



Xebec Adsorption Inc.  
Management's Discussion and Analysis  
Third Quarter, 2018

November 8, 2018

Additional information relating to the Company can be found on SEDAR at [www.sedar.com](http://www.sedar.com)



The following Management's Discussion and Analysis ("MD&A") of Xebec provides a review of the results of operations, financial conditions and cash flows of Xebec for the period ended Sept 30, 2018. This discussion should be read in conjunction with the information contained in the Company's unaudited condensed interim consolidated financial statements and related notes for the same period. Additional information can be found on SEDAR at [www.sedar.com](http://www.sedar.com).

The financial information presented herein has been prepared on the basis of International Financial Reporting Standards (IFRS) for financial statements and is expressed in Canadian dollars unless otherwise stated.

In this MD&A, unless otherwise indicated or required by the context, "Xebec", "the Company", "we", "us", "our", "our Company", "the Group" and "our Group" designate, as the case may be, Xebec Adsorption Inc. or Xebec Adsorption Inc. and its subsidiaries. The Company's other subsidiaries are designated as follows: "Xebec USA" for Xebec Adsorption USA, Inc., "Xebec Shanghai" for Xebec Adsorption (Shanghai) Co. Ltd and "Xebec Europe" for Xebec Adsorption Europe SRL. Also, the fiscal year ending December 31, 2017 and those ended in prior years are sometimes designated by the terms "Fiscal 2017", "Fiscal 2016" and so on.

The information contained in this MD&A and certain other sections of this report also includes some figures that are not performance measures consistent with IFRS, such as earnings (loss) before amortization, financial expenses, other items and income taxes ("EBITDA"). The Company uses EBITDA because this measure enables management to assess the Company's operational performance. This measure is a widely accepted financial indicator of a company's ability to repay and assume its debt. Investors should not regard it as an alternative to operating revenues or cash flows, or a measure of liquidity. As this measure is not established in accordance with IFRS, it might not be comparable to those of other companies.

The information contained in this Management's Report accounts for any major event occurring up to November 8, 2018, the date on which the Board of Directors approved the condensed interim consolidated financial statements and Management's Report for the period ended September 30, 2018. It presents the Company's status and business context as they were, to management's best knowledge, at the time this report was written.

This document contains forward-looking statements, which are qualified by reference to, and should be read together with, the "Forward-looking Statements" cautionary notice on page 31 of this MD&A.



## Contents

<b>1. OUR BUSINESS</b> .....	<b>5</b>
1.1. Who We Are .....	5
1.2. Products Include .....	5
1.3. Customers Include .....	5
1.4. Internationally Recognized .....	6
1.5. Technology .....	6
1.6. Internationally accredited .....	7
<b>2 OUR BUSINESS SEGMENTS</b> .....	<b>7</b>
2.1. INDUSTRIAL AIR & GAS PRODUCTS.....	7
2.1.1. Market Size for Xebec’s Industrial Products .....	8
2.1.2. Product Line & Services .....	8
2.2. CLEAN TECHNOLOGY .....	8
2.2.1. Renewable Natural Gas (RNG) and Renewable Hydrogen Market Size.....	9
2.2.2. Product Line.....	11
2.3. RENEWABLE GAS GENERATION .....	11
2.4. OIL AND GAS .....	11
<b>3 GROWTH STRATEGY</b> .....	<b>11</b>
3.1. Business Drivers .....	11
3.2. Path to Sustainable, Profitable Growth.....	12
3.2.1. Drive Recurring Revenue .....	12
3.2.2. Build & Market Clean Energy Solutions .....	12
3.3. Summary of Forward Path.....	12
3.3.1. Year-to-Date .....	12
3.3.2. 2018 Milestones .....	13
<b>4 OPERATING RESULTS</b> .....	<b>14</b>
<b>5 FINANCIAL CONDITION</b> .....	<b>18</b>
<b>6 SUMMARY OF QUARTERLY RESULT</b> .....	<b>19</b>
<b>7 LIQUIDITY AND CAPITAL RESOURCES</b> .....	<b>19</b>
<b>8 OUTSTANDING SHARE DATA</b> .....	<b>21</b>
<b>9 CRITICAL ACCOUNTING ESTIMATES</b> .....	<b>21</b>
<b>10 CHANGES IN ACCOUNTING POLICIES AND ACCOUNTING PRONOUNCEMENTS</b> .....	<b>22</b>



<b>11</b>	<b>OUTLOOK .....</b>	<b>24</b>
11.1.	Current Market and Guidance for 2018 .....	24
11.2.	Industrial Air & Gas Products.....	24
11.3.	Clean Technology .....	24
11.4.	Renewable Gas Generation.....	24
11.5.	Oil and Gas .....	24
11.6.	Delivery Outlook .....	25
11.7.	Outlook Summary.....	25
<b>12</b>	<b>RELATED PARTY TRANSACTIONS .....</b>	<b>25</b>
<b>13</b>	<b>RECONCILIATION OF NON-IFRS MEASURES .....</b>	<b>26</b>
<b>14</b>	<b>ENTERPRISE RISK MANAGEMENT .....</b>	<b>26</b>
<b>15</b>	<b>RISK FACTORS .....</b>	<b>27</b>
15.1.	Macroeconomic and Geopolitical .....	27
15.2.	Operating .....	28
15.3.	Liquidity.....	28
15.4.	Foreign Currency Exchange .....	29
<b>16</b>	<b>FORWARD-LOOKING STATEMENTS .....</b>	<b>29</b>
<b>17</b>	<b>CORPORATE GOVERNANCE .....</b>	<b>30</b>
<b>18</b>	<b>APPROVAL.....</b>	<b>30</b>
<b>19</b>	<b>ADDITIONAL INFORMATION .....</b>	<b>30</b>

## 1 OUR BUSINESS

### 1.1. Who We Are

Established in 1967, Xebec has over 50 years of experience in adsorption technology, supplying more than 9,000 units to clients worldwide.

Xebec specializes in compressed air and gas generation and purification systems, developing products and technology solutions for environmentally-responsible generation, purification, dehydration, separation, and filtration applications.

### 1.2. Products Include

- Hydrogen Purification Systems for fuel cell and industrial applications
- Renewable Hydrogen Generation from Renewable Natural Gas
- Biogas purification to renewable natural gas (RNG) from agricultural digesters, landfill sites and waste water treatment plants
- State-of-the-art Gas Processing Systems for removal of CO<sub>2</sub> from Natural Gas
- Natural Gas Dryers for Natural Gas Vehicles (NGV) refueling stations
- Energy-efficient Compressed Air Dryers & best-in-class Compressed Air and Gas Filters for a broad range of industrial applications



### 1.3. Customers Include

Our customers come from a wide variety of industries, because our technologies are deployed throughout the industrial world and cover applications in industries as diverse as hospitals to paint shops, food processing to algae production, and factory floors to upstream gas wells.



In addition, our business is international with deliveries to countries like Madagascar, Kazakhstan, Malaysia, Thailand, China, Japan, South Korea, France, Italy, Austria, U.S., Mexico, Columbia, Argentina and many others.

#### 1.4. Internationally Recognized



- Headquarters in Montreal, Quebec, Canada – Manufacturing, Sales & R&D
- Sales & Engineering Offices in Houston, Texas & Milan, Italy
- Manufacturing, Sales and Engineering in Shanghai
- Sales Partners in Singapore, France, Austria, South Korea

#### 1.5. Technology

##### ■ Adsorption Technology

Adsorption is a process that occurs when a gas or liquid (solute) accumulates on the surface of a solid or a liquid (adsorbent) forming a film of molecules or atoms (adsorbate). Xebec designs, develops, builds, sells, and services engineered adsorption and filtration products for industrial air and gas purification and separation applications employing the principles of Pressure Swing Adsorption (PSA) and Temperature Swing Adsorption (TSA).

##### ■ Membrane Technology

Xebec's membrane solution is another proven technology for gas purification. When pressurized gas feed enters the membrane modules, certain molecules have a much stronger preference to diffuse and permeate through the polymer-based membrane than other molecules. As a result, the product stream, which is rich in a certain molecule type, is retained in the pressurized side as product gas.

##### ■ Filtration Technology

Air and gas filters are used to separate liquid droplets, particles or solid contaminants, and oil vapor out of air and gas flows. Xebec also offers specialized natural gas filters for on-board natural gas-fueled vehicles, for treatment of the natural gas prior to it entering into the combustion process.

### 1.6. Internationally accredited



## 2 OUR BUSINESS SEGMENTS

### Industrial Air & Gas Products

*Industrial purification equipment, parts & services for applications as diverse as manufacturing, food processing, medical & pharma and petrochemical industries.*

### Clean Technology – Gas Systems and Solutions

*Renewable Natural Gas, Hydrogen & Renewable Hydrogen systems/plants for the production of fuel for a wide variety of applications, from fuel cells to the replacement of fossil fuels in transportation.*

### Renewable Gas Generation

*Build, Own & Operate projects and infrastructure that generates low-carbon renewable transportation fuel solutions.*

### Gas and Oil Processing

*Natural Gas Purification and CO<sub>2</sub> removal via membrane technology*

### 2.1. INDUSTRIAL AIR & GAS PRODUCTS

Almost all industrial gases, whether they are inert, flammable, acid, reactive, or oxidizing, can be purified or dried using what is commonly known as adsorption or membrane technology to remove targeted impurities or separate bulk mixtures. These technologies are used in many industrial air and gas treatment processes including air separation, nitrogen and oxygen enrichment for medical and industrial applications as well as drying applications for air, natural gas, carbon monoxide, carbon dioxide, sulfur dioxide, acetylene, propylene, propane, and syngas.

Xebec designs, develops, builds, sells, and services a range of adsorption and membrane air and gas purification solutions for natural gas dehydration and conditioning and for natural gas upgrading (NGX Solutions®); desiccant, refrigerant and modular air dryers for a wide range of industrial air applications (ADX Solutions®); and gas generators and systems for nitrogen (N2X Solutions™) and oxygen (O2X Solutions™). In addition, Xebec provides a complete range of compressed air and gas filtration products under its FSX Solution® brand as well as alternative brand replacements.

Xebec’s strengths in this field:

- Xebec can capitalize on this historically high margin business that creates a significant recurring revenue base from sales of parts and service to over 9,000 currently operating global installations
- Xebec has invested heavily over the last few years in product development of additional purification products that can be sold to existing and new customers, thanks to its strong reputation for quality
- Xebec has established a roll-up strategy focused on acquiring small to mid-sized Compressed Air and Gas service businesses (\$3-5M revenue) throughout Ontario, Alberta and BC to create a leading national Compressed Air & Gas distribution business
- Xebec is the only Canadian manufacturer of gas adsorption and gas membrane systems with a full product portfolio and all necessary Canadian and Provincial certifications (CRN, CSA etc.) and is well positioned for growth

### 2.1.1. Market Size for Xebec’s Industrial Products

- U.S. Market approx. USD\$700 to USD\$800 Million
- Canadian Market for Xebec products approx. CDN\$60 to CDN\$70 Million, of which Xebec currently has a 9% market share, with a target of 30 to 40% by 2020

### 2.1.2. Product Line & Services

- Compressed Air and Gas Dryers
- Compressed Air and Gas Filters
- Nitrogen and Oxygen Generators
- Spare Parts and Replacement Filter Elements
- Dew-point Probes and Calibration Services



## 2.2. CLEAN TECHNOLOGY

Xebec's proprietary rotary valve technology replaces the complex and bulky network of piping and valves used in conventional Pressure Swing Adsorption (PSA) systems with two compact, integrated valves. Especially for biogas to RNG, Xebec’s advanced biogas upgrading system improves methane recovery rates, reduces operating costs and consequently improves the profitability of the project for the owner. Xebec's rotary valve technologies are integrated into some of its advanced hydrogen and gas purification products, which operate at significantly higher cycle speeds (up to 50 cycles/minute) than conventional PSA systems. This results in a direct reduction in the amount of adsorbent material, the size of equipment and the amount of energy required to purify a given volume of feed gas.

Xebec has the most compact, economical and reliable PSA systems available today. With minimal pressure drop, remarkable uptime performance, occupying a fraction of the footprint of conventional systems, Xebec PSA systems have earned a reputation for easy, flexible installation and problem-free, economical performance.

Xebec’s strengths in this field:

- Over the last year Xebec has gained significant traction in the biogas upgrading field, with an order

backlog now of C\$63.3 million.

- Growing quote/order book for 2018; and a solid order pipeline into 2019
- Commercial readiness to take advantage of opportunities driven by government incentives as well as regulations to curb CO2 emissions in transportation - 2018 announcements for European RNG incentives, particularly in Italy and France; building momentum for a 2019 Federal Renewable Gas Innovation Program in Canada; and a growing number of U.S. state legislative bills tackling climate change through mandated use of renewable energy.
- Continued build out of clean natural gas refueling infrastructure both in the U.S. and Canada, combined with renewable natural gas as a transportation fuel, are gaining traction.
- Uniquely positioned to offer a win-win business model: sell core technology to partners for them to develop and serve local markets while Xebec drives aftermarket revenue with its proprietary technology, or offer complete systems to end-users in clearly identified markets

### 2.2.1. Renewable Natural Gas (RNG) and Renewable Hydrogen Market Size

- The global RNG upgrading market will be worth an estimated \$4B by 2025, or \$350MM annually, with a CAGR of 26.9%
- Xebec has approx. 12% market share with 50+ projects in the emerging RNG category
- Xebec estimates a 15% global market share in RNG by 2020

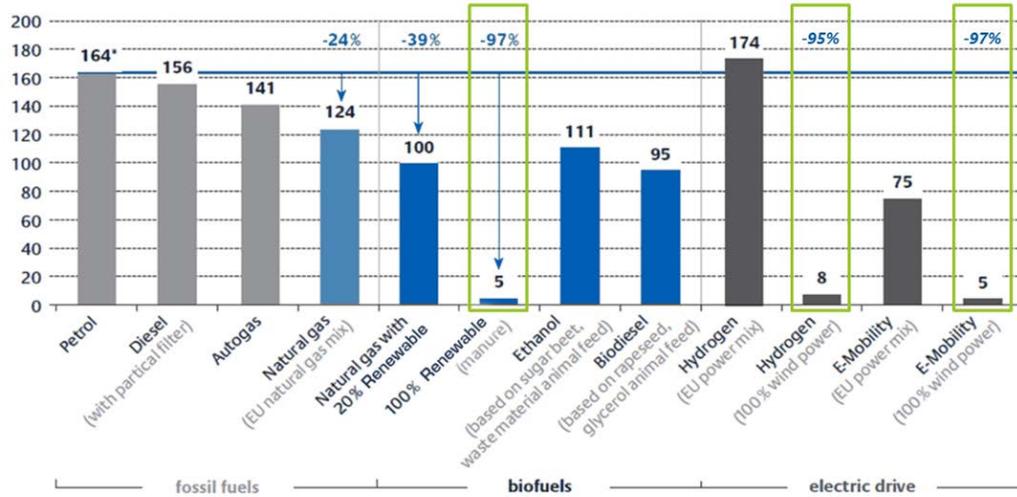
Xebec considers hydrogen purification for fuel cell applications and renewable hydrogen as a fuel for Fuel Cell Electric Vehicles (FCEV) to be one of the major opportunities over the next decade and beyond. Xebec is working with several fuel cell manufacturers to provide purification equipment to their refueling and/or hydrogen production equipment. As fuel cells gain traction over the coming years, the market will look for specialized purification solutions in a compact design.

- Fuel Cell Electric Vehicles (FCEV) in transportation are forecast to increase to 250,000 by 2027 (0.1% of the U.S. vehicle population).
- Annual production of fuel cell vehicles is forecast to reach 50,000 per year by 2025.
- Each FCEV requires about 0.5 to 1.5 kg of hydrogen per day, or about 125 to 375 tons/day by 2027 (30% legislated to be renewable hydrogen (RH<sub>2</sub>) in California)
- The market for renewable hydrogen is expected to grow from currently about \$30 million annually to about \$365 million annually by 2027
- Currently, only fossil hydrogen is readily available, and today fossil merchant hydrogen production worldwide equates to about 150 tons/day



- Fossil hydrogen today is either produced through electrolysis (electricity from coal or natural gas) or through steam methane reforming of natural gas (fossil natural gas). Renewable hydrogen is produced through electrolysis using renewable electricity, or through steam methane reforming of renewable natural gas (upgraded biogas to renewable natural gas). Consequently, it has an extremely low carbon

WTW GHG emissions in g CO<sub>2</sub> eq./ km



\* reference vehicle: gasoline engine (Induction engine), consumption 71 per 100 km

content compared to fossil hydrogen, making it ideal for low carbon transport fuels.

### Low Carbon Fuels – The Renewable Natural Gas and Renewable Hydrogen Opportunity

(Xebec offers solutions for renewable natural gas and renewable hydrogen)

Source: NREL - Renewable Hydrogen Potential from Biogas in the United States, 2014,

Department of Energy - <https://energy.gov/eere>, German Energy Agency, <http://www.zevstates.us>

## 2.2.2. Product Line

We offer a full suite of proprietary technology products in the following categories:

- *Biogas to renewable natural gas*
- *Hydrogen purification systems*
- *Natural gas dehydration units for refueling stations*
- *Solutions for the generation of renewable hydrogen (RH2), including filtration & separation products*

## 2.3. RENEWABLE GAS GENERATION

During the last year, Xebec significantly reduced its activities in the Oil & Gas segment in order to fully focus on the imminent opportunities in its clean technology segment, particularly in the field of Renewable Gas Generation and the build-out of related infrastructure. This decision has allowed Xebec to reduce costs associated with the continued development of the membrane technology for CO<sub>2</sub> removal from natural gas (Oil and Gas segment activity), and has freed up resources for build-own-operate (BOO) activities in the Renewable Gas Generation segment. Some organizational changes have already been initiated, but no costs have been yet associated to the segment as of September 30<sup>th</sup>, 2018.

Activity in this segment is being driven by newly established renewable gas requirements in two Canadian provinces, combined with continuing efforts by the Canadian federal government to introduce a low carbon fuel standard in 2019 (Canadian Clean Fuel Standard (CFS)). Xebec has started to identify locations and partners for the deployment of a number of high quality renewable gas assets for the production of low carbon renewable natural gas that can not only fill the current provincial requirements but also the future requirements under the potential federal legislation.

The concept:

- Xebec develops, sets up, owns and operates - Build, Own, Operate (BOO)
- Xebec signs off-take agreements with gas utilities and other third party off-takers
- Xebec enters into supply agreements with feedstock suppliers
- Xebec provides financing – debt and equity
- Xebec chooses sites where feedstock is easily available & gas interconnectivity is nearby
- Xebec applies and receives all regulatory permits to erect and operate a plant

## 2.4. OIL AND GAS

See point 2.3

## 3 GROWTH STRATEGY

### 3.1. Business Drivers

- *Increasing demand for Compressed Air and Gas equipment across the food & beverage, medical and pharma industries that can deliver cleaner, purer, oil-free, dry and sterile compressed air*
- *Acquisition opportunities in the Industrial Products segment driven by the retirement of owners of target companies that fall into the so called “boomer” category*
- *Increasing demand for small scale decentralized hydrogen production and purification solutions for fuel*

*cell applications in transport and power generation*

- *Hydrogen purification technologies poised to experience robust growth in the U.S., China, Japan, Canada and India in refining and electronics industries (industrial applications)*
- *Rapidly increasing demand for RNG as a readily available low carbon transport fuel in Europe, Canada and California.*
- *Implementation of low carbon fuel standards (LCFS) is driving demand for renewable natural gas and hydrogen as a low carbon transportation fuel and establishment of RNG assets.*

## **3.2. Path to Sustainable, Profitable Growth**

### *3.2.1. Drive Recurring Revenue*

- *Concentrate on Filtration, Parts & Service*
- *Optimize Supply Chain Network*
- *Deploy Acquisition Strategy for Industrial Products*

### *3.2.2. Build & Market Clean Energy Solutions*

- *Expand RNG Opportunities in France, Italy, California and Canada (incl. traction in BOO)*
- *Focus on Hydrogen for Fuel Cells (refinery off-gas applications)*
- *Continue to Grow National & Int'l Partnerships*

## **3.3. Summary of Forward Path**

Xebec's short term goal is to increase both revenue and earnings and build a sustainable business model that will drive shareholder value. Specifically:

The **Industrial Air & Gas Products** generates a large portion of the recurring revenue and is seen as the foundation for stability and sustainability. With over 9,000 adsorption units in operation, Xebec has a built-in parts and maintenance business that recurrently generates high margin revenue. As the only adsorption equipment manufacturer in Canada that is fully CRN/CSA certified, Xebec continues to see a solid increase in sales and quote activity, largely driven by a lower Canadian dollar versus the US dollar, combined with the fact that all equipment competitors in this segment are foreign-based. Xebec continues to work on executing its defined acquisition strategy in the Industrial segment and expects to close the first roll-up in Q4/ 18.

In the **Clean technology** segment Xebec is continuing to experience a solid uptick in activity in Europe, North America, and Asia, driven by its biogas to renewable natural gas product offering, and increased interest in Xebec's hydrogen purification products, as documented by recent orders. Xebec is currently expanding its sales efforts in Europe and North America, with the goal to capitalize on the ongoing renewable energy programs and feed-in tariffs that drive the Cleantech segment.

### *3.3.1. Year-to-Date*

- For the three-month period ended September 30, 2018, Xebec reports a 100 % increase in revenues compared to the same period in 2017.



- Order bookings have decreased from \$68.1 million as of August 6, 2018 to \$65.5 million, representing a 3.8% decrease. (Note: \$51.0 million to be delivered over three years)
- Net profit for the three months ended September 30, 2018 is \$0.64 million (EPS 0.01). This represents an increase of 611% from a net profit of \$0.09 million (EPS 0.00) for the same period last year.
- Net loss for the nine-month period ended September 30, 2018 is \$(0.41) million compared to a net income of \$1.0 million for the same period last year.
- Working capital increased from \$1.8 million as at December 31, 2017 to \$3.9 million as at September 30, 2018 (current ratio increase from 1.31 to 1.36)

### 3.3.2. 2018 Milestones

- On November 7<sup>th</sup>, 2018, Xebec Adsorption Inc. closed its equity offering for aggregate gross proceeds of \$6.1 million dollars. Xebec intends to use the net proceeds of the offering to finance new project development initiatives in the renewable gas generation sector, potential merger and acquisition opportunities involving targets in industrial business segments, research and development, capital equipment, and general corporate purposes.
- On August 30<sup>th</sup>, 2018, Xebec Adsorption Inc. was selected by Enbridge Gas Distribution Inc (Enbridge) to be the supplier for the turn-key biogas upgrading system for the City of Toronto's first Renewable Natural Gas (RNG) facility, located at the Dufferin Solid Waste Management Facility.
- On August 2<sup>nd</sup>, 2018, Xebec Adsorption Inc. obtained \$23 million of additional financial support from Export Development Canada (EDC), Canada's export credit agency. The financial support consists of a credit agreement worth \$11 million with two credit facilities, and a three year term consisting of a \$2 million working capital line and \$9 million Purchase Order (PO) facility. In addition, Xebec has also secured a \$12 million bonding facility with EDC. The bonding facility will be used to support the issuance of multiple bank guarantees.
- On July 24<sup>th</sup>, 2018, the Minority Shareholders of Xebec Adsorption (Shanghai) Co. Ltd. and Xebec Adsorption Inc. agreed that Xebec Adsorption Inc. will pay the Minority Shareholders RMB 1 million per year including 2018 until the EDC loan expiry or latest up to December 31, 2020 (whichever is earlier). Xebec Adsorption Inc. will also fulfill its repurchase obligation according to the original agreement, by paying the full repurchase price in one lump sum either at EDC loan expiry or latest by December 31, 2020. The 2018 annual fee will be paid in the fourth quarter of 2018. The annual fees will be considered a deduction to the repurchase price at the time of repurchase.
- On July 25<sup>th</sup>, 2018, the Minority Shareholders of Xebec Adsorption (Shanghai) Co. Ltd. agreed that, for a period beginning on the date hereof up to the date that Export Development Canada has been repaid in full (including capital, interests and fees) under the EDC Financing Arrangement, it shall not exercise any of its divestment, refund, compensation and other equity repurchase rights.
- On May 16<sup>th</sup>, 2018, Xebec announced it had signed an exclusive market development and commercialization agreement with Sapio Group. Under this agreement, Sapio entered into a minimum purchase order commitment for multiple Xebec biogas upgrading plants for a total value of 33 million euros (CDN\$51 million) to be delivered over three years



## 4 OPERATING RESULTS

Selected Financial Information  
(in millions of \$)

	For the three-month period ended September 30,		For the nine-month period ended September 30,	
	2018	2017	2018	2017
Industrial Air & Gas Products	1,26	0,97	4,72	3,48
Clean Technology	6,99	2,17	13,30	6,78
Renewable Gas Generation	-	-	-	-
Oil & Gas	-	0,99	-	1,23
<b>Total revenue</b>	<b>8,25</b>	<b>4,13</b>	<b>18,02</b>	<b>11,49</b>
<b>Total COGS</b>	<b>5,46</b>	<b>2,43</b>	<b>12,37</b>	<b>6,74</b>
<b>Gross margin</b>	<b>2,79</b>	<b>1,70</b>	<b>5,65</b>	<b>4,75</b>
Gross Margin %	34%	41%	31%	41%
Research and Development expenses	0,04	-	0,08	(0,04)
Selling and administrative expenses	1,76	1,49	4,89	3,58
(Gain)/loss on foreign exchange	(0,22)	0,11	(0,10)	0,23
Insurance compensation	-	(0,13)	-	(0,13)
(Gain)/loss on conversion of shares issued by a subsidiary	0,17	(0,07)	0,17	(0,11)
<b>Operating profit</b>	<b>1,05</b>	<b>0,31</b>	<b>0,61</b>	<b>1,21</b>
<b>Finance expenses</b>	<b>0,40</b>	<b>0,21</b>	<b>1,03</b>	<b>0,19</b>
Income taxes	-	-	-	-
<b>Net profit (loss)</b>	<b>0,64</b>	<b>0,10</b>	<b>(0,41)</b>	<b>1,02</b>
Net profit (loss) per share	0,01	0,00	(0,01)	0,02
EBITDA (1)	1,11	0,34	0,78	1,66
Cash generated (used) in operating activities	0,25	(0,02)	(0,65)	(2,38)
Cash and cash equivalents	0,87	0,36	0,87	0,36
Working capital	3,90	1,12	3,90	1,12
Total Assets	15,27	7,35	15,27	7,35
Total non-current liabilities	8,38	5,04	8,38	5,04

(1) EBITDA is Non-IFRS measure. Refer to section 16 - Reconciliation of Non-IFRS Measure.

### Highlights for the three-month period ended September 30, 2018 compared to the three-month period ended September 30, 2017

Revenues increased by \$4.12 million or 100% to \$8.25 million for the three-month period ended September 30, 2018 compared to \$4.13 million for the same period prior year. This is mainly due to the Clean Technology segment with an increase of \$4.82 million.

Gross margin increased from \$1.70 million to \$2.79 million, or 34% of revenue, from 41% of revenue. The three-month period ended September 30, 2017 includes higher margin projects.

Selling and administrative expenses (“SG&A”) for the three-month period ended September 30, 2018 of \$1.76 million were higher by \$0.27 million or 18% compared to \$1.49 million for the same three months of 2017. This is primarily due to the hiring of key personnel and organizational build-out.

Net profit of \$0.64 million or \$0.01 per share increased from \$0.09 million or \$0.00 per share in the three-month period ended September 30, 2018 compared to the same period prior year. The increase is mainly due to an increase in sales.

EBIDTA increased to \$1.11 million for the three-month period ended September 30, 2018 from \$ 0.34 million for the same period last year.



## Highlights for the nine-month period ended September 30, 2018 compared to the nine-month period ended September 30, 2017

Revenues increased by \$6.53 million or 57% to \$18.02 million for the nine-month period ended September 30, 2018 compared to \$11.49 million for the same period prior year. Revenue increased in the Clean Technology segment by \$6.52 million and by \$1.24 million in the Industrial Air & Gas Products segment while revenue from the Oil and Gas segment decreased by \$1.23 million.

Gross margin increased from \$4.75 million to \$5.65 million, or 31% of revenue, from 41% of revenue. The nine-month period ended September 30, 2017 included higher margin projects.

Selling and administrative expenses (“SG&A”) for the nine-month period ended September 30, 2018 of \$4.89 million were higher by \$1.31 million or 37% compared to \$3.58 million for the same period prior year. This is primarily due to the hiring of key personnel and organization build-out.

Net profit decreased by \$1.43 million or \$(0.03) per share to \$(0.41) million or \$(0.01) per share in the nine-month period ended September 30, 2018 versus \$1.02 million or \$0.02 per share for the same period prior year. The decrease is mainly due to a decrease in gross margin, an increase in SG&A and finance expenses. In addition, in Q1/18 Xebec experienced working capital constraints, which led to weak revenue generation and a substantial loss.

EBIDTA decreased to \$0.78 million for the nine-month period ended September 30, 2018 from \$ 1.66 million for the same period prior year.

## CURRENT BACKLOG

The order backlog is calculated considering contracts received and considered as firm orders.

### Current backlog as of November 8, 2018:

Business Segment:	November 8, 2018	August 6, 2018	May 28, 2018	April 16, 2018
In million of \$				
Industrial Air & Gas Products	2,2	1,7	3,0	3,3
Clean Technology	63,3 (1)	66,4 (1)(2)	63,1 (1)	10,6
Renewable Gas Generation	-	-	-	-
Oil and Gas	-	-	-	-
Consolidated Backlog	65,5	68,1	66,1	13,9

(1) Firm order commitment of \$51 million to be delivered over three years

(2) Include one order not yet publicly disclosed.

## Business Segment Review

We report our results in four business segments, being Industrial Air & Gas Products, Clean Technology, Renewable Gas Generation and Oil & Gas Processing. Our reporting structure reflects the way we manage our business and how we classify our operations for planning and measuring performance. The corporate office and administrative support is reported under Corporate and Other.

### Industrial Air & Gas Products

(in millions of \$)

	For the three-month period ended September 30,		For the nine-months period ended September 30,	
	2018	2017	2018	2017
Revenues	1,26	0,97	4,72	3,48
COGS	0,79	0,66	2,98	1,99
Gross margin	0,47	0,31	1,74	1,49
Gross Margin %	37%	32%	37%	43%
Selling and administrative expenses	0,20	0,15	0,64	0,56
Segment gain (loss)	0,27	0,16	1,10	0,93

**Revenues** increased by \$0.29 million or 30% to \$1.26 million for the three-month period ended September 30, 2018. Revenues increased by \$1.24 million or 36% to \$4.72 million for the nine-month period ended September 30, 2018. The increase is mainly explained by higher volume of sales in the air dryers product line.

**Gross Margin** increased by 5% for the three-month period ended in September 30, 2018 due to sale price revision. It decreased by 6% for the nine-month period ended September 30, 2018 due to distributor discounts.

**SG&A Expenses** for the three-month period ended September 30, 2018, increased by \$0.05 million. SG&A expenses totaled \$0.64 million for the nine-month period ended September 30, 2018 compared to \$0.56 million in the same period in 2017, an increase of \$0.08 million.

### Clean Technology

(in millions of \$)

	For the three-month period ended September 30,		For the nine-months period ended September 30,	
	2018	2017	2018	2017
Revenues	6,99	2,17	13,30	6,78
COGS	4,67	1,77	9,39	4,75
Gross margin	2,32	0,40	3,91	2,03
Gross Margin %	33%	30%	29%	30%
Research and Development expenses	0,04	-	0,08	(0,04)
Selling and administrative expenses	0,29	0,21	0,80	0,64
Segment gain (loss)	1,99	0,19	3,03	1,43

**Revenues** increased by \$4.82 million for the three-month period ended September 30, 2018 and increased by \$6.52 million or 96% to \$13.30 million for the nine-month period ended September 30, 2018. The increase is mainly due to additional sales of biogas equipment used for renewable natural gas projects and hydrogen purification systems.

**Gross Margin** increased for the three-month period ended September 30, 2018, to 33% compared to 30% in the same period of 2017. For the nine-month period ended September 30, 2018, gross margin decreased to 29% compared to 30% in the same period of 2017.

**SG&A Expenses** for the three-month period ended September 30, increased by \$0.08 million. For the nine-month period ended September 30, 2018 SG&A expenses increased by \$0.16 million to \$0.80 million compared to the same period prior year. The increase is mainly due to a higher volume of sales.

### Renewable Gas Generation

This segment has no reportable activities for the nine-month period ended September 30, 2018.

### Oil and Gas

(in millions of \$)

	For the three-month period ended September 30,		For the nine-month period ended September 30,	
	2018	2017	2018	2017
Revenues	-	0,99	-	1,23
COGS	-	-	-	-
Gross margin	-	<b>0,99</b>	-	<b>1,23</b>
Gross Margin %	0%	100%	0%	100%
Selling and administrative expenses	-	0,07	-	0,20
Segment gain	-	<b>0,92</b>	-	<b>1,03</b>

**Revenues** decreased by \$0.99 million over the six-month period ended September 30, 2018 compared to the same period in 2017 mainly due to inactivity in this segment.

**Gross Margin** is NIL for the nine-month period ended September 30, 2018 compared to the same period in 2017 mainly due to inactivity in this segment.

**SG&A Expenses** decreased by \$0.20 million for the nine-month period ended September 30, 2018 compared to the same period in 2017 mainly due to inactivity in this segment.

### Corporate and Other

(in millions of \$)

	For the three-months period ended September 30,		For the nine-months period ended September 30,	
	2018	2017	2018	2017
Selling and administrative expenses	1,27	1,06	3,44	2,19
Gain on disposal PP&E	-	(0,13)	-	(0,13)
Foreign exchange loss (gain)	(0,22)	0,11	(0,10)	0,23
(Gain) on conversion of shares issued by a subsidiary	0,17	(0,07)	0,17	(0,11)
Total	<b>1,22</b>	<b>0,97</b>	<b>3,51</b>	<b>2,18</b>
Financial income	-	0,01	-	(0,11)
Financial expense	<b>0,40</b>	0,20	<b>1,03</b>	0,30
Finance loss	<b>0,40</b>	0,21	<b>1,03</b>	0,19
Corporate Expenses	<b>1,62</b>	1,18	<b>4,54</b>	2,37

## 5 FINANCIAL CONDITION

### Summary Balance Sheet

	September 30, 2018	December 31, 2017
In thousands of \$		
Current assets	14 667	7 714
Non-current assets	599	627
	15 266	8 341
Current liabilities	10 772	5 870
Non-current liabilities	8 376	6 861
Shareholders' equity	(3 882)	(4 390)
	15 266	8 341

The increase in the company's total assets between September 30, 2018 and December 31, 2017 represents \$6.93 million. This is mainly due to the increases in trade and other receivables of \$7.34 million, an increase of \$0.17 million in the inventory and a decrease in cash and cash equivalent of \$0.47 million.

The increase in liabilities of \$6.42 million is mainly explained by the increase of deferred revenue of \$2.92 million, the increase of the trade, other payables and accrued liabilities of \$3.42 million.

Working capital amounted to \$3.90 million for a current ratio of 1.36:1 compared with a working capital of \$1.8 million and a 1.3:1 ratio as at December 31, 2017.

**Shareholders' equity** totalled \$(3.88) million as at September 30, 2018, an increase of \$0.51 million from December 31, 2017. The change is mainly due to the net loss for the nine-month period ended September 30, 2018 \$(0.41) million and the conversion of debenture and options for \$0.82 million.

### Indebtedness

	September 30, 2018	December 31, 2017
In thousands of \$		
Short-term debt	103	1 547
Long-term debt	8 154	6 640
Total indebtedness	8 257	8 187

### Total debt (bank loans, short and long-term debt)

This amounted to \$8.26 million as at September 30, 2018, up by \$0.07 million from December 31, 2017. This increase is mostly due to the EDC facility of \$1.91 million compensated by a decrease of the debentures \$0.49 million and the credit facility \$1.44 million.

### Capital Stock Information

The authorized share capital of the Company consists of an unlimited number of common shares and an unlimited number of preferred shares.

As at September 30, 2018, Xebec Adsorption Inc. had 47,578,304 common shares issued.

### Share Purchase Warrants Outstanding

As at September 30, 2018, no Warrants were outstanding.

## Stock Options Outstanding

The Company Stock Option Plan (the “Plan”) allows for the issuance of stock options.

As at September 30, 2018, the maximum number of common shares available for issuance under all stock-based compensation arrangements was 8,500,873.

Under the terms of the Plan, stock options are granted with an exercise price not less than the discounted market price (as such terms are defined in the Policies of the TSX Venture Exchange) of the common shares at the time of grant. Stock options generally vest quarterly over four years and are exercisable for five or seven years from the date of grant.

The Board of Directors, with the approval of the shareholders of the Company at the annual meeting held on June 14, 2018, has amended the Plan in order to change the relevant provisions therein so that the aggregate number of common shares reserved for issuance under the amended plan be fixed at 8,500,873 common shares (being 20% of all issued and outstanding common shares of the Company).

As at September 30, 2018, the Company had 5,566,758 options outstanding under the Plan with a weighted average exercise price of \$0.22.

## 6 SUMMARY OF QUARTERLY RESULT

In thousands of \$, except net earnings (loss) per share	Q3	2018		2017				2016	
		Q2	Q1	Q4	Q3	Q2	Q1	Q4	Q3
Revenues	8 248	6 555	3 215	3 259	4 129	4 047	3 310	3 265	1 795
Net income (loss)	643	315	(1 372)	(928)	93	359	572	(122)	(506)
Earnings (loss) per share									
Basic	0,01	0,01	(0,03)	(0,02)	0,002	0,01	0,01	(0,003)	(0,01)
Diluted	0,01	0,01	(0,02)	(0,02)	0,002	0,01	0,01	(0,01)	(0,01)

## 7 LIQUIDITY AND CAPITAL RESOURCES

Cash flow from (used in) in thousands of \$	For the three-month period ended September 30,			for the nine-month period ended September 30,		
	2018	2017	Change	2018	2017	Change
Operating activities	250	(19)	269	(653)	(2 382)	1 729
Investing activities	(18)	(16)	(2)	(135)	(28)	(107)
Financing activities	230	(133)	363	444	1 739	(1 295)

*Analysis of principal cash flows for the nine-month period ended September 30, 2018*

**Operating activities** in the nine-month period ended September 30, 2018, used \$0.65 million of cash, compared to \$2.38 million of cash used for the same period in 2017, a difference of \$1.73 million. The use of cash for the nine-month period ended September 30, 2018 is mainly explained by a loss of \$0.41 million.

**Investing activities** Cash outflow for the nine-month period ended September, 2018, relates mainly to an investment in engineering standardisation of \$0.1 million.



**Financing activities** for the nine-month period ended September 30, 2018, resulted in a cash inflow of \$0.44 million explained mainly by usage of the EDC facility, \$1.91 million partially offset by the reimbursement of the credit facility of \$1.44 million.

### Contractual Obligations

in millions of \$	Payments Due by Period			
	1 year	2 -5 years	Beyond 5 years	Total
Operating leases	0,4	1,3	1,0	2,7
<b>Total contractual obligations</b>	<b>0,4</b>	<b>1,3</b>	<b>1,0</b>	<b>2,7</b>

### Credit Facilities

As at September 30, 2018, the Company had access to credit facilities in the amount of \$750,000 with TD Bank which were guaranteed by Export Development of Canada and bore interest at TD Bank's prime rate plus 3.0% per annum. This credit facility was nil as at September 30, 2018.

The Company has a letter of guarantee facility of \$2,750,000 with Toronto Dominion Bank of Canada. The letter of guarantee facility was used up to \$2,190,517 as at September 30, 2018.

The Credit facilities are secured by a first ranking hypothec of \$5,000,000 on all movable property of the Company.

The Company is currently transitioning its credit facilities from Toronto-Dominion Bank of Canada to National Bank of Canada while also increasing its credit facilities from \$750,000 to \$2,000,000 which are guaranteed by Export Development Canada at 75%, and bear interest at the Canadian Prime Rate of the Bank plus 2.75%, per annum and are limited by certain margin requirements concerning trade and other receivables.

The company is also currently transferring its TD guarantee facility to a guarantee facility at National Bank of Canada and increasing it to \$12,000,000.

During the quarter, 1,212,821 common shares were issued as a result of the exercise of the conversion option by some of the debenture holders. From this amount, 1,166,667 common shares belong to the Debentures completed on November 30, 2016 and at September 30, 2018 all of its options have been exercised. The balance of 46,154 common shares comes from the Debentures completed on November 16, 2017. The common shares issued included the carrying value of the liability component to the date of conversion. The conversion is a non-cash transaction and thus is excluded from the consolidated statement of cash flows.

As at September 30, 2018, all options related to unsecured convertible debentures, maturing November 30, 2019 have been exercised.

As at September 30, 2018, the Company had unsecured convertible debentures, maturing November 15, 2019, for aggregate gross proceeds of \$1,959,149 outstanding. The debentures bear interest at a rate of 8% per annum. The debentures may be converted into common shares of the Company, at any time prior the maturity date, at the request of the holder of debentures, at a conversion price of \$0.65 per common share.

## 8 OUTSTANDING SHARE DATA

As at November 8, 2018, the following common shares and stock options were outstanding:

	Number of shares	Exercise Price	Expiring Date
Issued and outstanding Common Shares as of November 8, 2018	47 578 304		
Debentures	3 014 075	\$0.65	November 15, 2019
	3 014 075	\$0.65	
Stock Options	258 065	\$0.16	June 12, 2020
	1 399 500	\$0.10	December 22, 2018
	100 000	\$0.15	April 25, 2021
	200 000	\$0.14	May 29, 2021
	400 000	\$0.05	January 7, 2023
	2 098 193	\$0.18	March 5, 2024
	500 000	\$0.49	August 29, 2024
	400 000	\$0.55	December 19, 2022
	111 000	\$0.55	December 19, 2024
	100 000	\$0.60	May 14, 2025
	5 566 758	\$0.22	
Fully diluted as at November 8, 2018	<b>56 159 137</b>		

## 9 CRITICAL ACCOUNTING ESTIMATES

The Company makes estimates and assumptions concerning the future that will, by definition, seldom equal actual results. The following are the estimates and judgments applied by management that affect the Company's unaudited condensed interim consolidated financial statements.

### **Inventories must be valued at the lower of cost and net realizable value.**

A write-down of inventory will occur when its estimated market value less applicable variable selling expenses is below its carrying amount. Materials and other supplies held for use in the production of inventories are not written down below cost if the finished products in which they will be incorporated are expected to be sold at or above cost. This estimation process involves significant management judgment and is based on the Company's assessment of market conditions for its products determined by historical usage, estimated future demand and, in some cases, the specific risk of loss on specifically identified inventory. Any change in the assumptions used in assessing this valuation will impact the carrying amount of the inventory and have a corresponding impact on cost of goods sold.

### **Impairment of internally generated intangible assets**

The Company performs a test for internally generated intangible assets impairment when there is any indication that internally generated intangible assets have suffered any impairment in accordance with the accounting policy stated in the summary of significant accounting policies of these consolidated financial statements. The recoverable amounts of internally generated intangible assets have been determined based on

value-in-use calculations. The value in use calculation is based on a discounted cash flow model. These calculations require the use of estimates and forecasts of future cash flows. Qualitative factors, including strength of customer relationships, degree of variability in cash flows as well as other factors are considered when making assumptions with regard to future cash flows and the appropriate discount rate. A change in any of the significant assumptions or estimates used to evaluate internally generated intangible assets could result in a material change to the results of operations.

#### **Percentage of completion and revenues from long-term production-type contracts**

Revenues recognized on long-term production-type contracts reflect management's best assessment by taking into consideration all information available at the reporting date and the result on each ongoing contract and its estimated costs. The management assesses the profitability of the contract by applying important judgments regarding milestones marked, actual work performed and estimated costs to complete. Actual results could differ because of these unforeseen changes in the ongoing contracts' models.

#### **Allowance for doubtful accounts**

The Company reviews all amounts periodically for indications of impairment and the amounts impaired have been provided for as an allowance for doubtful accounts.

#### **Liquidity risk**

The assessment of the Company's ability to continue as a going concern and to raise sufficient funds to pay for its ongoing operations expenditures, meets its liabilities for the ensuing year, involve significant judgment based on historical experience and other factors including expectation of future events that are believed to be reasonable under the circumstances.

## **10 CHANGES IN ACCOUNTING POLICIES AND ACCOUNTING PRONOUNCEMENTS**

#### **Revenues from Contracts with Customers**

Since January 1, 2018, the Company is following IFRS 15. There is no material impact of this standard on its condensed interim consolidated financial statements.

The Company earns revenues mainly from the sale of natural gas dryers, air dryers and hydrogen purification solutions (commercial equipment). The Company recognizes revenue on commercial equipment sales when it is probable that the economic benefits will flow to the Company and delivery has occurred, the sales price is fixed or determinable and collectability is reasonably assured. These criteria are generally met at the time the product is shipped and delivered to the customer and, depending on the delivery conditions, title and risk have passed to the customer and acceptance of the product has been obtained. Provisions are established for estimated product returns and warranty costs at the time revenue is recognized. Cash received in advance of all of these revenue recognition criteria being met is recorded as deferred revenue.

Revenues from long-term production-type contracts such as biogas purification equipment and engineering service contracts are determined under the percentage-of-completion method whereby revenues are recognized based on the costs incurred to date in relation to the total expected costs of a contract (costs being composed mainly of materials and labor). Costs and estimated profit on contracts in progress in excess of amounts billed are reflected as work in progress. Cash received in advance of revenues being recognized on contracts is recorded as deferred revenue.

The Company monitors its contracts with customers on a regular basis to determine if a loss is likely to occur. If a loss is anticipated on a contract, the entire estimated loss is recorded as a cost of goods sold in the year in which the loss becomes evident and reasonably estimable.

Revenue is measured based on the price specified in the sales contract, net of discounts and estimated returns at the time of sale. Historical experience is used to estimate and provide for discounts and returns.

#### Financial Instruments

Since January 1, 2018, the Company is following IFRS 9. There is no material impact of this standard on its condensed interim consolidated financial statements.

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments. Financial assets are derecognized when the rights to receive cash flows from the assets have expired or have been transferred and the Company has transferred substantially all risks and rewards of ownership.

At initial recognition, the Company classifies its financial instruments in the following categories depending on the purpose for which the instruments were acquired:

Cash	Loans and receivables
Trade and other receivables	Loans and receivables
Bank loan	Other financial liabilities
Trade and other payables	Other financial liabilities
Accrued liabilities	Other financial liabilities
Long-term debt	Other financial liabilities
Government royalty program obligation	Other financial liabilities
Obligation arising from shares issued by a subsidiary	Other financial liabilities

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables are initially recognized at the amount expected to be received, less, when material, a discount to reduce the loans and receivables to fair value. Subsequently, loans and receivables are measured at amortized cost using the effective interest method less a provision for impairment, if any.

Finance income and expense are recognized by applying the effective interest rate, except for short-term receivable when the effect of discounting is immaterial. Other financial liabilities are initially measured at fair value and subsequently at amortized cost using the effective interest method. Financial liabilities are classified as current liabilities if payment is due within 12 months. Otherwise, they are presented as non-current liabilities.

The following standards have been issued but are not yet effective:

In January 2016, IASB issued IFRS 16, "Leases", which specifies how an IFRS reporter will recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. Lessors continue to classify leases as operating or finance, with IFRS 16's approach to lessor accounting substantially unchanged from its predecessor, IAS 17. The standard will be mandatory for annual periods beginning on or after January 1, 2019. The Company is currently evaluating the impact of this standard on its consolidated financial statements.



## 11 OUTLOOK

### 11.1. Current Market and Guidance for 2018

The company was able to grow revenues by 100% in Q3/18 compared to the same period in 2017. Management partially resolved the working capital issues early in Q3/18 through credit facilities with EDC and anticipates that going forward revenue generation will continue to increase. Conditions in Xebec's target markets remain favorable, allowing us to maintain guidance for increases in total revenue in 2018. We expect revenue growth for 2018 of 50% to 70%, leading to revenues in the range of CDN\$ 22.0 to 24.5 million. Earnings per share (EPS) are expected to be somewhat weaker due to higher interest rate expenses and increases in overall spending, and are now expected to be in the range of \$0.01 to \$0.02.

### 11.2. Industrial Air & Gas Products

Xebec's continues to push revenue growth in the Industrial Products Segment and expects double digit organic revenue growth in 2018. Xebec forecasts to grow this segment by 25% to 35% compared to last year. GM has been lower than expected in the first two quarters of 2018 but Xebec has put steps in place to bring the gross margin back in line with management's expectations. We have already seen an improvement in Q3/18. The first acquisition is on track to close in Q4/18. For the full year we expect revenues of CDN \$ 6.0 to 6.5 million, and gross margins to move closer to our target range of 40% plus.

### 11.3. Clean Technology

Our Clean technology segment continues to perform to expectations and our quote activity in the Clean Technology segment has significantly strengthened compared to prior years. We regard quote activity as an early indicator for future order activity. With a current order backlog of over \$63 million, Xebec is emerging as a worldwide leader in biogas upgrading technology. We maintain our forecast that the Clean Technology segment will grow 80 % to 100% in 2018, generating revenues of \$16 million to \$18 million.

### 11.4. Renewable Gas Generation

Xebec is working on the establishment of its Renewable Gas Generation business which will be to build, own and operate quality renewable gas assets in Canada, and to sell renewable natural gas to obligated parties and other third parties. No revenue or costs have yet been recorded.

### 11.5. Oil and Gas

After review of its available resources, Xebec decided to transition out of this business segment and allocate the available resources and funds to the Clean Technology and Renewable Gas Generation segments, which are experiencing or have the potential to experience significant growth. Xebec believes that gas sweetening would be an attractive medium to long term business, but given its significant growth in other segments, Xebec's directors and management came to the conclusion that the company does not have the resources necessary to aggressively grow all its business segments at the same time. Over the course of 2018 Xebec will continue to support specific customers and partners, and help them transition to alternate suppliers and establish alternate relationships.



## 11.6. Delivery Outlook

Our order lead times are normally between 12 weeks to 9 months, and we enjoy good visibility over at least two to three quarters. We operate in various end markets so our delivery outlook is subject to a number of factors that are within our control, such as product availability, delivery lead times, price and market engagement initiatives, as well as a number of factors beyond our control, such as macroeconomic conditions, environmental site permits, customer project financing, feedstock availability, off-take agreements etc. As part of our annual budget planning cycle, we make a number of underlying assumptions regarding delivery outlook in each of our relevant market segments in order to plan capacity and appropriately allocate our resources.

## 11.7. Outlook Summary

The timing and full realization of the opportunities under the current market environment cannot be assured or specifically established. It is, however, important to understand the magnitude of these opportunities and the transformative impact that any one of them could have on the business going forward.

Over the past few years, we have taken significant steps to streamline operating and production costs, and we are in the process of strengthening our consolidated financial position and repair our balance sheet. While we may still see some volatility in our revenue over the short-term, we do expect that for the medium and longer-term our revenue trend will continue to improve significantly. As at November 8, 2018, our order backlog was \$65.5 million (August 6, 2018 – \$68.1 million) spread across our two active business segments and numerous geographical regions. It includes firm order commitments of \$51 million to be delivered over three years. Xebec expects to be converting a portion of this backlog into revenue in Fiscal 2018. Consequently, Xebec maintains its 2018 guidance of \$22.0 million to \$24.5 million in revenue but, due to higher SG&A and interest expenses, guides lower on EPS to 0.01 to 0.02. In order to achieve our guidance, Xebec will need to stay focused on execution and delivery in Q4/18.

As a global company, we are subject to the risks arising from adverse changes in global economic and political conditions. Political conditions such as government commitments and policies towards environmental protection and renewable energy may change over time. Economic conditions in leading and emerging economies have been, and remain, unpredictable. In particular, currency fluctuations could have the impact of significantly reducing revenue and gross margin as well as the competitive positioning of our product portfolio. These macroeconomic and geopolitical changes could result in our current or potential customers reducing purchases or delaying shipment which could cause revenue recognition on these products to shift into 2019 or beyond.

## 12 RELATED PARTY TRANSACTIONS

In thousands of \$	For the three-month period ended September 30,		For the nine-month period ended September 30,	
	2018	2017	2018	2017
Marketing and professional services expenses paid to companies controlled by members of the immediate family of an officer	15	24	142	100
<b>Total</b>	<b>15</b>	<b>24</b>	<b>142</b>	<b>100</b>

## 13 RECONCILIATION OF NON-IFRS MEASURES

### EBITDA (unaudited)

In thousands of \$	For the three-month period ended September 30,		For the nine-month period ended September 30,	
	2018	2017	2018	2017
Net income (loss)	643	93	(413)	1 024
Depreciation of property	17	21	57	66
Amortization of intangible assets	42	20	105	60
Finance cost net	404	210	1 026	511
<b>EBITDA</b>	<b>1 106</b>	<b>344</b>	<b>775</b>	<b>1 661</b>

### EBITDA

Is not a performance measure defined under IFRS and is not considered an alternative to income from operations or net (loss) earnings in the context of measuring a company's performance. EBITDA does not have a standardized meaning and is therefore not likely to be comparable with similar measures used by other publicly traded companies.

The EBITDA for the three-month period ended September 30, 2018 has amounted to \$1.11 million compared to \$0.34 million in the same period of 2017, an increase of \$0.77 million. This is mainly due to the increase of the net income.

The net finance cost for the nine-month period ended September 30, 2018 includes the accretion of the obligation arising from shares issued by a subsidiary \$0.25 million, interest and accretion on convertible debentures \$0.33 million and interest on short term debt \$0.17 million.

## 14 ENTERPRISE RISK MANAGEMENT

### Our Definition of Business Risk

We define business risk as the degree of exposure associated with the achievement of key strategic, financial, organizational and process objectives in relation to the effectiveness and efficiency of operations, the reliability of financial reporting, compliance with laws and regulations and the safeguarding of assets within an ethical organizational culture.

Our enterprise risks are largely derived from the Corporation's business environment and are fundamentally linked to our strategies and business objectives. We strive to proactively mitigate our risk exposures through rigorous performance planning and effective and efficient business operational management. We strive to avoid taking on undue risk exposures whenever possible and ensure alignment with business strategies, objectives, values and risk tolerances.

The following sections summarize the principal risks and uncertainties that could affect our future business results going forward and our associated risk mitigation activities.

## 15 RISK FACTORS

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 below and in our Annual Information Form are not the only ones we face. Additional risks and uncertainties, including those that we do not know about now or that we currently deem immaterial, may also adversely affect our business. For a more complete discussion of the risks and uncertainties which apply to our business and our operating results (which are summarized below), please see our Annual Information Form and other filings with Canadian Regulatory Authorities ([www.sedar.com](http://www.sedar.com)).

Our business entails risks and uncertainties that affect our outlook and eventual results of our business and commercialization plans. The primary risks relate to meeting our product commercialization milestones, which require that our products exhibit the functionality, cost and performance required to be commercially viable against competing technologies and that we have sufficient access to capital to fund these activities. There is also a risk that key markets for certain of our products may not be as large as we anticipate or never develop, or that market acceptance might take longer to develop than anticipated – in particular for applications such as advanced CO<sub>2</sub> removal from natural gas, which requires industry acceptance and uptake, or our renewable natural gas (RNG) product offering which depends on government programs and regulatory support.

A summary of our identified risks and uncertainties are listed below:

### 15.1. Macroeconomic and Geopolitical

- The uncertain and unpredictable condition of the global economy could have a negative impact on our business, results of operations and consolidated financial condition, or our ability to accurately forecast our results, and it may cause a number of the risks that we currently face to increase in likelihood, magnitude and duration.
- Significant markets for renewable natural gas (RNG) and other hydrogen purification products may never develop or may develop more slowly than we anticipate. This would significantly harm our revenues and may cause us to be unable to recover the losses we have incurred.
- Changes in government policies and regulations could hurt the market for our products.
- Lack of new government policies and regulations for the renewable energy technologies could hurt the development of our renewable natural gas (RNG) and hydrogen generation and purification products.
- We currently face and will continue to face significant competition from other developers and manufacturers of renewable natural gas (RNG) products and hydrogen purification systems. If we are unable to compete successfully, we could experience a loss of market share, reduced gross margins for our existing products and a failure to achieve acceptance of our proposed products.
- We face competition for CO<sub>2</sub> removal from natural gas systems from developers and manufacturers of traditional technologies and other alternative technologies.
- Rapid technological advances or the adoption of new codes and standards could impair our ability to deliver our products in a timely manner and, as a result, our revenues would suffer.
- Our articles of incorporation authorize us to issue an unlimited number of common and preferred shares. Significant issuances of common or preferred shares could dilute the share ownership of our shareholders, deter or delay a takeover of us that our shareholders may consider beneficial or depress the trading price of our common shares.
- Our share price is volatile and we may continue to experience significant share price and volume fluctuations.

## 15.2. Operating

- We may not be able to implement our business strategy and the price of our common shares may decline.
- Our quarterly operating results are likely to fluctuate significantly and may fail to meet the expectations of securities analysts and investors causing the price of our common shares to decline.
- We currently depend on a relatively limited number of customers for a majority of our revenues and a decrease in revenue from these customers could materially adversely affect our business, consolidated financial condition and results of operations.
- Our insurance may not be sufficient.
- Hydrogen Fuel Cell systems and applications may not be readily available on a cost-effective basis, in which case our hydrogen generation and purification products may not find a sufficient end market and our revenues and results of operations would be materially adversely affected.
- We could be liable for environmental damages resulting from our research, development or manufacturing operations.
- Our strategy for the sale of renewable natural gas products depends on developing partnerships with OEMs, governments, systems integrators, suppliers and other market channel partners who will incorporate our products into theirs.
- We are dependent on third party suppliers for key materials and components for our products. If these suppliers become unable or unwilling to provide us with sufficient materials and components on a timely and cost-effective basis, we may be unable to manufacture our products cost-effectively or at all, and our revenues and gross margins would suffer.
- We may not be able to manage successfully the anticipated expansion of our operations.
- If we do not properly manage foreign sales and operations, our business could suffer.
- We will need to recruit, train and retain key management and other qualified personnel to successfully expand our business.
- We may acquire technologies or companies in the future, and these acquisitions could disrupt our business and dilute our shareholders' interests.
- We must continue to lower the cost of our renewable natural gas and hydrogen generation and purification products and demonstrate their reliability or consumers will be unlikely to purchase our products and we will therefore not generate sufficient revenues to achieve and sustain profitability.
- Any failures or delays in field tests of our products could negatively affect our customer relationships and increase our manufacturing costs.
- The components of our products may contain defects or errors that could negatively affect our customer relationships and increase our development, service and warranty costs.
- We depend on intellectual property and our failure to protect that intellectual property could adversely affect our future growth and success.
- Our products use flammable fuels that are inherently dangerous substances and could subject us to product liabilities.

## 15.3. Liquidity

The Company has realized an operating profit of \$643,107, had cash outflows from operating activities of \$652,693 for the nine-month period ended September 30, 2018 and finished the period with cash and cash equivalents amounting to \$866,141, a positive working capital of \$3,895,365 and had access to credit facilities totaling \$750,000 of which NIL has been used. During the quarter, management undertook various initiatives and developed a plan to manage its operating and liquidity risks in light of prevailing economic conditions. The Company has prepared a budget and forecast for 2018 for which management believes the assumptions are reasonable. Achieving budgeted results is dependent on improving the volume of revenues in Canada, United States, Europe and China, delivering on sales and contracts



schedules, meeting expected overall operating margin levels and controlling general and administrative costs.

The Company is thus faced with uncertainties that may have an impact on future operating results and liquidity. These uncertainties include reduced spending in biogas upgrading projects reflecting the uncertainties of an emerging market, fluctuations in foreign currency rates and achieving the Company's business plan goals as mentioned in the previous paragraph, which includes the development of a new business segment. While management believes it has developed planned courses of action to mitigate operating and liquidity risks, there is no assurance that management will be able to achieve its business plan and maintain the necessary liquidity level, including accessing liquidities from China, if events or conditions develop that are not consistent with management's expectations, key budget assumptions for 2018 and planned courses of action. Therefore, the Company may require additional external funding and there is no assurance that it would be successful. It is possible that future changes in capital markets conditions could result in such funding not being available when required or at acceptable costs. The Company is unable to predict the possible effects, if any, of such uncertainties and the potential adjustments to the carrying values of assets and liabilities that could be needed should the Company have insufficient liquidity. Such adjustments could be material.

#### **15.4. Foreign Currency Exchange**

Our operating results may be impacted by currency fluctuation.

### **16 FORWARD-LOOKING STATEMENTS**

This Management Discussion and Analysis ("MD&A") contains forward-looking statements, including statements regarding the future success of the Company's business, technology, and market opportunities. Forward-looking statements typically contain words such as "believes", "expects", "anticipates", "continues", "could", "indicates", "plans", "will", "intends", "may", "projects", "schedules", "would" or similar expressions suggesting future outcomes or events, although not all forward-looking statements contain these identifying words. Examples of such statements include, but are not limited to, statements concerning: (i) actions expected to be undertaken to achieve the Company's strategic goals; (ii) the key market drivers impacting the Company's success; (iii) intentions with respect to future biogas development work; (iv) expectations regarding business activities and orders that may be received in fiscal 2018 and beyond; (v) trends in, and the development of, the Company's target markets; (vi) the Company's market opportunities; (vii) the benefits of the Company's products, (viii) the intention to enter into agreements with partners; (ix) future outsourcing; (x) expectations regarding competitors; (xi) the expected impact of the described risks and uncertainties; (xii) intentions with respect to the payment of dividends; (xiii) the management of the Company's liquidity risks in light of the prevailing economic conditions; (xiv) the Company's cost reduction plan; and (xv) the search for additional financing over the next months.

These statements are neither promises nor guarantees, but involve known and unknown risks and uncertainties that may cause the Company's actual results, level of activity or performance to be materially different from any future results, levels of activity or performance expressed in or implied by these forward-looking statements. These risks include, generally, risks related to revenue growth, operating results, industry and products, technology, competition, the economy and other factors. Although the forward-looking statements contained herein are based upon what management believes to be current and reasonable assumptions, the Company cannot assure readers that actual results will be consistent with these forward-looking statements. Examples of such assumptions include, but are not limited to: (i) trends in certain market segments and the economic climate generally; (ii) the pace and outcome of technological development; (iii) the identity and expected actions of competitors and customers; and (iv) the value of the Canadian dollar. The



forward-looking statements contained herein are made as of the date of this MD&A and are expressly qualified in their entirety by this cautionary statement. Except to the extent required by law, the Company undertakes no obligation to publicly update or revise any forward-looking statements contained herein.

## 17 CORPORATE GOVERNANCE

The Board of Directors of Xebec Adsorption Inc. is comprised of five directors, three of whom are considered to be independent.

## 18 APPROVAL

The Board of Directors of Xebec Adsorption Inc. has approved the disclosure contained in this MD&A. A copy of this MD&A will be provided to anyone who requests it.

## 19 ADDITIONAL INFORMATION

Additional information relating to Xebec Adsorption Inc. is on SEDAR at [www.sedar.com](http://www.sedar.com) or by contacting:

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