



**Xebec Adsorption Inc.**

**Management's Discussion and Analysis  
For the three-month period ended March 31, 2015**

**June 1, 2015**

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

## 1. ABOUT THIS MANAGEMENT DISCUSSION AND ANALYSIS

The following Management's Discussion and Analysis ("MD&A") provides a review of the results of operations, financial conditions and cash flows of Xebec for three-month period ended March 31, 2015. This discussion should be read in conjunction with the information contained in the Company's unaudited consolidated financial statements and related notes for the first quarter of 2015, as well as with the audited consolidated financial statements and related notes for the year ended December 31, 2014. Additional information, including our annual information form (AIF), 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 SEA" for Xebec Adsorption South East Asia PTE. Ltd., "Xebec USA" for Xebec Adsorption USA, inc. and "Xebec Shanghai" for Xebec Adsorption (Shanghai) Co. Ltd. Also, the fiscal year ending December 31, 2014 and those ended December 31 of prior years are sometimes designated by the terms "fiscal 2014", "fiscal 2013" 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 June 1, 2015, the date on which the Board of Directors approved the consolidated financial statements and Management's Report for the period ended March 31, 2015. It presents the Company's status and business context as they were, to management's best knowledge, at the time this report was written.

### 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 2015 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 described in detail in Xebec's Annual Information Form for the year ended December 31, 2014 under the heading "Risk Factors" which is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on Xebec's website at [www.xebecinc.com](http://www.xebecinc.com).

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.

### **Compliance with International Financial Reporting Standards**

Unless otherwise indicated, the financial information presented below, including tabular amounts, is expressed in Canadian dollars and prepared in accordance with International Financial Reporting Standards ("IFRS"). 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 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.

## **2. DESCRIPTION OF THE BUSINESS**

### **CORPORATE OVERVIEW**

#### **General**

Xebec is a provider of gas purification and filtration solutions for the natural gas, field gas, biogas, helium, and hydrogen markets. Xebec designs, engineers and manufactures innovative products that transform raw gases into marketable sources of clean energy mainly used to displace diesel or gasoline as a transportation fuel. Xebec is focused on establishing leadership positions in 4 key markets where demand for natural gas purification, associated gas purification, biogas upgrading and hydrogen purification is growing. Headquartered in Blainville (QC), Xebec operates two manufacturing facilities in Blainville, and Shanghai, People's Republic of China, as well as a sales and distribution network in North America, and Asia. Xebec ([www.xebecinc.com](http://www.xebecinc.com)) shares trade on the Toronto Venture Exchange ("TSXV") under the symbol XBC-V. On February 25th 2014, Xebec opened a sales office in Houston, Texas (USA), in order to better serve sales opportunities in the United States and South America.



Xebec's products and services are an essential part of a growing industry of transforming raw gases into marketable sources of clean energy.

Xebec's head office is in Blainville, Quebec in a 41,753 square foot manufacturing facility in which 55 people are currently employed. The Blainville operation houses corporate finance, sales and application support, filtration and aftermarket, global supply chain, operational engineering, manufacturing and service and maintenance support.

Xebec's Asian 20,451 square foot manufacturing facility is located in the Song Jiang district of Shanghai, Peoples Republic of China ("China"). This facility employs 26 people and is responsible for sales, product engineering and assembly using components manufactured in the greater Shanghai industrial area. The facility also provides shared services including supply chain and engineering support to Xebec's head office. Xebec Shanghai is also responsible for sales of Xebec's products, marketing, technical and after-sales

support for the Asian and South East Asian markets.

Xebec USA is located in Houston, Texas. The primary role of Xebec USA is to handle sales from the United States and South America. In addition Xebec USA takes a leadership role within the group in the development of Xebec's next generation gas separation membrane technology. This facility currently employs three employees.

Xebec opened in the first quarter of 2009 along with Angstrom, a regional sales office in Singapore and the office has been closed and will be wound up during the year 2015. Since January 1<sup>st</sup> 2013, Xebec sells Xebec's products in South East Asia through Bireme PTE Limited, a reseller owned by a former director of Xebec Singapore. Bireme provides local support and service to the South East Asian customer base including customers in Thailand, Malaysia, Indonesia, the Philippines, Vietnam, Brunei, Sri Lanka, Bangladesh and Pakistan. Bireme is primarily supplied by Xebec Shanghai.

### **Technology and Application**

#### *Overview.*

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 technology. Adsorption technology is used to remove targeted impurities or separate bulk mixtures. This technology is used in many industrial gas treatment processes including biogas separation and purification, hydrogen recovery, air separation, and oxygen enrichment for medical applications as well as drying applications for air, natural gas, carbon monoxide, carbon dioxide, sulfur dioxide, acetylene, propylene, propane, and syngas.

#### *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). This process differs from the absorption process, in which a substance diffuses into a liquid or a solid to form a solution. 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").

Adsorbents are a class of materials that have the property whereby gas molecules adhere to their surface. Because some molecules will adhere preferentially over others, by selecting the right adsorbent material it is possible to selectively remove an impurity from a gas stream. To maximize capacity, adsorbents are made with an extremely high porosity, with the result that for a small quantity of adsorbent material, there is a very high surface area available for the impurities to be adsorbed. Once an adsorbent is laden with adsorbed molecules, it can be regenerated for re use in two ways. The first method is to reduce the pressure from normal operating conditions of 80 pounds per square inch to 160 pounds per square inch down to between 0 and 1 pound per square inch, at which point most of the adsorbed molecules are released. The second method is to regenerate using heat. By raising the adsorbent to temperatures of 200°C or higher, the adsorbed molecules are driven off. The adsorbent must then be cooled down to be ready for the next cycle.

The adsorbents and zeolites used by Xebec differ from conventional adsorbents in that their pore sizes are smaller and more orderly structured. This means that some molecules are physically too large to enter the pore, so that the selectivity for adsorption is determined by which molecules can actually enter the zeolite pore. In this way they act just like a sieve, therefore their common name - molecular sieve. One important property of adsorbents is their ability to remove impurities at very low concentrations. This means they can be used to purify a gas to a very high degree of purification. Certain adsorbents have larger pore sizes and are both used for removal of bulk quantities of impurities since they have a high loading capacity needed when impurity concentrations are high.

The purification of a gas implies the removal of a trace impurity or contaminant. The drying of air can be classified in this category since water molecules, considered as the contaminant in drying applications, are selectively adsorbed onto an adsorbent material as air passes over it. The impure moist air passes through the adsorbent material and the purified dry air is then released. Once the adsorbent material is saturated with water molecules, the adsorbed water can be released by changing the conditions under which it originally adhered in the first place. This regenerates the adsorbent so it can be used again. The principles of adsorption are not limited to the extraction of water, extending too many more types of gas purification. For instance, if the appropriate adsorbent material is used and other conditions are favorable, it is possible to selectively remove the carbon dioxide from air, to separate nitrogen from oxygen, or to dry any other gas such as natural gas.

### *Pressure Swing Adsorption (PSA).*

Pressure swing adsorption is a widely used technology for the purification of gases. This regeneration process is accomplished by reducing the pressure. At the moderate pressures found in compressed air systems, such as 100 pounds per square inch, an adsorbent can support a certain amount of moisture. When that pressure is dropped to ambient air pressure, the adsorbent can only support a smaller amount of moisture. By swinging the pressure from high to low, it is possible to adsorb large quantities of moisture at the higher pressure, and then release that moisture at the low pressure. This technique is called pressure swing adsorption. By alternating between two adsorbent filled vessels, one vessel being on line and removing moisture at high pressure, and the other off line releasing the trapped moisture at low pressure, it is possible to thoroughly dry a gas.

### *Temperature Swing Adsorption (TSA).*

Another method uses temperature in order to regenerate the adsorbent. At low temperatures, adsorbents can retain significant amounts of water. At temperatures above 200°C, however, adsorbents hold almost none. By swinging the temperature from low to high, it is possible to adsorb large quantities of moisture at a low temperature, such as 40°C, and release it at the high temperature.

### *Conventional PSA Technology.*

Conventional PSA systems used today in industry are made up of four to sixteen large vessels, connected by a complex network of piping and valves to switch the gas flows between the vessels. Despite their widespread use in industry, Xebec believes that conventional PSA systems suffer from a number of inherent disadvantages. These PSA systems typically operate at slow cycle speeds of 0.05 to 0.5 cycles/minute since faster cycle speeds would cause the adsorbent beads to float or fluidize in the vessel, causing the beads to wear and ultimately fail. To meet customer demands for capacity, conventional PSA systems must utilize large vessels to compensate for the slow cycle speeds, leading to higher costs and a large equipment footprint. The use of large vessels also means that these PSA systems are typically erected in the field, increasing installation costs. The network of piping and valves used in large scale PSA systems, with the associated instrumentation and process control equipment, also adds cost to the overall system.

### *Xebec's PSA Technology.*

Xebec's licensed rotary valve technology replaces the complex and bulky network of piping and valves used in conventional PSA systems with two compact, integrated valves. These rotary valves are included in Xebec's advanced purification and separation products, and they speed up (or intensify) the rate at which gas can be flowed into a PSA system that uses adsorbent beads in the separation process. In turn, the process intensification allows the PSA to be reduced in size, requiring smaller vessels (compared to conventional PSAs) to purify a particular volume of product gas. In addition, Xebec has a license to structured adsorbent material, which avoids the fluidization limitation of beaded adsorbents. Xebec's licensed structured adsorbent and rotary valve technologies are integrated into some of its advanced hydrogen and biogas purification products, which operate at significantly higher cycle speeds (up to 50 cycles/minute) than conventional PSA systems. This result 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.

### *Membrane Technology*

Xebec's Membrane solution is another proven technology for biogas purification. When the product stream must be delivered at higher pressures (typically higher than 250 psig) or for smaller feed flow rates, Xebec offers high-performance, hollow fiber polymer membranes. When pressurized biogas feed enters the membrane modules, CO<sub>2</sub> has a much stronger preference to diffuse and permeate through the polymer-based membrane than CH<sub>4</sub> molecules. As a result, the product stream, which is rich in CH<sub>4</sub>, is retained in the pressurized side and can be sent directly to the natural gas grid.

Based on the desired degree of product purity and methane recovery, Xebec employs a two- or three-stage membrane system for biogas upgrading. These advanced membrane separation techniques are superior to market competitors in several ways:

- The high methane recovery rate (up to 99.8%) generates very small amounts of CH<sub>4</sub> (between 0.5- 1%) in the exhaust stream
- The flexible membrane technology has the ability to produce product gas streams with different methane contents
- Apart from the high purity product gas, a portion of the recycle stream, which contains about 40% CH<sub>4</sub>, can be withdrawn and used as a heating and electricity resource within the plant
- The flow rate of the recycle stream from the multi-stage membrane system is about 30-60% less than that of other available membrane systems. This leads to enormous energy savings in the compressor section of the unit.

### *Hybrid System (Combination of Membrane and PSA)*

Xebec has been designing advanced Helium (He) recovery systems for several years, but has just recently developed a hybrid helium purification and conditioning system that will take low helium concentrations from a gas well, typically 0.6 to 2.5% of helium, and purify the gas stream to 99.999% (5 nines) pure helium, while achieving recovery rates of up to 95+%. After the helium purification step, the product helium gas can be liquefied or compressed for further monetization. Due to the fast cycle PSA technology of Xebec and the utilization of high performance membranes, these helium purification systems have a relatively small footprint and can be deployed in remote areas.

The hybrid system benefits from positive aspects of both PSA and Membrane systems. As an example, the membrane system is only preferred over a PSA system when the operating pressure is higher than 250 psig; however, the hybrid system is able to operate in wide ranges of pressure (100-400 psig).

### *Filtration Technology*

Xebec has been designing and manufacturing air and gas filters for decades. In 2014 Xebec launched a dedicated filter line for natural gas filtration. The high-grade, cast aluminum filter housings (XL and XM series) are chromated for corrosion protection and finished with an impact and abrasion-proof powder coating on the outer side. High pressure carbon steel housings (XH series) are manufactured by means of iron phosphate passivation and have a nickel-coated finish. This multi-layer surface protection ensures high resistance and a long service life.

Xebec's gas filters can perform the following separations:

*Water Separation* - Large, heavy amounts of liquid droplets or particles from a compressed gas flow are separated by means of gravitational forces, centrifugal forces, inertial effects, etc. The differential pressure is constant and a high separation efficiency is guaranteed over the whole specified flow rate range.

*Dry Type Filtration* - Solid contaminants are separated from the compressed gas system. The solids contact the fibres of the filter media where they remain. A coarse and a fine coarse media filter protects the fine filter media, increasing the service life. The differential pressure (dry) increases with an increasing amount of contaminant. The elements can be operated from inside to out or vice versa. The preferred direction of flow is toward the finer filter fibres, i.e. from out-to-in.

*Wet Type Filtration* - Liquid contaminants from the compressed gas flow are separated using a fine multi-layer filter media in combination with a drainage media (coalescing filter). The liquid contaminants contact the fibres of the fine filter media, move along the fibres due to the compressed gas flow and form larger droplets when they are merged (coalescing effect). The droplets are absorbed by the drainage media, discharged to the filter element bottom due to gravitational forces, and drop off the filter element. Theoretically, the differential pressure (wet) is constant. However, it rises as the filter element is continuously loaded with liquid and solid contaminants. The direction of flow is toward the drainage media, i.e. from in-to-out.

*Oil Vapour Adsorption* - Compressed gas flow is separated by means of absorption to activated carbon. The CNG becomes virtually oil-free which cannot condense into a liquid any more. There is often a filter media downstream of the activated carbon in order to eliminate activated carbon abrasion particles (abrasion-free activated carbon filter). The differential pressure (dry) is constant. The direction of flow is always toward the media, i.e. from in-to-out. Liquid oil or water would dramatically reduce the retention capacity of the activated carbon for oil vapour and should, therefore, be separated in advance using appropriate grade filters.



Products

Xebec designs, develops, builds, sells, and services a range of adsorption and membrane gas purification systems for biogas purification (BGX Solutions™), natural gas dehydration and conditioning units for natural gas vehicle refueling stations and for natural gas upgrading (NGX Solutions™), hydrogen purification (PSA) systems (H2X Solutions™), helium purification (SGX Solutions™), field gas (associated gas) purification systems (AGX Solutions™) and filtration and separation equipment (FSX Solutions™).

In addition Xebec designs, develops, builds, sells, and services a range of gas filtration products under its FSX Solutions™ brand, covering four ranges of filter lines from XL (pressure rating up to 290 psig / 20 bar), XM (pressure rating up to 725 psig / 50 bar), XH (pressure rating up to 6000 psig / 420 bar) and XT/XZ fabricated gas filters (pressure rating up to 260 psig / 18 bar) or custom designed fabricated filters.

MARKETS

Xebec mainly targets four key market and business segments:

- 1) Biogas upgrading plants
- 2) Natural gas dehydration and conditioning for NGV refueling stations
- 3) Hydrogen purification
- 4) Associated gas and Helium purification

**Natural gas dryers for NGV refueling stations**



**Growing market**

- Cost leadership through Chinese manufacturing

**Key Customers:** Clean Energy, Petrochina, Sinopec, Shell

**Biogas upgrading plants**




**Rapidly growing market**

- High recovery, high purity, low energy plants

**Key Customers:** SEMPRA, Montauk Energy, Halla Engineering, Terasen Gas

**Hydrogen purifiers for hydrogen recovery**



**Evolving market segment**

- Market-leading performance for small-capacity hydrogen purifiers
- Syngas purification

**Key Customers:** HydroChem, Air Liquide, Linde, Iwatani

**Associated Gas (Oil & Gas industry)**



**Evolving market segment**

- Market-leading performance for associated gas purification

**Key Customer:** Venocco, Warren

Xebec's current strategy is based on a number of key market drivers and global macro trends driving the demand for Natural Gas, Hydrogen, Helium and Renewable Gas as a low carbon and cleaner energy source amongst them are:

- The abundance and low cost of Natural Gas;
- Introduction of Hydrogen cars and the expanding hydrogen economy;
- Climate Changes and the urgent need to reduce greenhouse gas emission (GHG);
- Gas flaring reduction targets;
- The growing government commitments to renewable energy;
- Diesel displacement in favor of natural gas; and
- Technological advancements.



These market drivers are anticipated to fuel an increasing demand for gas purification, filtration and conditioning solutions. The low cost of natural gas and biogas drives the demand for solutions aimed at displacing diesel and other crude oil derivatives for applications in transportation and for applications on oil rigs, therefore creating additional business opportunities for Xebec.

The continued growth in the NGV segment and the continued build-out of natural gas vehicle refueling infrastructure offer increasing growth opportunities in this segment.

The introduction of hydrogen fuel cell vehicles in different parts of the world and the associated growth in hydrogen production requires an increase in hydrogen purification.

The scarcity of helium and its increase in price opens up additional helium purification opportunities at stranded wells. In addition there is an increase in the re-use of helium and its associated recycling.

### **COMPETITION**

Xebec faces competition within its target markets primarily from other manufacturers of biogas purification, natural gas, associated gas and hydrogen purification equipment. The natural gas and biogas purification and separation market has not yet seen considerable consolidation, unlike other industrial or renewable industries. Most competitors of Xebec today are small to medium companies working in niche segments of the natural gas and biogas business.

**BGX Solutions:** In the emerging biogas purification market, Xebec expects to compete with manufacturers of competing technologies including membrane separation, amine and water wash systems, as well as advanced and conventional adsorption based systems for the purification of biogas. These competitors include, Acion Technologies Inc. [USA], Cirmac International BV [The Netherlands], Läckeby Water Group (PURAC) [Sweden], Guild Associates Inc [USA], MT-Biomethan GMBH [Germany], Carbotech GmbH [Germany], Haase Energietechnik AG [Germany], Ros Roca Group [Spain], Flotech/Greenlane [Canada], Yit Vatten Och Misjoteknik [Sweden], Air Liquide [Canada], MalmBerg Water AB [Sweden] and A.R.C. Technologies Corp [USA].

**NGX Solutions:** In the natural gas dryer market, Xebec competes with a number of companies who manufacture gas dryers. These companies include SPX Corp. [USA], Parker Hannifin Corporation [USA], Aircel Corp. [USA], PSB Industries Inc. [USA], Xi'An Unionfilter Purification Equipment Co. Ltd. [Republic of China] and Tecno Project Industriale s.r.l. [Italy].

**H2X Solutions:** In the hydrogen purification market, Xebec's competition includes Air Liquide, HydroChem, Linde, PanAmerica, UOP (a division of Honeywell) and Air Products.

**AGX Solutions:** In the associated gas market, Xebec's competition includes mainly membrane providers like, Cameron, UOP, Fujifilm, UBE, Generon, MTR, Air Liquide and Prosep.

### **STRATEGY AND OBJECTIVES**

Xebec specializes in the design and manufacture of cost-effective, environmentally responsible, purification, separation, dehydration, and filtration equipment for gases and compressed air. Xebec's main product segments are: Biogas Plants for the purification of biogas from agricultural digesters, landfill sites and waste water treatment plants, Natural Gas Dryers for NGV refueling stations, Associated Gas Purification Systems including Helium and Hydrogen Purification Systems for fuel cell and industrial applications.

Xebec's short term focus is on returning its operation to sustainable profitability and positive cash-flow, while growing its revenue. Xebec intends to actively pursue and implement the following measures:

1. Grow the recurring revenue segments, namely aftermarket and filtration.
2. Continue to grow the NGX business segment in North America and Asia
3. Deliver products and solutions at the best price, on time and on budget while meeting or exceeding targeted gross margins;
4. Leverage key relationships with leading channel partners and project developers to penetrate target markets;
5. Improve balance sheet strength.

### RECENT DEVELOPMENTS

On May 18, 2015, Xebec received access to a new credit line facility totaling \$500,000 with the TD bank.

On April 22, 2015, Xebec announced that Mr. Prabhu Rao joined the Company's Board of Directors. Xebec also announced that Mr. Jean Bedard resigned on December 17, 2014 from the Board of Directors.

On March 10, 2015, Xebec announced that, effective immediately, it will be integrating high efficiency membranes into its gas purification and separation solutions.

On October 27, 2014, Xebec also announced the departure of the Company's Chief Financial Officer, Eric Favreau, effective December 4, 2014 and appointed Mr. Alnoor Mandjee, CPA.CA to assume the responsibility of Chief Financial Officer.

On May 1st, 2014, The Company announced the launch of a new line of high pressure filters for natural and specialty gases.

On April 3<sup>rd</sup>, 2014, The Company announced that it has commissioned the first biogas to renewable hydrogen purification system in Europe.

On February 17, 2014, The Company announced its expansion into the US with the opening of a Houston, Texas, office and dedicated senior management team.

### CURRENT BACKLOG

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

#### Current backlog as of June 1<sup>st</sup>, 2015:

Product	Line:	June 1, 2015	April 29, 2015	October 27, 2014	August 28, 2014
In million of \$					
Gas Purification		0.8	1.1	0.5	1.4
Natural Gas Dryers		2.0	2.8	4.6	3.8
Air Dryers		0.4	0.4	-	-
Others		0.8	1.8	0.9	1.3
Associated Gas		-	-	-	0.3
Consolidated Backlog		4.0	6.1	6.0	6.8

### 3. SELECTED CONSOLIDATED QUARTERLY INFORMATION

#### Three-Month Periods Ended March 31, 2015 and 2014

(In million of \$, except per-share amounts) (unaudited)

	Three months ended	
	March 31,	
	2015	2014
Revenues	3.1	2.6
Gross margin	21.9%	24.7%
EBITDA	0.03	(0.8)
Net income (loss)	(0.05)	(0.90)
Net income (loss) per share - basic (\$/share)	(0.00)	(0.02)
Net income (loss) per share - diluted (\$/share)	(0.00)	(0.02)

Balance Sheet Data	March 31	December 31
	2015	2014
Total assets	6.8	7.4
Shareholder's equity	0.6	0.9
Total long-term liabilities	0.3	0.8
Cash, cash equivalents	0.4	1.0

### 4. OPERATING RESULTS

#### Analysis of Consolidated Operating Results for the First Quarter of 2015 Compared with the First Quarter of 2014

**Consolidated Revenues by Product Line** (unaudited)

In millions of \$	Three months ended	
	March 31,	
	2015	2014
Natural gas dryers	1.6	1.3
Gas purification	0.3	0.2
Compressed gas filtration	1.0	1.0
Associated Gas	0.1	0.1
Engineering services	-	-
Air dryers	0.1	-
<b>Total</b>	<b>3.1</b>	<b>2.6</b>

## Management's Discussion and Analysis

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**Consolidated revenues** for the first quarter of 2015 amounted to \$3.1 million, compared to \$2.6 million for the first quarter of 2014. This increase of 18% is explained mainly by growth of the Natural gas dryer segment.

### **Gross profit margin** (unaudited)

	Three months ended March 31,	
In millions of \$	2015	2014
Revenues	3.1	2.6
Cost of Goods Sold	2.4	2.0
Gross Profit*	0.7	0.6
Gross Profit Margin (%)	21.9%	24.7%

\* Gross Profit is a non-IFRS financial measure.

The **gross profit margin** for the first quarter of 2015 stood at 21.8%, compared to 24.7% for the first quarter of 2014.

**Selling and administrative expenses** for the first quarter of 2015 decreased by \$0.3 million or 26.7% to \$1.1 million. The decrease is mainly explained by the cost reduction of 0.1 million and a reversal of provision for \$0.2 million.

**Research and development expenses, net of research and tax credits** for the first quarter of 2015 were very low compared to \$0.1 million in the first quarter of 2014.

### **EBITDA** (unaudited)

	Three months ended March 31,	
In millions of \$	2015	2014
Net income (loss)	(0.05)	(0.90)
Depreciation of property	0.03	-
Amortization of intangible assets	0.04	0.10
Finance cost net	0.02	-
EBITDA	0.03	(0.80)

\* EBITDA is a non-IFRS financial measure.

We report on our EBITDA (Income before income taxes, interest, depreciation and amortization). 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 first quarter of 2015 amounted to \$0.03 million compared to \$(0.8) million in the first quarter of 2014. This improvement from the comparative period is related to lower

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selling and administrative cost (-\$0.3 million), lower research and development cost (-\$0.1 million) and a significant currency gain (+\$0.3 million).

**Net financial expenses** for the first quarter of 2015 remained stable at \$0.02 million, compared to the first quarter of 2014.

### **Net income (loss)**

Net loss for the first quarter of 2015 totaled \$0.05 million, or \$0.00 per share, compared to a net loss of \$0.9 million, or \$0.02 per share for the same period in 2014.

### **Principal Quarterly Financial Information**

(in millions of \$, except per-share amounts) *(unaudited)*

	2015	2014				2013		
	Q1	Q4	Q3	Q2	Q1	Q4	Q3	Q2
Revenues	3.1	3.9	4.4	3.5	2.6	2.8	1.9	2.8
Net income (loss)	(0.05)	0.4	0.5	(0.7)	(0.9)	1.4	0.5	(0.4)
Earnings (loss) per share								
Basic	(0.00)	0.01	0.01	(0.02)	(0.02)	0.04	0.01	(0.01)
Diluted	(0.00)	0.01	0.01	(0.02)	(0.02)	0.04	0.01	(0.01)

Given the nature of Xebec's business, there are no apparent seasonal or other discernible trends at this time.

## 5. FINANCIAL POSITION

### *Analysis of Principal Cash Flows for the First Quarter 2015 (unaudited)*

Cash flow from (used in) in millions of \$	Three months ended March 31,		
	2015	2014	Change
Operating activities	(0.3)	0.3	(0.6)
Investing activities	-	0.3	(0.3)
Financing activities	-	(0.1)	0.1

**Operating activities** in the first quarter of 2015 used \$0.3 million of cash, compared to \$0.3 million of cash generation for the same period in 2014.

**Investing activities** used a very low amount for the acquisition of assets in the first quarter of 2015, compared to a cash inflow of \$0.3 million mainly related to the balance of sale collected on the sale of the building during the first quarter of 2014.

**Financing activities** in the first quarter of 2015 used a very low amount of cash due to the refund of restricted cash of \$0.1 million which was offset by the reimbursement of a loan of \$0.1 million compared to \$0.1 million used for the same period of 2014.

As of March 31, 2015, the Company had \$0.4 million of cash on hand and \$0.8 million of short-term debt outstanding due within one year.

### Balance Sheet Analysis as at March 31, 2015

#### Summary Balance Sheet

In millions of \$	March 31	December 31
	2015	2014
Current assets	5.4	6.0
Non-current assets	1.4	1.4
	<b>6.8</b>	<b>7.4</b>
Current liabilities	5.9	6.2
Non-current liabilities	0.3	0.3
Shareholders' equity	0.6	0.9
	<b>6.8</b>	<b>7.4</b>

The change in current asset is explained mainly by a decrease in cash of \$0.8 million. The change in current liabilities is reflected by the decrease of the bank loan and trade payables, and the increase of the accrued liabilities.

As at March 31, 2015 **total assets** amounted to \$6.8 million, down by \$0.6 million from December 31, 2014. **Working capital deficit** stood at (\$0.5) million for a current ratio of 0.92:1 compared with a deficit of (\$0.2) million and a 0.97:1 ratio as at December 31, 2014.

**Shareholders' equity** totalled \$0.6 million as at March 31, 2015 down by \$0.3 million from December 31, 2014. The change is mainly due to the accumulated other comprehensive loss.



**Indebtedness**

In millions of \$	March 31 2015	December 31 2014
Bank loans	-	0.1
Current portion of long-term debt	0.8	0.8
Long-term debt	-	-
Total indebtedness	0.8	0.9

**Total interest-bearing debt** (bank loans, current portion of long-term debt and long-term debt) amounted to \$0.8 million as at March 31, 2015, down by \$0.1 million from December 31, 2014. This decrease is due primarily to the reimbursement of the bank loan.

**Credit Facilities**

As at March 31, 2015, the Company had no access to credit facility and revolving demand facility by way of letters of credit and letters of guarantee.

**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 December 31, Xebec had 39,363,867 common shares issued.

**Share Purchase Warrants Outstanding**

As at March 31, 2015, 10,091,886 Share Purchase Warrants were outstanding and entitle the holder to acquire one Common Share at a price of \$0.45 per share until November 2<sup>nd</sup> 2015.

The 10,091,886 warrants are subject to an accelerated expiry if, at any time after December 31, 2010, the published closing trade price of the Common Shares on the TSX-V is equal or superior to \$0.75 for any 20 consecutive trading days, in which event Xebec may give the holder a written notice that the warrants will expire at 5:00 p.m. (Toronto Time) on the 30<sup>th</sup> day from the receipt of such notice.

**Stock Options Outstanding**

The Company plan (the "2013 Plan"), which allows for the issuance of stock options, stock appreciation rights, restricted stock, restricted stock units, performance awards and other stock-based awards. Under the Plan, the maximum number of common shares available for issuance under all stock-based compensation arrangements is 5,904,580.

As at March 31, 2015, the maximum number of common shares available for issuance under all stock-based compensation arrangements is 5,904,580.

Under the terms of the 2013 Plan, stock options are granted with an exercise price not less than the volume weighted average trading price of the common shares on the TSX for the five trading days prior to the date of grant. Stock options generally vest quarterly over four years and are exercisable for seven years from the date of grant.

As at March 31, 2015, the Company had 4,405,337 options outstanding under the 2013 Plan with a weighted average exercise price of \$0.16.

**Contractual Commitments**

The following table is a summary of the contractual obligations including payments due for the next five years and thereafter:

As at March 31, 2015	Payments Due by Period			
	1 year	2 -5 years	Beyond 5 years	Total
Operating leases	0.5	1.3	2.3	4.1
Software licenses agreements	-	-	-	-
Total contractual obligations	0.5	1.3	2.3	4.1

There have been no significant changes in the contractual obligations of the Company since its MD&A for the three and twelve-month periods ended December 31, 2014 issued on April 29, 2015.

**6. FINANCIAL AND OTHER INSTRUMENTS**

***Liquidity Risk***

The Company has realized an operating loss of \$23,666, had cash outflows from operations of \$305,550 for the period ended March 31, 2015 and finished the period with cash and cash equivalents amounting to \$363,512, a working capital deficit of \$466,855 and had no access to credit facilities. During the year, management undertook various initiatives and developed a plan to manage its operating and liquidity risks in light of prevailing economic conditions. Management is also currently seeking alternative financings for its operations. The Company has prepared a revised budget and forecast for 2015 for which management believes the assumptions are reasonable. Achieving budgeted results is dependent on improving the volume of revenues in Canada, United States and China, delivering on sales and contracts schedules, meeting expected overall operating margin levels and controlling general and administrative costs. Management expects to meet its budget and to have enough liquidity to fund operations to at least beyond December 31, 2015.

The Company is thus faced with uncertainties that may have an impact on future operating results and liquidity. These uncertainties include 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 2015 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.

***Credit Risk***

Credit risk is the risk of an unexpected loss if a customer or third party fails to meet its contractual obligations. The Company's primary credit risk is its cash and outstanding trade accounts receivable. The carrying amount of its outstanding trade accounts receivable represents the

Company's estimate of its maximum credit exposure. The Company regularly monitors its credit risk exposure and takes steps such as employing credit-approval procedures, establishing credit limits, using credit assessments and monitoring practices to mitigate the likelihood of these exposures from resulting in an actual loss. An allowance for doubtful accounts amounting to \$194,006 (2014 – \$217,021) was established, based on prior experience and an assessment of current financial conditions of customers as well as the general economic environment. In the case where an allowance for doubtful accounts provision is recorded and a receivable balance is considered uncollectible, it is written off against the allowances for doubtful accounts. Bad debt expense amounted to \$17,779 for first quarter in 2015 (nil for corresponding period 2014). As at March 31, 2015, the Company's three largest trade debtors accounted for 21% (11%, 5% and 5%) of the total accounts receivable balance (2014 – 14% (5%, 5% and 4%)).

### ***Currency Risk***

Some assets and liabilities are exposed to foreign exchange fluctuations. The Company does not use financial instruments to reduce this risk.

### ***Interest Rate Risk***

Interest rate risk is the risk that the fair value or future cash flows of financial instruments will fluctuate as market interest rates change. The Company does not use financial instruments to reduce this risk.

The Company is exposed to interest rate risk on its bank loan, for which the interest rates charged fluctuate based on the bank prime rate. As at March 31, 2015, there was no more short term bank loan (as at December 31 2014 – \$136,437).

## **7. CRITICAL ACCOUNTING POLICIES AND 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 most significantly affect the Company's consolidated financial statements. These estimates and judgments have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

### ***Inventories***

Inventories must be valued at the lower of cost or net realizable value. A write down of the 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 customer relations***

The Company performs a test for customer relations impairment when there is any indication whether customer relations has suffered any impairment in accordance with the accounting policy stated in the summary of significant accounting policies of these financial statements. The recoverable amounts of customer relations 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. The recoverable amount is most sensitive to the discount rate used for the discounted cash flow model and the expected future cash inflows. A change in any of the

significant assumptions or estimates used to evaluate customer relations 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, of 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.

### ***Related party transactions***

The following table presents a summary of the related party transactions during the period (unaudited):

	<b>For the three-month period ended March 31,</b>	
	<b>2015</b>	<b>2014</b>
	<b>\$</b>	<b>\$</b>
Marketing and professional services expenses paid to companies controlled by members of the immediate family of an officer	<b>26,980</b>	26,600
Sales to an entity controlled by a subsidiary manager	<b>638,101</b>	702,639
	<b>665,081</b>	729,239

These transactions are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

### ***Accounting standards issued but not yet applied***

Unless otherwise noted, the following revised standards and amendments are effective to the Company for annual periods beginning on or after January 1, 2014 with earlier application permitted. The Company has not yet assessed the impact of these standards and amendments or determined whether it will early adopt them.

IFRS 9, Financial Instruments, issued in November 2009, introduces new requirements for the classification and measurement of financial assets. IFRS 9 requires all recognized financial assets that are within the scope of IAS 39 Financial Instruments: Recognition and Measurement to be measured at amortized cost or fair value in subsequent accounting periods following initial recognition. Specifically, financial assets that are held within a business model whose objective is to collect the contractual cash flows, and that have contractual cash flows that are solely payments of principal and interest on the principal outstanding are generally measured at amortized cost at the end of subsequent accounting periods. All other financial assets including equity investments are measured at their fair values at the end of subsequent accounting periods. Requirements for classification and measurement of financial liabilities were added in October 2010 and they largely carried forward existing requirements in IAS 39, Financial Instruments – Recognition and Measurement, except that fair value changes due to credit risk for liabilities designated at fair value through profit and loss would generally be recorded in other comprehensive income.

IFRS 9 was amended in November 2013, to (i) include guidance on hedge accounting, (ii) allow entities to early adopt the requirement to recognize changes in fair value attributable to changes in an entity's own credit risk, from financial liabilities designated under the fair value option, in OCI, without having to adopt the remainder of IFRS 9, and to (iii) remove the previous mandatory effective date for adoption of January 1, 2015, although the standard is available for early adoption.

### **8. DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING**

#### ***Disclosure Controls and Procedures***

Our management is responsible for establishing and maintaining disclosure controls and procedures ("DC&P") designed to provide reasonable assurance that the information we are required to disclose in our annual filings, interim filings and other reports (the "reports") filed or submitted under the applicable securities legislation is recorded, processed, summarized and reported within the time periods specified in the applicable securities legislation. DC&P include, without limitation, controls and procedures designed to ensure that the information required to be disclosed by an issuer in the reports filed or submitted under the applicable securities legislation is accumulated and communicated to the issuer's management, including its Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

As at March 31, 2015, an evaluation was carried out, under the supervision of and with the participation of our management, including the President and Chief Executive Officer and the Chief Financial Officer, of the design and effectiveness of our disclosure controls and procedures as defined under NI 52-109. This evaluation was based on the framework set forth in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Upon such review, the Chief Executive Officer and the Chief Financial Officer determined that there were material weaknesses in the design of our DC&P. The DC&P deficiencies we identified resulted in adjustments to our annual or any interim consolidated financial statements for fiscal 2015 and 2014. We have identified the following material weaknesses:

#### ***Entity Level Controls***

We did not maintain a completely effective control environment as defined in accordance with COSO control framework. Specifically, we do not have comprehensive procedure manuals to clearly communicate management's and employees' roles and responsibilities in our internal control over financial reporting. To mitigate the risk, management relies heavily on manual procedures and detection controls, management meetings, quarterly reviews of financial statements of our subsidiaries. These manual procedures were performed during the interim and annual periods ended March 31, 2015 and 2014.

#### ***Internal Control over Financial Reporting***

Our internal control over financial reporting ("ICFR") includes, among others, those policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS, and that our receipts and expenditures are being made only in accordance with authorization of our management; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

We carried out an evaluation of our ICFR, under the supervision of and with the participation of

our management, including our Chief Executive Officer and our Chief Financial Officer as to the material weaknesses relating to the design of our ICFR as of March 31, 2015. This evaluation was based on the Internal Control-Integrated Framework issued by the COSO. The evaluation considered the procedures designed to ensure that information required to be disclosed by the Company in reports filed or submitted under the applicable securities legislation is recorded, processed, summarized and reported in the time periods specified in the rules and forms of the applicable securities legislation and communicated to our management as appropriate to allow discussions regarding required disclosure. Upon such review, our Chief Executive Officer and Chief Financial Officer have determined that there existed material weaknesses in the design of our ICFR. The ICFR weaknesses we identified did not result in adjustments to our interim and annual consolidated financial statements for 2015 and 2014. Following our assessment, we identified the following material weaknesses:

### *Segregation of Duties*

We have deficient controls within our accounting department over segregation of duties inherent to the department's size. Specifically, as a result of the limited number of personnel in the accounting department, certain financial personnel had incompatible duties that allowed for the creation, review and processing of certain financial data without independent review and authorization. To mitigate the risk, our management relies heavily on manual procedures and detection controls, regular management meetings, as well as reviews of our financial statements and of our subsidiaries. These manual procedures were performed for the periods ended March 31, 2015 and 2014.

### ***Remediation of Material Weaknesses in Internal Control over Financial Reporting and Disclosure Controls***

We have initiated the following actions to address the material weaknesses in our DC&P and ICFR identified as of March 31, 2015.

### *Entity Level Controls*

Our Management has taken an active role in responding to the deficiencies identified, including overseeing management's implementation of the remedial measures described below.

### *Information Technology General Controls*

We have hired an IT manager who implemented a global information technology strategic plan and a business continuity plan.

### *Inadequate Segregation of Duties*

We will continue to use appropriate measures to restrict or independently monitor systems access and properly assign job roles and responsibilities to employees to ensure the proper segregation of duties where feasible. As the Company grows, we will expand the number of individuals involved in the accounting function.

We realize that some of the above weaknesses are inherent to a company of our size. Nevertheless, we believe in and are committed to establishing rigorous DC&P and ICFR. It will take time to put in place the rigorous controls and procedures desired by our management and Board of Directors. We cannot at this time estimate how long it will take to complete the steps identified above. Our management will continue to evaluate the effectiveness of our overall control environment and will continue to refine existing controls as they, in conjunction with our Audit Committee, Chief Executive Officer and Chief Financial Officer, think necessary. Again, the control deficiencies which we identified did not result in adjustments to our interim and annual consolidated financial statements for the first quarter of 2015 or any previous periods.



Other than the remediation efforts discussed above and the implementation of the Company's ICFR, there have been no changes in our ICFR that occurred since the beginning of the interim period ended March 31, 2015 that have materially affected or are reasonably likely to materially affect our ICFR. Our management, including our Chief Executive Officer and our Chief Financial Officer, has discussed these issues and remediation efforts with our Audit Committee.

We will provide updates on the remediation plan in our quarterly and annual management's reports.

It should be noted that while our management believes that current disclosure and internal controls and procedures provide a reasonable level of assurance, it cannot be expected that existing disclosure controls and procedures or internal financial controls will prevent all human errors and circumvention or overriding of the controls and procedures. A control system, no matter how well conceived or operated, can provide only reasonable assurance, not absolute, that the objectives of the control system are met.

### **RISKS AND UNCERTAINTIES**

An investment in our securities involves a high degree of risk and should be considered speculative due to the nature of our business and the businesses of our subsidiaries and their current respective stage of development. Before making any decision to purchase or to sell any of our securities, you should carefully consider the complete statement of the risk factors and uncertainties described in the Management's Report and Annual Information Form for fiscal 2014. The Company is pursuing an ongoing risk review and management process.