



COMPANY INFORMATION

Date: **March 3, 2021**

Company:	Xebec Adsorption Inc. (Xebec)		
Phone:	1-877-469-3232	Web Site:	https://xebecinc.com/
Address:	730 boul. Industriel	City:	Blainville
State:	Québec, Canada	Zip Code:	J7C 3V4

BUSINESS CONTACT

TECHNICAL CONTACT

Name:	Alan Johnson, MBA, P. Eng.	Name:	Behrang Mansoornejad, PhD
Phone:	440-226-0881	Phone:	450-979-8700 Poste/Ext.:5779
Email:	Ajohnson@xebecinc.com	Email:	bmansoornejad@xebecinc.com
Address:		Address:	730 boul. Industriel
City:		City:	Blainville
State:	USA	State:	Québec, Canada
Zip Code:		Zip Code:	J7C 3V4

BUSINESS HISTORY

How long have you been in business? Xebec was established in 1967

Are you part of a larger company? Yes No

Did you exist as another company before this company was formed? Yes No *If so, what was that company's name?*

Number of employees? 400+ employees worldwide

What is your business structure? Corporation

Describe your business service(s). *For example: consulting, project development, EPC services, finance, other.*

Xebec is a pioneer and a champion of clean energy in biogas upgrading through pressure swing adsorption (PSA) technology, having supplied PSA systems around the world, including dairy farm upgrading of biogas to Renewable Natural Gas (RNG). Xebec is a global provider of clean energy solutions for renewable and low carbon gases used in energy, mobility, and industry applications. The company specializes in deploying a portfolio of proprietary technologies for the distributed production of hydrogen, renewable natural gas, oxygen, and nitrogen. By focusing on environmentally responsible gas generation, Xebec has helped thousands of customers around the world reduce their carbon footprints and operating costs. Xebec has a worldwide presence with five manufacturing facilities, eight Cleantech Service Centers and four sales offices spanning over four continents.

Describe your area or region of operation.

North America, Asia and Europe

Does your company hold any patents or the rights to any patents? Yes No *If yes, please describe.*

Xebec has received over 100 patents for its proprietary PSA technology, including a rotary valve that facilitates faster cycling time and reduces the footprint of the system.

Do you manufacture equipment? Yes No *If yes, please describe.*

Xebec has a worldwide presence with five manufacturing facilities, eight Cleantech Service Centers and four sales offices spanning over four continents.

Do you integrate equipment manufactured by others? Yes No

If you integrate, please list the names of the preferred companies you represent.

The company has partnerships with multiple manufacturing companies that facilitate the sale of integrated systems.

How do you answer potential customer's questions about financial strength of your company?

Xebec Adsorption Inc. announced orders were received from U.S dairy farmers for a total of six turnkey biogas upgrading plants and small-scale containerized Biostream™ systems to produce renewable natural gas (RNG). These orders confirm Xebec's strengthening position in the U.S dairy market as farmers look towards solutions that are reliable and have the lowest lifecycle costs. Xebec trades on the Toronto Stock Exchange under the symbol (TSX: XBC).

Do you offer technical/service support? Yes No *If so, what methods?*

Xebec provides local service and support through its U.S. network of service providers backed by Xebec's Service Centers.

Do you offer design services? Yes No *If yes, please describe.*

Xebec's Cleantech segment designs and manufactures biogas upgrading and purification systems used for the production of RNG and purified Hydrogen.

Do you offer financing? Yes No *If so, what terms?*

Xebec can assist dairies obtain financing.

Are you a full stop shop? Design to construction and operation? Yes No *If so, please describe.*

Xebec is a full-service provider; designing, building, installing, and servicing more than 9,000 adsorption units for compressed air and gas in Europe, Canada, Asia and the United States.

Do you have preferred partners? Yes No *If so, please list and provide contact information/identify partners by name.*

Xebec has a preferred digester partner to supply four small-scale, containerized RNG upgrading systems at dairy farms in California and acquired an air and gas services company in the state to provide service and support for these projects.

Environmental Benefits - Does your project provide environmental benefits to the farm? Yes No *If so, please describe. For example: GHG credit application, planning and permitting, marketing and sales.*

Our business model generates energy cost saving for the dairy, improves sustainability and reduces the carbon footprint of dairy operations.

Do you have experience monetizing environmental attributes from your projects? Yes No *If so, please describe. For example: carbon offset credits, renewable energy certificates (RECs), renewable identification numbers (RINs) and Low Carbon Fuel Standard (LCFS) credits.*

Xebec has the lowest carbon footprint among other gas upgrade technologies and can support the modeling of environmental attributes

Economic Benefits - Does your business model provide economic benefits to the farm? Yes No *If so, please describe. For example: added revenue and cost reductions to help financially sustain the farm.*

Xebec gas upgrading technology takes biogas and converts it into a saleable natural gas product often called biomethane.

Do you underwrite and secure supply agreements? Yes No *If so, please describe. For example: contractual agreements to for energy, services, or credits.*

Do you secure off-take agreements? Yes No *If so, please describe. For example: contractual agreements to for energy, services, or credits.*

Do you evaluate potential markets for the farm? Yes No *If so, please describe what markets. For example: soil amendments, manure fiber for products, recovered phosphors, nitrogen, or carbon for other industries.*

Do you have a standardized deal structure? Yes No *If so, please describe.*

Xebec is very open to how equipment can be deployed on a project, but since the gas upgrade equipment is a rather simple capital equipment purchase the deals tend to be straightforward.

Do you provide a performance guarantee? Yes No *If so, what are you guaranteeing? For example: up time, methane production, biogas production, parasitic load, throughput, O&M cost, percent recovery, other.*

Xebec prides itself in it's strong guarantee around product purity (meeting the pipeline tariff) and it's market leading guarantee around methane recovery from the PSA technology; the actual purity always meets the pipeline tariff and the recovery guarantee is based on the purity requirement and the amount of CO2 and other inerts in the biogas.

Newtrient 9-Point Score Information

Is this technology currently operational on at least three North American dairy farms? Yes No

Does this technology have a record of reliable performance for more than 12 months on at least three farms? Yes No

Is this technology installed on at least 10 North American dairy farms? Yes No

What are the Installed capital costs of this technology? *Please clearly define what is and is not included, Ranges are acceptable.*

The technology scales, so larger plants have a smaller CAPx on a per unit basis; but at the present time the cost is about \$3 /scfd

What are the annual operating costs of this technology? *Please clearly define what is and is not included, Ranges are acceptable.*

Very low, the largest cost has to do with the PSA compression equipment, all related to the size of the equipment

What value does this technology or the products it makes, deliver to the farm? *Please list identifiable economic, environmental, or community value (e.g. reduced cost, increased income, reduced odor, improved nutrient use, etc.).*

The gas upgrade equipment is the revenue generating equipment, often at todays power purchase agreements \$15,000 to \$20,000 per day on a typical farm gas upgrade site.

Do you feel an in-depth Technology Information Request is needed to help people understand this technology? Yes No
Newtrient has an extensive technical information request document that can be provided, it is based on the information requested for applications to the USDA NRCS EQIP program.