BALLARD POWER SYSTEMS INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

FOURTH QUARTER AND FISCAL YEAR 2020

FUEL CELL POWER
FOR A SUSTAINABLE
PLANET

Power to Change the World®

BALLARD®

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements about expected events and the financial and operating performance of Ballard Power Systems Inc. ("Ballard", "the Company", "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 related to the expected or potential impact of the novel coronavirus (COVID-19) pandemic, and the related responses of the government, our customers and partners, joint venture operations and suppliers, on our business, financial condition and results of operations; and statements with respect to our objectives, goals, liquidity, sources of capital and our outlook including our estimated revenue and gross margins, cash flow from operations, Cash Operating Costs, EBITDA and Adjusted EBITDA (see Non-GAAP Measures), order backlog, order book of expected deliveries over the subsequent 12-months, future product costs and selling prices, future product sales and production volumes, expenses / costs, contributions and cash requirements to and from joint venture operations, our strategy, the markets for our products, and research and development activities, as well as statements with respect to our beliefs, plans, objectives, expectations, anticipations, estimates and intentions. Words such as "estimate", "project", "believe", "anticipate", "intend", "expect", "plan", "predict", "may", "should", "will", the negatives of these words or other variations thereof and comparable terminology are intended to identify forward-looking statements. These statements are not guarantees of future performance and involve assumptions, risks and uncertainties that are difficult to predict. In particular, these forward-looking statements are based on certain factors and assumptions relating to our expectations with respect to new and existing customer and partner relationships, the generation of new sales, producing, delivering, and selling the expected product and service volumes at the expected prices and controlling our costs. They are also based on a variety of general factors and assumptions including, but not limited to, our expectations regarding technology and product development efforts, manufacturing capacity and cost, product and service pricing, market demand, and the availability and prices of raw materials, labour and supplies. These assumptions have been derived from information available to the Company including information obtained by the Company from third parties. These assumptions may prove to be incorrect in whole or in part. In addition, actual results may differ materially from those expressed, implied, or forecasted in such forward-looking statements. Factors that could cause our actual results or outcomes to differ materially from the results expressed, implied or forecasted in such forward-looking statements include, but are not limited to: the severity, magnitude and duration of the COVID-19 pandemic, including impacts of the pandemic and of businesses' and governments' responses to the pandemic on our operations, personnel and joint venture operations, and on commercial activity and demand across our and our customers', partners' and joint venture businesses, and on global supply chains; global economic trends and geopolitical risks, including changes in the rates of investment or economic growth in our key markets, or an escalation of trade tensions such as those between the U.S. and China; market developments or customer actions (including developments and actions arising from the COVID-19 pandemic) that may affect levels of demand and/or the financial performance of the major industries and customers we serve, such as secular, cyclical and competitive pressures in the bus, truck, rail and marine sectors; the rate of mass adoption of our products or related ecosystem, including the availability of cost-effective hydrogen; changes in product or service pricing or cost; changes in our customers' requirements, the competitive environment and/or related market conditions; the relative strength of the value proposition that we offer our customers with our products or services; changes in competitive technologies, including battery and fuel cell technologies; product safety, liability or warranty issues; challenges or delays in our technology and product development activities; changes in the availability or price of raw materials, labour and supplies; our ability to attract and retain business partners, suppliers, employees and customers; changing government or environmental regulations, including subsidies or incentives associated with the adoption of clean energy products, including hydrogen and fuel cells; our access to funding and our ability to provide the capital required for product development, operations and marketing efforts, working capital requirements, and joint venture capital contributions; our ability to protect our intellectual property; our ability to extract value from joint venture operations; currency fluctuations, including the magnitude of the rate of change of the Canadian dollar versus the U.S. dollar; potential merger and acquisition activities, including risks related to integration, loss of key personnel, disruptions to operations, costs of integration, and the integration failing to achieve the expected benefits of the transaction; the general assumption that none of the risks identified in the Risks and Uncertainties section of this document or in our most recent Annual Information Form will materialize. Readers should not place undue reliance on Ballard's forward-looking statements. The forward-looking statements contained in this document speak only as of the date of this Management Discussion and Analysis ("MD&A"). Except as required by applicable legislation, Ballard does not undertake any obligation to release publicly any updates or revisions to these forward-looking statements to reflect events or circumstances after the date of this MD&A including the occurrence of unanticipated events.

MANAGEMENT'S DISCUSSION AND ANALYSIS

March 10, 2021

1. INTRODUCTION

1.1 Preparation of the MD&A

This discussion and analysis of financial condition and results of operations of Ballard Power Systems Inc. ("Ballard", "the Company", "we", "us" or "our") is prepared as at March 10, 2021 and should be read in conjunction with our audited consolidated financial statements for the year ended December 31, 2020. The results reported herein are presented in U.S. dollars unless otherwise stated and have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board. Additional information relating to the Company, including our Annual Information Form, is filed with Canadian (www.sedar.com) and U.S. securities regulatory authorities (www.sec.gov) and is also available on our website at www.ballard.com.

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

Disclosure controls and procedures

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

As of the end of the period covered by this report, we evaluated, under the supervision and with the participation of management, including the CEO and the CFO, the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a–15(e) and 15d-15(e) of the Securities Exchange Act of 1934 ("Exchange Act"). The CEO and CFO have concluded that as of December 31, 2020, our disclosure controls and procedures were effective to ensure that information required to be disclosed in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified therein, and accumulated and reported to management to allow timely discussions regarding required disclosure.

Internal control over financial reporting

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

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

Management, including the CEO and CFO, have evaluated the effectiveness of internal control over financial reporting, as defined in Rules 13a–15(f) of the Exchange Act, in relation to criteria described in *Internal Control–Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this evaluation,

management has determined that internal control over financial reporting was effective as of December 31, 2020.

KPMG LLP, our independent registered public accounting firm, has audited our consolidated financial statements and expressed an unqualified opinion thereon. KPMG LLP has also expressed an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2020.

Changes in internal control over financial reporting

During the year ended December 31, 2020, there were no changes in internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. Our design of disclosure controls and procedures and internal controls over financial reporting includes controls, policies and procedures covering all our subsidiaries including Ballard Power Systems Europe A/S, Ballard Fuel Cell Systems Inc., and Guangzhou Ballard Power Systems Co., Ltd.

1.3 Risks and Uncertainties

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

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

- We may not be able to successfully execute our business plan.
- We depend on Chinese customers for a significant portion of our revenues in our Heavy-Duty Motive market, and we are subject to risks associated with economic conditions and government policies and practices in China.
- In China a significant amount of operations is conducted by joint ventures that we cannot operate solely for our benefit.
- We are dependent on third party suppliers for the supply of key materials and components for our products and services.
- In our Heavy-Duty Motive market, we depend on a limited number of customers for a majority of our revenues and are subject to risks associated with early stage market activities related to fuel cell bus, truck, rail, and marine applications.
- In our Technology Solutions market, we depend on a limited number of customers for a majority of our revenues and are subject to risks related to the continued commitment of these customers to their fuel cell programs.
- We currently face and will continue to face significant competition, and many current and future competitors may have significantly more resources.
- We could lose or fail to attract the personnel necessary to operate our business.
- Emerging diseases, like COVID-19, may adversely affect our operations (including our joint ventures in China), our suppliers, our customers and/or partners.

- We could be adversely affected by risks associated with mergers and acquisitions.
- We are dependent upon Original Equipment Manufacturers and Systems Integrators to purchase certain of our products.
- In our Material Handling market, we depend on a single customer for the majority of our revenues and are subject to risks from that customer's internal fuel cell stack development and commercialization plans.
- Our technology and products may not meet the market requirements, including requirements relating to performance, integration and / or cost.
- We may not be able to sell our products on a commercially viable basis on the timetable we anticipate, or at all.
- We have limited experience manufacturing fuel cell products on a commercial basis and our experience has been limited to relatively low production volumes.
- We are subject to risks inherent in international operations, including restrictions on the conversion of currencies and restrictions on repatriation of funds, including out of China.
- A mass market for our products may never develop or may take longer to develop than we anticipate.
- Warranty claims, product performance guarantees, or indemnification claims could negatively impact our gross margins and financial performance.
- We could be adversely affected by risks associated with capital investments and new business process.
- We depend on our intellectual property, and our failure to protect that intellectual property could adversely affect our expected future growth and success.
- We may experience cybersecurity threats to our information technology infrastructure and systems, and unauthorized attempts to gain access to our proprietary or confidential information, as may our customers, suppliers and/or partners.
- Global macro-economic conditions are beyond our control and may have an adverse impact on our business, our joint ventures, our key suppliers, and/or customers.
- Climate change risks may adversely affect our operations, or the operations of our suppliers, customers and/or partners.
- Public policy and regulatory changes could hurt the market for our products and services.
- Regulatory agencies could require us to modify or terminate existing investments, acquisitions or joint ventures and could delay or prevent future opportunities.
- Exchange rate fluctuations are beyond our control and may have a material adverse effect on our business, operating results, financial condition, and profitability.
- Commodity price fluctuations are beyond our control and may have a material adverse effect on our business, operating results, financial condition, and profitability.
- We expect our cash reserves will be reduced due to future operating losses, working capital requirements, capital expenditures, capital contributions to our joint venture(s) in China and potential acquisitions and other investments by our business, and we cannot provide certainty as to how long our cash reserves will last or that we will be able to access additional capital when necessary.
- Potential fluctuations in our financial and business results make forecasting difficult and

may restrict our access to funding for our commercialization plan.

- Our products use flammable fuels, and some generate high voltages, which could subject our business to product safety, product liability or other claims.
- We could be liable for environmental damages resulting from our research, development, or manufacturing operations.

2. CORE BUSINESS AND STRATEGY

2.1 Core Business

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

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

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

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

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

In addition, we have a non-controlling 10% interest in Guangdong Synergy Ballard Hydrogen Power Co., Ltd. ("Synergy Ballard JVCo"), located in Yunfu, Guangdong Province, China. Synergy Ballard JVCo manufactures fuel cell stacks utilizing our FCveloCity®-9SSL fuel cell stack technology for use primarily in fuel cell engines assembled in China to provide propulsion power for zero-emission fuel cell electric buses and commercial vehicles with certain exclusive rights in China.

2.2 Strategic Imperatives

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

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

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

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

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

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

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

We continue to strengthen our financial position, thereby providing additional flexibility to fund our growth strategy, including through activities such as product innovation, investments in production capacity expansion and localization, future acquisitions and strategic

partnerships and investments. This includes significant investment in next generation products and technology, including our proprietary membrane electrode assemblies ("MEAs"), stacks, modules, and systems integration; advanced manufacturing processes, technologies, and equipment; and technology and product cost reduction.

3. SELECT ANNUAL FINANCIAL INFORMATION AND 2021 BUSINESS OUTLOOK

3.1 Select Annual Financial Information

Results of Operations	**Year ended,**		
	2020	**2019**	**2018**
(Expressed in thousands of U.S. dollars, except per share amounts and gross margin %)			
Revenues	**$ 103,877**	**$ 105,723**	**$ 89,476**
Gross margin	**$ 20,984**	**$ 22,338**	**$ 26,795**
Gross margin %	**20%**	**21%**	**30%**
Total Operating Expenses	**$ 60,745**	**$ 47,784**	**$ 45,201**
Cash Operating Costs [1]	**$ 50,029**	**$ 38,801**	**$ 38,410**
Adjusted EBITDA [1]	**$ (38,944)**	**$ (26,608)**	**$ (11,772)**
Net loss from continuing operations	**$ (49,469)**	**$ (35,291)**	**$ (20,985)**
Net loss from continuing operations per share	**$ (0.20)**	**$ (0.15)**	**$ (0.12)**
Financial Position (expressed in thousands of U.S. dollars)	**At December 31,**		
	2020	**2019**	**2018**
Total assets	**$ 975,600**	**$ 340,319**	**$ 346,100**
Cash, cash equivalents and short-term investments	**$ 765,430**	**$ 147,792**	**$ 192,235**

[1] Cash Operating Costs 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 to GAAP in the Supplemental Non-GAAP Measures section.

3.2 2020 Performance compared to 2020 Business Outlook

Consistent with the Company's practice, and in view of the early stage of hydrogen fuel cell market development and adoption, we did not provide specific financial performance guidance for 2020. However, in the 2020 Business Outlook section of our 2019 year-end MD&A dated March 4, 2020, we stated that we had expected total revenue of approximately $130 million in fiscal 2020, compared to total revenue of $105.7 million in fiscal 2019. We also noted that this 2020 revenue outlook did not reflect any impact of the COVID-19 pandemic as, at that time, it was too early to accurately project any impact of COVID-19 since the duration and scope of the pandemic was not yet known with any certainty. In the 2020 Business Outlook section of our first quarter of 2020 MD&A dated May 5, 2020, we noted that although we were not seeing a pull-back in long-term demand as a result of COVID-19, there were now some uncertainties on the timelines for vehicle deployments by end customers. As a result, we felt it was prudent and responsible for us to withdraw our 2020 revenue outlook at that time. During the second, third and fourth quarters of 2020, revenues continued to be negatively impacted by COVID-19 as certain customer orders and product shipments and end customer vehicle deployments were delayed, and work on certain technology solutions programs was deferred due to work, travel and other restrictions related to COVID-19. As a result of these impacts and the ongoing uncertainties related to COVID-19, we noted that we would not be giving a revised 2020 revenue outlook in our third quarter of 2020 MD&A dated November 5, 2020.

Although we withdrew our 2020 revenue outlook, we did retain certain qualitative outlook expectations for 2020. During 2020, we continued to maintain focus on Heavy-Duty and Medium-Duty Motive applications in the bus, commercial truck, train, and marine markets in order to increase adoption in our key markets of China, Europe, and California. We continued to invest in next generation products and technology, including MEAs, stacks, modules, and systems integration, as well as advanced manufacturing processes, technologies, and equipment. We also continued to invest in technology and product cost reduction and in production capacity expansion. In particular:

- In China, the Weichai Ballard JV has commenced production activities and assembly of next-generation fuel cell stacks and modules. We now expect the joint venture to optimize manufacturing processes and start a production ramp-up through the first half of 2021, instead of being optimized by the end of 2020. We also delivered a significant volume of MEAs to Weichai Ballard JV for the production of next-generation FCgen®-LCS fuel cell stacks and FCmove™-fuel cell modules. During 2020, we had a commitment to make capital contributions towards our pro rata ownership share of Weichai Ballard JV of $19.5 million, all of which was contributed in the first three quarters of 2020. This is in addition to $20.9 million contributed in 2019 and $14.6 million contributed in 2018, as part of our total capital contribution commitment of approximately $78 million. As previously noted, we also made the first required 2021 capital contribution of $3.0 million in the fourth quarter of 2020.

  In addition, we had expected to report equity investment losses in joint venture and associates of approximately $10 million to $15 million in fiscal 2020 primarily in connection with the operations of Weichai Ballard JV. This compares to actual equity investment losses recognized in 2020 of $12.6 million.
- In Europe, we delivered a significant number of modules to support Fuel Cell Electric Buses ("FCEBs") in a number of countries.
- In North America, we saw continued policy support and market activity in California for FCEBs and fuel cell-powered trucks. In addition and as expected, we saw a volume reduction in fuel cell stack sales for forklift applications.
- In Technology Solutions, revenue decreased in 2020, as compared to 2019, due to a reduction in program scope as certain planned activities were completed, and by the deferral of development work on certain of our programs as a result of ongoing work, travel and other restrictions related to COVID-19. In addition to our ongoing technology transfer and engineering services programs with Audi and Weichai Ballard JV, Technology Solutions revenue was earned from other existing and new customers in a variety of markets.

3.3 2021 Business Outlook

Consistent with the Company's past practice, and in view of the early stage of hydrogen fuel cell market development and adoption, and the ongoing uncertainties resulting from the COVID-19 pandemic, we are not providing specific financial performance guidance for 2021.

We intend to maintain focus throughout 2021 on Heavy- and Medium-Duty Motive applications – including bus, commercial truck, train, and marine markets – to increase penetration in the key markets of China, Europe, and California. We also see opportunities in additional

geographic markets and therefore anticipate projects that will begin expanding our reach beyond these initial key markets. In particular:

- In 2021, we will invest significantly in additional technology and product innovation and development across bus, truck, rail, and marine applications, including next-generation MEAs, plates, stacks, and modules. This is expected to include collaboration with MAHLE Group ("MAHLE") on the design of fuel cell engines for commercial trucks for Europe. We will also continue to invest in the customer experience in these markets. In 2021, we will continue to work to expand our MEA production capacity 6-times at our Vancouver headquarter facility. We will also review options for further localization of production capacity in China and Europe. Furthermore, corporate development work will be an important priority this year, including potential acquisitions to help scale the business and simplify the customer experience.
- During 2021, we have a commitment to make contributions totaling approximately $11.4 million towards our pro rata ownership share of Weichai Ballard JV in China. This is in addition to $57.7 million contributed cumulatively through 2020, as part of Ballard's total capital commitment of approximately $79.5 million.
- In Europe during 2021, we expect to deliver a significant number of modules to support deployments of FCEBs in a number of countries. We also expect increased market activity for FCEBs, which can be expected to result in additional module purchase orders for delivery in future years. In addition, the shipment of backup power systems is expected to be flat as compared to 2020. We also plan to continue execution of our automotive program with Audi.
- Within North America during 2021, we expect continued market activity for FCEBs and fuel cell-powered trucks, which can be expected to result in additional module purchase orders for delivery in future years. In addition, we expect the volume of fuel cell stack shipments for material handling applications to be flat as compared to 2020.

Our qualitative outlook expectations for 2021 are supported by our 12-month Order Book of approximately $83.5 million which is derived from our Order Backlog of approximately $117.8 million as of December 31, 2020. Our Order Backlog represents the estimated aggregate value of orders at a given time for which customers have made contractual commitments and our 12-month Order Book represents the aggregate expected value of that portion of the Order Backlog that the Company expects to deliver in the subsequent 12-month period.

Our qualitative outlook expectations for 2021 are based on our internal forecast which reflects an assessment of overall business conditions and takes into account actual sales and financial results in the first two months of 2021; sales orders received for units and services expected to be delivered in the remainder of 2021; an estimate with respect to the generation of new sales and the timing of deliveries in each of our markets for the balance of 2021; and assumes an average U.S. dollar exchange rate in the mid to high $0.70's in relation to the Canadian dollar for 2021.

The primary risk factors to our qualitative business outlook expectations for 2021 are customer, production, or program delays or cancellations in delivering against existing power products and technology solutions orders and delays from forecast in terms of closing and delivering expected sales primarily in our Heavy-Duty Motive market including expected sales

to Weichai Ballard JV and Synergy Ballard JVCo and the timing of sales of that inventory by those respective joint ventures to end-customers in China; adverse macro-economic conditions including trade, public health (including the ongoing impact of the COVID-19 pandemic), and other geopolitical risks; changes in government subsidy and incentive programs; inadequate investment in hydrogen infrastructure and / or excessive hydrogen fuel costs, all of which could negatively impact our customers' access to capital and the success of their program plans which could adversely impact our business; disruptions in our Heavy-Duty market due to delays of supply of key materials and components from third party suppliers; disruptions in our Technology Solutions market as a result of our significant reliance on a limited number of customers including Audi and Weichai Ballard JV which are reliant on their internal commercialization plans and budget requirements; disruptions in our Technology Solutions market as a result of delays in achieving program milestones; disruptions in the Material Handling market as a result of our reliance on a single customer in this market and that customer's internal stack development and commercialization plans; and fluctuations in the Canadian dollar relative to the U.S. dollar, as a significant portion of our Technology Solutions revenues (including the technology development and engineering services agreement with Audi) are priced in Canadian dollars.

Our Order Backlog and our 12-month Order Book are currently comprised of a relatively limited number of contracts and a relatively limited number of customers. Given the relative immaturity of our industry and customer deployment programs, our Order Backlog and 12-month Order Book are potentially vulnerable to risk of cancellation, deferral or non-performance by our customers for a variety of reasons including: risks related to continued customer commitment to a fuel cell program; risks related to customer liquidity; credit risks; risks related to changes, reductions or eliminations in government policies, subsidies and incentives; risks related to macro-economic conditions including trade, public health (including the ongoing impact of the COVID-19 pandemic), and other geopolitical risks; risks related to slower market adoption; risks related to vehicle integration challenges; risks related to the development of effective hydrogen refueling infrastructure; risks related to the ability of our products to meet evolving market requirements; and supplier-related risks.

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

4. RECENT DEVELOPMENTS (Including Contractual Updates)

4.1 Corporate

Paul Dobson Appointed SVP & CFO

On March 10, 2021, we announced the appointment of Mr. Paul Dobson as Senior Vice-President and Chief Financial Officer, effective March 29th, 2021. Mr. Dobson will replace Tony Guglielmin, who is retiring after serving as the Company's CFO since 2010. Mr. Guglielmin will continue to serve as an employee in an advisory role until May 31st, 2021 to support the CFO transition process. The appointment of Paul Dobson follows a comprehensive search process supported by a leading global search firm. Mr. Dobson has extensive executive-level experience in the energy and financial sectors.

Board Member Retirement

On December 31, 2020, we announced that Mr. Ian Sutcliffe, a member of the Company's Board of Directors since 2013, retired from the board effective December 31, 2020 for personal reasons.

$550 Million Bought Deal Offering of Common Shares

On February 23, 2021, we closed the previously announced bought deal offering of 14.87 million common shares of the Company (the "Common Shares") at a price of $37.00 per Common Share (the "Offering Price") for gross proceeds of US$550.2 million (the "550 million Offering").

TD Securities Inc. and National Bank Financial Inc. acted as joint bookrunners for the Offering, with a syndicate of underwriters which includes BMO Nesbitt Burns Inc., CIBC World Markets Inc., Raymond James Ltd., and Cormark Securities Inc. (collectively, the "Underwriters").

The Underwriters have the option to purchase up to an additional 2.2 million Common Shares at the Offering Price to cover over-allotments, if any, and for market stabilization purposes, for a period of 30 days after the closing date of the Offering (the "Over-Allotment Option"). The exercise of the Over-Allotment Option may result in additional gross proceeds of up to $82.5 million.

The Common Shares were offered by way of a short form prospectus filed in all of the provinces and territories of Canada, excluding Quebec, and were offered in the United States pursuant to a registration statement on Form F-10 filed under the Canada/U.S. multijurisdictional disclosure system, and on a private placement basis in certain jurisdictions outside Canada and the United States pursuant to applicable prospectus exemptions.

We intend to use net proceeds of the $550 million Offering to further strengthen our financial position, thereby providing additional flexibility to fund our growth strategy, including through activities such as product innovation, investments in production capacity expansion and localization, future acquisitions and strategic partnerships and investments.

Pursuant to an investor rights agreement entered into between Ballard and Weichai Power Hong Kong International Development Co., Limited ("Weichai"), Weichai has certain anti-dilution rights to maintain its current level of ownership in the Company and will be entitled to exercise its anti-dilution rights in connection with the Common Shares issued in the $550 million Offering (including upon exercise of the Over-Allotment Option). The Company is not

aware of Weichai's intention with respect to the $550 million Offering. Weichai's anti-dilution rights with respect to previous offerings of the Company have expired unexercised.

$402 Million Bought Deal Offering of Common Shares

On November 27, 2020, we closed the previously announced bought deal offering of 20.9 million Common Shares at a price of $19.25 per Common Share for gross proceeds of $402.5 million and net proceeds of $385.8 million (the "$402 million Offering"), and which included the exercise in full by the underwriters of their over-allotment option to purchase up to an additional 2.7 million Common Shares at the offering price. National Bank Financial Inc. and Raymond James Ltd. acted as joint bookrunners for the Offering, with a syndicate of underwriters which included Cormark Securities Inc. and TD Securities Inc. We intend to use the net proceeds of the $402 million Offering to further strengthen our financial position, thereby providing additional flexibility to fund our growth strategy, including through activities such as product innovation, investments in production capacity expansion and localization, future acquisitions and strategic partnerships and investments.

Weichai's anti-dilution rights to maintain its current level of ownership in the Company with respect to the $402 million Offering have expired unexercised.

Ballard and Audi Sign Definitive Agreements Regarding Use of Industry-Leading High-Power Density Fuel Cell Stack for Vehicle Propulsion

On October 29, 2020, we announced the signing of definitive agreements, in the form of Amendments to the existing Technology Development Agreement and a Patent License Agreement, with AUDI AG ("Audi") related to the non-binding Memorandum of Understanding previously announced on September 14, 2020, thereby expanding Ballard's right to use the FCgen®-HPS product, a high-performance, zero-emission, PEM fuel cell stack in all applications, including commercial trucks and passenger cars. The amendments allowed Audi to reduce the size of the remaining Technology Solutions program to the lower end of the range previously disclosed, and in return Ballard acquired expanded rights to use the FCgen®-HPS product, subject to certain royalty obligations.

The FCgen®-HPS fuel cell stack provides propulsion for a range of Light-, Medium- and Heavy-Duty vehicles in an industry-leading volumetric high-power density of 4.3 kilowatts per liter (4.3 kW/L). The FCgen®-HPS was fully designed and developed by Ballard to stringent automotive standards in the Company's Technology Solutions program with AUDI AG.

In addition to its leading high-power density, the FCgen®-HPS delivers a combination of impressive performance metrics, including:

- High power output: up to 140kW maximum power level, with scalability to multiple power blocks;
- High operating temperature: up to 95°C maximum operating temperature, which allows for more efficient and smaller cooling systems; and
- Rugged cold weather capabilities: -28°C freeze start capability with fast power ramp.

Sale of UAV Business Assets to Honeywell

On October 15, 2020, we sold the UAV business assets of our subsidiary located in Southborough, Massachusetts to Honeywell International ("Honeywell"). All employees of the UAV subsidiary transitioned to Honeywell Aerospace. The companies are also committed to a

longer-term strategic collaboration to combine Ballard's expertise in fuel cell technology with Honeywell's leadership in aerospace and are working on agreements in respect of this collaboration.

As we were committed to the disposition of the UAV assets as of September 30, 2020, the UAV business has been classified as a discontinued operation as of September 30, 2020. As such, the historic operating results of the UAV business for both 2020 and 2019 have been removed from continuing operating results and are instead presented separately in the statement of comprehensive income (loss) as loss from discontinued operations.

At-The-Market Equity Distribution Agreements

On September 30, 2020, we announced the completion of an at-the-market equity program (the "$250 million ATM Program") announced and entered into on September 1, 2020, issuing a total of 16.45 million Common Shares from treasury, including approximately 3.7 million Common Shares on the Toronto Stock Exchange and approximately 12.75 million Common Shares on the NASDAQ Global Market. The Common Shares were sold at prevailing market prices at the time of sale, for total gross proceeds of $250 million and total net proceeds of approximately $244.1 million, which will be used for general corporate purposes. Of the 16.45 million Common Shares sold under the $250 million ATM Program, 14.25 million Common Shares were issued in the third quarter of 2020, with the remaining 2.2 million Common Shares issued early in the fourth quarter of 2020. Of the total net proceeds received of approximately $244.1 million, approximately $211.6 million was received in the third quarter of 2020 with the remaining approximately $32.5 million received early in the fourth quarter of 2020.

On March 10, 2020, we announced that we had entered into an at-the-market Equity Distribution Agreement, thereby establishing an at-the-market equity program (the "$75 million ATM Program") to allow the issuance of up to $75 million of Common Shares from treasury at the Company's discretion. Common Shares sold under the $75 million ATM Program were sold at the prevailing market price at the time of sale, with net proceeds of sales of Common Shares under the $75 million ATM Program to be used for general corporate purposes. During the first half of 2020, we issued 8.2 million Common Shares under the $75 million ATM Program for gross proceeds of $66.7 million and for net proceeds of approximately $64.7 million. With the renewal of our new base shelf prospectus ("Base Shelf Prospectus") on June 12, 2020, the $75 million ATM Program was terminated.

Weichai's anti-dilution rights to maintain its current level of ownership in the Company with respect to the $250 million ATM Program and the $75 million ATM Program have expired unexercised.

6X Expansion in MEA Production Capacity

On September 28, 2020, we announced that we are expanding manufacturing capacity for production of our proprietary MEAs, a critical component of every fuel cell, by a factor of 6x current capacity by mid-year 2021 at our headquarter facility in Burnaby, B.C. The upgraded capacity is expected to enable production of approximately 6 million MEAs annually.

Agreement to Collaborate with MAHLE Group

On September 28, 2020, we announced an agreement to collaborate with MAHLE, a leading international development partner and Tier 1 supplier to the commercial vehicle and

automotive industry, on the development and commercialization of zero-emission fuel cell systems to provide primary propulsion power in various classes of commercial trucks.

During the initial development phase, Ballard has prime responsibility for system design and the fuel cell stack sub-system, while MAHLE's scope of responsibility includes balance-of-plant components, thermal management and power electronics for the complete fuel cell system, or engine, as well as system assembly. MAHLE brings a number of key attributes to the collaboration, including:

- Extensive experience within the commercial truck value chain;
- Vast expertise in the field of peripheral fuel cell components;
- Supply chain depth;
- High-volume production expertise;
- Long-standing relationships with multiple commercial truck, and other, OEMs;
- After-sales service infrastructure; and
- A highly respected global brand.

The collaboration agreement was signed on October 1, 2020. The development phase remains subject to completion of definitive documents.

Launch of FCwave™ Fuel Cell Module

On September 8, 2020, we announced the launch of the fuel cell industry's first module designed for primary propulsion power in marine vessels. Ballard's FCwave™ fuel cell product is a 200-kilowatt (kW) modular unit that can be scaled in series up to the multi-megawatt (MW) power level.

The FCwave™ product provides primary propulsion power for marine vessels – such as passenger and car ferries, river push boats, and fishing boats – as well as stationary electrical power to support hotel and auxiliary loads on cruise ships and other vessels while docked at port (also known as 'cold ironing'). Fuel cells provide a zero-emission solution for the reduction of carbon emissions in marine vessels. Ballard's FCwave™ product was designed to leverage the Company's technology and critical components already proven in existing product applications to ensure that it can withstand the rigors of marine applications while meeting all performance and safety requirements.

FCwave™ offers compelling benefits to maritime customers, including:

- Industry-leading durability, with greater than 30,000 hours expected operating lifetime;
- High system efficiency >55%;
- Light weight at 4.4 kilograms/kW;
- Flexibility through modular components for scalable power;
- Extended range, limited only by the volume of hydrogen fuel stored onboard;
- Reliable performance;
- Safe operation; and
- Proven service model.

The Company is currently engaged in the Type Approval process with DNV-GL, an international accredited registrar and classification society headquartered in Norway.

4.2 China

China's New Policy to Support Adoption of FCEVs

On September 21, 2020, we noted that the Chinese government had announced a new official policy regarding FCEVs which is expected to support the adoption of FCEVs in selected demonstration regions in China.

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

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

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

  Ballard entered into an investor rights agreement with Weichai under which: (a) Weichai was subject to 2-year "standstill" and resale restrictions, subject to customary exceptions which expired in November 2020; (b) for so long as Weichai directly or indirectly holds at least 10% of Ballard's outstanding shares, it has an anti-dilution right entitling it to maintain its percentage ownership in Ballard by subscribing for Common Shares from treasury at the same price as Ballard distributes Common Shares to other investors; (c) for so long as Weichai directly or indirectly holds at least 15% of Ballard's outstanding Common Shares, it has the right to nominate two directors to Ballard's board of directors; and (d) if there is a third-party offer to buy Ballard, Weichai has the right to make a superior proposal or otherwise it must vote its Common Shares in accordance with the recommendation of Ballard's board of directors.

- *China Joint Venture and Technology Transfer Agreement* – Weichai and Ballard have established a joint venture company in Shandong Province to support China's Fuel Cell Electric Vehicle market, with Weichai holding a controlling ownership interest of 51% and Ballard holding a 49% ownership position. The Weichai Ballard JV, Weichai Ballard Hy-Energy Technologies Co., Ltd., was established in the fourth quarter of 2018 with Weichai making an initial capital contribution in 2018 of RMB 102 million and Ballard making an initial capital contribution of $14.3 million (RMB 98 million equivalent). During 2019, Weichai made its planned second and third capital contributions totaling RMB 149.2 million and Ballard made its planned second and third capital contributions totaling $20.9 million (RMB 143.3 million equivalent). In fiscal 2020, Weichai made its planned fourth, fifth, sixth and seventh capital contributions of RMB 161.9 million and Ballard made its planned fourth, fifth, sixth and seventh capital contributions totaling $22.5 million (RMB 155.6 million equivalent). Weichai and Ballard will fund pro rata shares of the Weichai Ballard JV based on an agreed business plan. Weichai holds three of five Weichai Ballard JV board seats and Ballard holds two, with Ballard having certain shareholder protection provisions.

  The Weichai Ballard JV will manufacture Ballard's next-generation LCS fuel cell stack and FCgen®-LCS-based power modules for bus, commercial truck and forklift applications with exclusive rights in China and will pay Ballard a total of $90 million under a program to develop and transfer technology to the Weichai Ballard JV in order to enable these manufacturing activities. Revenue earned from the $90 million Weichai Ballard JV

technology transfer agreement ($6.5 million in the fourth quarter of 2020; $21.2 million in fiscal 2020; $5.6 million in the fourth quarter of 2019; $22.5 million in fiscal 2019; $1.2 million in fiscal 2018) is recorded as Technology Solutions revenues. During the fourth quarter of 2018, we received an initial 10% or $9.0 million prepayment from Weichai Ballard JV for this program with additional amounts paid to us as program milestones are successfully completed. We retain an exclusive right to the developed technologies outside China, subject to certain restrictions on sublicensing outside China. The Weichai Ballard JV will also purchase MEAs for FCgen®-LCS fuel cell stacks exclusively from Ballard under a long-term supply agreement.

- *Fuel Cell Sales* – Weichai has indicated that it intends to build and supply at least 2,000 fuel cell modules using Ballard technology by 2022 for commercial vehicles in China. Specific terms related to the source and scope of supply, product mix, pricing and timing of shipments are subject to future agreement between the parties and the Weichai Ballard JV.

  On May 1, 2019, we announced that we have reached agreement with Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China. The order has a total value of approximately $44 million to Ballard. Once assembled by Weichai Ballard JV, final modules will be sold to Weichai to support initial deployments against Weichai's commitment to supply a minimum of 2,000 fuel cell modules for commercial FCEVs in China. All products and components to be supplied by Ballard, as well as related applications engineering support, are planned for delivery through the first quarter of 2021 and will be based on Ballard's next-generation LCS stack technology. Revenue earned from these agreements ($0.4 million in the fourth quarter of 2020; $14.8 million in fiscal 2020; $13.2 million in the fourth quarter of 2019; $14.7 million in fiscal 2019) is recorded as Heavy-Duty Motive revenues.

  As of December 31, 2020, an additional $15.0 million of revenue associated with shipments on these orders to Weichai Ballard JV remain unrecognized until these products are ultimately sold by Weichai Ballard JV.

On December 16, 2019, we announced the receipt of an additional purchase order from Weichai Ballard JV for the delivery of MEAs valued at approximately $19 million, expected to be delivered in 2020 and in the first quarter of 2021 under a long-term MEA supply agreement. Revenue earned from this agreement ($4.6 million in the fourth quarter of 2020; $8.8 million in fiscal 2020 and to date) is recorded as Heavy-Duty Motive revenues. As of December 31, 2020, an additional $8.5 million of revenue associated with shipments on this order to Weichai Ballard JV remain unrecognized until these products are ultimately sold by Weichai Ballard JV.

The Weichai Ballard JV operation, located in Shandong Province, China, has commenced production activities and assembly of next-generation LCS fuel cell stacks and LCS-based modules to power FCEVs for the China market. The Weichai Ballard JV is expected to have initial annual production capacity of 20,000 fuel cell stacks, or approximately 10,000 modules, based on a two-shift operation.

Guangdong Synergy Ballard Hydrogen Power Co., Ltd.

During 2017, the FCveloCity®-9SSL fuel cell stack joint venture operation in the city of Yunfu in China's Guangdong Province commenced operations. Ballard has a non-controlling 10%

interest in the joint venture, Synergy Ballard JVCo, together with our partner Guangdong Nation Synergy Hydrogen Power Technology Co., Ltd. (a member of the "Synergy Group") who has a 90% interest. The fuel cell stacks manufactured by Synergy Ballard JVCo are expected to be used primarily in fuel cell engines assembled in China to provide propulsion power for zero-emission fuel cell electric buses and commercial vehicles in China. The Synergy Ballard JVCo operation is designed to achieve an annualized production capacity of approximately 20,000 fuel cell stacks.

The joint venture transaction and related sales agreements, which closed on October 25, 2016 (originally announced on July 18, 2016), contemplated Ballard's exclusive supply of MEAs for each fuel cell stack manufactured by Synergy Ballard JVCo with minimum annual MEA volume commitments.

During the second quarter of 2019, we agreed to a new MEA equipment supply agreement with Synergy Ballard JVCo with a contemplated value of approximately $8 million to Ballard in 2019.

On July 2, 2020, we announced the receipt of a new purchase order for the delivery of $7.7 million of MEAs to Synergy Ballard JVCo for their use in manufacturing FCveloCity®-9SSL fuel cell stacks.

Revenue earned from MEA and other agreements with Synergy Ballard JVCo ($2.6 million in the fourth quarter of 2020; $8.4 million in fiscal 2020; $6.5 million in the fourth quarter of 2019; $8.7 million in fiscal 2019) is recorded as Heavy-Duty Motive revenues.

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

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

4.3 Europe

Wrightbus

On March 9, 2021, we announced the receipt of follow-on purchase orders from Wrightbus, a leading bus OEM and Ballard partner headquartered in Northern Ireland, for a total of 50 fuel cell modules to power FCEBs, planned for deployment in a number of U.K. cities including Birmingham, Aberdeen, London and Belfast. The buses will be partially funded under the JIVE (Joint Initiative For Hydrogen Vehicles Across Europe) program. After having gone into administration in 2019, the assets of Wrightbus Limited were acquired by Bamford Bus Company, which carries on business under the name Wrightbus ("Wrightbus"). The orders for these 50 fuel cell modules are incremental to the previous orders noted below. Of the additional 50 modules announced today, four were shipped in 2020.

On June 18, 2020, we announced the receipt of follow-on purchase orders for 15 of our 85-kilowatt heavy-duty FCveloCity®-HD fuel cell modules from Wrightbus to power FCEBs, planned for deployment in the U.K. Including the 15 modules, Ballard had orders in-hand from Wrightbus for a total of 50 modules to power FCEBs in the U.K., 35 of which were previously announced in 2019. Of those 35 modules, 20 are to power buses planned for deployment in London and 15 are for buses planned for deployment in Aberdeen. Ballard has shipped all 50 modules by the end of fiscal 2020.

Ballard, Wrightbus and Ryse Hydrogen – also a Bamford-owned business – are founding members of the H2Bus Consortium, announced in June 2019, and focused on deployment of at least 1,000 zero-emission Fuel Cell Electric Buses and related infrastructure in European cities at commercially competitive rates.

Revenue earned from all supply agreements with Wrightbus and its predecessor ($1.7 million in the fourth quarter of 2020; $6.7 million in fiscal 2020; nil million in the fourth quarter of 2019; $1.7 million in fiscal 2019) is recorded as Heavy-Duty Motive revenues.

Solaris Bus & Coach S.A.

On February 2, 2021, we announced purchase orders from Solaris Bus & Coach S.A. ("Solaris"), a leading European bus and trolleybus manufacturer and Ballard partner headquartered in Bolechowo, Poland, for 10 Ballard FCmove™ fuel cell modules to power 10 FCEBs in the Netherlands. Ballard plans to ship the modules in 2021. Ballard fuel cell modules will power 10 Solaris Urbino 12 hydrogen buses planned for deployment with Arriva Nederland in the Province of Gelderland, the Netherlands later in 2021. These will replace diesel buses currently in service.

On April 28, 2020, we announced a purchase order from Solaris for 20 of Ballard's new 70-kilowatt heavy-duty FCmove™-HD fuel cell modules. These modules will power 20 Solaris Urbino 12 hydrogen buses planned for deployment in The Netherlands, under the Joint Initiative For Hydrogen Vehicles Across Europe ("JIVE 2") funding program. The buses will be operated by Connexxion, which provides transport services for South Holland province. Shipments of the 20 FCmove™-HD modules to Solaris are expected to match the timing for bus builds and deployments.

On March 12, 2020, we announced a purchase order from Solaris for 25 of our new 70-kilowatt heavy-duty FCmove™-HD fuel cell modules. These 25 modules will power 15 Solaris Urbino 12 hydrogen buses planned for deployment in Cologne, Germany and 10 Urbino 12 hydrogen buses planned for deployment in Wuppertal, Germany, all under the JIVE 2 funding program. Shipment of the 25 FCmove™-HD modules to Solaris began in 2020 and will extend into 2021 to match the timing for the bus builds and deployments.

On July 29, 2019, we announced a purchase order from Solaris for 12 FCmove™-HD fuel cell modules to power 12 buses to be deployed with SASA Bolzano, the public transport operator in Bolzano, Italy under the JIVE funding program. The 12 FCmove™-HD modules were delivered in 2020 and the buses are expected to be deployed with SAS Bolzano in 2021.

Revenue earned from all supply agreements with Solaris ($0.8 million in the fourth quarter of 2020; $2.5 million in fiscal 2020) is recorded as Heavy-Duty Motive revenues.

Arcola Energy

On January 12, 2021, we announced a purchase order from Arcola Energy, a U.K.-based leader in hydrogen and fuel cell integration specializing in zero-emission solutions for heavy-duty vehicles and transport applications, for Ballard FCmoveTM-HD fuel cell modules to power a passenger train planned for demonstration during COP26, to be hosted by Glasgow City in November 2021. This project is expected to contribute to Scotland's goal for net zero emissions by 2035. Scottish Enterprise, Transport Scotland, and the Hydrogen Accelerator, based at the University of St. Andrews, have appointed Arcola Energy and a consortium of industry leaders in hydrogen fuel cell integration, rail engineering and functional safety to deliver Scotland's first hydrogen-powered train. The consortium will convert a Class 314 car passenger train, made available by ScotRail, into a deployment-ready and certified platform for hydrogen-powered train development.

Van Hool NV

On December 17, 2020, we announced a purchase order from Van Hool, a leading bus OEM and Ballard partner headquartered in Belgium, for 10 fuel cell modules to power Van Hool A330 buses to be deployed in Emmen, the Netherlands, under the JIVE2 funding program. We plan to deliver the 10 fuel cell modules in 2021 to power 10 Van Hool A330 model FCEBs that are planned for deployment with Groningen-Drenthe and Qbuzz, the public transport agency in Emmen, by 2022.

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

Revenue earned from all supply agreements with Van Hool (nil million in the fourth quarter of 2020; $2.3 million in fiscal 2020; $0.7 million in the fourth quarter of 2019; $5.1 million in fiscal 2019) is recorded as Heavy-Duty Motive revenues.

Eltek Nordic

On December 14, 2020, we announced the signing of a collaboration agreement with Eltek Nordic – a power conversion company headquartered in Drammen, Norway and part of Delta, a global leader in power electronics, automation and infrastructure – to provide reliable backup power solutions for telecom networks and other critical communication infrastructure, with a focus on Nordic countries, primarily Norway, Denmark and Iceland. The announced collaboration will utilize Ballard's FCgen®-H2PM fuel cell backup power system. Ballard and Eltek have a long-standing commercial relationship, having sourced products from each other for a number of years. The companies recently collaborated on a project at Trollstigen in the mountains of Norway, installing an off-grid power solution that integrates solar, wind, fuel cells, and batteries to ensure continuous operation and connectivity of a remote telecom network site.

As providers of extensive fiber broadband networks for telecommunications services, Nordic countries require reliable backup power systems that ensure continuous connectivity, even in the event of grid failures. Ballard's hydrogen fueled 1.7 kilowatt (kW) and 5kW FCgen®-H2PM backup power systems provide low cost, flexibility, and high reliability:

- Low cost – Competitive total cost of ownership is underpinned by an extensive 15-year product lifetime.
- Flexibility – Modular design ensures a fit with various site configurations and scalability supports power requirements up to 60kW's and beyond.
- No risk – High reliability in excess of 99%, tolerance to a wide range of temperatures (from -40oC to +46oC), and an intelligent architecture with predictive maintenance system and automated self-testing design for deployment in unmanned locations.

AdKor GMBH and SFC ENERGY AG

On January 14, 2020, we announced the signing of Equipment Sales Agreements for the provision of an initial 500 FCgen®-1020ACS fuel cell stacks to adKor GmbH ("adKor") and SFC Energy AG ("SFC Energy"), to be integrated into adKor's Jupiter backup power systems for deployment at radio tower sites in Germany through the end of 2021. Contracts have been awarded to adKor for the supply of fuel cell backup power systems to support an initial tranche of 500 radio tower sites in Germany – with the potential for a total of up to 1,500 radio tower sites – and adKor has sub-contracted a portion of the work to SFC Energy. As a result, adKor and SFC Energy have signed development partnership and licensing agreements, will share production activities for the supply of Jupiter systems and are developing product line extensions. Revenue earned from these agreements ($0.4 million in the fourth quarter of 2020; $1.4 million in fiscal 2020) are recorded as Backup Power revenues.

Audi AG

On June 11, 2018, we announced the signing of a 3.5-year extension to our technology solutions contract with Audi, part of the Volkswagen Group, extending the program to August 2022. The aggregate value of the contract extension is expected to be Canadian $80 to $130 million (approximately $62 to $100 million), subject to certain rights by Audi to reduce the program scope and value. The program, through a series of technical milestone awards, encompasses automotive fuel cell stack development as well as system design support activities for the benefit of Audi. Ballard engineers are leading critical areas of fuel cell product design – including the MEA, plate and stack components – along with certain testing and integration work. As noted above, on October 29, 2020 we entered into an amendment to the existing Technology Development Agreement and a Patent License Agreement with Audi and now expect total Audi contract revenues to be at the lower end of the above noted range.

Ballard signed an initial 4-year contract with Volkswagen AG in March 2013, followed by a 2-year extension in February 2015. Audi assumed leadership of the program in 2016. Revenue earned from this and other agreements with Audi ($5.2 million in the fourth quarter of 2020; $16.0 million in fiscal 2020; $9.2 million in the fourth quarter of 2019; $26.7 million in fiscal 2019; $26.6 million in fiscal 2018) is recorded as Technology Solutions revenues.

Siemens AG

On November 14, 2017, we announced the signing of a multi-year Development Agreement with Siemens AG ("Siemens") for the development of a zero-emission fuel cell engine to power

Siemens' Mireo light rail train. The Development Agreement has a contemplated value of approximately $9.0 million to Ballard over 3 years. Under the terms of the Development Agreement, Ballard will develop a 200-kilowatt fuel cell engine for integration into Siemens' new Mireo train platform. Initial deployments of the fuel cell powered Mireo train are planned for 2021. Revenue earned from this agreement (nil million in the fourth quarter of 2020; $0.9 million in fiscal 2020; $0.7 million in the fourth quarter of 2019; $3.2 million in fiscal 2019; $1.8 million in fiscal 2018) is recorded as Technology Solutions revenue.

4.4 North America and Other

Canadian Pacific

On March 9, 2021, we announced together with Canadian Pacific ("CP") that CP will employ Ballard fuel cell modules for CP's pioneering Hydrogen Locomotive Program. The modules will provide a total of 1.2 megawatts of electricity to power the locomotive. Through its Hydrogen Locomotive Program, CP will develop North America's first hydrogen-powered line-haul freight locomotive by retrofitting a formerly diesel-powered locomotive with Ballard hydrogen fuel cells. The fuel cells will work with battery technology to power the locomotive's electric traction motors. Once operational, CP will conduct rail service trials and qualification testing to evaluate the technology's readiness for the freight-rail sector. We plan to deliver six of our 200-kilowatt fuel cell modules to CP in 2021. We will also provide support to enable integration of the modules into the locomotive.

Chart Industries. Inc.

On February 10, 2021, we announced the signing of a non-binding Memorandum of Understanding with Chart Industries, Inc. ("Chart") – a leading diversified global manufacturer of highly engineered equipment for the industrial gas and clean energy industries – for the joint development of integrated system solutions that include a fuel cell engine with onboard liquid hydrogen ("LH2") storage and vaporization for the transportation industry, with a focus on heavy-duty applications including buses, trucks, rail and marine vessels. This collaboration is targeted to enable accelerated adoption of hydrogen in heavy-duty transport applications requiring long range, rapid refueling and lowest total cost of ownership of the vehicle. Liquid hydrogen is well-suited for the transportation industry as its higher density, lower pressure, and ease of filling via liquid hydrogen pump contributes to the ability for larger mobile equipment to travel longer distances, similar to what is possible today with diesel fuel. As part of the development agreement:

- Chart will provide:
    - Liquid hydrogen expertise from liquefaction plant to storage, fueling & onboard tanks;
    - Extensive truck LNG tank experience;
    - An existing liquid hydrogen onboard vehicle tank prototype design;
    - Fuel to vehicle connection / interface experience; and
    - LH2 test lab in Minnesota, United States.
- Ballard will provide:
    - PEM fuel cell technology expertise;
    - PEM fuel cell stacks, modules, and systems;

- Fuel cell mobility experience with over 70 million km of vehicle operation;
- Market access to System Integrators and vehicle OEMs; and
- Fuel cell testing facilities in British Columbia, Canada, and Denmark.

Global Energy Ventures

On February 3, 2021, we announced that the signing of a non-binding Memorandum of Understanding with Global Energy Ventures ("GEV") – a provider of integrated compressed shipping solutions for the transportation of energy to regional markets, headquartered in Australia – for the development of a new fuel cell-powered ship, called C-H2 Ship, designed to transport compressed green hydrogen. The power required for a small-scale demonstration of the C-H2 Ship is expected to be under 10 megawatts (MW). At full scale, the C-H2 Ship will have a propulsion power requirement of approximately 26MW, based on 2,000 tons of compressed green hydrogen storage capacity. GEV will be responsible for design approvals, development, financing, and operation of C-H2 Ship, along with integration of the required power system. Ballard will be responsible for design of the fuel cell system for the C-H2 Ship, based on its FCwaveTM technology, and will assist GEV with integration of the fuel cell system into the vessel's design. Ballard's FCwaveTM system will obtain its hydrogen fuel from the compressed green hydrogen stored onboard and transported by the vessel.

Canadian Government's Introduction of a Progressive Hydrogen Strategy

On December 16, 2020, we recognized and applauded Canada's Federal Government for the launch of the Hydrogen Strategy for Canada, a critical step toward realizing the goal of carbon neutrality in Canada by 2050 as part of the global fight against climate change. Canada now joins 31 other countries in recognizing the critical role of hydrogen in the energy transition. With hydrogen as a keystone underpinning Canada's Climate Action Plan, a pathway is provided to decarbonize segments of the economy that are otherwise difficult to abate. This includes Heavy- and Medium-Duty Motive applications – such as transit buses, commercial trucks, trains, and marine vessels – that have a disproportionately large impact on the emission of CO2 and particulate matter.

Anglo American

On October 29, 2019, we announced receipt of a purchase order for the sale of nine FCveloCity®-HD 100-kilowatt (kW) fuel cell modules to Anglo American, the world's largest platinum group metals mining company and a strategic investor in Ballard. Eight of the FCveloCity®-HD modules are expected to power a retrofitted Ultra heavy-duty mining truck in a demonstration project during 2020 at one of Anglo American's mining operations in South Africa with the ninth module maintained as a spare. Revenue earned from this and other agreements with Anglo American (nil million in the fourth quarter of 2020; $1.5 million in fiscal 2020) are recorded as Heavy-Duty Motive 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), 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.

On October 15, 2020, we sold the UAV business assets of our subsidiary located in Southborough, Massachusetts to Honeywell. As we were committed to the disposition of the UAV assets as of September 30, 2020, the UAV business has been classified as a discontinued operation as of September 30, 2020. As such, the historic operating results of the UAV business for both 2020 and 2019 have been removed from continuing operating results and are instead presented separately in the statement of comprehensive income (loss) as loss from discontinued operations.

5.2 Summary of Key Financial Metrics – Three Months Ended December 31, 2020

Revenue and Gross Margin

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
Fuel Cell Products and Services	**2020**	2019	$ Change	% Change
Heavy-Duty Motive	**$ 11,918**	$ 21,392	$ (9,474)	(44%)
Material Handling	**945**	1,932	(987)	(51%)
Backup Power	**2,103**	2,005	98	5%
Technology Solutions	**13,623**	16,428	(2,805)	(17%)
Revenues	**28,589**	41,757	(13,168)	(32%)
Cost of goods sold	**22,949**	33,195	(10,246)	(31%)
Gross Margin	**$ 5,640**	$ 8,562	$ (2,922)	(34%)
Gross Margin %	**20%**	21%	n/a	(1 pt)

Fuel Cell Products and Services Revenues of $28.6 million for the fourth quarter of 2020 decreased (32%), or ($13.2) million, compared to the fourth quarter of 2020. The (32%) decrease was driven by significantly lower Heavy-Duty Motive revenues and by lower Technology Solutions and Material Handling revenues which more than offset a minor increase in Backup Power revenues.

Technology Solutions revenues of $13.6 million decreased by ($2.8) million, or (17%), due primarily to decreased amounts earned on the Audi program. Technology Solutions revenues in the fourth quarter of 2020, as compared to the fourth quarter of 2019, continued to be negatively impacted by a reduction in program scope as certain planned activities were completed, and by the deferral of development work on certain of our programs as a result of ongoing work, travel and other restrictions related to the COVID-19 pandemic. Revenues of $13.6 million in the fourth quarter of 2020 were from a variety of customer programs including revenue from the Weichai Ballard JV technology transfer program of $6.5 million; the Audi program of $5.2 million; Nisshinbo programs of $0.1 million; and $1.8 million from a variety of other customer programs. Revenue in the fourth quarter of 2019 of $16.4 million were also from a variety of customer programs including amounts earned from the Weichai Ballard JV technology transfer program of $5.6 million; the Audi program of $9.2 million; the Siemens development program of $0.7 million; Nisshinbo programs of $0.4 million; and $0.5 million from a variety of other customer programs.

Heavy-Duty Motive revenues of $11.9 million decreased ($9.5) million, or (44%), due primarily to lower shipments of fuel cell products to customers primarily in China. Heavy-Duty

Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying customer requirements and various fuel cell products, including numerous power configurations required by our customers (and the resulting impact on selling price) of our fuel cell modules, fuel cell stacks, MEAs, and related component and parts kits. Heavy-Duty Motive revenues of $11.9 million in the fourth quarter of 2020 include $5.0 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; $2.5 million for shipments of MEAs to Synergy Ballard JVCo for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; $1.7 million to Wrightbus, $0.8 million to Solaris, and $0.5 million to New Flyer for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules and related components for their respective bus programs; and $1.4 million for fuel cell products to other customers. Heavy-Duty Motive revenues of $21.4 million in the fourth quarter of 2019 include $13.2 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; $6.5 million for shipments of MEAs to Synergy Ballard JVCo for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; $0.7 million to Van Hool for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules and related components for their bus programs; and $1.0 million for a variety of fuel cell products to a variety of customers around the world.

Backup Power revenues of $2.1 million increased $0.1 million, or 5%, due primarily to an increase in sales of hydrogen-based backup power fuel cell stacks to Europe and Asia, including shipments of FCgen®-1020ACS fuel cell stacks to adKor and SFC Energy in Germany.

Material Handling revenues of $0.9 million decreased ($1.0) million, or (51%), primarily as a result of lower shipments to Plug Power.

Fuel Cell Products and Services gross margins were $5.6 million, or 20% of revenues, for the fourth quarter of 2020, compared to $8.6 million, or 21% of revenues, for the fourth quarter of 2019. The decrease in gross margin of ($2.9) million, or (34%), was driven primarily by the (32%) decrease in total revenues, combined with a shift to lower overall product margin and service revenue mix resulting in an (1) percentage point decrease in gross margin as a percent of revenues.

Gross margin in the fourth quarter of 2020 was also positively impacted by net warranty adjustments of $1.2 million related primarily to contractual expirations and reduced service costs; and was negatively impacted as a result of net inventory adjustments of ($0.4) million related primarily to excess and impaired inventory. Gross margin in the fourth quarter of 2019 was negatively impacted as a result of net inventory adjustments of ($1.6) million related primarily to excess and impaired inventory; and was positively impacted by net warranty adjustments of $1.0 million related primarily to contractual expirations and reduced service costs.

Cash Operating Costs

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Research and Product Development (cash operating cost)	**$ 9,571**	$ 7,317	$ 2,254	31%
General and Administrative (cash operating cost)	**4,454**	3,328	1,126	34%
Sales and Marketing (cash operating cost)	**2,365**	2,439	(74)	(3)%
Cash Operating Costs	**$ 16,390**	$ 13,084	$ 3,306	25%

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

Cash Operating Costs (see Supplemental Non-GAAP Measures and Reconciliations) for the fourth quarter of 2020 were $16.4 million, an increase of $3.3 million, or 25%, compared to the fourth quarter of 2019. The $3.3 million, or 25%, increase was driven by higher research and product development cash operating costs of $2.3 million, by higher general and administrative cash operating costs of $1.1 million, partially offset by lower sales and marketing cash operating costs of ($0.1) million.

The $3.3 million, or 25%, increase in cash operating costs in the fourth quarter of 2020 was driven primarily by increased expenditure on technology and product development activities in Canada and in Denmark related to the design and development of our next generation fuel cell stacks and modules for bus, truck, rail and marine applications, and the ongoing improvement of our existing fuel cell products, including activities related to product cost reduction. In addition, general and administrative expenses were higher due primarily to incurred COVID-19 administration costs and by higher contract administration, legal and professional fees.

While we have significantly increased our gross investment and expenditure on research and product development activities in Canada and Denmark related to our next generation fuel cell products including the launch of our FCgen®-HPS High-Power Density Fuel Cell Stack for light-medium-and heavy-duty vehicles, the launch of our FCwave™ Fuel Cell Module for marine applications, and on the ongoing improvement of all of our fuel cell products including our high performance fuel cell module, the FCmove™-HD, and our high performance liquid-cooled fuel cell stack, the FCgen®-LCS, a portion of this gross investment has been reallocated from research and product development expense to cost of goods sold for work performed on revenue producing Technology Solutions projects. These cost increases were partially offset by increased government funding recoveries in the fourth quarter of 2020 as compared to the fourth quarter of 2019. Government funding recoveries are primarily reflected as a cost offset against gross research and product development expenses.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Adjusted EBITDA	$ **(14,470)**	$ (7,046)	$ (7,424)	(105%)

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

Adjusted EBITDA (see Supplemental Non-GAAP Measures and Reconciliations) for the fourth quarter of 2020 was ($14.5) million, compared to ($7.0) million for the fourth quarter of 2019. The ($7.4) million increase in Adjusted EBITDA loss was driven primarily the decrease in gross margin of ($2.9), by the increase in Cash Operating Costs of ($3.3) million, and by higher equity in loss of investment in joint venture and associates of ($1.4) million primarily attributed to the ongoing establishment of operations of Weichai Ballard JV.

Net loss from Continuing Operations

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Net loss from continuing operations	$ **(14,408)**	$ (9,795)	$ (4,614)	(47%)

Net loss from continuing operations for the fourth quarter of 2020 was ($14.4) million, or ($0.05) per share, compared to a net loss from continuing operations of ($9.8) million, or ($0.04) per share, in the fourth quarter of 2019. The ($4.6) million increase in net loss in the fourth quarter of 2020 was driven primarily by the increase in Adjusted EBITDA loss of ($7.4) million, by higher stock-based compensation expense of ($1.4) million, partially offset by higher finance and other income of $3.6 million primarily as a result of increased foreign exchange gains attributable to the effect of the strengthening of the value of the Canadian dollar, relative to the U.S. dollar, on our Canadian dollar-denominated net monetary position.

Net Loss from Discontinued Operations

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Revenues	**$ (19)**	$ 126	$ (145)	(115%)
Cost of goods sold	**-**	40	40	100%
Gross margin	**(19)**	86	(105)	(122%)
Operating expenses	**(427)**	(564)	137	24%
Gain on sale of assets	**168**	-	168	100%
Net loss from discontinued operations	**$ (278)**	$ (478)	$ 200	42%

Net loss from discontinued operations for the fourth quarter of 2020 was ($0.3) million, or ($0.00) per share, compared to a new loss from discontinued operations of ($0.5) million, or ($0.00) per share, in the fourth quarter of 2019. The $0.2 million decrease in net loss in the fourth quarter of 2020 was driven primarily by an increase in gain on sale of assets of $0.2 million. During the fourth quarter of 2020, we recorded a gain on sale of assets of $0.2 million on the divestiture of our UAV business assets to Honeywell.

Cash provided by (used in) operating activities

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Cash provided by (used in) operating activities	**$ (6,661)**	$ 4,109	$ (10,769)	(262%)

Cash used in operating activities in the fourth quarter of 2020 was ($6.7) million, consisting of cash operating losses of ($6.7) million and nominal net working capital inflows. Cash provided by operating activities in the fourth quarter of 2019 was $4.1 million, consisting of

cash operating losses of ($3.9) million and net working capital inflows of $8.0 million. The ($10.8) million increase in cash used in operating activities in the fourth quarter of 2020, as compared to the fourth quarter of 2019, was driven by the relative increase in cash operating losses of ($2.8) million, combined with the relative increase in working capital requirements of ($8.0) million.

The relative ($2.8) million increase in cash operating losses in the fourth quarter of 2020 was negatively impacted by the increase in Adjusted EBITDA loss of ($7.4) million. This net (loss) increase in the fourth quarter of 2020 was also impacted by several items included in Adjusted EBITDA loss but excluded from cash operating losses including: higher equity investment losses in joint venture and associates of $1.4 million, and higher finance and other income of $3.6 million.

The nominal total change in working capital in the fourth quarter of 2020 was driven by higher accounts and contract receivables of ($10.5) million primarily as a result of the timing of revenues and the related customer collections, lower deferred revenue of ($1.6) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period, by lower accrued warranty obligations of ($1.2) million primarily on Heavy-Duty Motive product shipments, and by higher prepaid expenses of ($1.1) million. These fourth quarter of 2020 outflows were partially offset by lower inventory of $7.7 million as we shipped against expected Heavy-Duty Motive shipments in the last quarter of 2020, and by higher accounts payable and accrued liabilities of $6.6 million primarily as a result of the timing of supplier payments and annual compensation awards.

This compares to a total change in working capital of $8.0 million in the fourth quarter of 2019 which was driven primarily by higher accounts payable and accrued liabilities of $7.4 million primarily as a result of the timing of supplier payments and annual compensation awards, by lower inventory of $5.9 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth quarter of 2019, and by lower prepaid expenses of $1.5 million. These fourth quarter of 2019 inflows were partially offset by higher accounts and contract receivables of ($4.0) million primarily as a result of the timing of revenue recognition and the related customer collections, and by lower deferred revenue of ($3.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period.

5.3 Summary of Key Financial Metrics – Year Ended December 31, 2020

Revenue and Gross Margin

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
Fuel Cell Products and Services	**2020**	2019	$ Change	% Change
Heavy-Duty Motive	**$ 47,688**	$ 35,363	$ 12,325	35%
Material Handling	**5,310**	10,758	(5,448)	(51%)
Backup Power	**5,602**	2,982	2,620	88%
Technology Solutions	**45,277**	56,620	(11,343)	(20%)
Revenues	**103,877**	105,723	(1,846)	(2%)
Cost of goods sold	**82,893**	83,385	(492)	(1%)
Gross Margin	**$ 20,984**	$ 22,338	$ (1,354)	(6%)
Gross Margin %	**20%**	21%	n/a	(1 pt)

Fuel Cell Products and Services Revenues of $103.8 million for 2020 decreased (2%), or ($1.8) million, compared to 2019. The (2%) decrease was driven by lower Technology Solutions and Material Handling revenues which more than offset higher Heavy-Duty Motive and Backup Power revenues.

Heavy-Duty Motive revenues of $47.7 million increased $12.3 million, or 35%, due primarily to higher shipments of fuel cell products to customers primarily in China. Heavy-Duty Motive revenues on a quarter to quarter basis are also impacted by product mix due to varying customer requirements and various fuel cell products, including numerous power configurations required by our customers (and the resulting impact on selling price) of our fuel cell modules, fuel cell stacks, MEAs, and related component and parts kits. Heavy-Duty Motive revenues of $47.7 million in 2020 include $23.6 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; $8.0 million for shipments of MEAs to Synergy Ballard JVCo for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; $6.7 million to Wrightbus, $2.3 million to Van Hool, $2.5 million to Solaris, and $0.5 million to New Flyer for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules and related components for their respective bus programs; $1.5 million to Anglo American for shipments of FCveloCity®-HD 100 kilowatt (kW) fuel cell modules and related components for their mining project; and $2.6 million for fuel cell products to other customers. Heavy-Duty Motive revenues of $35.4 million in 2019 include $14.7 million to Weichai Ballard JV for the supply of a mix of certain fuel cell products and components that will be used in the assembly of modules to power zero-emission FCEVs in China; $8.7 million to Synergy Ballard JVCo for shipments of MEAs for use in their manufacture and assembly of FCveloCity® fuel cell stacks in China; $5.1 million to Van Hool and $1.7 million to WrightBus for shipments of FCveloCity®-HD7 85&100-kilowatt fuel cell modules for their respective bus programs; and $5.2 million for a variety of fuel cell products to a variety of customers around the world.

Technology Solutions revenues of $45.3 million decreased by ($11.3) million, or (20%), due primarily to decreased amounts earned on the Audi program, the Siemens development program, and the Weichai Ballard JV technology transfer program. Technology Solutions revenues in 2020, as compared to 2019, was negatively impacted by a reduction in program scope as certain planned activities were completed, and by the deferral of development work on certain of our programs as a result of ongoing work, travel and other restrictions related

to the COVID-19 pandemic. Revenues of $45.3 million in 2020 were from a variety of customer programs including revenue from the Weichai Ballard JV technology transfer program of $21.2 million; the Audi program of $16.0 million; the Siemens development program of $0.9 million; Nisshinbo programs of $1.8 million; the Broad-Ocean program of $0.8 million, and $4.6 million from a variety of other customer programs. Revenue in 2019 of $56.6 million were also from a variety of customer programs including amounts earned from the Audi program of $26.7 million, the Weichai Ballard JV technology transfer program of $22.5 million; the Siemens development program of $3.2 million; Nisshinbo programs of $1.1 million; and $3.1 million from a variety of other customer programs. Audi program revenues were also nominally impacted in 2020, as compared to 2019, as a result of an approximate average (1%) lower Canadian dollar, relative to the U.S. dollar, as the Audi Agreement is priced in Canadian dollars. The underlying costs to satisfy the Audi Agreement are primarily denominated in Canadian dollars.

Backup Power revenues of $5.6 million increased $2.6 million, or 88%, due primarily to an increase in sales of hydrogen-based backup power fuel cell stacks to Asia and Europe, including shipments of FCgen®-1020ACS fuel cell stacks to adKor and SFC Energy in Germany, as hydrogen-based backup power product and service revenues in Europe were relatively flat.

Material Handling revenues of $5.3 million decreased ($5.4) million, or (51%), primarily as a result of significantly lower shipments to Plug Power.

Fuel Cell Products and Services gross margins were $21.0 million, or 20% of revenues, for the 2020, compared to $22.3 million, or 21% of revenues, for 2019. The decrease in gross margin of ($1.4) million, or (6%), was driven primarily by the (2%) decrease in total revenues, combined with a shift to lower overall product margin and service revenue mix resulting in an (1) percentage point decrease in gross margin as a percent of revenues.

Gross margin in 2020 was also negatively impacted by net inventory adjustments of ($1.5) million related primarily to excess and impaired inventory; and was positively impacted by net warranty adjustments of $1.4 million related primarily to contractual expirations and reduced service costs. Gross margin in 2019 was negatively impacted by net inventory adjustments of ($2.4) million related primarily to excess and impaired inventory; and positively impacted by net warranty adjustments of $1.0 million related primarily to contractual expirations and lower expected service costs.

Cash Operating Costs

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Research and Product Development (cash operating cost)	**$ 28,981**	$ 20,548	$ 8,433	41%
General and Administrative (cash operating cost)	**13,566**	11,099	2,467	24%
Sales and Marketing (cash operating cost)	**7,482**	7,154	328	5%
Cash Operating Costs	**$ 50,029**	$ 38,801	$ 11,228	29%

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

Cash Operating Costs (see Supplemental Non-GAAP Measures and Reconciliations) for 2020 were $50.0 million, an increase of $11.2 million, or 29%, compared to 2019. The $11.2 million, or 29%, increase was driven by higher research and product development cash operating costs of $8.4 million, by higher general and administrative cash operating costs of $2.5 million, and by higher sales and marketing cash operating costs of $0.3 million.

The $11.2 million, or 29%, increase in cash operating costs in 2020 was driven primarily by increased expenditure on technology and product development activities in Canada and in Denmark related to the design and development of our next generation fuel cell stacks and modules for bus, truck, rail and marine applications, and the ongoing improvement of our existing fuel cell products, including activities related to product cost reduction. In addition, general and administrative expenses were higher due primarily to incurred COVID-19 administration costs and by higher contract administration, legal and professional fees, and sales and marketing costs increased primarily due to increase in sales and marketing labour costs in Canada and Europe.

While we have significantly increased our gross investment and expenditure on research and product development activities in Canada and Denmark related to our next generation fuel cell products including the launch of our FCgen®-HPS High-Power Density Fuel Cell Stack for light-medium-and heavy-duty vehicles, the launch of our FCwave™ Fuel Cell Module for marine applications, and on the ongoing improvement of all of our fuel cell products including our high performance fuel cell module, the FCmove™-HD, and our high performance liquid-cooled fuel cell stack, the FCgen®-LCS, a portion of this gross investment has been reallocated from research and product development expense to cost of goods sold for work performed on revenue producing Technology Solutions projects. These cost increases were partially offset by increased government funding recoveries in 2020 as compared to 2019. Government funding recoveries are reflected primarily as a cost offset against gross research and product development expenses.

Adjusted EBITDA

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Adjusted EBITDA	$ **(38,944)**	$ (26,608)	$ (12,336)	(46%)

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

Adjusted EBITDA (see Supplemental Non-GAAP Measures and Reconciliations) for 2020 was ($38.9) million, compared to ($26.6) million for 2019. The ($12.3) million increase in Adjusted EBITDA loss was driven primarily by the decrease in gross margin of ($1.4) million and by the increase in Cash Operating Costs of ($11.2) million. In addition, Adjusted EBITDA in 2020 was positively impacted by a decline in other operating expenses of $1.5 million primarily as a result of lower impairment losses on trade receivables consisting primarily on amounts owed to us in 2019 for product shipments to the former WrightBus. This positive impact was however offset by higher equity in loss of investment in joint venture and associates of ($1.5) million primarily attributed to the ongoing establishment of operations of Weichai Ballard JV

In addition, operating costs in 2020 were impacted by the slightly positive impact of a weaker Canadian dollar, relative to the U.S. dollar, as compared to 2019. As a significant amount of our net operating costs (primarily labour) are denominated in Canadian dollars, gross margin,

operating expenses, and Adjusted EBITDA are impacted by changes in the Canadian dollar relative to the U.S. dollar. As the Canadian dollar relative to the U.S. dollar was approximately (1%), or (100) basis points, lower 2020 as compared to 2019, positive foreign exchange impacts on our Canadian operating cost base and Adjusted EBITDA were approximately $0.7 million. A $0.01 decrease in the Canadian dollar, relative to the U.S. dollar, positively impacts annual Adjusted EBITDA by approximately $0.7 million.

Net loss from Continuing operations

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Net loss from continuing operations	$ **(49,469)**	$ (35,291)	$ (14,178)	(40%)

Net loss from continuing operations for 2020 was ($49.5) million, or ($0.20) per share, compared to a net loss from continuing operations of ($35.3) million, or ($0.15) per share, in 2019. The ($14.2) million increase in net loss in 2020 was driven primarily by the increase in Adjusted EBITDA loss of ($12.3) million, by an increase in the impact of unrealized gains (losses) on foreign exchange contracts of ($0.5) million, and higher stock-based compensation expense of ($2.8) million. These loss increases in 2020 were partially offset by higher finance and other income of $1.6 million primarily as a result of increased foreign exchange gains attributable to the effect of the strengthening of the value of the Canadian dollar, relative to the U.S. dollar, on our Canadian dollar-denominated net monetary position, partially offset by lower interest income earned on our cash and cash equivalents primarily due to the decline in cash deposit interest rates.

Net Loss from Discontinued Operations

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Revenues	**$ 263**	$ 604	$ (341)	(56%)
Cost of goods sold	**223**	347	124	36%
Gross margin	**40**	257	(217)	(84%)
Operating expenses	**(2,116)**	(2,204)	88	4%
Finance and other income	**-**	188	(188)	(100%)
Gain (loss) on sale of assets	**168**	(2,000)	2,168	108%
Net loss from discontinued operations	**$ (1,908)**	$ (3,759)	$ 1,851	49%

Net loss from discontinued operations for 2020 was ($1.9) million, or ($0.01) per share, compared to a net loss from discontinued operations of ($3.8) million, or ($0.02) per share, in 2019. The $1.9 million decrease in net loss in 2020 was driven primarily by a decline in loss on sale of assets of $2.2 million combined with lower operating expenses of $0.1 million, partially offset by lower gross margin of ($0.2) million and lower finance and other income of ($0.2) million.

As noted above, net loss from discontinued operations in 2019 was negatively impacted by a loss on sale of assets of ($2.0) million related to an additional impairment charge arising from the divestiture of our Power Manager assets in October 2018 after adjusting the estimated amount of variable consideration from $2.0 million to nil. During October 2019, the estimated amount of variable consideration was confirmed as nil as the buyer failed to meet the

minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to us.

Cash provided by (used in) operating activities

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Cash provided by (used in) operating activities	**$ (42,933)**	$ (14,230)	$ (28,703)	(202%)

Cash used in operating activities in 2020 was ($42.9) million, consisting of cash operating losses of ($25.8) million and net working capital outflows of ($17.1) million. Cash used in operating activities in 2019 was ($14.2) million, consisting of cash operating losses of ($14.1) million and net working capital outflows of ($0.1) million. The ($28.7) million increase in cash used in operating activities in 2020, as compared to 2019, was driven by relative increase in cash operating losses of ($11.7) million combined with the relative increase in working capital requirements of ($17.0) million.

The relative ($11.7) million increase in cash operating losses in 2020 was negatively impacted by the increase in Adjusted EBITDA loss of ($12.3) million. This net (loss) increase in 2020 was also impacted by several items included in Adjusted EBITDA loss but excluded from cash operating losses including: higher equity investment losses in joint venture and associates of $1.5 million, higher finance and other income of $1.6 million, and lower impairment losses on trade receivables of ($1.5) million.

The total change in working capital of ($17.1) million in 2020 was driven by lower deferred revenue of ($10.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period, by lower accounts payable and accrued liabilities of ($4.2) million as a result of the timing of payments for inventory purchases and annual compensation awards, by higher accounts and contract receivables of ($2.1) million primarily as a result of the timing of revenues and the related customer collections, by higher prepaid expenses of ($1.0) million, and by lower accrued warranty obligations of ($0.9) million primarily on Heavy-Duty Motive product shipments. These working capital outflows were partially offset by lower inventory of $1.4 million.

This compares to a total change in working capital of ($0.1) million in 2019 which was driven by higher accounts and contract receivables of ($14.5) million primarily as a result of the timing of revenue recognition and the related customer collections, by higher inventory of ($0.8) million primarily to support expected Heavy-Duty Motive shipments in the first quarter of 2020, and by higher prepaid expenses of ($0.8) million as we made supplier payment deposits primarily on certain inventory purchases. These 2019 outflows were partially offset by higher accounts payable and accrued liabilities of $11.1 million primarily as a result of the timing of supplier payments and annual compensation awards, by higher deferred revenue of $3.5 million as we collected net pre-payments on certain Heavy-Duty Motive and Technology Solutions contracts in advance of work performed, and by higher accrued warranty obligations of $1.4 million primarily on Heavy-Duty Motive product shipments.

5.4 Operating Expenses and Other Items – Three Months and Year ended December 31, 2020

Research and product development expenses

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
Research and product development	**2020**	2019	$ Change	% Change
Research and product development expense	**$ 11,759**	$ 8,922	$ 2,836	32%
Less: Depreciation and amortization expense	**$ (765)**	$ (1,226)	$ 461	38%
Less: Stock-based compensation expense	**$ (1,423)**	$ (379)	$ (1,044)	(275%)
Research and Product Development (cash operating cost)	**$ 9,571**	$ 7,317	$ 2,254	31%

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
Research and product development	**2020**	2019	$ Change	% Change
Research and product development expense	**$ 35,519**	$ 25,259	$ 10,260	41%
Less: Depreciation and amortization expense	**$ (3,211)**	$ (3,339)	$ 128	4%
Less: Stock-based compensation expense	**$ (3,327)**	$ (1,372)	$ (1,955)	(142%)
Research and Product Development (cash operating cost)	**$ 28,981**	$ 20,548	$ 8,433	41%

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

Research and product development expenses for the three months ended December 31, 2020 were $11.8 million, an increase of $2.8 million, or 32%, compared to the corresponding period of 2019. Excluding depreciation and amortization expense of ($0.8) million and ($1.2) million, respectively, in each of the periods, and excluding stock-based compensation expense of ($1.4) million and ($0.3) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $9.6 million in the fourth quarter of 2020, an increase of $2.3 million, or 31%, compared to the fourth quarter of 2019.

Research and product development expenses for the year ended December 31, 2020 were $35.5 million, an increase of $10.3 million, or 41%, compared to the corresponding period of 2019. Excluding depreciation and amortization expense of ($3.2) million and ($3.3) million, respectively, in each of the periods, and excluding stock-based compensation expense of ($3.3) million and ($1.4) million, respectively, in each of the periods, research and product development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $29.0 million in 2020, an increase of $8.4 million, or 41%, compared to 2019.

The respective $2.3 million, or 31%, and $8.4 million, or 41%, increases in research and development cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter and fiscal 2020, as compared to the fourth quarter and fiscal 2019, was driven primarily by increased expenditure on technology and product development activities in Canada and Denmark related to the design and development of our next generation fuel cell stacks and modules for bus, truck, rail and marine applications, and the ongoing improvement of our existing fuel cell products, including activities related to product cost reduction. These cost increases were partially offset by increased government funding recoveries, and by lower labour costs in Canada in 2020 as a result of an approximate

(1%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

While we have significantly increased our gross investment and expenditure on research and product development activities in Canada and Denmark related to our next generation fuel cell products including the launch of our FCgen®-HPS High-Power Density Fuel Cell Stack for light-medium-and heavy-duty vehicles, the launch of our FCwave™ Fuel Cell Module for marine applications, and on the ongoing improvement of all of our fuel cell products including our high performance fuel cell module, the FCmove™-HD, and our high performance liquid-cooled fuel cell stack, the FCgen®-LCS, a portion of this gross investment has been reallocated from research and product development expense to cost of goods sold for work performed on revenue producing Technology Solutions projects.

Government funding recoveries were higher in 2020, as compared to 2019, and are attributable primarily to government funding recoveries earned in Denmark by Ballard Power Systems Europe A/S for work performed a variety of European programs including the development of the FCwave™ Fuel Cell Module for marine applications, and in Canada as a result of qualifying for certain COVID-19 government recoveries in the fourth quarter of 2020. Government funding recoveries are reflected primarily as a cost offset against gross research and product development expenses.

Depreciation and amortization expense included in research and product development expense for the three months and year ended December 31, 2020 was $0.8 million and $3.2 million, respectively, compared to $1.2 million and $3.3 million, respectively, for the corresponding periods of 2019. Depreciation and amortization expense relate primarily to amortization expense on our intangible assets and depreciation expense on our research and product development facilities and equipment.

Stock-based compensation expense included in research and product development expense for the three months and year ended December 31, 2020 was $1.4 million and $3.3 million, compared to $0.4 million and $1.4 million, respectively, for the corresponding periods of 2019. The increase in 2020 is due primarily to new equity awards granted in 2020 to a wider employee base to help retain key personnel.

General and administrative expenses

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
General and administrative	**2020**	2019	$ Change	% Change
General and administrative expense	**$ 4,972**	$ 3,812	$ 1,160	30%
Less: Depreciation and amortization expense	**$ (281)**	$ (284)	$ 3	1%
Less: Stock-based compensation expense	**$ (561)**	$ (434)	$ (127)	(29%)
Add: Impact of unrealized gains (losses) on foreign exchange contracts	**$ 324**	$ 234	$ 90	39%
General and Administrative (cash operating cost)	**$ 4,454**	$ 3,328	$ 1,126	34%

(Expressed in thousands of U.S. dollars) **General and administrative**		**2020**		Year ended December 31, 2019		$ Change	% Change
General and administrative expense	**$**	**16,234**	$	12,868	$	3,366	26%
Less: Depreciation and amortization expense	**$**	**(1,120)**	$	(1,137)	$	17	1%
Less: Stock-based compensation expense	**$**	**(1,807)**	$	(1,437)	$	(370)	(26%)
Add: Impact of unrealized gains (losses) on foreign exchange contracts	**$**	**259**	$	805	$	(546)	(68%)
General and Administrative (cash operating cost)	**$**	**13,566**	$	11,099	$	2,467	22%

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

General and administrative expenses for the three months ended December 31, 2020 were $5.0 million, an increase of $1.2 million, or 30%, compared to the corresponding period of 2019. Excluding depreciation and amortization expense of ($0.3) million in each of the periods, excluding stock-based compensation expense of ($0.6) million and ($0.4) million, respectively, in each of the periods, and excluding the impact of unrealized gains (losses) on foreign exchange contracts of $0.3 and $0.2 million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $4.5 million in the fourth quarter of 2020, an increase of $1.1 million, or 34%, compared to the fourth quarter of 2019.

General and administrative expenses for the year ended December 31, 2020 were $16.2 million, an increase of $3.4 million, or 26%, compared to the corresponding period of 2019. Excluding depreciation and amortization expense of ($1.1) million in each of the periods, excluding stock-based compensation expense of ($1.8) million and ($1.4) million, respectively, in each of the periods, and excluding the impact of unrealized gains (losses) on foreign exchange contracts of $0.3 and $0.8 million, respectively, in each of the periods, general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $13.6 million in 2020, an increase of $2.5 million, or 22%, compared to 2019.

The respective $1.1 million, or 34%, and $2.5 million, or 22%, increases in general and administrative cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in the fourth quarter and fiscal 2020, as compared to the fourth quarter and fiscal 2019, was due primarily to incurred COVID-19 administration costs and by higher contract administration, legal and professional fees. These cost increases were partially offset by lower labour costs in Canada in 2020 as a result of an approximate (1%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

Depreciation and amortization expense included in general and administrative expense for the *three months and year ended December 31, 2020* was $0.3 million and $1.1 million, consistent with the corresponding periods of 2019. Depreciation and amortization expense relate primarily to our office and information technology intangible assets including our ongoing investment in our ERP system.

Stock-based compensation expense included in general and administrative expense for the three months and year ended December 31, 2020 was $0.6 million and $1.8 million, respectively, compared to $0.4 million and $1.4 million, respectively, for the corresponding

periods of 2019. The increase in 2020 is due primarily to new equity awards granted in 2020 to a wider employee base to help retain key personnel.

The impact of unrealized gains (losses) on foreign exchange contracts included in general and administrative expense for the three months and year ended December 31, 2020 was $0.3 million in each of the periods, compared to $0.2 million and $0.8 million, respectively, for the corresponding periods of 2019. We use forward foreign exchange contracts to help manage our exposure to currency rate fluctuations. We record these contracts at their fair value as of the balance sheet date as either assets or liabilities with any changes in fair value in the period recorded in profit or loss (general and administrative expense) as these contracts are not designated or qualified under hedge accounting criteria. At December 31, 2020, we had outstanding foreign exchange currency contracts to purchase a total of Canadian $16.75 million at an average rate of 1.3237 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian $0.6 million at December 31, 2020.

Sales and marketing expenses

(Expressed in thousands of U.S. dollars)	Three months ended December,			
Sales and marketing	**2020**	2019	$ Change	% Change
Sales and marketing expense	**$ 2,742**	$ 2,604	$ 138	5%
Less: Depreciation and amortization expense	**$ (14)**	$ (8)	$ (6)	(75%)
Less: Stock-based compensation expense	**$ (363)**	$ (157)	$ (206)	(131%)
Sales and Marketing (cash operating cost)	**$ 2,365**	$ 2,439	$ (74)	(3%)

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
Sales and marketing	**2020**	2019	$ Change	% Change
Sales and marketing expense	**$ 8,616**	$ 7,769	$ 847	11%
Less: Depreciation and amortization expense	**$ (40)**	$ (33)	$ (7)	(21%)
Less: Stock-based compensation expense	**$ (1,094)**	$ (582)	$ (512)	(88%)
Sales and Marketing (cash operating cost)	**$ 7,482**	$ 7,154	$ 328	5%

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

Sales and marketing expenses for the three months ended December 31, 2020 were $2.7 million, an increase of $0.1 million, or 5%, compared to the corresponding period of 2019. Excluding stock-based compensation expense of ($0.4) million and ($0.2) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $2.4 million in the fourth quarter of 2020, a decrease of ($0.1) million, or (3%), compared to the fourth quarter of 2019.

Sales and marketing expenses for the year ended December 31, 2020 were $8.6 million, an increase of $0.8 million, or 11%, compared to the corresponding period of 2019. Excluding stock-based compensation expense of (1.1) million and ($0.6) million, respectively, in each of the periods, sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) were $7.5 million in 2020, an increase of $0.3 million, or 5%, compared to 2019.

The $0.3 million, or 5%, increase in sales and marketing cash operating costs (see Supplemental Non-GAAP Measures and Reconciliations) in 2020, as compared to 2019, was driven primarily by an increase in sales and marketing labour costs in Canada and Europe. These cost increases were partially offset by reduced travel expenditures and by lower labour

costs in Canada as a result of an approximate (1%) lower Canadian dollar, relative to the U.S. dollar, and the resulting positive impact on our Canadian operating cost base.

Stock-based compensation expense included in sales and marketing expense for the three months and year ended December 31, 2020 was $0.4 million and $1.1 million, respectively, compared to $0.2 million and $0.6 million, respectively, for the corresponding periods of 2019. The increase in 2020 is due primarily to new equity awards granted in 2020 to a wider employee base to help retain key personnel.

Other expense for the three months and year ended December 31, 2020 was $0.1 million and $0.4 million, respectively, compared to $0.2 million and $1.9 million, respectively, for the corresponding periods of 2019. The following table provides a breakdown of other expense for the reported periods:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Impairment loss (recovery) on trade receivables	**$ 60**	$ 251	$ (191)	(76%)
Restructuring expense (recovery)	**26**	(3)	29	967%
Acquisition charges	**-**	-	-	-
Other expenses (recovery)	**$ 86**	$ 248	$ (162)	(65%)

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Impairment loss (recovery) on trade receivables	**$ 310**	$ 1,787	$ (1,477)	(83%)
Restructuring expense	**66**	101	(35)	(35%)
Acquisition charges	**-**	-	-	-
Other expenses (recovery)	**$ 376**	$ 1,888	$ (1,512)	(80%)

Net impairment loss (recovery) on trade receivables for the year ended December 31, 2020 was $0.3 million and is due primarily to an increase in the expected credit loss ("ECL") on our financial assets measured at amortized cost which consist primarily of trade receivables and contract assets. ECLs are a probability-weighted estimate of credit losses. 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.

Net impairment loss (recovery) on trade receivables for the year ended December 31, 2019 was $1.8 million and is due primarily to an increase in ECLs of $0.3 million and $1.5 million for amounts owed to us for product shipments sold to a former company named WrightBus that were no longer expected to be collected when WrightBus entered administration under U.K. insolvency laws in September 2019 due to an inability to pay its debts. After having gone into administration in 2019, the assets of Wrightbus Limited were acquired by Bamford Bus Company, which carries on business under the name Wrightbus. In the event that we are able to recover on an impaired trade receivable through legal or other means, the recovered amount is recognized in the period of recovery as a reversal of the impairment loss.

Finance income (loss) and other for the three months and year ended December 31, 2020 was $4.1 million and $4.3 million, respectively, compared to $0.6 million and $2.7 million for the corresponding periods of 2019. The following table provides a breakdown of

finance and other income (loss) for the reported periods:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,			
	2020	2019	$ Change	% Change
Employee future benefit plan expense	**$ 4**	$ (40)	$ 44	110%
Pension administration expense	**(9)**	(107)	98	92%
Investment and other income (loss)	**339**	598	(259)	(43%)
Foreign exchange gain (loss)	**5,303**	124	5,179	4,177%
Government levies	**(1,500)**	-	(1,500)	(100%)
Finance income (loss) and other	**$ 4,137**	$ 575	$ 3,562	619%

(Expressed in thousands of U.S. dollars)	Year ended December 31,			
	2020	2019	$ Change	% Change
Employee future benefit plan expense	**$ (164)**	$ (208)	$ 44	21%
Pension administration expense	**(110)**	(120)	10	8%
Investment and other income (loss)	**1,181**	3,411	(2,230)	(65%)
Foreign exchange gain (loss)	**4,875**	(420)	5,295	1,260%
Government levies	**(1,500)**	-	(1,500)	(100%)
Finance income (loss) and other	**$ 4,282**	$ 2,663	$ 1,619	61%

Employee future benefit plan expense for the years ended December 31, 2020 and 2019 were ($0.2) million in each of the periods and primarily represent the excess of expected interest cost on plan obligations in excess of the expected return on plan assets related to a curtailed defined benefit pension plan for certain former United States employees. Pension administration expense for the years ended December 31, 2020 and 2019 were ($0.1) million in each of the periods and represent administrative costs incurred in managing the plan.

Investment and other income for the three months and year ended December 31, 2020 were $0.3 million and $1.2 million, respectively, compared to $0.6 million and $3.6 million, respectively, for the corresponding periods of 2019. Amounts were earned primarily on our cash and cash equivalents and have changed relatively proportionately with the change in our overall average monthly cash balances with the decline primarily due to the significant decrease in cash deposit interest rates.

Foreign exchange gains (losses) for the three months and year ended December 31, 2020 were $5.3 million and $4.9 million, respectively, compared to $0.1 million and ($0.4) million, respectively, for the corresponding periods of 2019. Foreign exchange gains and losses are attributable primarily to the effect of the changes in the value of the Canadian dollar, relative to the U.S. dollar, on our Canadian dollar-denominated net monetary position. Foreign exchange gains and losses impacted by the conversion of Ballard Power Systems Europe A/S' assets and liabilities from the Danish Kroner to the U.S. dollar at exchange rates in effect at each reporting date are recorded in other comprehensive income (loss).

Government levies for the three months and year ended December 31, 2020 was ($1.5) million in each of the periods, compared to nominal amounts for the corresponding periods of 2019. Government levies relate primarily to withholding taxes deducted from proceeds earned on certain commercial contracts.

Finance expense for the three months and year ended December 31, 2020 was ($0.3) million and ($1.3) million, respectively, and relatively consistent with the corresponding periods of 2019. Finance expense represents the interest expense incurred on all of our right-of-use assets with a lease term of greater than 12-months, including our head office building, manufacturing facility, and related storage facilities in Burnaby, British Columbia, as well as similar right-of-use assets in all of our subsidiaries.

Equity in income (loss) of investment in joint venture and associates for the three months and year ended December 31, 2020 was ($4.3) million and ($12.6) million respectively, compared to ($3.0) million and ($11.1) million, respectively, for the corresponding periods of 2019. Equity in loss of investment in joint venture and associates relates to the pickup of 49% of the net income (loss) of Weichai Ballard JV as a result of our 49% ownership position, and 10% of the net income (loss) of Synergy Ballard JVCo as a result of our 10% ownership position. Both investments in China are accounted for using the equity method of accounting.

The loss of investment in joint venture and associates in 2020 and 2019 is primarily as a result of research and product development expenses in the periods consisting primarily of amounts expended on the ongoing $90 million technology transfer agreement with Ballard as Weichai Ballard JV continue to establish operations. Weichai Ballard JV will manufacture Ballard's next-generation LCS fuel cell stack and LCS-based power modules for bus, commercial truck, and forklift applications with exclusive rights in China.

5.5 Summary of Quarterly Results

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

(Expressed in thousands of U.S. dollars, except per share amounts and weighted average shares outstanding which are expressed in thousands)	Quarter ended,			
	Dec 31, 2020	Sep 30, 2020	Jun 30, 2020	Mar 31, 2020
Revenues	$ 28,589	$ 25,624	$ 25,783	$ 23,882
Net loss from continuing operations	$ (14,408)	$ (11,212)	$ (10,745)	$ (13,103)
Net loss from continuing operations per share, basic and diluted	$ (0.05)	$ (0.05)	$ (0.05)	$ (0.06)
Weighted average common shares outstanding	268,735	246,059	235,765	235,330
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019
Revenues	$ 41,757	$ 24,679	$ 23,419	$ 15,869
Net loss from continuing operations	$ (9,795)	$ (9,307)	$ (6,600)	$ (9,589)
Net loss from continuing operations per share, basic and diluted	$ (0.04)	$ (0.04)	$ (0.03)	$ (0.04)
Weighted average common shares outstanding	233,969	232,810	243,469	232,012

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

- **Revenues**: Variations in fuel cell product and service revenues reflect the demand and timing of our customers' fuel cell vehicle, bus, and fuel cell product deployments as well as the demand and timing of their engineering services projects. Variations in fuel cell

product and service revenues also reflect the timing of work performed and the achievements of milestones under long-term fixed price contracts.

- **Operating expenditures**: Operating expenses were negatively impacted in the third quarter of 2019 by net impairment losses on trade receivables of ($1.5) million for amounts owed to us for product shipments sold to the former WrightBus that were uncollectable. Operating expenses also include the impact of changes in the value of the Canadian dollar, versus the U.S. dollar, on our Canadian dollar denominated expenditures.
- **Net loss:** Net loss in the third quarter of 2019 was impacted by the above noted impact on Operating expenditures in the third quarter of 2019.

6. CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

6.1 Summary of Cash Flows

Cash and cash equivalents were $763.4 million at December 31, 2020, compared to $147.8 million at December 31, 2019. The $615.6 million increase in cash and cash equivalents in 2020 was driven by net proceeds of $694.6 million received from the sale of Common Shares under the $402 million Offering, the $75 million ATM Program, and the $250 million ATM Program, and by share purchase option exercises of $4.4 million. These 2020 cash inflows were partially offset by net cash operating losses (excluding non-cash items) of ($25.8) million, net working capital outflows of ($17.1) million, equity investments in Weichai Ballard JV of ($22.5) million, purchases of property, plant and equipment of ($12.6) million, and by finance lease repayments of ($2.5) million.

6.2 Cash Provided by (Used by) Operating Activities

For the three months ended December 31, 2020, cash used in operating activities was ($6.7) million, consisting of cash operating losses of ($6.7) million and nominal net working capital inflows. For the three months ended December 31, 2019, cash provided by operating activities was $4.1 million, consisting of cash operating losses of ($3.9) million and net working capital inflows of $8.0 million. The ($10.8) million increase in cash used in operating activities in the fourth quarter of 2020, as compared to the fourth quarter of 2019, was driven by the relative increase in cash operating losses of ($2.8) million, combined with the relative increase in working capital requirements of ($8.0) million.

The relative ($2.8) million increase in cash operating losses in the fourth quarter of 2020 was negatively impacted by the increase in Adjusted EBITDA loss of ($7.4) million. This net (loss) increase in the fourth quarter of 2020 was also impacted by several items included in Adjusted EBITDA loss but excluded from cash operating losses including: higher equity investment losses in joint venture and associates of $1.4 million, and higher finance and other income of $3.6 million.

The nominal total change in working capital in the fourth quarter of 2020 was driven by higher accounts and contract receivables of ($10.5) million primarily as a result of the timing of revenues and the related customer collections, lower deferred revenue of ($1.6) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period, by lower accrued warranty obligations of ($1.2) million primarily on Heavy-Duty Motive product shipments, and by higher prepaid expenses of ($1.1) million. These fourth quarter of 2020 outflows were partially offset

by lower inventory of $7.7 million as we shipped against expected Heavy-Duty Motive shipments in the last quarter of 2020, and by higher accounts payable and accrued liabilities of $6.6 million primarily as a result of the timing of supplier payments and annual compensation awards.

This compares to a total change in working capital of $8.0 million in the fourth quarter of 2019 which was driven primarily by higher accounts payable and accrued liabilities of $7.4 million primarily as a result of the timing of supplier payments and annual compensation awards, by lower inventory of $5.9 million as we delivered expected Heavy-Duty Motive shipments to customers in the fourth quarter of 2019, and by lower prepaid expenses of $1.5 million. These fourth quarter of 2019 inflows were partially offset by higher accounts and contract receivables of ($4.0) million primarily as a result of the timing of revenue recognition and the related customer collections, and by lower deferred revenue of ($3.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period.

For the year ended December 31, 2020, cash used in operating activities was ($42.9) million, consisting of cash operating losses of ($25.8) million and net working capital outflows of ($17.1) million. For the year ended December 31, 2019, cash used in operating activities was ($14.2) million, consisting of cash operating losses of ($14.1) million and net working capital outflows of ($0.1) million. The ($28.7) million increase in cash used in operating activities in 2020, as compared to 2019, was driven by relative increase in cash operating losses of ($11.7) million combined with the relative increase in working capital requirements of ($17.0) million.

The relative ($11.7) million increase in cash operating losses in 2020 was negatively impacted by the increase in Adjusted EBITDA loss of ($12.3) million. This net (loss) increase in 2020 was also impacted by several items included in Adjusted EBITDA loss but excluded from cash operating losses including: higher equity investment losses in joint venture and associates of $1.5 million, higher finance and other income of $1.6 million, and lower impairment losses on trade receivables of ($1.5) million.

The total change in working capital of ($17.1) million in 2020 was driven by lower deferred revenue of ($10.3) million as we fulfilled contract deliverables on certain Heavy-Duty Motive and Technology Solutions contracts for which we received pre-payments in an earlier period, by lower accounts payable and accrued liabilities of ($4.2) million as a result of the timing of payments for inventory purchases and annual compensation awards, by higher accounts and contract receivables of ($2.1) million primarily as a result of the timing of revenues and the related customer collections, by higher prepaid expenses of ($1.0) million, and by lower accrued warranty obligations of ($0.9) million primarily on Heavy-Duty Motive product shipments. These working capital outflows were partially offset by lower inventory of $1.4 million.

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

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

6.3 Cash Provided by (Used by) Investing Activities

Investing activities resulted in net cash outflows of ($7.8) million and ($36.4) million, respectively, for the three months and year ended December 31, 2020, compared to net cash outflows of ($11.6) million and ($32.7) million, respectively, for the corresponding periods of 2019.

Investing activities in the fourth quarter of 2020 of ($7.8) million consist primarily of investments in associated companies of ($3.0) million paid as planned for the seventh equity contribution in our 49% investment in Weichai Ballard JV, and by capital expenditures of ($3.5) million incurred primarily for production and test equipment. Investing activities in the fourth quarter of 2019 of ($11.6) million consist primarily of investments in associated companies of ($6.4) million paid as planned for our required equity contribution in our 49% investment in Weichai Ballard JV, and by capital expenditures of ($5.1) million incurred primarily for production and test equipment.

Investing activities in 2020 of ($36.4) million consist primarily of investments in associated companies of ($22.5) million paid as planned for the fourth, fifth, sixth and seventh equity contributions in our 49% investment in Weichai Ballard JV, and by capital expenditures of ($12.6) million incurred primarily for production and test equipment. Investing activities in 2019 of ($32.7) million consist primarily of investments in associated companies of ($20.9) million paid as planned for our required equity contributions in our 49% investment in Weichai Ballard JV, by capital expenditures of ($13.9) million incurred primarily for production and test equipment, partially offset by net proceeds received on sale of assets of $2.1 million from the repayment of the promissory note from Revision in the third quarter of 2019 owing as a result of the divestiture of our Power Manager assets on October 5, 2018.

6.4 Cash Provided by (Used by) Financing Activities

Financing activities resulted in net cash inflows of $418.0 million and $696.5 million, respectively, for the three months and year ended December 31, 2020, compared to net cash inflows of $1.8 million and $2.6 million, respectively, for the corresponding periods of 2019.

Financing activities in the fourth quarter of 2020 consist of net proceeds from the sale of Common Shares of $418.3 million consisting of net proceeds of $385.8 million from the $402 million Offering and the residual net proceeds of $32.5 million from the $250 million ATM Program, proceeds from the exercise of share purchase options of $0.5 million, partially offset by finance lease payments of ($0.7) million. Financing activities in the fourth quarter of 2019 of $1.8 million consist of proceeds from the exercise of share purchase options of $2.4 million, partially offset by finance lease payments of ($0.6) million.

Financing activities in 2020 of $696.5 million consist of net proceeds from the sale of Common Shares of $694.6 million consisting of net proceeds of $385.8 million from the $402 million Offering (gross proceeds of $402.5 million), net proceeds of $244.1 million from the $250

million ATM Program (gross proceeds of $250.0 million), and net proceeds of $64.7 million from the $75 million ATM Program (gross proceeds of $66.7 million). These 2020 financing proceeds were augmented by proceeds from the exercise of share purchase options of $4.4 million which were partially offset by finance lease payments of ($2.5) million. Financing activities in 2019 of $2.6 million consist of proceeds from the exercise of share purchase options of $4.6 million, partially offset by finance lease payments of ($2.1) million.

6.5 Liquidity and Capital Resources

At December 31, 2020, we had total liquidity of $765.4 million. We measure liquidity as our net cash position, consisting of the sum of our cash, cash equivalents and short-term investments of $765.4 million, as we have no debt.

We do have a Letter of Guarantee Facility ("the LG Facility") enabling our bank to issue letters of guarantees, standby letters of credit, performance bonds, counter guarantees, counter standby letter of credit or similar credits on our behalf to from time to time up to a maximum of $2.0 million. As of December 31, 2020, nothing was outstanding on the LG Facility. We also have a Foreign Exchange Facility (the "FX Facility") enabling us to enter into foreign exchange currency contracts to a maximum face value of $23.7 million (approximately Canadian $30 million) secured by a guarantee from Export Development Canada. At December 31, 2020, we had outstanding foreign exchange currency contracts to purchase a total of Canadian $16.75 million under the FX Facility.

Our liquidity objective is to maintain cash balances sufficient to fund at least six quarters of forecasted cash used by operating activities and expected joint venture capital contributions at all times. Our strategy to attain this objective is to continue our drive to attain profitable operations that are sustainable by executing a business plan that continues to focus on Fuel Cell Products and Services revenue growth, improving overall gross margins, maintaining discipline over Cash Operating Costs, managing working capital requirements, and securing additional financing to fund our operations as needed until we do achieve profitable operations that are sustainable. We believe that we currently have adequate liquidity in cash and working capital to achieve our liquidity objective.

Failure to achieve or maintain this liquidity objective could have a material adverse effect on our financial condition and results of operations including our ability to continue as a going concern. There are also various risks and uncertainties affecting our ability to achieve this liquidity objective including, but not limited to, the market acceptance and rate of commercialization of our products, the ability to successfully execute our business plan, and general global economic conditions, certain of which are beyond our control. While we continue to make significant investments in product development and market development activities necessary to commercialize our products, make increased investments in working capital as we grow our business, and make ongoing capital contributions in support of our investment in Weichai Ballard JV, our actual liquidity requirements will also vary and will be impacted by future acquisitions and strategic partnerships and investments, our relationships with our lead customers and strategic partners including their ability to successfully finance and fund their operations and programs and agreements with us, our success in developing new channels to market and relationships with customers, our success in generating revenue growth from near-term product, service and licensing opportunities, our success in managing our operating expense and working capital requirements, foreign exchange fluctuations, and

the progress and results of our research, development and demonstration programs.

We may also choose to pursue additional liquidity through the issuance of debt or equity in private or public market financings. To enable the timely issuance of equity securities in the public market, we renewed our Base Shelf Prospectus on file with the securities regulators in Canada in June 2020. The Base Shelf Prospectus, which is effective for 25-months ending in July 2022, was filed in each of the provinces and territories of Canada, and a corresponding shelf registration statement on Form F-10 was also filed with the United States Securities and Exchange Commission ("SEC"). These filings initially enabled offerings of securities up to an aggregate initial offering price of $750 million, which amount has been reduced by $250 million for Common Shares issued under the completed $250 million ATM Program and by $402.5 million for Common Shares issued under the $402 million Offering.

Pursuant to an investor rights agreement entered into between Ballard and Weichai, Weichai has certain anti-dilution rights to maintain its current level of ownership in the Company, and will be entitled to exercise its anti-dilution rights in connection with any Offered Shares issued in the $550 million Offering, The Company is not aware of Weichai's intention with respect to the $550 million Offering. Weichai's anti-dilution rights to maintain its current level of ownership in the Company with respect to the $402 million Offering, the $250 million ATM Program, and the $75 million ATM Program have expired unexercised.

No assurance can be given that any such additional liquidity will be available or that, if available, it can be obtained on terms favorable to the Company. If any securities are offered under the Base Shelf Prospectus, the terms of any such securities and the intended use of the net proceeds resulting from such offering would be established at the time of any offering and would be described in a Prospectus Supplement filed with applicable Canadian securities regulators and/or the SEC, respectively, at the time of such an offering.

7. USE OF PROCEEDS

7.1 Reconciliation of Use of Proceeds from Previous Financings

The net proceeds from the $402 million Offering were intended to be used to further strengthen the Company's financial position, thereby providing additional flexibility to fund growth strategies, including through activities such as product innovation, investments in production capacity expansion and localization, future acquisitions and strategic partnerships and investments. The net proceeds from each of the $250 million ATM Program and the $75 million ATM Program were intended to be used for general corporate purposes. Pending their use, the Company disclosed its intention to invest the net proceeds from the $402 million Offering in short-term, investment grade, interest bearing instruments or hold them as cash. As of December 31, 2020, the aggregate net proceeds of approximately $694 million from the $402 million Offering, the $250 million ATM Program, and the $75 million ATM Program were held in interest bearing cash accounts.

8. OTHER FINANCIAL MATTERS

8.1 Off-Balance Sheet Arrangements and Contractual Obligations

Periodically, we use forward foreign exchange contracts to manage our exposure to currency rate fluctuations. We record these contracts at their fair value as either assets or liabilities on our balance sheet. Any changes in fair value are either (i) recorded in other comprehensive

income if formally designated and qualified under hedge accounting criteria; or (ii) recorded in profit or loss (general and administrative expense) if either not designated, or not qualified, under hedge accounting criteria. At December 31, 2020, we had outstanding foreign exchange currency contracts to purchase a total of Canadian $16.75 million at an average rate of 1.3237 Canadian per U.S. dollar, resulting in an unrealized gain of Canadian $0.6 million at December 31, 2020. The outstanding foreign exchange currency contracts have not been designated under hedge accounting.

At December 31, 2020, we did not have any other material obligations under guarantee contracts, retained or contingent interests in transferred assets, outstanding derivative instruments, or non-consolidated variable interests.

At December 31, 2020, we had the following contractual obligations and commercial commitments (including capital contribution commitments to Weichai Ballard JV) calculated on a non-discounted basis with the exception of Finance leases:

(Expressed in thousands of U.S. dollars) **Contractual Obligations**		**Total**	Payments due by period, Less than one year	1-3 years	4-5 years	After 5 years
Finance leases	**$**	**21,791**	$ 3,825	$ 7,588	$ 6,265	$ 4,113
Asset retirement obligations		**1,952**	-	-	1,952	-
Capital contributions to Weichai Ballard JV		**21,742**	12,183	9,559	-	-
Total contractual obligations	**$**	**45,485**	$ 16,008	$ 17,147	$ 8,217	$ 4,113

In addition, we have outstanding commitments of $7.5 million at December 31, 2020 related primarily to purchases of property, plant, and equipment. Capital expenditures and expenditures on other intangible assets pertain to our regular operations and are expected to be funded through cash on hand.

In connection with the acquisition of intellectual property from UTC in 2014, we have a royalty obligation in certain circumstances to pay UTC a portion of any future intellectual property sale and licensing income generated from certain of our intellectual property portfolio for a period of 15-years expiring in April 2029. No royalties were paid to UTC in the years ended December 31, 2020, 2019 and 2018.

As of December 31, 2020, we retain a previous funding obligation to pay royalties of 2% of revenues (to a maximum of Canadian $5.4 million) on sales of certain fuel cell products for commercial distributed utility applications. No royalties have been incurred to date as a result of this agreement.

We also retain a previous funding obligation to pay royalties of 2% of revenues (to a maximum of Canadian $2.2 million) on sales of certain fuel cell products for commercial transit applications. No royalties have been incurred to date as a result of this agreement.

In the ordinary course of business or as required by certain acquisition or disposition agreements, we are periodically required to provide certain indemnities to other parties. At December 31, 2020, we have not accrued any significant amount owing, or receivable, as a result of any indemnity agreements undertaken in the ordinary course of business.

8.2 Related Party Transactions

Related parties include our 49% owned equity accounted investee, Weichai Ballard JV, and our 10% owned equity accounted investee, Synergy Ballard JVCo, Transactions between us and our subsidiaries are eliminated on consolidation. For the three months and year ended December 31, 2020 and 2019, related party transactions and balances with Weichai Ballard JV and Synergy Ballard JVCo total as follows:

(Expressed in thousands of U.S. dollars)	Three Months Ended December 31,	
Transactions with related parties	**2020**	2019
Revenues	**$ 14,010**	$ 25,372
Cost of goods sold and operating expense	**$ -**	$ -

(Expressed in thousands of U.S. dollars)	Year Ended December 31,	
Transactions with related parties	**2020**	2019
Revenues	**$ 53,087**	$ 45,863
Cost of goods sold and operating expense	**$ -**	$ -

(Expressed in thousands of U.S. dollars)	As at Dec 31,	As at Dec 31,
Balances with related parties	**2020**	2019
Accounts receivable	**$ 17,564**	$ 10,122
Investments	**$ 27,561**	$ 21,642
Deferred revenue	**$ (5,016)**	$ (11,903)

We also provide key management personnel, being board directors and executive officers, certain benefits, in addition to their salaries. Key management personnel also participate in the Company's share-based compensation plans. Key management personnel compensation is summarized in note 27 to our annual consolidated financial statements for the year ended December 31, 2020.

8.3 Outstanding Share and Equity Information

As at March 10, 2021	
Common share outstanding	297,092,518
Options outstanding	4,026,687
DSU's outstanding	720,270
RSU's / PSU's outstanding (subject to vesting and performance criteria)	1,129,946

9. ACCOUNTING MATTERS

9.1 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.

9.2 Critical Judgments in Applying Accounting Policies

Critical judgments that we have made in the process of applying our accounting policies and that have the most significant effect on the amounts recognized in the consolidated financial statements is limited to our assessment of our ability to continue as a going concern (See Note 2 (e) to our consolidated financial statements).

Our significant accounting policies are detailed in note 4 to our annual consolidated financial statements for the year ended December 31, 2020 except as described below. These changes in accounting policies were reflected in the Company's consolidated financial statements as at and for the year ending December 31, 2020.

Effective January 1, 2020, we have adopted *Amendments to References to the Conceptual Framework in IFRS Standards, Definition of a Business (Amendments to IFRS 3) and Definition of Material (Amendments to IAS 1 and IAS 8)*. The effect of initially applying *Amendments to References to the Conceptual Framework in IFRS Standards, Definition of a Business (Amendments to IFRS 3) and Definition of Material (Amendments to IAS 1 and IAS 8)* did not have a material impact on our financial statements. A number of other new standards and interpretations were also effective from January 1, 2020 but they also did not have a material impact on our financial statements. Changes to significant accounting policies are detailed below and in note 4 to our annual consolidated financial statements.

9.3 Key Sources of Estimation Uncertainty

The following are key assumptions concerning the future and other key sources of estimation uncertainty that have a significant risk of resulting in a material adjustment to the reported amount of assets, liabilities, income, and expenses within the next financial year.

REVENUE RECOGNITION

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

Revenue is recognized when a customer obtains control of the goods or services. Determining the timing of the transfer of control, at a point in time or over time, requires judgment.

On standard product sales contracts, revenues are recognized when customers obtain control of the product, that is when transfer of title and risks and rewards of ownership of goods have passed, and when obligation to pay is considered certain. Invoices are generated and revenue is recognized at that point in time. Provisions for warranties are made at the time of sale. Revenue recognition for standard product sales contracts does not usually involve significant estimates.

On standard licensing and technology transfer agreements, revenues are recognized on the transfer of rights to a licensee, when it is determined to be distinct from other performance obligations, and if the customer can direct the use of, and obtain substantially all of the

remaining benefits from the license as it exists at the time of transfer. In other cases, the proceeds are considered to relate to the right to use the asset over the license period and the revenue is recognized over that period. If it is determined that the license is not distinct from other performance obligations, revenue is recognized over time as the customer simultaneously receives and consumes the benefit. Revenue recognition for standard license and sale agreements does not usually involve significant estimates.

On cost-plus reimbursable contracts, revenues are recognized as costs are incurred, and include applicable fees earned as services are provided. Revenue recognition for cost-plus reimbursable contracts does not usually involve significant estimates.

On long-term fixed price contracts, the customer controls all of the work in progress as the services are being provided. This is because under these contracts, the deliverables are made to a customer's specification, and if a contract is terminated by the customer, then the Company is entitled to reimbursement of the costs incurred to date plus the applicable gross margin. Therefore, revenue from these contracts and the associated costs are recognized as the costs are incurred over time. On long-term fixed price contracts, revenues are recognized over time using cumulative costs incurred to date relative to total estimated costs at completion to measure progress towards satisfying performance obligations. Generally, revenue is recognized by multiplying the expected consideration by the ratio of cumulative costs incurred to date to the sum of incurred and estimated costs for completing the performance obligation. The cumulative effect of changes to estimated revenues and estimated costs for completing a contract are recognized in the period in which the revisions are identified. If the estimated costs for completing the contract exceed the expected revenues on a contract, such loss is recognized in its entirety in the period it becomes known. Deferred revenue (i.e. contract liabilities) represents cash received from customers in excess of revenue recognized on uncompleted contracts.

- The determination of expected costs for completing a contract is based on estimates that can be affected by a variety of factors such as variances in the timeline to completion, the cost of materials, the availability and cost of labour, as well as productivity.
- The determination of potential revenues includes the contractually agreed amount and may be adjusted based on the estimate of our attainment on achieving certain defined contractual milestones. Management's estimation is required in determining the amount of consideration for which the Company expects to be entitled and in determining when a performance obligation has been met.

Estimates used to determine revenues and costs of long-term fixed price contracts involve uncertainties that ultimately depend on the outcome of future events and are periodically revised as projects progress. There is a risk that a customer may ultimately disagree with management's assessment of the progress achieved against milestones, or that our estimates of the work required to complete a contract may change.

During the three months and year ended December 31, 2020 and 2019, 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.

As of December 31, 2020, our consolidated goodwill balance of $40.3 million relates solely to our Fuel Cell Products and Services segment. We perform the annual review of goodwill as at December 31 of each year, more often if events or changes in circumstances indicate that it might be impaired. Under IFRS, the annual review of goodwill requires a comparison of the carrying value of the asset to the higher of (i) value in use; and (ii) fair value less costs to sell**.** Value in use is defined as the present value of future cash flows expected to be derived from the asset in its current state. Our fair value less costs to sell test is in effect a modified market capitalization assessment, whereby we calculate the fair value of the Fuel Cell Products and Services segment by first calculating the value of the Company at December 31, 2020

based on the average closing share price in the month of December, add a reasonable estimated control premium to determine the Company's enterprise value on a controlling basis after adjusting for excess cash balances, and then deducting the estimated costs to sell from this enterprise value to arrive at the fair value of the Fuel Cell Products and Services segment. As a result of this assessment, we have determined that the fair value of the Fuel Cell Products and Services segment exceeds its carrying value as of December 31, 2020 indicating that no goodwill impairment charge is required for 2020.

In addition to the above goodwill impairment test, we perform a quarterly assessment of the carrying amounts of our non-financial assets (other than inventories) to determine whether there is any indication of impairment. During the year ended December 31, 2019, we recorded a loss on sale of assets of ($2.0) million related to an additional impairment charge arising from the divestiture of our Power Manager assets in October 2018 after adjusting the estimated amount of variable consideration from $2.0 million to nil. During October 2019, the estimated amount of variable consideration was confirmed as nil as the buyer failed to meet the minimum specific sales objectives in the 12-month earn-out period to trigger any additional proceeds payable to us. As a result of the classification of the UAV business as a discontinued operation as of September 30, 2020, the above noted ($2.0) million loss on sale of assets has been removed from loss from continuing operations and instead included in loss from discontinued operations.

WARRANTY PROVISION

A provision for warranty costs is recorded on product sales at the time of shipment. In establishing the accrued warranty liabilities, we estimate the likelihood that products sold will experience warranty claims and the cost to resolve claims received.

In making such determinations, we use estimates based on the nature of the contract and past and projected experience with the products. Should these estimates prove to be incorrect, we may incur costs different from those provided for in our warranty provisions. During the three months and year ended December 31, 2020, we recorded provisions to accrued warranty liabilities of $0.7 million and $3.1 million, respectively, for new product sales, compared to $1.9 million and $3.9 million, respectively, for the three months and year ended December 31, 2019.

We review our warranty assumptions and make adjustments to accrued warranty liabilities quarterly based on the latest information available and to reflect the expiry of contractual obligations. Adjustments to accrued warranty liabilities are recorded in cost of product and service revenues. As a result of these reviews and the resulting adjustments, our warranty provision and cost of revenues for the three months and year ended December 31, 2020 were adjusted downwards by $1.2 million and $1.4 million, respectively, in each of the periods, compared adjustments downwards of $1.0 million for each of the three months and year ended December 31, 2019.

INVENTORY PROVISION

In determining the lower of cost and net realizable value of our inventory and establishing the appropriate provision for inventory obsolescence, we estimate the likelihood that inventory carrying values will be affected by changes in market pricing or demand for our products and by changes in technology or design which could make inventory on hand

obsolete or recoverable at less than cost. We perform regular reviews to assess the impact of changes in technology and design, sales trends, and other changes on the carrying value of inventory. Where we determine that such changes have occurred and will have a negative impact on the value of inventory on hand, appropriate provisions are made. If there is a subsequent increase in the value of inventory on hand, reversals of previous write-downs to net realizable value are made. Unforeseen changes in these factors could result in additional inventory provisions, or reversals of previous provisions, being required. During the three months and year ended December 31, 2020, net negative inventory adjustments of ($0.4) million and ($1.5) million, respectively, were recorded as a recovery (charge) to cost of product and service revenues, compared to net negative inventory adjustments of ($1.6) million and ($2.4) million, respectively, for the three months and year ended December 31, 2019.

FINANCIAL ASSETS INCLUDING IMPAIRMENT OF TRADE RECEIVABLES

A financial asset is classified as measured at: amortized cost; fair value through other comprehensive income ("FVOCI") or fair value through profit or loss ("FVTPL"). The classification of financial assets is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. Derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never separated. Instead, the hybrid financial instrument as a whole is assessed for classification. The Company's financial assets which consist primarily of cash, cash equivalents and short term investments, trade and other receivables, and contract assets, are classified at amortized cost.

An ECL model applies to financial assets measured at amortized cost and debt investments at FVOCI, but not to investments in equity instruments. The Company's financial assets measured at amortized cost and subject to the ECL model consist primarily of trade receivables and contract assets.

In applying the ECL model, loss allowances are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- Lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

We have elected to measure loss allowances for trade receivables and contract assets at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, we consider reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on our historical experience and informed credit assessment and including forward-looking information.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that we expect to receive). ECLs are discounted at the effective interest rate of the financial asset. At each reporting date, we

assess whether financial assets carried at amortized cost are credit impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. Impairment (losses) recoveries related to trade receivables and contract assets are presented separately in the statement of profit or loss. During the three months and year ended December 31, 2020, net impairment (charges) on trade receivables and contract assets of ($0.1) million and ($0.3) million, respectively, were recorded in other operating expenses, compared to net impairment (charges) of ($0.3) million and ($1.8) million, respectively, during the three months and year ended December 31, 2019. Net impairment charges in 2020 and 2019 include ECL's of ($0.3) million in each of the periods.

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.

9.4 Recently Adopted Accounting Policy Changes

Effective January 1, 2020, we have adopted *Amendments to References to the Conceptual Framework in IFRS Standards, Definition of a Business (Amendments to IFRS 3) and Definition of Material (Amendments to IAS 1 and IAS 8)*. The effect of initially applying *Amendments to References to the Conceptual Framework in IFRS Standards, Definition of a Business (Amendments to IFRS 3) and Definition of Material (Amendments to IAS 1 and IAS 8)* did not have a material impact on our financial statements. A number of other new standards and interpretations were also effective from January 1, 2020 but they also did not have a material impact on our financial statements.

AMENDMENTS TO REFERENCES TO THE CONCEPTUAL FRAMEWORK IN IFRS STANDARDS

On March 29, 2018, the IASB issued a revised version of its *Conceptual Framework for Financial Reporting ("the Framework")* that underpins IFRS Standards. The IASB also issued *Amendments to References to the Conceptual Framework in IFRS Standards ("the Amendments")* to update references in IFRS Standards to previous versions of the Conceptual Framework.

Some Standards include references to the 1989 and 2010 versions of the Framework. The IASB has published a separate document which contains consequential amendments to affected Standards so that they refer to the new Framework, with the exception of IFRS 3 Business Combinations which continues to refer to both the 1989 and 2010 Frameworks.

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

DEFINITION OF A BUSINESS (AMENDMENTS TO IFRS 3)

On October 22, 2018, the IASB issued amendments to *IFRS 3 Business Combinations* that seek to clarify whether a transaction results in an asset or a business acquisition.

The amendments include an election to use a concentration test. This is a simplified assessment that results in an asset acquisition if substantially all of the fair value of the gross assets is concentrated in a single identifiable asset or a group of similar identifiable assets. If a preparer chooses not to apply the concentration test, or the test is failed, then the assessment focuses on the existence of a substantive process.

The adoption of the amendments to IFRS 3 did not have a material impact on the Company's financial statements.

DEFINITION OF MATERIAL (AMENDMENTS TO IAS 1 and IAS 8)

On October 31, 2018 the IASB refined its definition of material and removed the definition of material omissions or misstatements from *IAS 8*.

The definition of material has been aligned across *IFRS Standards and the Conceptual Framework for Financial Reporting*. The amendments provide a definition and explanatory paragraphs in one place. Pursuant to the amendments, information is material if omitting, misstating, or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.

The adoption of the amendments to IAS 1 and IAS 8 did not have a material impact on the Company's financial statements.

9.5 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.

Classification of Liabilities as Current or Non-Current (Amendments to IAS 1)

On January 23, 2020, the IASB issued amendments to *IAS 1 Presentation of Financial Statements*, to clarify the classification of liabilities as current or non-current. On July 15, 2020 the IASB issued an amendment to defer the effective date by one year.

For the purposes of non-current classification, the amendments removed the requirement for a right to defer settlement or roll over of a liability for at least twelve months to be unconditional. Instead, such a right must have substance and exist at the end of the reporting period. The amendments also clarify how a company classifies a liability that includes a counterparty conversion option. The amendments state that:

- settlement of a liability includes transferring a company's own equity instruments to the counterparty, and
- when classifying liabilities as current or non-current a company can ignore only those conversion options that are recognized as equity.

The amendments are effective for annual periods beginning on or after January 1, 2023. Early adoption is permitted. The extent of the impact of adoption of the amendments to *IAS 1* has not yet been determined.

Property, Plant and Equipment – Proceeds before Intended Use (Amendments to IAS 16)

On May 14, 2020, the IASB issued *Property, Plant and Equipment — Proceeds before Intended Use (Amendments to IAS 16)*.

The amendments provide guidance on the accounting for sale proceeds and the related production costs for items a company produces and sells in the process of making an item of property, plant, and equipment ("PPE") available for its intended use. Specifically, proceeds from selling items before the related item of PPE is available for use should be recognized in profit or loss, together with the costs of producing those items.

The amendments are effective for annual periods beginning on or after January 1, 2022. Early adoption is permitted. The extent of the impact of adoption of the amendments to *IAS 16* has not yet been determined.

Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37)

On May 14, 2020, the IASB issued *Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37)*.

IAS 37 does not specify which costs are included as a cost of fulfilling a contract when determining whether a contract is onerous. The IASB's amendments address this issue by clarifying that the 'costs of fulfilling a contract' comprise both:

- the incremental costs – e.g. direct labour and materials; and
- an allocation of other direct costs – e.g. an allocation of the depreciation charge for an item of PPE used in fulfilling the contract.

The amendments are effective for annual periods beginning on or after January 1, 2022 and apply to contracts existing at the date when the amendments are first applied. Early adoption is permitted. The extent of the impact of adoption of the amendments to *IAS 37* has not yet been determined.

10. SUPPLEMENTAL NON-GAAP MEASURES AND RECONCILIATIONS

10.1 Overview

In addition to providing measures prepared in accordance with GAAP, we present certain supplemental non-GAAP measures. These measures are Cash Operating Costs (including its components of research and product development (operating cost), general and administrative (operating cost) and sales and marketing (operating cost)), EBITDA and Adjusted EBITDA, and Adjusted Net Loss. These non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore are unlikely to be comparable to similar measures presented by other companies. We believe these measures are useful in evaluating the operating performance of the Company's ongoing business. These measures should be considered in addition to, and not as a substitute for, operating expenses, net income, cash flows and other measures of financial performance and liquidity reported in accordance with GAAP. The calculation of these non-GAAP measures has been made on a consistent basis for all periods presented.

10.2 Cash Operating Costs

This supplemental non-GAAP measure is provided to assist readers in determining our operating costs on an ongoing cash basis. We believe this measure is useful in assessing performance and highlighting trends on an overall basis.

We also believe Cash Operating Costs is frequently used by securities analysts and investors when comparing our results with those of other companies. Cash Operating Costs differs from the most comparable GAAP measure, operating expenses, primarily because it does not include stock-based compensation expense, depreciation and amortization, impairment losses or recoveries on trade receivables, restructuring charges, acquisition costs, the impact of unrealized gains and losses on foreign exchange contracts, and financing charges. The following tables show a reconciliation of operating expenses to Cash Operating Costs for the three months and year ended December 31, 2020 and 2019:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,		
Cash Operating Costs	**2020**	**2019**	$ Change
Total Operating Expenses	**$ 19,559**	**$ 15,588**	$ 3,971
Stock-based compensation expense	**(2,347)**	**(970)**	(1,377)
Impairment recovery (losses) on trade receivables	**(60)**	**(251)**	191
Acquisition and integration costs	**-**	**-**	-
Restructuring (charges) recovery	**(26)**	**3**	(29)
Impact of unrealized gains (losses) on foreign exchange contracts	**324**	**234**	90
Depreciation and amortization	**(1,060)**	**(1,518)**	458
Cash Operating Costs	**$ 16,390**	**$ 13,086**	$ 3,304

(Expressed in thousands of U.S. dollars)	Year ended December 31,		
Cash Operating Costs	**2020**	**2019**	$ Change
Total Operating Expenses	**$ 60,745**	**$ 47,784**	$ 12,961
Stock-based compensation expense	**(6,228)**	**(3,391)**	(2,837)
Impairment recovery (losses) on trade receivables	**(310)**	**(1,787)**	1,477
Acquisition and integration costs	**-**	**-**	-
Restructuring (charges) recovery	**(66)**	**(101)**	35
Impact of unrealized gains (losses) on foreign exchange contracts	**259**	**805**	(546)
Depreciation and amortization	**(4,371)**	**(4,509)**	138
Cash Operating Costs	**$ 50,029**	**$ 38,801**	$ 11,228

The components of Cash Operating Costs of research and product development (cash operating cost), general and administrative (cash operating cost), and sales and marketing (cash operating cost) differ from their respective most comparable GAAP measure of research and product development expense, general and administrative expense, and sales and marketing expense, primarily because they do not include stock-based compensation expense and depreciation and amortization expense. A reconciliation of these respective operating expenses to the respective components of Cash Operating Costs for the three months and year ended December 31, 2020 and 2019 is included in Section 5.4 Operating Expenses and Other Items.

A breakdown of total stock-based compensation expense for the three months and year ended December 31, 2020 and 2019 are as follows:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,		
Stock-based compensation expense	**2020**	**2019**	$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	**$ -**	**$ -**	$ -
Research and product development expense	**1,423**	**379**	1,044
General and administrative expense	**561**	**434**	127
Sales and marketing expense (recovery)	**363**	**157**	206
Stock-based compensation expense	**$ 2,347**	**$ 970**	$ 1,377

(Expressed in thousands of U.S. dollars)	Year ended December 31,		
Stock-based compensation expense	**2020**	**2019**	$ Change
Total stock-based compensation expense recorded as follows:			
Cost of goods sold	**$ -**	**$ -**	$ -
Research and product development expense	**3,327**	**1,372**	1,955
General and administrative expense	**1,807**	**1,437**	370
Sales and marketing expense (recovery)	**1,094**	**582**	512
Stock-based compensation expense	**$ 6,228**	**$ 3,391**	$ 2,837

A breakdown of total depreciation and amortization expense for the three months and year ended December 31, 2020 and 2019 are as follows:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,		
Depreciation and amortization expense	**2020**	**2019**	$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	**$ 708**	**$ 704**	$ 4
Research and product development expense	**765**	**1,226**	(461)
General and administrative expense	**281**	**284**	(3)
Sales and marketing expense	**14**	**8**	6
Depreciation and amortization expense	**$ 1,768**	**$ 2,222**	$ (454)

(Expressed in thousands of U.S. dollars)	Year ended December 31,		
Depreciation and amortization expense	**2020**	**2019**	$ Change
Total depreciation and amortization expense recorded as follows:			
Cost of goods sold	**$ 3,034**	**$ 2,802**	$ 232
Research and product development expense	**3,211**	**3,339**	(128)
General and administrative expense	**1,120**	**1,137**	(17)
Sales and marketing expense	**40**	**33**	7
Depreciation and amortization expense	**$ 7,405**	**$ 7,311**	$ 94

10.3 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 from continuing operations, primarily because it does not include finance expense, income taxes, depreciation of property, plant and equipment, and amortization of intangible assets. Adjusted EBITDA adjusts EBITDA for stock-based compensation expense, transactional gains and losses, asset impairment charges, finance and other income, the impact of unrealized gains and losses on foreign exchange contracts, and acquisition costs. The following tables show a reconciliation of net loss to EBITDA and Adjusted EBITDA for the three months and year ended December 31, 2020 and 2019:

(Expressed in thousands of U.S. dollars)	Three months ended December 31,		
EBITDA and Adjusted EBITDA	**2020**	**2019**	$ Change
Net loss from continuing operations	**$ (14,408)**	**$ (9,795)**	$ (4,613)
Depreciation and amortization	**1,768**	**2,222**	(454)
Finance expense	**324**	**352**	(28)
Income taxes	**(39)**	**14**	(53)
EBITDA	**$ (12,355)**	**$ (7,207)**	$ (5,148)
Stock-based compensation expense	**2,347**	**970**	1,377
Finance and other (income) loss	**(4,138)**	**(575)**	(3,563)
Loss (gain) on sale of assets	**-**	**-**	-
Impact of unrealized (gains) losses on foreign exchange contracts	**(324)**	**(234)**	(90)
Adjusted EBITDA	**$ (14,470)**	**$ (7,046)**	$ (7,424)

(Expressed in thousands of U.S. dollars)	Year ended December 31,		
EBITDA and Adjusted EBITDA	**2020**	**2019**	$ Change
Net loss from continuing operations	**$ (49,469)**	**$ (35,291)**	$ (14,178)
Depreciation and amortization	**7,405**	**7,311**	94
Finance expense	**1,303**	**1,434**	(131)
Income taxes	**130**	**20**	110
EBITDA	**$ (40,631)**	**$ (26,526)**	$ (14,105)
Stock-based compensation expense	**6,228**	**3,391**	2,837
Finance and other (income) loss	**(4,282)**	**(2,663)**	(1,619)
Loss (gain) on sale of assets	**-**	**(5)**	5
Impact of unrealized (gains) losses on foreign exchange contracts	**(259)**	**(805)**	546
Adjusted EBITDA	**$ (38,944)**	**$ (26,608)**	$ (12,336)

10.4 Adjusted Net Loss

This supplemental non-GAAP measure is provided to assist readers in determining our financial performance. We believe this measure is useful in assessing our actual performance by adjusting our results from continuing operations for transactional gains and losses and impairment losses. Adjusted Net Loss differs from the most comparable GAAP measure, net loss from continuing operations, primarily because it does not include transactional gains and losses, asset impairment charges, and acquisition costs. There were no significant Adjusted Net Loss adjustments to net income for the three months and year ended December 31, 2020 and 2019.