



A world powered  
by **clean energy**

**Xebec Adsorption Inc.**

**Management's Discussion and Analysis  
For the three and six-month periods ended June 30, 2014**

**August 28, 2014**

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 and six-month periods ended June 30, 2014. This discussion should be read in conjunction with the information contained in the Company's unaudited consolidated financial statements and related notes for the second quarter of 2014, as well as with the audited consolidated financial statements and related notes for the year ended December 31, 2013. 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, 2013 and those ended December 31 of prior years are sometimes designated by the terms "fiscal 2013", "fiscal 2012" 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 August 28, 2014, the date on which the Board of Directors approved the consolidated financial statements and Management's Report for the period ended June 30, 2014. 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 2014 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, 2013 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 Canadian provider of biogas upgrading, natural gas, field gas and hydrogen purification solutions for the clean energy and crude-derived fuels displacement markets. Xebec designs, engineers and manufactures innovative products that transform raw gases into marketable sources of clean energy mainly used as transportation fuel. Xebec is focused on establishing leadership positions in 4 key markets where demand for biogas upgrading, natural gas purification, associated gas purification and hydrogen purification is growing. Headquartered in Blainville (QC), Xebec also operates two manufacturing facilities in Blainville and Shanghai, 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 Stock Exchange Venture ("TSXV") under the symbol XBC-V. Since February 25<sup>th</sup> 2014, Xebec has opened a sales office in Houston, Texas (USA), in order to cover sales opportunities in the United States.



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 57 people are currently employed. The Blainville operation houses corporate finance, sales for natural gas, associated gas and biogas purification products, aftermarket support, global supply chain, operational engineering, manufacturing of gas separation and purification equipment 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"). This facility employs 30 people and is responsible for 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. This facility currently employs two 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 2014. 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 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 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 licensed PSA Technology.*

On March 22, 2012, Xebec has sold and licensed back the technology it has developed to continue the marketing of its products. Management believes that its products solve some of the inherent disadvantages of conventional PSA systems. 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 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.

#### *Products*

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

## **MARKETS**

Xebec mainly targets four key market and business segments focused on gaseous fuels used for transportation:

- 1- Biogas upgrading plants
- 2- Natural gas dehydration for NGV refueling stations
- 3- Hydrogen pressure swing adsorption ("PSA ") for hydrogen recovery
- 4- Associated gas 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

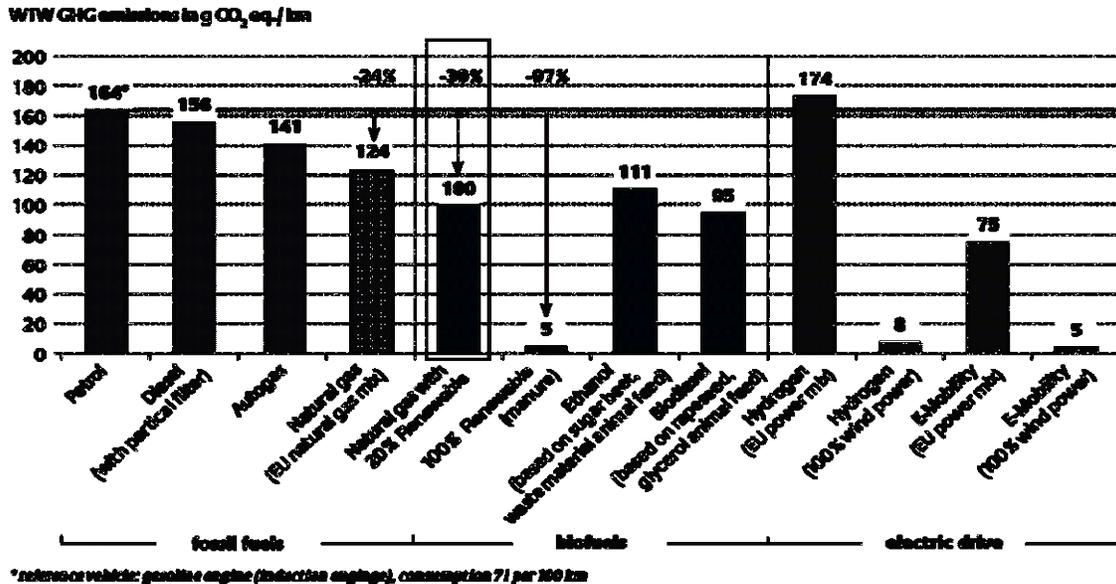
▪ Market-leading performance for associated gas purification

**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 and Renewable Gas as a low carbon cleaner energy source of transportation fuel, amongst them are:

- The abundance and low cost of Natural Gas;
- The rising price of oil and need for greater energy independence and security;
- 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 demand for renewable gas. The low cost of natural gas and biogas drives the demand for solutions aimed at displacing diesel and other crude oil derivatives for power applications for transportation and oil rigs, therefore creating new business opportunities for Xebec.



## 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, Acron Technologies Inc. [USA], Cirmac International BV [The Netherlands], Läckeby Water Group (PURAC) [Sweden], Guild Associates Inc [USA], MT-Biomethan GMBH [Germany], Carbotech AC 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 and Air Products.

**AGX Solutions:** In the associated gas market, Xebec's competition includes several membrane equipment suppliers.

## **STRATEGY AND OBJECTIVES**

Xebec is a global provider which 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 which enables diesel displacement on drilling sites, and Hydrogen Purification Systems for fuel cell and industrial applications.

Xebec's continues to manage its cost structure and working capital, while increasing its revenue. Xebec intends to actively pursue and implement the following measures:

1. Standardize product offering with strong focus on smaller to medium gas flows, where Xebec's solutions offer inherent size and cost benefits;
2. Xebec has monetized some its intellectual property portfolio and created additional liquidity to complete its restructuring plan implemented during its 2012 fiscal year;
3. Enforce and implement tight cost control measures on all general and administrative costs;
4. Maintain regional sales, service and support infrastructure for Xebec's key markets to strengthen Xebec's sales abilities and support products and systems in the market place;
5. Execution and operational excellence, allowing Xebec to deliver products and solutions at the best price, on time and on budget while meeting or exceeding targeted gross margins;
6. Leverage key relationships with leading channel partners and project developers to penetrate target markets;
7. Continue to proactively address and manage its liquidity and working capital requirements. Xebec's delivery cycle for gas plants can be 8 to 12 months which put constraints on its working capital. Xebec is currently reviewing its product design in order to supply a more competitive offering.

## **RECENT DEVELOPMENTS**

On May 1st, 2014, The Company announced the launch of a new line of filtration products for natural gas.

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

On December 23, the Company transferred its listing from the TSX to the TSX Venture Exchange ("TSXV"). The Company's common shares listed on the TSXV started to trade under the symbol "XBC-V" commencing on that date. The TSX delisting review announced on September 18, 2013 was completed by the listing of the Company's common shares on the TSXV.

The Company also announced on the same day that its Board of Directors has approved amendments to the Xebec Adsorption 2013 Amended and Restated Omnibus Plan (the "Plan") that were required to comply with TSXV requirements. In accordance with the provisions of the Plan, the amendments did not require shareholder approval but required acceptance by the TSXV. The amendments included renaming the Plan as the "Xebec Adsorption Stock Option Plan" and moving from a rolling 15% of stock options available for issuance to a fixed number of 5,904,580 Common Shares available for grants.

## CURRENT BACKLOG

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

### Current backlog as of

Product Line:	August 28, 2014	May 29, 2014	April 25, 2014	November 11, 2013
In million of \$				
Gas Purification	1.4	3.0	3.3	2.6
Natural Gas Dryers	3.8	2.2	3.6	2.3
Others	1.3	0.7	1.5	1.0
Associated Gas	0.3	1.0	1.0	-
<b>Consolidated Backlog</b>	<b>6.8</b>	<b>6.9</b>	<b>9.4</b>	<b>5.9</b>

## 3. SELECTED CONSOLIDATED QUARTERLY INFORMATION

### Three and six-month periods ended June 30, 2014 and 2013

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

	Three months ended June 30,		Six months ended June 30,	
	2014	2013	2014	2013
Revenues	3.5	2.8	6.1	6.6
Gross margin	28.1%	16.3%	26.5%	12.6%
EBITDA	(0.6)	(0.2)	(1.4)	(1.2)
Net income (loss)	(0.7)	(0.4)	(1.6)	(1.5)
Net income (loss) per share - basic (\$/share)	(0.02)	(0.01)	(0.04)	(0.04)
Net income (loss) per share - diluted (\$/share)	(0.02)	(0.01)	(0.04)	(0.04)

Balance Sheet Data	June 30	December 31
	2014	2013
Total assets	7.3	9.7
Shareholder's equity	0.5	2.0
Total long-term debt	0.8	1.0
Cash, cash equivalents	1.3	2.8

#### 4. OPERATING RESULTS

##### Analysis of Consolidated Operating Results for the Second Quarter of 2014 Compared with the Second Quarter of 2013

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

In millions of \$	Three months ended June 30,		Six months ended June 30,	
	2014	2013	2014	2013
Natural gas dryers	1.2	1.3	2.5	2.3
Gas purification	0.8	0.5	1.0	2.1
Compressed gas filtration	0.9	1.0	1.9	2.0
Associated Gas	0.6	-	0.7	0.2
<b>Total</b>	<b>3.5</b>	<b>2.8</b>	<b>6.1</b>	<b>6.6</b>

**Consolidated revenues** for the second quarter of 2014 amounted to \$3.5 million, compared to \$2.8 million for the second quarter of 2013. The increase is mainly explained by the revenues in the associated gas segment since the Company had no contract in 2013 for the corresponding period. For the six-month period ended June 30, 2014, total revenues amounted to \$6.1 million compared to \$6.6 million for the corresponding period. This decrease is due mainly to the \$1.1 million decrease in sales of custom biogas plants and Hydrogen PSAs, combined with a \$0.5 million increase in the associated gas segment as explained above.

###### Operating profit margin (unaudited)

In millions of \$	Three months ended June 30,		Six months ended June 30,	
	2014	2013	2014	2013
Revenues	3.5	2.8	6.1	6.6
Cost of Goods Sold	2.5	2.3	4.5	5.7
Gross Profit*	1.0	0.5	1.6	0.9
Gross Profit Margin (%)	28.1%	16.3%	26.5%	12.6%

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

The **operating profit margin** for the second quarter of 2014 stood at 28.1%, up by 11.8% compared to the second quarter of 2013. The increase versus the same period last year is mostly explained by the negative margin generated on a biogas project during the previous corresponding quarter.

For the six-month period ended June 30, 2014 the operating profit margin stood at 26.5% up by 13.9% compared to the second quarter of 2013. Margins were affected negatively in Q2-2013 by a \$200,000 provision for an ongoing biogas project in Asia and the completion of a biogas project with a negative margin during Q2-2013.

**Selling and administrative expenses** for the second quarter of 2014 increased by \$0.1 million or 10.1% to \$1.6 million. The increased is mainly due to higher professional fees incurred for the creation of Xebec USA.

For the six-month period ended June 30, 2014 the selling and administrative expense increased by \$0.1 million or 4.2% to \$3.0 million. The increase is explained by increased professional fees as mentioned above.

**Research and development expenses, net of research and tax credits** for the second quarter of 2014 increased by \$0.04 to \$(0.04) million, compared to the second quarter of 2013. The Company finalized its analysis on admissible expenses on the previous year projects and booked a \$0.1 million receivable in refundable Quebec's research and development tax credit. Furthermore, the Company increased its research and development activities by \$0.1 million to maintain its technological leadership and advance.

For the six-month period ended June 30, 2014, the research and development expenses, net of research and tax credits increased by \$0.1 to \$0.1 million, compared to the second quarter of 2013. The increase is explained by the lower refundable tax credit claimed less the increased research and development activities described above.

**EBITDA** (unaudited)

In millions of \$	Three months ended June 30,		Six months ended June 30,	
	2014	2013	2014	2013
Net income (loss)	(0.7)	(0.4)	(1.6)	(1.5)
Depreciation of property	-	0.1	-	0.1
Amortization of intangible assets	-	-	0.1	0.1
Finance cost net	0.1	0.1	0.1	0.1
<b>EBITDA</b>	<b>(0.6)</b>	<b>(0.2)</b>	<b>(1.4)</b>	<b>(1.2)</b>

\* 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..

**EBITDA** for second quarter in 2014 declined by \$0.4 million to \$(0.6) million. The reduction is mainly explained by the additional \$0.5 million gross proceeds received for the remaining milestone related to the sale of the IP portfolio to Air Products in the previous corresponding quarter.

For the six-month period ended June 30, 2014, the EBITDA declined by \$0.2 million to \$(1.4) million. The EBITDA decline reflects primarily the \$0.5 million gain on the additional proceeds of \$0.5 million in Q2-2013 related to this transaction combined with better margins realized on slightly fewer sales.

**Net financial expenses** for the second quarter of 2014 decreased by \$0.05 million due to the amount of \$0.06 million paid to the TPC program, due to the collection of additional gross proceeds of \$0.5 million from Air Products in the previous corresponding quarter.

For the six-month period ended June 30, 2014, the net financial expenses decreased by \$0.05 million due to the aforementioned reasons.

**Net income (loss)**

Net loss for the three-month period ended June 30, 2014 was \$0.7 million, or \$0.02 per share, compared to \$0.4 million, or \$0.01 per share, for the same period in 2013. The slight increase in net loss is partly explained by an increase in gross margin of \$0.5 million, offset by an increase in research and development expenses of \$0.04 million and the increase in selling and

administrative expense of \$0.1 million related to professional fees incurred to create Xebec USA. It is also explained by a gain of \$0.5 million in Q2-2013 due to the additional proceeds pursuant to the agreement with Air Product and an increase in net financial expenses for the additional royalty of \$0.06 million related to agreement mentioned above.

For the six-month period ended June 30, 2013, net loss was \$1.6 million, or \$0.04 per share, compared to \$1.5 million, or \$0.04 per share, for the same period in 2013. The slight increase in net loss is explained by a an increase in gross margin of \$0.8 million, offset by increases in research and development expenses of \$0.1 million and in selling and administrative expenses of \$0.1 million mentioned above. It is also explained by the aforementioned nonrecurring gain of \$0.5 million in Q2-2013.

### Principal Quarterly Financial Information

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

	2014		2013				2012	
	Q2	Q1	Q4	Q3	Q2	Q1	Q4	Q3
Revenues	3.5	2.6	2.8	1.9	2.8	3.8	5.8	3.7
Net income (loss)	(0.7)	(0.9)	1.4	0.5	(0.4)	(1.1)	(0.1)	(0.7)
Earnings (loss) per share								
Basic	(0.02)	(0.02)	0.04	0.01	(0.01)	(0.03)	0.00	(0.02)
Diluted	(0.02)	(0.02)	0.04	0.01	(0.01)	(0.03)	0.00	(0.02)

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 Second Quarter 2014 (unaudited)*

Cash flow from (used in)	Three months ended			Six months ended		
	June 30,			June 30,		
in millions of \$	2014	2013	Change	2014	2013	Change
Operating activities	(1.9)	(0.7)	(1.2)	(1.6)	(1.2)	(0.4)
Investing activities	-	0.5	(0.5)	0.3	0.8	(0.5)
Financing activities	(0.3)	-	(0.3)	(0.4)	0.2	(0.6)

**Operating activities** in the second quarter of 2014 used \$1.9 million of cash, compared to \$0.7 million for the same period in 2013. The increase in uses of cash is mainly outlined as follows: a decrease of \$0.8 million of cash inflow from trades receivables, a reduction of cash outflow of \$0.5 million for trades payables and respective increases of cash outflow of \$0.4 million and of \$0.8 million for accrued liabilities and for deferred revenues.

For the six-month period ended June 30, 2014 operating activities used a cash outflow of \$1.6 million compared to \$1.2 million for the same period last year. The increased in cash outflow is mainly explained by an increase of \$0.2 million of cash inflow from trades receivables and a increase of cash outflow of \$0.6 million regarding trades payables, accrued liabilities and deferred revenues resulting from the completion of the gas purification projects in Asia in Q2-2013.

**Investing activities** had no significant cash outflow in the second quarter of 2014, compared to a cash inflow of \$0.5 million for the corresponding second quarter of 2013. The change is mainly explained by the additional proceeds from the disposition of the IP assets related to the transaction with Air Products in Q2-2013.

For the six-month period ended June 30, 2014 investing activities generated a cash inflow of \$0.3 million compared to \$0.8 million for the same period last year. The decrease is explained by the disposition of the assets related to the transaction with Air Product in Q2-2013 of \$0.5 million.

**Financing activities** in the second quarter of 2014 used \$0.3 million compared to non significant cash inflow for the same period of 2013. The increase of \$0.3 million relates mainly to the repayment of the bank loan.

For the six-month period ended June 30, 2014 financing activities used cash of \$0.4 million compared to a cash inflow of \$0.2 million for the same period of 2013. The decrease in cash inflow is mainly due to the repayment of the bank loan during the current period, compared to the increase of the bank loan in during the corresponding period in 2013.

As of June 30, 2014, the Company had \$1.3 million of cash on hand, \$0.1 million of bank loan and \$0.8 million of long-term debt outstanding, of which \$0.3 million is due within one year.

## Balance Sheet Analysis as at June 30, 2014

### Summary Balance Sheet

	June 30 2014	December 31 2013
Current assets	\$ 6.1	\$ 8.3
Long-term assets	1.2	1.5
	\$ 7.3	\$ 9.8
Current liabilities	\$ 6.2	\$ 6.8
Long-term liabilities	0.6	1.0
Shareholders' equity	0.5	2.0
	\$ 7.3	\$ 9.8

The change in the company's assets between June 30, 2014 and December 31, 2013 mainly reflects cash inflows from the collection of the trade and other receivables, the balance of sale and the reduction of the inventories. The change in liabilities is mainly reflected by the decrease of deferred revenues of \$0.2 million, the decrease of the bank loan of \$0.2 million and the decrease of accrued liabilities of \$0.2 million.

As at June 30, 2014 **total assets** amounted to \$7.3 million, down by \$2.5 million from December 31, 2013. **Working capital** stood at \$(0.1) million for a current ratio of 0.9:1, compared with \$1.5 million and a 1.2:1 ratio as at December 31, 2013.

**Shareholders' equity** totalled \$0.5 million as at June 30, 2014 down by \$1.5 million from December 31, 2013. The change is mainly due to net losses for the first and second quarter of 2014.

### Indebtedness

	June 30 2014	December 31 2013
Bank loans	\$ 0.1	\$ 0.4
Current portion of long-term debt	0.3	0.3
Long-term debt	0.5	0.7
Total indebtedness	\$ 0.9	\$ 1.4

**Total interest-bearing debt** (bank loans, current portion of long-term debt and long-term debt) amounted to \$0.9 million as at June 30, 2014, down by \$0.5 million from December 31, 2013. This decrease is due primarily to the repayment of the bank loan.

## **Credit Facilities**

As at June 30, 2014, the Company had a revolving demand facility by way of letters of credit and letters of guarantee amounting to \$1,000,000 with Royal Bank of Canada which bore interest at the Royal Bank's prime rate plus 2.50% per annum and which were limited by certain margin requirements concerning accounts receivable. This credit facility was used up to \$470,000 as at June 30, 2014.

In addition, the Company had access to credit facilities in the amount of \$500,000 with Royal Bank of Canada which were guaranteed by Export Development of Canada and bore interest at the Royal Bank's prime rate plus 2.5% per annum and were limited by certain requirements concerning pre-shipment costs. These credit facilities were not used as at June 30, 2014.

In addition, Xebec Shanghai had access to credit facilities in the amount of RMB \$700,000 with Bank of China - Shanghai which is guaranteed by a deposit at Bank of China – Montreal.

The bank loan is secured by a first ranking hypothec of \$4,000,000 on all movable property of the Company.

As of August 28, 2014, the Company is no longer accessing its pre-shipment credit facilities.

## **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 June 30, 2014 and August 28, 2014, Xebec had 39,363,867 common shares issued.

### ***Share Purchase Warrants Outstanding***

As at June 30, 2014, 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 2nd 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 June 30, 2014, 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 June 30, 2014, the Company had 3,863,402 options outstanding under the 2013 Plan with a weighted average exercise price of \$0.18.

## Contractual Commitments

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

	Payments Due by Period			
	1 year	2-5 years	Beyond 5 years	Total
Operating leases	0.5	1.3	2.4	4.2
<b>Total contractual obligations</b>	<b>0.5</b>	<b>1.3</b>	<b>2.4</b>	<b>4.2</b>

There have been no significant changes in the contractual obligations of the Company since its MD&A for the three and twelve-month period ended December 31, 2013 issued on April 25, 2014.

## 6. FINANCIAL AND OTHER INSTRUMENTS

### *Liquidity Risk*

The Company has realized an operating loss of \$1,540,244, had cash outflows from operations of \$1,570,748 for the period ended June 30, 2014 and finished the period with a cash and cash equivalent amounting to \$1,269,820, a working capital deficiency of \$39,178 and had access to credit facilities totaling \$1,500,000 of which only \$470,000 has been used. 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 2014 for which management believes the assumptions are reasonable. Achieving budgeted results is dependent on improving the volume of revenues, 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, 2014. 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 projects reflecting the weakness of the 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 if events or conditions develop that are not consistent with management's expectations, key budget assumptions for 2014 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 \$418,783 (2013 – \$217,207) 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 \$1,435 for second quarter in 2014 and \$1,272 for the six-month period ended June 30, 2014 (corresponding period 2013 – \$(25,136) and \$(18,205) As at June 30, 2014, the Company's three largest trade debtors accounted for 17% (10%, 4% and 3%) of the total accounts receivable balance (2013 – 32% (14%, 9% and 9%)).

### ***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 some of its bank loan, for which the interest rates charged fluctuate based on the bank prime rate. As at June 30, 2014, the short term bank loan that carries variable interests amounted to \$125,633 (as at December 31 2013 – \$370,000). If the interest rate on the bank debt had been 50 basis points higher (lower), related to the bank loan as at June 30, 2014, net loss would have been \$310 for the second quarter of 2014 and \$772 for the six-month period ended June 30, 2014 (corresponding period 2013 \$558 and \$907 respectively) higher (lower).

## **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):

	For the three-month periode ended June 30,		For the six-month periode ended June 30,	
	2014	2013	2014	2013
	\$	\$	\$	\$
Marketing and professional services expenses paid to companies controlled by members of the immediate family of an officer	28,745	28,120	55,345	50,778
Sales to an entity controlled by a subsidiary manager	150,404	219,146	853,043	236,318
	<u>179,149</u>	<u>247,266</u>	<u>908,388</u>	<u>287,096</u>

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.

## **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 2013. The Company is pursuing an ongoing risk review and management process.