U.S. SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 40-F

☐ Registration statement pursuant to Section 12 of the Securities Exchange Act of 1934

or

☒ Annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934

For the fiscal year ended: **December 31, 2018** Commission File Number: **000-53543**

Ballard Power Systems Inc.

(Exact name of registrant as specified in its charter)

British Columbia, Canada	**3620**	**Not Applicable**
(Province or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

9000 Glenlyon Parkway

Burnaby, BC

Canada V5J 5J8

(604) 454-0900

(Address and telephone number of registrant's principal executive offices)

CT Corporation System

111 8th Avenue

New York, NY 10011

(212) 894-8940

(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class:	Name of Each Exchange On Which Registered:
Common Shares	**NASDAQ Global Market**

Securities registered or to be registered pursuant to Section 12(g) of the Act: **Not applicable**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **Not applicable**

For annual reports, indicate by check mark the information filed with this form:

☒ Annual Information Form ☒ Audited Annual Financial Statements

Indicate the number of outstanding shares of each of the registrant's classes of capital or common stock as of the close of the period covered by the annual report: **As of December 31, 2018, there were 231,812,809 common shares outstanding.**

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or such shorter period that the Registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 12b-2 of the Exchange Act.
Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

This Annual Report (this "Annual Report") on Form 40-F shall be incorporated by reference into or as an exhibit to, as applicable, the following Registration Statements of the Registrant filed under the Securities Act of 1933: Form S-8 (File No. 333-225494, 333-161807 and 333-156553); and Form F-10 (File No. 333-225493).

DOCUMENTS INCORPORATED BY REFERENCE

The following documents of Ballard Power Systems Inc. (the "Registrant" or the "Company") are filed as exhibits to this Annual Report and are hereby incorporated by reference herein:

- the Registrant's Annual Information Form for the year ended December 31, 2018;
- the Registrant's Audited Consolidated Financial Statements as at and for the years ended December 31, 2018 and 2017, including the notes thereto, together with the report of the independent registered public accounting firm thereon; and
- the Registrant's Management's Discussion and Analysis for the year ended December 31, 2018.

EXPLANATORY NOTE

The Company is a Canadian issuer eligible to file its annual report pursuant to Section 13 of the United States Securities Exchange Act of 1934, as amended (the "Exchange Act") on Form 40-F. The Company is a "foreign private issuer" as defined in Rule 3b-4 under the Exchange Act and Rule 405 under the Securities Act of 1933, as amended. Accordingly, the Company's equity securities are exempt from Sections 14(a), 14(b), 14(c), 14(f) and 16 of the Exchange Act pursuant to Rule 3a12-3.

The Company is permitted, under a multi-jurisdictional disclosure system adopted by the United States, to prepare this Annual Report on Form 40-F in accordance with Canadian disclosure requirements, which are different from those of the United States.

The Company prepares its financial statements in accordance with International Financial Reporting Standards as issued by the International Financial Accounting Boards, and they may be subject to Canadian auditing and auditor independence standards. Accordingly, the financial statements of the Company incorporated by reference in this Annual Report may not be comparable to financial statements of United States companies.

CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS

This Annual Report contains forward-looking statements concerning anticipated developments in the operations of the Company in future periods, planned development activities, the adequacy of the Company's financial resources and other events or conditions that may occur in the future. Forward-looking statements are frequently, but not always, identified by words such as "estimate", "project", "believe", "anticipate", "intend", "expect", "plan", "predict", "may", "should", "will" and similar expressions, or by statements that events, conditions or results "will," "may," "could" or "should" occur or be achieved. Forward-looking statements are statements about the future and are inherently uncertain, and actual achievements of the Company or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including, without limitation, those described in the Annual Information Form incorporated by reference in this Annual Report.

The Company's forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made and the Company assumes no obligation to update such forward-looking statements in the future. For the reasons set forth above, investors should not place undue reliance on forward-looking statements.

DISCLOSURE CONTROLS AND PROCEDURES

The required disclosure is included in Management's Discussion and Analysis, which is incorporated herein by reference to Exhibit 99.2.

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The required disclosure is included in Management's Discussion and Analysis, which is incorporated herein by reference to Exhibit 99.2.

ATTESTATION REPORT OF THE REGISTERED PUBLIC ACCOUNTING FIRM

The Registrant's independent registered public accounting firm, KPMG LLP, independently assessed the effectiveness of the Registrant's internal control over financial reporting. KPMG LLP's attestation is located in the Report of Independent Registered Public Accounting Firm included in the Registrant's Audited Consolidated Financial Statements, which is incorporated herein by reference to Exhibit 99.1.

CHANGES IN INTERNAL CONTROLS OVER FINANCIAL REPORTING

During the period covered by this Annual Report, no changes occurred in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

NOTICES PURSUANT TO REGULATION BTR

There were no notices required by Rule 104 of Regulation BTR that the Company sent during the year ended December 31, 2018 concerning any equity security subject to a blackout period under Rule 101 of Regulation BTR.

AUDIT COMMITTEE AND AUDIT COMMITTEE FINANCIAL EXPERT

The Board has a separately designated standing audit committee (the "Audit Committee") established for the purpose of overseeing the accounting and financial reporting processes of the Company and audits of the financial statements of the Company in accordance with Section 3(a)(58)(A) of the Exchange Act. As of the date of this Annual Report, the Company's Audit Committee is comprised of Douglas P. Hayhurst, Ian Sutcliffe, and Janet Woodruff and James Roche is an ex officio member of the Audi Committee, each of whom the Board has determined is independent, as that term is defined in the listing standards of the NASDAQ Global Market ("Nasdaq") and Rule 10A-3 of the Exchange Act.

The Registrant's Board of Directors has determined that the Audit Committee has at least two members, Douglas P. Hayhurst and Janet Woodruff, who qualify as an audit committee financial expert under as defined in paragraph (8)(b) of General Instruction B of Form 40-F, and is independent, as defined in the listing standards of Nasdaq. A description of Mr. Hayhurst's qualifications are included in the Annual Information Form, under the heading "Audit Committee Matters", which is incorporated herein by reference to Exhibit 99.3.

CODE OF ETHICS

The Registrant has adopted a code of ethics that applies to all members of its Board of Directors, as well as its officers and employees. A copy of the code of ethics is posted on the Registrant's Internet website at www.ballard.com, and is available in print to any person without charge, upon written request to the corporate secretary of the Registrant at the principal executive offices of the Registrant provided above. If there are any amendments to the code of ethics, the Registrant intends to provide a brief description of the amendment and a copy of the amendment via its website. No waivers of the code of ethics have been granted to any principal officer of the Registrant or any person performing similar functions during the year ended December 31, 2018.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The required disclosure is included in the Annual Information Form, under the heading "Audit Committee Matters," which is incorporated herein by reference to Exhibit 99.3.

OFF-BALANCE SHEET ARRANGEMENTS

The required disclosure is included under the heading "Off-Balance Sheet Arrangements & Contractual Obligations" in Management's Discussion and Analysis, which is incorporated herein by reference to Exhibit 99.2.

CONTRACTUAL OBLIGATIONS

The required disclosure is included under the heading “Off-Balance Sheet Arrangements & Contractual Obligations” in Management’s Discussion and Analysis, which is incorporated herein by reference to Exhibit 99.2.

NASDAQ CORPORATE GOVERNANCE

The Registrant’s common shares are listed on Nasdaq. Nasdaq Marketplace Rule 5615(a)(3) permits a foreign private issuer, such as the Registrant, to follow its home country practice in lieu of most of the requirements of the 5600 Series of the Nasdaq Marketplace Rules. For a discussion of the significant differences between our corporate governance practices and those required to be followed by U.S. domestic issuers under Nasdaq’s corporate governance requirements, please refer to our website at www.ballard.com.

UNDERTAKING

The Company undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the Commission staff, and to furnish promptly, when requested to do so by the Commission staff, information relating to: the securities registered pursuant to Form 40-F; the securities in relation to which the obligation to file an annual report on Form 40-F arises; or transactions in said securities.

CONSENT TO SERVICE OF PROCESS

The Company has previously filed with the Commission a written consent to service of process on Form F-X. Any change to the name or address of the Company’s agent for service shall be communicated promptly to the Commission by amendment to the Form F-X referencing the file number of the Company.

EXHIBIT INDEX

The following documents are being filed with the Commission as exhibits to this Annual Report on Form 40-F.

Exhibit	Description
99.1	Ballard Power Systems Inc. Consolidated Financial Statements for the years ended December 31, 2018 and 2017
99.2	Ballard Power Systems Inc. Management’s Discussion and Analysis for the year ended December 31, 2018
99.3	Annual Information Form for Ballard Power Systems Inc. for the year ended December 31, 2018
99.4	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
99.5	Certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
99.6	Consent of KPMG LLP
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this Annual Report to be signed on its behalf by the undersigned, thereto duly authorized.

BALLARD POWER SYSTEMS INC.

Date: March 7, 2019

By: /s/ Anthony Guglielmin

Name: Anthony Guglielmin

Title: Vice President and Chief Financial Officer

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 Reponsibility 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.

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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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

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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 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).

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

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1. INTRODUCTION

1.1 Preparation of the MD&A

This discussion and analysis of financial condition and results of operations of Ballard Power Systems Inc. ("Ballard", "the Company", "we", "us" or "our") is prepared as at March 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.

2.2 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 MEA’s, 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	$ 96,586	$ 121,288
Gross margin	$	29,674	$ 29,674	$ 41,600
Gross margin %		31%	31%	34%
Total Operating Expenses	$	50,472	$ 50,472	$ 46,477
Cash Operating Costs (1)	$	42,982	$ 42,982	$ 39,053
Adjusted EBITDA (1)	$	(13,465)	$ (13,465)	$ 3,324
Net loss attributable to Ballard	$	(27,322)	$ (27,322)	$ (8,048)
Net loss per share attributable to Ballard, basic and diluted	$	(0.15)	$ (0.15)	$ (0.05)
Adjusted Net Loss (1)	$	(23,364)	$ (23,364)	$ (5,190)
Adjusted Net Loss per share (1)	$	(0.13)	$ (0.13)	$ (0.03)
Financial Position			**At December 31,**	
(expressed in thousands of U.S. dollars)		**2018**	**2018**	**2017**
Total assets	$	346,100	$ 346,100	$ 177,657
Cash, cash equivalents and short-term investments	$	192,235	$ 192,235	$ 60,255

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)	Three months ended December 31,			
Research and product development	**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)	Year ended December 31,			
Research and product development	**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)		Year ended December 31,		
Cash Operating Costs	**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)		Three months ended December 31,		
Stock-based compensation expense	**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)		Year ended December 31,		
Stock-based compensation expense	**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)	Three months ended December 31,		
Depreciation and amortization expense	**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)	Year ended December 31,		
Depreciation and amortization expense	**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**	$ 5,063	$ (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)		Three months ended December 31,		
EBITDA and Adjusted EBITDA	**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)		Year ended December 31,		
EBITDA and Adjusted EBITDA	**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)		Three months ended December 31,		
Adjusted Net Loss	**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)		Year ended December 31,		
Adjusted Net Loss	**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)



BALLARD POWER SYSTEMS INC.

ANNUAL INFORMATION FORM

For the year ended December 31, 2018

Dated March 6, 2019

BALLARD®

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This Annual Information Form and the documents incorporated by reference herein contain forward-looking statements that 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. When used in this Annual Information Form, the words "estimate", "project", "believe", "anticipate", "intend", "expect", "plan", "predict", "may", "could", "should", "will", the negatives of these words or other variations thereof and comparable terminology are intended to identify forward-looking statements. Such statements reflect our current views with respect to future events based on currently available information and are subject to risks and uncertainties that could cause actual results to differ materially from those contemplated in those forward-looking statements, including, without limitation, the following risks and uncertainties which are discussed in the section of this Annual Information Form entitled "Risk Factors": we may not be able to successfully execute our business plan; 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 customers' 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 a 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 fuel cell 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 ventures 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 requirements 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 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; our products use flammable fuels and some generate high voltages, which could subject our business to product liability and other claims; and the other risks and uncertainties discussed elsewhere in this Annual Information Form.

The forward-looking statements contained in this Annual Information Form speak only as of the date of this Annual Information Form. Except as required by applicable legislation, Ballard does not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this Annual Information Form, including the occurrence of unanticipated events.

In this Annual Information Form, references to “Corporation”, “Ballard”, “we”, “us” and “our” refers to Ballard Power Systems Inc. and, as applicable, its subsidiaries. All dollar amounts are in United States dollars unless otherwise indicated. Canadian dollars are indicated by the symbol “C$”, and euros by the symbol “€”.

Except where otherwise indicated, all information presented is as of December 31, 2018.

CORPORATE STRUCTURE

Name, Address and Incorporation

Ballard was incorporated on November 12, 2008 under the *Canada Business Corporations Act* (Canada), under the name "7076991 Canada Inc." Ballard changed its name to "Ballard Power Systems Inc." on December 31, 2008. On August 24, 2016, Ballard continued into British Columbia under the *Business Corporations Act* (British Columbia). Ballard's head office is located at 9000 Glenlyon Parkway, Burnaby, British Columbia, Canada V5J 5J8, and its registered office is located at Suite 1700, 666 Burrard Street, Vancouver, British Columbia, Canada V6C 2X8.

Previously, Ballard Power Systems Inc. was a British Columbia company incorporated on May 30, 1989. The original predecessor to Ballard was founded in 1979 under the name Ballard Research Inc. to conduct research and development on high-energy lithium batteries. In the course of investigating environmentally-clean energy systems with commercial potential, we began to develop fuel cells and have been developing fuel cell products since 1983.

Our Mission, Vision and Values

Our vision is to deliver fuel cell power for a sustainable planet, and our mission is to use our fuel cell expertise to deliver innovative, valuable solutions to our customers globally, create rewarding opportunities for our team, provide extraordinary value to our shareholders, and power the hydrogen society.

Our values represent our core beliefs, and underpin how we carry on our business: Listen and Deliver – We listen to our customers, understand their business, and deliver innovative and valuable solutions for lasting partnerships; Quality. Always – We deliver quality in everything we do; Inspire Excellence – We live with integrity, passion, urgency, agility and humility; Row Together – We achieve success through respect, trust and collaboration; and Own It – We step up, take ownership for our results, and trust others to do the same.

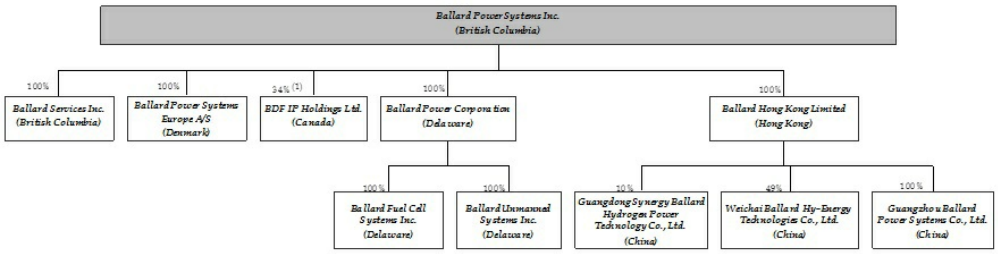
Intercorporate Relationships

We have six principal subsidiaries and affiliates: Ballard Fuel Cell Systems Inc., a Delaware corporation that provides certain services to customers in the U.S. and internationally and does certain development work; Ballard Power Systems Europe A/S (formerly Dantherm Power A/S) ("**Ballard Europe**"), a Danish corporation; BDF IP Holdings Ltd. ("**IP Holdings**"), a Canadian corporation that holds intellectual property assets; Ballard Services Inc., a British Columbia company that provides engineering services; Ballard Unmanned Systems Inc. (formerly Protonex Technology Corporation) ("**Ballard Unmanned Systems**"), a Delaware corporation that provides complete unmanned vehicle fuel cell solutions; and Guangzhou Ballard Power Systems Co., Ltd., a Chinese wholly foreign-owned entity that serves as our 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 FCgen®-LCS fuel cell stack and FCgen®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 JV**"), also located in China. The Synergy-Ballard JV 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.

The following chart shows these principal subsidiaries and affiliates, their respective jurisdictions of incorporation and our percentage of share ownership in each of them, all as of March 6, 2019:



Notes

(1) The Corporation holds all of the non-voting, participating shares of IP Holdings and 34% of the voting, non-participating shares of IP Holdings, with each of Daimler AG and Ford Motor Company holding 33% of the voting, non-participating shares.

Recent History

Over the past three years, we have continued to focus on building a clean energy business and expanding our recognized leadership in proton exchange membrane ("**PEM**") fuel cell development and commercialization. The following are key recent developments:

Strategic Collaboration with Weichai Power Co., Ltd. ("Weichai")

On November 13, 2018, we closed a strategic collaboration transaction with Weichai. The strategic collaboration included an equity investment in Ballard, formation of a joint venture company and a development program each of which is discussed in more detail below.

Weichai, through its wholly-owned subsidiary Weichai Power Hong Kong International Development Co., Limited ("**Weichai HK**"), made an equity investment in Ballard in the amount of approximately $163.6 million, representing a 19.9% interest in Ballard, through the purchase of shares from treasury.

In addition, Zhongshan Broad-Ocean Motor Co., Ltd. ("**Broad-Ocean**") – a current Ballard strategic investor and licensee – invested a further approximately $20.2 million, to maintain its 9.9% ownership position in Ballard through the subscription and purchase of shares from treasury via a wholly-owned subsidiary.

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 directly or indirectly holds at least 15% of Ballard's outstanding shares, it has the right to nominate two directors to Ballard's board of directors. If there is a third-party offer to buy Ballard, Weichai has the right to make a superior proposal or otherwise it must vote its shares in accordance with the recommendation of Ballard's board of directors.

Weichai and Ballard established a joint venture company, named Weichai Ballard Hy-Energy Technologies Co., Ltd., on November, 26, 2018 in in Shandong Province to support China's Fuel Cell Electric Vehicle market. Ballard holds a 49% ownership position and Weichai holds a 51% ownership position. In December 2018, Weichai made its initial capital contribution of RMB 102 million and Ballard made its initial capital contribution of $14.3 million (RMB 98 million equivalent). In February 2019, 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 holds three of five Weichai-Ballard JV board seats and Ballard holds two, with Ballard having certain minority shareholder protections.

The Weichai-Ballard JV is planning on manufacturing Ballard's next-generation FCgen®-LCS fuel cell stack and FCgen®-LCS-based power modules for bus, commercial truck and forklift applications with exclusive rights in China. The Weichai-Ballard JV will pay Ballard $90 million under the Research and Development Agreement to develop and transfer technology to the Weichai-Ballard JV in order to enable these manufacturing activities. In December 2018, Ballard received an initial 10%, or $9.0 million prepayment from the Weichai-Ballard JV for this program. The Weichai-Ballard JV will purchase Membrane Electrode Assemblies ("**MEAs**") for FCgen®-LCS fuel cell stacks exclusively from Ballard under a long-term supply agreement. Ballard will grant the Weichai-Ballard JV a non-exclusive royalty-free licence to Ballard's background technology incorporated into the products it develops for the Weichai-Ballard JV. Ballard will also retain an exclusive right to the transferred technologies outside of China.

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.

Transaction to Divest Power Manager Business

On October 5, 2018, we announced that we had closed an asset purchase agreement to divest certain assets related to the Power Manager business of Ballard Unmanned Systems to Revision Military, a private U.S.-based company. Ballard retained certain assets related to fuel cell propulsion systems for unmanned vehicles.

Terms of the transaction include upfront consideration of $4.1 million to Ballard – payable in cash and note – and up to a further $11.25 million, based on achievement of specific sales objectives during a 12-month earn-out period.

Ballard Acquires Fuel Cell Assets from AFCC Automotive Fuel Cell Cooperation Corporation ("AFCC")

On July 3, 2018, we announced that we had acquired certain strategic assets of AFCC, a private company owned by Daimler AG and Ford Motor Company for approximately Canadian $6 million. The assets included testing equipment, prototype production equipment and lab and quality inspection equipment.

This asset acquisition supports and accelerates our growth plans in two key respects. 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 provides much of the incremental capacity needed to meet forecasted growth over the next five years. With these assets already in place and functioning within Ballard's existing facilities, this transaction accelerates 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.

Ballard and Audi Sign 3.5-Year Extension to Long-Term Program for Fuel Cell Passenger Cars

On June 11, 2018, we announced that we had signed a 3.5-year extension to our current Technology Solutions contract with AUDI AG ("**Audi**"), part of the Volkswagen Group, extending the HyMotion program to August 2022. The aggregate value of the contract extension is expected to be C$80 to 130 million (approximately US$62 to $100 million). The program will support Audi through its small series production launch.

Ballard signed an initial 4-year contract with Volkswagen AG in March 2013, followed by a 2-year extension in February 2015. AUDI AG assumed leadership of the program in 2016. The agreement signed June 11, 2018 replaces the prior technology development agreements, except for certain key surviving provisions of the prior agreements.

Ballard Receives Purchase Order for 40 Fuel Cell Modules to Power Van Hool Buses in Germany

On April 30, 2018, we announced we had received a purchase order from Van Hool NV ("**Van Hool**"), a bus OEM partner in Belgium, for 40 FCveloCity®-HD fuel cell modules to power buses under the Joint Initiative for hydrogen Vehicles across Europe (JIVE) funding programs.

Supply and Collaboration Agreement for Air-Cooled Fuel Cell Stacks for Class 3 Lift Trucks

On April 30, 2018, we announced that we had signed a Master Supply Agreement with Hyster-Yale Group, Inc. ("**Hyster-Yale**"). The agreement provides for the supply of minimum annual volumes of Ballard FCgen®-1020 air-cooled fuel cell stacks for use in powering Class 3 lift trucks and Ballard support on the design of a fuel cell electric propulsion system to power these lift trucks.

Development Program for Next-Gen Air-Cooled Fuel Cell Stack for Forklift Trucks

On February 14, 2018, we announced that we had signed 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.

Ballard Unmanned Systems Cost Reductions

On January 3, 2018, we announced further cost reductions in the solid oxide fuel cell ("**SOFC**") business at Ballard Unmanned Systems. In 2017 we determined that Ballard Unmanned Systems' small-scale SOFC stationary power products assets were not core to our PEM fuel cell business, and we decided to divest these non-core assets. As a result, certain SOFC assets were transferred to a private, start-up company, Upstart Power Inc., effective December 31, 2017, for nominal consideration.

Multi-Year Development Agreement with Siemens AG

On November 14, 2017, we announced we had entered into a Development Agreement with Siemens AG 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 over three years. Under the terms of the Development Agreement, we 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.

Supply Agreements with Zhongshan Broad-Ocean Motor Co., Ltd.

On April 6, 2017, we announced the entering into of an $11 million supply contract with strategic partner Broad-Ocean for the supply and delivery of 200 FCveloCity® fuel cell engines expected to be used in demonstrations of clean energy buses and commercial vehicles in key Chinese cities. The engines were manufactured and supplied by Ballard from its operations in British Columbia. The 200 fuel cell engines were shipped to Broad-Ocean in 2017.

On June 5, 2017, we announced that an $18 million supply contract with Broad-Ocean to support the expected deployment of an additional 400 FCveloCity® fuel cell engines integrated into clean energy buses and trucks in key Chinese cities. The 400 fuel cell engines were shipped to Broad-Ocean in 2017.

All 600 fuel cell engines and related components were delivered by Ballard in 2017.

Licensing and Local Assembly Transaction with Broad-Ocean

On February 16, 2017, we announced that we had signed a definitive agreement 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 agreement, Broad-Ocean can manufacture fuel cell modules in three strategic regions in China, including

Shanghai. The definitive agreement and future amounts payable to Ballard are dependent on the attainment of certain commissioning milestones by Broad-Ocean.

Strategic Collaboration and Equity Investment Transaction with Broad-Ocean

On July 26, 2016, Broad-Ocean and Ballard entered into a strategic collaboration that included a $28.3 million equity investment in Ballard. On August 18, 2016, the investment by Broad-Ocean was completed through a subscription and purchase of 17,250,000 common shares of Ballard issued from treasury at a price per share of $1.64, and representing approximately 9.9% of Ballard's then-outstanding common shares. 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, to maintain its 9.9% ownership position in Ballard

In connection with the completion of the investment, Broad-Ocean and Ballard also entered into an Investor Rights Agreement under which Broad-Ocean: agreed to a two-year hold period on the common shares purchased, which has since expired; provided Ballard with a right of first refusal to sell Broad-Ocean additional treasury shares if Broad-Ocean wishes to increase its ownership position up to 20%; was granted anti-dilution rights to maintain its 9.9% ownership interest; and agreed to a two-year "standstill" under which it will not purchase more than 19.9% of Ballard's outstanding common shares without receiving approval of Ballard's board of directors.

In connection with the purchase of additional common shares of Ballard in connection with the investment by Weichai discussed above, Broad-Ocean and Ballard amended the existing investor rights agreement to extend each of Broad-Ocean's covenants referred to in the paragraph above, except the two-year hold period applies only to the shares purchased in connection with the Weichai transaction.

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.

Local Production of Fuel Cell Stacks in China

In 2017, our joint venture for the production of FCveloCity®-9SSL fuel cell stacks in the City of Yunfu in Guangdong Province, named Guangdong Synergy Ballard Hydrogen Power Co., Ltd., commenced operations.

The Synergy-Ballard JV has the exclusive right to manufacture and sell FCveloCity®-9SSL fuel cell stacks in China. The fuel cell stacks will be packaged into locally-assembled fuel cell engines and integrated into zero-emission buses and commercial vehicles in China.

Exclusivity is subject to certain performance criteria of the Synergy-Ballard JV, including compliance with a code of ethics, compliance with Ballard's quality policies, compliance with Ballard's branding policies, achievement of the minimum annual "take or pay" MEA volumes, compliance with payment terms, and compliance with certain intellectual property covenants. Ballard has the exclusive right to purchase fuel cell stacks and sub-components from the Synergy-Ballard JV for sale outside China.

Ballard received approximately $18.4 million in Technology Solutions revenue for technology transfer services, test equipment, production equipment specification and procurement services, training and commissioning support in relation to the establishment of an FCveloCity®-9SSL fuel cell stack production line in Yunfu, with the majority of this revenue recognized in 2017.

Ballard is the exclusive supplier of MEA for each fuel cell stack manufactured by the Synergy-Ballard JV, with minimum annual MEA volume commitments on a "take or pay" basis. 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 JV, Synergy-Ballard JV 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. 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 the Synergy-Ballard JV, are subject to risk including risks related to market demand for the Synergy-Ballard JV's products, and risks related to the ability of the Synergy-Ballard JV 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 the Synergy-Ballard JV 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.

The Synergy-Ballard JV was formed with Guangdong Nation Synergy Hydrogen Power Technology Co. Ltd. ("**Nation-Synergy**"). The Synergy-Ballard JV is 90% owned by Nation-Synergy and 10% owned by Ballard Hong Kong Limited. Pursuant to the Equity Joint Venture Agreement Ballard contributed RMB 6.7 million (approximately $1.0 million) for its non-controlling 10% joint venture interest, appointed one of the three members of the Synergy-Ballard JV board of directors, has veto rights over certain key Synergy-Ballard JV decisions, must agree with Nation-Synergy on the Synergy-Ballard JV marketing strategy, and has no obligation to provide additional funding to the Synergy-Ballard JV.

Technology Solutions Transaction for Hydrogen Backup Power Systems in China

On July 11, 2016, we announced that we had signed a definitive agreement with Nation-Synergy for a Technology Solutions transaction to enable Nation-Synergy to exclusively manufacture and sell Ballard's direct hydrogen FCgen®-H2PM fuel cell backup power systems in China.

Under the agreement Ballard licensed the designs of its 1.7 kW and 5 kW FCgen®-H2PM systems to Nation-Synergy for manufacture in the City of Yunfu in Guangdong Province and exclusive sales in China. Nation-Synergy has paid Ballard an upfront technology solutions fee of $2.5 million for the license and related technology services and is required to make additional recurring payments to Ballard for each unit sold. Ballard will also be the exclusive supplier of air-cooled fuel cell stacks to Nation-Synergy for use in the FCgen®-H2PM systems that it produces and sells.

Sale of Methanol Telecom Backup Power Business

On May 17, 2016, we announced that we has entered into a definitive agreement to sell certain of the Corporation's methanol Telecom Backup Power business assets to Chung-Hsin Electric & Machinery Manufacturing Corporation ("**CHEM**"), a major Taiwanese power equipment company, for a purchase price of up to $6.1 million.

The sale closed on May 31, 2016 and at the closing CHEM made an upfront payment of $3 million. The remaining potential purchase price of up to $3.1 million consisted of an earn-out arising from sales of methanol Telecom Backup Power systems by CHEM during the 18-month period to November 2017 derived from the sales pipeline transferred to CHEM on closing. During 2017, we collected approximately $1.0 million on this potential earn-out and impaired the residual value.

In addition to the purchase price, CHEM agreed to purchase fuel cell stacks exclusively from the Corporation over the earnout period, with a minimum spend of $2 million ($2 million purchased to date).

Equipment Supply Agreement with Nation-Synergy

On January 21, 2016, we announced the signing of an equipment supply agreement, valued at $12 million, with Nation-Synergy to provide FCveloCity®-9SSL fuel cell stacks for range extension applications in commercial vehicles in China. The majority of the fuel stacks were delivered in 2016 with the balance delivered in 2017. Nation-Synergy was expected to collaborate with Dongfeng Xiangyang Touring Car Co., Ltd., which is part of Dongfeng Motor Corporation, a Chinese state-owned automobile manufacturer headquartered in Wuhan, China.

OUR BUSINESS

At Ballard, our vision is to deliver fuel cell power for a sustainable planet. We are recognized as a world leader in PEM fuel cell and 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, low operating temperature, low noise and vibration, compact size, quick response to changes in electrical demand and modular design. Embedded in each Ballard PEM fuel cell product lies a stack of unit cells designed with Ballard's proprietary technology, which include membrane electrode assemblies, catalysts, plates, and other key components, and which 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 system integration.

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.

Strategy

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 or address new business opportunities 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 the new-energy bus and commercial vehicle markets in China. We believe this strategy aligns with current and expected local content requirements for government

subsidies supporting the adoption of fuel cell electric vehicles (FCEVs). Key elements of our strategy include adopting a business model in which we seek to mitigate market adoption risk and capital investment by engaging partnerships with local companies that 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 generating structures. We also typically structure our commercial transaction 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 MEAs, a key high value technology component in our fuel cell stacks. We currently plan to continue to manufacture our MEAs in our facilities in Burnaby, Canada.

We continue to make significant investment in next-generation products and technology, including MEAs, stacks, modules and systems integration.

Revenues from Market 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 the sale to Revision, and product and service revenues generated from the retained Protonex assets related primarily to fuel cell propulsion systems for unmanned systems.

The following chart shows the percentage of total revenues which arises from sales to investees and sales of products and services to other customers, for the years 2018 and 2017:

	2018	2017
Revenues from Fuel Cell Products and Services		
Percentage of total revenues	100%	100%
Portion representing sales to investees[1]	19.5%	25.6%
Portion representing sales to customers other than investees	80.5%	74.4%

(1) In this table, "investees" means Guangdong Synergy Ballard Hydrogen Power Co., Ltd., a joint venture formed in China of which we hold a 10% equity interest and Weichai Ballard Hy-Energy Technologies Co., Ltd., a joint venture formed in China, of which we hold a 49% equity interest.

Our Markets, Products and Services

Product & Service Overview

Ballard's product offering provides for a cost effective and flexible set of fuel cell power solutions. Ballard provides products in four distinct product classes:

(1) **Fuel cell stacks**: We provide FCgen® and FCveloCity® fuel cell stacks to OEM customers and system integrators that use the stacks to produce fuel cell systems for power solutions. As the fuel cell stack provider, we are the power inside the system.

(2) **Fuel cell modules**: We build the fuel cell stacks into self-contained FCveloCity® motive modules that are plug-and-play into commercial vehicle powertrains. As a fuel cell module provider, we make it easier for OEMs and system integrators to create fuel cell powertrains.

(3) **Fuel cell systems**: We also build complete fuel cell systems for stationary power markets that are designed to solve certain energy needs of our customers, including back-up for critical infrastructure. Through Ballard Unmanned Systems, we build fuel cell systems for UAVs.

(4) **Power management systems**: Through Ballard Unmanned Systems, we built power management devices for military customers that allowed them to optimize their energy use. The assets used to design, build and sell these products were divested in October 2018 as discussed above.

Our technology solutions offerings primarily involve the provision of engineering services and customer access through licensing to our deep intellectual property portfolio and know-how.

The following table lists the key fuel cell and non-fuel cell products we currently produce, have under development or are testing:

Motive Power Product Family:		
Product Name	**Application**	**Status**
FCgen®-LCS	Buses, commercial vehicles, light rail, and material handling	Latest generation of product offered – currently in final testing and validation
FCveloCity®-9SSL	Buses, commercial vehicles, light rail, and material handling	Sales to OEMs and system integrators
FCgen®-1020ACS	Material handling	Sales to OEMs and system integrators
FCveloCity® modules	Buses, commercial vehicles, and light rail	Sales to OEMs and system integrators
FCmove™ modules	Buses, commercial vehicles, and light rail	Latest generation of product offered - currently in final testing and validation

Stationary Power Product Family:		
Product Name	**Application**	**Status**
FCgen®-1020ACS	Backup power	Sales to OEMs and system integrators
FCgen®-H2PM	Backup power systems	Sales to customers
ClearGen®	Distributed Generation systems	Sales to customers

UAV and Portable Power Product Family:		
Product Name	**Application**	**Status**
FCair®-600 and FCair®-1200	UAV power system	Prototype testing

Fuel Cell Products and Services

Power Products Markets

Heavy Duty Motive

We provide fuel cell modules for public transit systems, including buses and light rail, and for commercial trucks. These fuel cell buses, fuel cell commercial trucks and light rail systems rely on centralized fuelling depots that simplify the hydrogen infrastructure requirements and are government-subsidized, thus enabling the purchase of pre-commercial fleets.

We design and manufacture the FCveloCity® fuel cell module platform, which in various forms is capable of delivering 30 kW to 200 kW of power for use in the Heavy Duty Motive market. We supply the fuel cell modules to hybrid drive, bus and light rail manufacturer customers that deliver zero-emission fuel cell-powered vehicles to transit operators around the world. The demand for zero-emission mass transit systems is driven in many jurisdictions by the requirement to reduce greenhouse gases and other harmful emissions that are impacting urban areas.

FCveloCity® power module platform cost reduction efforts have focused on unit cell design enhancements, including improved durability and lifetime. This ongoing effort was partially funded by a C$4.8 million award announced in January 2010 (revised to C$6.9 million in June 2012) from Sustainable Development Technology Canada ("**SDTC**"), and was successfully completed in 2014 to further develop fuel cell power module technology for the transit bus market. Product cost reductions continued with the launch in 2015 of our seventh generation motive module FCveloCity® platform, which reduced the total cost of the module by 25%. This new platform is available in various configurations ranging in power from 30 kW to 200 kW to address different levels of battery/fuel cell hybridization and a variety of applications. The FCveloCity®-MD series is optimized for smaller buses (less than 12 meters in length), the FCveloCity®-HD module is the workhorse of the standard-size (12-18 meter) fuel cell bus industry, and the FCveloCity®-XD series is aimed at light rail.

To date, Ballard-powered fuel cell buses have accumulated more than 14 million kilometres in service, with several fuel cell buses having passed the 30,000 operating hour threshold.

In 2015, Ballard FCveloCity® power modules were used to power the world's first fuel cell light rail system in Foshan, China opening up a new market for the FCveloCity® heavy duty power modules.

In 2016, we expanded the use of FCveloCity® to more heavy duty applications such as commercial trucks, where products have been integrated into class 8 drayage trucks and delivery trucks.

In 2017, we shipped over 600 FCveloCity®-MD30 modules to China which were integrated locally in delivery trucks in 2018.

In 2018 we have expanded our heavy duty market coverage to the marine sector through a number of government funded projects in Europe aiming at developing hydrogen ferries and barges. We also launched of our next-generation high performance liquid-cooled fuel cell stack FCgen®-LCS at the IAA Hanover tradeshow in Germany.

In 2019 we expect to launch our eighth generation of power module portfolio for use in heavy-duty applications using FCgen®-LCS stacks.

Competition

Diesel-powered buses and commercial trucks currently dominate the market today. Compressed natural gas ("**CNG**") and diesel electric hybrid powertrains are lower-emission alternatives to diesel engines, but are in limited service today. Other variants available today include gasoline hybrid buses and CNG hybrid buses. Electric trolley buses provide a zero-emission alternative; however, their purchase price is high and the overhead catenary power infrastructure is expensive to maintain and is considered aesthetically undesirable in many urban centres. The recent developments in battery-powered powertrain vehicles have created a zero emission alternative to fuel cell buses in the form of battery electric buses and commercial trucks. These battery-powered heavy-duty vehicles will continue to offer a viable zero emission bus for applications where long range and extended operating hours between recharges are not a requirement.

We believe that fuel cells are the best zero-emission alternative for transit applications. They offer much greater fuel efficiency than conventional diesel buses, reduce greenhouse gas and other harmful emissions and eliminate the need for unsightly overhead catenary wires. Fuel cell buses are the most flexible zero-emissions option. Unlike other electric solutions, fuel cell buses can be operated like diesel buses providing longer daily driving distances and faster refuelling.

Companies developing fuel cell systems for heavy-duty applications include Hydrogenics Corporation ("**Hydrogenics**") and Powercell Sweden AB. We have accumulated far more operating hours in real world heavy-duty operations than any other fuel cell manufacturer. We believe this experience has enabled us to produce more reliable, more durable and easier to integrate products than those of our competitors.

Portable Power / UAV

On October 5, 2018 we completed the sale of assets related to the Power Manager business of Ballard Unmanned Systems. On December 31, 2017 we divested our non-core SOFC business at Ballard Unmanned Systems. Details of the SOFC and Power Manager transactions are discussed above in the Recent History Section.

Ballard Unmanned Systems has a decade of experience developing fuel cell based power systems for UAVs for the defense industry. Ballard Unmanned Systems has integrated its fuel cells onto UAV platforms from leading platform providers including Insitu (a Boeing company), Lockheed-Martin, Aerovironment, and others. As UAV technology has transitioned from defense to commercial use, Ballard has developed commercial variants of 600 watt and 1,200 watt UAV fuel cell systems, and is now supplying these systems to leading commercial platform integrators.

In UAV markets, flight duration (and hence range) is a critical limiting factor for many applications. Airspace regulators across the globe are actively developing rules to allow operation of UAVs in beyond visual line of sight (BVLOS) missions, and as these rules are issued and operators are able to address applications that require long distances or areas to be covered, range limitations due to battery capacity will become more and more critical. Many integrators and operators have already accepted that fuel cells provide the logical next step from battery power for commercial UAVs, and Ballard is positioning itself to be the leader in this space.

Ballard Unmanned Systems has also developed portable fuel cells focused on low power applications for use in extended surveillance applications, including vehicle auxiliary power units (APUs), unmanned aerial (UAV), unmanned ground (UGV), and underwater (UUV) vehicle propulsion.

Competition

Several other companies have developed fuel cell systems for UAVs, including Intelligent Energy, EnergyOR, and MicroMultiCopter Aero Technology Co., Ltd. (MMC) and Doosan. Ballard fuel cell systems are the most reliable and proven systems on the market, due to their long history in the defense UAV sector. At this point, with commercial fuel cell UAV power in its infancy, no provider has established a clear leadership position. However, Ballard's leadership position in the defense UAV market, as well as robust technology and field experience give us an enviable head-start on establishing this industry leadership.

Non-fuel-cell competition includes traditional lithium-polymer battery systems and internal combustion engines. Batteries have been consistently identified as the most significant limitation in commercial UAV operations, and there is general acceptance in the industry that battery technology will not develop fast enough to meet present flight duration requirements. Internal combustion engines can provide mission durations comparable with fuel cells, but the audible noise and continued cost of ownership associated with internal combustion engines makes them a less desirable solution.

Material Handling

The material handling market includes industrial vehicles such as forklifts, automated guided vehicles ("**AGVs**") and ground support equipment. Our initial focus is on battery-powered Class 1 counterbalance lift trucks, Class 2 reach trucks and Class 3 pallet forklifts and AGVs. Our products for the material handling market are the FCveloCity®-9SSL stack, which is applicable to Class 1, Class 2 and Class 3 forklift truck solutions, the FCveloCity®-1020ACS stack for Class 3 material handling applications, and the FCgen®-LCS stack which is expected to be applicable to Class 1, Class 2 and Class 3 forklift truck solutions.

Our main customer and partner in North America is Plug Power, a specialized system integrator achieving early market penetration deploying its GenDrive™ battery pack replacement fuel cell systems. Ballard's current equipment supply agreement with Plug Power continues through 2020 with the potential for two 1-year extensions.

As noted in the Recent History section above, in 2018 we entered into a Master Supply Agreement with the Hyster-Yale for the supply of Ballard FCgen®-1020 air-cooled fuel cell stacks for use in powering Class 3 lift trucks.

Competition

Class 2 and Class 3 forklift trucks are currently dominated by lead-acid battery-powered solutions, as are Class 1 forklift trucks intended for indoor applications. Internal combustion engine power is typically seen as the solution for forklift trucks in Class 1 for outdoor applications. Compared to batteries, fuel cell systems in Class 1, Class 2 and Class 3 forklift trucks can provide extended run time without frequent and lengthy battery replacement and recharging cycles. For high-throughput, multi-shift warehouse or manufacturing operations, fuel cell powered forklift trucks can provide a lower life-cycle cost when compared with traditional lead-acid battery solutions.

Companies developing fuel cell systems for material handling applications include Nuvera, which was acquired by Hyster-Yale in 2014. We seek to gain a competitive advantage through our engineering know-how and fuel cell designs that provide superior performance, efficiency, durability and cost. Plug Power is the only company currently offering a full suite of Class 1, 2 and 3 forklift solutions to the material handling market. We currently sell and supply fuel cell stacks to Plug Power. Plug Power has developed its own air-cooled and liquid-cooled fuel cell stacks to vertically integrate into their material handling solutions. Plug Power's own fuel cell stacks compete with our fuel cell stacks for supply in Plug Power's business. Ballard is also engaged with other companies to increase potential sales beyond Plug Power for the forklift market, including Hyster-Yale as discussed above.

Advanced battery technology continues to make progress in the material handling market. However, the high up-front cost of advanced batteries continues to be a barrier to broad market adoption. Furthermore, advanced battery technologies still requires significant time for recharging and, in many cases, cannot meet desired run times without requiring spare batteries and substantial space for battery charging and storage.

Backup Power

The backup power market includes stationary applications for telecommunications equipment and other critical infrastructure. In May 2016, we sold our methanol ElectraGen®-ME assets to CHEM for an upfront payment of $3 million.

We continue to supply the backup power market through the sale and licensing of our hydrogen backup power product, the FCgen®-H2PM. The FCgen®-H2PM is manufactured by Ballard Europe. In addition to manufacturing products for sale in the backup power market, we also look for opportunities to exploit our systems-based intellectual property and, in July 2016, entered into a licensing arrangement with Nation-Synergy for the FCgen®-H2PM.

We provide fuel cell systems to back-up critical communication infrastructure following the sale of the methanol back-up product line to CHEM with a focus on fibre optics network backbones, critical hub sites and emergency communication networks (police, fire, ambulance and other emergency response services) in Europe with our FCgen®-H2PM product. Several Scandinavian countries have passed regulations to impose extended backup time (more than 12 hours) for critical infrastructure. Fuel cell technology provides an alternative power solution with a compelling value proposition to ensure site power availability during unexpected power outages to harden critical telecommunication networks.

The FCgen®-H2PM fuel cell system has been designed to integrate easily with existing power equipment and can be installed at low cost in many environments including dense urban areas and rooftop sites. Using the FCgen®-H2PM backup power solution allows operators to harden their network while reducing operating costs.

Competition

The backup power market is currently dominated by diesel generators and batteries. Advanced battery technology continues to make modest progress in the backup power generation market. However, advanced battery technologies still require lengthy recharging and, in many cases, cannot meet desired run times without requiring substantial space. We believe that PEM fuel cell products are superior to batteries in some applications, because of their ability to provide extended run time without frequent or lengthy recharging, as well as their ability to offer lower life cycle costs, given that batteries require periodic replacement. Fuel cell backup power offers a strong value proposition against diesel generators with lower operating cost, low emission and noise, and less risk of theft.

Companies developing PEM fuel cell systems for backup power applications include Altergy, Hydrogenics and Serenergy. We seek to gain competitive advantage through fuel cell designs that provide superior performance, efficiency, durability and cost.

Technology Solutions

This division (formerly named Engineering Services) was established in late 2011 to leverage our expertise in fuel cell design, prototyping, manufacturing and servicing. The mandate of the Technology Solutions division is to help customers solve difficult technical and business challenges in their PEM fuel cell programs or address new business opportunities. We offer customized, bundled technology solutions, including world-class, specialized engineering services, access to our intellectual property portfolio and know-how, as well as the supply of test equipment and technology components.

Our current Technology Solutions efforts are predominantly in support of multiple automotive research and product development programs; however, in 2018 we also executed on contracts in bus, light rail, marine, stationary, material handling and unmanned vehicles applications.

As noted in the Recent History section above, in 2018 we signed a 3.5-year extension to its current Technology Solutions contract with AUDI AG, part of the Volkswagen Group, extending the HyMotion program to August 2022.

In addition to our work with the Volkswagen Group, throughout 2018 we have also continued to execute engineering services projects for other automotive customers.

Also noted in the Recent History section, in 2016, we signed and closed definitive agreements with Nation-Synergy for the establishment of an FCveloCity®-9SSL fuel cell stack production operation in the City of Yunfu, in Guangdong Province, China. Ballard received $18.4 million in Technology Solutions revenue for technology transfer services, 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, with most of this revenue recognized in 2017.

Competition

In the automotive sector, our main competition for engineering services is the automakers' 'in-house' capabilities or specialized automotive engineering companies like AVL. Companies providing fuel cell test equipment include FuelCon and Greenlight Innovation. Fuel cell development companies**,** like Hydrogenics and Powercell**,** offer competing fuel cell development programs for emerging **markets** like rail and marine.

Impact of Regulations and Public Policy

Public funding for hydrogen and fuel cells in China, Japan, Germany, the rest of Europe, South Korea and the United States each exceed $100 million per year, with the worldwide total exceeding $1 billion per year. This funding has, and is expected to continue to, help drive demand for fuel cell products.

The U.S. Federal Transit Agency manages the competitive Low or No Emission Vehicle Program which provides funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities. Under the FAST Act, $55 million per year is available until fiscal year 2020.

The California Air and Resource Board ("**CARB**") Low Carbon Transportation and AQIP programs provide mobile source incentives to reduce greenhouse gas (GHG) emissions, criteria pollutants, and air toxics through the development of advanced technology and clean transportation. Low Carbon Transportation investments are supported by California Cap-and-Trade auction proceeds projects. AQIP, established by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 is a voluntary incentive program administered by CARB to fund clean vehicle and equipment projects, research of biofuels production. Each year, the legislature appropriates funding to CARB for low carbon transportation and the air quality impacts of alternative fuels, and workforce training. On August 31, 2016, the California Legislature appropriated $363 million to CARB for Low Carbon Transportation projects and provided direction on how these funds will be used. Among the funded projects in 2016 were the Zero-Emission Truck and Bus Pilot Commercial Deployment Project which will fund the deployment of 25 fuel cell electric buses in California. On September 15, 2017, the California legislature passed AB 134, which gives significant funding to zero emission buses in fiscal years 2017-18. The package provides $895 million to vehicles in total, with $560 million for ARB's Low Carbon Transportation Program, and $180 million to the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project ("**HVIP**"), including a $300,000 voucher for fuel cell electric buses. The proposed project allocations for the HVIP fiscal year 2018-19 funding plan includes $208.6 million dedicated to heavy-duty vehicles with $125 million for clean truck and bus vouchers.

In Europe, the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) – a partnership of the European Commission with industry and the research community under the framework of the Fuel Cells and Hydrogen Joint Technology Initiative – supports research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies in Europe. The FCH JU's aim is to accelerate the market introduction of these technologies. In May 2014, the Council of the European Union formally agreed to continue the Fuel Cells and Hydrogen Joint Technology Initiative under the EU Horizon 2020 Framework Program. The current phase (2014 – 2020), will have a total budget of €1.33 billion, provided on a matched basis. Calls for proposals under Horizon 2020 have occurred for 2014, 2015, 2016, 2017, and 2018 with 2019 calls for proposals open through April 2019. FCH-JU had a budget of €73.2m for the 2018 call and €80.8m for the 2019 call. On February 26, 2017 the Joint Initiative for hydrogen Vehicles across Europe – commonly known as the JIVE project – was officially launched. This collaborative initiative is set to deploy 139 fuel cell electric buses across Europe. A phase 2 program with the deployment of 152 additional buses was approved as part of the 2017 call.

In 2018 the European Union Connecting Europe Facility program (CEF) awarded €40 million for the deployment of a large scale fleet of fuel cell buses and supporting infrastructure in selected region in Europe.

In China, the Ministry of Finance proposed in April 2015 and confirmed in January 2017, extended subsidies for new energy vehicles (low emission vehicles) to 2020, with subsidies for battery electric vehicles being reduced by 20 percent by 2018 and by 40 percent by 2020. The new energy vehicle subsidy policy does not currently provide for subsidy reductions for fuel cell vehicles. Subsidies will be granted to buyers of pure electric, highly electrified plug-in hybrid and fuel-cell vehicles, including both cars and buses.

In Japan, incentives focus on fuel cell systems for residential co-generation systems and transportation. A cumulative total of 130,000 co-generation systems were installed in Japan between 2009 and 2014, with more than 50,000 of those in 2014 alone. The current government subsidy for the purchase of a hydrogen fuel cell car is approximately $20,000. In 2015, the Japanese government announced that it plans to spend 45.2 billion yen (more than $350 million) on fuel-cell vehicle subsidies and hydrogen stations for the 2020 Olympics as part of a plan to reduce Japan‘s reliance on nuclear power. In 2017, the Cabinet of Japan adopted a plan to decide on a basic strategy that allows the government to be united in promoting initiatives that will ensure Japan becomes the first country in the world to realize a hydrogen-based society.

In Canada, SDTC operates the SD Tech Fund which supports the late-stage development and pre-commercial demonstration of clean technology solutions. These solutions being products and processes that contribute to clean air, clean water and clean land, that address climate change and improve the productivity and the global competitiveness of the Canadian industry.

The Strategic Innovation Fund announced in July 2017 by Innovation, Science and Economic Development Canada, allocates repayable and non-repayable contributions to firms of all sizes across all of Canada's industrial and technology sectors. The program has a budget of $1.26 billion over five years. It consolidates and simplifies the Strategic Aerospace and Defence Initiative, Technology Demonstration Program, Automotive Innovation Fund and Automotive Supplier Innovation Program.

Research and Product Development

Ballard’s research activities are primarily focused on the MEA and its sub-components, aimed at improving the overall cost, durability, and reliability of our products. Material development for other unit cell components, such as bipolar plates, frames, seals and adhesives, is another area of research focus. Product development activities have been primarily directed at module development and cost reduction. Progress is driven by leveraging stack component designs, materials, and manufacturing processes across multiple product platforms. In addition, warranty cost reduction is enabled through improved durability and reliability growth.

Intellectual Property

Ballard’s technical strengths lay in our proprietary MEA design, combined with our extensive stack and system integration capabilities, which enables development of complete end-user systems that meet or exceed customer specifications, across a wide range of market applications.

Our intellectual property covers multiple aspects of our technology, including: materials and components; cell, stack and systems architecture; stack/system operation and control; and manufacturing processes. Our intellectual property portfolio is not limited to our patents and patent applications; it also includes know-how and trade secrets developed over more than 30 years of research and product development.

As of March 6, 2019, Ballard owns or controls through IP Holdings: 59 United States granted patents; 102 non-United States granted patents; 6 United States published patent applications; and 32 published non-United States patent applications. Our patents will expire between June 2019 and August 2038.

Ballard Unmanned Systems' intellectual property comprises approximately 12 United States granted patents, 20 non-US granted patents, no United States published patent applications and 2 published non-United States patent applications.

We hold licence rights to additional intellectual property from a number of third parties. We have a royalty-free license to approximately 900 issued patents and pending patent applications from Audi for bus and non-automotive applications as well as for certain limited pre-commercial purposes in automotive applications. In addition, these licences include non-exclusive, royalty-free access to all of the intellectual property rights held by NuCellSys GmbH, a Daimler subsidiary, and to all of the intellectual property rights relating to fuel cells developed by Daimler, Ford and their subsidiaries (either directly or through AFCC), including any intellectual property rights developed by them to January 31, 2013. As of March 6, 2019, of the approximately 2,000 patents and patent applications that were included in these licenses, approximately 275 of them are currently granted or pending.

Manufacturing

Our fuel cell products and clean energy solutions are produced in six facilities – three in Burnaby, British Columbia, one in Bend, Oregon, one in Southborough, Massachusetts, and one in Hobro, Denmark. Along with these facilities, the Synergy-Ballard JV, of which Ballard is a 10% owner, operates an FCveloCity®-9SSL fuel cell stack assembly line in Yunfu, China. The Burnaby facilities are focused on our core fuel cell competencies, which include the production of MEAs, integration and testing of fuel cell stacks, assembly and testing of motive modules, as well as support of other products required through our engineering services contracts. The Weichai-Ballard JV is planning to manufacture Ballard's next-generation FCgen®-LCS fuel cell stack and FCgen®-LCS-based power modules for bus, commercial truck and forklift applications.

We continue to make investments in our manufacturing process, equipment and capabilities and processes which are targeted at supporting higher volume production and automated processing to support future growth. Ballard Unmanned Systems develops, tests, and manufactures its UAV products in Southborough, Massachusetts. Ballard Europe develops, tests, and manufactures backup power systems in Hobro, Denmark.

Many of the materials and components used in the production of MEAs, fuel cell stacks, and balance of plant are proprietary in nature and have been developed in joint collaboration between Ballard and our key supply base. Strategic supply agreements have been executed with these suppliers to ensure security of supply, protection of our intellectual property, and adherence to our strict quality and reliability standards.

Safety

Our products are designed and manufactured with the safety of our employees, customers, and end-users in mind. All equipment and processes that are introduced into our working environment are evaluated using a rigorous Preliminary Hazard Assessment procedure to ensure they are safe to use.

In 2018 we continued to work diligently to continue to strengthen the culture of safety across our entire global footprint. We launched a "Step up to Safety" campaign that all employees participated in, and focused on core safety awareness through training programs such as

"Behavioural Based Safety" and "Due Diligence for Supervisors and Managers". We have updated our WHMIS training as well as to launch an online platform, passed a recertification audit for the Occupational Safety Standard of Excellence, and enhanced the robustness of our safety protocols for visitors and contractors.

Quality

Quality is an integral part of the Ballard culture. Our processes and systems are focused on ensuring that every product that is shipped to our customers conforms to their expectations and contractual requirements while being produced in a safe and environmentally conscious manner. We adhere to our Quality Policy Statement, which reads, "At Ballard, Quality is intrinsic to our identity. Our team is empowered to do things right – the first time – to satisfy customer needs and deliver on our promise. We will accomplish this by:

- Satisfying the requirements and addressing the Quality concerns of all stakeholders in pursuit of our strategic objectives;
- Providing the necessary resources to ensure our employees are able to fulfill their responsibilities;
- Establishing & communicating effective Quality metrics and targets;
- Monitoring the performance of our products and processes to discover improvement opportunities; and
- Continually improving our Quality Management System.

We will measure our success through the satisfaction of our customers."

In 2018 we certified to automotive standard IATF16949 while maintaining ISO9001:2015 in our Burnaby facilities. In addition, we passed supplier audits conducted by Audi and Siemens in 2018 as well. Conformance to these quality systems is ensured through our Integrated Management System. We also strive for continuous improvements in our manufacturing processes through such practices as Lean Manufacturing, 5-S and Six Sigma. The Synergy-Ballard JV in Yunfu, China carries the IATF16949 and ISO9001:2015 certifications.

Facilities

We, or our wholly-owned subsidiaries, currently have the following principal facilities: (a) a leased 116,797 ft² (10,850 m²) facility in Burnaby, British Columbia that houses our corporate headquarters and our fuel cell development, manufacturing, assembly and testing activities; (b) a leased 112,000 ft² (10,405 m²) facility in Burnaby that houses some of our manufacturing facilities, as well as manufacturing facilities of Mercedes-Benz Canada Inc. through a sublease; (c) approximately 10,000 ft² (930 m²) of assembly space in Burnaby that is used to support motive module assembly; (d) a leased 4,100 ft² (381 m²) facility in Hobro, Denmark; (e) a subleased 1,150 ft² (107 m²) facility in Southborough, Massachusetts that houses all of Ballard Unmanned Systems' operations. The Synergy-Ballard JV's operations in Yunfu, China occupies approximately 40,000 ft² of a purpose built 120,000 ft² facility dedicated to fuel cell stack and module assembly.

As per our Quality Statement, we are committed to ensuring that each of these facilities is operated in full compliance with all applicable laws, as well as all health, safety, and regulatory standards.

Sustainability

In 2017 we successfully completed our registration to the environmental policy standard ISO14001:2015. We take this initiative very seriously, not only in producing clean energy products and solutions for a global market, but also by ensuring that we will manufacture them in an environmentally conscious manner. It is our goal to act as corporate leaders with respect to environmental sustainability and stewardship and to ensure that, across our footprint, we will not adversely impact the environment.

Human Resources

As of December 31, 2018, we had 443 employees in Canada, 16 in the United States, 41 in the European Union, and 14 in China, representing such diverse disciplines as electrochemistry, polymer chemistry, chemical, mechanical, electronic and electrical engineering, manufacturing, marketing, sales, business development, legal, finance, human resources, information technology and business management. Our employees in Canada and the United States are not represented by any labour union. Each employee must agree to confidentiality provisions as part of the terms of his or her employment, and certain employees have also executed non-competition agreements with us.

SHARE CAPITAL AND MARKET FOR SECURITIES

Our authorized share capital consists of an unlimited number of common shares and an unlimited number of preferred shares. As of March 6, 2019, our issued share capital consisted of 231,929,309 common shares. Our common shares are listed and trade on the Toronto Stock Exchange ("**TSX**") and on the National Association of Securities Dealers Automated Quotation Global Market ("**NASDAQ**") and trade under the symbol "BLDP" on both exchanges. Prior to January 1, 2017 our common shares traded on the TSX under the symbol "BLD".

The following table shows the monthly trading activity for our common shares on the TSX and NASDAQ during 2018:

	TSX		NASDAQ	
	Price Range (C$)	**Average Daily Volume (#)**	**Price Range (US$)**	**Average Daily Volume (#)**
January	3.71 - 5.49	509,905	3.01 - 4.40	3,062,243
February	3.90 - 4.82	423,379	3.10 - 3.74	1,935,747
March	3.84 - 4.61	363,276	2.98 - 3.60	1,630,614
April	4.21 - 4.70	177,657	3.21 - 3.70	687,600
May	3.87 - 4.26	122,673	2.97 - 3.29	702,264
June	3.56 - 4.04	172,405	2.65 - 3.13	873,000
July	3.70 - 4.08	104,043	2.80 - 3.11	556,048
August	3.78 - 4.66	214,855	2.94 - 3.54	781,848
September	4.37 - 5.86	421,337	3.37 - 4.55	1,601,563
October	4.39 - 5.81	236,955	3.38 - 4.33	818,439
November	3.70 - 4.05	230,713	2.74 - 3.06	922,964
December	3.06 - 3.90	142,505	2.26 - 2.97	588,663

The holders of our common shares are entitled to one vote for each share held on all matters to be voted on by such shareholders and, subject to the rights and priorities of the holders of preferred shares, are entitled to receive such dividends as may be declared by our Board out of funds legally available therefor and, in the event of liquidation, wind-up or dissolution, to receive our remaining property, after the satisfaction of all outstanding liabilities.

Our preferred shares are issuable in series and our Board is entitled to determine the designation, preferences, rights, conditions, restrictions, limitations and prohibitions to be attached to each series of such shares. Currently there are no preferred shares outstanding.

DIVIDEND RECORD AND POLICY

To date, we have not paid any dividends on our shares and, because it is anticipated that all available cash will be needed to implement our business plans, we have no plans to pay dividends in the immediate future.

ESCROWED SECURITIES AND SECURITIES SUBJECT TO CONTRACTUAL RESTRICTIONS ON TRANSFER

The following tables sets out the number of common shares in escrow or subject to contractual restrictions on transfer and the percentage that number represents of the outstanding securities of that class.

Designation of Class	Number of Securities Held in Escrow or that are Subject to a Contractual Restriction on Transfer	Percentage of Class
Common	51,831,659	22.35%

Pursuant to the investor rights agreement dated November 13, 2018 between Ballard and Weichai HK with respect to the 46,131,712 common shares of Ballard purchased that date and the investor rights agreement amendment dated November 13, 2018 between Ballard and Broad-Ocean Motor (Hong Kong) Co. Limited ("**Broad-Ocean HK**") with respect to the 5,699,947 common shares of Ballard purchased that date, neither Weichai HK nor Broad-Ocean HK may trade such shares of Ballard before November 13, 2020 unless:

(1) in connection with a sale, transfer or disposition pursuant to any plan of arrangement, re-organization, amalgamation, takeover bid, merger or other similar combination transaction where an offer to purchase or exchange or reorganize the voting shares has been made to all shareholders of Ballard by a third party or involves all the voting shares;

(2) in connection with a sale, transfer or disposition to an affiliate of the shareholder, provided that the shareholder causes such affiliate to whom such voting shares are transferred to expressly agree in writing to be bound by the terms of the particular Investor Rights Agreement, and provided further that such sale, transfer or disposition is made in accordance with applicable securities laws;

(3) if a proceeding is commenced against or involving Ballard under the *Bankruptcy and Insolvency Act* (Canada) or the *Companies' Creditors Arrangement Act* (Canada) or any similar legislation; or

(4) if Ballard has received notice from any securities regulatory authority that the voting shares will be permanently cease-traded within a specified period.

DIRECTORS AND OFFICERS

Board of Directors

The following chart provides the following information as of March 6, 2019: the name and province or state of residence of each of our directors; each director's respective positions and offices held with Ballard, their principal occupation during the past five years; the period of time each has served as a director; and the number of shares and deferred share units (the "**DSUs**") beneficially owned or controlled by each of them.

Name, Province/State and Country of Residence[1]	Principal Occupation[1]	Director Since	Shares Beneficially Owned or Controlled or Directed[1] (#/% of Class)	Deferred Share Units Owned or Controlled[2] (#/% of Class)
Douglas P. Hayhurst British Columbia, Canada	Corporate Director of Ballard. 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).	2012	5,000 / 0.002%	195,943 / 26.22%

Name, Province/State and Country of Residence[1]	Principal Occupation[1]	Director Since	Shares Beneficially Owned or Controlled or Directed[1] (#/% of Class)	Deferred Share Units Owned or Controlled[2] (#/% of Class)
Jiang Kui (Kevin) Shandong, China	Mr. Jiang is President of Shandong Heavy Industry Group Co., Ltd. (*heavy machinery and automotive manufacturing*). He is also a non-executive director of Weichai Power Co., Ltd, (*diesel engine, powertrain and hydraulic products 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 Assembly Department 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*) . Mr. Jiang's principal business is acting as the General Manager of Shandong Heavy Industry Group Co., Ltd. (*heavy machinery and automotive manufacturing)).*	2019	0 / 0%	0 / 0%

Name, Province/State and Country of Residence[1]	Principal Occupation[1]	Director Since	Shares Beneficially Owned or Controlled or Directed[1] (#/% of Class)	Deferred Share Units Owned or Controlled[2] (#/% of Class)
Duy-Loan Le Texas, USA	Corporate Director of Ballard. Ms. Le is President of DLE Management Consulting LLC (*management consulting services*), a position she has held since 2016. Ms. Le is also a Director of Cree, Inc. (*LED lighting*). Previously, Ms. Le was 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.	2017	50,000 / 0.022%	20,390 / 2.73%
R. Randall MacEwen California, USA	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.	2014	161,821 / 0.070%	148,046 / 19.81%
Marty T. Neese California, USA	Corporate Director of Ballard. 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.	2015	0 / 0%	55,414 / 7.42%

Name, Province/State and Country of Residence[1]	Principal Occupation[1]	Director Since	Shares Beneficially Owned or Controlled or Directed[1] (#/% of Class)	Deferred Share Units Owned or Controlled[2] (#/% of Class)
James Roche Ontario, Canada	Corporate Director of Ballard. Mr. Roche is currently President and CEO of Stratford Managers Corporation, and was a founding member and executive at Newbridge Networks Corporation. He subsequently co-founded Tundra Semiconductor Corporation, and was President and CEO of the publicly-traded company. Mr. Roche has also served as President and CEO of CMC Microsystems and ThinkRF Corp.	2015	50,000 / 0.022%	64,573 / 8.64%
Sun Shaojun (Sherman) Shandong, China	Mr. Sun is a director of Weichai Group Holdings Limited and Weichai Heavy-duty Machinery Co., Ltd., 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*) director of Torch Automobile Group Co., Ltd. (*heavy machinery and automotive manufacturing*). Mr. Sun's principal business is acting as the Executive President of Weichai Power Co., Ltd. (*diesel engine, powertrain and hydraulic products manufacturing*).	2019	0 / 0%	0 / 0%

Name, Province/State and Country of Residence[1]	Principal Occupation[1]	Director Since	Shares Beneficially Owned or Controlled or Directed[1] (#/% of Class)	Deferred Share Units Owned or Controlled[2] (#/% of Class)
Ian Sutcliffe Ontario, Canada	Corporate Director of Ballard. 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*) from 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 (*video conferencing services*) from January 2003 to March 2004. Mr. Sutcliffe was President of Mediconsult.com (*public internet health services*) from June 1995 to June 1999 and President and CEO from 1999 to 2001.	2013	10,000 / 0.004%	87,100 / 11.66%
Janet Woodruff British Columbia, Canada	Corporate Director of Ballard. 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 (207-2008) 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.	2017	0 / 0%	18,881 / 2.53%

Notes

1. The information as to place of residence, principal occupation, business or employment of, and shares beneficially owned, or controlled or directed, directly or indirectly, by a director is not within the knowledge of our management and has been furnished by the director.
2. Rounded to the nearest whole number.

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.

The Board has formed three committees: the Corporate Governance & Compensation Committee; the Audit Committee; and the Commercial Committee. The Corporate Governance & Compensation Committee members are Mr. Hayhurst, Ms. Le, Mr. Sun, and Ms. Woodruff. The Audit Committee members are Mr. Hayhurst, Mr. Sutcliffe and Ms. Woodruff. The Commercial Committee members are Ms. Le, Mr. Neese and Mr. Sutcliffe. The chair of the Board is an *ex officio* member of each committee.

In 2012 Mr. Hayhurst was a director of Catalyst Paper Corporation during the time it restructured its debt under the *Companies' Creditors Arrangement Act* (Canada). In 2012, Mr. Sutcliffe was a director of BluePoint Data Inc. when the B.C. Securities Commission issued a cease trade order against BluePoint Data Inc. for failure to file its financial statements and management's discussion and analysis related thereto for the year ended December 31, 2011. The order remains in effect. Mr. Sutcliffe resigned as a director on June 27, 2012, subsequent to which BluePoint Data Inc. sold its business and distributed the proceeds to its shareholders. 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

Conflicts of Interest

Mr. Sun and Mr. Jiang are directors and officers of Weichai or affiliates of Weichai and as a result have potential material conflicts of interest with Ballard as a result of the contractual relationships between and amongst Ballard, Weichai and the Weichai-Ballard JV as discussed above in the Recent History section and below in the Material Contracts section of this Annual Information Form.

Senior Officers

As of March 6, 2019, we had five senior officers. The name and province or state of residence of each executive officer, the offices held by each officer and each officer's principal occupation during the last five years are as follows:

Name and Province/State of Residence	Position	Principal Occupation
R. Randall MacEwen California, USA	President and Chief Executive Officer	Executive of Ballard. Formerly the founder and Managing Partner at NextCleanTech LLC from 2010 to 2014, and President & CEO and Executive Vice President, Corporate Development at Solar Integrated Technologies, Inc. from 2006 to 2009 and 2005 to 2006, respectively.
Anthony Guglielmin British Columbia, Canada	Vice President and Chief Financial Officer	Executive of Ballard. Formerly SVP Finance and Chief Financial Officer of Canada Line Rapid Transit Inc. (2005 to 2009).
Sarbjot Sidhu British Columbia, Canada	Vice President, Operations	Senior officer of Ballard. Formerly Director, Quality of Ballard.
Kevin Colbow British Columbia, Canada	Vice President , Technology & Product Development	Senior officer of Ballard. Formerly Vice President, Technology Solutions of Ballard.
Robert Campbell British Columbia, Canada	Vice President and Chief Commercial Officer	Senior officer of Ballard. Formerly President and CEO of SoloPower Systems, Inc. (2013 – 2017).

In 2013, Mr. Campbell was the President and CEO of SoloPower Systems, Inc. during a financial restructuring with its secured creditors.

Shareholdings of Directors and Senior Officers

As of March 6, 2019, our directors and executive officers, as a group, beneficially owned, or controlled or directed, directly or indirectly, 443,614 of our common shares, being 0.191% of our issued and outstanding common shares, and 732,057 DSUs.

AUDIT COMMITTEE MATTERS

Audit Committee Mandate

The Audit Committee operates under a mandate that is approved by the Board and which outlines the responsibilities of the Audit Committee. A copy of the Audit Committee's mandate is attached as Appendix "A" and posted on our website. This mandate is reviewed annually and the Audit Committee's performance is assessed.

Composition of the Audit Committee

The following table sets forth the name of each of the current members of the Audit Committee, whether such member is independent, whether such member is financially literate and the relevant education and experience of such member.

Name	Independent?	Financially Literate?	Relevant Education and Experience
Douglas P. Hayhurst	Yes	Yes	Mr. Hayhurst was an executive with IBM Canada Business Consulting Services and a Partner with PricewaterhouseCoopers Management Consultants. Prior to that, Mr. Hayhurst held various senior executive management roles with Price Waterhouse 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.
James Roche *(ex officio)*	Yes	Yes	Corporate Director of Ballard. Mr. Roche is currently President and CEO of Stratford Managers Corporation, and was a founding member and executive at Newbridge Networks Corporation. He subsequently co-founded Tundra Semiconductor Corporation, and was President and CEO of the publicly-traded company. Mr. Roche has also served as President and CEO of CMC Microsystems and ThinkRF Corp.
Ian Sutcliffe	Yes	Yes	Mr. Sutcliffe has been a partner at Sutcliffe & Associates Management Consultants since June 1985. Previously, he was CEO, Chairman and independent director of BluePoint Data from September 2001 to June 2011 and Vice Chair and CEO of BCS Global from January 2003 to March 2004. Mr. Sutcliffe was President of Mediconsult.com from June 1995 to June 1999 and President and CEO from 1999 to 2001. Prior to that, he was with Coopers & Lybrand in Vancouver and London, England from June 1979 to June 1985.
Janet Woodruff	Yes	Yes	Ms. Woodruff was acting CEO to the Transportation Investment Corporation from 2014 to 2015, advisor to the board (2013-2014) and interim Chief Financial Officer (2012-2013). Formerly Vice President and Special Advisor to BC Hydro from 2010 to 2011; Interim President (2009-2010) and Vice President, Corporate Services and Chief Financial Officer (2007-2008) of BC Transmission Corporation. Formerly, Chief Financial Officer and Vice President, Systems Development and Performance of Vancouver Coastal Health from 2003 to 2007.

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 following table shows the costs incurred with KPMG LLP in 2018 and 2017 for audit and non-audit related work, all of which were approved by the Audit Committee:

Type of Audit Fees	2018 (C$)	2017 (C$)
Audit Fees	$516,800	$543,000
Audit-Related Fees	Nil	Nil
Tax Fees	$18,000	Nil
All Other Fees	Nil	Nil

Audit Fees

Audit fees were for professional services rendered by KPMG LLP for the audit of the annual financial statements, quarterly reviews and services provided in connection with statutory and regulatory filings or engagements relating to prospectuses and other offering documents.

Audit-Related Fees

Audit-related fees would be for assurance and related services reasonably related to the performance of the audit or review of the annual statements and are not reported under the heading audit fees above. There were no fees paid to KPMG LLP that would be considered “Audit-Related Fees” in 2018 and 2017.

Tax Fees

Tax fees paid to KPMG LLP in 2018 related to specialized customs and duties advice. There were no fees paid to KPMG LLP that would be considered “Tax Fees” in 2017.

All Other Fees

All other fees to be disclosed under this category would be for products and services other than those described under the headings audit fees, audit-related fees and tax fees above. There were no fees paid to KPMG LLP that would be considered “All Other Fees” in 2018 or 2017.

TRANSFER AGENT AND REGISTRAR

Our transfer agent and registrar is Computershare Trust Company of Canada, 100 University Avenue, 9th Floor, Toronto, Ontario, M5J 2Y1.

LEGAL PROCEEDINGS

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 with respect to the statements of Ballard) about its business partnerships and deployment of hydrogen fuel cell technology in China. In April the plaintiffs voluntarily dismissed all but one of the cases, *Porwal v. Ballard Power Systems Inc., et al.* (S.D. N.Y.). On August 21, 2018 we filed a notice of motion to dismiss and are awaiting a hearing of the motion. We will continue vigorously contest, and defend against, the complaint and believe the complaint is without merit.

In addition to the legal proceedings noted above, from time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of business.

INTERESTS OF EXPERTS

KPMG LLP, our independent auditors, has audited our consolidated financial statements for the years ended December 31, 2018 and 2017. As at the date hereof, KPMG LLP has confirmed that they are independent with respect to the Corporation within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies in Canada and any applicable legislation or regulations and also that they are independent accountants with respect to the Corporation under all relevant U.S. professional and regulatory standards.

INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

The Weichai-Ballard JV is 51% owned by Weichai and Weichai's wholly-owned subsidiary, Weichai HK, owns 19.9% of Ballard's common shares.

We expect the technology services provided to the Weichai-Ballard JV pursuant to the Research and Development Agreement dated November 13, 2018, the Joint Venture Agreement between Weichai and Ballard related to the Weichai-Ballard JV, and the ancillary agreements between Ballard and the Weichai-Ballard JV to have a material effect on Ballard in 2019 and following years.

As noted above, two of Ballard's directors, Mr. Sun and Mr. Jiang, are directors and officers of Weichai or affiliates of Weichai.

Except as described above, none of our insiders, directors or executive officers, nor any associate or affiliate of such persons, has had any material interest, direct or indirect, in any transaction of ours within our three most recently completed financial years, nor in any transaction or proposed transaction within our current financial year that has materially affected or would materially affect us or any of our subsidiaries.

MATERIAL CONTRACTS

Particulars of every contract that is material to Ballard, other than a contract entered into in the ordinary course of business that is not required to be disclosed under *National Instrument 51-102 – Continuous Disclosure Obligations*, and that was entered into within the most recently completed financial year, or before the most recently completed financial year but is still in effect, are listed below.

Weichai Strategic Collaboration Transaction

On November 13, 2018 we entered into a strategic collaboration transaction with Weichai that included the following material agreements:

1. A Subscription Agreement between Weichai and Ballard dated August 29, 2018. The Subscription Agreement resulted in an equity investment in Ballard by Weichai in the amount of approximately $163.6 million, representing 19.9% of the outstanding common shares of the capital of Ballard.

2. An Investor Rights Agreement between Weichai HK and Ballard dated November 13, 2018. The key terms of Investor Rights Agreement are set out in the Recent History section of this Annual Information Form.

3. A Joint Venture Agreement between Weichai and Ballard HK dated November 13, 2018. The key terms of Joint Venture Agreement are set out in the Recent History section of this Annual Information Form.

The Subscription Agreement was filed on SEDAR on September 3, 2018 and the Investor Rights Agreement and Joint Venture Agreement were filed on SEDAR on November 23, 2018.

Power Manager Asset Sale

On August 31, 2018, our wholly-owned subsidiary Ballard Unmanned Systems entered into an asset purchase agreement to sell the Power Manager business of Protonex to Revision Military. The particulars of the Asset Purchase Agreement are described above in the Recent History section of this Annual Information Form.

We filed the Asset Purchase Agreement on SEDAR on September 7, 2018.

Technology Development Agreement with Audi

On June 11, 2018 we entered into a 3.5-year extension to its current Technology Solutions contract with AUDI extending the HyMotion program to August 2022. The aggregate value of the contract extension is expected to be C$80 – 130 million (US$62 – 100 million). The program will support Audi through its small series production launch. The particulars of the Technology Development Agreement are described in above in this Annual Information Form.

We filed the Technology Development Agreement on SEDAR on June 21, 2018. The preceding technology development agreement and associated amending agreement with AUDI and VW were filed on SEDAR on February 20, 2015 and March 15, 2013, respectively.

Broad-Ocean Licensing Transaction

On February 16, 2017, we announced that we had signed a definitive agreement relating to technology transfer, licensing and supply arrangements with strategic partner Broad-Ocean for the assembly and sale of FCveloCity® 30kW and 85kW fuel cell engines in China. The particulars of the Fuel Cell Module Assembly Framework Agreement and Module Assembly License Agreements are described above in the Recent History section of this Annual Information Form.

Ballard filed the Fuel Cell Module Assembly Framework Agreement and Module Assembly License Agreements on SEDAR on April 25, 2017 in conjunction with the filing of a Material Change Report in respect of the transaction.

FCveloCity®-9SSL Fuel Cell Stack Production Operation

On July 18, 2016 we entered definitive agreements in Foshan, China with Nation-Synergy for the establishment of an FCveloCity®-9SSL fuel cell stack production operation in the City of Yunfu, in Guangdong Province. The transaction completed on October 25, 2016.

Ballard filed the 9SSL Production Line Master Agreement and form of Equity Joint Venture Agreement on SEDAR on July 27, 2016 in conjunction with the filing of a Material Change Report in respect of the transaction. On November 4, 2016, we filed the final Equity Joint Venture Agreement and Sales and Marketing Agreement in conjunction with the filing of a Material Change Report in respect of the closing of the transaction. The particulars of the 9SSL Production Line Master Agreement, Equity Joint Venture Agreement, and Sales and Marketing Agreement are described above in the Recent History section of this Annual Information Form.

Ballard Unmanned Systems Acquisition

On June 29, 2015, Ballard entered into an agreement and plan of merger with BPC Subco Inc. (**MergerCo**"), a wholly-owned subsidiary of Ballard, and Protonex Technology Corporation (the "**Merger Agreement**") under which MergerCo merged with Protonex Technology Corporation. Pursuant to the Merger Agreement, Ballard Power Corporation, a wholly-owned subsidiary of Ballard, became the sole stockholder of the post-merger corporation, also named Protonex Technology Corporation (now Ballard Unmanned Systems).

The merger occurred on October 1, 2015 and as consideration for the merger Ballard assumed and paid certain of Ballard Unmanned Systems' debt obligations and transaction costs at closing, being approximately $3.8 million, and paid the balance of the consideration through the issuance of approximately 11.4 million Ballard shares.

On June 29, 2015 Ballard filed the Merger Agreement on SEDAR in conjunction with the filing of a Material Change Report in respect of the transaction.

Audi IP Asset Transfer

On February 11, 2015, we entered into an agreement with Audi (the **IP Transfer and License Agreement**") under which we agreed to transfer to Audi certain of the transportation-related fuel cell intellectual property assets we previously acquired from United Technologies Corporation. These assets consist of approximately 900 patents and patent applications as well as know-how primarily related to PEM fuel cell technology.

As consideration for the patents and patent applications, Ballard received $40 million from Audi, of which $10 million was paid to UTC as a royalty under the terms of our prior acquisition from UTC. As consideration for the know-how, Ballard received $10 million from Audi on transfer thereof, of which $900,000 was paid to UTC.

In addition, we retain the sole right to use the patents, patent applications and know-how transferred to Audi for all non-automotive purposes, as well as a non-exclusive right for use in buses, and a non-exclusive right for use in certain limited pre-commercial automotive purposes, all on a royalty-free basis. We also retain the right to provide technology solutions services to other automotive OEMs.

In connection with the transaction, Volkswagen extended its existing technology development agreement with us as described below.

Ballard filed the IP Transfer and License Agreement on SEDAR on February 20, 2015 in conjunction with the filing of a Material Change Report in respect of the transaction.

RISK FACTORS

An investment in our common shares involves risk. Investors should carefully consider the risks and uncertainties described below and the other information contained in, and incorporated into, this Annual Information Form, including "Management's Discussion and Analysis" and our financial statements for the year ended December 31, 2018. The risks and uncertainties described below 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.

We may not be able to successfully execute our business plan.

The execution of our business plan poses many challenges and is based on a number of assumptions. We may not be able to successfully execute our business plan. If we experience significant cost overruns on our programs, or if our business plan is more costly than we anticipate, certain research and development activities may be delayed or eliminated, resulting in changes or delays to our commercialization plans, or we may be compelled to secure additional funding (which may or may not be available) to execute our business plan. We cannot predict with certainty our future revenues or results from our operations. If the assumptions on which our revenue or expenditure forecasts are based change, the benefits of our business plan may change as well. In addition, we may consider expanding our business beyond what is currently contemplated in our business plan. Depending on the financing requirements of a potential acquisition or new product opportunity, we may be required to raise additional capital through the issuance of equity or debt. If we are unable to raise additional capital on acceptable terms, we may be unable to pursue a potential acquisition or new product opportunity.

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 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. While we continually seeking to expand our customer base, we expect the limited number of customers will continue for the next several years. Our future success is dependent upon the continued purchases of our products by these customers. Any fluctuations in anticipated demand from these customers may negatively impact our business, financial condition and results of operations.

If we are unable to broaden our customer base and expand relationships with other potential customers, our business in the Heavy-Duty Motive market will continue to be impacted by unanticipated demand fluctuations due to our dependence on these customers. Unanticipated demand fluctuations may have a negative impact on our revenues and business, and an adverse effect on our business, financial condition and results of operations.

In addition, our dependence on a small number of customers in our Heavy-Duty Motive market exposes us to numerous other risks, including: (i) a slowdown or delay in the customers' deployment of our products could significantly reduce demand for our products as well as increase pricing pressure on our products due to increased purchasing leverage; (ii) customer-specific factors resulting in a choice to pursue an alternative technology or supplier; (iii) reductions in a few

customers' forecasts and demand could result in excess inventories; (iv) the current or future economic conditions could negatively affect our major customers and cause them to significantly reduce operations or file for bankruptcy; (v) concentration of accounts receivable credit risk, which could have a material adverse effect on our liquidity and financial condition if one of our major customers declared bankruptcy or delayed payment of their receivables; and (vi) changes in government support for zero-emission vehicles could adversely affect the end-user cost of vehicles incorporating our heavy-duty motive products.

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 customers' 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.

We sell most of our products in the Heavy-Duty Motive market to a limited number of Chinese customers, and while we are continually seeking to expand our customer base, we expect this will continue for the next several years. The risks and uncertainties described above apply equally to Chinese customers. In addition, any significant economic slowdown in China, change in Chinese government policy around subsidies for zero-emission vehicles or hydrogen fueling infrastructure could have an adverse impact on our business, financial condition and results of operations.

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.

Stack manufacturing in the Heavy-Duty Motive market in China will be carried out by the Synergy-Ballard JV. The Weichai-Ballard JV is planning to manufacture our next-generation FCgen®-LCS fuel cell stack and FCgen®-LCS-based power modules for bus, commercial truck and forklift applications. We share ownership and management of the Synergy-Ballard JV with one or more parties who may not have the same goals, strategies, priorities or resources as we do and may compete with us outside the joint venture. Similarly, we share ownership and management of the Weichai-Ballard JV with one or more parties who may not have the same goals, strategies, priorities or resources as we do and may compete with us outside the joint venture.

Joint ventures are intended to be operated for the equal benefit of all co-owners, rather than for our exclusive benefit. Operating a business as a joint venture often requires additional organizational formalities as well as time-consuming procedures for sharing information and making decisions. If a co-owner changes or relationships deteriorate, our success in the joint venture may be materially adversely affected. In addition, because we have a minority share ownership, we have limited control over the actions of each of the Synergy-Ballard JV and the Weichai-Ballard JV. As a result, we may be unable to prevent misconduct or other violations of applicable laws by the

Synergy-Ballard JV and the Weichai-Ballard JV. To the extent another party makes decisions that negatively impact the Synergy-Ballard JV or the Weichai-Ballard JV or internal control issues arise within either joint venture, we may have to take responsive or other action or we may be subject to penalties, fines or other related actions for these activities.

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.

We provide most of our services in the Technology Solutions market to a single customer, the Volkswagen Group, and while we are continually seeking to expand our customer base, we expect this will continue for the next several years. Our future success in this market is dependent upon the continued demand by this customer and expansion of our customer base. Any decline in or loss of demand from this customer or other customers for any reason may have a negative impact on our revenues, and an adverse effect on our business, financial condition and results of operations. In addition, our dependence on a single customer in this market exposes us to numerous other risks, including: the current or future economic conditions could negatively affect our major customer and cause them to significantly reduce operations or file for bankruptcy.

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 fuel cell stack development and commercialization plans.

We sell most of our products in the Material Handling market to a single customer, Plug Power, and while we are continually seeking to expand our customer base, we expect this will continue for the next several years. Plug Power has developed its own fuel cell stacks to integrate into their material handling products. If Plug Power decides to solely use its own fuel cell stacks, then these fuel cell stacks may compete directly with our fuel cell stacks. Any decline in business with this customer could have an adverse impact on our business, financial condition and results of operations. Our future success is dependent upon the continued purchases of our products by this customer. Any fluctuations in demand from this customer or other customers may negatively impact our business, financial condition and results of operations. If we are unable to broaden our customer base and expand relationships with other potential customers, our business in this market will continue to be impacted by unanticipated demand fluctuations due to our dependence on a single customer. Unanticipated demand fluctuations can have a negative impact on our revenues and business, and an adverse effect on our business, financial condition and results of operations. In addition, our dependence on a single customer in this market exposes us to numerous other risks, including: (i) a slowdown or delay in the customer's deployment of our products could significantly reduce demand for our products as well as increase pricing pressure on our products due to increased purchasing leverage; (ii) reductions in the customer's forecasts and demand could result in excess inventories; (iii) the current or future economic conditions could negatively affect the customer and cause it to significantly reduce operations or file for bankruptcy; (iv) concentration of accounts receivable credit risk, which could have a material adverse effect on our liquidity and financial condition if the customer declared bankruptcy or delayed payment of their receivables; and (v) reductions in the customer's demand as a result of their own strategic action to dual source their supply of fuel cell stacks.

We expect our cash reserves will be reduced due to future operating losses and working capital requirements and capital contributions to our joint ventures 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.

We expect to incur continued losses and generate negative cash flow until we can produce sufficient revenues to cover our costs. Further, we are obligated to fund our pro rata share of the Weichai-Ballard JV based on an agreed business plan. We may never become profitable. Even if we do achieve profitability, we may be unable to sustain or increase our profitability in the future. For the reasons discussed in more detail below, there are substantial uncertainties associated with our achieving and sustaining profitability. We expect our cash reserves will be reduced due to future operating losses, working capital requirements and funding obligations to the Weichai-Ballard JV, and we cannot provide certainty as to how long our cash reserves will last or that we will be able to access additional capital if and 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 expect our revenues and operating results to vary significantly from quarter to quarter. As a result, quarter-to-quarter comparisons of our revenues and operating results may not be meaningful. Due to the stage of development of our business, it is difficult to predict our future revenues or results of operations accurately. We are also subject to normal operating risks such as credit risks, foreign currency risks and fluctuations in commodity prices. As a result, it is possible that in one or more future quarters, our operating results may fall below the expectations of investors and securities analysts. Not meeting investor and security analyst expectations may materially and adversely impact the trading price of our common shares and restrict our ability to secure required funding to pursue our commercialization plans.

We are dependent upon Original Equipment Manufacturers and Systems Integrators to purchase certain of our products.

To be commercially useful, our fuel cell products must be integrated into products manufactured by Systems Integrators and OEMs. We can offer no guarantee that Systems Integrators or OEMs will manufacture appropriate, durable or safe products or, if they do manufacture such products, that they will choose to use our fuel cell products. Any integration, design, manufacturing or marketing problems encountered by Systems Integrators or OEMs could adversely affect the market for our fuel cell products and our financial results.

We, directly or through joint ventures that we are party to, sell a significant portion of our products in the Heavy Duty Motive market in China and to relatively small System Integrator customers with limited experience developing fuel cell system products on a commercial basis. We do not know whether these customers will be able to successfully develop, manufacture or market products to their customers. In addition, our dependence on such customers in this market increases the risks of difficulties in integration, design, manufacturing or marketing of their products; and that current or future macro-economic conditions in China could negatively affect them and cause them to significantly reduce operations or file for bankruptcy.

Our technology and products may not meet the market requirements, including requirements relating to performance and / or cost.

The market requirements for our products and, by extension, our technology changes rapidly. Our existing and planned products may not meet the market requirements for any number of characteristics, including performance, cost, freeze-protection, ingress protection, and durability.

We may not be able to achieve commercialization of our products on the timetable we anticipate, or at all.

We cannot guarantee that we will be able to develop commercially viable fuel cell products on the timetable we anticipate, or at all. The commercialization of our fuel cell products requires substantial technological advances to improve the durability, reliability and performance of these products, and to develop commercial volume manufacturing processes for these products. It also depends upon our ability to significantly reduce the costs of these products, since they are currently more expensive than products based on existing technologies, such as internal combustion engines and batteries. We may not be able to sufficiently reduce the cost of these products without reducing their performance, reliability and durability, which would adversely affect the willingness of consumers to buy our products. We cannot guarantee that we will be able to internally develop the technology necessary for commercialization of our fuel cell products or that we will be able to acquire or license the required technology from third parties.

In addition, before we release any product to market, we subject it to numerous field tests. These field tests may encounter problems and delays for a number of reasons, many of which are beyond our control. If these field tests reveal technical defects or reveal that our products do not meet performance goals, our commercialization schedule could be delayed, and potential purchasers may decline to purchase our products.

A mass market for our products may never develop or may take longer to develop than we anticipate.

Our fuel cell products represent emerging markets, and we do not know whether end-users will want to use them in commercial volumes. In such emerging markets, demand and market acceptance for recently introduced products and services are subject to a high level of uncertainty and risk. The development of a mass market for our fuel cell products may be affected by many factors, some of which are beyond our control, including the emergence of newer, more competitive technologies and products, the cost of fuels used by our products, regulatory requirements, consumer perceptions of the safety of our products and related fuels, and end-user reluctance to buy a new product.

If a mass market fails to develop, or develops more slowly than we anticipate, we may never achieve profitability. In addition, we cannot guarantee that we will continue to develop, manufacture or market our products if sales levels do not support the continuation of the product.

We are subject to risks inherent in international operations, including restrictions on the conversion of currencies and restrictions on repatriation of funds.

Our success depends on our ability to secure international customers and receive payments from international customers and joint ventures we are participants in.

We face numerous challenges in our international business activities, including restrictions on the conversion of currencies, restrictions on repatriation of funds, war, insurrection, civil unrest, strikes and other political risks, negotiation of contracts with government entities, unexpected changes in regulatory and other legal requirements, fluctuations in exchange rates, longer accounts receivable requirements and collections, difficulties in managing international operations, potentially adverse tax consequences, and the burdens of complying with a wide variety of international laws.

Trade disputes and trade barriers, whether tariff or non-tariff, could prevent us from selling our products in key geographical markets, make our products uncompetitive with local competitors, and prevent us from sourcing key components of our products.

We have limited experience developing and manufacturing products that meet foreign regulatory and commercial requirements in our target markets.

Any of the above factors could have a material adverse effect on our business, results of operations and financial performance.

We have limited experience manufacturing fuel cell products on a commercial basis.

To date, we have limited experience manufacturing fuel cell products on a commercial basis. We cannot be sure that we will be able to develop efficient, low-cost, high-volume automated processes that will enable us to meet our cost goals and profitability projections. While we currently have sufficient production capacity to fulfill customer orders in the near-term, we expect that we will increase our production capacity based on market demand. We cannot be sure that we will be able to achieve any planned increases in production capacity or that unforeseen problems relating to our manufacturing processes will not occur. Even if we are successful in developing high-volume automated processes and achieving planned increases in production capacity, we cannot be sure that we will do so in time to meet our product commercialization schedule or to satisfy customer demand. If our business does not grow as quickly as anticipated, our existing and planned manufacturing facilities would, in part, represent excess capacity for which we may not recover the cost, in which case our revenues may be inadequate to support our committed costs and planned growth, and our gross margins and business strategy would be adversely affected. Any of these factors could have a material adverse effect on our business, results of operations and financial performance.

Warranty claims, product performance guarantees, or indemnification claims could negatively impact our gross margins and financial performance.

There is a risk that our warranty accrual estimates are not sufficient and we may recognize additional expenses, including those related to litigation, as a result of warranty claims in excess of our current expectations. Such warranty claims may necessitate changes to our products or manufacturing processes and/or a product recall, all of which could hurt our reputation and the reputation of our products and may have an adverse impact on our financial performance and/or on future sales. While we attempt to mitigate these risks through product development, quality assurance and customer support and service processes, there can be no assurance that these processes are adequate. Even in the absence of any warranty claims, a product deficiency such as a design or manufacturing defect could be identified, necessitating a product recall or other corrective

measures, which could hurt our reputation and the reputation of our products and may have an adverse impact on our financial performance and/or on future sales.

New products may have different performance characteristics from previous products. In addition, we have limited field experience with existing commercial products from which to make our warranty accrual estimates.

We could be adversely affected by risks associated with acquisitions.

We may in future, seek to expand our business through acquisitions. Any such acquisitions will be in part dependent on management's ability to identify, acquire and develop suitable acquisition targets in both new and existing markets. In certain circumstances, acceptable acquisition targets might not be available. Acquisitions involve a number of risks, including: (i) the possibility that we, as successor owner, may be legally and financially responsible for liabilities of prior owners; (ii) the possibility that we may pay more than the acquired company or assets are worth; (iii) the additional expenses associated with completing an acquisition and amortizing any acquired intangible assets; (iv) the difficulty of integrating the operations and personnel of an acquired business; (v) the challenge of implementing uniform standards, controls, procedures and policies throughout an acquired business; (vi) the inability to integrate, train, retrain and motivate key personnel of an acquired business; and (vii) the potential disruption of our ongoing business and the distraction of management from our day-to-day operations. These risks and difficulties, if they materialize, could disrupt our ongoing business, distract management, result in the loss of key personnel, increase expenses and otherwise have a material adverse effect on our business, results of operations and financial performance.

We depend on our intellectual property, and our failure to protect that intellectual property could adversely affect our expected future growth and success.

Failure to protect our existing intellectual property rights may result in the loss of our exclusivity regarding, or the right to use, our technologies. If we do not adequately ensure our freedom to use certain technology, we may have to pay others for rights to use their intellectual property, pay damages for infringement or misappropriation, or be enjoined from using such intellectual property. We rely on patent, trade secret, trademark and copyright laws to protect our intellectual property. Some of our intellectual property is not covered by any patent or patent application, and the patents to which we currently have rights expire between 2019 and 2038. Our present or future-issued patents may not protect our technological leadership, and our patent portfolio may not continue to grow at the same rate as it has in the past. Moreover, our patent position is subject to complex factual and legal issues that may give rise to uncertainty as to the validity, scope and enforceability of a particular patent. Accordingly, there is no assurance that: (i) any of the patents owned by us or other patents that third parties license to us will not be invalidated, circumvented, challenged, rendered unenforceable or licensed to others; or (ii) any of our pending or future patent applications will be issued with the breadth of claim coverage sought by us, if issued at all. In addition, effective patent, trade secret, trademark and copyright protection may be unavailable, limited or not applied for in certain countries.

We also seek to protect our proprietary intellectual property, including intellectual property that may not be patented or patentable, in part by confidentiality agreements and, if applicable, inventors' rights agreements with our strategic partners and employees. We can provide no assurance

that these agreements will not be breached, that we will have adequate remedies for any breach, or that such persons or institutions will not assert rights to intellectual property arising out of these relationships.

Certain of our intellectual property have been licensed to us on a non-exclusive basis from third parties who may also license such intellectual property to others, including our competitors. If necessary or desirable, we may seek further licences under the patents or other intellectual property rights of others. However, we may not be able to obtain such licences or the terms of any offered licences may not be acceptable to us. The failure to obtain a licence from a third party for intellectual property we use could cause us to incur substantial liabilities and to suspend the manufacture or shipment of products or our use of processes requiring the use of such intellectual property.

We may become subject to lawsuits in which it is alleged that we have infringed the intellectual property rights of others or commence lawsuits against others who we believe are infringing upon our rights. Our involvement in intellectual property litigation could result in significant expense to us, adversely affecting the development of sales of the challenged product or intellectual property and diverting the efforts of our technical and management personnel, whether or not such litigation is resolved in our favour.

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.

We depend on information technology infrastructure and systems ("**IT Systems**"), hosted internally and outsourced, to process, transmit and store electronic data and financial information (including proprietary or confidential information), and manage business operations. Our business requires the appropriate and secure utilization of sensitive, confidential or personal data or information belonging to our employees, customers and partners. In addition, Ballard proprietary or confidential information may be stored on IT Systems of our suppliers, customers and partners. Increased global cybersecurity vulnerabilities, threats and more sophisticated and targets cyber-related attacks pose a risk to the security of Ballard's and its customers', partners', suppliers' and third-party service providers' IT Systems and the confidentiality, availability and integrity of Ballard's and its customers' and partners' data or information. While we have made investments seeking to address these threats, including monitoring of networks and systems, hiring of experts, employee training and security policies for employees, we may face difficulties in anticipating and implementing adequate preventative measures and remain potentially vulnerable. We must rely on our own safeguards as well as the safeguards put in place by our suppliers, customers and partners to mitigate the threats. Our internal systems are audited for cybersecurity vulnerabilities by third party security firms to ensure we are prepared for new and emerging threats. Our suppliers, customers and partners have varying levels of cybersecurity expertise and safeguards, most have yearly compliance audits that are available upon request.

An IT System failure or non-availability, cyber-attack or breach of systems security could disrupt our operations, cause the loss of, corruption of, or unauthorized access to sensitive, confidential or personal data or information or expose us to regulatory investigation, litigation or contractual penalties. Our customers, partners or governmental authorities may question the adequacy of cybersecurity processes and procedures and this could have a negative impact on existing business or future opportunities. Furthermore, given the highly evolving nature of

cybersecurity threats or disruptions and their increased frequency, the impact of any future incident cannot be easily predicted or mitigated, and the costs related to such threats or disruptions may not be fully insured or indemnified by other means.

Global macro-economic conditions are beyond our control and may have an adverse impact on our business or our key suppliers and/or customers.

Current global economic conditions, including volatility in China, may adversely affect the development of sales of our products, and thereby delay the commercialization of our products. Customers and/or suppliers may not be able to successfully execute their business plans; product development activities may be delayed or eliminated; new product introduction may be delayed or eliminated; end-user demand may decrease; and some companies may not continue to be commercially viable.

We currently face and will continue to face significant competition.

As fuel cell products have the potential to replace existing power products, competition for our products will come from current power technologies, from improvements to current power technologies, and from new alternative energy technologies, including other types of fuel cells. Each of our target markets is currently serviced by existing manufacturers with existing customers and suppliers. These manufacturers use proven and widely accepted technologies such as internal combustion engines and batteries as well as coal, oil and nuclear powered generators.

Additionally, there are competitors working on developing technologies other than PEM fuel cells (such as other types of fuel cells and advanced batteries) in each of our targeted markets. Some of these technologies are as capable of fulfilling existing and proposed regulatory requirements as the PEM fuel cell.

Within the PEM fuel cell market, we also have a large number of competitors. Across the world, corporations, national laboratories and universities are actively engaged in the development and manufacture of PEM fuel cell products and components. Each of these competitors has the potential to capture market share in each of our target markets.

Many of our competitors have substantial financial resources, customer bases, manufacturing, marketing and sales capabilities, and businesses or other resources, which give them significant competitive advantages over us.

We could lose or fail to attract the personnel necessary to operate our business.

Our success depends in large part on our ability to attract and retain key management, engineering, scientific, marketing, manufacturing and operating personnel. As we develop additional manufacturing capabilities and expand the scope of our operations, we will require more skilled personnel. Recruiting personnel for the fuel cell industry is highly competitive. We may not be able to continue to attract and retain qualified executive, managerial and technical personnel needed for our business. Our failure to attract or retain qualified personnel could have a material adverse effect on our business.

Public policy and regulatory changes could hurt the market for our products and services.

Changes in existing government regulations and the emergence of new regulations with respect to fuel cell products may hurt the market for our products and services. Environmental laws

and regulations have driven interest in fuel cells. We cannot guarantee that these laws and policies including subsidies or incentives associated with the adoption of clean energy products, will not change. Changes in these laws and other laws and policies, or the failure of these laws and policies to become more widespread, could result in manufacturers abandoning their interest in fuel cell products or favouring alternative technologies. In addition, as fuel cell products are introduced into our target markets, governments may impose burdensome requirements and restrictions on the use of fuel cell products that could reduce or eliminate demand for some or all of our products and services.

Government budgetary constraints could reduce the demand for our products by restricting the funding available to public transportation agencies and militaries. We cannot guarantee that current government direct and indirect financial support for our products will continue.

We are dependent on third party suppliers for the supply of key materials and components for our products and services.

We have established relationships with third party suppliers, on whom we rely to provide materials and components for our products. A supplier's failure to supply materials or components in a timely manner, or to supply materials and components that meet our quality, quantity or cost requirements, or our inability to obtain substitute sources for these materials and components in a timely manner or on terms acceptable to us, could harm our ability to manufacture our products. In addition, to the extent that our product development plans rely on development of supplied materials or components, we cannot guarantee that we will be able to leverage our relationships with suppliers to support these plans. To the extent that the processes that our suppliers use to manufacture the materials and components are proprietary, we may be unable to obtain comparable materials or components from alternative suppliers, which could adversely affect our ability to produce viable fuel cell products or significantly raise our cost of producing such products.

Exchange rate fluctuations are beyond our control and may have a material adverse effect on our business, operating results, financial condition and profitability.

We report our financial results in United States dollars. Our operating expenditures are particularly affected by fluctuations in the exchange rate between the Canadian dollar and the United States dollar. We generate the majority of our revenues in United States dollars while the majority of our operating expenditures are incurred in Canadian dollars. As a result, any increase in the value of the Canadian dollar, relative to the United States dollar, increases the amount of reported operating expenditures in excess of any corresponding increase in revenues and gross margins. Exchange rate fluctuations are beyond our control, and the Canadian dollar may appreciate against the United States dollar in the future, which would result in higher operating expenditures and lower net income. In order to reduce the potential negative effect of a strengthening Canadian dollar, we occasionally enter into various hedging programs. Regardless, if the Canadian dollar increases in value, it will negatively affect our financial results and our competitive position compared to other fuel cell product manufacturers in jurisdictions where operating costs are lower.

Commodity price fluctuations are beyond our control and may have a material adverse effect on our business, operating results, financial condition and profitability.

Commodity prices, in particular the price of platinum and palladium, affect our costs. Platinum and palladium are key components of our fuel cell products. Platinum and palladium are

scarce natural resources and we are dependent upon a sufficient supply of these commodities. While we do not anticipate significant near or long-term shortages in the supply of platinum or palladium, such shortages could adversely affect our ability to produce commercially viable fuel cell products or significantly raise our cost of producing such products. In order to reduce the impact of platinum price fluctuations, we occasionally enter into various hedging programs.

We could be liable for environmental damages resulting from our research, development or manufacturing operations.

Our business exposes us to the risk of harmful substances escaping into the environment, resulting in personal injury or loss of life, damage to or destruction of property, and natural resource damage. Depending on the nature of the claim, our current insurance policies may not adequately reimburse us for costs incurred in settling environmental damage claims, and in some instances, we may not be reimbursed at all. Our business is subject to numerous laws and regulations that govern environmental protection and human health and safety. These laws and regulations have changed frequently in the past and it is reasonable to expect additional and more stringent changes in the future. Our operations may not comply with future laws and regulations, and we may be required to make significant unanticipated capital and operating expenditures. If we fail to comply with applicable environmental laws and regulations, governmental authorities may seek to impose fines and penalties on us, or to revoke or deny the issuance or renewal of operating permits, and private parties may seek damages from us. Under those circumstances, we might be required to curtail or cease operations, conduct site remediation or other corrective action, or pay substantial damage claims.

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.

Merger and acquisition activities are disruptive to management and the expected benefits of a merger or acquisition transaction are subject to numerous risks, including the disruption of our day-to-day operations, a failure to realize projected revenue gains, achieve expected cost savings within the assumed timeframe, and integration costs being higher than expected.

In addition, the actual integration may result in additional and unforeseen expenses, and the anticipated benefits of the integration plan may not be realized. An inability to realize the full extent of, or any of, the anticipated benefits of a merger or acquisition transaction, as well as any delays encountered in the integration process, could have a material adverse effect on our business and results of operations.

Our products use flammable fuels and some generate high voltages, which could subject our business to product liability or other claims.

Our business exposes us to potential product liability claims that are inherent in electrical products, and in products that use hydrogen or hydrogen-rich reformate fuels. High-voltage electricity poses potential shock hazards, and hydrogen is a flammable gas and therefore a potentially dangerous fuel. Any accidents involving our products or other hydrogen-based products could materially impede widespread market acceptance and demand for our fuel cell products. Involvement in litigation could result in significant expense to us, adversely affecting the development and sales of our products, and diverting the efforts of our technical and management

personnel, whether or not the litigation is resolved in our favour. In addition, we may be held responsible for damages beyond the scope of our insurance coverage. We also cannot predict whether we will be able to maintain our insurance coverage on acceptable terms.

ADDITIONAL INFORMATION

Additional information regarding Ballard may be found on SEDAR at www.sedar.com. In particular, additional information regarding directors' and officers' remuneration and indebtedness, principal holders of our securities and securities authorized for issuance under security compensation plans is contained in our information circular for our most recent annual meeting of securityholders that involved the election of directors. Additional financial information is provided in our financial statements and Management's Discussion and Analysis for the most recently completed financial year.

Copies of this Annual Information Form and the documents incorporated by reference herein, our comparative financial statements (including the auditors' report) for the year ended December 31, 2018, each interim financial statement issued after December 31, 2018, our management proxy circular and our Annual Report may be obtained upon request from our Corporate Secretary, 9000 Glenlyon Parkway, Burnaby, British Columbia, V5J 5J8, or on our website at www.ballard.com.

APPENDIX "A"
AUDIT COMMITTEE MANDATE

The Board has established an Audit Committee (the "**Committee**") to assist 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, as further described below.

In this Mandate, the "**Corporation**" means Ballard Power Systems Inc. and a "**director**" means a Board member. "**CGCC**" means the Corporation's Corporate Governance & Compensation Committee.

Composition and Eligibility

A) The Committee will have a minimum of three members, including the chair of the Committee. Following each annual meeting of shareholders of the Corporation the Board, upon the recommendation of the Corporate Governance & Compensation Committee, will appoint the members of the Committee, including the Committee chair. Any member may be removed or replaced at any time by the Board and will cease to be a member upon ceasing to be a director of the Corporation. Each member will hold office until the close of the next annual meeting of shareholders of the Corporation or until the member resigns or is replaced, whichever occurs first.

B) Each member of the Committee will be an independent director as set out in applicable securities laws, rules and regulations, and standards of the stock exchanges on which the Corporation's securities are listed.

C) All members of the Committee will be financially literate, as defined in accordance with applicable securities laws, rules and regulations, and standards of the stock exchanges on which the Corporation's securities are listed.

D) At least one member of the Committee must be an audit committee "financial expert" as defined by securities laws, rules and regulations.

E) Any member of the Committee who serves on more than three public company audit committees must inform the Chair of the Board, so that the Board may consider and discuss with such member any issues related to his or her effectiveness and time commitment.

Meetings & Quorum

A) The Committee will meet at least quarterly and otherwise as necessary. Any member of the Committee may request additional meetings.

B) The CEO, CFO, Controller and internal auditor shall have direct access to the Committee. The CEO, CFO, Controller, internal and external auditors will receive notice of every meeting of the Committee and may request a meeting of the Committee be called by notifying the chair of the Committee.

C) A majority of Committee members constitute a quorum necessary for the transaction of business at Committee meetings. A quorum once established is maintained even if members of the Committee leave the meeting prior to conclusion.

D) All directors of the Company, including management directors, may attend meetings of the Committee provided, however, that no director is entitled to vote at such meetings and is not counted as part of the quorum for the Committee if he or she is not a member of the Committee.

E) As part of every regularly-scheduled meeting, the Committee will hold in-camera sessions with: (1) the external auditors and the internal auditors; (2) with the external auditors only; and (3) of the Committee itself, without management or management directors present. The Committee may also hold other in-camera sessions with such members of management present as the Committee deems appropriate.

F) The Corporate Secretary or his or her nominee will act as Secretary to the Committee.

G) The Committee will report to the Board on its meetings and each member of the Board will have access to the minutes of the Committee's meetings, regardless of whether the director is a member of the Committee.

Duties and Responsibilities

A) Financial Reporting Control Systems

The Committee is responsible for monitoring the quality and integrity of the Corporation's accounting and financial reporting process through discussions with management, the external auditors and the internal auditors.

In discharging this responsibility, the Committee will review:

(i) with management and the external auditors, the Company's significant accounting policies, including the impact of alternative accounting policies, and any proposed changes thereto; and key management estimates, risks and judgments that could materially affect the financial results;

(ii) emerging accounting issues and their potential impact on the Company's financial reporting;

(iii) with management any significant changes in financial risks facing the Corporation;

(iv) management's report assessing the adequacy and effectiveness of the Corporation's disclosure controls and procedures and systems of internal control; and

(v) the evaluation by either the internal or external auditors of management's internal control systems, and management's responses to any identified deficiencies or weaknesses.

Prior to public disclosure, the Committee will review and approve (where authority has been delegated by Board to the Committee) or recommend to the Board for approval:

(i) the audited annual consolidated financial statements and unaudited interim condensed consolidated financial statements of the Corporation;

(ii) the interim and annual management's discussion and analysis of financial condition and results of operations (MD&A) of the Corporation; and

(iii) all other material financial public disclosure documents of the Company and those of its subsidiaries that are reporting issuers, including prospectuses, material press releases with financial results, the Annual Information Form and management information circular.

B) External Auditors

The external auditors will report directly to the Committee and the Committee will:

(i) recommend to the Board and the Corporation's shareholders the appointment of external auditors; determine their compensation; and monitor and evaluate their qualifications, resources, performance and independence;

(ii) oversee the work of the external auditors and review and approve the annual audit plan of the external auditors, including the scope of the audit to be performed, and performance against the audit plan;

(iii) pre-approve all audit, audit-related and non-audit services to be provided to the Corporation or any of its subsidiaries, by the external auditors (and its affiliates), in accordance with applicable securities laws, rules and regulations;

(iv) discuss with the external auditors the quality and acceptability of the Corporation's accounting policies, including:

a) all critical accounting policies and practices;

b) all alternative treatments of financial information that have been discussed with management, implications of their use and the external auditors' "preferred treatment";

c) any other material written communications between the external auditors and management;

(v) review reports of the external auditors;

(vi) review the quarterly and annual representation letters given by management to the external auditors;

(vii) at least annually, obtain and review a report by the external auditors describing:

a) the firm's internal quality-control procedures;

b) any material issues raised by the most recent internal quality control review, or peer review of the firm, or by any inquiry or investigation by governmental, regulatory or professional authorities, within the preceding five years, respecting one or more independent audits carried out by the firm, and any steps taken to deal with such issues; and

c) all relationships between the external auditors and the Company;

(viii) annually assess and confirm the independence of the external auditors and require the external auditors to deliver an annual report to the Committee regarding its

independence, and hold discussions with the external auditors as to any relationship or services that may impact their objectivity or independence;

(ix) ensure that the audit partners representing the external auditors meet the rotation requirements set out by applicable securities laws, rules and regulations, and standards of the stock exchanges on which the Corporation's securities are listed; and

(x) review and approve hiring policies regarding partners, employees and former partners and employees of current and former external auditors in accordance with applicable securities laws, rules and regulations and the Corporation's policies.

C) Monitoring Internal Auditors

The internal auditors will report quarterly to the Committee on the results of internal audit activities and will also have direct access to the chair of the Committee when the internal auditors determine it is necessary. The Committee will:

(i) annually approve the appointment of the internal auditor (or persons responsible for the function);

(ii) review the scope of responsibilities and effectiveness of the internal audit team, its reporting relationships, activities, organizational structure and resources, its independence from management and its working relationship with the external auditors;

(iii) oversee the work of the internal auditors including reviewing and approving the annual internal audit plan and updates thereto; and

(iv) review the reports of the internal auditors on the status of significant internal audit findings, recommendations and management's responses and review any other reports of the internal auditors.

D) Financial Management

The Committee will at least annually:

(i) review with management and approve, or make recommendations to the Board to approve, the Corporation's capital structure strategy; financial policies and investment policies, including debt and equity components; current and expected financial leverage, interest rate and foreign exchange exposures; taking in consideration current and future business needs (including the Annual Operating Plan), capital markets and the Corporation's credit rating; and

(ii) review compliance with financial policies.

E) Risk Management and Internal Controls

The Committee will:

(i) at least annually, review the Corporation's risk assessment and risk management policies, including the Corporation's insurance coverage, and management's compliance with them;

(ii) review with management, the external auditors and legal counsel, as necessary, any litigation, claim or other contingency, including any tax assessment, that could have a material effect upon the financial position or operating results of the Corporation and the appropriateness of the disclosure thereof in the documents reviewed by the Committee;

(iii) review and recommend to the Board for approval of the Corporation's delegation of financial authority;

(iv) while ensuring confidentiality and anonymity, ensure management has established procedures for the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal accounting controls or auditing matters or employee concerns regarding accounting or auditing matters or breaches of the Corporation's ethics policies ("Whistleblower Reporting");

(v) review quarterly reports on any Whistleblower Reporting complaints received by the Corporation;

(vi) at least annually, review management's compliance with the Corporation's ethics and Whistleblower Reporting policies;

(vii) at least annually, review the Corporation's ethics and Whistleblower Reporting policies, and recommend changes to the Board for approval;

(viii) review management's approach for safeguarding corporate assets, data and information systems, the adequacy of staffing of key financial functions (including succession plans for the Corporation's CFO and Controller) and their plans for improvements;

(ix) review the appointment of the financial senior executives of the Corporation, prior to recommendation by the CGCC to the Board;

(x) assist the Board with the oversight of the Corporation's compliance with applicable legal and regulatory requirements; and

(xi) review other risk management matters from time to time as the Committee may consider suitable or the Board may specifically direct.

F) Related Party Transactions

A related party transaction is defined as a transaction or a series of transactions in which the Corporation or any of its subsidiaries is to be a party, which involves an amount exceeding U.S. $60,000 in aggregate and in which any of the following persons have a direct or indirect material interest:

- a director or executive officer of the Corporation;
- any nominee for election as a director of the Corporation;
- any security holder of the Corporation known by the Corporation to own (of record or beneficially) more than 5% of any class of the Corporation's voting securities; and
- any member of the immediate family of any of the foregoing persons.

In carrying out its responsibilities in reviewing and approving related party transactions, the Committee will:

(i) receive details of all related party transactions proposed by the Corporation, and actual and potential conflicts of interest relating thereto, to verify their propriety and that disclosure is appropriate;

(ii) if a valuation or fairness opinion is required by any applicable statutes or regulations, supervise the preparation of such valuation or fairness opinion; and

(iii) if approval of the Board of directors is necessary, provide a recommendation to the Board of directors with respect to the related party transaction.

G) Other

The Committee will:

(i) annually review the audit of the expense reports of the Chair of the Board of Directors and the CEO;

(ii) review the minutes of the Corporation's Disclosure Committee; and

(iii) evaluate, at least annually, the adequacy of this Mandate and the Committee's performance, and report its evaluation and any recommendations for change to the Board.

Authority

A) The Committee is authorized to request the presence, at any meeting, of senior management, legal counsel or anyone else who could contribute substantively to the subject of the meeting.

B) The Committee is empowered to investigate any activity of the Corporation and all employees are to co-operate as requested by the Committee. The Committee may retain outside advisors having special expertise to assist it in fulfilling its responsibilities, and determine the appropriate level of remuneration for such outside advisors.

C) The Committee may form and delegate authority to Committee members or subcommittees.

D) Nothing contained in the above mandate is intended to assign to the Audit Committee the Board's responsibility to ensure the Corporation's compliance with applicable laws or regulations or to expand applicable standards of liability under statutory or regulatory requirements for the directors or the members of the Audit Committee.

Certification Pursuant to Section 302
of the Sarbanes-Oxley Act of 2002

I, **R. Randall MacEwen,** certify that:

1. I have reviewed this annual report on Form 40-F of Ballard Power Systems Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: March 7, 2019

By: /s/ R. Randall MacEwen
Name: R. Randall MacEwen
President and Chief Executive Officer

A signed original of this written statement required by Section 302 has been provided to Ballard Power Systems Inc. and will be retained by Ballard Power Systems Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Certification Pursuant to Section 302
of the Sarbanes-Oxley Act of 2002

I, **Anthony Guglielmin,** certify that:

1. I have reviewed this annual report on Form 40-F of Ballard Power Systems Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

    c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: March 7, 2019

By: /s/ Anthony Guglielmin
Name: Anthony Guglielmin
Vice President and Chief Financial Officer

A signed original of this written statement required by Section 302 has been provided to Ballard Power Systems Inc. and will be retained by Ballard Power Systems Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Section 906 Certification

Certification Pursuant to
18 U.S.C. Section 1350

As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report on Form 40-F of Ballard Power Systems Inc., a corporation organized under the laws of British Columbia (the "Company"), for the period ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a) or 78o(d)); and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 7, 2019

/s/ R. Randall MacEwen

R. Randall MacEwen

President and Chief Executive Officer (principal executive officer)

Dated: March 7, 2019

/s/ Anthony Guglielmin

Anthony Guglielmin

Vice President and Chief Financial Officer (principal financial officer)

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Consent of Independent Registered Public Accounting Firm

The Board of Directors
Ballard Power Systems Inc.

We consent to the use of our reports, each dated March 6, 2019, with respect to the consolidated financial statements and the effectiveness of internal control over financial reporting included in this annual report on Form 40-F. Our report on the consolidated financial statements refers to changes in accounting policies for revenue recognition and financial instruments in 2018 due to the adoption of IFRS 15 – *Revenue from Contracts with Customers* (IFRS 15) and IFRS 9 – *Financial Instruments* (IFRS 9).

We also consent to the incorporation by reference of such reports in the Registration Statements No. 333-225494, No. 333-161807 and No. 333-156553 on Form S-8 and No. 333-225493 on Form F-10/A of Ballard Power Systems Inc.



Chartered Professional Accountants

March 6, 2019
Vancouver, Canada

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