

BALLARD POWER SYSTEMS INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
FOURTH QUARTER 2017



BALLARD®

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements about expected events and the financial and operating performance of Ballard Power Systems Inc. ("Ballard", "the Company", "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, 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 the generation of new sales, producing, delivering and selling the expected product and service volumes at the expected prices, controlling our costs, and obtaining the expected benefits arising from the Protonex acquisition. 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, 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; changes in our customers' requirements, the competitive environment and/or related market conditions; the relative strength in the value proposition that we offer our customers with our products or services; changes in competitive technologies, including battery 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, and working capital requirements; our ability to protect our intellectual property; risks relating to the Company's successful integration of Protonex and its operations, such as the loss of key personnel due to the transaction, the disruption to the operations of the Company and Protonex' respective businesses, and the integration failing to achieve the expected benefits of the transaction; currency fluctuations, including the magnitude of the rate of change of the Canadian dollar versus the U.S. dollar; and 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 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

February 28, 2018

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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 February 28, 2018 and should be read in conjunction with our audited consolidated financial statements and accompanying notes for the year ended December 31, 2017. 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, 2017, 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, 2017.

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, 2017.

Changes in internal control over financial reporting

During the year ended December 31, 2017, we updated the design of our disclosure controls and procedures and internal controls over financial reporting as we replaced our incumbent financial and other resource systems with a fully integrated Enterprise Resource Planning ("ERP") management reporting software system and aligned our internal controls over financial reporting with the new ERP system. During the year ended December 31, 2017, there were no other 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 Protonex Technology Corporation, Ballard Power Systems Europe A/S, 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 which remain substantively unchanged. 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. securities regulatory authorities (www.sec.gov).

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 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 production with a joint venture partner, where we do not control



the joint venture;

- In our Technology Solutions market, we depend on a single customer for the majority of our revenues;
- In our Portable Power market, defense spending volatility could have an adverse impact on our business as well as our reliance on a limited number of customers in the United States military;
- In our Portable Power market, defense acquisition process changes could have an adverse impact on our business;
- 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;
- In our Heavy-Duty Motive market, a significant amount of operations are conducted by a joint venture in China that we cannot operate solely for our benefit;
- We expect our cash reserves will be reduced due to future operating losses and working capital requirements, 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;
- 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 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 are subject to risks inherent in international operations;
- 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; and
- Our products use flammable fuels and some generate high voltages, which could subject our business to product liability claims.

2. CORE BUSINESS AND STRATEGY

2.1 Core Business

At Ballard, we are building a clean energy growth company. 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, 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 draws 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 and development, testing, manufacturing and service facilities in Burnaby, British Columbia. We also have a sales, manufacturing, research and development facility in Southborough, Massachusetts, and have a sales, assembly, service and research and development facility in Hobro, Denmark. 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 service center based in Yunfu, China.

2.2 Strategic Imperatives

We plan to build value for our shareholders by developing, manufacturing, selling and servicing industry-leading PEM fuel cell products to meet the needs of our customers in



select target markets.

We are pursuing a corporate strategy and business model that 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 is designed to include 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 provides us with the opportunity for near-term commercialization, revenue and profitability, while also enabling significant 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 clean energy power products that reduce customer costs and risks. Through technology solutions, our focus is on enabling our customers to solve their technical and business challenges and accelerate their fuel cell programs 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 providing technology component supply.

Starting in 2015, we increased our efforts on growing our business in China. China represents a potentially unique opportunity for clean energy 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 transportation applications, including the implementation of supporting subsidy programs.

We have been pursuing a strategy that includes the development of a local fuel cell supply chain and related ecosystem to address the new-energy bus and commercial vehicle markets in China. 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 stacks for heavy-duty motive applications in China, including bus, commercial vehicles and light-rail train applications. 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. 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, intellectual property and minimum payments. We believe these typical deal 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 structures. We also typically structure our commercial deals in China to restrict sales to that country and to position Ballard as the exclusive purchaser of modules or 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. Also, we typically restrict technology transfer and licenses to current generation technology and products. We continue to make significant investment in next generation products and technology, including modules and systems integration, stacks, and MEAs. We strive to reserve flexibility on how we introduce these next generation products to the markets, including to China.

3. SELECT ANNUAL FINANCIAL INFORMATION AND 2018 BUSINESS OUTLOOK

3.1 Select Annual Financial Information

Results of Operations	Year ended,		
	2017	2016	2015
(Expressed in thousands of U.S. dollars, except per share amounts and gross margin %)			
Revenues	\$ 121,288	\$ 85,270	\$ 56,463
Gross margin	\$ 41,600	\$ 24,184	\$ 9,974
Gross margin %	34%	28%	18%
Total Operating Expenses	\$ 46,477	\$ 42,253	\$ 34,858
Cash Operating Costs ⁽¹⁾	\$ 39,053	\$ 34,338	\$ 29,050
Adjusted EBITDA ⁽¹⁾	\$ 3,324	\$ (9,883)	\$ (15,259)
Net loss attributable to Ballard	\$ (8,048)	\$ (21,112)	\$ (5,815)
Net loss per share attributable to Ballard, basic and diluted	\$ (0.05)	\$ (0.13)	\$ (0.04)
Adjusted Net Loss ⁽¹⁾	\$ (5,190)	\$ (19,286)	\$ (24,791)
Adjusted Net Loss per share ⁽¹⁾	\$ (0.03)	\$ (0.12)	\$ (0.18)
Financial Position	At December 31,		
(expressed in thousands of U.S. dollars)	2017	2016	2015
Total assets	\$ 177,657	\$ 183,446	\$ 161,331
Cash, cash equivalents and short-term investments	\$ 60,255	\$ 72,628	\$ 40,049

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

3.2 2017 Performance compared to 2017 Business Outlook

Although we did not provide specific financial performance guidance for 2017, we did indicate that we expected growth in product revenues in 2017, as compared to 2016, supported by increased activity in Heavy-Duty Motive, due primarily to increased sales to customers in China. We also indicated that we expected Technology Solutions to account for a larger proportion of total revenue in 2017, supported by work related to contracts in China as well as engineering services work with various partners in the automotive, rail, military, and UAV sectors. We subsequently forecast lower Portable Power product revenues in 2017 as a result of the delay in obtaining Program of Record ("Milestone C") status with the U.S. Army (which was received in September 2017, later than initially forecast) for certain of our Portable Power products including our Squad Power Manager (SPM-622).

Actual revenues in 2017 of \$121.3 million increased 42%, or \$36.0 million, compared to 2016. As expected, overall revenue growth in 2017 was driven by growth in our Heavy-Duty Motive and Technology Solutions markets, partially offset by lower Portable Power revenues. Heavy-Duty Motive revenues in 2017 of \$63.7 million increased 140%, or \$37.2 million, from 2016; Technology Solutions revenues in 2017 of \$43.7 million increased 47%, or \$14.0 million from 2016; whereas Portable Power revenues in 2017 of \$4.5 million declined (61%), or (\$7.0) million, from 2016.

3.3 2018 Business Outlook

Given the early stage of the hydrogen fuel cell market development and adoption rate, and consistent with our approach in 2017, we are not providing specific financial performance guidance for 2018.

Global trends toward decarbonization, improving air quality and the electrification of propulsion systems have underpinned a growing interest in fuel cell electric vehicles ("FCEVs") for heavy and medium duty applications, including buses, commercial truck, rail and marine markets. Industry activity levels are increasing in China, Europe and the United States, including relating to demonstration programs and commercial deployments.

Looking to 2020, the Company expects strong growth in FCEV demonstration programs and commercial scaling in certain heavy and medium duty applications in China, Europe and North America. With continued investment in talent, technology, products, customer engagement and our brand, we expect Ballard to have a leading market position.

In 2018, Ballard will continue to pursue a corporate strategy and business model that mitigates risk by diversifying its business across a portfolio of market opportunities that are enabled by substantially the same core competencies, technology, products and intellectual property.

China

As noted in the Strategic Imperatives section above, we increased our efforts on growing our business in China starting in 2015 given that China represents a potentially unique opportunity for clean energy solutions.

In China, Ballard has been pursuing a strategy that includes the development of a local fuel cell supply chain and related ecosystem to address the zero emission bus and commercial vehicle markets. 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 stacks and modules for heavy-duty motive applications in China, including bus, commercial vehicles and light-rail train applications. We believe this strategy aligns with expected local content requirements for government subsidies supporting the adoption of fuel cell electric vehicles. Key elements of our strategy include adopting a business model in which we seek to mitigate market adoption risk and capital investment by engaging in partnerships with local companies that market our products and invest in manufacturing operations and supply chain localization. We also structure our business model in China to protect our core intellectual property.

The Company accomplished important progress in 2017 with the localization of stack and module assembly operations in China. In particular, the Company supported our stack joint venture in Guangdong Province, Guangdong Synergy Ballard Hydrogen Power Co., Ltd. ("Synergy JVCo"), on various aspects of the set-up and commission of the operations line, including the design, construction and layout of the production facility and related infrastructure; manufacturing and test equipment specification, procurement, delivery, installation, validation and optimization; management and staffing of the joint venture; quality processes; supplier and materials procurement and qualification; pilot production; and production scaling. This project contributed significant revenue and gross margin in 2017, which will not be duplicated in 2018 as we now transition to a supplier relationship with the joint venture based on a take-or-pay supply agreement for the supply by Ballard of MEAs.

In 2017, we also supported Zhongshan Broad-Ocean Motor Co., Ltd. ("Broad-Ocean") with technology transfer services relating to the set-up and commissioning of an initial module assembly line in Shanghai. In parallel to these technology transfer and module assembly line commissioning activities, we also supplied Broad-Ocean with module and components supply for 600 modules to support initial FCEV demonstration programs in key Chinese markets. This program contributed significant revenue and gross margin in 2017, which will not be duplicated in 2018 as we transition to a business model where Broad-Ocean assembles Ballard-designed modules and sources stacks from Synergy JVCo while also paying royalties to Ballard on assembled modules.

As a result of the localization of stack and module production in China that supported strong revenue growth in 2017, the Company expects field deployments of FCEVs to begin scaling in 2018, subject to anticipated parallel scaling of hydrogen refueling infrastructure and service infrastructure. In 2018, with completion of these localization activities, we expect the China revenue mix to shift from the sale of modules towards MEA component sales and royalties from the sale of locally-assembled modules. With this transition in business model, combined with the absence of the one-time revenue related to the technology transfer activities and module sales in 2017, Ballard expects year-on-year revenue from China to be lower in 2018. However, beyond 2018, we expect to generate increasing revenue from MEA sales, royalties and future Technology Solutions opportunities as a result of increasing demand for FCEV engines in a range of applications.

Europe

In Europe, the Company expects increased market activity in 2018 for fuel cell electric buses, commercial trucks, train and marine. The Company also expects new contract



awards for FCEVs under certain European programs, which we expect to result in growth in purchase orders for our fuel cell modules.

United States

In the United States, the Company expects increased 2018 market activity relating to fuel cell electric buses and commercial trucks. The Company also expects new contract awards for FCEVs in California, which we expect to lead to growth in purchase orders for our fuel cell modules.

The Company expects growth in revenues from our Protonex subsidiary in 2018. We believe obtaining the Program of Record "Milestone C" status with the U.S. Army in September 2017 for certain of our Portable Power products will support sales growth in 2018. While we believe the recent passage of the U.S. federal budget with a significant increase in planned military budget spending is a positive development for our Protonex business, it is currently uncertain whether this will impact our 2018 results.

Given Plug Power's continued movement since 2016 towards internally-manufactured and sourced stacks for their fuel cell systems integrated into forklifts, we expect this trend to continue with a further decline in our sales of stacks in Material Handling to Plug Power in 2018. We expect increased activities in this market segment with other partners in our Technology Solutions business.

Technology Solutions

Technology Solutions revenue is expected to be relatively flat in 2018 given the significant contribution made in 2017 from the technology transfer projects in China that will not be duplicated in 2018. This decline however is expected to be largely offset by increases in engineering services activities for existing and new customers, including in the automotive, rail, material handling and unmanned aerial vehicle sectors, including the Company's HyMotion program with the Volkswagen Group.

Summary

In summary, 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 expect revenue to be relatively flat in 2018, coincident with a strengthening of the underlying business mix for long-term growth prospects. The 2018 revenue outlook is supported by a solid foundation to start the year with a 12-month Order Book of approximately \$73 million at the 2017 year end. Since year end, we have added additional orders of approximately \$18 million, such that we now have total committed orders of approximately \$91 million expected for delivery in 2018, together with a robust pipeline of qualified commercial sales opportunities.

Our outlook for 2018 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 2018; sales orders received for units and services expected to be delivered in the remainder of 2018; an estimate with respect to the generation of new sales and the timing of deliveries in each of our markets for the balance of 2018; and assumes an average U.S. dollar exchange rate of approximately \$0.80 in relation to the Canadian dollar for the remainder of 2018.

The primary risk factors to our business outlook expectations for 2018 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 and Portable Power markets; 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 Chinese 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 reliance on a single customer in this market and that customer's internal commercialization plans and budget requirements; disruptions in our Portable Power market as a result of U.S. defense spending volatility and potential defense procurement or acquisition process changes; 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 Volkswagen) are priced in Canadian dollars.

As noted above, the above outlook for 2018 is supported by our December 31, 2017 12-month Order Book of approximately \$73 million which is derived from our Order Backlog of approximately \$221 million as of December 31, 2017, as well as by incremental contract bookings in January and February 2018. Our Order Backlog represents the estimated aggregate value of orders 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 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, including our MEA supply agreement with Synergy JVCo. 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 China

Shanghai Reinventing Fire Technology Company Limited

On February 13, 2018, we announced the planned deployment of 500 licensed fuel cell electric commercial trucks – all using Ballard fuel cell stack technology – in Shanghai, China. Each of the 500 Dongfeng Special Vehicle trucks is now licensed, plated and powered by a 30 kilowatt fuel cell engine that was designed and integrated by Shanghai Reinventing Fire Technology Company Limited (“Re-Fire”), featuring Ballard FCvelocity®-9SSL proton exchange membrane (PEM) fuel cell stacks. Ballard and Re-Fire have entered into a collaboration agreement under which Re-Fire has agreed to use Ballard-designed fuel cell stacks in its fuel cell engines. Ballard’s FCvelocity®-9SSL stacks are now being manufactured and are available from Synergy JVCo, Ballard’s joint venture in Yunfu, Guangdong Province.

Zhongshan Broad-Ocean Motor Co., Ltd.

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 plans to assemble Ballard-designed engines in Hubei and Shandong 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 (\$20.7 million in the fourth quarter of 2017; \$28.7 million in fiscal 2017), which are now 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 and received an initial payment of \$3.6 million. Under the Broad-Ocean Program, Broad-Ocean plans to manufacture fuel cell modules in three strategic regions in China, including Shanghai. The Broad-Ocean Program is dependent on the attainment of certain commissioning milestones and if met, has an estimated value of approximately \$25 million in revenue to Ballard over



the initial 5-year term, including approximately \$12 million in Technology Solutions revenue plus future royalties and the supply of test equipment. In each of the three assembly operation locations, Broad-Ocean plans 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 transferred to Synergy JVCo, since Synergy JVCo became operational in late-2017. Ballard will be the exclusive supplier of MEAs for stacks manufactured by Synergy JVCo. Revenue earned from these Broad-Ocean technology transfer agreements (\$0.6 million in the fourth quarter of 2017; \$2.0 million in fiscal 2017) is recorded as Technology Solutions revenues.

On August 18, 2016, Broad-Ocean became Ballard's largest shareholder following an investment made through a subscription and purchase of 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 Broad-Ocean has agreed to a two-year hold period (expiring on July 25, 2018) on the 17.25 million Ballard common shares that it has purchased in the financing; has provided Ballard with a right of first refusal to sell to Broad-Ocean additional treasury shares if Broad-Ocean wishes to increase its ownership position up to 20%; and has agreed to certain "standstill" provisions effective for a two-year period under which Broad-Ocean will not purchase more than 19.9% of Ballard's outstanding common shares without receiving Ballard board approval. Ballard granted Broad-Ocean certain anti-dilution rights to maintain its 9.9% ownership interest. Finally, Broad-Ocean has no special right to appoint nominees to Ballard's board of directors.

Guangdong Synergy Ballard Hydrogen Power Co., Ltd.

On September 5, 2017, a ceremonial opening event was held at the company's FCvelocity®-9SSL fuel cell stack joint venture operation in the city of Yunfu, in China's Guangdong Province. Ballard has a 10% interest in the joint venture – called Synergy JVCo – together with our partner Guangdong Nation Synergy Hydrogen Power Technology Co. Ltd. (a member of the "Synergy Group"). The fuel cell stacks manufactured by Synergy 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. Synergy JVCo operation is currently ramping to an estimated annualized production capacity of approximately 6,000 fuel cell stacks by late 2017 and is designed to achieve an annualized production capacity of approximately 20,000 fuel cell stacks, based on 3 shifts running 5-days per week. Since becoming operational in September 2017, Synergy JVCo has produced more than 1,000 stacks in 2017, including 558 stacks manufactured in December.

The joint venture transaction and related sales agreements, which closed on October 25, 2016 and originally announced on July 18, 2016, have a contemplated minimum sales value to Ballard of approximately \$170 million over 5-years. The transaction includes these key elements:



- Ballard is expected to receive approximately \$20 million for 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 these technology transfer agreements (\$1.7 million in the fourth quarter of 2017; \$16.0 million in fiscal 2017; \$4.4 million in the fourth quarter of 2016 and in fiscal 2016), which are now effectively complete, is recorded as Technology Solutions revenues; and
- 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 JVCo, with minimum annual MEA volume commitments on a "take or pay" value of at least \$150 million over the initial 5-year term from 2017 to 2021. Revenue earned from the MEA supply agreement (\$4.7 million in the fourth quarter of 2017; \$14.9 million in fiscal 2017; nil in fiscal 2016) is recorded as Heavy-Duty Motive revenues.

Synergy JVCo has an exclusive right to manufacture and sell FCvelocity®-9SSL stacks in China. Exclusivity is subject to Synergy 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 "take or pay" MEA volumes. Ballard will have the exclusive right to purchase FCvelocity®-9SSL fuel cell stacks and sub-components from Synergy JVCo for sale outside China.

Ballard contributed approximately \$1.0 million for its 10% interest in Synergy JVCo in 2017. We have no obligation to provide future funding to Synergy JVCo. Ballard's CEO serves as one of the three members of the Synergy JVCo board of directors. Ballard has veto rights over certain key Synergy JVCo decisions, including the appointment of certain key management, appointment of auditors, and Synergy JVCo's pricing and branding policies.

Guangdong Nation Synergy Hydrogen Power Technology Co. Ltd.

On July 11, 2016, we announced the signing of definitive agreement with the Synergy Group for a Technology Solutions transaction to enable Synergy Group 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 and 5 kilowatt FCgen®-H2PM systems to Synergy Group for manufacture in the City of Yunfu in Guangdong Province and for exclusive sales in China. Synergy Group prepaid Ballard an upfront Technology Solutions fee of \$2.5 million in the second quarter of 2016 for the license and related technology transfer services. Synergy Group is required to make additional license royalty payments to Ballard for each FCgen®-H2PM system that it manufactures and sells, subject to annual minimums starting in 2018. Ballard will also be the exclusive supplier of air-cooled fuel cell stacks to Synergy Group for use in the FCgen®-H2PM systems that it produces and sells. Revenue earned from this technology transfer agreement (\$0.1 million in the fourth quarter of 2017; \$0.7 million in fiscal 2017; \$0.8 million in the fourth quarter of 2016; \$1.3 million in fiscal 2016) is recorded as Technology Solutions revenues whereas revenue earned from sales of fuel cell stacks is recorded as Backup Power revenues.

On January 21, 2016, we announced the signing of an equipment supply agreement, valued



at \$12 million, with Synergy Group to provide FCvelocity®-9SSL fuel cell stacks for range extension applications in commercial vehicles in China. Ballard delivered the stacks in 2016 and 2017. Synergy Group was expected to collaborate with Dongfeng Xiangyangtouring Car Co., Ltd. ("DFAC"), which is part of Dongfeng Motor Corporation, a Chinese state-owned automobile manufacturer headquartered in Wuhan. Revenue earned from this agreement (nil in the fourth quarter of 2017; \$4.1 million in fiscal 2017; \$2.5 million in the fourth quarter of 2016; \$7.9 million in fiscal 2016), which are now complete, is recorded as Heavy-Duty Motive revenues.

On September 25, 2015, we announced the signing of a long-term license and supply agreement with Synergy Group to provide fuel cell power products and technology solutions in support of the planned deployment of approximately 300 fuel cell-powered buses in the cities of Foshan and Yunfu, China. The agreement has an estimated initial value of approximately \$17 million with the opportunity for recurring royalties starting in 2017. The agreement includes the supply and sale of fully-assembled 30kW to 85kW fuel cell power modules, ready-to-assemble module kits, a technology license for localization of assembly, supply of proprietary fuel cell stacks and long-term recurring royalties leveraged to unit volumes of locally assembled modules. Revenue earned from this agreement (\$0.4 million in the fourth quarter of 2017; \$0.7 million in fiscal 2017; \$6.6 million in the fourth quarter of 2016; \$13.7 million in fiscal 2016; \$2.9 million in fiscal 2015), which are now effectively complete (except for any future royalty payments), is recorded as either Heavy-Duty Motive or Technology Solutions revenues depending on the nature of work performed.

China - Other

On January 24, 2017, we announced the signing of an initial Equipment Sales Agreement with Zhuhai Yinlong Energy Group ("Yinlong"), a major Chinese manufacturer of battery electric buses, for 10 FCveloCity®-MD 30-kilowatt fuel cell engines. Ballard delivered the engines in 2017 for expected integration into Yinlong buses. Revenue earned from this agreement (nil in the fourth quarter of 2017; \$0.7 million in fiscal 2017), which is now complete, is recorded as Heavy-Duty Motive revenues.

On November 1, 2015, we announced that the signing of a definitive agreement with Tangshan Railway Vehicle Company, Limited ("TRC") for the development of a new fuel cell module that will be designed to meet the requirements of tram or Modern Ground Rail Transit Equipment applications. This agreement, with a value of approximately \$3 million, contemplates that TRC trams will use next-generation Ballard fuel cell power modules designed specifically for the Modern Ground Rail Transit Equipment application. The purpose-designed product is expected to deliver at least 200 kilowatts of power. Revenue earned from this agreement (nil in the fourth quarter of 2017; \$0.2 million in fiscal 2017; \$0.6 million in the fourth quarter of 2016; \$2.0 million in fiscal 2016; \$0.5 million in fiscal 2015), which is effectively complete, is recorded as Technology Solutions revenue.

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 is now expected to occur starting in 2019. Revenue earned from these agreements (nil in the fourth quarter of 2017; \$3.1 million fiscal 2017; \$0.1 million in the fourth quarter of 2016; \$0.9 million in fiscal 2016) is recorded as either Heavy-Duty Motive or Technology Solutions revenues depending on the nature of work performed.

4.2 Europe

On February 28, 2018, we announced the receipt of a Letter of Intent (“LOI”) from Van Hool NV (“Van Hool”), a bus OEM partner in Belgium, for 40 FCveloCity®-HD fuel cell engines to power buses under the Joint Initiative For Hydrogen Vehicles Across Europe (“JIVE”) funding program. These buses are expected to be the first fuel cell bus deployments supported under JIVE I. The 40 buses will be powered by Ballard FCveloCity®-HD 85 kilowatt fuel cell engines, which Ballard expects to receive a purchase order for and to begin shipping in the second half of 2018. Van Hool plans to deploy 30 of these buses with the Regionalverkehr Köln GmbH transit agency in the city of Cologne, Germany, and plans to deploy the remaining 10 buses with WSW mobil GmbH transit agency in Wuppertal, Germany, with deliveries expected to begin in 2019.

On November 14, 2017, we announced the signing of a 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. Under the terms of the Development Agreement, Ballard will develop a 200 kilowatt fuel cell engine for integration into Siemens’ new Mireo train platform. Initial deployments of the fuel cell-powered Mireo train are planned for 2021. Revenue earned from this agreement (\$0.7 million in the fourth quarter of 2017 and in fiscal 2017) is recorded as Technology Solutions revenue.

On September 13, 2017, we announced the acceptance of a Letter of Intent to provide FCveloCity®-HD 100-kilowatt fuel cell engines to power 8 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). These will be the first hydrogen bus routes in France and the world’s first hydrogen tram-buses for a full BRT (Bus Rapid Transit) system. Ballard expects to deliver the 8 fuel cell engines to Van Hool during 2018.

On January 10, 2017, we announced that we had purchased all of the shares in the Company’s European subsidiary held by Dansk Industri Invest A/S (previously Dantherm Air Handling A/S). As a result, Ballard now owns 100% of the Company’s subsidiary in Europe, Ballard Power Systems Europe A/S (formerly Dantherm Power A/S). Ballard held 57% of the shares in Ballard Power Systems Europe A/S before purchasing the remaining 43% of shares from Dansk Industri Invest A/S on January 5th, 2017. For a nominal payment, Ballard acquired the remaining shares and obtained the cancellation of debt owed by Ballard Power Systems Europe A/S to Dansk Industri Invest A/S of approximately \$0.5 million.

On November 29, 2016, we announced the signing of a Long-Term Sales Agreement (“LTSA”) with Solaris Bus & Coach (“Solaris”), a bus OEM headquartered in Poland, for the

sale and supply of fuel cell modules to support deployment of Solaris fuel cell buses in Europe. An initial order was placed under the LTSA for 10 FCveloCity®-HD fuel cell modules, which have now been fully delivered. Revenue earned from this initial agreement (\$0.8 million in the fourth quarter of 2017; \$2.5 million in fiscal 2017; \$0.3 million in the fourth quarter of 2016 and fiscal 2016), which is now complete, is recorded as Heavy-Duty Motive revenues.

On July 22, 2015, we announced the signing of an agreement to provide a 1 megawatt (1MW) ClearGen™ fuel cell distributed generation system for Hydrogène de France (“HDF”) which will be deployed at an Akzo Nobel sodium chlorate chemical plant in Ambres near Bordeaux, France. The program agreement is structured in two phases. Under the first phase, completed in 2016, Ballard received an initial payment of €1.7 million to undertake engineering services and core component development work. Under the second phase, targeted for completion in early 2018, Ballard received an additional €1.6 million in February 2017 for onsite assembly and commissioning. Revenue earned from this agreement (\$0.2 million in the fourth quarter of 2017; \$1.6 million in fiscal 2017; \$0.2 million in the fourth quarter of 2016; \$1.0 million in fiscal 2016; \$0.8 million in fiscal 2015) is recorded as Technology Solutions revenue.

On March 6, 2013, we entered into a technology development and engineering services agreement with Volkswagen to advance development of fuel cells for use in powering demonstration cars in Volkswagen’s fuel cell automotive research program. The initial contract term was 4-years commencing in March 2013, with an option by Volkswagen for a 2-year extension. On the closing of the Volkswagen IP Agreement in February 2015, this technology development and engineering services was extended 2-years to February 2019. This technology development and engineering services contract is focused on the design and manufacture of next-generation fuel cell stacks for use in Volkswagen’s fuel cell demonstration car program. Volkswagen also retains an option to further extend this program by 2-years to February 2021. Revenue earned from this and related agreements (\$5.0 million in the fourth quarter of 2017; \$18.0 million fiscal 2017; \$4.0 million in the fourth quarter of 2016; \$13.9 million in fiscal 2016) is recorded as Technology Solutions revenues.

4.3 North America

Protonex Technology Corporation

On January 30, 2018, we announced that the Company's subsidiary, Protonex Technology Corporation (“Protonex”), has received a \$1.6 million purchase order for the supply of Squad Power Manager (SPM-622) Special Operations 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.

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. Together, these actions are expected to yield annualized cost savings of \$2.6 million. 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 proton exchange membrane (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. Initially, 10 Protonex employees have moved to Upstart, with an additional 6 employees expected to be transferred later in 2018 on completion of certain Technology Solutions contracts. As part of this transfer of employees, Dr. Paul Osenar, previously President of Protonex has moved to Upstart as CEO. Our understanding is that Dr. Osenar and other former Protonex employees who have moved to Upstart are also security-holders of Upstart. This action has enabled Ballard to significantly reduce the cost structure at Protonex. No restructuring expense was incurred as a result of this transaction. 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.

On September 24, 2017, we announced that the U.S. Army Program Executive Office Soldier (PEO-Soldier) has received signature approval for its Mobile Soldier Power Program of Record to full rate production status, commonly known as "Milestone C". This Program of Record includes a number of new devices focused on improving power and energy management on and around the soldier, including Protonex' Squad Power Manager Kit (SPM-622), conformal wearable batteries, and man-worn power and data distribution devices. The Milestone C designation now enables the U.S. Army to field the SPM-622 as part of the Mobile Soldier Power Program of Record in higher volume. This announcement follows an announcement made on January 19, 2017 whereby we announced that Protonex received certification from the U.S. Government enabling its SPM-622 and its Vest Power Manager Kit (VPM-402) products to be exported under the Commerce Department's Export Administration Regulations, classification EAR99. With this classification, these products can be sold to allied military partners as well as commercial customers without the need for an export license.

North America - Other

On July 18, 2017, we announced that we received an order from SunLine Transit Agency ("SunLine") for five (5) FCveloCity® fuel cell engines to power clean energy buses in Palm Desert, California. All five 150 kilowatt engines were delivered in 2017. Ballard is partnering with ElDorado National, a key North American bus OEM, and BAE Systems, a system integrator and major supplier of electric drive systems, to deliver buses to SunLine. SunLine received funding from the Federal Transit Administration ("FTA") to purchase and deploy 5 hydrogen electric fuel cell buses. Revenue earned from this agreement (nil million in the fourth quarter of 2017; \$2.1 million in fiscal 2017), which is now effectively complete, is recorded as Heavy-Duty Motive revenues.

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). Ballard will be providing 20 of 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 will power New Flyer 40-foot Xcelsior XHE40 fuel cell buses, which are planned to be delivered and in-service with AC Transit and OCTA starting in late 2018. The buses are to be supported by advanced hydrogen fueling infrastructure provided by The Linde Group. Revenue earned from this agreement (nil to date) will be recorded as Heavy-Duty Motive revenues.

4.4 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.

This follows an announcement made on September 12, 2017 whereby Nisshinbo and Ballard announced that we had successfully collaborated on development of the world's first NPMC-based proton exchange membrane (PEM) fuel cell product – the FCgen®-1040 – which is a new 30-watt air-cooled fuel cell stack incorporating NPMC expected to launch in late-2017 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.

During the second quarter of 2016, we completed the sale of certain of our methanol Telecom Backup Power business assets to Chung-Hsin Electric & Machinery Manufacturing

Corporation ("CHEM"), a Taiwanese power equipment company, for a purchase price of up to \$6.1 million of which \$3 million was paid to us on closing (the "CHEM Transaction"). 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 the second quarter of 2016, we recorded a loss on sale of assets of (\$0.4) million after estimating the fair value of the remaining potential purchase price of up to \$3.1 million to approximate \$1.8 million. During the second quarter of 2017, we recorded an additional loss on sale of assets of (\$0.8) million as the remaining potential purchase price was written down to its revised estimated fair value of \$1.0 million from the previous estimate of \$1.8 million. During the third quarter of 2017, we recorded an additional loss on sale of assets of (\$0.1) million as the remaining potential purchase price was written down to its further revised estimated fair value of \$0.95 million (which was fully collected in the fourth quarter of 2017) from the previous estimate of \$1.0 million. On the closing of this transaction, CHEM received certain assets related to the methanol Telecom Backup Power line of our business including intellectual property rights, and physical assets such as inventory and related product brands. We also transferred to CHEM a number of our engineering, sales, and service employees involved in this business. Ballard continues to retain the Company's direct hydrogen fuel cell backup power system assets, primarily in our Ballard Power Systems Europe A/S subsidiary located in Denmark. The direct hydrogen fuel cell backup power system has since been rebranded FCgen®-H2PM. As noted above, certain designs of the FCgen®-H2PM system were exclusively licensed to Synergy Group for manufacture and sale in China. In the CHEM Transaction, we also signed a fuel cell stack supply agreement with CHEM which included minimum sales of \$2 million over an 18-month period (now completed). Revenue earned under the fuel cell stack supply agreement with CHEM (nil in the fourth quarter of 2017; \$0.3 million in fiscal 2017; \$0.6 million in the fourth quarter of 2016; \$1.7 million in fiscal 2016; \$2.0 million to date), which is now complete, is recorded as Backup Power 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, Material Handling and Backup Power, as well as the delivery of Technology Solutions, including engineering services, technology transfer and the license and sale of our extensive intellectual property portfolio and fundamental knowledge for a variety of fuel cell applications.

As a result of the sale of certain of our methanol Backup Power assets to CHEM in the second quarter of 2016, we have renamed the former Telecom Backup Power market as the Backup Power market. The Backup Power market includes revenues associated with our direct hydrogen fuel cell backup power systems, methanol fuel cell backup power systems prior to the CHEM Transaction, and fuel cell stacks sold for all backup power applications including those sold to CHEM.

5.2 Summary of Key Financial Metrics – Three Months Ended December 31, 2017

Revenue and gross margin

(Expressed in thousands of U.S. dollars)

Three months ended December 31,

Fuel Cell Products and Services	2017	2016	\$ Change	% Change
Heavy-Duty Motive	\$ 26,551	\$ 10,993	\$ 15,558	142%
Portable Power	1,510	2,905	(1,395)	(48%)
Material Handling	1,307	2,985	(1,679)	(56%)
Backup Power	712	2,069	(1,357)	(66%)
Technology Solutions	10,177	11,731	(1,554)	(13%)
Revenues	40,257	30,684	9,574	31%
Cost of goods sold	27,661	21,338	6,323	30%
Gross Margin	\$ 12,596	\$ 9,346	\$ 3,251	35%
Gross Margin %	31%	30%	n/a	1 pt

Fuel Cell Products and Services Revenues of \$40.3 million for the fourth quarter of 2017 increased 31%, or \$9.6 million, compared to the fourth quarter of 2016. The 31% increase was driven by higher Heavy-Duty Motive revenues which more than offset declines in Material Handling, Technology Solutions, Portable Power and Backup Power revenues.

Heavy-Duty Motive revenues of \$26.6 million increased \$15.6 million, or 142%, due primarily to increased shipments of a variety of fuel cell bus products to customers, principally in China but also supported by sales in Europe. Heavy-Duty Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying customer requirements and various fuel cell products, including power configurations required by our customers (and the resulting impact on selling price) of our FCveloCity®-HD7 200-kilowatt fuel cell modules, FCveloCity®-HD6 150-kilowatt fuel cell modules, FCveloCity®-HD7 85-kilowatt fuel cell modules, FCveloCity®-MD 30-kilowatt fuel cell modules, FCvelocity®-9SSL fuel cell stacks, MEA's, and related component and parts kits. Heavy-Duty Motive revenues in the fourth quarter of 2017 include product shipments of \$20.7 million to Broad-Ocean to complete each 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 consisting primarily of shipments of FCveloCity®-MD 30-kilowatt fuel cell products. Heavy-Duty Motive revenues in the fourth quarter of 2017 also include \$4.7 million of shipments of MEA's under the MEA Supply Agreement with Synergy JVCo and \$0.8 million of shipments of FCveloCity®-HD7 85-kilowatt fuel cell modules to Solaris.

Technology Solutions revenues of \$10.2 million decreased (\$1.6) million, or (13%), due primarily to program scope and timing requirements of the underlying service contracts. Amounts earned in the fourth quarter of 2017 consist of amounts earned under various customer programs, primarily including Volkswagen program revenues of \$5.0 million, amounts earned from Synergy JVCo of \$1.4 million on the now completed FCvelocity®-9SSL fuel cell stack production line in Yunfu, China, initial amounts earned on the Siemens development agreement of \$0.7 million, and amounts earned relating to ongoing technology transfer arrangements with Broad-Ocean of \$0.6 million for the assembly and sale by Broad-Ocean of FCveloCity® 30-kilowatt (kW) and 85kW fuel cell engines in China. Amounts earned in the fourth quarter of 2016 were driven by initial amounts earned from



Synergy JVCo of \$4.4 million related to the establishment by Synergy JVCo of the FCvelocity®-9SSL fuel cell stack production line in Yunfu, China, Volkswagen program revenues of \$4.0 million, and amounts earned of \$0.8 million to enable Synergy Group to exclusively manufacture and sell Ballard's direct hydrogen FCgen®-H2PM fuel cell backup power systems in China. Volkswagen service revenues were also positively impacted by approximately \$0.4 million in the fourth quarter of 2017, as compared to the fourth quarter of 2016, as a result of an approximate 5% higher Canadian dollar, relative to the U.S. dollar, as the Volkswagen Agreement is priced in Canadian dollars. The underlying costs to satisfy the Volkswagen Agreement are primarily denominated in Canadian dollars.

Portable Power revenues of \$1.5 million decreased (\$1.4) million, or (48%), due to lower product and service revenues generated by Protonex. Revenues from Protonex in the fourth quarter of 2016 benefited from \$1.4 million of product shipments of Squad Power Manager (SPM-622) Special Operations Kits for end customer U.S. Special Operations Command under the Nett Warrior program which was completed in the fourth quarter of 2016. Portable Power revenues are impacted by the demand and timing of end customers' product deployments as well as the demand and timing of their engineering services projects.

Material Handling revenues of \$1.3 million decreased (\$1.7) million, or (56%), as a result of lower stack shipments to Plug Power combined with the impact of a lower average selling price due to product mix.

Backup Power revenues of \$0.7 million decreased (\$1.4) million, or (66%), due primarily to a decrease in shipments of hydrogen-based backup power stacks and methanol-based backup power systems, partially offset by an increase in hydrogen-based backup power system equipment for backup power applications.

Fuel Cell Products and Services gross margins improved to \$12.6 million, or 31% of revenues, for the fourth quarter of 2017, compared to \$9.3 million, or 30% of revenues, for the fourth quarter of 2016. The improvement in gross margin of \$3.3 million, or 35%, was driven primarily by the 31% increase in total revenues, combined with a shift to a slightly higher overall margin product and service revenue mix resulting in a 1 percentage point improvement 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 driven by the 31% increase in total revenues. These gross margin benefits in the fourth quarter of 2017 were partially offset by the decline in higher margin Technology Solutions and Portable Power revenues.

Cash Operating Costs

(Expressed in thousands of U.S. dollars)

		Three months ended December 31,			
		2017	2016	\$ Change	% Change
Research and Product Development (cash operating cost)	\$	6,730	\$ 3,544	\$ 3,186	90%
General and Administrative (cash operating cost)		2,544	2,929	(385)	(13%)
Sales and Marketing (cash operating cost)		1,970	1,667	303	18%
Cash Operating Costs	\$	11,244	\$ 8,140	\$ 3,104	38%

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 2017 were \$11.2 million, an increase of \$3.1 million, or 38%, compared to the fourth quarter of 2016. The \$3.1 million, or 38%, increase was driven by an increase in research and product development cash operating costs of \$3.2 million and by higher sales and marketing cash operating costs of \$0.3 million, partially offset by lower general and administrative cash operating costs (\$0.4) million.

The 38% increase in cash operating costs in the fourth quarter of 2017 was driven primarily by higher engineering and prototyping expenses related to research and product development and the ongoing improvement of all of our fuel cell products including the design and development of our next generation fuel cell products, and by increased investment to support our commercial efforts in China. In addition, operating expenses were negatively impacted by higher labour costs in Canada as a result of an approximate 5% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base.

As noted above, operating costs in the fourth quarter of 2017 was impacted by the negative impact of a stronger Canadian dollar, relative to the U.S. dollar, as compared to the fourth quarter of 2016. As a significant amount of our net operating costs (primarily labour) are denominated in Canadian dollars, 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 5%, or 6 basis points, higher in the fourth quarter of 2017 as compared to the fourth quarter of 2016, negative foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately \$0.6 million. 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 \$0.4 million.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)

		Three months ended December 31,			
		2017	2016	\$ Change	% Change
Adjusted EBITDA	\$	2,086	\$ 1,763	\$ 323	18%

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 2017



was \$2.1 million, compared to \$1.8 million for the fourth quarter of 2016. The \$0.3 million improvement in Adjusted EBITDA in the fourth quarter of 2017 was driven by the \$3.3 million increase in gross margin as a result of the 31% increase in overall revenues combined with the 1 point improvement in gross margin as a percent of revenues. This improvement was partially offset by the increase in Cash Operating Costs of (\$3.1) million due primarily as a result of higher research and product development cash operating costs.

Net income (loss) attributable to Ballard

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
		2017	2016	\$ Change	% Change
Net income (loss) attributable to Ballard	\$	(2,887)	\$ (1,121)	\$ (1,766)	(158%)

Net loss attributable to Ballard for the fourth quarter of 2017 was (\$2.9) million, or (\$0.02) per share, compared to a net loss of (\$1.1) million, or (\$0.01) per share, in the fourth quarter of 2016. The (\$1.8) million increase in net loss in the fourth quarter of 2017 was driven by a loss on sale of assets of (\$0.5) million as we sold certain SOFC fuel cell inventory to Upstart for nominal proceeds, and 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 nominal estimated net realizable value. These negative impacts were partially offset by the improvement in Adjusted EBITDA of \$0.3 million and by lower finance and other income losses of \$0.5 million in 2017 due primarily to lower foreign exchange losses.

As noted above, net loss attributable to Ballard 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 related primarily to the divestiture of certain SOFC assets during the Upstart Transaction. Net loss attributable to Ballard in the fourth quarter of 2016 was negatively impacted by a loss on sale of assets of (\$0.3) million. Excluding the impact of asset impairment charges on intangible assets and property, plant and equipment, transactional gains and losses, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in the fourth quarter of 2017 was (\$0.9) million, or (\$0.01) per share, compared to (\$0.9) million, or (\$0.00) per share, for the fourth quarter of 2016.

Net loss attributable to Ballard in the fourth quarter of 2016 excludes the net income (loss) attributed to the interests of the non-controlling shareholder in the losses of Ballard Power Systems Europe A/S related to its 43% equity interest in Ballard Power Systems Europe A/S during that time. In early January 2017, we purchased all of the shares in the Company's European subsidiary held by Dansk Industri Invest A/S for a nominal payment. As a result, Ballard now owns 100% of Ballard Power Systems Europe A/S. Net income (loss) attributed to non-controlling interests for the fourth quarter of 2017 was nil, compared to \$0.2 million for the fourth quarter of 2016.

Cash provided by (used in) operating activities

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
	2017	2016	\$ Change	% Change	
Cash provided by (used in) operating activities	\$ (728)	\$ 7,983	\$ (8,711)	(109%)	

Cash provided by (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. Cash provided by operating activities in the fourth quarter of 2016 was \$8.0 million, consisting of cash operating income of \$1.1 million, combined with net working capital inflows of \$6.9 million. The (\$8.7) million increase in cash used in operating activities in the fourth quarter of 2017, as compared to the fourth quarter of 2016, was driven by the relative increase in working capital requirements of (\$9.3) million, partially offset by the relative improvement in cash operating income (loss) of \$0.6 million. The relative \$0.6 million improvement in cash operating income (loss) in the fourth quarter of 2017 was due primarily to the \$0.3 million improvement in Adjusted EBITDA.

The total change in working capital of (\$2.4) million in the fourth quarter of 2017 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.

This compares to a total change in working capital of \$6.9 million in the fourth quarter of 2016 which was driven by lower inventory of \$6.5 million as we delivered expected Heavy-Duty Motive shipments to customers in the last quarter of 2016, and by higher deferred revenue of \$3.9 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed. These fourth quarter of 2016 working capital inflows were partially offset by lower accounts payable and accrued liabilities of (\$1.7) million due primarily to the timing of purchases and supplier payments, and by lower accrued warranty obligations of (\$1.5) million due primarily to customer service related expenses incurred in our Material Handling market and by Backup Power warranty contract expirations.

5.3 Summary of Key Financial Metrics – Year ended December 31, 2017

Revenue and gross margin

(Expressed in thousands of U.S. dollars)

Year ended December 31,

Fuel Cell Products and Services	2017	2016	\$ Change	% Change
Heavy-Duty Motive	\$ 63,684	\$ 26,480	\$ 37,204	140%
Portable Power	4,468	11,420	(6,953)	(61%)
Material Handling	7,535	12,910	(5,375)	(42%)
Backup Power	1,933	4,821	(2,888)	(60%)
Technology Solutions	43,668	29,638	14,030	47%
Revenues	121,288	85,270	36,018	42%
Cost of goods sold	79,688	61,086	18,602	30%
Gross Margin	\$ 41,600	\$ 24,184	\$ 17,416	72%
Gross Margin %	34%	28%	n/a	6 pts

Fuel Cell Products and Services Revenues of \$121.3 million in 2017 increased 42%, or \$36.0 million, compared to 2016. The 42% increase was driven by higher Heavy-Duty Motive and Technology Solutions revenues, which more than offset declines in Portable Power, Material Handling and Backup Power revenues.

Heavy-Duty Motive revenues of \$63.7 million increased \$37.2 million, or 140%, due primarily to increased shipments of a variety of fuel cell bus products to customers, principally in China but also supported by sales in Europe and North America. Heavy-Duty Motive revenues are also impacted by product mix due to varying customer requirements and various fuel cell products, including power configurations required by our customers (and the resulting impact on selling price) of our FCveloCity®-HD7 200-kilowatt fuel cell modules, FCveloCity®-HD6 150-kilowatt fuel cell modules, FCveloCity®-HD7 85-kilowatt fuel cell modules, FCveloCity®-MD 30-kilowatt fuel cell modules, FCvelocity®-9SSL fuel cell stacks, MEA's, and related component and parts kits. Heavy-Duty Motive revenues in 2017 include product shipments of \$28.7 million to Broad-Ocean to complete 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 consisting primarily of shipments of FCveloCity®-MD 30-kilowatt fuel cell products and MEA's. Heavy-Duty Motive revenues in 2017 also include \$14.9 million of shipments of MEA's under the MEA Supply Agreement with Synergy JVCo, \$8.7 million of 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 \$43.7 million increased \$14.0 million, or 47%, due primarily to certain larger customer programs, program scope and timing requirements of the underlying service contracts. Amounts earned in 2017 of \$43.7 million consist of amounts earned under various customer programs, primarily including Volkswagen program revenues of \$18.0 million, amounts earned from Synergy JVCo of \$15.1 million on the now completed FCvelocity®-9SSL fuel cell stack production line in Yunfu, China, amounts earned

relating to ongoing technology transfer arrangements with Broad-Ocean of \$2.0 million for the assembly and sale by Broad-Ocean of FCveloCity® 30-kilowatt (kW) and 85kW fuel cell engines in China, initial amounts earned on the Siemens development agreement 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. Amounts earned in 2016 of \$29.6 million consist primarily of Volkswagen program revenues of \$13.9 million, initial amounts earned from Synergy JVCo of \$4.4 million related to the establishment by Synergy JVCo of the FCvelocity®-9SSL fuel cell stack production line in Yunfu, China, amounts earned to enable Synergy Group to exclusively manufacture and sell Ballard's direct hydrogen FCgen®-H2PM fuel cell backup power systems in China, and by amounts earned on the TRC and CRRC Sifang tram projects and the HDF distributed generation project. Volkswagen service revenues were also positively impacted by approximately \$0.6 million in of 2017, as compared to 2016, as a result of an approximate 2% higher Canadian dollar, relative to the U.S. dollar, as the Volkswagen Agreement is priced in Canadian dollars. The underlying costs to satisfy the Volkswagen Agreement are primarily denominated in Canadian dollars.

Material Handling revenues of \$7.5 million decreased (\$5.4) million, or (42%), as a result of lower stack shipments to Plug Power combined with the impact of a lower average selling price due to product mix.

Portable Power revenues of \$4.5 million decreased (\$7.0) million, or (61%), due to lower product and service revenues generated by Protonex. Revenues from Protonex in 2016 benefited from \$6.4 million of product shipments of Squad Power Manager (SPM-622) Special Operations Kits for end customer U.S. Special Operations Command under the Nett Warrior program which was completed in the fourth quarter of 2016. Portable Power revenues are impacted by the demand and timing of end customers' product deployments as well as the demand and timing of their engineering services projects.

Backup Power revenues of \$1.9 million decreased (\$2.9) million, or (60%), due primarily to a decrease in shipments of hydrogen-based backup power stacks, combined with a decline in shipments of methanol-based backup power systems as we sold certain of our methanol Telecom Backup Power assets to CHEM in the CHEM Transaction in the second quarter of 2016. This decrease more than offset revenue increases as a result of higher shipments of hydrogen-based backup power system equipment for backup power applications.

Fuel Cell Products and Services gross margins improved to \$41.6 million, or 34% of revenues, for 2017, compared to \$24.2 million, or 28% of revenues, for 2016. The improvement in gross margin of \$17.4 million, or 72%, was driven partially by the 42% increase in total revenues, combined with a shift to a higher overall margin product and service revenue mix resulting in a 6 percentage point improvement in gross margin as a percent of revenues. Gross margin 2017 particularly benefited from the increase in higher margin Technology Solutions (including amounts earned from Synergy JVCo related to the now completed FCvelocity®-9SSL fuel cell stack production operation in Yunfu, China) and Heavy-Duty Motive revenues. Gross margin in 2017 also benefited from cost reductions in per unit material cost on certain modules due to an increased focus on supply chain sourcing in China for certain of our material components, combined with activities done to

improve manufacturing overhead (including cost reduction as a result of the closure of our contract manufacturing facility in Tijuana, Mexico in the first quarter of 2016) and the related cost absorption due to improved scale and efficiency driven by the 42% increase in total revenues. These gross margin benefits in 2017 were partially offset by the decline in higher margin Portable Power shipments and services.

Cash Operating Costs

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,			
	2017	2016	\$ Change	% Change	
Research and Product Development (cash operating cost)	\$ 21,332	\$ 16,546	\$ 4,786	29%	
General and Administrative (cash operating cost)	10,248	10,897	(649)	(6%)	
Sales and Marketing (cash operating cost)	7,473	6,895	578	8%	
Cash Operating Costs	\$ 39,053	\$ 34,338	\$ 4,715	14%	

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 2017 were \$39.1 million, an increase of \$4.7 million, or 14%, compared to 2016. The \$4.7 million, or 14%, increase was driven by an increase in research and product development cash operating costs of \$4.8 million and by higher sales and marketing cash operating costs of \$0.6 million, partially offset by lower general and administrative cash operating costs (\$0.6) million.

The 14% increase in cash operating costs in 2017 was driven primarily by higher engineering and prototyping expenses related to research and product development and the ongoing improvement of all of our fuel cell products including the design and development of our next generation fuel cell products, and by increased investment to support our commercial efforts in China. In addition, operating expenses were negatively impacted by higher labour costs in Canada as a result of an approximate 2% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base. These cost increases were partially offset by the benefit of cost reductions as a result of the Company's rationalization initiatives undertaken during the first quarter of 2016 which were primarily focused on reducing our operating cost base associated with methanol Telecom Backup Power activities including significant reductions in engineering, sales and marketing efforts associated with this market.

As noted above, operating costs in 2017 was impacted by the negative impact of a stronger Canadian dollar, relative to the U.S. dollar, as compared to the fourth quarter of 2016. As a significant amount of our net operating costs (primarily labour) are denominated in Canadian dollars, operating expenses and Adjusted EBITDA are impacted by changes in the Canadian dollar relative to the U.S. dollar. As the Canadian dollar relative to the U.S. dollar was approximately 2%, or 3 basis points, higher in 2017 as compared to 2016, negative foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately \$1.2 million. 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 \$0.4 million.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)		Year ended December 31,		
	2017	2016	\$ Change	% Change
Adjusted EBITDA	\$ 3,324	\$ (9,883)	\$ 13,207	134%

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 2017 was \$3.3 million, compared to (\$9.9) million for 2016. The \$13.2 million improvement in Adjusted EBITDA in 2017 was driven by the \$17.4 million increase in gross margin as a result of the 42% increase in overall revenues combined with the 6 point improvement in gross margin as a percent of revenues. This improvement was partially offset by the increase in Cash Operating Costs of (\$4.7) million primarily as a result of higher cash research and product development operating costs.

In addition, Adjusted EBITDA in 2017 benefited from lower other operating expenses of \$1.4 million due primarily to lower restructuring expenses period over period. During 2017, restructuring expenses of \$0.8 million were incurred and 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 undertaken at Protonex in the third quarter of 2017. This compares to restructuring expenses of \$2.3 million incurred in 2016 which were as a result of cost reduction initiatives that included the elimination of approximately 50 positions including the elimination of three executive level positions. These 2016 cost reduction initiatives were primarily focused on reducing our operating cost base associated with methanol Telecom Backup Power activities.

Net income (loss) attributable to Ballard

(Expressed in thousands of U.S. dollars)		Year ended December 31,		
	2017	2016	\$ Change	% Change
Net income (loss) attributable to Ballard	\$ (8,048)	\$ (21,112)	\$ 13,064	62%

Net loss attributable to Ballard for 2017 was (\$8.0) million, or (\$0.05) per share, compared to a net loss of (\$21.1) million, or (\$0.13) per share, in 2016. The \$13.1 million reduction in net loss in 2017 was driven by the improvement in Adjusted EBITDA loss of \$13.2 million, and by higher finance and other income of \$2.6 million in 2017 due primarily to higher foreign exchange gains. These net income improvements were partially offset by higher income taxes of (\$1.2) million in 2017 related to withholding taxes on certain Chinese commercial contracts, higher impairment charges of (\$0.3) million as we wrote-down certain SOFC fuel cell assets in 2017 and certain methanol Telecom Backup Power assets in 2016, and by a higher loss on sale of assets of (\$0.7 million) related to the Upstart SOFC Transaction and the CHEM Transaction.

As noted above, net loss attributable to Ballard in 2017 was negatively impacted by a loss on sale of assets of (\$1.4) million, compared to a loss on sale of assets of (\$0.6) million in 2016. These transactional losses were as a result of the SOFC Transaction with Upstart in

2017 and the CHEM Transaction in 2016 and the subsequent change in estimated fair value of potential proceeds receivable during 2017. In addition, net loss attributable to Ballard in 2017 was negatively impacted by impairment charges of (\$1.5) million related to a write-down of SOFC fuel cell intangible assets and property, plant and equipment, whereby net loss attributable to Ballard in 2016 was negatively impacted by impairment charges of (\$1.2) million related to a write-down of methanol Telecom Backup Power intangible assets and property, plant and equipment. Excluding the impact of asset impairment charges on intangible assets and property, plant and equipment, transactional gains and losses, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in 2017 was (\$5.2) million, or (\$0.03) per share, compared to (\$19.3) million, or (\$0.12) per share, for 2016.

Net loss attributable to Ballard in 2016 excludes the net loss attributed to the interests of the non-controlling shareholder in the losses of Ballard Power Systems Europe A/S related to its 43% equity interest in Ballard Power Systems Europe A/S during that time. In early January 2017, we purchased all of the shares in the Company's European subsidiary held by Dansk Industri Invest A/S for a nominal payment. As a result, Ballard now owns 100% of Ballard Power Systems Europe A/S. Net loss attributed to non-controlling interests for 2017 was nil, compared to (\$0.6) million for 2016.

Cash provided by (used in) operating activities

<i>(Expressed in thousands of U.S. dollars)</i>				
	2017	Year ended December 31,		
		2016	\$ Change	% Change
Cash used in operating activities	\$ (9,768)	\$ (3,904)	\$ (5,864)	(150%)

Cash used in operating activities in 2017 was (\$9.8) million, consisting of cash operating income of \$2.5 million more than offset by net working capital outflows of (12.3) million. Cash used in operating activities in 2016 was (\$3.9) million, consisting of cash operating losses of (\$12.4) million, partially offset by net working capital inflows of \$8.5 million. The (\$5.9) million increase in cash used by operating activities in 2017, as compared to 2016, was driven by the relative increase in working capital requirements of (\$20.8) million, partially offset by the relative improvement in cash operating losses of \$14.9 million. The \$14.9 million reduction in cash operating losses in 2017 was due primarily to the \$13.2 million improvement in Adjusted EBITDA, and by higher finance and other income of \$2.6 million in 2017 due primarily to higher foreign exchange gains, partially offset by higher income taxes of (\$1.2) million in 2017 related to withholding taxes on certain Chinese commercial contracts.

The total change in working capital of (\$12.3) million in 2017 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.



This compares to a total change in working capital of \$8.5 million in 2016 which was driven by higher deferred revenue of \$14.5 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, and by higher accounts payable and accrued liabilities of \$1.0 million due primarily to restructuring and wage accrual expenses which were paid during 2017. These 2016 working capital inflows were partially offset by higher inventory of (\$2.3) million primarily to support expected Heavy-Duty Motive shipments to customers in the first quarter of 2017, by lower accrued warranty obligations of (\$2.6) million due primarily to customer service related expenses incurred in our Material Handling market and by Backup Power warranty contract expirations, by higher prepaid expenses of (\$1.3) million primarily related to withholding taxes incurred on certain Chinese transactions, and by higher accounts receivable of (\$0.8) million primarily as a result of the timing of Material Handling, Technology Solutions and Portable Power revenues and the related customer collections.

5.4 Operating Expenses and Other Items – Three Months and Year ended December 31, 2017

Research and product development expenses

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,		
Research and product development	2017	2016	\$ Change	% Change
Research and product development expense	\$ 7,787	\$ 4,316	\$ 3,471	80%
Less: Depreciation and amortization expense	\$ (654)	\$ (512)	\$ (142)	(28%)
Less: Stock-based compensation expense	\$ (403)	\$ (260)	\$ (143)	(55%)
Research and Product Development (cash operating cost)	\$ 6,730	\$ 3,544	\$ 3,186	90%

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,		
Research and product development	2017	2016	\$ Change	% Change
Research and product development expense	\$ 25,022	\$ 19,827	\$ 5,195	26%
Less: Depreciation and amortization expense	\$ (2,566)	\$ (2,214)	\$ (352)	(16%)
Less: Stock-based compensation expense	\$ (1,124)	\$ (1,067)	\$ (57)	(5%)
Research and Product Development (cash operating cost)	\$ 21,332	\$ 16,546	\$ 4,786	29%

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, 2017 were \$7.8 million, an increase of \$3.5 million, or 80%, compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$0.7) million and (\$0.5) million, respectively, in each of the periods, and excluding stock-based compensation expense of (\$0.4) million and (\$0.3) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures) were \$6.7 million in the fourth quarter of 2017, an increase of \$3.2 million, or 90%, compared to the fourth quarter of 2016.

The \$3.2 million, or 90%, increase in research and development operating costs (see Supplemental Non-GAAP Measures) in the fourth quarter of 2017 was driven primarily by higher engineering and prototyping expenses related to research and product development and the ongoing improvement of all of our fuel cell products including the design and

development of our next generation fuel cell products, and by higher labour costs in Canada as a result of an approximate 5% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base.

Research and product development expenses for the year ended December 31, 2017 were \$25.0 million, an increase of \$5.2 million, or 26%, compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$2.6) million and (\$2.2) 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 \$21.3 million in 2017, an increase of \$4.8 million, or 29%, compared to 2016.

The \$4.8 million, or 29%, increase in research and development cash operating costs (see Supplemental Non-GAAP Measures) in 2017 was driven primarily by higher engineering and prototyping expenses related to research and product development and the ongoing improvement of all of our fuel cell products including the design and development of our next generation fuel cell products, and by higher labour costs in Canada as a result of an approximate 2% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base. These cost increases in 2017 were partially offset by lower methanol Telecom Backup Power engineering expenses due to cost reduction initiatives undertaken in the first quarter of 2016 and culminating with the CHEM Transaction.

Government funding recoveries were lower in 2017 as compared to 2016 due to a decline in government funding recoveries in Canada. Government funding recoveries in Denmark by Ballard Power Systems Europe A/S were relatively consistent year over year. 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, 2017 was \$0.7 million and \$2.6 million, respectively, compared to \$0.5 million and \$2.2 million, respectively, for the corresponding periods of 2016. Depreciation and amortization expense relates primarily to amortization expense on our intangible assets and depreciation expense on our research and product development equipment. Research and product development depreciation and amortization expense is primarily due to the acquisition of Protonex on October 1, 2015 and the resulting amortization of acquired intangible assets over their estimated useful lives of 15 to 20 years.

Stock-based compensation expense included in research and product development expense for the three months and year ended December 31, 2017 was \$0.4 million and \$1.1 million, respectively, relatively consistent with the amounts recognized in the corresponding periods of 2016 of \$0.3 million and \$1.1 million, respectively.

General and administrative expenses

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
General and administrative	2017	2016	\$ Change	% Change	
General and administrative expense	\$ 3,223	\$ 3,514	\$ (291)	(8%)	
Less: Depreciation and amortization expense	\$ (352)	\$ (92)	\$ (260)	(283%)	
Less: Stock-based compensation expense	\$ (516)	\$ (493)	\$ (23)	(5%)	
Add: Unrealized gain (loss) on foreign exchange contracts	\$ 189	\$ -	\$ 189	100%	
General and Administrative (cash operating cost)	\$ 2,544	\$ 2,929	\$ (385)	(13%)	

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,			
General and administrative	2017	2016	\$ Change	% Change	
General and administrative expense	\$ 12,602	\$ 12,938	\$ (336)	(3%)	
Less: Depreciation and amortization expense	\$ (1,019)	\$ (375)	\$ (644)	(172%)	
Less: Stock-based compensation expense	\$ (1,524)	\$ (1,666)	\$ 142	9%	
Add: Unrealized gain (loss) on foreign exchange contracts	\$ 189	\$ -	\$ 189	100%	
General and Administrative (cash operating cost)	\$ 10,248	\$ 10,897	\$ (649)	(6%)	

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, 2017 were \$3.2 million, a decrease of (\$0.3) million, or (8%), compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$0.4) million and (\$0.1) million, respectively, in each of the periods, excluding stock-based compensation expense of (\$0.5) million in each of the periods, and excluding unrealized gains on foreign exchange contracts of \$0.2 million in the three months ended December 31, 2017, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were \$2.5 million in the fourth quarter of 2017, a decrease of (13%), compared to the fourth quarter of 2016.

The (\$0.4) million, or (13%), decrease in cash general and administrative operating costs (see Supplemental Non-GAAP Measures) in the fourth quarter of 2017 was driven primarily by a decline in costs at Protonex as a result of steps taken in August 2017 to reduce and align the Protonex cost base, partially offset by higher labour costs in Canada as a result of an approximate 5% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base.

General and administrative expenses for the year ended December 31, 2017 were \$12.6 million, a decrease of (\$0.3) million, or (3%), compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$1.0) million and (\$0.4) million, respectively, in each of the periods, excluding stock-based compensation expense of (\$1.5) million and (\$1.7) million, respectively, in each of the periods, and excluding unrealized gains on foreign exchange contracts of \$0.2 million in 2017, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were \$10.2 million in 2017, a decrease of (\$0.6) million, or (6%), compared to 2016.

The (\$0.6) million, or (6%), decrease in general and administrative cash operating costs (see Supplemental Non-GAAP Measures) in 2017 was driven primarily by a decline in costs at Protonex as a result of steps taken in August 2017 to reduce and align the Protonex cost base, partially offset by higher labour costs in Canada as a result of an approximate 2% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base.

Depreciation and amortization expense included in general and administrative expense for the three months and year ended December 31, 2017 was \$0.4 million and \$1.0 million, respectively, compared to \$0.1 million and \$0.4 million, respectively, for the corresponding periods of 2016. The expense relates primarily to depreciation and amortization expense on our office and information technology intangible assets and on our office and information technology equipment and has increased in 2017 as a result of increased 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, 2017 was \$0.5 million and \$1.5 million, respectively, compared to \$0.5 million and \$1.7 million, respectively, for the corresponding periods of 2016. The decline in 2017 is primarily as a result of cost reduction activities at Protonex.

Unrealized gains (losses) on foreign exchange contracts included in general and administrative expense for the three months and year ended December 31, 2017 was \$0.2 million, compared to nil for the corresponding periods of 2016. Periodically, we use forward foreign exchange contracts to manage our exposure to currency rate fluctuations. We record these contracts at their fair value as either assets or liabilities on our balance sheet. Any changes in fair value are recorded in profit or loss (general and administrative expense) as these contracts are not designated or qualified under hedge accounting criteria. At December 31, 2017, we had outstanding foreign exchange currency contracts to purchase a total of Canadian \$12.0 million at an average rate of 1.2777 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian \$0.2 million at December 31, 2017.

Sales and marketing expenses

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,			
Sales and marketing	2017	2016	\$ Change	% Change	
Sales and marketing expense	\$ 2,144	\$ 1,495	\$ 649	43%	
Less: Depreciation and amortization expense	\$ -	\$ -	\$ -	-%	
Less: Stock-based compensation (expense) recovery	\$ (174)	\$ 172	\$ (346)	(201%)	
Sales and Marketing (cash operating cost)	\$ 1,970	\$ 1,667	\$ 303	18%	

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,			
Sales and marketing	2017	2016	\$ Change	% Change	
Sales and marketing expense	\$ 7,951	\$ 7,190	\$ 761	11%	
Less: Depreciation and amortization expense	\$ (1)	\$ (4)	\$ 3	75%	
Less: Stock-based compensation expense	\$ (477)	\$ (291)	\$ (186)	(64%)	
Sales and Marketing (cash operating cost)	\$ 7,473	\$ 6,895	\$ 578	8%	

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, 2017 were \$2.1 million, an increase of \$0.6 million, or 43%, compared to the corresponding period of 2016. Excluding stock-based compensation (expense) recovery of (\$0.2) 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 2017, an increase of \$0.3 million, or 18%, compared to the fourth quarter of 2016.

The \$0.3 million, or 18%, increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) in the fourth quarter of 2017 was driven primarily by an increased investment to support our commercial sales and marketing efforts in China, combined with higher labour costs in Canada as a result of an approximate 5% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base.

Sales and marketing expenses for the year ended December 31, 2017 were \$8.0 million, an increase of \$0.8 million, or 11%, compared to the corresponding period of 2016. Excluding stock-based compensation expense of (\$0.5) million and (\$0.3) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) were \$7.5 million in 2017, an increase of \$0.6 million, or 8%, compared to 2016.

The \$0.6 million, or 8%, increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) in 2017 was driven primarily by an increased investment to support our commercial sales and marketing efforts in China, combined with higher labour costs in Canada as a result of an approximate 2% higher Canadian dollar, relative to the U.S. dollar, and the resulting negative impact on our Canadian operating cost base. These cost increases in 2017 were partially offset by cost reductions due to the Company's rationalization and renewal initiatives undertaken during the first quarter of 2016 which were primarily focused on reducing our operating cost base associated with methanol Telecom Backup Power activities including significant reductions in our sales and marketing efforts associated with this market at the time.

Stock-based compensation expense included in sales and marketing expense (recovery) for the three months and year ended December 31, 2017 was \$0.2 million and \$0.5 million, respectively, compared to (\$0.2) million and \$0.3 million, respectively, for the corresponding periods of 2016. The increase in 2017 is primarily as a result of increased investment to support our commercial sales and marketing efforts in China.

Other expense (recovery) for the three months and year ended December 31, 2017 was \$nil million and \$0.9 million, respectively, compared to (\$0.3) million and \$2.3 million, respectively for the corresponding periods of 2016. The following tables provide a breakdown of other expense (recovery) for the reported periods:

(Expressed in thousands of U.S. dollars)		Three months ended December 31,			
	2017	2016	\$ Change	% Change	
Impairment loss (recovery) on trade receivables	\$ 101	\$ (132)	\$ 233	177%	
Restructuring expense (recovery)	(71)	(217)	146	67%	
Acquisition charges	-	-	-	-	
Other expenses (recovery)	\$ 30	\$ (349)	\$ 379	109%	

(Expressed in thousands of U.S. dollars)		Year ended December 31,			
	2017	2016	\$ Change	% Change	
Impairment loss (recovery) on trade receivables	\$ 103	\$ (63)	\$ 166	263%	
Restructuring expense	799	2,318	(1,519)	(66%)	
Acquisition charges	-	43	(43)	(100%)	
Other expenses (recovery)	\$ 902	\$ 2,298	\$ (1,396)	(61%)	

Net impairment loss (recovery) on trade receivables for the three months and year ended December 31, 2017 was \$0.1 million in each of the periods, compared to (\$0.1) million for the corresponding periods of 2016. In the event that we are able to recover on an impaired trade receivable through legal or other means, the recovered amount is recognized in the period of recovery as a reversal of the impairment loss.

Restructuring expenses of \$0.8 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. Restructuring expenses for the year ended December 31, 2016 of \$2.3 million relate primarily to cost reduction initiatives undertaken in 2016 that included the elimination of approximately 50 positions including the elimination of three executive level positions. These 2016 cost reduction initiatives were primarily focused on reducing our operating cost base associated with methanol Telecom Backup Power activities as we reviewed strategic alternatives for these assets prior to the CHEM Transaction.

Finance income (loss) and other for the three months and year ended December 31, 2017 was (\$0.2) million and \$1.8 million, respectively, compared to (\$0.7) million and (\$0.8) million, respectively, for the corresponding periods of 2016. 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,			
	2017	2016	\$ Change	% Change	
Employee future benefit plan expense	\$ (51)	\$ (48)	\$ (3)	(6%)	
Pension administration expense	-	(1)	1	100%	
Investment and other income (loss)	147	79	68	87%	
Foreign exchange gain (loss)	(322)	(730)	408	56%	
Finance income (loss) and other	\$ (226)	\$ (700)	\$ 474	68%	

(Expressed in thousands of U.S. dollars)

		Year ended December 31,			
	2017	2016	\$ Change	% Change	
Employee future benefit plan expense	\$ (230)	\$ (263)	\$ 33	13%	
Pension administration expense	(118)	(103)	(15)	(15%)	
Investment and other income	436	112	324	290%	
Foreign exchange gain (loss)	1,692	(523)	2,215	423%	
Finance income (loss) and other	\$ 1,780	\$ (777)	\$ 2,557	329%	

Employee future benefit plan expense for the three months and year ended December 31, 2017 were (\$0.05) million and (\$0.2) million, respectively, relatively consistent with the corresponding periods of 2016. Employee future benefit plan expense primarily represents 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 of approximately (\$0.1) million for the years ended December 31, 2017 and 2016 represent administrative costs incurred in managing the plan.

Foreign exchange gains (losses) for the three months and year ended December 31, 2017 were (\$0.3) million and \$1.7 million, respectively, compared to (\$0.7) million and (\$0.5) million, respectively, for the corresponding periods of 2016. 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 comprehensive income (loss).

Investment and other income for the three months and year ended December 31, 2017 were \$0.1 million and \$0.4 million, respectively, compared to \$0.1 million for each of the corresponding periods of 2016. Amounts were earned primarily on our cash and cash equivalents.

Finance expense for the three months and year ended December 31, 2017 was (\$0.2) million and (\$0.7) million, respectively, consistent with the corresponding periods of 2016. Finance expense relates primarily to the sale and leaseback of our head office building in Burnaby, British Columbia which was completed on March 9, 2010. Due to the long term nature of the lease, the leaseback of the building qualifies as a finance (or capital) lease.

Loss on sale of assets for the year ended December 31, 2016 was (\$0.6) million and was recognized as a result of the closing of the transaction with CHEM. During the second quarter of 2016, we completed the sale of certain of our methanol Telecom Backup Power business assets to CHEM for a purchase price of up to \$6.1 million, of which \$3.0 million was paid on closing. 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. The remaining potential purchase price of up to \$3.1 million was recorded as proceeds receivable in 2016 at its estimated fair value of \$1.8 million. The final

gain (loss) on sale arising from the CHEM transaction was subject to change during 2017 depending upon the final earn-out amount actually received by Ballard through November 2017. On the closing of this transaction, CHEM received certain assets related to the methanol Telecom Backup Power line of our business, including intellectual property rights and physical assets such as inventory and related product brands.

Loss on sale of assets for the year ended December 31, 2017 was (\$1.4) million, 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 SOFC assets consisting primarily of SOFC inventory to Upstart for nominal consideration resulting in a loss on sale of assets of (\$0.5) million. Initially, 10 Protonex employees have also moved to Upstart, with an additional 6 employees expected to be transferred later in 2018 on completion of certain Technology Solutions contracts. As part of this transfer of employees, Dr. Paul Osenar, previously President of Protonex has moved to Upstart as CEO. This action has 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 year ended December, 2016 of (\$1.2) million consists of a (\$0.8) million impairment charge on intangible assets and a (\$0.4) million impairment charge on property, plant and equipment as we wrote-down certain methanol Telecom Backup Power assets to their estimated net realizable value of \$nil. The impairment charges were incurred during the first quarter of 2016 while we continued to review strategic alternatives for our methanol Telecom Backup Power assets prior to concluding the transaction with CHEM in the second quarter of 2016.

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.

Income tax expense for the three months and year ended December 31, 2017 was (\$0.2) million and (\$1.6) million, respectively, compared to (\$0.1) million and (\$0.4) million, respectively, for the corresponding periods of 2016. Income tax expense relates primarily to withholding taxes in China deducted from proceeds earned on certain Chinese commercial contracts.

Equity in income (loss) of investment for the three months and year ended December 31, 2017 was \$0.3 million and \$0.2 million, respectively, compared to nil million for the corresponding periods of 2016. Equity in income of investment relates to the pickup of 10% of the net income (loss) of Synergy JVCo as a result of our 10% ownership position in the China joint venture which is accounted using the equity method of accounting.

Net loss attributed to non-controlling interests for the three months and year ended December 31, 2016 was \$0.2 million and (\$0.6) million, respectively. Amounts represent the non-controlling interest of Dansk Industri Invest A/S in the losses of Ballard Power Systems Europe A/S (formerly named Dantherm Power A/S) as a result of their 43% total equity interest in Ballard Power Systems Europe A/S during 2016. In early January 2017, we purchased all of the shares in the Company's European subsidiary held by Dansk Industri Invest A/S for a nominal payment. As a result, Ballard now owns 100% of Ballard Power Systems Europe A/S.

5.5 Summary of Quarterly Results

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

		Quarter ended,			
		Dec 31, 2017	Sep 30, 2017	Jun 30, 2017	Mar 31, 2017
<i>(Expressed in thousands of U.S. dollars, except per share amounts and weighted average shares outstanding which are expressed in thousands)</i>					
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
		Dec 31, 2016	Sep 30, 2016	Jun 30, 2016	Mar 31, 2016
Revenues	\$	30,684	\$ 20,635	\$ 17,647	\$ 16,304
Net income (loss) attributable to Ballard	\$	(1,121)	\$ (4,187)	\$ (5,810)	\$ (9,994)
Net income (loss) per share attributable to Ballard, basic and diluted	\$	(0.01)	\$ (0.03)	\$ (0.04)	\$ (0.06)
Weighted average common shares outstanding		174,722	165,193	156,889	156,851

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 MEA's. Revenues were negatively impacted as of the second quarter of 2016 by the CHEM Transaction whereby we disposed certain assets related to our methanol Telecom



Backup Power line of our business including intellectual property rights and physical assets such as inventory and related product brands.

- **Operating expenditures:** 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 were negatively impacted in the first quarter of 2016 by restructuring expenses of (\$2.2) million related to cost reduction initiatives that included the elimination of approximately 50 positions including the elimination of three executive level positions. 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 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. Net income (loss) in the second quarter of 2016 was negatively impacted by a loss on sale of assets of (\$0.4) million recognized on the closing of the CHEM Transaction after initially estimating the fair value of the remaining potential purchase price of up to \$3.1 million to approximate \$1.8 million. Net income (loss) in first quarter of 2016 was negatively impacted by impairment losses on intangible assets and property, plant and equipment totaling (\$1.2) million as a result of the write-down of certain Telecom Backup Power assets to their estimated net realizable value of \$nil.

6. CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

6.1 Summary of Cash Flows

Cash and cash equivalents were \$60.3 million at December 31, 2017, compared to \$72.6 million at December 31, 2016. The (\$12.3) million decrease in cash and cash equivalents in 2017 was driven by net working capital outflows of (\$12.3) million, purchases of property, plant and equipment of (\$3.1) million, investments in other intangible assets of (\$3.4) million, by investments in associated companies of (\$1.0) million, and by finance lease repayments of (\$0.6) million. These 2017 outflows were partially offset by net income (excluding non-cash items) of \$2.5 million, net proceeds received from share purchase warrant exercises of \$2.0 million, and by net proceeds received from share purchase option exercises of \$3.6 million.

6.2 Cash Provided by (Used by) Operating Activities

For the three months ended December 31, 2017, cash provided by (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. For the three months ended December 31, 2016, cash provided by operating activities was \$8.0 million, consisting of cash operating income of \$1.1 million, combined with net working capital inflows of \$6.9 million. The (\$8.7) million increase in cash used in operating activities in the fourth quarter of 2017, as compared to the fourth quarter of 2016, was driven by the relative increase in working capital requirements of (\$9.3) million, partially offset by the relative improvement in cash operating income (loss) of \$0.6 million. The relative \$0.6 million improvement in cash operating income (loss) in the fourth quarter of 2017 was due primarily to the \$0.3 million improvement in Adjusted EBITDA.

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.

This compares to net working capital inflows of \$6.9 million in the fourth quarter of 2016 which were driven by lower inventory of \$6.5 million as we delivered the expected Heavy-Duty Motive shipments to customers in the last quarter of 2016, and by higher deferred revenue of \$3.9 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed. These fourth quarter of 2016 working capital inflows were partially offset by lower accounts payable and accrued liabilities of (\$1.7) million due primarily to the timing of purchases and supplier payments, and by lower accrued warranty obligations of (\$1.5) million due primarily to customer service related expenses incurred in our Material Handling market and by Backup Power warranty contract expirations.

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. For the year ended December 31, 2016, cash used in operating activities in 2016 was (\$3.9) million, consisting of cash operating losses of (\$12.4) million, partially offset by net working capital inflows of \$8.5 million. The (\$5.9) million increase in cash used by operating activities in 2017, as compared to 2016, was driven by the relative increase in working capital requirements of (\$20.8) million, partially offset by the relative improvement in cash operating losses of \$14.9 million. The \$14.9 million reduction in cash operating losses in 2017 was due primarily to the \$13.2 million improvement in Adjusted EBITDA, and by higher finance and other income of \$2.6 million in 2017 due primarily to higher foreign exchange gains, partially offset by higher income taxes of (\$1.2) million in 2017 related to withholding taxes on certain Chinese commercial contracts.

In 2017, net working capital outflows of (\$12.3) million 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.

This compares to a total change in working capital of \$8.5 million in 2016 which were driven by higher deferred revenue of \$14.5 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, and by higher accounts payable and accrued liabilities of \$1.0 million due primarily to restructuring and wage accrual expenses which will be paid into 2017. These 2016 working capital inflows were partially offset by higher inventory of (\$2.3) million primarily to support expected Heavy-Duty Motive shipments to customers in the first quarter of 2017, by lower accrued warranty obligations of (\$2.6) million due primarily to customer service related expenses incurred in our Material Handling market and by Backup Power warranty contract expirations, by higher prepaid expenses of (\$1.3) million primarily related to withholding taxes incurred on certain Chinese transactions, and by higher accounts receivable of (\$0.8) million primarily as a result of the timing of Material Handling, Technology Solutions and Portable Power revenues and the related customer collections.

6.3 Cash Provided by (Used by) Investing Activities

Investing activities resulted in net cash outflows of (\$0.5) million and (\$6.5) million, respectively, for the three months and year ended December 31, 2017, compared to net cash inflows (outflows) of (\$3.4) million and \$5.2 million, respectively, for the corresponding periods of 2016.

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 JVCo, partially offset by final net proceeds of \$1.0 million received in the fourth quarter of 2017 from the CHEM Transaction.

Investing activities in 2016 of \$5.2 million consist primarily of net proceeds of \$9.2 million received in the first quarter of 2016 as a result of the fourth quarter of 2015 sale of the automotive-related know-how of the UTC Portfolio to Volkswagen, the initial net proceeds of \$3.0 million received in the second quarter of 2016 from the CHEM Transaction, partially offset by capital expenditures of (\$2.8) million, by investments in fuel cell technology intangible assets of (\$1.1) million, and by investments in other intangible assets of (\$3.0) million relating to the commencement of implementation of a fully integrated ERP management reporting software system.

6.4 Cash Provided by (Used by) Financing Activities

Financing activities resulted in net cash inflows of \$1.6 million and \$5.0 million, respectively, for the three months and year ended December 31, 2017, compared to net cash inflows of \$nil million and \$31.0 million, respectively, for the corresponding periods of

2016.

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.

Financing activities in 2016 of \$31.0 million consist of net proceeds received from the Broad-Ocean strategic equity investment of \$28.2 million, net proceeds of \$3.3 million (Canadian \$4.6 million) received pursuant to a settlement agreement with Superior Plus as to the full and final amount payable to us under the Indemnity Agreement, proceeds from employee share purchase option exercises of \$0.5 million, partially offset by capital lease payments of (\$1.0) million.

6.5 Liquidity and Capital Resources

At December 31, 2017, we had total Liquidity of \$60.3 million. We measure Liquidity as our net cash position, consisting of the sum of our cash, cash equivalents and short-term investments of \$60.3 million, net of amounts drawn on our \$7 million Canadian demand revolving facility ("Operating Facility") of nil. The Operating Facility is occasionally used to assist in financing 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 occasionally 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, 2017, 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 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 have adequate liquidity in cash and working capital to meet this Liquidity objective and to finance our operations.

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, and make increased investments in working capital as we grow our business, 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.

In addition to our existing cash reserves of \$60.3 million at December 31, 2017, there were 0.1 million warrants outstanding (expire on March 27, 2018) from the March 2013 underwritten offering each of which enables the holder to purchase one common share at a fixed price of \$1.50 per common share, and 0.7 million warrants outstanding (expire on October 9, 2018) from the October 2013 underwritten offering each of which enable the holder to purchase one common share at a fixed price of \$2.00 per common share. If any of these warrants are exercised our liquidity position would be further augmented. We may also choose to pursue additional liquidity through the issuance of debt or equity in private or public market financings. To enable such an action and to allow the exercise of warrants, we filed a new short form base shelf prospectus ("Prospectus") in June 2016 ahead of the expiry of our existing short form base shelf prospectus in each of the provinces and territories of Canada, except Quebec, and a corresponding shelf registration statement on Form F-10 ("Registration Statement") with the United States Securities and Exchange Commission. These filings enable offerings of equity securities during the effective period (to July 2018) of the Prospectus and Registration Statements. However, 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.

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, 2017, we had outstanding foreign exchange currency contracts to purchase a total of Canadian \$12.0 million at an average rate of 1.2777 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian \$0.2 million at December 31, 2017. The outstanding foreign exchange currency contracts are not qualified under hedge accounting.

At December 31, 2017, 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, 2017, we had the following contractual obligations and commercial commitments:

<i>(Expressed in thousands of U.S. dollars)</i>		Payments due by period,				
Contractual Obligations	Total	Less than one year	1-3 years	4-5 years	After 5 years	
Operating leases	\$ 22,017	\$ 2,459	\$ 4,698	\$ 4,236	\$ 10,624	
Capital leases	8,893	1,127	2,425	2,567	2,774	
Asset retirement obligations	1,773	-	-	-	1,773	
Total contractual obligations	\$ 32,683	\$ 3,586	\$ 7,123	\$ 6,803	\$ 15,171	

In addition, we have outstanding commitments of \$3.0 million at December 31, 2017 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 on April 24, 2014, we retain a royalty obligation to pay UTC a portion (typically 25%) of any future intellectual property sale and licensing income generated from our intellectual property portfolio for a period of 15-years expiring in April 2029.

As of December 31, 2017, 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, 2017, 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 and February 2018, certain related class action complaints were filed in U.S. Federal Court alleging violations of U.S. federal securities laws. Neither complaint has been served on Ballard. Ballard will vigorously contest, and defend against, the complaints and believes the claims are without merit.

7.2 Related Party Transactions

Related parties include our 10% owned equity accounted investee, Synergy JVCo. Transactions between us and our subsidiaries are eliminated on consolidation. For the three months and year ended December 31, 2017, related party transactions and balances with Synergy JVCo are as follows:

(Expressed in thousands of U.S. dollars)

Transactions with related parties	Three Months Ended December 31,	
	2017	2016
Revenues	\$ 6,369	\$ -
Cost of goods sold and operating expense	\$ -	\$ -

(Expressed in thousands of U.S. dollars)

Transactions with related parties	Year Ended December 31,	
	2017	2016
Revenues	\$ 30,916	\$ -
Cost of goods sold and operating expense	\$ -	\$ -

(Expressed in thousands of U.S. dollars)

Balances with related parties	As at December 31,	
	2017	2016
Accounts receivable	\$ 1,415	\$ -
Investments	\$ 676	\$ -
Deferred revenue	\$ 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 29 to our annual consolidated financial statements for the year ended December 31, 2017.

7.3 Outstanding Share and Equity Information

As at February 28, 2018

Common share outstanding	178,082,082
Warrants outstanding	785,063
Options outstanding	4,670,774
DSU's outstanding	865,344
RSU's and PSU's outstanding (subject to vesting criteria)	1,534,433

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 the Corporation's ability to continue as a going concern (See Note 2 (d) 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, 2017.

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 and services, the license and sale of intellectual property and fundamental knowledge, and the provision of engineering services and technology transfer services. Product and service revenues are derived primarily from standard equipment and material sales contracts and from long-term fixed price contracts. Intellectual property and fundamental knowledge license and sale revenues are derived primarily from licensing and sale and technology transfer agreements and from long-term fixed price contracts. Engineering service and technology transfer service revenues are derived primarily from cost-plus reimbursable contracts and from long-term fixed price contracts.

On standard equipment and material sales contracts, revenues are recognized when (i) significant risks and rewards of ownership of the goods has been transferred to the buyer; (ii) we retain neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold; (iii) the amount of revenue can be measured reliably; (iv) it is probable that the economic benefits associated with the sale will accrue to us; and (v) the costs incurred, or to be incurred, in respect of the transaction can be measured reliably. Provisions are made at the time of sale for warranties. Revenue recognition for standard equipment and material sales contracts does not usually involve significant estimates.

On standard licensing and sale and technology transfer agreements, revenues are recognized on the transfer of the rights to the licensee if (i) the rights to the assets are assigned to the licensee in return for a fixed fee or a non-refundable guarantee; (ii) the contract is non-cancellable; (iii) the licensee is able to exploit its rights to the asset freely; and (iv) the Company has no remaining obligations to perform. Otherwise, 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. Revenue recognition for 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, revenues are recorded on the percentage-of-completion basis over the duration of the contract, which consists of recognizing revenue 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 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 probability that the revenue will be received and in determining the measurement of that amount.

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. 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.

During the three months and year ended December 31, 2017 and 2016, 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, 2017, our consolidated goodwill balance of \$40.6 million relates solely to our Fuel Cell Products and Services segment. Based on the impairment test performed as at December 31, 2017, we have concluded that no goodwill impairment charge is required for the year ending December 31, 2017. Details of our 2017 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, 2017 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, 2017 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 15%; an average estimated compound annual growth rate of approximately 19% from 2018 to 2022; and a terminal year EBITDA multiplied by a terminal value multiplier of 10. 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, 2017 indicating that no impairment charge is required in 2017.

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, 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. During the year ended December 31, 2016, we recorded impairment losses on intangible assets of (\$0.8) million and impairment losses on property, plant and equipment of (\$0.4) million as we wrote-down certain methanol Telecom Backup Power assets to their estimated net realizable value of \$nil. The impairment charges were incurred during the first quarter of 2016 while we continued to review strategic alternatives for our methanol Telecom Backup Power assets prior to concluding the transaction with CHEM in the second quarter of 2016.

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, 2017, we recorded provisions to accrued warranty liabilities of \$1.6 million and \$4.1 million, respectively, for new product sales, compared to \$0.4 million and \$1.1 million, respectively, for the three months and year ended December 31, 2016.

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, 2017 were adjusted downwards by \$0.7 million in each of the periods, compared to a net adjustment downwards of \$0.4 million and \$0.5 million, respectively, for the three months and year ended December 31, 2016. The positive adjustments to the accrued warranty liability provisions in 2017 were due primarily to contractual expirations and improved

lifetimes and reliability of our Heavy-Duty Motive products, whereas the positive adjustments to the accrued warranty liability provision in 2016 were due primarily to contractual expirations and improved lifetimes of our Backup Power 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, 2017, inventory adjustments of (\$0.1) million and \$nil million, respectively were recorded as a recovery (charge) to cost of product and service revenues, compared to negative inventory adjustments of (\$0.6) million for the three months and year ended December 31, 2016.

IMPAIRMENT (LOSSES) RECOVERIES ON TRADE RECEIVABLES

Trade and other receivables are recognized initially at fair value and subsequently at amortized cost using the effective interest method, less any impairment losses. Fair value is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date. In determining the fair value of our trade and other receivables and establishing the appropriate provision for doubtful accounts, we perform regular reviews to estimate the likelihood that our trade and other accounts receivable will ultimately be collected in a timely manner. Where we determine that customer collectability issues have occurred and will have a negative impact on the value of trade and other receivables, appropriate provisions are made. If there is a subsequent recovery in the value of trade and other receivables, reversals of previous write-downs to fair value are made. Unforeseen changes in these factors could result in additional impairment provisions, or reversals of previous impairment provisions, being required. During the three months and year ended December 31, 2017, net impairment (charges) on trade receivables of (\$0.1) million were recorded in other operating income, compared to net impairment recoveries of \$0.1 million for the three months and year ended December 31, 2016.

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, 2017 and 2016, we have not recorded any deferred income tax assets on our consolidated statement of financial position.

8.4 Recently Adopted Accounting Policy Changes

We did not adopt any new accounting standard changes or amendments effective January 1, 2017 that had a material impact on our consolidated 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 2 – SHARE-BASED PAYMENTS

On June 20, 2016, the IASB issued amendments to *IFRS 2 Share-based Payment*, clarifying how to account for certain types of share-based payment transactions.

The amendments provide requirements on the accounting for:

- the effects of vesting and non-vesting conditions on the measurement of cash-settled share-based payments;
- share-based payment transactions with a net settlement feature for withholding tax obligations; and
- a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled.

The amendments apply for annual periods beginning on or after January 1, 2018. As a practical simplification, the amendments can be applied prospectively. Retrospective, or early, application is permitted if information is available without the use of hindsight. The Corporation intends to adopt the amendments to IFRS 2 in its financial statements for the fiscal year beginning on January 1, 2018. The Company does not expect the amendments to have a material impact on the financial statements.

IFRS 15 – REVENUE FROM CONTRACTS WITH CUSTOMERS

On May 28, 2014, the IASB issued *IFRS 15 Revenue from Contracts with Customers*. IFRS 15 will replace *IAS 11 Construction Contracts*, *IAS 18 Revenue*, *IFRIC 13 Customer Loyalty*

Programmes, IFRIC 15 Agreements for the Construction of Real Estate, IFRIC 18 Transfer of Assets from Customers, and SIC 31 Revenue – Barter Transactions Involving Advertising Services. On April 12, 2016, the IASB issued Clarifications to IFRS 15, Revenue from Contracts with Customers, which is effective at the same time as IFRS 15.

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 new standard is effective for annual periods beginning on or after January 1, 2018 and is available for early adoption. The Corporation intends to adopt IFRS 15 in its financial statements for the fiscal year beginning on January 1, 2018. Based on an analysis of the Company's contracts in place as of January 1, 2018, the Company does not expect the standard to have a material impact on the financial statements. The Company continues to evaluate the disclosure obligations under IFRS 15.

IFRS 9 – FINANCIAL INSTRUMENTS

On July 24, 2014, the IASB issued the complete *IFRS 9 Financial Instruments* standard ("IFRS 9"). IFRS 9 introduces new requirements for the classification and measurement of financial assets. 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 mandatory effective date of IFRS 9 is for annual periods beginning on or after January 1, 2018 and must be applied retrospectively with some exemptions. Early adoption is permitted. The restatement of prior periods is not required and is only permitted if information is available without the use of hindsight. The Corporation intends to adopt IFRS 9 in its financial statements for the fiscal year beginning on January 1, 2018. Based on an analysis of the Company's financial instruments as of January 1, 2018, the Company does not expect the standard to have a material impact on the 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. Early adoption is permitted for entities that apply *IFRS 15 Revenue from Contracts with Customers* as at or before the date of initial adoption of IFRS 16. IFRS 16 will replace *IAS 17 Leases*. The Corporation intends to adopt IFRS 16 in its financial statements for the fiscal year beginning on January 1, 2019. The extent of the impact of adoption of the standard has not yet been determined.

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;
- reflect an uncertainty in the amount of income tax payable (recoverable) if it is probable that it will pay (or recover) an amount for the uncertainty; and
- measure a tax uncertainty based on the most likely amount of expected value depending on whichever method better predicts the amount payable (recoverable).

The Interpretation is applicable for annual periods beginning on or after January 1, 2019. Early application is permitted. The Corporation intends to adopt the Interpretation in its financial statements for the fiscal year beginning on January 1, 2019. The extent of the impact of adoption of the Interpretation 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, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,		
Cash Operating Costs	2017	2016	\$ Change	
Total Operating Expenses	\$ 13,184	\$ 8,976	\$	4,208
Stock-based compensation expense	(1,093)	(581)		(512)
Impairment recovery (losses) on trade receivables	(101)	132		(233)
Acquisition and integration costs	-	-		-
Restructuring (charges) recovery	71	217		(146)
Unrealized gains on foreign exchange contracts	189	-		189
Financing charges	-	-		-
Depreciation and amortization	(1,006)	(604)		(402)
Cash Operating Costs	\$ 11,244	\$ 8,140	\$	3,104

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,		
Cash Operating Costs	2017	2016	\$ Change	
Total Operating Expenses	\$ 46,477	\$ 42,253	\$	4,224
Stock-based compensation (expense) recovery	(3,125)	(3,024)		(101)
Impairment recovery (losses) on trade receivables	(103)	63		(166)
Acquisition and integration costs	-	(43)		43
Restructuring charges	(799)	(2,318)		1,519
Unrealized gains on foreign exchange contracts	189	-		189
Financing charges	-	-		-
Depreciation and amortization	(3,586)	(2,593)		(993)
Cash Operating Costs	\$ 39,053	\$ 34,338	\$	4,715

The components of Cash Operating Costs of research and product development (cash operating cost), general and administrative (cash operating cost), and sales and marketing (cash operating cost) differ from their respective most comparable GAAP measure of research and product development expense, general and administrative expense, and sales and marketing expense, primarily because they do not include stock-based compensation expense and depreciation and amortization expense. A reconciliation of these respective

operating expenses to the respective components of Cash Operating Costs for the three months and year ended December 31, 2017 and 2016 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, 2017 and 2016 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>			
	Three months ended December 31,		
Stock-based compensation expense	2017	2016	\$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	403	260	143
General and administrative expense	516	493	23
Sales and marketing expense (recovery)	174	(172)	346
Stock-based compensation expense	\$ 1,093	\$ 581	\$ 512

<i>(Expressed in thousands of U.S. dollars)</i>			
	Year ended December 31,		
Stock-based compensation expense	2017	2016	\$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	1,124	1,067	57
General and administrative expense	1,524	1,666	(142)
Sales and marketing expense	477	291	186
Stock-based compensation expense	\$ 3,125	\$ 3,024	\$ 101

A breakdown of total depreciation and amortization expense for the three months and year ended December 31, 2017 and 2016 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>			
	Three months ended December 31,		
Depreciation and amortization expense	2017	2016	\$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	\$ 474	\$ 451	\$ 23
Research and product development expense	654	512	142
General and administrative expense	352	92	260
Sales and marketing expense	1	1	-
Depreciation and amortization expense	\$ 1,481	\$ 1,056	\$ 425

<i>(Expressed in thousands of U.S. dollars)</i>			
	Year ended December 31,		
Depreciation and amortization expense	2017	2016	\$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	\$ 1,477	\$ 1,951	\$ (474)
Research and product development expense	2,566	2,214	352
General and administrative expense	1,019	375	644
Sales and marketing expense	1	4	(3)
Depreciation and amortization expense	\$ 5,064	\$ 4,544	\$ 520

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 attributable to Ballard, 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 attributable to Ballard to EBITDA and Adjusted EBITDA for the three months and year ended December 31, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended December 31,		
EBITDA and Adjusted EBITDA	2017	2016	\$ Change	
Net income (loss) attributable to Ballard	\$ (2,887)	\$ (1,121)	\$ (1,766)	
Depreciation and amortization	1,481	1,056	425	
Finance expense	168	164	4	
Income taxes	210	127	83	
EBITDA attributable to Ballard	\$ (1,028)	\$ 226	\$ (1,254)	
Stock-based compensation expense	1,093	581	512	
Acquisition and integration costs	-	-	-	
Finance and other (income) loss	226	700	(474)	
Impairment loss (recovery) on intangible assets and property, plant and equipment	1,484	-	1,484	
Loss on sale of assets	500	256	244	
Unrealized gains on foreign exchange contracts	(189)	-	(189)	
Adjusted EBITDA	\$ 2,086	1,763	\$ 323	

<i>(Expressed in thousands of U.S. dollars)</i>		Year ended December 31,		
EBITDA and Adjusted EBITDA	2017	2016	\$ Change	
Net income (loss) attributable to Ballard	\$ (8,048)	\$ (21,112)	\$ 13,064	
Depreciation and amortization	5,064	4,544	520	
Finance expense	732	686	46	
Income taxes	1,571	381	1,190	
EBITDA attributable to Ballard	\$ (681)	\$ (15,501)	\$ 14,820	
Stock-based compensation expense (recovery)	3,125	3,024	101	
Acquisition and integration costs	-	43	(43)	
Finance and other (income) loss	(1,780)	777	(2,557)	
Gain on sale of intellectual property	-	-	-	
Impairment charges on intangible assets and property, plant and equipment	1,484	1,151	333	
Loss (gain) on sale of assets	1,365	623	742	
Unrealized gains on foreign exchange contracts	(189)	-	(189)	
Adjusted EBITDA	\$ 3,324	\$ (9,883)	\$ 13,207	

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 attributable to Ballard, 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 attributable to Ballard to Adjusted Net Loss for the three months and year ended December 31, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>			
Three months ended December 31,			
Adjusted Net Loss	2017	2016	\$ Change
Net (loss) attributable to Ballard	\$ (2,887)	\$ (1,121)	\$ (1,766)
Acquisition and integration costs	-	-	-
Impairment charges (recovery) on intangible assets and property, plant and equipment	1,484	-	1,484
Loss on sale of assets	500	260	240
Adjusted Net Loss	\$ (903)	\$ (861)	\$ (42)
Adjusted Net Loss per share	\$ (0.01)	\$ (0.00)	\$ (0.01)

<i>(Expressed in thousands of U.S. dollars)</i>			
Year ended December 31,			
Adjusted Net Loss	2017	2016	\$ Change
Net (loss) attributable to Ballard	\$ (8,048)	\$ (21,112)	\$ 13,064
Acquisition and integration costs	-	43	(43)
Impairment charges on intangible assets and property, plant and equipment	1,484	1,151	333
Loss on sale of assets	1,374	632	742
Adjusted Net Loss	\$ (5,190)	\$ (19,286)	\$ 14,096
Adjusted Net Loss per share	\$ (0.03)	\$ (0.12)	\$ 0.09