbell	100,000[(11)] 6,400[(10)] 25,310[(4)]	4.33 4.02 4.82	May 2, 2024 Jun. 9, 2024 Mar. 1, 2025	0 0 0	103,174	338,412
Kevin Colbow	25,000 40,000 40,000 24,752[(12)] 17,873[(13)] 4,528[(14)] 14,256[(4)]	1.22 3.73 2.98 1.80 2.67 4.02 4.82	Mar. 8, 2020 Feb. 27, 2021 Feb. 27, 2022 Feb. 26, 2023 Mar. 3, 2024 Jun. 9, 2024 Mar. 1, 2025	51,500 0 12,000 24,421 3,634 0 0	112,725	369,739
David Whyte	30,000 30,000 24,752[(12)] 17,873[(13)] 3,200[(15)] 13,120[(4)]	3.73 2.98 1.80 2.67 4.02 4.82	Feb. 27, 2021 Feb. 27, 2022 Feb. 26, 2023 Mar. 3, 2024 Jun. 9, 2024 Mar. 1, 2025	0 9,000 24,421 3,634 0 0	108,697	356,525

(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, 2018.

(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, 2018, 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 as at December 31, 2018.

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 103,134 vested and 51,568 unvested options.

(6) Comprising 37,236 vested and 74,474 unvested options.

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

(8) Comprising 31,682 vested and 15,842 unvested options.

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

(10) Comprising 2,133 vested and 4,267 unvested options.

(11) Comprising 33,333 vested and 66,667 unvested options.

(12) Comprising 16,501 vested and 8,251 unvested options.

(13) Comprising 5,957 vested and 11,916 unvested options.

(14) Comprising 1,509 vested and 3,019 unvested options.

(15) Comprising 1,066 vested and 2,134 unvested options.

The following table sets forth the value of the incentive plan awards vested or earned during the year ended December 31, 2018 by our Named Executive Officers.

Incentive Plan Awards – Value Vested or Earned During the Year (2018)

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$)
Randall MacEwen	242,156	303,993	0
Anthony Guglielmin	74,390	93,384	0
Robert Campbell	0	105,617	0
Kevin Colbow	51,928	32,429	0
David Whyte	46,660	19,458	0

(1) This value was determined by calculating the difference between the market price of the underlying Shares on the TSX 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 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 251,292.

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, 2018, there were 1,175,022 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
Randall MacEwen	322,752 198,209 13,164 106,976	February 25, 2019 March 2, 2020 June 8, 2020 February 28, 2021
Anthony Guglielmin	99,149 60,890 11,164 38,122	February 25, 2019 March 2, 2020 June 8, 2020 February 28, 2021
Robert Campbell	26,944 26,944 11,164 38,122	May 1, 2019 May 1, 2020 June 8, 2020 February 28, 2021
Kevin Colbow	51,640 31,713 7,899 21,473	February 25, 2019 March 2, 2020 June 8, 2020 February 28, 2021
David Whyte	51,640 31,714 5,582 19,761	February 25, 2019 March 2, 2020 June 8, 2020 February 28, 2021

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 2018 was as follows: CDN$550,000 for Mr. MacEwen; CDN$350,000 for Mr. Guglielmin; CDN$350,000 for Mr. Campbell; CDN$250,000 for Dr. Colbow; and CDN$230,000 for Mr. Whyte.

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 and Mr. Whyte, 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.

The employment contracts for Mr. MacEwen, Mr. Guglielmin and Mr. Campbell 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 a payment equivalent 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, 2018: (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, 2018)		
	Termination of Employment [2] (CDN$)[1]	**Change of Control [3] (CDN$)[1]**	**Termination of Employment following Change of Control (CDN$)[1]**
Randall MacEwen			
Severance	$1,488,516	$0	$2,200,000
Other benefits	$50,946	$0	$100,298
Accelerated vesting	$0	$2,366,232	$0
Total	$1,539,462	$2,366,232	$2,300,298
Anthony Guglielmin			
Severance	$991,667	$0	$1,190,000
Other benefits	$68,527	$0	$107,232
Accelerated vesting	$0	$903,576	$0
Total	$1,060,194	$903,576	$1,297,232
Robert Campbell			
Severance	$644,583	$0	$1,190,000
Other benefits	$80,155	$0	$185,311
Accelerated vesting	$0	$338,412	$0
Total	$724,739	$338,412	$1,375,311
Kevin Colbow			
Severance	$484,375	$0	$484,375
Other benefits	$36,920	$0	$36,920
Accelerated vesting	$0	$461,294	$0
Total	$521,295	$461,294	$521,295
David Whyte[4]			
Severance	$237,667	$0	$237,667
Other benefits	$13,309	$0	$13,309
Accelerated vesting	$0	$393,580	$0
Total	$250,976	$393,580	$250,976

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

(2) Based on accrued service to December 31, 2018.

(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, 2018 multiplied by the number of PSUs. Value shown in the case of Options is the difference between the market price on December 31, 2018 and the exercise price for options, for those options where the market price on that date is greater than the exercise price.

(4) Mr. Whyte retired from Ballard in December 2018.

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:

- 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. The following table describes the compensation of independent directors in 2018:

2018 Compensation Elements	**CDN$**
Annual Retainer (Non-Executive Chair of the Board)	$150,000
Annual Retainer (Director)	$90,000
Annual Retainer (Committee Chairs)	$15,000

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 2018, the following compensation was paid to the directors:

Director	Board Retainer (CDN$)	Committee Retainer (CDN$)	Meeting Fees[(1)] (CDN$)	Total Compensation (CDN$) [(1)]
Ian A. Bourne[(2)]	65,110	N/A	0	65,110
Douglas P. Hayhurst[(3)]	90,000	37,000	2,250	129,250
Duy-Loan Le	90,000	0	0	90,000
Marty Neese	90,000	0	2,250	92,250
Jim Roche	123,956	6,511	2,250	132,717
Ian Sutcliffe[(3)]	90,000	15,000	2,250	107,250
Janet Woodruff[(3)]	90,000	23,489	2,250	115,739

1. Directors attended a meeting in China in September 2018, except for Ms. Le who was unable to attend.
2. Mr. Bourne retired from the board effective June 6, 2018, and received a pro rata portion of his board retainer.
3. A Special Committee was established (and dissolved) in 2018 to consider certain strategic transactions. The Special Committee members, Mr. Hayhurst, Mr. Sutcliffe and Ms. Woodruff, received a $15,000 cash retainer. Mr. Hayhurst received an additional $7,000 cash retainer as Committee Chair.

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, 2018.

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, 2018)

	Option-Based Awards			
Name	Number of Securities Underlying Unexercised Options	Option Exercise Price[1] (CDN$)	Option Expiration Date	Value of Unexercised In-The-Money Options[2] (CDN$)
Ian A. Bourne	0	–	–	–
Doug Hayhurst	0	–	–	–
Duy-Loan Le	0	–	–	–
Marty Neese	0	–	–	–
Jim Roche	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, 2018, 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, 2018.

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 Management Proxy Circular.

The following table sets out, as of December 31, 2018, 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 (CDN$)
Equity-based compensation plans approved by security holders	7,658,867 [1]	2.14
Equity-based compensation plans not approved by security holders	Nil	N/A
Total	7,658,867 [1]	2.14

(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.

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(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.

As of 2018, 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, 2018, December 31, 2017, and December 31, 2016. The percentages represent the number relative to the number of issued and outstanding shares for the each fiscal year.

	December 31, 2018		**December 31, 2017**		**December 31, 2016**	
	#	**%(1)**	#	**%(1)**	#	**%(1)**
Plan Maximum	19,710,790	8.50%	17,806,267	10.00%	17,474,963	10.00%
Securities Awarded under the Option Plan	5,133,461	2.21%	4,828,173	2.71%	5,537,729	3.17%
Securities Awarded under the SDP	2,525,406	1.09%	2,539,981	1.43%	2,598,658	1.49%
Remaining Securities Available for Grant	12,051,923	5.20%	10,438,113	5.86%	9,338,576	5.34%

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, 2018, December 31, 2017, and December 31, 2016, are as follows:

	Annual Burn Rate	
Year	**Option Plan**	**SDP**
2018	0.90%	0.42%
2017	0.85%	0.57%
2016	0.83%	0.80%

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 Management Proxy 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$265,000 for 2018 and US$217,000 for 2017. The aggregate maximum coverage provided by the policy for all claims, for both directors and officers, in any single policy year is US$30 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 Management Proxy Circular:

- Annual Information Form dated March 7, 2019;
- Audited Annual Financial Statements for the year ended December 31, 2018 together with the auditors' report thereon; and
- Management's Discussion and Analysis for the year ended December 31, 2018.

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 4, 2020; 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 2020 annual Shareholders' meeting if the proposal is received after the March 4, 2020 deadline.

APPROVAL BY THE BOARD

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

BY ORDER OF THE BOARD

"*Kerry Hillier*"

Kerry Hillier
Corporate Secretary
Ballard Power Systems Inc.

Dated: April 8, 2019

DEFINED TERMS

In this Management Proxy 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 2019 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 8, 2019.

"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 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.

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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 8, 2019, the total number of Shares issued and reserved and authorized for issue under the Option Plan was 6,265,316 Shares, representing 2.7% 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.

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 8, 2019, the total number of Shares issued and reserved and authorized for issue under the SDP was 2,107,698 Shares, representing 0.9% 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.

BALLARD POWER SYSTEMS INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

FOURTH QUARTER 2018

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, 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; 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 6, 2019

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 2019 Business Outlook	3.1 Select Annual Financial Information 3.2 2018 Performance Compared to Revised 2018 Business Outlook 3.3 2019 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, 2018 5.3 Summary of Key Financial Metrics – Year ended December 31, 2018 5.4 Operating Expenses and Other Items – Three months and year ended December 31, 2018 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 Judgements 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

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 6, 2019 and should be read in conjunction with our audited consolidated financial statements and accompanying notes for the year ended December 31, 2018. 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, 2018, 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 effected 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, 2018.

KPMG LLP, our independent registered public accounting firm, has audited our consolidated financial statements and expressed an unqualified opinion thereon. KPMG has also expressed an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2018.

Changes in internal control over financial reporting

During the year ended December 31, 2018, 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, Protonex Technology Corporation (re-named Ballard Unmanned Systems Inc. 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 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 a limited number of Chinese customers for a majority of our revenues. Macro-economic conditions, including government subsidy programs and significant and recent volatility in China's capital markets, may adversely impact our Chinese customer's access to capital and program plans which could adversely impact our business. Furthermore, successful large-scale deployment of zero-emission vehicles will require adequate investment in hydrogen fueling infrastructure and competitive pricing of hydrogen. Inadequate hydrogen fueling infrastructure and/or excessive hydrogen fuel costs could negatively impact deployment of zero-emission vehicles and may negatively impact our business, financial condition and results of operations. Our performance in China is dependent on our business model of localization, including the strength and performance of our localization partners. A key part of our strategy is based on the localization of stack and module production with joint venture partners, where we do not control the joint venture;

- 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 single customer for the majority of our revenues and are subject to risks related 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;
- We expect our cash reserves will be reduced due to future operating losses, working capital requirements and capital contributions to our joint venture(s) in China, 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 and / or cost;
- We may not be able to achieve commercialization of our products 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;
- We have limited experience manufacturing fuel cell products on a commercial basis;
- 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;
- 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;
- 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 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 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 clean-energy fuel cell products feature high fuel efficiency, relatively low operating temperature, 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 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 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; and a sales, assembly, research and development facility in Southborough, Massachusetts. We also have an office in Guangzhou, the capital of Guangdong Province, China. This office serves as the Company's initial operations center in China, with China management, sales and business development, technical, quality, supply chain, after-sales and administrative support personnel. We also have a non-controlling, 49% interest, in the newly established

Weichai Ballard Hy-Energy Technologies Co., Ltd. ("Weichai Ballard JV"), located in China. Weichai Ballard JV is intended to 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. In addition, we retain a non-controlling 10% interest in Guangdong Synergy Ballard Hydrogen Power Technology Co., Ltd. ("Synergy Ballard JVCo"), also located in China. Synergy Ballard JVCo is intended to manufacture fuel cell stacks utilizing our existing 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 in China.

1.2 Strategic Imperatives

We plan 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 are pursuing a corporate strategy and business model that leverages growth and mitigates risk by diversifying our business across a portfolio of market opportunities that are enabled by substantially the same core competencies, technology, products and intellectual property. Our business model includes two growth platforms (power products and technology solutions), multiple markets within each of these platforms, geographic diversification and customer diversification.

We are also pursuing a strategy that supports commercialization, revenue and profitability, while also enabling future value based on longer-term market opportunities for our technology, products and intellectual property, such as the global automotive fuel cell market and the unmanned aerial vehicle ("UAV") or drone market.

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 deep 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 and continued growth 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, including the implementation of supporting subsidy programs.

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 **("FCEV")**. 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 market our products and invest in manufacturing operations and supply chain localization.

As part of our strategy, we 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 typically seek to structure our arrangements in a way that provide us with payments from our partners of significant value for technology transfer early in the transfer process, requirements for ongoing purchases by our partners of components from us, and requirements for our partners to comply with certain performance conditions and reporting requirements, including quality, branding, and intellectual property protections. We believe these typical transaction structures provide for near-, mid- and long-term revenue and cash flow streams by building in program phases, technology transfer payments, license payments, required supply purchases, and recurring royalty or other long-term cash generation structures. We also typically structure our commercial transactions in China to restrict sales to that country and to position Ballard as the exclusive purchaser of fuel cell modules or fuel cell stacks manufactured by our partners in China for sale outside of China. We believe this structure provides us with additional flexibility in satisfying global market demand for our modules and stacks by supplementing or mitigating our mid- and long-term manufacturing strategy.

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 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.

3. SELECT ANNUAL FINANCIAL INFORMATION AND 2019 BUSINESS OUTLOOK

3.1 Select Annual Financial Information

Results of Operations		**Year ended,**	
	2018	**2017**	**2016**
(Expressed in thousands of U.S. dollars, except per share amounts and gross margin %)			
Revenues	**$ 96,586**	**$ 121,288**	**$ 85,270**
Gross margin	**$ 29,674**	**$ 41,600**	**$ 24,184**
Gross margin %	**31%**	**34%**	**28%**
Total Operating Expenses	**$ 50,472**	**$ 46,477**	**$ 42,253**
Cash Operating Costs [1]	**$ 42,982**	**$ 39,053**	**$ 34,338**
Adjusted EBITDA [1]	**$ (13,465)**	**$ 3,324**	**$ (9,883)**
Net loss attributable to Ballard	**$ (27,322)**	**$ (8,048)**	**$ (21,112)**
Net loss per share attributable to Ballard, basic and diluted	**$ (0.15)**	**(0.05)**	**$ (0.13)**
Adjusted Net Loss [1]	**$ (23,364)**	**$ (5,190)**	**$ (19,286)**
Adjusted Net Loss per share [1]	**$ (0.13)**	**$ (0.03)**	**$ (0.12)**

Financial Position (expressed in thousands of U.S. dollars)	**2018**	**At December 31, 2017**	**2016**
Total assets	**$ 346,100**	**$ 177,657**	**$ 183,446**
Cash, cash equivalents and short-term investments	**$ 192,235**	**$ 60,255**	**$ 72,628**

[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 2018 Performance compared to Revised 2018 Business Outlook

Although we did not provide specific financial performance guidance for 2018 during the first three quarters of 2018, we did however outline our qualitative outlook expectations for 2018 which are detailed in the 2018 Outlook section of our 2017 year-end MD&A. In summary and given the relatively early stage of development in some of our markets, the length and uncertainty of timing in contract award and program deliveries in 2018, together with the significant one-time contributions from key projects in 2017, we had expected revenue to be relatively flat in 2018, as compared to 2017 (with revenue of $121.3 million), coincident with a strengthening of the underlying business mix for long-term growth prospects.

However as previously reported, Ballard's revenue in the third quarter of 2018 was lower than expected due primarily to slower growth in market demand in China which resulted in significantly reduced MEA sales to Synergy Ballard JVCo under our "take or pay" MEA supply agreement. This decline in the third quarter of 2018, and in our outlook for 2018, has been primarily the result of the relatively slow pace of hydrogen fueling station roll-out, along with evolving government subsidy rules and delays in FCEV certifications. During the third quarter of 2018, we also announced (i) a strategic collaboration with Weichai, (ii) the divestiture of our Power Manager business, and (iii) unveiled our next-generation fuel cell stack. We continue to position Ballard as the leading fuel cell technology provider in the FCEV market for Heavy Duty Motive applications. Given the uncertainties regarding Synergy Ballard JVCo's ability to meet its "take or pay" commitments under the MEA supply agreement, combined with the recent sale of the Power Manager business (which closed in

October 2018) and the associated absence of Power Manager-related revenue in the fourth quarter of 2018, we had therefore revised our revenue expectations for 2018 to approximately $90 million to $95 million.

Actual revenues in 2018 of $96.6 million slightly exceeded this revised revenue outlook of between $90 million to $95 million and were primarily as a result of higher than expected Technology Solutions revenues in the fourth quarter of 2018.

3.3 2019 BUSINESS OUTLOOK

Given the early stage of hydrogen fuel cell market development and adoption, and consistent with the Company's past approach, Ballard is not providing specific financial performance guidance for 2019. However, directionally the Company anticipates total revenue on a year-over-year basis in 2019 to be relatively flat to 2018, as work progresses on the establishment of the new joint venture operation in China with Weichai and on addressing commercial opportunities stemming from growing momentum in other key target markets.

During 2019, Ballard intends to focus on the early stage execution of the collaboration agreement with Weichai, further penetration of the European and California markets in certain Heavy and Medium Duty Motive applications, and continued investment in talent, technology, products and customer experience. The foundation for the 2019 Outlook includes a 12-Month Order Book of approximately $69 million at the beginning of the year, along with a robust sales pipeline. Industry activity levels continue to increase in China, Europe and North America, including development programs, demonstration programs and commercial deployments.

In China, Ballard has been pursuing the development of a local fuel cell supply chain and related ecosystem to address the growing zero-emission bus and commercial vehicle markets. The collaboration with Weichai that closed in the fourth quarter of 2018 represents 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 has generated increased cash reserves and, moving forward, is expected to increase corporate revenue through the transfer of LCS technology and module designs and the sale of MEAs to the joint venture in which Ballard has a 49% minority position. During 2019, the Company plans to make additional capital contributions to Weichai Ballard JV of approximately $21 million, including $14.5 million which was contributed in February 2019. Ballard anticipates making additional contributions beyond 2019 in order to continue to fund our pro rata ownership share of Weichai Ballard JV's operations. In addition, the Company expects to record equity investment losses in joint venture and associates of approximately $15 million to $20 million in 2019 in connection with the operations of Weichai Ballard JV. Since the technology transfer and the establishment of operations in the joint venture will take some time, the proportion of total revenue generated from the China market in 2019 is expected to be lower than in 2018.

In Europe, during 2019 the Company will continue execution of the HyMotion program with Audi, will deliver a significant 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, and also expects increased market activity for FCEBs, which can be expected to result in additional module purchase orders. The proportion of total revenue generated from the European market is expected to increase in 2019, relative to 2018, largely offsetting the proportionate decline in revenue from China.

Within North America in 2019, Ballard expects increased market activity in California for FCEVs, which can be expected to result in additional module purchase orders. In addition, a consistent volume of fuel cell stack sales for forklift applications is also expected.

Technology Solutions revenue is expected to increase in 2019, underpinned by ongoing work on the HyMotion program with Audi, technology transfer activity in relation to the joint venture with Weichai, as well as engineering services activity with existing and new customers in the automotive, rail, material handling and UAV sectors. This revenue increase is expected to largely offset a decline in Heavy Duty Motive revenue.

In summary, given the relatively early stage of development in some markets and the uncertainty of timing in contract awards and program deliveries in 2019, Ballard expects revenue to be relatively flat compared to 2018, coincident with a strengthening of the underlying business mix for long-term growth prospects.

Our 2019 revenue outlook is supported by our 12-month Order Book of approximately $69 million which is derived from our Order Backlog of approximately $195 million as of December 31, 2018. 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 outlook for 2019 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 2019; sales orders received for units and services expected to be delivered in the remainder of 2019; an estimate with respect to the generation of new sales and the timing of deliveries in each of our markets for the balance of 2019; and assumes an average U.S. dollar exchange rate in the mid $0.70's in relation to the Canadian dollar for 2019.

The primary risk factors to our revised business outlook expectations for 2019 are customer or production delays in delivering against existing 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 / or Weichai; adverse macro-economic conditions, 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 Heavy-Duty market; 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 growth platform, which are reliant on their internal commercialization plans and budget requirements; 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 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. The Company's revenues, cash flows and other operating results can vary significantly from quarter to quarter. Sales and margins may be lower than anticipated due to general economic conditions, market-related factors, operating factors and competitive factors. Cash receipts may also vary from quarter to quarter due to the timing of cash collections from customers. 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. 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. It is likely that in one or more future quarters, financial results will fall below the expectations of securities analysts and investors. If this occurs, the trading price of the Company's shares may be materially and adversely affected.

4 RECENT DEVELOPMENTS (Including Contractual Updates)

4.1 Corporate

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 **("LCS")**, the FCgen®-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 8th-generation power module portfolio for use in Heavy-Duty Motive applications – including buses, commercial trucks and trains – planned for initial launch in 2019, and other applications such as forklifts.

Benefits of the FCgen®-LCS, compared to the current generation liquid-cooled fuel cell stack that it will replace, are expected to include lower cost, improved durability, high power density, freeze start capability, higher tolerance to operating conditions, simplified systems integration, and sustainability.

Ballard will continue to support the Company's existing customers where current generation FCvelocity®-9SSL fuel cell stack technology is used.

Acquisition of assets of Automotive Fuel Cell Cooperation Corporation

On July 3, 2018, we announced that the acquisition of certain strategic assets of Automotive Fuel Cell Cooperation Corporation ("AFCC"), a private company owned by Daimler AG ("Daimler") and Ford Motor Company ("Ford"). Pursuant to the wind-down of AFCC's operations in Vancouver, which were co-located with Ballard at our headquarters, Daimler and Ford have instead in-housed and relocated their fuel cell stack development activities to their respective operations in Germany and the United States. As a result, Daimler and Ford agreed to sell AFCC assets to Ballard for approximately Canadian $6 million.

This acquisition supports and accelerates our growth plans in two key respects. First, it immediately provides needed expansion of our product and material testing capabilities that will be used to support new and existing programs, products, as well as customers. In addition, we have acquired key production equipment that supports forecasted growth over the next five years. With these assets already in place and functioning within Ballard's existing facilities, this transaction accelerated the expansion of our fuel cell testing, production and lab capacity at a lower cost, compared to acquiring new equipment. The acquired assets include testing equipment, prototype production equipment, and lab and quality inspection equipment.

Filing of Base Shelf Prospectus ahead of expiry of existing Shelf Prospectus

Ballard had a shelf prospectus on file with the securities regulators in Canada and the United States, expiring on July 16, 2018. Prior to expiry of that shelf prospectus, we filed a final short form base shelf prospectus ("Prospectus"), which provides us continued flexibility to make offerings of securities during the effective period of the Prospectus, until July 2020. The 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 US$150 million at any time during the 25-month period that the Prospectus remains effective. If any securities are offered under the 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.

4.2 China

Weichai Power Co., Ltd.

On November 13, 2018, we announced the closing of a strategic collaboration transaction with Weichai Power Co., Ltd. ("Weichai"), initially detailed 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 use of proceeds is expected to include investment in Ballard's core fuel cell business, equity contributions to a joint venture company established by Weichai and Ballard, and support of potential M&A transactions.

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 an initial 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). Subsequent to year-end, Weichai made its planned second capital contribution of RMB 102 million and Ballard made its planned second capital contribution of $14.5 million (RMB 98 million equivalent). Weichai and Ballard will fund pro rata shares of the Weichai Ballard JV based on an agreed business plan. Weichai will hold three of five Weichai Ballard JV board seats and Ballard will hold 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 $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 ($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, Ballard received an initial 10%, or $9.0 million prepayment from Weichai Ballard JV for this program. Ballard will also retain an exclusive right to the developed technologies outside China.

  The Weichai Ballard JV will purchase MEAs for LCS fuel cell stacks exclusively from Ballard under a long-term supply agreement. Revenue earned from an MEA supply agreement (nil million to date) will be recorded as Heavy-Duty Motive revenues.

- *Fuel Cell Sales* – Weichai 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.

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.

On December 6, 2017, we announced that a subsidiary of strategic partner Broad-Ocean called Shanghai Edrive Co. Ltd. ("Shanghai Edrive") has commissioned its fuel cell engine manufacturing facility located in the City of Shanghai, China. Shanghai Edrive plans to primarily assemble Ballard FCveloCity® 30-kilowatt (kW) fuel cell engines at the facility under a technology transfer, licensing and supply arrangement between Ballard and Broad-Ocean that closed earlier in 2017. Broad-Ocean also has plans to assemble Ballard-designed engines at locations in Shandong and Hubei Provinces.

On June 5, 2017, we announced the closing of an approximate $18 million supply contract with Broad-Ocean to support the expected deployment of 400 FCveloCity® fuel cell engines integrated into clean energy buses and trucks in key Chinese cities. This announcement, together with an approximate $11 million transaction announced on April 6, 2017 for the planned deployment of 200 FCveloCity® fuel cell engines, means that Ballard is supporting Broad-Ocean through the expected deployment of 600 fuel cell engines having a total value of approximately $29 million. All 600 fuel cell engines and related components were delivered by Ballard in 2017. Revenue earned from these agreements (nil million in 2018; $20.7 million in the fourth quarter of 2017; $28.7 million in fiscal 2017), which are complete, is recorded as Heavy-Duty Motive revenues.

On April 6, 2017, we also 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. In each of the three assembly operation locations, Broad-Ocean will also need to engage with local governments as well as with bus and commercial vehicle OEMs for deployment of fuel cell buses and commercial vehicles incorporating Ballard-designed modules manufactured by Broad-Ocean. Ballard will have the exclusive right to purchase fuel cell engines from any of the Broad-Ocean manufacturing operations for sale outside China. 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. Revenue earned from these Broad-Ocean technology transfer agreements ($0.1 million in the fourth quarter of 2018; $3.5 million in fiscal 2018; $0.6 million in the fourth quarter of 2017; $2.0 million in fiscal 2017) is recorded as Technology Solutions revenues.

Broad-Ocean has also expressed an interest in acquiring a 10% ownership position in the Weichai Ballard JV, which if transacted, would correspondingly reduce Ballard's ownership

position from 49% to 39%. Discussions regarding this investment are currently underway between the parties.

On August 18, 2016, Broad-Ocean purchased 17.25 million Ballard common shares issued from treasury for total proceeds to Ballard of $28.3 million. The investment represented approximately 9.9% of Ballard's outstanding common shares following the transaction. Broad-Ocean and Ballard also entered into 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.

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 Technology 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, based on 3 shifts running 5-days per week.

The joint venture transaction and related sales agreements, which closed on October 25, 2016 and originally announced on July 18, 2016, had a contemplated minimum sales value to Ballard of approximately $170 million over 5-years (of which approximately $53 million has been recognized as of December 31, 2018) include these key elements:

- Ballard provided approximately $20 million of technology transfer services, test equipment, production equipment specification and procurement services, training and commissioning support in relation to the establishment of a production line in Yunfu for the manufacture and assembly of FCvelocity®-9SSL fuel cell stacks. Revenue earned from the technology transfer agreements ($0.1 million in fiscal 2018; $1.7 million in the fourth quarter of 2017; $16.0 million in fiscal 2017; $4.4 million in fiscal 2016), which are effectively complete, is recorded primarily as Technology Solutions revenues.
- Ballard's exclusive supply of membrane electrode assemblies ("MEA"s), a key component of every fuel cell, for each fuel cell stack manufactured by Synergy Ballard JVCo, with minimum annual MEA volume commitments with 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. Revenue earned from the MEA supply agreement ($0.8 million in the fourth quarter of 2018; $17.5 million in fiscal 2018; $4.7 million in the fourth quarter of 2017; $14.9 million in fiscal 2017; nil million in fiscal 2016) is recorded as Heavy-Duty Motive revenues.

As a result of various Chinese market circumstances, including dynamic 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 fourth quarter of 2018 and first quarter of 2019 MEA shipments. As previously noted, our Order Backlog and our 12-month Order Book, which had prior to the end of the third quarter of 2018 included certain contractual commitments under the MEA supply agreement with Synergy Ballard JVCo, are subject to risk including risks related to market demand for Synergy Ballard JVCo's products, and risks related to the ability of Synergy Ballard JVCo to finance its operations including fulfilling its purchase commitments to us under the MEA supply agreement. As a result, there continues to be no reasonable assurance that Synergy Ballard JVCo will be able to meet the "take or pay" purchase commitment going forward. Accordingly, we have continued to remove all remaining purchase commitments in the MEA supply agreement from the Order Backlog and 12-month Order Book.

Synergy Ballard JVCo has an exclusive right to manufacture and sell FCvelocity®-9SSL stacks in China. Exclusivity is subject to Synergy Ballard JVCo achieving certain performance criteria, including compliance with: a code of ethics; Ballard's quality policies and branding practices; payment terms; and certain intellectual property covenants; as well as achievement of the minimum annual contemplated "take or pay" MEA volume commitments. We remain in discussions with Synergy Ballard JVCo to address current issues and future opportunities including the status of the MEA supply and related agreements.

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 its 10% interest in Synergy Ballard JVCo in 2017. We have no obligation to provide future funding to Synergy Ballard JVCo.

China - Other

On September 28, 2015, we announced the signing of a joint development agreement and a supply agreement to develop and commercialize a fuel cell engine specifically designed for integration into low floor trams manufactured by CRRC Qingdao Sifang Company, Ltd. ("CRRC Sifang"), a Chinese rolling stock manufacturer. The agreements include delivery of ten customized FCvelocity® modules and have an initial expected value of approximately $6 million. Ballard has developed a new prototype configuration of its FCvelocity® fuel cell module to deliver 200 kilowatts of net power for use in powering trams in urban deployments. An initial deployment of eight fuel cell-powered trams is planned by CRRC Sifang and the City of Foshan on the Gaoming Line. With delays in the construction of the Gaoming Line, deployment of these trams by CRRC Sifang is now expected to occur starting in 2019. As of June 30, 2018, we had delivered all ten FCveloCity®-HD7 200-kilowatt fuel cell modules in support of this program. Revenue earned from these agreements (nil million in the fourth quarter of 2018; $2.3 million in fiscal 2018; nil million in the fourth quarter of 2017; $3.1 million fiscal 2017; $0.9 million in fiscal 2016), which are effectively complete, is recorded as either Heavy-Duty Motive or Technology Solutions revenues depending on the nature of work performed.

4.3 Europe

Eniig and Fibia A/S

On February 5, 2019, we announced that the Company's European 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. Ballard also received initial orders for a total of 30 FCgen®-H2PM 5-kilowatt (kW) systems, including installation, hydrogen storage and power management equipment, having a total value of approximately $1.2 million under these Framework Agreements. This includes 20 systems for Eniig and 10 systems for Fibia. Revenue earned from these agreements (nil million to date) will be recorded as Backup Power revenues.

Audi AG

On June 11, 2018, we announced the signing of a 3.5 year extension to our current technology solutions contract with AUDI AG ("Audi"), part of the Volkswagen Group ("Volkswagen AG"), extending the HyMotion 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). The program, through a series of technical milestone awards, will support Audi through its small series production launch. The HyMotion program 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 related agreements with Audi ($8.8 million in the fourth quarter of 2018; $26.6 million in fiscal 2018; $5.0 million in the fourth quarter of 2017; $18.0 million in fiscal 2017; $13.9 million in fiscal 2016) are recorded as Technology Solutions revenues.

ABB Marine & Ports

On June 27, 2018, we announced signing of a Memorandum of Understanding ("MOU") with ABB to undertake collaboration activities toward the development of megawatt (MW) scale PEM fuel cell power systems for the marine market, with an initial focus on the cruise ship segment. The multi-year collaboration between Ballard and ABB will include joint market development activities, systems design and development work, as well as systems testing and validation activities. The goal will be development of commercial ready MW-scale containerized PEM fuel cell power systems for the marine market, with an initial focus on the cruise ship segment. These systems could be used in a variety of ways, including provision of power for hotel operations while cruise ships are docked at port as well as the provision of primary propulsion power when ships are at sea. Revenue earned from this and related agreements ($0.2 million in fiscal 2018) will be recorded as Technology Solutions revenues.

Van Hool NV

On May 1, 2018, we announced the receipt of a purchase order from Van Hool NV ("Van Hool"), a bus OEM in Belgium, for 40 FCveloCity®-HD fuel cell modules to power buses under the Joint Initiative for Hydrogen Vehicles across Europe ("JIVE") funding programs. The purchase order is further to Ballard's announcement of a Letter of Intent, which was issued on February 28, 2018. Ballard continues to make initial shipments of the FCveloCity®-HD 85 kilowatt modules in 2018, with initial deliveries of buses by Van Hool expected in 2019. Van Hool plans to deploy 30 buses with the Regionalverkehr Köln GmbH transit agency in Cologne, Germany, and the remaining 10 buses with WSW mobil GmbH transit agency in Wuppertal, Germany. Revenue earned from this agreement with Van Hool ($0.8 million in the fourth quarter of 2018; $1.2 million in fiscal 2018 and to date) is recorded as Heavy-Duty Motive revenues.

On September 13, 2017, we announced the acceptance of a Letter of Intent to provide FCveloCity®-HD 100-kilowatt fuel cell engines to power ExquiCity tram-buses to be built by Van Hool for delivery in Pau, France to the SMTU-PPP (Syndicat Mixte de Transports urbains – Pau Portes des Pyrénées) and the STAP (Société de Transport de l'Agglomération Paloise). During the second quarter of 2018, we finalized contracting for this order and have now delivered the fuel cell engines to Van Hool. Revenue earned from this and other agreements under the 3Emotion European program with Van Hool ($1.5 million in the fourth quarter of 2018; $2.2 million in fiscal 2018 and to date) is recorded as Heavy-Duty Motive 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 ($0.2 million in the fourth quarter of 2018; $1.8 million in fiscal 2018; $0.7 million in the fourth quarter of 2017 and in fiscal 2017) is recorded as Technology Solutions revenue.

4.4 North America

Protonex Technology Corporation – Divestiture of Power Manager assets

On October 5, 2018, we closed the previously announced transaction (on August 31, 2018) to divest certain assets of the Company's subsidiary, Protonex Technology Corporation ("Protonex"), related to the Power Manager business to Revision Military Ltd. ("Revision"), a private U.S.-based company. 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 the second quarter of 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 Protonex assets related to fuel cell propulsion systems for unmanned vehicles, under the Ballard brand. We decided to divest assets of the Protonex Power Manager assets as they were considered to be no longer aligned with Ballard's strategic fuel cell focus, while retaining Protonex assets related to the unmanned systems

market. The divestiture reduces complexity while adding resources for us to invest in our core fuel cell business. In 2015, Ballard paid approximately $17.5 million in shares and cash to acquire Protonex, which included the Power Manager business, a Solid Oxide Fuel Cells business which was divested in January 2018, and the unmanned systems business.

During the fourth quarter of 2018, we recorded a loss on sale of assets of ($4.0) million for 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. The estimate of the ultimate transaction price, including the estimate of the amount of earn-out variable consideration that is considered constrained of $2.0 million, will be reassessed each quarter-end during 2019. Any change in the estimated transaction price will result in an adjustment to the above noted loss on sale of assets which will be recognized on a prospective basis.

Protonex Technology Corporation – Revenue contracts and other

On June 25, 2018, we announced that Protonex had received a $1.0 million order for the supply of SPM-622 Squad Power Manager Kits to support U.S. Army brigades deploying overseas. Revenue earned from this agreement (nil million to date) is recorded as Portable Power revenues. This agreement was transferred to Revision on the sale of the Power Manager assets.

On March 26, 2018, we announced that Protonex had received a $1.9 million follow-on purchase order for the supply of SPM-622 Squad Power Manager Kits to support U.S. Army Security Force Assistance Brigades (SFAB). Revenue earned from this agreement (nil million in the fourth quarter of 2018; $1.9 million in fiscal of 2018), which is complete, is recorded as Portable Power / UAV revenues.

On January 30, 2018, we announced that Protonex received a $1.6 million purchase order for the supply of SPM-622 Squad Power Manager Kits for end customer U.S. Special Operations Command. The purchase order was the first issued by the Program Executive Office (PEO) – Soldier, as part of the newly approved program of record, with Milestone C approval having been received in 2017. Revenue earned from this agreement (nil million in the fourth quarter of 2018; $1.6 million in fiscal of 2018), which is complete, is recorded as Portable Power / UAV revenues.

Protonex Technology Corporation – Divestiture of Solid Oxide Fuel Cell assets

On January 3, 2018, we announced that as a result of our strategic review in 2017 of our Protonex subsidiary, we implemented certain changes at Protonex including the divestiture of certain non-core assets. This action is in addition to steps taken in August 2017 to reduce and align the Protonex cost base. In the fourth quarter of 2017, it was determined that certain of Protonex' Solid Oxide Fuel Cells ("SOFC") assets were not core to Ballard's PEM fuel cell business, and the Company decided to divest these non-core assets. As a result, certain SOFC assets were transferred to a private, start-up company, Upstart Power Inc. ("Upstart"), effective December 31, 2017, for nominal consideration. This action enabled Ballard to significantly reduce the cost structure at Protonex. During the fourth quarter of 2017, we recorded a loss on sale of assets of ($0.5) million related primarily to the sale of SOFC inventory to Upstart. We also recorded impairment losses of ($1.5) million in the fourth quarter of 2017 related to a write-down of certain SOFC intangible assets and property, plant and equipment.

Hyster-Yale Group, Inc.

On April 30, 2018, we announced the signing of a Master Supply Agreement ("MSA") with Hyster-Yale Group, Inc. ("Hyster-Yale") encompassing the supply of minimum annual volumes of Ballard FCgen®-1020 air-cooled fuel cell stacks for use in powering Class 3 lift trucks and support on the design of a fuel cell electric propulsion system to power these lift trucks. The MSA runs until 2022. Hyster-Yale is a leading global lift truck OEM. In 2014, Hyster-Yale's acquisition of Nuvera activated a strategy to design purpose-built, optimized fuel cell-powered lift trucks, and put in place significant expertise and capabilities for fuel cells. The collaboration with Ballard, Nuvera, and Hyster-Yale will focus on air-cooled stacks for low power applications, complementing the existing Nuvera fuel cell solutions. Revenue earned from this agreement will be recorded as Material Handling revenues.

New Flyer Industries Inc.

On February 13, 2017, we announced the Company's membership in the "Fuel Cell Electric Bus Commercialization Consortium" (FCEBCC), a large-scale project for which funding has now been committed to support deployment of 20 zero-emission hydrogen fuel cell electric buses at two California transit agencies. Ten buses are to be deployed with Alameda Contra-Costa Transit District (AC Transit) and 10 buses are to be deployed with the Orange County Transportation Authority (OCTA). In support, Ballard has provided its FCveloCity®-HD 85-kilowatt fuel cell engines to New Flyer of America Inc., a subsidiary of New Flyer Industries Inc. ("New Flyer"), the largest transit bus and motor coach manufacturer and parts distributor in North America. Ballard's engines are to power New Flyer 40-foot Xcelsior XHE40 fuel cell buses, which are planned to be delivered by New Flyer and in-service with AC Transit and OCTA starting in late 2018 and into 2019. The buses are to be supported by advanced hydrogen fueling infrastructure provided by The Linde Group. Revenue earned from this and other agreements with New Flyer ($3.5 million in the fourth quarter of 2018; $6.9 million in fiscal 2018 and to date) is recorded as Heavy-Duty Motive revenues.

4.5 Other

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 related agreements ($0.4 million in the fourth quarter of 2018; $1.3 million in fiscal 2018; $0.7 million in the fourth quarter of 2017; $1.6 million in fiscal 2017), which are effectively complete, is recorded as Technology Solutions revenues.

This followed an announcement that Nisshinbo and Ballard had successfully collaborated on **development of the world's first NPMC**-based PEM fuel cell product – the FCgen®-1040 – which is a new 30-watt air-cooled fuel cell stack incorporating NPMC with possible uses in ultralight-weight applications such as laptop and cell phone chargers, and military soldier power devices. The NPMC is an innovative technology enabling a reduction in product cost through the use of significantly lower amounts of platinum.

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 ($0.9 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 our sale of the Power Manager assets in the fourth quarter of 2018, we have 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, and product and service revenues generated from the retained Protonex assets related primarily to fuel cell propulsion systems for unmanned systems.

5.2 Summary of Key Financial Metrics – Three Months Ended December 31, 2018

Revenue and gross margin

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
Fuel Cell Products and Services	**2018**	**2017**	$ Change	% Change
Heavy-Duty Motive	**$ 10,629**	$ 26,551	$ (15,922)	(60%)
Portable Power / UAV	**371**	1,510	(1,139)	(75%)
Material Handling	**3,202**	1,307	1,895	145%
Backup Power	**1,366**	712	654	92%
Technology Solutions	**12,909**	10,177	2,732	27%
Revenues	**28,477**	40,257	(11,780)	(29%)
Cost of goods sold	**21,285**	27,661	(6,376)	(23%)
Gross Margin	**$ 7,192**	$ 12,596	$ (5,404)	(43%)
Gross Margin %	**25%**	31%	n/a	(6 pts)

Fuel Cell Products and Services Revenues of $28.5 million for the fourth quarter of 2018 declined (29%), or ($11.8) million, compared to the fourth quarter of 2017. The (29%) decline was driven by significantly lower Heavy-Duty Motive and Portable Power / UAV revenues, which was partially offset by increases in Technology Solutions, Material Handling and Backup Power revenues.

Heavy-Duty Motive revenues of $10.6 million decreased ($15.9) million, or (60%), due primarily to lower shipments of a variety of fuel cell bus products to customers, principally 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 $10.6 million in the fourth quarter of 2018 include $0.8 million for shipments of MEAs under the MEA Supply Agreement with Synergy Ballard JVCo for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; $2.8 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products primarily to customers in China; and $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. Heavy-Duty Motive revenues of $26.6 million in the fourth quarter of 2017 include $20.7 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products and MEAs to Broad-Ocean to complete both of the $11 million supply contract announced on April 6, 2017 for 200 FCveloCity® fuel cell engines and the $18 million supply contract announced on June 5, 2017 for 400 FCveloCity® fuel cell engines; and $4.7 million for shipments of MEAs under the MEA Supply Agreement with Synergy Ballard JVCo.

Technology Solutions revenues of $12.9 million increased by $2.7 million, or 27%, due primarily to higher amounts earned from the Audi program which more than offset declines as a result of the completion in 2017 of the technology transfer and related agreements with Synergy Ballard JVCo. Amounts earned of $12.9 million in the fourth quarter of 2018 were from a variety of customer programs including amounts earned from the Audi program of $8.8 million; the Weichai Ballard JV technology transfer program of $1.2 million; the program with the unnamed strategic customer of $0.9 million; the Nisshinbo program of $0.4 million; the Siemens development program of $0.2 million; and the Broad-Ocean

technology transfer program of $0.1 million. Amounts earned of $10.2 million in the fourth quarter of 2017 were also from a variety of customer programs including amounts earned from the Audi program revenues of $5.0 million; Synergy Ballard JVCo of $1.4 million on the completed in 2017 FCvelocity®-9SSL fuel cell stack production line in Yunfu, China; the Siemens development program of $0.7 million; the Nisshinbo program of $0.7 million; the Broad-Ocean technology transfer program of $0.6 million; and amounts earned on a variety of other programs including the HDF distributed generation project, the TRC and CRRC Sifang tram development projects, and the project to enable Synergy Group to exclusively manufacture and sell Ballard's direct hydrogen FCgen®-H2PM fuel cell backup power systems in China. Audi program revenues were also negatively impacted by approximately ($0.5) million in the fourth quarter of 2018, as compared to the fourth quarter of 2017, as a result of an approximate (4%) 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.

Material Handling revenues of $3.2 million increased $1.9 million, or 145%, primarily as a result of higher stack shipments to Plug Power combined with the impact of a higher average selling price due to product mix.

Portable Power / UAV revenues of $0.4 million decreased ($1.1) million, or (75%), as a result of lower product and service revenues generated by Protonex primarily as a result of the disposition of the Power Manager assets in October 2018.

Backup Power revenues of $1.4 million increased $0.7 million, or 92%, due primarily to an increase in hydrogen-based backup power product and service revenues in Europe and Japan for backup power applications.

Fuel Cell Products and Services gross margins were $7.2 million, or 25% of revenues, for the fourth quarter of 2018, compared to $12.6 million, or 31% of revenues, for the fourth quarter of 2017. The decline in gross margin of ($5.4) million, or (43%), was driven primarily by the (29%) decrease in total revenues, combined with a shift to a slightly lower overall margin product and service revenue mix resulting in a (6) percentage point decrease in gross margin as a percent of revenues. Gross margin in the fourth quarter of 2017 particularly benefited from the increase in higher margin Heavy-Duty Motive revenues, combined with improved manufacturing overhead and related cost absorption as a result of improved scale and efficiency.

Gross margin in the fourth quarter of 2018 was also negatively impacted by net inventory adjustments of ($0.7) million related primarily to excess and impaired inventory; whereas Gross margin in 2017 benefited from positive net warranty adjustments of $0.7 million related primarily to contractual expirations and improved lifetimes and reliability of our Heavy-Duty Motive products.

Cash Operating Costs

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2018	2017	$ Change	% Change
Research and Product Development (cash operating cost)	**$ 5,718**	$ 6,730	$ (1,012)	(15%)
General and Administrative (cash operating cost)	**3,514**	2,544	970	38%
Sales and Marketing (cash operating cost)	**1,965**	1,970	(5)	(-%)
Cash Operating Costs	**$ 11,197**	$ 11,244	$ (47)	-%

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 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, unrealized gains or losses on foreign exchange contracts, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures) for the fourth quarter of 2018 were $11.2 million, relatively flat to the fourth quarter of 2017. The minor decrease was driven by lower product development cash operating costs of ($1.0) million, offset by an increase in general and administrative cash operating costs of $1.0 million, as sales and marketing cash operating costs were relatively flat period over period.

The minor decrease in cash operating costs in the fourth quarter of 2018 was driven primarily by lower expenses in Protonex 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 (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. These cost reductions were effectively offset by higher general and administrative costs due primarily to higher realized losses on our foreign exchange contracts which are designed as a hedge against our Canadian dollar labour costs, and by higher legal and advisory costs due to the timing of transactional contracting and human resources costs.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2018	2017	$ Change	% Change
Adjusted EBITDA	$ **(5,194)**	$ 2,086	$ (7,280)	(349%)

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 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) for the fourth quarter of 2018 was ($5.2) million, compared to $2.1 million for the fourth quarter of 2017. The ($7.3) million decline in Adjusted EBITDA was driven primarily by the ($5.4) million decrease in gross margin as a result of the (29%) decline in overall revenues combined with the (6) point reduction in gross margin as a percent of revenues, as Cash Operating Costs were relatively flat period over period. In addition, Adjusted EBITDA in 2018 was negatively impacted by higher equity investment losses in joint venture and associates of ($1.4) million, and by higher restructuring expenses of ($0.5) million.

In addition and as noted above, operating costs in the fourth quarter of 2018 were impacted by the positive impact of a weaker Canadian dollar, relative to the U.S. dollar, as compared to the fourth quarter of 2017. 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 (4%), or (5) basis points, lower in the fourth quarter of 2018 as compared to the fourth quarter of 2017, positive foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately $0.6 million. A $0.01 decrease in the Canadian dollar, relative to the U.S. dollar, positively impacts annual Adjusted EBITDA by approximately $0.5 million.

Net income (loss)

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2018	2017	$ Change	% Change
Net income (loss)	$ **(11,475)**	$ (2,887)	$ (8,588)	(297%)

Net loss for the fourth quarter of 2018 was ($11.5) million, or ($0.06) per share, compared to a net loss of ($2.9) million, or ($0.02) per share, in the fourth quarter of 2017. The ($8.6) million increase in net loss in the fourth quarter of 2018 was driven primarily by the increase in Adjusted EBITDA loss of ($7.3) million, and by an increase in loss on sale of assets of ($3.5) million, partially offset by lower asset impairment charges of $1.5 million.

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 the divestiture by Protonex of its Power Manager assets to Revision. Net loss in the fourth quarter of 2017 was negatively impacted by a loss on sale of assets of ($0.5) million and asset impairment charges of ($1.5) million both related primarily to the divestiture of certain SOFC assets during the Upstart Transaction. Excluding the impact of asset impairment charges, transactional gains and losses, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in the fourth quarter of 2018 was ($7.5) million, or ($0.04) per share, compared to ($0.9) million, or ($0.01) per share, for the fourth quarter of 2017.

Cash provided by (used in) operating activities

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2018	2017	$ Change	% Change
Cash provided by (used in) operating activities	**$ 188**	$ (728)	$ 916	126%

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. Cash used in operating activities in the fourth quarter of 2017 was ($0.7) million, consisting of cash operating income of $1.7 million partially offset by net working capital outflows of ($2.4) million. The $0.9 million improvement in cash provided by (used in) operating activities in the fourth quarter of 2018, as compared to the fourth quarter of 2017, as compared to the fourth quarter of 2017, was driven by the relative decrease in working capital requirements of $7.1 million, partially offset by the increase in cash operating losses of ($6.1) million. The relative ($6.1) million increase in cash operating losses in the fourth quarter of 2018 was due primarily to the increase in Adjusted EBITDA loss of ($7.3) million, partially offset by higher equity investment losses in joint venture and associates of $1.4 million which are included in Adjusted EBITDA but excluded from cash operating losses.

The total change in working capital of $4.6 million in the fourth quarter of 2018 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.

This compares to a total change in working capital of ($2.4) million in the fourth quarter of 2017 which was driven by higher accounts receivable of ($5.7) million primarily as a result of the timing of revenues and the related customer collections, and by lower deferred revenue of ($1.5) 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. These fourth quarter of 2017 outflows were partially offset by higher accounts payable and accrued liabilities of $2.1 million as a result of the timing of supplier payments and annual compensation awards, by lower inventory of $2.0 million as we delivered expected Heavy-Duty Motive shipments to customers in the last quarter of 2017, and by higher accrued warranty obligations of $0.8 million due to increased product shipments.

5.3 Summary of Key Financial Metrics – Year Ended December 31, 2018

Revenue and gross margin

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
Fuel Cell Products and Services	**2018**	**2017**	$ Change	% Change
Heavy-Duty Motive	**$ 39,464**	$ 63,684	$ (24,220)	(38%)
Portable Power / UAV	**7,109**	4,468	2,641	59%
Material Handling	**8,010**	7,535	475	6%
Backup Power	**2,426**	1,933	493	26%
Technology Solutions	**39,577**	43,668	(4,091)	(9%)
Revenues	**96,586**	121,288	(24,702)	(20%)
Cost of goods sold	**66,912**	79,688	(12,776)	(16%)
Gross Margin	**$ 29,674**	$ 41,600	$ (11,926)	(29%)
Gross Margin %	**31%**	34%	n/a	(3 pts)

Fuel Cell Products and Services Revenues of $96.6 million in 2018 decreased (20%), or ($24.7) million, compared to 2017. The (20%) decline was driven by lower Heavy-Duty Motive and Technology Solutions revenues, which more than offset increases in Portable Power / UAV, Backup Power and Material Handling revenues.

Heavy-Duty Motive revenues of $39.5 million decreased ($24.2) million, or (38%), due primarily to decreased shipments of a variety of fuel cell products to customers, principally 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 $39.5 million in 2018 include $17.5 million for shipments of MEAs under the MEA Supply Agreement with Synergy Ballard JVCo for use in

their manufacture and assembly of FCveloCity® fuel cell stacks in China; $5.9 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products primarily to customers in China; $2.3 million for shipments of FCveloCity®-HD7 200-kilowatt fuel cell modules to CRRC Sifang for their tram project; and $6.9 million to New Flyer and $3.4 million to Van Hool for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their respective bus programs. Heavy-Duty Motive revenues of $63.7 million in 2017 include $28.7 million for shipments of FCveloCity®-MD 30-kilowatt fuel cell products and MEAs to Broad-Ocean to complete both of the $11 million supply contract announced on April 6, 2017 for 200 FCveloCity® fuel cell engines and the $18 million supply contract announced on June 5, 2017 for 400 FCveloCity® fuel cell engines. Heavy-Duty Motive revenues in 2017 also include $14.9 million for shipments of MEAs under the MEA Supply Agreement with Synergy Ballard JVCo; $8.7 million for shipments of FCvelocity®-9SSL fuel cell stacks to Synergy Group for a variety of programs; $2.9 million of shipments of FCveloCity®-HD7 200-kilowatt fuel cell modules to CRRC Sifang, $2.5 million of shipments of FCveloCity®-HD7 85-kilowatt fuel cell modules to Solaris, and $2.1 million of shipments of FCveloCity®-HD6 150-kilowatt fuel cell modules to Sunline.

Technology Solutions revenues of $39.6 million decreased ($4.1) million, or (9%), due primarily to lower amounts earned in 2018 from technology transfer and related agreements with Synergy Ballard JVCo, partially offset by increases in amounts earned on other the Audi and other programs. Amounts earned of $39.6 million in 2018 were from a variety of customer programs including amounts earned from the Audi program of $26.6 million; the Broad-Ocean technology transfer program of $3.5 million; the program with the unnamed strategic customer of $0.9 million; the Siemens development program of $1.8 million; the Nisshinbo program of $1.3 million; and the Weichai Ballard JV technology transfer program of $1.2 million. Amounts earned of $43.7 million in 2017 were also from a variety of customer programs including amounts earned from the Audi program of $18.0 million; Synergy Ballard JVCo of $15.1 million on the completed in 2017 FCvelocity®-9SSL fuel cell stack production line in Yunfu, China; the Broad-Ocean technology transfer program of $2.0 million; the Nisshinbo program of $1.6 million; the Siemens development program of $0.7 million; and amounts earned on a variety of other programs including the HDF distributed generation project, the TRC and CRRC Sifang tram development projects, and the project to enable Synergy Group to exclusively manufacture and sell Ballard's direct hydrogen FCgen®-H2PM fuel cell backup power systems in China. Audi service revenues were nominally impacted in 2018, as compared to 2017, 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 $8.0 million increased $0.5 million, or 6%, primarily as a result of product mix to Plug Power as slightly lower stack shipments benefited by a higher average selling price.

Portable Power / UAV revenues of $7.1 million increased $2.6 million, or 59%, due to higher product revenues generated by Protonex prior to the disposition of the Power Manager assets in October 2018, partially offset by lower service revenues. Revenues from Protonex in 2018 include $1.9 million of product shipments of SPM-622 Squad Power Manager Kits to

complete a $1.9 million purchase order from U.S. Army Security Force Assistance Brigades (SFAB), and $1.6 million of shipments of SPM-622 Squad Power Manager Kits to complete a purchase order for end customer U.S. Special Operations Command.

Backup Power revenues of $2.4 million increased $0.5 million, or 26%, due primarily to an increase in hydrogen-based backup power product and service revenues in Europe and Japan for a variety of backup power applications.

Fuel Cell Products and Services gross margins were $29.7 million, or 31% of revenues, for 2018, compared to $41.6 million, or 34% of revenues, for 2017. The decline in gross margin of ($11.9) million, or (29%), was driven primarily by the (20%) decrease in total revenues, combined with a shift to slightly lower overall margin product and service revenue mix resulting in a (3) percentage point decline in gross margin as a percent of revenues. Gross margin in 2017 particularly benefited from the increase in higher margin Technology Solutions revenues (particularly including amounts earned from Synergy Ballard JVCo related to the completed in 2017 FCvelocity®-9SSL fuel cell stack production operation in Yunfu, China) and from the increase in higher margin Heavy-Duty Motive revenues.

Gross margin in 2018 was also negatively impacted by net inventory adjustments of ($1.0) million related primarily to excess and impaired inventory, and negatively impacted by warranty adjustments of ($0.9) million related primarily to increased Heavy-Duty Motive service costs. Gross margin in 2017 benefited from positive net warranty adjustments of $0.7 million related primarily to contractual expirations and improved lifetimes and reliability of our Heavy-Duty Motive products.

Cash Operating Costs

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2018	2017	$ Change	% Change
Research and Product Development (cash operating cost)	**$ 23,755**	$ 21,332	$ 2,423	11%
General and Administrative (cash operating cost)	**11,705**	10,248	1,457	14%
Sales and Marketing (cash operating cost)	**7,522**	7,473	49	1%
Cash Operating Costs	**$ 42,982**	$ 39,053	$ 3,929	10%

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 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, unrealized gains or losses on foreign exchange contracts, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures) in 2018 were $43.0 million, an increase of $3.9 million, or 10%, compared to 2017. The $3.9 million, or 10%, increase was driven primarily by an increase in research and product development cash operating costs of $2.4 million, combined with increases in general and administrative cash operating costs of $1.5 million and nominal increases in sales and marketing cash operating costs.

The 10% increase in cash operating costs in 2018 was driven primarily by increased investment in research and product development 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 high performance liquid-cooled fuel cell

stack, the FCgen®-LCS. In addition, operating expenses were negatively impacted by increased investment to support our commercial efforts in China, and by increased general and administrative costs due primarily to higher realized losses on our foreign exchange contracts which are designed as a hedge against our Canadian dollar labour costs, and by higher legal and advisory costs due to the timing of transactional contracting and human resources costs. These cost increases were partially offset by lower costs at Protonex as a result of the Company's rationalization initiatives undertaken in the third and fourth quarters of 2017 and by the disposition of the Power Manager assets and associated personnel in October 2018.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)		Year ended December 31,		
	2018	2017	$ Change	% Change
Adjusted EBITDA	$ **(13,465)**	$ 3,324	$ (16,789)	(505%)

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 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) in 2018 was ($13.5) million, compared to $3.3 million for 2017. The ($16.8) million decline in Adjusted EBITDA was driven by the ($11.9) million decrease in gross margin as a result of the (20%) decline in overall revenues combined with the (3) point reduction in gross margin as a percent of revenues, and by the increase in Cash Operating Costs of ($3.9) million primarily as a result of higher research and product development and general and administrative cash operating costs, and by higher equity investment losses in joint venture and associates of ($1.4) million, partially offset by lower restructuring expenses of $0.3 million.

Operating costs in 2018 were nominally impacted by the impact of changes in the Canadian dollar, relative to the U.S. dollar, as the average annual rate for 2018 was consistent with the average annual rate for 2017. 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. A $0.01 increase in the Canadian dollar, relative to the U.S. dollar, negatively impacts annual Cash Operating Costs and Adjusted EBITDA by approximately ($0.5) million.

Net income (loss)

(Expressed in thousands of U.S. dollars)		Year ended December 31,		
	2018	2017	$ Change	% Change
Net income (loss)	$ **(27,323)**	$ (8,048)	$ (19,275)	(239%)

Net loss in 2018 was ($27.3) million, or ($0.15) per share, compared to a net loss of ($8.0) million, or ($0.05) per share, in 2017. The ($19.3) million increase in net loss in 2018 was driven primarily by the increase in Adjusted EBITDA loss of ($16.8) million, combined with higher finance and other expense of ($2.2) million in 2018 due primarily to higher foreign exchange losses, and an increase in loss on sale of assets of ($2.7) million. These net (loss) increases in 2018 were partially offset by lower income tax expense of $1.2 million related to withholding taxes on certain Chinese commercial contracts, and by lower asset impairment charges of $1.5 million.

As noted above, net loss in 2018 was negatively impacted by a loss on sale of assets of ($4.0) million related to the divestiture by Protonex of its Power Manager assets to Revision. Net loss in 2017 was negatively impacted by a loss on sale of assets of ($0.5) million and asset impairment charges of ($1.5) million both related to the divestiture of certain SOFC assets during the Upstart Transaction, and by a loss on sale of assets of ($0.9) million as a result of the CHEM Backup Power Transaction. Excluding the impact of asset impairment charges, transactional gains and losses, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in 2018 was ($23.4) million, or ($0.13) per share, compared to ($5.2) million, or ($0.03) per share, for 2017.

Cash provided by (used in) operating activities

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2018	2017	$ Change	% Change
Cash provided by (used in) operating activities	**$ (31,688)**	$ (9,768)	$ (21,920)	(224%)

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. Cash used in operating activities in 2017 was ($9.8) million, consisting of cash operating income of $2.5 million offset by net working capital outflows of ($12.3) million. The ($21.9) million increase in cash used in operating activities in 2018, as compared to 2017, was driven by the relative increase in cash operating losses of ($16.9) million and by the relative increase in working capital requirements of ($5.0) million. The relative ($16.9) million increase in cash operating losses in 2018 was due primarily to the increase in Adjusted EBITDA loss of ($16.8) million, combined with higher finance and other expense of ($2.2) million in 2018 due primarily to higher foreign exchange losses. These net (loss) increases in 2018 were partially offset by lower income tax expense of $1.2 million related to withholding taxes on certain Chinese commercial contracts, and by higher equity investment losses in joint venture and associates of $1.4 million which are included in Adjusted EBITDA but excluded from cash operating losses.

The total change in working capital of ($17.3) million in 2018 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.

This compares to a total change in working capital of ($12.3) million in 2017 which was driven by lower deferred revenue of ($12.5) 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, by higher accounts receivable of ($9.4) million primarily as a

result of the timing of revenues and the related customer collections, and by higher inventory of ($0.6) million primarily to support expected shipments in the first quarter of 2018. These 2017 working capital outflows were partially offset by higher accounts payable and accrued liabilities of $6.9 million as a result of the timing of supplier payments and accrued compensation awards, by higher accrued warranty obligations of $2.4 million due to increased product shipments, and by lower prepaid expenses of $0.9 million.

5.4 Operating Expenses and Other Items – Three Months and Year ended December 31, 2018

Research and product development expenses

(Expressed in thousands of U.S. dollars) **Research and product development**			Three months ended December 31,		
	2018	2017	$ Change	% Change
Research and product development expense	**$ 6,423**	**$ 7,787**	$ (1,364)	(18%)
Less: Depreciation and amortization expense	**$ (490)**	**$ (654)**	$ 164	25%
Less: Stock-based compensation expense	**$ (215)**	**$ (403)**	$ 188	47%
Research and Product Development (cash operating cost)	**$ 5,718**	**$ 6,730**	$ (1,012)	(15%)

(Expressed in thousands of U.S. dollars) **Research and product development**		Year ended December 31,		
	2018	2017	$ Change	% Change
Research and product development expense	**$ 27,039**	**$ 25,022**	$ 2,017	8%
Less: Depreciation and amortization expense	**$ (2,158)**	**$ (2,566)**	$ 408	16%
Less: Stock-based compensation expense	**$ (1,126)**	**$ (1,124)**	$ (2)	-%
Research and Product Development (cash operating cost)	**$ 23,755**	**$ 21,332**	$ 2,423	11%

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 Non-GAAP Measures section.

Research and product development expenses for the three months ended December 31, 2018 were $6.4 million, a decrease of ($1.4) million, or (18%), compared to the corresponding period of 2017. Excluding depreciation and amortization expense of ($0.5) million and ($0.7) million, respectively, in each of the periods, and excluding stock-based compensation expense of ($0.2) million and ($0.4) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures) were $5.7 million in the fourth quarter of 2018, a decrease of ($1.0) million, or (15%), compared to the fourth quarter of 2017.

The ($1.0) million, or (15%), decrease in research and development cash operating costs (see Supplemental Non-GAAP Measures) in the fourth quarter of 2018 was driven primarily by lower program development and engineering expenses in Protonex as a result of the disposition of our Power Manager assets and associated personnel in October 2018. This decline, combined with lower labour costs in Canada as a result of an approximate (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base, was partially offset by increased investment in research and product development 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 high performance liquid-cooled fuel cell stack, the FCgen®-LCS.

Research and product development expenses for the year ended December 31, 2018 were $27.0 million, an increase of $2.0 million, or 8%, compared to the corresponding period of 2017. Excluding depreciation and amortization expense of ($2.2) million and ($2.6) million, respectively, in each of the periods, and excluding stock-based compensation expense of ($1.1) million in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures) were $23.8 million in 2018, an increase of $2.4 million, or 11%, compared to 2017.

The $2.4 million, or 11%, increase in research and development cash operating costs (see Supplemental Non-GAAP Measures) in 2018 were driven primarily by increased investment in research and product development 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 high performance liquid-cooled fuel cell stack, the FCgen®-LCS. These cost increases were partially offset by lower costs at Protonex as a result of the Company's rationalization initiatives undertaken in the third and fourth quarters of 2017 and by the disposition of the Power Manager assets and associated personnel in October 2018.

Government funding recoveries were also lower in 2018 as compared to 2017 due primarily to a decline in government funding recoveries in Denmark by Ballard Power Systems Europe A/S. Government research funding, and development costs capitalized as fuel cell technology intangible assets, are reflected as cost offsets to research and product development expenses, whereas labour and material costs incurred on revenue producing engineering services projects are reallocated from research and product development expenses to cost of goods sold.

Depreciation and amortization expense included in research and product development expense for the three months and year ended December 31, 2018 was $0.5 million and $2.2 million, respectively, compared to $0.7 million and $2.6 million, respectively, for the corresponding periods of 2017. Depreciation and amortization expense relates primarily to amortization expense on our intangible assets and depreciation expense on our research and product development equipment. Amortization expense on intangible assets is primarily due to the acquisition of Protonex on October 1, 2015 and the resulting amortization of acquired intangible assets.

Stock-based compensation expense included in research and product development expense for the three months and year ended December 31, 2018 was $0.2 million and $1.1 million, respectively, relatively consistent with the amounts recognized in the corresponding periods of 2017 of $0.4 million and $1.1 million, respectively.

General and administrative expenses

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
General and administrative	**2018**	**2017**	$ Change	% Change
General and administrative expense	**$ 4,479**	**$ 3,223**	$ 1,256	39%
Less: Depreciation and amortization expense	**$ (302)**	**$ (352)**	$ 50	14%
Less: Stock-based compensation expense	**$ (213)**	**$ (516)**	$ 303	59%
Add: Unrealized gain (loss) on foreign exchange contracts	**$ (450)**	**$ 189**	$ (639)	(338%)
General and Administrative (cash operating cost)	**$ 3,514**	**$ 2,544**	$ 970	38%

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
General and administrative	**2018**	**2017**	$ Change	% Change
General and administrative expense	**$ 14,760**	**$ 12,602**	$ 2,158	17%
Less: Depreciation and amortization expense	**$ (1,254)**	**$ (1,019)**	$ (235)	(23%)
Less: Stock-based compensation expense	**$ (1,231)**	**$ (1,524)**	$ 293	19%
Add: Unrealized gain (loss) on foreign exchange contracts	**$ (570)**	**$ 189**	$ (759)	(402%)
General and Administrative (cash operating cost)	**$ 11,705**	**$ 10,248**	$ 1,457	14%

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 unrealized gains or losses on foreign exchange contracts. See the reconciliation of the adjustments to General and administrative expense in the Non-GAAP Measures section.

General and administrative expenses for the three months ended December 31, 2018 were $4.5 million, an increase of $1.3 million, or 39%, compared to the corresponding period of 2017. Excluding depreciation and amortization expense of ($0.3) million and ($0.4) million, respectively, in each of the periods, excluding stock-based compensation expense of ($0.2) million and ($0.5) million, respectively, in each of the periods, and excluding unrealized gains (losses) on foreign exchange contracts of ($0.5) and $0.2 million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were $3.5 million in the fourth quarter of 2018, an increase of $1.0 million, or 38%, compared to the fourth quarter of 2017.

The $1.0 million, or 38%, increase in general and administrative cash operating costs (see Supplemental Non-GAAP Measures) in the fourth quarter of 2018 was driven primarily by higher realized losses on our foreign exchange contracts which are designed as a hedge against our Canadian dollar labour costs, and by higher legal and advisory costs due to the timing of transactional contracting and human resources costs. These cost increases in the fourth quarter of 2018 were partially offset by lower expenses in Protonex 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 (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

General and administrative expenses for the year ended December 31, 2018 were $14.8 million, an increase of $2.2 million, or 17%, compared to the corresponding period of 2017. Excluding depreciation and amortization expense of ($1.3) million and ($1.0) million,

respectively, in each of the periods, excluding stock-based compensation expense of ($1.2) million and ($1.5) million, respectively, in each of the periods, and excluding unrealized gains (losses) on foreign exchange contracts of ($0.6) million and $0.2 million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were $11.7 million in 2018, an increase of $1.5 million, or 14%, compared 2017.

The $1.5 million, or 14%, increase in general and administrative cash operating costs (see Supplemental Non-GAAP Measures) in 2018 was driven primarily by higher realized losses on our foreign exchange contracts which are designed as a hedge against our Canadian dollar labour costs, and by higher legal and advisory costs due to the timing of transactional contracting and human resources costs. These cost increases in 2018 were partially offset by lower costs at Protonex as a result of the Company's rationalization initiatives undertaken in the third and fourth quarters of 2017 and by the disposition of the Power Manager assets and associated personnel in October 2018.

Depreciation and amortization expense included in general and administrative expense for the ***three months and year ended December 31, 2018*** was $0.3 million and $1.3 million, respectively, compared to $0.4 million and $1.0 million respectively, for the corresponding periods of 2017. Depreciation and amortization expense relates primarily to our office and information technology intangible assets and has increased in 2018 primarily as a result of 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, 2018 was $0.2 million and $1.2 million, respectively, compared to $0.5 million and $1.5 million, respectively, for the corresponding periods of 2016. The decline in 2018 is primarily as a result of cost reduction activities at Protonex including the disposition of the Power Manager assets and associated personnel.

Unrealized gains (losses) on foreign exchange contracts included in general and administrative expense for the three months and year ended December 31, 2018 was ($0.5) million and ($0.6) million, respectively, compared to $0.2m for each of the corresponding periods of 2017. 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, 2018, we had outstanding foreign exchange currency contracts to purchase a total of Canadian $17.4 million at an average rate of 1.3014 Canadian per U.S. dollar, 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)	Three months ended December 31,						
Sales and marketing		**2018**		**2017**		$ Change	% Change
Sales and marketing expense	**$**	**2,033**	**$**	**2,144**	$	(111)	(5%)
Less: Depreciation and amortization expense	**$**	**-**	**$**	**-**	$	-	-%
Less: Stock-based compensation expense	**$**	**(68)**	**$**	**(174)**	$	106	61%
Sales and Marketing (cash operating cost)	**$**	**1,965**	**$**	**1,970**	$	(5)	-%

(Expressed in thousands of U.S. dollars)	Year ended December 31,						
Sales and marketing		**2018**		**2017**		$ Change	% Change
Sales and marketing expense	**$**	**8,068**	**$**	**7,951**	$	117	1%
Less: Depreciation and amortization expense	**$**	**-**	**$**	**(1)**	$	1	-%
Less: Stock-based compensation expense	**$**	**(546)**	**$**	**(477)**	$	(69)	(15%)
Sales and Marketing (cash operating cost)	**$**	**7,522**	**$**	**7,473**	$	49	1%

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 Non-GAAP Measures section.

Sales and marketing expenses for the three months ended December 31, 2018 were $2.0 million, a decrease of ($0.1) million, or (5%), compared to the corresponding period of 2017. Excluding stock-based compensation expense of ($0.1) million and ($0.2) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) were $2.0 million in the fourth quarter of 2018, flat compared to the fourth quarter of 2017.

Sales and marketing expenses for the year ended December 31, 2018 were $8.1 million, an increase of $0.1 million, or 1%, compared to the corresponding period of 2017. Excluding stock-based compensation expense of ($0.5) million in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) were $7.5 million in 2018, an increase of $0.05 million, or 1%, compared to 2017.

The nominal increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) in 2018 was driven primarily by an increased investment to support our commercial sales and marketing efforts in China. This cost increase was effectively offset by lower costs at Protonex as a result of the Company's rationalization initiatives undertaken in the third and fourth quarters of 2017 and the disposition of the Power Manager assets and associated personnel in October 2018.

Stock-based compensation expense included in sales and marketing expense for the three months and year ended December 31, 2018 was $0.1 million and $0.5 million, respectively, relatively consistent with the amounts recognized in the corresponding periods of 2017 of $0.2 million and $0.5 million, respectively.

Other expense for the three months and year ended December 31, 2018 was $0.5 million and $0.6 million, respectively, compared to nil million and $0.9 million, respectively, for the corresponding periods of 2017. The following table provides a breakdown of other expense for the reported periods:

(Expressed in thousands of U.S. dollars)				Three months ended December 31,			
		2018		2017		$ Change	% Change
Impairment loss (recovery) on trade receivables	$	**68**	$	**101**	$	(33)	(32%)
Restructuring expense (recovery)		**438**		**(71)**		509	717%
Acquisition charges		**-**		**-**		-	-
Other expenses (recovery)	$	**506**	$	**30**	$	476	1,587%

(Expressed in thousands of U.S. dollars)				Year ended December 31,			
		2018		2017		$ Change	% Change
Impairment loss (recovery) on trade receivables	$	**98**	$	**103**	$	(5)	(5%)
Restructuring expense		**507**		**799**		(292)	(37%)
Acquisition charges		**-**		**-**		-	-
Other expenses (recovery)	$	**605**	$	**902**	$	(297)	(33%)

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 Protonex as a result of the disposition of the Power Manager assets and associated personnel. Restructuring expenses of $0.8 million for the year ended December 31, 2017 relate primarily to a leadership change in sales and marketing combined with cost reduction initiatives in the general and administration function undertaken in the first quarter of 2017, and by cost reduction initiatives at Protonex undertaken in the third quarter of 2017.

Net impairment loss (recovery) on trade receivables for the three months ended December 31, 2018 and 2017 were nominal. 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.

Finance income (loss) and other for the three months and year ended December 31, 2018 was nil million and ($0.4) million, respectively, compared to ($0.2) million and $1.8 million, respectively, for the corresponding periods of 2017. The following tables provide a breakdown of finance and other income (loss) for the reported periods:

(Expressed in thousands of U.S. dollars)				Three months ended December 31,			
		2018		2017		$ Change	% Change
Employee future benefit plan expense	$	**(58)**	$	**(51)**	$	(7)	(14%)
Pension administration expense		**(104)**		**-**		(104)	(100%)
Investment and other income (loss)		**617**		**147**		470	320%
Foreign exchange gain (loss)		**(469)**		**(322)**		(147)	(46%)
Finance income (loss) and other	$	**(14)**	$	**(226)**	$	212	94%

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2018	2017	$ Change	% Change
Employee future benefit plan expense	**$ (226)**	**$ (230)**	$ 4	2%
Pension administration expense	**(117)**	**(118)**	1	1%
Investment and other income (loss)	**972**	**436**	535	123%
Foreign exchange gain (loss)	**(1,078)**	**1,692**	(2,770)	(164%)
Finance income (loss) and other	**$ (449)**	**$ 1,780**	$ (2,230)	(125%)

Employee future benefit plan expense for the years ended December 31, 2018 and 2017 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, 2018 and 2017 were ($0.1) million in each of the periods and represent administrative costs incurred in managing the plan.

Foreign exchange gains (losses) for the three months and year ended December 31, 2018 were ($0.5) million and ($1.1) million, respectively, compared to ($0.3) million and $1.7 million, respectively, for the corresponding periods of 2017. 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).

Investment and other income for the months and year ended December 31, 2018 were $0.6 million and $1.0 million, respectively, compared to $0.1 million and $0.4 million, respectively, for the corresponding periods of 2017. Amounts were earned primarily on our cash and cash equivalents.

Finance expense for the three months and year ended December 31, 2018 was ($0.1) million and ($0.5) million, respectively, compared to ($0.2) million and ($0.7) million, respectively, for the corresponding periods of 2017. Finance expense relates primarily to the sale and leaseback of our head office building in Burnaby, British Columbia which was completed in 2010. Due to the long term nature of the lease, the leaseback of the building qualifies as a finance (or capital) lease.

Equity in income (loss) of investment in joint venture and associates for the three months and year ended December, 2018 was ($1.1) million and ($1.2) million, respectively, compared to $0.3 million and $0.2 million, respectively, for the corresponding periods of 2017. Equity in income of investment in joint venture and associates relates to the pickup of 10% of the net income (loss) of Synergy Ballard JVCo as a result of our 10% ownership position, and 49% of the net income (loss) of Weichai Ballard JV as a result of our 49% ownership position. Both of these investments in China are accounted for using the equity method of accounting.

Loss on sale of assets for the three months and year ended December 31, 2018 were ($4.0) million primarily as a result of the divestiture of our Power Manager assets to

Revision on October 5, 2018. 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 the second quarter of 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. The loss on sale of Power Manager assets of ($4.0) million was calculated 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. The estimate of the ultimate transaction price, including the estimate of the amount of earn-out variable consideration that is considered constrained of $2.0 million, will be reassessed each quarter-end during 2019. Any change in the estimated transaction price will result in an adjustment to the above noted loss on sale of assets which will be recognized on a prospective basis.

Loss on sale of assets for the three months and year ended December 31, 2017 were ($0.5) million and ($1.4) million, respectively, consisting of additional losses incurred in the first three quarters of 2017 of ($0.9) million as a result of the CHEM Backup Power Transaction, and a loss incurred in the fourth quarter of 2017 of ($0.5) million on the Upstart SOFC Transaction.

During 2017, we recorded a loss on sale of assets of ($0.9) million as the remaining estimated potential purchase price owing from the 2016 CHEM Transaction was written down to its revised and final fair value of $0.9 million (which was collected in the fourth quarter of 2017) from its previous fair value estimate of $1.8 million as of December 31, 2016.

During the fourth quarter of 2017, we sold certain Protonex solid oxide fuel cells ("SOFC) assets consisting primarily of SOFC inventory to Upstart Power Inc. for nominal consideration, resulting in a loss on sale of assets of ($0.5) million. This action had enabled Ballard to significantly reduce the cost structure at Protonex. No restructuring expense was incurred as a result of this transaction.

Impairment (Loss) on Intangible Assets and Property, Plant and Equipment for the three months and year ended December 31, 2017 was ($1.5) million and consists of a ($1.2) million impairment charge on intangible assets and a ($0.3) million impairment charge on property, plant and equipment as we wrote-down certain SOFC fuel cell assets to their estimated net realizable value of $0.05 million. The impairment charges were incurred during the fourth quarter of 2017 while we continued to review strategic alternatives for our SOFC fuel cell assets at Protonex prior to concluding the transaction with Upstart Power Inc.

Income tax expense for the three months ended and year ended December 31, 2018 was ($0.1) million and ($0.4) million, respectively, compared to ($0.2) million and ($1.6) million, respectively, for the corresponding periods of 2017. Income tax expense relates primarily to withholding taxes in China deducted from proceeds earned on certain Chinese commercial contracts.

5.5 Summary of Quarterly Results

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

(Expressed in thousands of U.S. dollars, except per share amounts and weighted average shares outstanding which are expressed in thousands)	Quarter ended,			
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018
Revenues	$ 28,477	$ 21,574	$ 26,445	$ 20,090
Net income (loss) attributable to Ballard	$ (11,475)	$ (6,024)	$ (4,323)	$ (5,500)
Net income (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

	Dec 31, 2017	Sep 30, 2017	Jun 30, 2017	Mar 31, 2017
Revenues	$ 40,257	$ 31,854	$ 26,521	$ 22,656
Net income (loss) attributable to Ballard	$ (2,887)	$ (1,027)	$ (1,201)	$ (2,935)
Net income (loss) per share attributable to Ballard, basic and diluted	$ (0.02)	$ (0.01)	$ (0.01)	$ (0.02)
Weighted average common shares outstanding	177,803	176,438	175,953	174,853

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. Revenues were positively impacted in the fourth quarter of 2017 as we fulfilled an $18 million supply contract (announced on June 5, 2017) for 400 FCveloCity® fuel cell engines and consisting primarily of shipments of FCveloCity®-MD 30-kilowatt fuel cell products and MEAs.

- **Operating expenditures**: 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 Protonex as a result of the disposition of the Power Manager assets and associated personnel. Operating expenses were negatively impacted in the first quarter of 2017 by restructuring expenses of ($0.6) million related to a leadership change in sales and marketing and by cost reduction initiatives in the general and administration function. 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 income (loss):** Net income (loss) for the fourth quarter of 2018 was negatively impacted by a loss on sale of assets of ($4.0) million as a result of the divestiture of our Power Manager assets to Revision on October 5, 2018. Net income (loss) for the fourth quarter of 2017 was negatively impacted by a loss on sale of assets of ($0.5) million as we sold certain SOFC fuel cell inventory to Upstart for nominal proceeds. Net loss in the fourth quarter of 2017 was also negatively impacted by impairment charges of ($1.5)

million consisting of a ($1.2) million impairment charge on intangible assets and a ($0.3) million impairment charge on property, plant and equipment as we wrote-down certain SOFC fuel cell assets to their estimated net realizable value of $0.05 million. Net income (loss) for the second quarter of 2017 was negatively impacted by a loss on sale of assets of ($0.8) million as we recorded an impairment adjustment against the potential purchase price receivable from the CHEM Transaction by reducing the estimated fair value of the potential remaining earn-out to $1.0 million from $1.8 million.

6 CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

6.1 Summary of Cash Flows

Cash and cash equivalents were $192.2 million at December 31, 2018, compared to $60.3 million at December 31, 2017. The $131.9 million increase in cash and cash equivalents in 2018 was driven by net proceeds received from the Weichai and Broad-Ocean strategic financings of $183.7 million, net proceeds received from share purchase warrant exercises of $1.4 million, net proceeds received from share purchase option exercises of $1.6 million, and initial net proceeds received on the sale of Power Manager assets of $1.3 million. These 2018 inflows were partially offset by net losses (excluding non-cash items) of ($14.4) million, net working capital outflows of ($17.3) million, initial equity investment in Weichai Ballard JV of ($14.6) million, purchases of property, plant and equipment of ($9.9) million, and by finance lease repayments of ($0.6) million.

6.2 Cash Provided by (Used by) Operating Activities

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. For the three months ended December 31, 2017, cash used in operating activities was ($0.7) million, consisting of cash operating income of $1.7 million partially offset by net working capital outflows of ($2.4) million. The $0.9 million improvement in cash provided by (used in) operating activities in the fourth quarter of 2018, as compared to the fourth quarter of 2017, as compared to the fourth quarter of 2017, was driven by the relative decrease in working capital requirements of $7.1 million, partially offset by the increase in cash operating losses of ($6.1) million. The relative ($6.1) million increase in cash operating losses in the fourth quarter of 2018 was due primarily to the increase in Adjusted EBITDA loss of ($7.3) million, partially offset by higher equity investment losses in joint venture and associates of $1.4 million which are included in Adjusted EBITDA but excluded from cash operating losses.

In the fourth quarter of 2018, net working capital inflows of $4.6 million were 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 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.

In the fourth quarter of 2017, net working capital outflows of ($2.4) million were driven by higher accounts receivable of ($5.7) million primarily as a result of the timing of revenues and the related customer collections, and by lower deferred revenue of ($1.5) 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. These fourth quarter of 2017 outflows were partially offset by higher accounts payable and accrued liabilities of $2.1 million as a result of the timing of supplier payments and annual compensation awards, by lower inventory of $2.0 million as we delivered expected Heavy-Duty Motive shipments to customers in the last quarter of 2017, and by higher accrued warranty obligations of $0.8 million due to increased product shipments.

For the year ended December 31, 2018, cash used in operating activities was ($31.7) million, consisting of cash operating losses of ($14.4) million combined with net working capital outflows of ($17.3) million. For the year ended December 31, 2017, cash used in operating activities was ($9.8) million, consisting of cash operating income of $2.5 million offset by net working capital outflows of ($12.3) million. The ($21.9) million increase in cash used in operating activities in 2018, as compared to 2017, was driven by the relative increase in cash operating losses of ($16.9) million and by the relative increase in working capital requirements of ($5.0) million. The relative ($16.9) million increase in cash operating losses in 2018 was due primarily to the increase in Adjusted EBITDA loss of ($16.8) million, combined with higher finance and other expense of ($2.2) million in 2018 due primarily to higher foreign exchange losses. These net (loss) increases in 2018 were partially offset by lower income tax expense of $1.2 million related to withholding taxes on certain Chinese commercial contracts, and by higher equity investment losses in joint venture and associates of $1.4 million which are included in Adjusted EBITDA but excluded from cash operating losses.

In 2018, net working capital outflows of ($17.3) million were 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.

In 2017, net working capital outflows of ($12.3) million were driven by lower deferred revenue of ($12.5) 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, by higher accounts receivable of ($9.4) million primarily as a result of the timing of revenues and the related customer collections, and by higher inventory of ($0.6) million primarily to support expected shipments in the first quarter of 2018. These 2017 working capital outflows were partially offset by higher accounts payable and accrued liabilities of $6.9 million as a result of the timing of supplier payments and accrued compensation awards, by higher accrued warranty obligations of $2.4 million due to increased product

shipments, and by lower prepaid expenses of $0.9 million.

6.3 Cash Provided by (Used by) Investing Activities

Investing activities resulted in net cash outflows of ($14.9) million and ($23.1) million, respectively, for the three months and year ended December 31, 2018, compared to net cash outflows of ($0.5) million and ($6.5) million, respectively, for the corresponding periods of 2017.

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 the Power Manager assets by Protonex to Revision.

Investing activities in 2017 of ($6.5) million consist primarily of capital expenditures of ($3.1) million, investments in other intangible assets of ($3.4) million related primarily to the implementation of a new Enterprise Resource Planning ("ERP") management reporting software system, investments in associated companies of ($1.0) million paid for our 10% investment in Synergy Ballard JVCo, partially offset by final net proceeds of $1.0 million received in the fourth quarter of 2017 from the CHEM Transaction.

6.4 Cash Provided by (Used by) Financing Activities

Financing activities resulted in net cash inflows of $183.6 million and $186.1 million, respectively, for the three months and year ended December 31, 2018, compared to net cash inflows of $1.6 million and $5.0 million, respectively, for the three months and year ended December 31, 2017.

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.

Financing activities in 2017 of $5.0 million consist of proceeds from share purchase warrant exercises of $2.0 million, proceeds from share purchase option exercises of $3.6 million, partially offset by capital lease payments of ($0.6) million.

6.5 Liquidity and Capital Resources

At December 31, 2018, we had total liquidity of $192.2 million. We measure liquidity as our net cash position, consisting of the sum of our cash, cash equivalents and short-term investments of $192.2 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, 2018, 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 on file with the securities regulators in Canada and the United States, expiring in July 2020. The 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.

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 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 and forward platinum purchase contracts to manage our exposure to currency rate fluctuations and platinum price 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, 2018, we had outstanding foreign exchange currency contracts to purchase a total of Canadian $17.4 million at an average rate of 1.3014 Canadian per U.S dollar, resulting in an unrealized loss of Canadian ($0.8) million at December 31, 2018. The outstanding foreign exchange currency contracts are not qualified under hedge accounting.

At December 31, 2018, 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, 2018, we had the following contractual obligations and commercial commitments (including capital contribution commitments to Weichai Ballard JV):

(Expressed in thousands of U.S. dollars)		Payments due by period,			
Contractual Obligations	**Total**	Less than one year	1-3 years	4-5 years	After 5 years
Operating leases	**$ 17,770**	$ 2,335	$ 4,436	$ 4,148	$ 6,851
Finance leases	**7,107**	1,023	2,355	2,355	1,374
Asset retirement obligations	**1,825**	-	-	-	1,825
Capital contributions to Weichai Ballard JV	**64,121**	20,839	34,198	9,084	-
Total contractual obligations	**$ 90,823**	$ 24,197	$ 40,989	$ 15,587	$ 10,050

In addition, we have outstanding commitments of $2.9 million at December 31, 2018 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, 2018 and 2017.

As of December 31, 2018, 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, 2018, we have not accrued any amount owing, or receivable, as a result of any indemnity agreements undertaken in the ordinary course of business.

In January, February and April 2018, certain related class action complaints were filed in U.S. Federal Court alleging violations of U.S. federal securities laws. In April plaintiffs voluntarily dismissed all but one of their cases, Porwal v. Ballard Power Systems, Inc. et al (S.D. N.Y.). Under the current scheduling order in this action, Plaintiffs filed an amended complaint on June 22, 2018. Ballard will vigorously contest, and defend against, Plaintiffs' claims and believes the claims are without merit.

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, 2018 and 2017, related party transactions and balances with Weichai Ballard JV and Synergy Ballard JVCo total as follows:

(Expressed in thousands of U.S. dollars)	Three Months Ended December 31,	
Transactions with related parties	**2018**	2017
Revenues	**$ 2,060**	$ 6,369
Cost of goods sold	**$ -**	$ -

(Expressed in thousands of U.S. dollars)	Year Ended December 31,	
Transactions with related parties	**2018**	2017
Revenues	**$ 18,795**	$ 30,916
Cost of goods sold	**$ -**	$ -

(Expressed in thousands of U.S. dollars)	As at December 31,	
Balances with related parties	**2018**	2017
Accounts receivable	**$ 1,604**	$ 1,415
Investments	**$ 13,989**	$ 676
Deferred revenue	**$ (10,896)**	$ (2,973)

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 31 to our annual consolidated financial statements for the year ended December 31, 2018.

7.3 Outstanding Share and Equity Information

As at March 6, 2019	
Common share outstanding	231,929,309
Warrants outstanding	-
Options outstanding	5,053,795
DSU's outstanding	747,213
RSU's / PSU's outstanding (subject to vesting and performance criteria)	1,778,192

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, 2018.

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. 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 typically on a percentage-of-completion basis, which consists of recognizing revenue for a performance obligation on a given contract proportionately with its percentage of completion at any given time. The percentage of completion is determined by dividing the cumulative costs incurred as at the balance sheet date by the sum of incurred and anticipated costs for completing a contract. The cumulative effect of changes to anticipated revenues and anticipated costs for completing a contract are recognized in the period in which the revisions are identified. If the anticipated costs exceed the anticipated revenues on a contract, such loss is recognized in its entirety in the period it becomes known.

- The determination of anticipated 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 is expected 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 our assessment of the progress achieved against milestones, or that our estimates of the work required completing a contract may change.

During the three months and year ended December 31, 2018 and 2017, there was 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, 2018, 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, 2018, we have concluded that no goodwill impairment charge is required for the year ending December 31, 2018. Details of our 2018 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, 2018 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, 2018 indicating that no impairment charge is required for 2017.
- 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 ("WACC"), and terminal value assumptions. Our value in use test was based on a WACC of 10%; an average estimated compound annual growth rate of approximately 23% from 2019 to 2023; a terminal year EBITDA multiplied by a terminal value multiplier of 10; and a WACC of 8% and a terminal year revenue multiple of 5 for Weichai Ballard JV. 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, 2018 indicating that no impairment charge is required in 2018.

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 year ended December 31, 2018, we recorded a loss on sale of assets of ($4.0) million on the divestiture by Protonex of its Power Manager assets to Revision on October 5, 2018 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. This estimate of the ultimate transaction price, including the estimate of the amount of earn-out

variable consideration that is considered constrained of $2.0 million, will be reassessed each quarter-end during 2019. During the year ended December 31, 2017, we recorded a loss on sale of assets of ($0.9) million as the remaining estimated potential purchase price owing from the 2016 CHEM Transaction was written down to its revised and final fair value of $0.9 million (which was collected in the fourth quarter of 2017) from its previous fair value estimate of $1.8 million as of December 31, 2016. During the fourth quarter of 2017, we also recognized a loss on sale of assets of ($0.5) million as we sold certain SOFC fuel cell inventory to Upstart for nominal proceeds, and recorded impairment charges of ($1.5) million consisting of a ($1.2) million impairment charge on intangible assets and a ($0.3) million impairment charge on property, plant and equipment as we wrote-down certain SOFC fuel cell assets to their estimated net realizable value of $0.05 million.

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, 2018, we recorded provisions to accrued warranty liabilities of $2.1 million and $4.4 million, respectively, for new product sales, compared to $1.6 million and $4.1 million, respectively, for the three months and year ended December 31, 2017.

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, 2018 were adjusted upwards by nil million and ($0.9) million, respectively, in each of the periods, compared to an adjustment downwards by $0.7 million for the three months and year ended December 31, 2017. The negative adjustments to the accrued warranty liability provisions in 2018 were due primarily to increased Heavy-Duty Motive service costs, whereas the positive adjustments to the accrued warranty liability provision in in 2017 were due primarily to contractual expirations and improved lifetimes and reliability of our Heavy-Duty Motive products.

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, 2018, net inventory adjustments of ($0.7) million and ($1.0) million, respectively, were recorded as a recovery (charge) to cost of product and service revenues, compared to net inventory adjustments of ($0.1) million and nil million, respectively, for the three months and year ended December 31, 2017.

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, 2018 and 2017, nominal net impairment (charges) on trade receivables and contract assets were recorded in other operating income.

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. As of December 31, 2018 and 2017, 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, 2018, we have initially adopted ***IFRS 15 Revenue from Contracts with Customers*** and ***IFRS 9 Financial Instruments***. The effect of initially applying these standards did not have a material impact on the Company's financial statements. A number of other new standards are also effective from January 1, 2018 but they also did not have a material impact on the Company's financial statements.

IFRS 15 – REVENUE FROM CONTRACTS WITH CUSTOMERS

IFRS 15 Revenue from Contracts with Customers establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaced ***IAS 18 Revenue, IAS 11 Construction Contracts*** and related interpretations. The Company has adopted IFRS 15 using the cumulative effect method (without practical expedients; with the effect of initially applying this standard recognized at the date of initial application (i.e. January 1, 2018). Accordingly, the information presented for 2017 has not been restated – i.e. it is presented, as previously reported, under IAS 18, IAS 11 and related interpretations.

IFRS 15 contains a single model that applies to contracts with customers and two approaches to recognizing revenue: at a point in time or over time. The model features a contract-based five-step analysis of transactions to determine whether, how much, and

when revenue is recognized. New estimates and judgmental thresholds have been introduced, which may affect the amount and/or timing of revenue recognized. The new standard applies to contracts with customers. It does not apply to insurance contracts, financial instruments or lease contracts, which fall in the scope of other IFRSs. The clarifications to IFRS 15 provide additional guidance with respect to the five-step analysis, transition, and the application of the Standard to licenses of intellectual property.

The adoption of IFRS 15 did not have a material impact on the Company's financial statements.

IFRS 9 – FINANCIAL INSTRUMENTS

IFRS 9 Financial Instruments sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces ***IAS 39 Financial Instruments: Recognition and Measurement***.

Under IFRS 9, financial assets are classified and measured based on the business model in which they are held and the characteristics of their contractual cash flows. The standard introduces additional changes relating to financial liabilities. It also amends the impairment model by introducing a new 'expected credit loss' model for calculating impairment.

IFRS 9 also includes a new general hedge accounting standard which aligns hedge accounting more closely with risk management. This new standard does not fundamentally change the types of hedging relationships or the requirement to measure and recognize ineffectiveness; however it will provide more hedging strategies that are used for risk management to qualify for hedge accounting and introduce more judgment to assess the effectiveness of a hedging relationship. Special transitional requirements have been set for the application of the new general hedging model.

The adoption of IFRS 9 did not have a material 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.

IFRS 16 – LEASES

On January 13, 2016, the IASB issued ***IFRS 16 Leases***. IFRS 16 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 carries forward the lessor accounting requirements of IAS 17, 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. Transitional provisions have been provided.

The new standard is effective for annual periods beginning on or after January 1, 2019. IFRS 16 will replace ***IAS 17 Leases*** and the related interpretations**.**

The most significant effect of the new standard will be 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 will result 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 would thus be higher under the new standard. Relative to the results of applying the current standard, although actual cash flows will be unaffected, the lessee's statement of cash flows will 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 would currently be accounted for as operating leases as a cash flow use within financing activities under the new standard.

The Company will adopt IFRS 16 in its financial statements for the fiscal year beginning on January 1, 2019. The Company intends to apply the modified retrospective approach and will not restate comparative amounts for the year prior to first adoption. Right-of-use assets will be measured on transition at the amount of the lease liability on adoption (adjusted for any prepaid or accrued lease expenses). As a transitional practical expedient permitted by the new standard, the Company will not reassess whether contracts are, or contain, leases as at January 1, 2019, that were previously identified as leases applying IAS 17 Leases, and IFRIC 4 Determining whether an Arrangement contains a Lease. Only contracts entered into (or changed) after January 1, 2019, will be assessed for being, or containing, leases applying the criteria of the new standard. The Company also intends to apply the practical expedient for leases that have duration of 12 months or less.

Based on the analysis completed to date of the Company's leasing arrangements open as of December 31, 2018, on adoption of the new standard on January 1, 2019 the Company expects to recognize, right-of-use assets of between approximately $9 million to $11 million, net of lease incentives (primarily deferred lease inducements) of approximately $2 million, and lease liabilities of between approximately $13 million to $15 million.

IFRIC 23 – UNCERTAINTY OVER INCOME TAX TREATMENTS

On June 7, 2017, the IASB issued ***IFRIC Interpretation 23 Uncertainty over Income Tax Treatments***. The Interpretation 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 Interpretation is applicable for annual periods beginning on or after January 1, 2019. The Company will adopt the Interpretation in its financial statements for the fiscal year beginning on January 1, 2019. Based on an analysis of the Company's historic tax filing positions as of January 1, 2019, the Company does not expect the Interpretation to have a material impact on the 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 does not intend to adopt the Amendments in its financial statements before the annual period beginning on January 1, 2020. The extent of the impact of the change has not yet been determined.

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 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 Company does not intend to adopt the amendments in its financial statements before the annual reporting period beginning on January 1, 2020. The extent of the impact of adoption of the amendments has not yet been determined.

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 does not intend to adopt the amendments in its financial statements before the annual reporting period beginning on January 1, 2020. The extent of the impact of adoption of the amendments has not yet been determined.

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, net income, cash flows and other measures of financial performance and liquidity reported in accordance with GAAP.

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, 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, 2018 and 2017:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,		
Cash Operating Costs	**2018**	2017	$ Change
Total Operating Expenses	**$ 13,441**	**$ 13,184**	$ 257
Stock-based compensation expense	**(496)**	**(1,093)**	597
Impairment recovery (losses) on trade receivables	**(68)**	**(101)**	33
Acquisition and integration costs	**-**	**-**	-
Restructuring (charges) recovery	**(438)**	**71**	(509)
Unrealized gain (loss) on foreign exchange contracts	**(450)**	**189**	(639)
Financing charges	**-**	**-**	-
Depreciation and amortization	**(792)**	**(1,006)**	214
Cash Operating Costs	**$ 11,197**	**$ 11,244**	$ (47)

(Expressed in thousands of U.S. dollars) **Cash Operating Costs**	Year ended December 31, **2018**	2017	$ Change
Total Operating Expenses	$ **50,472**	$ **46,477**	$ 3,995
Stock-based compensation expense	**(2,902)**	**(3,125)**	222
Impairment recovery (losses) on trade receivables	**(98)**	**(103)**	5
Acquisition and integration costs	**-**	**-**	-
Restructuring (charges) recovery	**(507)**	**(799)**	292
Unrealized gain (loss) on foreign exchange contracts	**(570)**	**189**	(759)
Financing charges	**-**	**-**	-
Depreciation and amortization	**(3,413)**	**(3,586)**	174
Cash Operating Costs	$ **42,982**	$ **39,053**	$ 3,929

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 month and year ended December 31, 2018 and 2017 is included in Operating Expense and Other Items.

A breakdown of total stock-based compensation expense for the three months and year ended December 31, 2018 and 2017 are as follows:

(Expressed in thousands of U.S. dollars) **Stock-based compensation expense**	Three months ended December 31, **2018**	2017	$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	$ **-**	$ **-**	$ -
Research and product development expense	**215**	**403**	(188)
General and administrative expense	**213**	**516**	(303)
Sales and marketing expense (recovery)	**68**	**174**	(106)
Stock-based compensation expense	$ **496**	$ **1,093**	$ (597)

(Expressed in thousands of U.S. dollars) **Stock-based compensation expense**	Year ended December 31, **2018**	2017	$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	$ **-**	$ **-**	$ -
Research and product development expense	**1,126**	**1,124**	2
General and administrative expense	**1,231**	**1,524**	(293)
Sales and marketing expense (recovery)	**545**	**477**	68
Stock-based compensation expense	$ **2,902**	$ **3,125**	$ (223)

A breakdown of total depreciation and amortization expense for the three months and year ended December 31, 2018 and 2017 are as follows:

(Expressed in thousands of U.S. dollars) **Depreciation and amortization expense**	Three months ended December 31, **2018**	 2017	 $ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	**$ 386**	**$ 474**	$ (88)
Research and product development expense	**490**	**654**	(164)
General and administrative expense	**302**	**352**	(50)
Sales and marketing expense	**-**	**1**	(1)
Depreciation and amortization expense	**$ 1,178**	**$ 1,481**	$ (303)

(Expressed in thousands of U.S. dollars) **Depreciation and amortization expense**	Year ended December 31, **2018**	 2017	 $ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	**$ 1,603**	**$ 1,477**	$ 126
Research and product development expense	**2,158**	**2,566**	(408)
General and administrative expense	**1,254**	**1,019**	235
Sales and marketing expense	**-**	**1**	(1)
Depreciation and amortization expense	**$ 5,015**	**$ 5,064**	$ (48)

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, 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, 2018 and 2017:

(Expressed in thousands of U.S. dollars) **EBITDA and Adjusted EBITDA**	Three months ended December 31, **2018**	2017	$ Change
Net income (loss)	**$ (11,475)**	**$ (2,887)**	$ (8,588)
Depreciation and amortization	**1,178**	**1,481**	(303)
Finance expense	**121**	**168**	(47)
Income taxes	**68**	**210**	(142)
EBITDA	**$ (10,108)**	**$ (1,028)**	$ (9,080)
Stock-based compensation expense	**496**	**1,093**	(597)
Acquisition and integration costs	**-**	**-**	-
Finance and other (income) loss	**13**	**226**	(213)
Impairment charges on intangible assets and property, plant and equipment	**-**	**1,484**	(1,484)
Loss (gain) on sale of assets	**3,955**	**500**	3,455
Unrealized loss (gain) on foreign exchange contracts	**450**	**(189)**	639
Adjusted EBITDA	**$ (5,194)**	**$ 2,086**	$ (7,280)

(Expressed in thousands of U.S. dollars) **EBITDA and Adjusted EBITDA**	Year ended December 31, **2018**	2017	$ Change
Net income (loss)	**$ (27,323)**	**$ (8,048)**	$ (19,275)
Depreciation and amortization	**5,015**	**5,064**	(49)
Finance expense	**503**	**732**	(229)
Income taxes	**370**	**1,571**	(1,201)
EBITDA	**$ (21,435)**	**$ (681)**	$ (20,754)
Stock-based compensation expense	**2,902**	**3,125**	(223)
Acquisition and integration costs	**-**	**-**	-
Finance and other (income) loss	**449**	**(1,780)**	2,229
Impairment charges on intangible assets and property, plant and equipment	**-**	**1,484**	(1,484)
Loss (gain) on sale of assets	**4,049**	**1,365**	2,684
Unrealized loss (gain) on foreign exchange contracts	**570**	**(189)**	759
Adjusted EBITDA	**$ (13,465)**	**$ 3,324**	$ (16,789)

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, 2018 and 2017:

(Expressed in thousands of U.S. dollars) **Adjusted Net Loss**	Three months ended December 31, **2018**	2017	$ Change
Net (loss)	**$ (11,475)**	$ (2,887)	$ (8,588)
Acquisition and integration costs	**-**	-	-
Impairment charges (recovery) on intangible assets and property, plant and equipment	**-**	1,484	(1,484)
Loss on sale of assets	**3,957**	500	3,457
Adjusted Net Loss	**$ (7,518)**	$ (903)	$ (6,615)
Adjusted Net Loss per share	**$ (0.04)**	$ (0.01)	$ (0.03)

(Expressed in thousands of U.S. dollars) **Adjusted Net Loss**	Year ended December 31, **2018**	2017	$ Change
Net (loss)	**$ (27,323)**	$ (8,048)	$ (19,275)
Acquisition and integration costs	**-**	-	-
Impairment charges (recovery) on intangible assets and property, plant and equipment	**-**	1,484	(1,484)
Loss on sale of assets	**3,957**	1,374	2,583
Adjusted Net Loss	**$ (23,366)**	$ (5,190)	$ (18,176)
Adjusted Net Loss per share	**$ (0.13)**	$ (0.03)	$ (0.10)

Consolidated Financial Statements
(Expressed in U.S. dollars)

BALLARD POWER SYSTEMS INC.

Years ended December 31, 2018 and 2017

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, 2018. 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, 2018. 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"

RANDALL MACEWEN
President and
Chief Executive Officer
March 6, 2019

"TONY GUGLIELMIN"

TONY GUGLIELMIN
Vice President and
Chief Financial Officer
March 6, 2019

KPMG LLP
Chartered Professional Accountants
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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 balance sheets of Ballard Power Systems, Inc. (the Company) as of December 31, 2018 and 2017, the related consolidated statements of loss, comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, 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 Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, 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 6, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its accounting policies for revenue recognition and financial instruments in 2018 due to the adoption of IFRS 15 - *Revenue from Contracts with Customers* and IFRS 9 - *Financial Instruments*.

Basis for Opinion

These *consolidated* financial statements are the responsibility of the Company'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 Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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.

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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.

We have served as the Company's auditor since 1999.

//s// KPMG LLP

Chartered Professional Accountants

Vancouver, Canada
March 6, 2019

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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 Company) internal control over financial reporting as of December 31, 2018, 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 Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, 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 balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of loss, comprehensive loss, changes in equity, and cash flows for each of the years in the two-year period ended December 31, 2018 and the related notes (collectively, the consolidated financial statements), and our report dated March 6, 2018 expressed an unqualified opinion on those *consolidated* financial statements.

Basis for Opinion

The Company'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 Company'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 Company 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.

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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 6, 2019

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.

BALLARD POWER SYSTEMS INC.

Consolidated Statement of Financial Position

(Expressed in thousands of U.S. dollars)

	Note	**December 31, 2018**	December 31, 2017
Assets			
Current assets:			
Cash and cash equivalents		**$ 192,235**	$ 60,255
Trade and other receivables	7	**38,524**	23,080
Inventories	8	**29,311**	17,292
Prepaid expenses and other current assets		**1,523**	2,175
Total current assets		**261,593**	102,802
Non-current assets:			
Property, plant and equipment	9	**21,620**	15,314
Intangible assets	10	**8,285**	17,950
Goodwill	11	**40,287**	40,562
Investments	12	**13,994**	681
Other non-current assets		**321**	348
Total assets		**$ 346,100**	$ 177,657
Liabilities and Equity			
Current liabilities:			
Trade and other payables	14	**$ 21,154**	$ 25,243
Deferred revenue	15	**16,681**	8,082
Provisions and other current liabilities	16	**9,243**	5,447
Finance lease liability	17	**631**	652
Total current liabilities		**47,709**	39,424
Non-current liabilities:			
Finance lease liability	17	**5,064**	6,229
Deferred gain on finance lease liability	17	**2,566**	2,982
Provisions and other non-current liabilities	16	**3,862**	4,253
Employee future benefits	19	**4,299**	4,914
Total liabilities		**63,500**	57,802
Equity:			
Share capital	20	**1,174,889**	986,497
Contributed surplus	20	**291,260**	290,536
Accumulated deficit		**(1,184,400)**	(1,157,382)
Foreign currency reserve		**851**	204
Total equity		**282,600**	119,855
Total liabilities and equity		**$ 346,100**	$ 177,657

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	2018	2017
Revenues:			
Product and service revenues	23	$ 96,586	$ 121,288
Cost of product and service revenues		66,912	79,688
Gross margin		29,674	41,600
Operating expenses:			
Research and product development		27,039	25,022
General and administrative		14,760	12,602
Sales and marketing		8,068	7,951
Other expense	25	605	902
Total operating expenses		50,472	46,477
Results from operating activities		(20,798)	(4,877)
Finance income (loss) and other	26	(449)	1,780
Finance expense	26	(503)	(732)
Net finance income (loss)		(952)	1,048
Loss on sale of assets	27	(4,049)	(1,365)
Equity in earnings (loss) of investment in joint venture and associates	12 & 30	(1,154)	201
Impairment charges on intangible assets and property, plant and equipment	28	—	(1,484)
Loss before income taxes		(26,953)	(6,477)
Income tax expense	29	(370)	(1,571)
Net loss		(27,323)	(8,048)
Other comprehensive income (loss):			
Items that will not be reclassified to profit or loss:			
Actuarial gain (loss) on defined benefit plans	19	305	(206)
		305	(206)
Items that may be reclassified subsequently to profit or loss:			
Foreign currency translation differences		647	(1,139)
		647	(1,139)
Other comprehensive income (loss), net of tax		952	(1,345)
Total comprehensive loss		$ (26,371)	$ (9,393)
Basic and diluted loss per share			
Loss per share		$ (0.15)	$ (0.05)
Weighted average number of common shares outstanding		185,836,596	176,270,305

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					Ballard Power Systems Europe A/S	
	Number of shares	Share capital	Contributed surplus	Accumulated deficit	Foreign currency reserve	Non-controlling interests	Total equity
Balance, December 31, 2016	174,749,630	$ 977,707	$ 295,547	$ (1,149,128)	$ 718	$ (3,301)	$ 121,543
Net loss	—	—	—	(8,048)	—	—	(8,048)
Non dilutive financing	—	—	12	—	—	—	12
DSUs redeemed (note 20)	181,788	297	(737)	—	—	—	(440)
RSUs redeemed (note 20)	298,556	706	(1,421)	—	—	—	(715)
Options exercised (note 20)	1,820,193	5,762	(2,164)	—	—	—	3,598
Warrants exercised (note 20)	1,012,500	2,025	—	—	—	—	2,025
Share-based compensation (note 20)	—	—	2,745	—	—	—	2,745
Ballard Power Systems Europe (NCI) adjustment for change in ownership (note 18)	—	—	(3,446)	—	625	3,301	480
Other comprehensive loss:							
Defined benefit plan actuarial loss	—	—	—	(206)	—	—	(206)
Foreign currency translation for foreign operations					(1,139)		(1,139)
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 20)	**51,831,659**	**183,672**	**—**	**—**	**—**	**—**	**183,672**
DSUs redeemed (note 20)	**154,752**	**356**	**(792)**	**—**	**—**	**—**	**(436)**
RSUs redeemed (note 20)	**149,980**	**338**	**(802)**	**—**	**—**	**—**	**(464)**
Options exercised (note 20)	**945,022**	**2,592**	**(964)**	**—**	**—**	**—**	**1,628**
Warrants exercised (note 20)	**747,563**	**1,434**		**—**	**—**	**—**	**1,434**
Share-based compensation (note 20)	**—**	**—**	**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**

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	**2018**	2017
Cash provided by (used in):			
Operating activities:			
Net loss for the year		**$ (27,323)**	$ (8,048)
Adjustments for:			
Share-based compensation	20	**2,902**	3,125
Employee future benefits		**226**	201
Employee future benefits plan contributions		**(536)**	(660)
Depreciation and amortization		**5,015**	5,064
Loss (gain) on decommissioning liabilities		**(85)**	390
Amortization of deferred lease inducement		**(476)**	—
Loss on sale of assets	27	**4,049**	1,365
Impairment charges on intangible assets and property, plant and equipment	28	**—**	1,484
Impairment loss on trade receivables	25	**98**	103
Unrealized loss (gain) on forward exchange contracts		**570**	(324)
Equity in (earnings) loss of investment in joint venture and associates	12 & 30	**1,154**	(201)
		(14,406)	2,499
Changes in non-cash working capital:			
Trade and other receivables		**(11,702)**	(9,387)
Inventories		**(12,932)**	(572)
Prepaid expenses and other current assets		**426**	930
Trade and other payables		**(5,573)**	6,857
Deferred revenue		**8,607**	(12,539)
Warranty provision		**3,892**	2,444
		(17,282)	(12,267)
Cash used in operating activities		**(31,688)**	(9,768)
Investing activities:			
Additions to property, plant and equipment	9	**(9,854)**	(3,068)
Net proceeds on sale of property, plant and equipment and other	27	**1,345**	981
Additions to intangible assets	10	**—**	(3,376)
Investment in joint venture and associates	12	**(14,606)**	(972)
Purchase of non-controlling interest in subsidiary	18	**—**	(47)
Cash used in investing activities		**(23,115)**	(6,482)
Financing activities:			
Net payment of finance lease liabilities		**(598)**	(607)
Net proceeds on issuance of share capital from share option exercises	20	**1,628**	3,598
Net proceeds on issuance of share capital from warrant exercises	20	**1,434**	2,025
Net proceeds on issuance of share capital from private placement	20	**183,672**	—
Cash provided by financing activities		**186,136**	5,016
Effect of exchange rate fluctuations on cash and cash equivalents held		**647**	(1,139)
Increase (decrease) in cash and cash equivalents		**131,980**	(12,373)
Cash and cash equivalents, beginning of year		**60,255**	72,628
Cash and cash equivalents, end of year		**$ 192,235**	$ 60,255

Supplemental disclosure of cash flow information (note 31).

See accompanying notes to consolidated financial statements.

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 / 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 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, 2018 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 6, 2019.

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 15 Revenue from Contracts with Customers* and *IFRS 9 Financial Instruments* 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.

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 initially adopted *IFRS 15 Revenue from Contracts with Customers* and *IFRS 9 Financial Instruments,* effective January 1, 2018. The effect of initially applying these standards during the year ended December 31, 2018 did not have a material impact on these consolidated financial statements. A number of other new standards are also effective from January 1, 2018 but they also did not have a material 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 15 Revenue from Contracts with Customers*

IFRS 15 Revenue from Contracts with Customers establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaced *IAS 18 Revenue, IAS 11 Construction Contracts* and related interpretations. Under *IFRS 15*, 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.

IFRS 15 contains a single model that applies to contracts with customers and two approaches to recognizing revenue: at a point in time or over time. The model features a contract-based five-step analysis of transactions to determine whether, how much, and when revenue is recognized. New estimates and judgmental thresholds have been introduced, which may affect the amount and/or timing of revenue recognized. The new standard applies to contracts with customers. It does not apply to insurance contracts, financial instruments or lease contracts, which fall in the scope of other IFRSs. The clarifications to *IFRS 15* provide additional guidance with respect to the five-step analysis, transition, and the application of the Standard to licenses of intellectual property.

3. Changes in accounting policies (cont'd):

(a) *IFRS 15 Revenue from Contracts with Customers (cont'd)*

The Corporation has adopted *IFRS 15* using the cumulative effect method, without practical expedients, with the effect of initially applying this standard recognized at the date of initial application of January 1, 2018. Accordingly, the information presented for 2017 has not been restated. It is presented, as previously reported, under *IAS 18*, *IAS 11* and related interpretations.

The adoption of *IFRS15* did not have a material impact on the Corporation's financial statements.

(b) IFRS 9 Financial Instruments

IFRS 9 Financial Instruments sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces *IAS 39 Financial Instruments: Recognition and Measurement*. There was no material impact to the Corporation’s financial statements as a result of transitioning to *IFRS 9*.

IFRS 9 largely retains the existing requirements in *IAS 39* for the classification and measurement of financial liabilities. However, it eliminates the previous *IAS 39* categories for financial assets of held to maturity, loans and receivables and available for sale.

Under *IFRS 9*, financial assets are classified and measured based on the business model in which they are held and the characteristics of their contractual cash flows. The standard introduces additional changes relating to financial liabilities. It also amends the impairment model by introducing a new ‘expected credit loss’ model for calculating impairment.

IFRS 9 also includes a new general hedge accounting standard which aligns hedge accounting more closely with risk management. This new standard does not fundamentally change the types of hedging relationships or the requirement to measure and recognize ineffectiveness; however it will provide more hedging strategies that are used for risk management to qualify for hedge accounting and introduce more judgment to assess the effectiveness of a hedging relationship. Special transitional requirements have been set for the application of the new general hedging model.

The adoption of *IFRS 9* did not have a material 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.

4. Significant accounting policies (cont'd):

(a) Basis of consolidation:

The consolidated financial statements include the accounts of the Corporation and its principal subsidiaries as follows:

	Percentage ownership	
	2018	2017
Guangzhou Ballard Power Systems Co., Ltd.	100%	100%
Ballard Hong Kong Ltd.	100%	100%
Protonex Technology Corporation (renamed Ballard Unmanned Systems Inc. as of January 1, 2019)	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%

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 though 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 exclusive rights in China. Under the agreement, Weichai is to contribute RMB 561,000,000 ($81,600,000 equivalent at December 31, 2018 exchange rate) and the Corporation is to contribute RMB 539,000,000 ($78,400,000 equivalent at December 31, 2018 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.

Weichai Power made an initial capital contribution in 2018 of RMB 102,000,000 and the Corporation made an initial capital contribution of $14,286,000 (RMB 98,000,000 equivalent). In February 2019, the Corporation made an additional capital contribution of $14,506,000 (RMB 98,000,000 equivalent). Weichai Power and the Corporation will fund pro rata shares of the Weichai Ballard JV based on an agreed business plan. Weichai Power will hold three of five Weichai Ballard JV board seats and the Corporation will hold 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.

4. Significant accounting policies (cont'd):

(a) Basis of consolidation (cont'd):

(iii) 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 carry out the Mk9 SSL fuel cell stack technology transfer transaction that was contemplated in the Mk 9 SSL Manufacturing Master Agreement to establish Mk9 SSL fuel cell stack manufacturing capabilities in China. 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.

(iv) 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.

(v) Protonex Technology Corporation

On October 1, 2015, the Corporation acquired Protonex Technology Corporation ("Protonex"), (renamed Ballard Unmanned Systems Inc. as of January 1, 2019), a leading designer and manufacturer of advanced power management products and portable fuel cell solutions.

(vi) Ballard Power Systems Europe

On January 18, 2010, the Corporation acquired a controlling interest in Ballard Power Systems Europe A/S ("BPSE"). BPSE (formerly Dantherm Power A/S) has been consolidated since acquisition. The remaining 43% interest was held by Dansk Industri Invest A/S (previously Dantherm Air Handling A/S). On January 5, 2017, the Corporation purchased all of the shares in its European subsidiary held by Dansk Industri Invest A/S for a nominal value of $47,000. As a result, the Corporation now owns 100% of BPSE.

(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.

4. Significant accounting policies (cont'd):

(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.

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.

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 expenditure

Subsequent expenditure is capitalized only if it is probable that the future economic benefits associated with the expenditure 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. Leased assets are depreciated over the shorter of the lease term and their useful lives unless it is reasonably certain that the Corporation will obtain ownership by the end of the lease term.

The estimated useful lives of property, plant and equipment for current and comparative periods are as follows:

Building under finance lease	15 years
Computer equipment	3 to 7 years
Furniture and fixtures	5 to 14 years
Furniture and fixtures under finance lease	5 years
Leasehold improvements	The shorter of initial term of the respective lease and estimated useful life
Production and test equipment	4 to 15 years
Production and test equipment under finance lease	5 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(f) Leases:

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.

Minimum lease payments made under finance leases are apportioned between finance expenses 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.

The Corporation will adopt the new *IFRS 16 Leases* standard commencing January 1, 2019 (note 6).

4. Significant accounting policies (cont'd):

(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 expenditure, including expenditure on internally generated goodwill, is 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	5 years
Patents, know-how and in-process research & development	5 to 20 years
ERP management reporting software system	7 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.

(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.

4. Significant accounting policies (cont'd):

(h) Impairment (cont'd):

(i) Financial assets (cont'd)

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.

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.

4. Significant accounting policies (cont'd):

(h) Impairment (cont'd):

(ii) Non-financial assets (cont'd)

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.

The details of the new significant accounting policies and the nature of the changes to previous accounting policies in relation to the Corporation's various goods and services are set out below. Under *IFRS 15*, 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.

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 typically on a percentage-of-completion basis, which consists of recognizing revenue for a performance obligation on a given contract proportionately with its percentage of completion at any given time. The percentage of completion is determined by dividing the cumulative costs incurred as at the balance sheet date by the sum of incurred and anticipated costs for completing a contract. The cumulative effect of changes to anticipated revenues and anticipated costs for completing a contract are recognized in the period in which the revisions are identified. In the event that the anticipated costs exceed the anticipated 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.

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.

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 20. 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.

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 typically on a percentage-of-completion basis, which consists of recognizing revenue for a performance obligation on a given contract proportionately with its percentage of completion at any given time. The percentage of completion is determined by dividing the cumulative costs incurred as at the balance sheet date by the sum of incurred and anticipated costs for completing a contract. The cumulative effect of changes to anticipated revenues and anticipated costs for completing a contract are recognized in the period in which the revisions are identified. If the anticipated costs exceed the anticipated revenues on a contract, such loss is recognized in its entirety in the period it becomes known.

- The determination of anticipated 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 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.

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 an 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.

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 does not expect to adopt any of these standards before their effective dates and will continue to evaluate the impact of these standards on the consolidated financial statements.

(a) IFRS 16 - *Leases*

On January 13, 2016, the IASB issued *IFRS 16 Leases*. *IFRS 16* 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 carries forward the lessor accounting requirements of *IAS 17*, 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. Transitional provisions have been provided.

The new standard is effective for annual periods beginning on or after January 1, 2019. *IFRS 16* will replace *IAS 17 Leases* and the related interpretations.

The most significant effect of the new standard will be 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 will result 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 would thus be higher under the new standard. Relative to the results of applying the current standard, although actual cash flows will be unaffected, the lessee's statement of cash flows will 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 would currently be accounted for as operating leases as a cash flow use within financing activities under the new standard.

6. Recent accounting pronouncements and future accounting policy changes:

(a) IFRS 16 - *Leases (cont'd)*

The Corporation will adopt *IFRS 16* in its financial statements for the fiscal year beginning on January 1, 2019. The Corporation intends to apply the modified retrospective approach and will not restate comparative amounts for the year prior to first adoption. Right-of-use assets will be measured on transition at the amount of the lease liability on adoption (adjusted for any prepaid or accrued lease expenses). As a transitional practical expedient permitted by the new standard, the Corporation will not reassess whether contracts are, or contain, leases as at January 1, 2019, that were previously identified as leases applying *IAS 17 Leases*, and *IFRIC 4 Determining whether an Arrangement contains a Lease*. Only contracts entered into (or changed) after January 1, 2019, will be assessed for being, or containing, leases applying the criteria of the new standard. The Corporation also intends to apply the practical expedient for leases that have duration of 12 months or less.

Based on the analysis completed to date of the Corporation's leasing arrangements as of December 31, 2018, on adoption of the new standard on January 1, 2019, the Corporation expects to recognize right-of-use assets of between $9,000,000 and $11,000,000, net of lease incentives (primarily deferred lease inducements) of approximately $2,000,000, and lease liabilities of between $13,000,000 and $15,000,000.

(b) IFRIC *23 - Uncertainty over Income Tax Treatments*

On June 7, 2017, the IASB issued *IFRIC Interpretation 23 Uncertainty over Income Tax Treatments*. The Interpretation 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 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 Interpretation is applicable for annual periods beginning on or after January 1, 2019. The Corporation will adopt the Interpretation in its financial statements for the fiscal year beginning on January 1, 2019. Based on an analysis of the Corporation's historic tax filing positions as of January 1, 2019, the Corporation does not expect the Interpretation to have a material impact on the consolidated financial statements.

(c) 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 does not intend to adopt the Amendments in its financial statements before the annual period beginning on January 1, 2020. The extent of the impact of the change has not yet been determined.

6. Recent accounting pronouncements and future accounting policy changes (cont'd):

(d) 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 does not intend to adopt the amendments in its financial statements before the annual reporting period beginning on January 1, 2020. The extent of the impact of adoption of the amendments has not yet been determined.

e) 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 does not intend to adopt the amendments in its financial statements before the annual reporting period beginning on January 1, 2020. The extent of the impact of adoption of the amendments has not yet been determined.

7. Trade and other receivables:

	December 31, 2018	December 31, 2017
Trade accounts receivable	$ 21,724	$ 20,439
Other receivables	7,706	1,637
Contract assets	9,094	1,004
	$ 38,524	$ 23,080

Contract assets primarily relate to the Corporation's rights to consideration for work completed but not billed as at December 31, 2018 for engineering services and technology transfer services.

Contract assets	December 31, 2018
At January 1, 2018	$ 1,004
Additions to contract assets	9,030
Invoiced during the year	(940)
At December 31, 2018	$ 9,094

8. Inventories:

	December 31, 2018	December 31, 2017
Raw materials and consumables	$ 15,547	$ 8,663
Work-in-progress	10,034	4,694
Finished goods	1,460	2,440
Service inventory	2,270	1,495
	$ 29,311	$ 17,292

In 2018, the amount of raw materials and consumables, finished goods and work-in-progress recognized as cost of product and service revenues amounted to $39,647,000 (2017 - $55,342,000).

In 2018, the write-down of inventories to net realizable value amounted to $1,300,000 (2017 - $611,000) and the reversal of previously recorded write-downs amounted to $409,000 (2017 - $531,000), resulting in a net write-down of $891,000 (2017 - $80,000). 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:

Net carrying amounts	December 31, 2018	December 31, 2017
Building under finance lease	$ 5,007	$ 5,819
Computer equipment	1,639	1,020
Furniture and fixtures	67	155
Leasehold improvements	1,019	1,624
Production and test equipment	13,888	6,696
	$ 21,620	$ 15,314

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 and impairment loss	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 (note 16).

9. Property, plant and equipment (cont'd):

Cost	December 31, 2016	Additions	Disposals	Transfers	Effect of movements in exchange rates	December 31, 2017
Building under finance lease	$ 12,180	$ —	$ —	$ —	$ —	$ 12,180
Computer equipment	4,607	390	(169)	(54)	13	4,787
Furniture and fixtures	1,163	32	(17)	—	12	1,190
Leasehold improvements	8,794	7	(594)	—	39	8,246
Production and test equipment	33,053	2,639	(809)	1,532	16	36,431
Production and test equipment under finance lease	2,078	—	—	(2,078)	—	—
	$ 61,875	$ 3,068	$ (1,589)	$ (600)	$ 80	$ 62,834

Accumulated depreciation and impairment loss	December 31, 2016	Depreciation	Impairment loss	Disposals	Transfers	Effect of movements in exchange rates	December 31, 2017
Building under finance lease	$ 5,549	$ 812	$ —	$ —	$ —	$ —	$ 6,361
Computer equipment	3,558	365	—	(169)	—	13	3,767
Furniture and fixtures	978	62	—	(17)	—	12	1,035
Leasehold improvements	6,606	566	—	(594)	—	44	6,622
Production and test equipment	28,040	1,366	284	(809)	843	11	29,735
Production and test equipment under finance lease	1,443	—	—	—	(1,443)	—	—
	$ 46,174	$ 3,171	$ 284	$ (1,589)	$ (600)	$ 80	$ 47,520

During the year ended December 31, 2018, the Corporation disposed of certain property, plant and equipment totaling $495,000 primarily related to Protonex' Power Manager business (note 27).

Leased assets

The Corporation leases certain assets under finance lease agreements including the Corporation's head office building in Burnaby, British Columbia (note 17).

Impairment loss

The Corporation recorded an impairment loss on property, plant and equipment of $284,000 in 2017 related to the write-off of certain Protonex Solid Oxide Fuel Cell assets to their estimated net realizable value of $50,000 (note 28).

10. Intangible assets:

	December 31, 2018	December 31, 2017
Intellectual property acquired from UTC	$ 1,417	$ 1,864
Intellectual property acquired from H2 Logic A/S	43	129
Intellectual property acquired from Protonex	787	8,507
Internally generated fuel cell intangible assets	1,199	1,690
ERP management reporting software system	4,825	5,738
Intellectual property acquired by Ballard Power Systems Europe	14	22
	$ 8,285	$ 17,950

10. Intangible assets (cont'd):

Intangible assets Balance	Cost	Accumulated amortization	Net carrying amount
At January 1, 2017	$ 66,171	$ 48,088	$ 18,083
Additions to and acquisition of intangible assets	3,376	—	3,376
Amortization expense	—	2,309	(2,309)
Impairment charges (note 28)	—	1,200	(1,200)
At December 31, 2017	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 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 2018, amortization of $2,354,000 (2017 - $2,309,000) was recorded.

During the year ended December 31, 2018, the Corporation disposed of intangible assets of $7,311,000 related to Protonex' Power Manager business (note 27).

During the year ended December 31, 2017, the Corporation recorded an impairment loss on intellectual property of $1,200,000 related to the write-off of certain Protonex Solid Oxide Fuel Cell assets to their estimated net realizable value of $nil (note 28).

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 32).

Fuel Cell Products and Services

As of December 31, 2018, the aggregate carrying amount of the Corporation’s goodwill is $40,287,000 (2017 - $40,562,000).

During the year ended December 31, 2018, the Corporation adjusted its goodwill downward by $275,000 related to the sale of the assets related to Protonex' Power Manager business (note 27).

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, 2018 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 from this enterprise value, arriving 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, 2018.

11. Goodwill (cont'd):

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 ("WACC"), and terminal value assumptions. The Corporation's value in use test was based on a WACC of 10%; an average estimated compound annual growth rate of approximately 23% from 2019 to 2023; and a terminal year earnings before interest, taxes, depreciation and amortization ("EBITDA") multiplied by a terminal value multiplier of 10; and a WACC of 8% and a terminal year revenue multiplier of 5 for Weichai Ballard JV. 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 2018 or 2017.

12. Investments:

	December 31, 2018	December 31, 2017
Investment in Synergy Ballard JVCo (note 4)	$ —	$ 676
Investment in Weichai Ballard JV (note 4)	13,989	—
Other	5	5
	$ 13,994	$ 681

Investment in Synergy Ballard JVCo	December 31, 2018	December 31, 2017
Beginning balance	$ 676	$ 1,185
Adjustment for actual cash contributed to JV	—	(34)
Elimination of 10% profit on MEAs not yet sold or consumed	(139)	(676)
Equity in earnings (loss)	(537)	201
	$ —	$ 676

Of the $1,185,000 beginning balance at January 1, 2017, $972,000 was contributed to the investment in Synergy Ballard JVCo in 2016.

Investment in Weichai Ballard JV	December 31, 2018	December 31, 2017
Capital contribution to JV	$ 14,286	$ —
Incorporation costs	320	—
Equity in loss	(617)	—
	$ 13,989	$ —

Weichai Ballard JV is an associate in which the Corporation has significant influence and a 49% ownership interest.

The following table summarizes the financial information of Weichai Ballard JV as included in its own financial statements as of December 31, 2018, adjusted for foreign exchange differences and the Corporation's accounting policies and its own costs incurred to setup.

12. Investments (cont'd):

		2018
Percentage ownership interest		49%
Cash	$	20,107
Prepaid expenses and other current assets		8,856
Trade and other payables		(1,123)
Net assets (100%)	$	27,840
Corporation's share of net assets (49%)		13,642
Incorporation costs		320
Foreign exchange		27
Carrying amount of investment in Weichai Ballard JV	$	13,989
Operating expenses		1,259
Net loss (100%)	$	1,259
Corporation's share of net loss (49%)	$	617

At December 31, 2018, as specified in the Equity Joint Venture Agreement, the Corporation is committed to capital contributions to Weichai Ballard JV as follows:

Less than 1 year	$	20,839
1-3 years		34,198
4-5 years		9,084
Total capital contributions	$	64,121

In February 2019, the Corporation made a committed capital contribution of $14,506,000 (RMB 98,000,000 equivalent) to Weichai Ballard JV.

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.

There was no activity under the Operating Facility in 2018, and there were no outstanding amounts payable on the Operating Facility as of December 31, 2018 and 2017.

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, 2018, $nil (2017 - a nominal amount) was outstanding on the Leasing Facility which is included in the finance lease liability (note 17).

13. Bank facilities (cont'd):

Forward Contract Facility (cont'd)

The Corporation also has a CDN $5,000,000 demand revolving line ("Forward Contract Facility") and a CDN $30,000,000 credit facility ("EncoreFX Facility"), which are both available for use when the Corporation purchases forward foreign exchange contracts or forward platinum contracts used to hedge against currency and platinum price fluctuations, respectively.

Periodically, the Corporation uses forward foreign exchange and forward platinum purchase contracts to manage exposure to currency rate fluctuations and platinum price 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, 2018, the Corporation had outstanding foreign exchange currency contracts to purchase a total of CDN $17,400,000 (2017 – CDN $12,000,000) at an average rate of 1.30 CDN per U.S. dollar, resulting in an unrealized loss of CDN $777,000 at December 31, 2018 (2017 – unrealized gain of CDN $243,000). The outstanding foreign exchange currency contracts are not qualified under hedge accounting.

14. Trade and other payables:

	December 31, 2018	December 31, 2017
Trade accounts payable	$ 6,924	$ 13,181
Compensation payable	8,505	9,209
Other liabilities	5,327	2,491
Taxes payable	398	362
	$ 21,154	$ 25,243

15. Deferred revenue:

Deferred revenue (i.e. contract liabilities) represents cash received from customers in excess of revenue recognized on uncompleted contracts.

Deferred revenue	December 31, 2018
At January 1, 2018	$ 8,082
Additions to deferred revenue	19,353
Revenue recognized during the year	(10,754)
At December 31, 2018	$ 16,681

16. Provisions and other liabilities:

Balance	Restructuring provision	Warranty provision	Other liabilities	Total
At January 1, 2017	$ 813	$ 2,755	$ 3,864	$ 7,432
Provisions made during the year	912	4,540	111	5,563
Provisions used/paid during the year	(1,424)	(905)	—	(2,329)
Provisions reversed during the year	(81)	(1,198)	—	(1,279)
Effect of movements in exchange rates	28	7	278	313
At December 31, 2017	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 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

At December 31, 2017				
Current	$ 248	$ 5,199	$ —	$ 5,447
Non-current	—	—	4,253	4,253
	$ 248	$ 5,199	$ 4,253	$ 9,700

At December 31, 2018				
Current	$ 191	$ 9,052	$ —	$ 9,243
Non-current	—	—	3,862	3,862
	$ 191	$ 9,052	$ 3,862	$ 13,105

Restructuring provision

During 2018, restructuring charges relate primarily to a change in operations leadership combined with severance obligations paid to departed employees at Protonex as a result of the disposition of the Power Manager assets and associated personnel (note 27).

During 2017, restructuring charges relate primarily to a leadership change in sales and marketing, combined with cost reduction initiatives in the general and administration function and by cost reduction initiatives at Protonex.

Warranty provision

The Corporation recorded $5,474,000 (2017 - $4,540,000) of warranty provisions of which $4,414,000 (2017 - $4,057,000) related to new product sales and $1,060,000 (2017 - $483,000) related to upward warranty adjustments. This was offset by warranty expenditures of $1,409,000 (2017 - $905,000) and downward warranty adjustments of $208,000 (2017 - $1,198,000), due primarily to contractual expirations and changes in estimated and actual costs to repair. The remaining $4,000 (2017 – $7,000 increase) reduction 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.

16. Provisions and other liabilities (cont'd):

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 2.18% per annum (2017 – 2.26%).

The Corporation performed an assessment of the estimated cash flows required to settle the obligations for the building as of December 31, 2018. Based on the assessment, a $171,000 increase in the provision (2017 - $nil) was recorded against decommissioning liabilities, in addition to accretion costs of $36,000 (2017 - $111,000).

The total undiscounted amount of the estimated cash flows required to settle the obligation for the building is $1,825,000 (2017 - $1,773,000) 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 $2,768,000 for the second building was treated as a lease inducement and was deferred and amortized on a straight-line basis over the amended 10 year lease term, commencing January 2018.

As at December 31, 2018, the deferred lease inducement amounted to $2,292,000.

17. Finance lease liability:

The Corporation leases its head office building under finance lease agreements. The finance lease has an imputed interest rate of 7.35% per annum and expires in February 2025.

Finance lease liabilities are payable as follows:

		December 31, 2018		December 31, 2017
Building lease	$	631	$	638
Machinery lease		—		14
Finance lease liability, current	$	631	$	652

Building lease	$	5,064	$	6,191
Machinery lease		—		38
Finance lease liability, non-current	$	5,064	$	6,229

At December 31, 2018		Future minimum lease payments		Interest		Present value of minimum lease payments
Less than one year	$	1,023	$	392	$	631
Between one and five years		4,710		960		3,750
More than five years		1,374		60		1,314
	$	7,107	$	1,412	$	5,695

Current	$	631
Non-current		5,064
	$	5,695

17. Finance lease liability (cont'd):

At December 31, 2017	Future minimum lease payments	Interest	Present value of minimum lease payments
Less than one year	$ 1,127	$ 475	$ 652
Between one and five years	4,992	1,323	3,669
More than five years	2,774	214	2,560
	$ 8,893	$ 2,012	$ 6,881

Current	$ 652
Non-current	6,229
	$ 6,881

The finance lease liability consists primarily of the lease of the Corporation's head office building of $5,695,000 (2017 - $6,829,000) and machinery leased by its subsidiary, Protonex of $nil (2017 - $52,000).

Deferred gains were also recorded on closing of the finance lease agreement and are amortized over the finance lease term. At December 31, 2018, the outstanding deferred gain was $2,566,000 (2017 – $2,982,000).

18. Ballard Power Systems Europe A/S non-controlling interests:

On January 5, 2017, the Corporation purchased all of the shares in its European subsidiary held by Dansk Industri Invest A/S (previously Dantherm Air Handling A/S) for a nominal amount. As a result, the Corporation now owns 100% of it subsidiary in Europe, BPSE (formerly Dantherm Power A/S) effective January 5, 2017. The Corporation previously held 57% of the shares in BPSE before purchasing the remaining 43% of shares from Dansk Industri Invest A/S.

The Corporation acquired the remaining shares and obtained the cancellation of debt of $521,000 owed by BPSE to Dansk Industri Invest A/S for $47,000. The cancellation of debt and the removal of non-controlling interests were recorded as equity transactions resulting in a net increase of $480,000 to equity. There was no impact on the Corporation's consolidated statement of loss and other comprehensive loss.

19. Employee future benefits:

	December 31, 2018	December 31, 2017
Net defined benefit pension plan liability	$ 4,215	$ 4,794
Net other post-retirement benefit plan liability	84	120
Employee future benefits	$ 4,299	$ 4,914

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.

19. Employee future benefits (cont'd):

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, 2018. The next actuarial valuation of the employee future benefit plans for funding purposes is expected to be performed as of January 1, 2019.

The Corporation expects contributions of approximately $500,000 to be paid to its defined benefit plans in 2019.

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	
Defined benefit pension plan	**2018**	2017	**2018**	2017	**2018**	2017
Balance at January 1	**$ 17,603**	$ 16,253	**$ (12,809)**	$ (11,282)	**$ 4,794**	$ 4,971
Included in profit or loss						
Current service cost	**57**	32	**—**	—	**57**	32
Interest cost (income)	**621**	658	**(455)**	(464)	**166**	194
Benefits payable	**—**	—	**—**	—	**—**	—
	678	690	**(455)**	(464)	**223**	226
Included in other comprehensive income						
Remeasurements loss (gain):						
Actuarial loss (gain) arising from:						
Demographic assumptions	**(49)**	(99)	**—**	—	**(49)**	(99)
Financial assumptions	**(1,331)**	1,300	**—**	—	**(1,331)**	1,300
Experience adjustment	**(2)**	111	**—**	—	**(2)**	111
Return on plan assets excluding interest income	**—**	—	**1,075**	(1,055)	**1,075**	(1,055)
Plan expenses	**(35)**	(55)	**35**	55	**—**	—
	(1,417)	1,257	**1,110**	(1,000)	**(307)**	257
Other						
Contributions paid by the employer	**—**	—	**(495)**	(660)	**(495)**	(660)
Benefits paid	**(609)**	(597)	**609**	597	**—**	—
	(609)	(597)	**114**	(63)	**(495)**	(660)
Balance at December 31	**$ 16,255**	$ 17,603	**$ (12,040)**	$ (12,809)	**$ 4,215**	$ 4,794

19. Employee future benefits (cont'd):

	Defined benefit obligation		Fair value of plan assets		Net defined benefit liability	
Other post-retirement benefit plan	**2018**	2017	**2018**	2017	**2018**	2017
Balance at January 1	**$ 120**	$ 196	**$ —**	$ —	**$ 120**	$ 196
Included in profit or loss						
Interest cost (income)	**3**	4	**—**	—	**3**	4
	3	4	**—**	—	**3**	4
Included in other comprehensive income						
Remeasurements loss (gain):						
Actuarial loss (gain) arising from:						
Demographic assumptions	**—**	(1)	**—**	—	**—**	(1)
Financial assumptions	**(5)**	3	**—**	—	**(5)**	3
Experience adjustment	**7**	(53)	**—**	—	**7**	(53)
	2	(51)	**—**	—	**$ 2**	$ (51)
Other						
Contributions paid by the employer	**—**	—	**(41)**	(29)	**(41)**	(29)
Benefits paid	**(41)**	(29)	**41**	29	**—**	—
	(41)	(29)	**—**	—	**(41)**	(29)
Balance at December 31	**$ 84**	$ 120	**$ —**	$ —	**$ 84**	$ 120

Included in other comprehensive income (loss)	December 31, 2018	December 31, 2017
Defined benefit pension plan actuarial gain (loss)	$ 307	$ (257)
Other post-retirement benefit plan actuarial gain (loss)	(2)	51
	$ 305	$ (206)

Pension plan assets comprise:

	2018	2017
Cash and cash equivalents	3%	3%
Equity securities	59%	60%
Debt securities	38%	37%
Total	100%	100%

The significant actuarial assumptions adopted in measuring the fair value of benefit obligations at December 31 were as follows:

	2018		2017	
	Pension plan	Other benefit plan	Pension plan	Other benefit plan
Discount rate	4.16%	3.96%	3.60%	3.27%
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:

	2018		2017	
	Pension plan	Other benefit plan	Pension plan	Other benefit plan
Discount rate	3.60%	3.96%	4.13%	3.27%
Rate of compensation increase	n/a	n/a	n/a	n/a

19. 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:

	2018	2017
Initial medical/dental health care cost trend rate	n/a	8.0%
Cost trend rate declines to medical and dental	n/a	5.0%
Year that the medical rate reaches the rate it is assumed to remain at	2023	2022
Year that the dental rate reaches the rate it is assumed to remain at	2018	2017

A one-percentage-point change in assumed health care cost trend rates would not have a material impact on the Corporation's financial statements.

20. Equity:

Share-based Compensation		December 31, 2018		December 31, 2017
Option Expense	$	1,676	$	1,245
DSU Expense for 2018		307		679
DSU Expense Adjustment for 2017		(45)		—
RSU Expense		964		1,201
Total Share-based Compensation (included in net loss)	$	2,902	$	3,125
2017 DSU Expense (issued in 2018) (note 20 (e))		380		(380)
Total Share-based Compensation (per statement of equity)	$	3,282	$	2,745

(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. (a current strategic investor) 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

20. Equity (cont'd):

(b) Share Purchase Warrants:

Warrants Outstanding	Exercise price of $ 1.50	Exercise price of $ 2.00	Total Warrants
At January 1, 2017	122,563	1,675,000	1,797,563
Warrants exercised in 2017	—	(1,012,500)	(1,012,500)
At December 31, 2017	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 2018, 747,563 (2017 - 1,012,500) warrants were exercised for an equal amount of common shares for net proceeds of $1,434,000 (2017 - $2,025,000).

At December 31, 2018, no share purchase warrants were issued and outstanding (2017 – 785,063).

(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, 2017	5,537,729	$ 1.84
Options granted	1,498,776	2.21
Options exercised	(1,820,193)	1.99
Options forfeited	(277,839)	1.91
Options expired	(110,300)	2.31
At December 31, 2017	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	$ 2.34

20. Equity (cont'd):

(c) Share options (cont'd):

The following table summarizes information about the Corporation's share options outstanding as at December 31, 2018:

	Options outstanding			Options exercisable	
Range of exercise price	Number outstanding	Weighted average remaining contractual life (years)	Weighted average exercise price	Number exercisable	Weighted average exercise price
$0.83 - $1.19	208,167	1.2	$ 0.90	208,167	$ 0.90
$1.23 - $1.96	1,689,154	4.6	1.64	736,818	1.51
$2.00 - $2.74	1,994,924	3.9	2.39	1,441,920	2.32
$2.80 - $3.74	1,241,216	6.0	3.48	68,190	3.21
	5,133,461	4.5	$ 2.34	2,455,095	$ 1.98

During 2018, 945,022 options were exercised for an equal amount of common shares for proceeds of $1,628,000. During 2017, 1,820,193 options were exercised for an equal amount of common shares for proceeds of $3,598,000 .

During 2018, options to purchase 1,675,640 common shares were granted with a weighted average fair value of $1.70 (2017 – 1,498,776 options and $1.09 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:

	2018	2017
Expected life	4 years	4 years
Expected dividends	Nil	Nil
Expected volatility	64%	70%
Risk-free interest rate	2%	1%

As at December 31, 2018, options to purchase 5,133,461 common shares were outstanding (2017 – 4,828,173). During 2018, compensation expense of $1,676,000 (2017 – $1,245,000) 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, 2018, there were 12,051,923 (2017 – 11,617,902) shares available to be issued under this plan.

During 2017 and 2018, 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.

20. Equity (cont'd):

(e) Deferred share units (cont'd):

Balance	DSUs for common shares
At January 1, 2017	1,125,250
DSUs granted	87,682
DSUs exercised	(347,588)
At December 31, 2017	865,344
DSUs granted	179,469
DSUs exercised	(297,600)
At December 31, 2018	747,213

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 2017, $679,000 of compensation expense was recorded in net loss, of which $299,000 related to DSUs granted during the year. The remaining $380,000 related to compensation expense recorded in 2017 for DSUs ultimately issued in 2018.

During 2018, 297,600 DSUs (2017 – 347,588) were exercised, net of applicable taxes, which resulted in the issuance of 154,752 common shares (2017 – 181,788).

As at December 31, 2018, 747,213 deferred share units were outstanding (2017 – 865,344).

(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 of specified performance criteria, resulting in additional RSUs being converted and likewise if there is an under-achievement of specified performance criteria, a lower number of RSUs will be 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 20(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 2018 and 2017.

	RSUs for common shares
At January 1, 2017	1,473,408
RSUs granted	735,978
RSU performance factor adjustment	186,083
RSUs exercised	(560,677)
RSUs forfeited	(160,155)
At December 31, 2017	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

20. Equity (cont'd):

(f) Restricted share units (cont'd):

During 2018, 379,257 RSUs were issued (2017 – 735,978). 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 2018, compensation expense of $964,000 (2017 - $1,201,000) was recorded in net loss.

During 2018, 290,820 RSUs (2017 – 560,677) were exercised, net of applicable taxes, which resulted in the issuance of 149,980 common shares (2017 – 298,556).

As at December 31, 2018, 1,778,192 RSUs were outstanding (2017 – 1,674,637).

21. Operating leases:

In addition to other minor operating leases, the Corporation leases a facility at its Burnaby, Canada location (which has been assessed as an operating lease). This facility had a lease term expiring in 2019 which was extended to 2027 under a lease extension and modification agreement signed in December 2017. During 2018, lease payments of $2,144,000 relating to this lease were expensed (2017 - $2,107,000).

At December 31, 2018, the Corporation is committed to payments under all operating leases as follows:

Less than 1 year	$	2,335
1-3 years		4,436
4-5 years		4,148
Thereafter		6,851
Total minimum lease payments	$	17,770

22. 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, 2018 and December 31, 2017.

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, 2018, 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, 2018, no royalties have been incurred to date for this agreement.

At December 31, 2018, the Corporation has outstanding commitments aggregating up to a maximum of $2,911,000 (2017 - $3,049,000) relating primarily to purchases of property, plant and equipment.

The Corporation is committed to capital contributions to Weichai Ballard JV over a four year period (note 12).

In January, February and April 2018, certain related class action complaints were filed in U.S. Federal Court alleging violations of U.S. federal securities laws. In April 2018, plaintiffs voluntarily dismissed all but one of their cases, *Porwal v. Ballard Power Systems, Inc. et al* (S.D.N.Y.). Under the current scheduling order in this action, Plaintiffs filed an amended complaint on June 22, 2018. The Corporation will vigorously contest, and defend against, the complaints and believes the complaints are without merit.

23. 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.

As disclosed in note 3, the application of *IFRS 15 Revenue from Contracts with Customers* at January 1, 2018 did not have a material impact on the Corporation's consolidated financial statements.

In the following table, revenue is disaggregated by geographical market, by market application, and by timing of revenue recognition.

	December 31, 2018	December 31, 2017
Geographical markets		
China	$ 30,791	$ 76,558
Europe	37,590	26,145
North America	23,871	15,425
Other	4,334	3,160
	$ 96,586	$ 121,288
Market application		
Heavy Duty Motive	39,464	63,684
Portable Power	7,109	4,468
Material Handling	8,010	7,535
Back Up Power	2,426	1,933
Technology Solutions	39,577	43,668
	$ 96,586	$ 121,288
Timing of revenue recognition		
Products transferred at a point in time	53,729	73,840
Products and services transferred over time	42,857	47,448
	$ 96,586	$ 121,288

24. 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, 2018	December 31, 2017
Salaries and employee benefits	$ 46,381	$ 44,763
Share-based compensation (note 20)	2,902	3,125
	$ 49,283	$ 47,888

25. Other operating expense:

	December 31, 2018	December 31, 2017
Net impairment loss on trade receivables	$ 98	$ 103
Restructuring expense	507	799
	$ 605	$ 902

25. Other operating expense (cont'd):

In 2018, the Corporation recorded net impairment losses of $98,000 (2017 - $103,000) primarily due to amounts that remained uncollected. 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.

During 2018, restructuring charges of $507,000 relate primarily to a change in operations leadership combined with severance obligations paid to departed employees at Protonex as a result of the disposition of the Power Manager assets and associated personnel (note 27).

During 2017, restructuring charges of $799,000 relate primarily to a leadership change in sales and marketing, combined with cost reduction initiatives in the general and administrative function and by cost reduction initiatives at Protonex.

26. Finance income and expense:

		2018		2017
Employee future benefit plan expense (note 19)	$	(226)	$	(230)
Pension administration expense		(117)		(118)
Investment and other income		1,034		417
Other income (loss)		(62)		19
Foreign exchange gain (loss)		(1,078)		1,692
Finance income (loss) and other	$	(449)	$	1,780
Finance expense	$	(503)	$	(732)

27. Loss on sale of assets:

		2018		2017
Loss on sale of Power Manager assets	$	(3,957)	$	—
Loss on sale of SOFC assets		(94)		(508)
Loss on sale of Telecom Backup Power assets		—		(866)
Gain on miscellaneous disposals		2		9
	$	(4,049)	$	(1,365)

		2018		2017
Cash proceeds received on sale of Power Manager assets	$	2,000	$	—
Less: Disposition costs		(707)		—
Net cash proceeds received on sale of Power Manager assets	$	1,293		—
Cash proceeds received on sale of SOFC assets		50		—
Cash proceeds received on sale of Telecom Backup Power assets		—		972
Cash proceeds from miscellaneous disposals		2		9
Net cash proceeds received on sale of assets	$	1,345	$	981

27. Loss on sale of assets (cont'd):

Loss on sale of Power Manager assets

During the year ended December 31, 2018, the Corporation divested certain assets of Protonex related to its Power Manager business while retaining certain Protonex assets related to fuel cell propulsion systems for the unmanned systems market. The Power Manager assets were sold to Revision, a private U.S. based company. At closing, the Corporation received initial proceeds of $2,000,000, a $2,132,000 note receivable payable in the second quarter of 2019, and may receive up to a further $11,250,000, based on achievement of specific sales objectives during a 12-month earn-out period. During the year ended December 31, 2018, the Corporation recorded a loss on sale of these assets of $3,957,000 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. The estimate of the ultimate transaction price, including the estimate of the amount of earn-out variable consideration that is considered constrained of $2,000,000, will be reassessed each quarter-end during 2019. Any change in the estimated transaction price will result in an adjustment to the above noted loss on sale of assets which will be recognized on a prospective basis.

Cash proceeds received in 2018	$	2,000
Note receivable as of December 31, 2018		2,132
Proceeds receivable (constrained estimate of earn-out payments)		2,000
Total proceeds		6,132
Less: Disposition costs		(707)
Net proceeds		5,425
Less: Net book value of disposed assets		(9,382)
Loss on sale of assets in 2018	$	(3,957)

Loss on sale of SOFC assets

During the year ended December 31, 2017, the Corporation performed a strategic review of its subsidiary, Protonex, specifically its Solid Oxide Fuel Cells ("SOFC") business. As a result, certain SOFC assets were transferred to a private start-up company, Upstart Power Inc. ("Upstart"), effective December 31, 2017 for nominal consideration, resulting in a loss on sale of assets of $508,000. Upstart also received an Option to Purchase certain property, plant and equipment that was used primarily for SOFC fuel cell development. This Equipment Purchase Option was exercised in August 2018, resulting in cash proceeds of $50,000 and a further loss on sale of property, plant and equipment of $94,000.

Loss on sale of Telecom Backup Power assets

During the year ended December 31, 2017, the Corporation recorded an additional loss on sale of assets of $866,000 as the remaining potential purchase price was written down to its revised estimated fair value of $nil.

28. Impairment charges on intangible assets and property, plant and equipment:

During the year ended December 31, 2017, the Corporation recorded total impairment losses of $1,484,000, consisting of a $1,200,000 impairment charge on intangible assets and a $284,000 impairment charge on property, plant and equipment as the Corporation wrote-off certain SOFC assets to their estimated net realizable value of $50,000. The impairment charges were incurred as a result of the Corporation's divestiture of its SOFC assets to Upstart Power (note 27).

29. 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:

		2018		2017
Current tax expense				
Current period income tax	$	51	$	34
Withholding tax		319		1,537
Total current tax expense	$	370	$	1,571
Deferred tax expense				
Origination and reversal of temporary differences	$	1,834	$	(13,227)
Adjustments for prior periods		(1,138)		(1,922)
Change in unrecognized deductible temporary differences		(696)		15,149
Total deferred tax expense	$	—	$	—
Total income tax expense	$	370	$	1,571

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:

		2018		2017
Net loss before income taxes	$	(26,953)	$	(6,477)
Expected tax recovery at 27.00% (2017 – 26.00%)	$	(7,277)	$	(1,684)
Increase (reduction) in income taxes resulting from:				
Non-deductible expenses		1,009		362
Investment tax credits earned		(2,439)		(1,300)
Foreign tax rate differences		227		(1,341)
Change in unrecognized deductible temporary differences		8,531		3,997
Other		319		1,537
Income taxes	$	370	$	1,571

(b) Unrecognized deferred tax liabilities:

At December 31, 2018, 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, 2018, the Corporation did not recognize any deferred tax assets resulting from the following deductible temporary differences for financial statement and income tax purposes.

		2018		2017
Scientific research expenditures	$	83,661	$	81,459
Accrued warranty provision		15,892		14,209
Share issuance costs		668		982
Losses from operations carried forward		107,339		110,851
Investment tax credits		30,231		29,473
Property, plant and equipment and intangible assets		168,311		173,928
	$	406,102	$	410,902

29. Income taxes (cont'd):

(c) Unrecognized deferred tax asset (cont'd):

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:

		2018		2017
Canadian scientific research expenditures	$	83,661	$	81,459
Canadian losses from operations		33,801		38,840
Canadian investment tax credits		30,231		29,473
German losses from operations for corporate tax purposes		553		624
U.S. federal losses from operations		45,140		43,074
Denmark losses from operations		25,757		27,068
Hong Kong losses from operations		24		6

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 2030 to 2038.

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 2038.

30. 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: Synergy Ballard JVCo and Weichai Ballard JV.

For the year ended December 31, 2018 and 2017, 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		2018		2017
Trade and other receivables	$	481	$	1,415
Investments		—		676
Deferred revenue		2,021		2,973

Transactions during the year with related party - Synergy Ballard JVCo		2018		2017
Revenues	$	17,547	$	30,916

30. Related party transactions (cont'd):

For the year ended December 31, 2018 and 2017, 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		2018		2017
Trade and other receivables	$	1,123	$	—
Investments		13,989		—
Deferred revenue		8,875		—

Transactions during the year with related party - Weichai Ballard JV		2018		2017
Revenues	$	1,248	$	—

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 20).

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.

Key management personnel compensation is comprised of:

		2018		2017
Salaries and employee benefits	$	2,869	$	3,420
Post-employment retirement benefits		49		52
Termination benefits		12		516
Share-based compensation (note 20)		1,353		1,749
	$	4,283	$	5,737

31. Supplemental disclosure of cash flow information:

Non-cash financing and investing activities:		2018		2017
Compensatory shares	$	693	$	1,003
Constrained earn-out receivable on sale of assets		2,000		—

32. 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 fuel cell applications.

As a result of the sale of the Power Manager assets (note 27) 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 Protonex assets related primarily to fuel cell propulsion systems for unmanned systems.

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.

In 2017, revenues included sales to three individual customers of $31,080,000, $30,555,000 and $17,989,000, respectively, which each exceeded 10% of total revenue.

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		2018		2017
China	$	30,791	$	76,558
Germany		28,685		18,984
U.S.		23,505		14,881
Japan		3,901		2,579
Belgium		3,531		308
Denmark		1,889		808
UK		1,431		943
Netherlands		892		374
Canada		366		551
Taiwan		287		483
France		276		1,755
Poland		213		2,455
Finland		198		379
Norway		187		37
Spain		168		5
Other countries		266		188
	$	96,586	$	121,288

Non-current assets by geographic area are as follows:

Non-current assets		December 31, 2018		December 31, 2017
Canada	$	65,346	$	60,481
U.S.		4,880		13,622
China		14,012		692
Denmark		269		60
	$	84,507	$	74,855

33. 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).

(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, 2018, the Corporation held Canadian dollar denominated cash and cash equivalents of CDN $18,490,000 and outstanding forward foreign exchange contracts to sell a total of CDN $17,400,000 in 2018 at an average rate of CDN $1.30 to US $1.00.

The following exchange rates applied during the year ended December 31, 2018:

	$U.S. to $1.00 CDN	$CDN to $1.00 U.S.
January 1, 2018 Opening rate	$0.798	$1.254
December 31, 2018 Closing rate	$0.734	$1.363
Fiscal 2018 Average rate	$0.772	$1.296

Based on cash and cash equivalents and forward foreign exchange contracts held at December 31, 2018, 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 $2,633,000 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.

33. Financial instruments (cont'd):

(b) Financial risk management (cont'd):

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, 2018, 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.

Based on cash and cash equivalents at December 31, 2018, a 0.25% decline in interest rates, with all other variables held constant, would result in a decrease in investment income of $481,000. 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 counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Corporation's accounts receivable. The Corporation manages its exposure to credit risk on accounts receivable by assessing the ability of counterparties to fulfill their obligations under the related contracts prior to entering into such contracts, and continuously monitors these exposures.

34. Subsequent Event:

In February 2019, the Corporation made a committed capital contribution of $14,506,000 (RMB 98,000,000 equivalent) to Weichai Ballard JV (note 12).

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