

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



## 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) 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 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; changes in product or service pricing; changes in our customers' requirements, the competitive environment and related market conditions; product development delays; 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 environmental regulations including subsidies or incentives associated with the adoption of clean energy products; 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, the cost of integration exceeding that projected by Ballard, and the integration failing to achieve the expected benefits of the transaction; 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

August 2, 2017

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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 August 2, 2017 and should be read in conjunction with our unaudited condensed consolidated interim financial statements and accompanying notes for the three and six months ended June 30, 2017 and with our audited consolidated financial statements and accompanying notes for the year ended December 31, 2016. 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 including International Accounting Standard 34, Interim Financial Reporting. Additional information relating to the Company, including our Annual Information Form, is filed with Canadian ([www.sedar.com](http://www.sedar.com)) and U.S. securities regulatory authorities ([www.sec.gov](http://www.sec.gov)) and is also available on our website at [www.ballard.com](http://www.ballard.com).

### **1.2 Disclosure Controls and Procedures and Internal Controls over Financial Reporting**

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 and the Chief Financial Officer, on a timely basis so that appropriate decisions can be made regarding public disclosures. We have also designed internal controls over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. In 2016, we commenced the process of replacing our incumbent financial and other resource systems with a fully integrated Enterprise Resource Planning (“ERP”) management reporting software system. During the three and six months ended June 30, 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 both Protonex and Ballard Power Systems Europe A/S.

### **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](http://www.sedar.com)) and U.S. securities regulatory authorities ([www.sec.gov](http://www.sec.gov)).

## **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, service and research and development facility in Hobro, Denmark. We have recently opened an office in Guangzhou, the capital of Guangdong Province, China. This office is expected to serve 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.

### **2.2 Strategic Imperatives**

We plan to build value for our shareholders by developing, manufacturing, selling and servicing industry-leading 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 systems 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 fast-growing clean 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 strong 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 do not provide technology transfer and licensing relating to the manufacture of our proprietary membrane electrode assemblies (“MEAs”), key technology components 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 reserve flexibility on how we introduce these next generation products to the markets, including to China.

### **3. 2017 BUSINESS OUTLOOK**

We continue to anticipate growth in product revenues in 2017, as compared to 2016, supported by increased activity in Heavy-Duty Motive. We also expect 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 automotive partners. In addition, Technology Solutions work is expected with customers in the rail, military, and unmanned aerial vehicle sectors. As a result of delays from forecast in obtaining Program of Record (Milestone C) status with the U.S. Army, and the resulting negative impact on sales of Squad Power Manager (SPM-622) Operations Kits to the broader U.S. military, we no longer expect Portable Power product revenue growth in 2017.

We believe that our committed orders received to date in 2017 combined with our pipeline of qualified commercial sales opportunities, current market conditions, and our strategic, competitive and balance sheet positioning support continued revenue growth, gross margin expansion, and improved financial performance in 2017, as compared to 2016. Sales to Chinese customers in 2017 continue to be expected to account for an increased proportion of total revenue.

Given the early stage of fuel cell market development and adoption rate, and consistent with our approach in 2016, we have decided not to provide specific financial performance guidance for 2017. While our strategic focus on multiple fuel cell product markets, engineering services and intellectual property monetization serves to mitigate risk, the resulting cadence in customer demand can be uneven through the early stages of market development. As such, our financial results on a quarterly basis are subject to a high degree of variability.

Our outlook for 2017 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 seven months of 2017, sales orders received for units and services to be delivered in the remainder of 2017, an estimate with respect to the generation of new sales and the timing of deliveries in each of our markets for the balance of 2017, and assumes an average U.S. dollar exchange rate in the high 70's in relation to the Canadian dollar for the remainder of 2017. The primary risk factors to our business outlook expectations for 2017 are delays from forecast in terms of closing and delivering expected sales primarily in our

Heavy-Duty Motive market, potential adverse macro-economic conditions or changes in government subsidy or incentive programs negatively impacting our Chinese customer's access to capital and program plans which could adversely impact our Heavy-Duty market, potential 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.

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 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. 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**

###### Zhongshan Broad-Ocean Motor Co., Ltd.

On June 5, 2017, we announced the closing of an approximate \$18 million supply contract with strategic partner Broad-Ocean Motor Co., Ltd. ("Broad-Ocean") to support the expected deployment of 400 FCveloCity® fuel cell engines integrated into clean energy buses and trucks in key Chinese cities. The transaction is part of an ongoing program with Broad-Ocean to implement Ballard's leading fuel cell technology in support of China's plan to address environmental concerns and advance the adoption of zero-emission vehicles. The complementary addition of fuel cell systems effectively addresses the limitations of stand-alone battery solutions in certain use cases, resulting in growing demand for zero-emission and efficient propulsion systems that provide bus, truck and commercial vehicles with the traditional range and refueling times provided by legacy diesel solutions. This announcement, together with an approximate \$11 million transaction announced on April 5, 2017 for the deployment of 200 FCveloCity® fuel cell engines, means that Ballard is planning to support Broad-Ocean through the deployment of 600 fuel cell engines having a total value of approximately \$29 million, with significant deliveries expected to occur in 2017. Revenue earned from these agreements (\$0.8 million in the second quarter of 2017 and to date) is recorded as Heavy-Duty Motive revenues.

On April 6, 2017, we announced the closing of a transaction previously announced on February 16, 2017, relating to technology transfer, licensing and supply arrangements with Broad-Ocean for the assembly and sale of FCveloCity® 30-kilowatt (kW) and 85kW fuel cell



engines in China. Under the agreement, Broad-Ocean will manufacture fuel cell modules in three strategic regions in China, including Shanghai. The agreement 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. As of closing, Ballard received initial payments of \$3.6 million. To date, revenue earned from this agreement (\$0.3 million in the second quarter of 2017 and to date) are recorded as Technology Solutions revenues. 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. Broad-Ocean will make further payments to Ballard based on certain commissioning milestones, initial supply agreements, and recurring royalties. Ballard will also have the exclusive right to purchase fuel cell engines from any of the Broad-Ocean manufacturing operations for sale outside China. Each fuel cell engine assembled by Broad-Ocean will utilize FCvelocity®-9SSL fuel cell stacks, initially manufactured by Ballard at its head office facilities in Burnaby. Stack supply will be transferred to Guangdong Synergy Ballard Hydrogen Power Co., Ltd. ("Synergy JVCo"), the joint venture owned by Guangdong Nation Synergy Hydrogen Power Technology Co. Ltd. (a member of the "Synergy Group") and Ballard in the City of Yunfu in China's Guangdong Province, once Synergy JVCo becomes fully operational, expected in late-2017. From that time forward, Ballard will supply MEAs on an exclusive basis for stacks manufactured by Synergy JVCo.

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 (to 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. and Guangdong Nation Synergy Hydrogen Power Technology Co. Ltd.

On October 25, 2016, we announced the closing of a transaction with the Synergy Group for the establishment of an FCvelocity®-9SSL fuel cell stack production operation in the City of Yunfu, in Guangdong Province, China. The transaction was originally announced on July 18, 2016. The fuel cell stacks will be packaged into locally-assembled fuel cell engines and integrated into zero-emission buses and commercial vehicles in China. The transaction has a contemplated minimum value to Ballard of approximately \$170 million over 5-years. As of the closing of this transaction in October 2016, we had received payments totaling \$10.9

million and received further payments of \$8.1 million in December 2016 in relation to a contract milestone, for total receipts of \$19.0 million. 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, with most of this revenue expected through the fourth quarter of 2016 and 2017. Revenue earned from these agreements (\$3.9 million in the second quarter of 2017; \$10.1 million in the first half 2017; \$4.4 million in fiscal 2016) are recorded as Technology Solutions revenues;
- A joint venture (Synergy JVCo) has been registered in China to undertake the FCvelocity®-9SSL fuel cell stack manufacturing operations, with Synergy JVCo owned 90% by the Synergy Group and 10% by Ballard; and
- On commissioning of the stack production line, expected in late 2017, Ballard will be the exclusive supplier of membrane electrode assemblies (“MEA”s) for each fuel cell stack manufactured by Synergy JVCo, with minimum annual MEA volume commitments on a “take or pay” basis totaling in excess of \$150 million over the initial 5-year term from 2017 to 2021. Revenue earned from the MEA Supply Agreement (\$4.0 million in the second quarter of 2017; \$4.5 million in the first half of 2017; nil in fiscal 2016) are recorded as Heavy-Duty Motive revenues.

During May 2017, Ballard contributed approximately \$1.0 million for its 10% interest in Synergy JVCo. Under the terms of the agreement, Ballard has the right to appoint one of the three Synergy JVCo board directors, has veto rights over certain key Synergy JVCo decisions, and has no further obligation to provide future funding to Synergy JVCo. Ballard’s CEO, Randall MacEwen, was appointed to the board of Synergy JVCo effective as of closing. After commissioning of the operation, Synergy JVCo will have an exclusive right to manufacture and sell FCvelocity®-9SSL stacks in China. Exclusivity will be subject to certain performance criteria of Synergy JVCo, including compliance with a code of ethics, compliance with Ballard’s quality policies, compliance with Ballard’s branding policies, achievement of the minimum annual “take or pay” MEA volumes, compliance with payment terms, and compliance with certain intellectual property covenants. Ballard will have the exclusive right to purchase FCvelocity®-9SSL fuel cell stacks and sub-components from Synergy JVCo for sale outside China.

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 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. Technology transfer work performed under this agreement is recorded as Technology Solutions revenues (\$0.3 million in the second quarter of 2017; \$0.6 million in the first half of 2017; \$1.3 million in fiscal 2016) whereas sales of fuel cell stacks are 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 will 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 (\$3.0 million in the second quarter of 2017; \$4.1 million in the first half of 2017; \$1.5 million in the second quarter of 2016; \$2.6 million in the first half of 2016; \$7.9 million in fiscal 2016) are 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 significant 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 (\$0.2 million in the second quarter of 2017; \$0.2 million in the first half of 2017; \$3.4 million in the second quarter of 2016; \$4.8 million in the first half of 2016; \$13.7 million in fiscal 2016; \$2.9 million in fiscal 2015) are 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 plans to deliver the engines in 2017 for integration into Yinlong buses that are expected to be deployed in Beijing. Revenue earned from this agreement (nil to date) will be 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 (\$0.2 million in the first half of 2017; \$0.3 million in the second quarter of 2016; \$1.0 million in the first half of 2016; \$2.0 million in fiscal 2016; \$0.5

million in fiscal 2015) are 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 plans to develop 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 is expected to start in 2018. Revenue earned from this agreement (\$2.9 million in the second quarter of 2017; \$3.0 million in the first half of 2017; \$0.3 million in the second quarter of 2016; \$0.7 million in the first half of 2016; \$0.9 million in fiscal 2016) are recorded as either Heavy-Duty Motive or Technology Solutions revenues depending on the nature of work performed.

## **4.2 Europe**

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, with deliveries planned to start in 2017. Revenue earned from this agreement (\$0.5 million in the second quarter of 2017 and to date) 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 late 2017, Ballard received an additional €1.6 million in February 2017 for onsite assembly and commissioning. Revenue earned from this agreement (\$0.6 million in the second quarter of 2017; \$0.8 million in the first half of 2017; \$0.2 million in the second quarter of 2016; \$0.7 million in the first half of 2016; \$1.0 million in fiscal 2016; \$0.8 million in fiscal 2015) are 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 second quarter of 2017; \$8.7 million in the first half of 2017; \$3.5 million in the second quarter of 2016; \$6.5 million in the first half of 2016; \$13.9 million in fiscal 2016) are recorded as Technology Solutions revenues.

### **4.3 North America**

On July 18, 2017, we announced that we have received an order from SunLine Transit Agency ("SunLine") for five (5) FCveloCity® fuel cell engines to power clean energy buses in Palm Desert, California. The 150 kilowatt engines are expected to be shipped in 2017. Ballard is partnering with EIDorado 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 Transit Agency. SunLine Transit Agency received funding from the Federal Transit Administration ("FTA") to purchase and deploy 5 hydrogen electric fuel cell buses. This will double SunLine's current fleet of fuel cell buses and allow it to offer expanded transit service in the Coachella Valley area of Southern California. Revenue earned from this agreement (nil to date) will be 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 by the end of 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.

On January 19, 2017, we announced that our subsidiary, Protonex Technology Corporation ("Protonex"), received certification from the U.S. Government enabling its SPM-622 (Squad Power Manager) and VPM-402 (Vest Power Manager) 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.



#### **4.4 Other**

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 consists 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. The final gain (loss) on sale arising from the CHEM Transaction is subject to change 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. 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 includes minimum sales of \$2 million over an 18-month period. Revenue earned under the fuel cell stack supply agreement with CHEM (\$0.3 million in the first half of 2017; \$0.6 million in the second quarter and first half of 2016; \$1.7 million in fiscal 2016) are 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 June 30, 2017

### Revenue and gross margin

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,			
Fuel Cell Products and Services	2017	2016	\$ Change	% Change	
Heavy-Duty Motive	\$ 12,194	\$ 4,748	\$ 7,446	157%	
Portable Power	886	2,899	(2,014)	(69%)	
Material Handling	1,984	2,518	(535)	(21%)	
Backup Power	118	1,613	(1,494)	(93%)	
Technology Solutions	11,340	5,869	5,470	93%	
<b>Revenues</b>	<b>26,521</b>	17,647	8,874	50%	
Cost of goods sold	17,256	12,525	4,731	38%	
<b>Gross Margin</b>	<b>\$ 9,265</b>	\$ 5,122	\$ 4,143	81%	
Gross Margin %	35%	29%	n/a	6 pts	

Fuel Cell Products and Services Revenues of \$26.5 million for the second quarter of 2017 increased 50%, or \$8.9 million, compared to the second quarter of 2016. The 50% increase was driven by higher Heavy-Duty Motive and Technology Solutions revenues, which more than offset a decline in Portable Power, Backup Power, and Material Handling revenues.

Heavy-Duty Motive revenues of \$12.2 million increased \$7.4 million, or 157%, due primarily to increased shipments of a variety of fuel cell bus products to customers, principally in China but supported by sales in Europe. Heavy-Duty Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying power configurations required by our customers (and the resulting impact on selling price) of our FCveloCity®-HD7 200-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 second quarter of 2017 include \$4.0 million for shipments of MEA's under the MEA Supply Agreement with Synergy JVCo, and \$2.9 million for the shipment of five FCveloCity®-HD7 200-kilowatt fuel cell modules to CRRC Sifang for their tram program.

Technology Solutions revenues of \$11.3 million increased \$5.5 million, or 93%, due primarily to amounts earned in the second quarter of 2017 related to the ongoing establishment by Synergy JVCo of a production line in Yunfu, China for the manufacture and assembly of FCvelocity®-9SSL fuel cell stacks, by 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 an increase in Volkswagen service revenues primarily as a result of program scope and timing requirements. Increases in revenue in the second quarter of 2017 as a result of these projects more than offset lower amounts recognized in total on the TRC and CRRC Sifang tram development projects, the HDF distributed generation project, and a variety of other programs primarily as a result of the timing and completion of project work. Volkswagen service revenues were also negatively impacted by approximately (\$0.2) million in the second quarter of 2017, as compared to the second quarter of 2016, as a result of an approximate (4%) lower 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 \$2.0 million decreased (\$0.5) million, or (21%), as increased stack shipments to Plug Power were offset by the impact of a lower average selling price due to product mix.

Portable Power revenues of \$0.9 million decreased (\$2.0) million, or (69%), due to lower product revenues generated by Protonex as service revenues were relatively flat. Revenues from Protonex in the second quarter of 2016 benefited from 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 in particular 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 \$0.1 million decreased (\$1.5) million, or (93%), due primarily to a decrease in shipments of hydrogen-based backup power stacks and hydrogen-based backup power systems for backup power applications, 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.

Fuel Cell Products and Services gross margins improved to \$9.3 million, or 35% of revenues, for the second quarter of 2017, compared to \$5.1 million, or 29% of revenues, for the second quarter of 2016. The improvement in gross margin of \$4.1 million, or 81%, was driven by the 50% increase in total revenues combined with a shift to higher margin product and service revenue resulting in a 6 point improvement in gross margin as a percent of revenues. Gross margin in the second quarter of 2017 particularly benefited from the increase in higher margin Technology Solutions (including amounts earned from Synergy JVCo related to the ongoing establishment of an FCvelocity®-9SSL fuel cell stack production operation in Yunfu, China) and Heavy-Duty Motive revenues, combined with improved manufacturing overhead and related cost absorption as a result of improved scale and efficiency driven by the 50% increase in total revenues.

### **Cash Operating Costs**

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,			
	2017	2016	\$ Change	% Change	
Research and Product Development (cash operating cost)	\$ 4,358	\$ 4,447	\$ (89)	(2%)	
General and Administrative (cash operating cost)	2,334	2,232	102	5%	
Sales and Marketing (cash operating cost)	1,790	1,743	47	3%	
<b>Cash Operating Costs</b>	<b>\$ 8,482</b>	<b>\$ 8,422</b>	<b>\$ 60</b>	<b>1%</b>	

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, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures) for the second quarter of 2017 were \$8.5 million, relatively consistent with the second quarter of 2016. Nominal increases in general and administrative cash operating costs and nominal increases in sales and marketing cash operating costs in the second quarter of 2017 were primarily offset by nominal reductions in research and product development cash operating costs.

The nominal overall increase in cash operating costs in the second quarter of 2017 was driven primarily by increased investment to support our commercial efforts in China, and by marginally 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. These cost increases were effectively offset by lower labour costs in Canada as a result of an approximate (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

As noted above, operating costs in the second quarter of 2017 benefited from the positive impact of a weaker Canadian dollar, relative to the U.S. dollar, as compared to the second 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 (4%), or (5) basis points, lower in the second quarter of 2017 as compared to the second quarter of 2016, positive foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately \$0.4 million. A \$0.01 decrease in the Canadian dollar, relative to the U.S. dollar, positively impacts annual Cash Operating Costs and Adjusted EBITDA by approximately (\$0.3) million to (\$0.4) million.

### **Adjusted EBITDA**

*(Expressed in thousands of U.S. dollars)*

	Three months ended June 30,			
	2017	2016	\$ Change	% Change
<b>Adjusted EBITDA</b>	\$ 1,050	\$ (2,921)	\$ 3,971	136%

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, finance and other income, and acquisition costs.

Adjusted EBITDA (see Supplemental Non-GAAP Measures) for the second quarter of 2017 was \$1.1 million, compared to (\$2.9) million for the second quarter of 2016. The \$4.0 million improvement in Adjusted EBITDA in the second quarter of 2017 was driven by the \$4.1 million increase in gross margin as a result of the 50% 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 nominal increase in Cash Operating Costs.

## ***Net income (loss) attributable to Ballard***

		<i>(Expressed in thousands of U.S. dollars)</i>			
		Three months ended June 30,			
		2017	2016	\$ Change	% Change
<b>Net income (loss) attributable to Ballard</b>	<b>\$</b>	<b>(1,201)</b>	<b>\$ (5,810)</b>	<b>\$ 4,609</b>	<b>79%</b>

Net loss attributable to Ballard for the second quarter of 2017 was (1.2) million, or (\$0.01) per share, compared to a net loss of (\$5.8) million, or (\$0.04) per share, in the second quarter of 2016. The \$4.6 million reduction in net loss in the second quarter of 2017 was driven by the improvement in Adjusted EBITDA loss of \$4.0 million, combined with higher finance and other income of \$1.6 million in 2017 due primarily to foreign exchange gains. These net income improvements were partially offset by an increase in net loss on sale of assets of (\$0.5) million as we wrote-down the fair value of potential proceeds receivable on the CHEM transaction, and by higher income taxes of (\$0.4) million in the second quarter of 2017 related to withholding taxes on certain Chinese commercial contracts.

As noted above, net loss attributable to Ballard in the second quarter of 2017 was negatively impacted by a loss on sale of assets of (\$0.8) million, compared to a loss on sale of assets of (\$0.4) million in the second quarter of 2016. These transactional losses were recognized on the closing of the CHEM Transaction and the subsequent change in estimated fair value of potential proceeds receivable. Excluding the impact of asset impairment charges, transactional gains and losses on intangible assets and property, plant and equipment, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in the second quarter of 2017 was (\$0.4) million, or (\$0.00) per share, compared to (\$5.4) million, or (\$0.03) per share, for the second quarter of 2016.

Net loss attributable to Ballard in the second quarter of 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 the second quarter of 2017 was nil, compared to (\$0.2) million for the second quarter of 2016.

## ***Cash provided by (used in) operating activities***

		<i>(Expressed in thousands of U.S. dollars)</i>			
		Three months ended June 30,			
		2017	2016	\$ Change	% Change
<b>Cash provided by (used in) operating activities</b>	<b>\$</b>	<b>1,802</b>	<b>\$ (3,921)</b>	<b>\$ 5,723</b>	<b>146%</b>

Cash provided by (used in) operating activities in the second quarter of 2017 was \$1.8 million, consisting of cash operating income of \$1.4 million and net working capital inflows of \$0.4 million. Cash used by operating activities in the second quarter of 2016 was (\$3.9) million, consisting of cash operating losses of (\$3.7) million and net working capital outflows of (\$0.2) million. The \$5.7 million improvement in cash provided by (used in) operating activities in the second quarter of 2017, as compared to the second quarter of 2016, was driven by the relative improvement in cash operating income (loss) of \$5.1 million,

combined with the relative reduction in working capital requirements of \$0.6 million. The \$5.1 million improvement in cash operating income (loss) in the second quarter of 2017 was due primarily to the \$4.0 million improvement in Adjusted EBITDA.

The total change in working capital of \$0.4 million in the second quarter of 2017 was driven by higher accounts payable and accrued liabilities of \$3.4 million as a result of the timing of supplier payments and annual compensation awards, combined with higher accrued warranty obligations of \$0.7 million due to increased product shipments. These second quarter of 2017 inflows were partially offset by lower deferred revenue of (\$3.0) 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, and by higher inventory of (\$0.4) million primarily to support expected Heavy-Duty Motive shipments in the last half of 2017.

This compares to a total change in working capital of (\$0.2) million in the second quarter of 2016 which was driven by higher accounts receivable of (\$4.7) million primarily as a result of the timing of revenues and the related customer collections, and by higher inventory of (\$2.4) million primarily to support expected Heavy-Duty Motive and Power Products shipments to customers in the second half of 2016. These second quarter of 2016 working capital outflows were partially offset by higher deferred revenue of \$5.8 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, and by lower prepaid expenses of \$1.2 million due primarily to the timing of certain purchases and supplier payments.

### 5.3 Summary of Key Financial Metrics – Six months ended June 30, 2017

#### *Revenue and gross margin*

		Six months ended June 30,			
		<i>(Expressed in thousands of U.S. dollars)</i>			
Fuel Cell Products and Services		2017	2016	\$ Change	% Change
Heavy-Duty Motive	\$	19,375	\$ 8,018	\$ 11,357	142%
Portable Power		2,092	5,455	(3,363)	(62%)
Material Handling		4,193	6,590	(2,397)	(36%)
Backup Power		655	1,941	(1,286)	(66%)
Technology Solutions		22,862	11,947	10,916	91%
<b>Revenues</b>		<b>49,177</b>	33,951	15,226	45%
Cost of goods sold		30,363	25,547	4,816	19%
<b>Gross Margin</b>	<b>\$</b>	<b>18,814</b>	\$ 8,404	\$ 10,410	124%
Gross Margin %		<b>38%</b>	25%	n/a	13 pts

Fuel Cell Products and Services Revenues of \$49.2 million for the first half of 2017 increased 45%, or \$15.2 million, compared to the first half of 2016. The 45% increase was driven by higher Heavy-Duty Motive and Technology Solutions revenues, which more than offset a decline in Portable Power, Material Handling and Backup Power revenues.

Technology Solutions revenues of \$22.9 million increased \$10.9 million, or 91%, due primarily to amounts earned in 2017 related to the ongoing establishment by Synergy JVCo of a production line in Yunfu, China for the manufacture and assembly of FCvelocity®-9SSL

fuel cell stacks, by 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 an increase in Volkswagen service revenues primarily as a result of program scope and timing requirements. Increases in revenue in the first half of 2017 as a result of these projects more than offset lower amounts recognized in total on the TRC and CRRC Sifang tram development projects, the HDF distributed generation project, and a variety of other programs primarily as a result of the timing and completion of project work.

Heavy-Duty Motive revenues of \$19.4 million increased \$11.4 million, or 142%, due primarily to increased shipments of a variety of fuel cell bus products to customers, principally in China but supported by sales in Europe and North America. Heavy-Duty Motive revenues are also impacted by product mix due to varying power configurations required by our customers (and the resulting impact on selling price) of our FCvelocity®-HD7 200-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 first half of 2017 include \$4.6 million for shipments of MEA's under the MEA Supply Agreement with Synergy JVCo, and \$2.9 million for the shipment of five FCvelocity®-HD7 200-kilowatt fuel cell modules to CRRC Sifang for their tram program.

Material Handling revenues of \$4.2 million decreased (\$2.4) million, or (36%), primarily as a result of lower stack shipments to Plug Power combined with a lower average selling price due to product mix.

Portable Power revenues of \$2.1 million decreased (\$3.4) million, or (62%), due primarily to lower product revenues generated by Protonex, combined with slightly lower service revenues. Revenues from Protonex in the first half of 2016 benefited from 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 in particular 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 \$0.7 million decreased (\$1.3) million, or (66%), due primarily to a decrease in shipments of hydrogen-based backup power stacks and hydrogen-based backup power systems for backup power applications, 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.

Fuel Cell Products and Services gross margins improved to \$18.8 million, or 38% of revenues, for the first half of 2017, compared to \$8.4 million, or 25% of revenues, for the first half of 2016. The improvement in gross margin of \$10.4 million, or 124%, was driven by the 45% increase in total revenues combined with a shift to higher margin product and service revenue resulting in a 13 point improvement in gross margin as a percent of revenues. Gross margin in the first half of 2017 particularly benefited from the increase in higher margin Technology Solutions (including amounts earned from Synergy JVCo related to the ongoing establishment of an FCvelocity®-9SSL fuel cell stack production operation in Yunfu, China) and Heavy-Duty Motive revenues, combined with improved 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 related cost absorption as a result of improved scale and efficiency driven by the 45% increase in total revenues.

### **Cash Operating Costs**

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,			
	2017	2016	\$ Change	% Change	
Research and Product Development (cash operating cost)	\$ 9,759	\$ 8,961	\$ 798	9%	
General and Administrative (cash operating cost)	5,014	5,163	(149)	(3%)	
Sales and Marketing (cash operating cost)	3,662	3,662	-	-%	
<b>Cash Operating Costs</b>	<b>\$ 18,435</b>	<b>\$ 17,786</b>	<b>\$ 649</b>	<b>4%</b>	

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, acquisition costs and financing charges.

Cash Operating Costs (see Supplemental Non-GAAP Measures) for the first half of 2017 were \$18.4 million, an increase of \$0.6 million, or 4%, compared to the first half of 2016. The \$0.6 million, or 4%, increase was driven by an increase in research and product development cash operating costs of \$0.8 million, partially offset by lower general and administrative cash operating costs (\$0.1) million.

The overall minor increase in cash operating costs in the first half 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. 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.

Operating costs in the first half of 2017 as compared to the first half of 2016 were not significantly impacted by the Canadian dollar, relative to the U.S. dollar. As a significant amount of our net operating costs (primarily labour) are denominated in Canadian dollars, operating expenses and Adjusted EBITDA can be impacted by changes in the Canadian dollar relative to the U.S. dollar. As the Canadian dollar, relative to the U.S. dollar, was relatively consistent in the first half of 2017 as compared to the first half of 2016, foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were nominal. 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 (\$0.3) million to (\$0.4) million.

## Adjusted EBITDA

(Expressed in thousands of U.S. dollars)

	Six months ended June 30,			
	2017	2016	\$ Change	% Change
<b>Adjusted EBITDA</b>	\$ <b>399</b>	\$ (10,126)	\$ 10,525	104%

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, finance and other income, and acquisition costs.

Adjusted EBITDA (see Supplemental Non-GAAP Measures) for the first half of 2017 was \$0.4 million, compared to (\$10.1) million for the first half of 2016. The \$10.5 million improvement in Adjusted EBITDA in the first half of 2017 was driven by the \$10.4 million increase in gross margin as a result of the 45% increase in overall revenues combined with the 13 point improvement in gross margin as a percent of revenues. This improvement was partially offset by the increase in Cash Operating Costs of (\$0.6) 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 \$1.7 million due primarily to lower restructuring expenses. During the first half of 2016, restructuring expenses of \$2.5 million were incurred as a result of the Company's rationalization and renewal initiatives which were primarily focused on reducing our operating cost base associated with methanol Telecom Backup Power activities. This compares to restructuring expenses of \$0.7 million incurred in the first half of 2017 related primarily to a leadership change in sales and marketing, combined with cost reduction initiatives in the general and administration function.

## Net income (loss) attributable to Ballard

(Expressed in thousands of U.S. dollars)

	Six months ended June 30,			
	2017	2016	\$ Change	% Change
<b>Net income (loss) attributable to Ballard</b>	\$ <b>(4,136)</b>	\$ (15,804)	\$ 11,668	74%

Net loss attributable to Ballard for the first half of 2017 was (\$4.1) million, or (\$0.02) per share, compared to a net loss of (\$15.8) million, or (\$0.10) per share, in the first half of 2016. The \$11.7 million decrease in net loss in the first half of 2017 was driven by the improvement in Adjusted EBITDA loss of \$10.5 million, combined with higher finance and other income of \$1.0 million in 2017 due primarily to foreign exchange gains, and by lower impairment charges of \$1.2 million as we wrote-down certain methanol Telecom Backup Power assets in the first half 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. These net income improvements were partially offset by an increase in net loss on sale of assets of (\$0.5) million as we reduced the estimated fair value of potential proceeds receivable owing on the CHEM Transaction, and by higher income taxes of (\$0.9) million in the first half 2017 related to withholding taxes on certain Chinese commercial contracts.

As noted above, net loss attributable to Ballard in the first half of 2017 was negatively impacted by a loss on sale of assets of (\$0.8) million, compared to a loss on sale of assets of (\$0.4) million in the first half of 2016. These transactional losses were recognized on the closing of the CHEM Transaction and the subsequent change in estimated fair value of

potential proceeds receivable. In addition, net loss attributable to Ballard in the first half of 2016 was negatively impacted by the above noted impairment loss 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, transactional gains and losses on intangible assets and property, plant and equipment, and acquisition costs, Adjusted Net Loss (see Supplemental Non-GAAP Measures) in the first half of 2017 was (\$3.3) million, or (\$0.02) per share, compared to (\$14.2) million, or (\$0.09) per share, for the first half of 2016.

Net loss attributable to Ballard in the first half of 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 the first half of 2017 was nil, compared to (\$0.6) million for the first half of 2016.

### ***Cash provided by (used in) operating activities***

*(Expressed in thousands of U.S. dollars)*

	Six months ended June 30,			
	2017	2016	\$ Change	% Change
<b>Cash used by operating activities</b>	<b>\$ (1,295)</b>	<b>\$ (11,405)</b>	<b>\$ 10,110</b>	<b>89%</b>

Cash used by operating activities in the first half of 2017 was (\$1.3) million, consisting of cash operating income of \$0.2 million and net working capital outflows of (\$1.5) million. Cash used by operating activities in the first half of 2016 was (\$11.4) million, consisting of cash operating losses of (\$11.1) million and net working capital outflows of (\$0.3) million. The \$10.1 million reduction in cash used by operating activities in the first half of 2017, as compared to the first half of 2016, was driven by the relative improvement in cash operating losses of \$11.3 million, partially offset by the relative increase in working capital requirements of (\$1.2) million. The \$11.3 million reduction in cash operating losses in the first half of 2017 was due primarily to the \$10.5 million improvement in Adjusted EBITDA.

The total change in working capital of (\$1.5) million in the first half of 2017 was driven by higher inventory of (\$2.5) million primarily to support expected Heavy-Duty Motive shipments in the last half of 2017. This first half of 2017 working capital outflow was partially offset by higher accounts payable and accrued liabilities of \$0.7 million as a result of the timing of supplier payments, combined with higher accrued warranty obligations of \$0.7 million due to increased product shipments.

This compares to a total change in working capital of (\$0.3) million in the first half of 2016 which was driven by higher inventory of (\$5.1) million primarily to support expected Heavy-Duty Motive and Power Products shipments to customers in the second half of 2016, and by higher accounts receivable of (\$3.8) million primarily as a result of the timing of revenues and the related customer collections. These first half of 2016 working capital outflows were partially offset by higher deferred revenue of \$7.4 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 \$2.8 million due primarily to restructuring expenses which are being paid over 2016 and 2017.

#### 5.4 Operating Expenses and Other Items – Three and Six Months Ended June 30, 2017

##### *Research and product development expenses*

(Expressed in thousands of U.S. dollars)

Research and product development	Three months ended June 30,			
	2017	2016	\$ Change	% Change
Research and product development expense	\$ 5,256	\$ 5,241	\$ 15	-%
Less: Depreciation and amortization expense	\$ (635)	\$ (498)	\$ (137)	(28%)
Less: Stock-based compensation expense	\$ (263)	\$ (296)	\$ 33	11%
Research and Product Development (cash operating cost)	\$ 4,358	\$ 4,447	\$ (89)	(2%)

(Expressed in thousands of U.S. dollars)

Research and product development	Six months ended June 30,			
	2017	2016	\$ Change	% Change
Research and product development expense	\$ 11,533	\$ 10,643	\$ 890	8%
Less: Depreciation and amortization expense	\$ (1,276)	\$ (1,138)	\$ (138)	(12%)
Less: Stock-based compensation expense	\$ (498)	\$ (544)	\$ 46	8%
Research and Product Development (cash operating cost)	\$ 9,759	\$ 8,961	\$ 798	9%

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 June 30, 2017** were \$5.3 million, flat compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$0.6) million and (\$0.5) million, respectively, in each of the periods, and excluding stock-based compensation expense of (\$0.3) million in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures) were \$4.4 million in the second quarter of 2017, a decrease of (\$0.1) million, or (2%), compared to the second quarter of 2016.

The nominal (2%) decline in research and development cash operating costs (see Supplemental Non-GAAP Measures) in the second quarter of 2017 was driven primarily by lower labour costs in Canada as a result of an approximate (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base. This cost saving was partially offset 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.

**Research and product development expenses for the six months ended June 30, 2017** were \$11.5 million, an increase of \$0.9 million, or 8%, compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$1.3) million and (\$1.1) million, respectively in each of the periods, and excluding stock-based compensation expense of (\$0.5) million in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures) were \$9.8

million in the first half of 2017, an increase of \$0.8 million, or 9%, compared to the first half of 2016.

The \$0.8 million, or 9%, increase in research and development cash operating costs (see Supplemental Non-GAAP Measures) in 2017 was driven primarily by higher continuation engineering and prototyping expenses related to the ongoing and continual improvement of all of our fuel cell products. These cost pressures 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 relatively consistent in the first half of 2017 as compared to the first half of 2016 and include government funding recoveries in Denmark by Ballard Power Systems Europe A/S and government funding recoveries in Canada.

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 and six months ended June 30, 2017 was \$0.6 million and \$1.3 million, compared to \$0.5 million and \$1.1 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. Depreciation and amortization expense in research and product development expense is primarily as a result of 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 and six months ended June 30, 2017 was \$0.3 million and \$0.5 million, respectively, compared to \$0.3 million and \$0.5 million, respectively, for the corresponding periods of 2016. The reduction in the first half of 2017 as compared to the first half of 2016 was due primarily to the Company's rationalization and renewal initiatives undertaken in the first quarter of 2016 which included the elimination of three executive and several other positions.*

## General and administrative expenses

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
<b>General and administrative</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	<b>% Change</b>
General and administrative expense	\$ 2,927	\$ 2,642	\$ 285	11%
Less: Depreciation and amortization expense	\$ (212)	\$ (93)	\$ (119)	(128%)
Less: Stock-based compensation expense	\$ (382)	\$ (317)	\$ (65)	(20%)
General and Administrative (cash operating cost)	\$ 2,333	\$ 2,232	\$ 101	5%

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,		
<b>General and administrative</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	<b>% Change</b>
General and administrative expense	\$ 6,169	\$ 6,152	\$ 17	-%
Less: Depreciation and amortization expense	\$ (446)	\$ (193)	\$ (253)	(131%)
Less: Stock-based compensation expense	\$ (710)	\$ (796)	\$ 86	11%
General and Administrative (cash operating cost)	\$ 5,014	\$ 5,163	\$ (149)	(3%)

General and Administrative (cash operating cost) is a non-GAAP measure. We use certain Non-GAAP measures to assist in assessing our financial performance. Non-GAAP measures do not have any standardized meaning prescribed by GAAP and are therefore unlikely to be comparable to similar measures presented by other companies. General and Administrative (cash operating cost) adjusts General and administrative expense for depreciation and amortization expense and stock-based compensation expense. 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 June 30, 2017** were \$2.9 million, an increase of \$0.3 million, or 11%, compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$0.2) million and (\$0.1) million, respectively, and excluding stock-based compensation expense of (\$0.4) million and (\$0.3) million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were \$2.3 million in the second quarter of 2017, a 5% increase, compared to the second quarter of 2016.

The \$0.1 million, or 5%, increase in cash general and administrative operating costs (see Supplemental Non-GAAP Measures) in the second quarter of 2017 was driven primarily by higher legal and advisory costs due to the timing of transactional contracting and human resources costs, partially offset by lower labour costs in Canada as a result of an approximate (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

**General and administrative expenses for the six months ended June 30, 2017** were \$6.2 million, a nominal increase compared to the corresponding period of 2016. Excluding depreciation and amortization expense of (\$0.4) million and (\$0.2) million, respectively, and excluding stock-based compensation expense of (\$0.7) million and (\$0.8) million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures) were \$5.0 million in the first half of 2017, a decrease of (\$0.1) million, or (3%), compared to the first half of 2016.

The (\$0.1) million, or (3%), decrease in general and administrative cash operating costs (see Supplemental Non-GAAP Measures) in the first half of 2017 was driven primarily by lower legal and advisory costs due to the timing of transactional contracting and human resources costs.



Depreciation and amortization expense included in general and administrative expense for the three and six months ended June 30, 2017 was \$0.2 million and \$0.4 million, respectively, compared to \$0.1 million and \$0.2 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 enterprise resource planning system.

Stock-based compensation expense included in general and administrative expense for the three and six months ended June 30, 2017 was \$0.4 million and \$0.7 million, respectively, compared to \$0.3 million and \$0.8 million, respectively, for the corresponding periods of 2016. The minor decline in 2017 is primarily as a result of a reduction in overall awards granted.

### Sales and marketing expenses

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 31,		
<b>Sales and marketing</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	<b>% Change</b>
Sales and marketing expense	\$ 1,913	\$ 1,911	\$ 2	-%
Less: Depreciation and amortization expense	\$ -	\$ (1)	\$ 1	100%
Less: Stock-based compensation (expense) recovery	\$ (123)	\$ (167)	\$ 44	26%
<b>Sales and Marketing (cash operating cost)</b>	<b>\$ 1,790</b>	<b>\$ 1,743</b>	<b>\$ 47</b>	<b>3%</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 31,		
<b>Sales and marketing</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	<b>% Change</b>
Sales and marketing expense	\$ 3,827	\$ 3,977	\$ (150)	(4%)
Less: Depreciation and amortization expense	\$ (1)	\$ (3)	\$ 2	77%
Less: Stock-based compensation expense	\$ (164)	\$ (312)	\$ 148	47%
<b>Sales and Marketing (cash operating cost)</b>	<b>\$ 3,662</b>	<b>\$ 3,662</b>	<b>\$ -</b>	<b>-%</b>

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 June, 2017** were \$1.9 million, consistent with the corresponding period of 2016. Excluding stock-based compensation expense of (\$0.1) million and (\$0.2) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) were \$1.8 million in the second quarter of 2017, a nominal, or 3% increase, compared to the second quarter of 2016.

The nominal, or 3%, increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) in the second quarter of 2017 was driven primarily by an increased investment to support our commercial sales and marketing efforts in China, partially offset by lower labour costs in Canada as a result of an approximate (4%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

**Sales and marketing expenses for the six months ended June 30, 2017** were \$3.8 million, a decrease of (\$0.2) million, or (4%), compared to the corresponding period of

2016. Excluding stock-based compensation expense of (\$0.2) million and (\$0.3), respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) were \$3.7 million in the first half of 2017, consistent with the first half of 2016.

Reductions in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures) in the first half of 2017, compared to the first half of 2016, as a result of 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, were offset by an increased investment in 2017 to support our commercial sales and marketing efforts in China.

*Stock-based compensation expense included in sales and marketing expense for the three and six months ended June 30, 2017 was \$0.1 million and \$0.2 million, respectively, compared to \$0.2 million and \$0.3 million, respectively, for the corresponding periods of 2016. The minor decline in 2017 is primarily as a result of a reduction in overall awards granted.*

***Other expense (recovery) for the three and six months ended June 30, 2017*** was \$0.1 million and \$0.7 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:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
	2017	2016	\$ Change	% Change
Impairment loss (recovery) on trade receivables	\$ 4	\$ (64)	\$ 68	106%
Restructuring expense	66	313	(247)	(79%)
Acquisition charges	-	21	(21)	(100%)
<b>Other expenses (recovery)</b>	<b>\$ 70</b>	<b>\$ 270</b>	<b>\$ (200)</b>	<b>(74%)</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,		
	2017	2016	\$ Change	% Change
Impairment loss (recovery) on trade receivables	\$ 2	\$ (251)	\$ 253	101%
Restructuring expense	652	2,515	(1,863)	(74%)
Acquisition charges	-	43	(43)	(100%)
<b>Other expenses (recovery)</b>	<b>\$ 654</b>	<b>\$ 2,307</b>	<b>\$ (1,653)</b>	<b>(72%)</b>

Net impairment loss (recovery) on trade receivables for the three and six months ended June 30, 2017 was nominal, compared to (\$0.1) million and (\$0.3) million, respectively, for the corresponding periods of 2016. Net impairment recoveries in the first half of 2016 of (\$0.3) million resulted primarily from the collection of outstanding receivables principally in Asia that were considered impaired and written down in a previous period. 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 \$0.7 million for the six months ended June 30, 2017 relate primarily to a leadership change in sales and marketing, combined with cost reduction initiatives in the general and administration function. Restructuring expenses for the six months ended June 30, 2016 of \$2.5 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 and six months and year ended June 30, 2017** was \$1.1 million and \$1.3 million, respectively, compared to (\$0.5) million and \$0.1 million, respectively, for the corresponding periods of 2016. The following tables provide a breakdown of finance and other income (loss) for the reported periods:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
	2017	2016	\$ Change	% Change
Employee future benefit plan expense	\$ (60)	\$ (72)	\$ 12	17%
Pension administration expense	-	-	-	-%
Investment and other income (loss)	79	(33)	112	339%
Foreign exchange gain (loss)	1,062	(436)	1,498	344%
<b>Finance income (loss) and other</b>	<b>\$ 1,081</b>	<b>\$ (541)</b>	<b>\$ 1,622</b>	<b>300%</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,		
	2017	2016	\$ Change	% Change
Employee future benefit plan expense	\$ (120)	\$ (144)	\$ 24	17%
Pension administration expense	(15)	(5)	(10)	(200%)
Investment and other income	168	-	168	100%
Foreign exchange gain (loss)	1,293	295	998	338%
<b>Finance income (loss) and other</b>	<b>\$ 1,326</b>	<b>\$ 146</b>	<b>\$ 1,180</b>	<b>808%</b>

Employee future benefit plan expense for the three and six months ended June 30, 2017 were (\$0.1) million, 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. Nominal pension administration expense for the three and six months ended June 30, 2017 and 2016 represent administrative costs incurred in managing the plan.

Foreign exchange gains (losses) for the three and six months ended June 30, 2016 were \$1.1 million and \$1.3 million, respectively, compared to (\$0.4) million and \$0.3 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 and on any outstanding foreign exchange currency contracts that are marked to market each reporting period and recorded in profit (loss) if not qualified for hedge accounting treatment.

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 and six months ended June 30, 2017 and 2016 were nominal and were earned primarily on our cash and cash equivalents.

**Finance expense for the three and six months ended June 30, 2017** was (\$0.2) million and (\$0.3) million, respectively, relatively 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.

**Impairment (Loss) on Intangible Assets and Property, Plant and Equipment for the six months ended June 30, 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.

**Gain (Loss) on sale of assets for the three and six months ended June 30, 2017** was (\$0.8) million, compared to a loss of (\$0.4) million for the corresponding periods of 2016 and consist of losses incurred as a result of the CHEM Transaction. 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 consists 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 at its estimated fair value of \$1.8 million on June 30, 2016. 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 \$1.8 million. The final gain (loss) on sale arising from the CHEM Transaction is subject to change depending upon the final earn-out amount actually received by Ballard through November 2017. On the closing of this transaction in the second quarter of 2016, 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.

**Income tax expense for the three and six months ended June 30, 2017** was (\$0.4) million and (\$0.9) million, respectively, compared to nominal amounts 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.

**Net loss attributed to non-controlling interests** for the three and six months ended June 30, 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,			
	Jun 30, 2017	Mar 31, 2017	Dec 31, 2016	Sep 30, 2016
<i>(Expressed in thousands of U.S. dollars, except per share amounts and weighted average shares outstanding which are expressed in thousands)</i>				
Revenues	\$ 26,521	\$ 22,656	\$ 30,684	\$ 20,635
Net income (loss) attributable to Ballard	\$ (1,201)	\$ (2,935)	\$ (1,121)	\$ (4,187)
Net income (loss) per share attributable to Ballard, basic and diluted	\$ (0.01)	\$ (0.02)	\$ (0.01)	\$ (0.03)
Weighted average common shares outstanding	175,953	174,853	174,722	165,193
	Jun 30, 2016	Mar 31, 2016	Dec 31, 2015	Sep 30, 2015
Revenues	\$ 17,647	\$ 16,304	\$ 19,986	\$ 16,037
Net income (loss) attributable to Ballard	\$ (5,810)	\$ (9,994)	\$ (1,355)	\$ (4,135)
Net income (loss) per share attributable to Ballard, basic and diluted	\$ (0.04)	\$ (0.06)	\$ (0.01)	\$ (0.03)
Weighted average common shares outstanding	156,889	156,851	155,188	141,253

**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 as of the fourth quarter of 2015 by the acquisition of Protonex on October 1, 2015. 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 were negatively impacted as of the fourth quarter of 2015 by the acquisition of Protonex and the assumption of its cost base on October 1, 2015, including the incurrence of acquisition related expenses totaling \$1.5 million incurred in the second and third quarters of 2015. 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 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. Net income for the fourth quarter of 2015 was positively impacted by a gain on sale of intellectual property of \$5.4 million resulting from the sale of a copy of the automotive-related know-how of the UTC Portfolio to Volkswagen on the closing of the second and final tranche of the Volkswagen IP Agreement.

## **6. CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES**

### **6.1 Summary of Cash Flows**

Cash and cash equivalents were \$68.1 million at June 30, 2017, compared to \$72.6 million at December 31, 2016. The (\$4.5) million decrease in cash and cash equivalents in 2017 was driven by net working capital outflows of (\$1.5) million, purchases of property, plant and equipment of (\$1.3) million, investments in other intangible assets of (\$2.1) million, by investments in associated companies of (\$1.0) million, and by finance lease repayments of (\$0.3) million. These 2017 outflows were partially offset by net income (excluding non-cash items) of \$0.2 million, net proceeds received from share purchase warrant exercises of \$1.1 million, and by net proceeds received from share purchase option exercises of \$1.0 million.

### **6.2 Cash Provided by (Used by) Operating Activities**

For the three months ended June 30, 2017, cash provided by (used in) operating activities was \$1.8 million, consisting of cash operating income of \$1.4 million and net working capital inflows of \$0.4 million. For the three months ended June 30, 2016, cash used by operating activities was (\$3.9) million, consisting of cash operating losses of (\$3.7) million and net working capital outflows of (\$0.2) million. The \$5.7 million improvement in cash provided by (used in) operating activities in the second quarter of 2017, as compared to the second quarter of 2016, was driven by the relative improvement in cash operating income (loss) of \$5.1 million, combined with the relative reduction in working capital requirements of \$0.6



million. The \$5.1 million improvement in cash operating income (loss) in the second quarter of 2017 was due primarily to the \$4.0 million improvement in Adjusted EBITDA.

In the second quarter of 2017, net working capital inflows of \$0.4 million were driven by higher accounts payable and accrued liabilities of \$3.4 million as a result of the timing of supplier payments and annual compensation awards, combined with higher accrued warranty obligations of \$0.7 million due to increased product shipments. These second quarter of 2017 inflows were partially offset by lower deferred revenue of (\$3.0) 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, and by higher inventory of (\$0.4) million primarily to support expected Heavy-Duty Motive shipments in the last half of 2017.

This compares to net working capital outflows of (\$0.2) million in the second quarter of 2016 which were driven by higher accounts receivable of (\$4.7) million primarily as a result of the timing of revenues and the related customer collections, and by higher inventory of (\$2.4) million primarily to support expected Heavy-Duty Motive and Power Products shipments to customers in the second half of 2016. These second quarter of 2016 working capital outflows were partially offset by higher deferred revenue of \$5.8 million as we collected pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, and by lower prepaid expenses of \$1.2 million due primarily to the timing of certain purchases and supplier payments.

For the six months ended June 30, 2017, cash used by operating activities was (\$1.3) million, consisting of cash operating income of \$0.2 million and net working capital outflows of (\$1.5) million. For the six months ended June 30, 2016, Cash used by operating activities was (\$11.4) million, consisting of cash operating losses of (\$11.1) million and net working capital outflows of (\$0.3) million. The \$10.1 million reduction in cash used by operating activities in the first half of 2017, as compared to the first half of 2016, was driven by the relative improvement in cash operating losses of \$11.3 million, partially offset by the relative increase in working capital requirements of (\$1.2) million. The \$11.3 million reduction in cash operating losses in the first half of 2017 was due primarily to the \$10.5 million improvement in Adjusted EBITDA.

In the first half of 2017, net working capital outflows of (\$1.5) million were driven by higher inventory of (\$2.5) million primarily to support expected Heavy-Duty Motive shipments in the last half of 2017. This first half of 2017 working capital outflow was partially offset by higher accounts payable and accrued liabilities of \$0.7 million as a result of the timing of supplier payments, combined with higher accrued warranty obligations of \$0.7 million due to increased product shipments.

This compares to a total change in working capital of (\$0.3) million in the first half of 2016 which was driven by higher inventory of (\$5.1) million primarily to support expected Heavy-Duty Motive and Power Products shipments to customers in the second half of 2016, and by higher accounts receivable of (\$3.8) million primarily as a result of the timing of revenues and the related customer collections. These first half of 2016 working capital outflows were partially offset by higher deferred revenue of \$7.4 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 \$2.8 million due primarily to restructuring expenses which will be paid over 2016 and 2017.

### **6.3 Cash Provided by (Used by) Investing Activities**

Investing activities resulted in net cash outflows of (\$2.9) million and (\$4.4) million, respectively, for the three and six months ended June 30, 2017, compared to net cash inflows of \$1.7 million and \$10.2 million, respectively, for the corresponding periods of 2016.

Investing activities in the first half of 2017 of (\$4.4) million consist primarily of capital expenditures of (\$1.3) million, by investments in other intangible assets of (\$2.1) million related primarily to the ongoing implementation of a new Enterprise Resource Planning (“ERP”) management reporting software system, and by investments in associated companies of (\$1.0) million paid for our 10% investment in Synergy JVCo.

Investing activities in the first half of 2016 of \$10.2 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 (\$1.4) million, and by investments in fuel cell technology intangible assets of (\$0.7) million.

### **6.4 Cash Provided by (Used by) Financing Activities**

Financing activities resulted in net cash inflows of \$1.8 million and \$1.9 million, respectively, for the three and six months ended June 30, 2017, compared to net cash inflows (outflows) of (\$0.5) million and \$2.6 million, respectively, for the three and six months ended June 30, 2016.

Financing activities in the first half of 2017 of \$1.9 million consist of proceeds from share purchase warrant exercises of \$1.1 million, proceeds from share purchase option exercises of \$1.0 million, partially offset by capital lease payments of (\$0.3) million.

Financing activities in the first half of 2016 of \$2.6 million consist primarily of 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, partially offset by capital lease payments of (\$0.7) million.

### **6.5 Liquidity and Capital Resources**

At June 30, 2017, we had total Liquidity of \$68.1 million. We measure Liquidity as our net cash position, consisting of the sum of our cash, cash equivalents and short-term investments of \$68.1 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

June 30, 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, 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 \$68.1 million at June 30, 2017, there are 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 1.1 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 if either not designated, or not qualified, under hedge accounting criteria. At June 30, 2017, we had outstanding foreign exchange currency contracts to purchase a total of Canadian \$12.5 million at an average rate of 1.336 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian \$0.4 million at June 30, 2017. The outstanding foreign exchange currency contracts are not qualified under hedge accounting.

At June 30, 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 June 30, 2017, we had the following contractual obligations and commercial commitments:

<i>(Expressed in thousands of U.S. dollars)</i>	<b>Contractual Obligations</b>	<b>Total</b>	Payments due by period,			
			Less than one year	1-3 years	4-5 years	After 5 years
Operating leases	\$ 8,786	\$ 2,521	\$ 3,685	\$ 1,288	\$ 1,292	
Capital leases	9,156	1,093	2,267	2,493	3,304	
Asset retirement obligations	4,535	-	2,819	-	1,716	
Total contractual obligations	\$ 22,477	\$ 3,614	\$ 8,771	\$ 3,781	\$ 6,312	

In addition, we have outstanding commitments of \$4.0 million at June 30, 2017 related primarily to the ongoing implementation of an ERP management reporting software system and for purchases of capital assets. 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 at June 30, 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 June 30, 2017, we have not accrued any amount owing, or receivable, as a result of any indemnity agreements undertaken in the ordinary course of business.

## 7.2 Related Party Transactions

Related parties include our 10% owned equity accounted investee, Synergy JVCo. Transactions between us and our subsidiaries are eliminated on consolidation. For the three and six months ended June 30, 2017, related party transactions and balances with Synergy JVCo are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>	Three Months Ended June 30,	
<b>Transactions with related parties</b>	<b>2017</b>	<b>2016</b>
Revenues	\$ 8,124	\$ -
Cost of goods sold and operating expense	\$ -	\$ -

<i>(Expressed in thousands of U.S. dollars)</i>	Six Months Ended June 30,	
<b>Transactions with related parties</b>	<b>2017</b>	<b>2016</b>
Revenues	\$ 14,819	\$ -
Cost of goods sold and operating expense	\$ -	\$ -

<i>(Expressed in thousands of U.S. dollars)</i>	As at June 30,	
<b>Balances with related parties</b>	<b>2017</b>	<b>2016</b>
Investments	\$ 836	\$ -
Trade and other payables	\$ -	\$ -
Deferred revenue	\$ 7,086	\$ -

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 30 to our annual consolidated financial statements for the year ended December 31, 2016.

## 7.3 Outstanding Share and Equity Information

### As at August 2, 2017

Common share outstanding	176,344,343
Warrants outstanding	1,247,563
Options outstanding	6,213,775
DSU's outstanding	837,723
RSU's and PSU's outstanding (subject to vesting criteria)	1,881,282

## 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 (e) to our condensed consolidated interim financial statements).

Our significant accounting policies are detailed in note 4 to our annual consolidated financial statements for the year ended December 31, 2016.

### **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 and six months ended June 30, 2017 and 2016, there were no material adjustments to revenues relating to revenue recognized in a prior period.

#### ASSET IMPAIRMENT

The carrying amounts of our non-financial assets other than inventories are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. For goodwill and intangible assets that have indefinite useful lives, the recoverable amount is estimated at least annually.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In assessing fair value less costs to sell, the price that would be received on the sale of an asset in an orderly transaction between market participants at the measurement date is

estimated. For the purposes of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other groups of assets. The allocation of goodwill to cash-generating units reflects the lowest level at which goodwill is monitored for internal reporting purposes. Many of the factors used in assessing fair value are outside the control of management and it is reasonably likely that assumptions and estimates will change from period to period. These changes may result in future impairments. For example, our revenue growth rate could be lower than projected due to economic, industry or competitive factors, or the discount rate used in our value in use model could increase due to a change in market interest rates. In addition, future goodwill impairment charges may be necessary if our market capitalization decreased due to a decline in the trading price of our common stock, which could negatively impact the fair value of our business.

An impairment loss is recognized if the carrying amount of an asset or its cash-generating unit exceeds its estimated recoverable amount. Impairment losses are recognized in net loss. Impairment losses recognized in respect of the cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units, and then to reduce the carrying amounts of the other assets in the unit on a pro-rata basis.

An impairment loss in respect of goodwill is not reversed. In respect of other assets, impairment losses recognized in prior periods are assessed at each reporting date for any indications that the cumulative loss has decreased or no longer exists. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

We perform the annual review of goodwill as at December 31 of each year, more often if events or changes in circumstances indicate that it might be impaired. Based on the impairment test performed as at December 31, 2016 and our assessment of current events and circumstances, we have concluded that no goodwill impairment test was required for the three and six months ended June 30, 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 six months ended June 30, 2017, we recorded a loss on sale of assets of (\$0.8) million as the remaining estimated potential purchase price owing from the CHEM Transaction was written down to its estimated revised fair value of \$1.0 million from \$1.8 million. The final gain (loss) on sale arising from the CHEM Transaction is subject to change depending upon the final earn-out amount actually received by Ballard through November 2017. During the six months ended June 30, 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 and six months ended June 30, 2017, we recorded provisions to accrued warranty liabilities of \$0.9 million and \$1.2 million, respectively, for new product sales, compared to \$0.1 million and \$0.4 million, respectively, for the three and six months ended June 30, 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 and six months ended June 30, 2017 were adjusted downwards by a nominal amount in each of the periods, compared to a net adjustment downwards of \$0.2 million and \$0.1 million, respectively, for the three and six months ended June 30, 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 fuel cell 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 six months ended June 30, 2017, positive inventory adjustments of \$0.2 million were recorded as a recovery (charge) to cost of product and service revenues, compared to a nominal negative inventory adjustment for the six months ended June 30, 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 six months ended June 30, 2017, nominal net impairment charges on trade receivables were recorded in other operating income, compared to net impairment recoveries of \$0.3 million for the six months ended June 30, 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 June 30, 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. The extent of the impact of adoption of the standard has not yet been determined.

#### 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. The extent of the impact of adoption of the standard has not yet been determined.

#### 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, and financing charges. The following tables show a reconciliation of operating expenses to Cash Operating Costs for the three and six months ended June 30, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
<b>Cash Operating Costs</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	
Total Operating Expenses	\$ 10,167	\$ 10,064	\$	103
Stock-based compensation expense	(767)	(780)		13
Impairment recovery (losses) on trade receivables	(4)	64		(68)
Acquisition and integration costs	-	(21)		21
Restructuring charges	(66)	(313)		247
Financing charges	-	-		-
Depreciation and amortization	(847)	(592)		(255)
<b>Cash Operating Costs</b>	<b>\$ 8,482</b>	<b>\$ 8,422</b>	<b>\$</b>	<b>60</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,	
<b>Cash Operating Costs</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Total Operating Expenses	\$ 22,183	\$ 23,079	\$ (896)
Stock-based compensation (expense) recovery	(1,371)	(1,652)	281
Impairment recovery (losses) on trade receivables	(2)	251	(253)
Acquisition and integration costs	-	(43)	43
Restructuring (charges) recovery	(652)	(2,515)	1,863
Financing charges	-	-	-
Depreciation and amortization	(1,723)	(1,334)	(389)
<b>Cash Operating Costs</b>	<b>\$ 18,435</b>	<b>\$ 17,786</b>	<b>\$ 649</b>

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 and six months ended June 30, 2017 and 2016 is included in Operating Expense and Other Items.

A breakdown of total stock-based compensation expense for the three and six months ended June 30, 2017 and 2016 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,	
<b>Stock-based compensation expense</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	263	296	(33)
General and administrative expense	382	317	65
Sales and marketing expense (recovery)	123	167	(44)
<b>Stock-based compensation expense</b>	<b>\$ 767</b>	<b>\$ 780</b>	<b>\$ (13)</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,	
<b>Stock-based compensation expense</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	\$ -	\$ -	\$ -
Research and product development expense	498	544	(46)
General and administrative expense	710	796	(86)
Sales and marketing expense	164	312	(148)
<b>Stock-based compensation expense</b>	<b>\$ 1,371</b>	<b>\$ 1,652</b>	<b>\$ (281)</b>

A breakdown of total depreciation and amortization expense for the three and six months ended June 30, 2017 and 2016 are as follows:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
<b>Depreciation and amortization expense</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	
Total depreciation and amortization expense recorded as follows:				
Cost of goods sold	\$ 339	\$ 432	\$ (93)	
Research and product development expense	635	498	137	
General and administrative expense	212	93	119	
Sales and marketing expense	-	1	(1)	
<b>Depreciation and amortization expense</b>	<b>\$ 1,187</b>	<b>\$ 1,024</b>	<b>\$ 163</b>	

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,		
<b>Depreciation and amortization expense</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	
Total depreciation and amortization expense recorded as follows:				
Cost of goods sold	\$ 674	\$ 924	\$ (250)	
Research and product development expense	1,276	1,138	138	
General and administrative expense	446	193	253	
Sales and marketing expense	1	3	(2)	
<b>Depreciation and amortization expense</b>	<b>\$ 2,397</b>	<b>\$ 2,258</b>	<b>\$ 139</b>	

### 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, amortization of intangible assets, and goodwill impairment charges. Adjusted EBITDA adjusts EBITDA for stock-based compensation expense, transactional gains and losses, asset impairment charges, finance and other income, and acquisition costs. The following tables show a reconciliation of net loss attributable to Ballard to EBITDA and Adjusted EBITDA for the three and six months ended June 30, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,		
<b>EBITDA and Adjusted EBITDA</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>	
Net income (loss) attributable to Ballard	\$ (1,201)	\$ (5,810)	\$ 4,609	
Depreciation and amortization	1,187	1,024	163	
Finance expense	164	179	(15)	
Income taxes	392	-	392	
<b>EBITDA attributable to Ballard</b>	<b>\$ 541</b>	<b>\$ (4,607)</b>	<b>\$ 5,148</b>	
Stock-based compensation expense	767	780	(13)	
Acquisition and integration costs	-	21	(21)	
Finance and other (income) loss	(1,081)	541	(1,622)	
Impairment loss (recovery) on intangible assets and property, plant and equipment	-	(24)	24	
Loss on sale of assets	824	367	457	
<b>Adjusted EBITDA</b>	<b>\$ 1,050</b>	<b>(2,921)</b>	<b>\$ 3,971</b>	

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,	
<b>EBITDA and Adjusted EBITDA</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Net income (loss) attributable to Ballard	\$ (4,136)	\$ (15,804)	\$ 11,668
Depreciation and amortization	2,397	2,258	139
Finance expense	345	350	(5)
Income taxes	924	3	921
<b>EBITDA attributable to Ballard</b>	<b>\$ (470)</b>	<b>\$ (13,193)</b>	<b>\$ 12,723</b>
Stock-based compensation expense (recovery)	1,371	1,652	(281)
Acquisition and integration costs	-	43	(43)
Finance and other (income) loss	(1,326)	(146)	(1,179)
Gain on sale of intellectual property	-	-	-
Impairment charges on intangible assets and property, plant and equipment	-	1,151	(1,151)
Loss (gain) on sale of assets	824	367	457
<b>Adjusted EBITDA</b>	<b>\$ 399</b>	<b>\$ (10,126)</b>	<b>\$ 10,525</b>

#### 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 (formerly named Normalized 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 and six months ended June 30, 2017 and 2016:

<i>(Expressed in thousands of U.S. dollars)</i>		Three months ended June 30,	
<b>Adjusted Net Loss</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Net (loss) attributable to Ballard	\$ (1,201)	\$ (5,810)	\$ 4,609
Acquisition and integration costs	-	22	(22)
Impairment charges (recovery) on intangible assets and property, plant and equipment	-	(24)	24
Loss on sale of assets	833	372	461
<b>Adjusted Net Loss</b>	<b>\$ (368)</b>	<b>\$ (5,440)</b>	<b>\$ 5,072</b>
<b>Adjusted Net Loss per share</b>	<b>\$ (0.00)</b>	<b>\$ (0.03)</b>	<b>\$ 0.03</b>

<i>(Expressed in thousands of U.S. dollars)</i>		Six months ended June 30,	
<b>Adjusted Net Loss</b>	<b>2017</b>	<b>2016</b>	<b>\$ Change</b>
Net (loss) attributable to Ballard	\$ (4,136)	\$ (15,804)	\$ 11,668
Acquisition and integration costs	-	43	(43)
Impairment charges on intangible assets and property, plant and equipment	-	1,151	(1,151)
Loss on sale of assets	833	372	461
<b>Adjusted Net Loss</b>	<b>\$ (3,303)</b>	<b>\$ (14,238)</b>	<b>\$ 10,935</b>
<b>Adjusted Net Loss per share</b>	<b>\$ (0.02)</b>	<b>\$ (0.09)</b>	<b>\$ 0.07</b>