

Success through Sustainability

Individuals, communities, nations, and the world are collectively working to improve the relationship between our species and the natural environment. We must recognize that we are as much a part of nature as it is a part of us. An ethos of connectivity between humans and the environment must be incorporated into the development and implementation of all technology.

CH-Four Biogas Inc. offers technology that provides essential services to society while ensuring long-term benefits for the natural environment.

Biogas technology has been implemented in countless applications around the world and has a proven record of reliability and versatility. The growth of the international biogas industry can be attributed to its ability to satisfy the three pillars of sustainability: economy, society and the environment.

Biogas Technology

Biogas technology involves the use of anaerobic digestion (AD). AD is the microbiological breakdown of organic material in an oxygen-free environment. One byproduct of AD is “biogas”, a combustible fuel comprised of roughly 60% methane and 40% carbon dioxide.

CH-Four Biogas Inc. is an engineering and design firm specializing in the development and implementation of biogas projects. We have successfully completed and are currently engaged in a number of projects in Canada and internationally.

CH-Four Biogas Inc. offers three standard sized AD systems. Below are cost estimates for the installation of a complete project, including a co-generation unit (all figures CAD).

500m³ System	\$ 700,000 - \$1,200,000
1,000m³ System	\$1,000,000 – \$1,800,000
1,500m³ System	\$1,200,000 – \$2,200,000



“The world needs new solutions for waste management, energy production and environmental protection.

Biogas technology can provide these solutions.”

Why Biogas?

- Capture and destruction of Greenhouse Gases
- Production of Renewable Energy
- Reduction of pathogens and protection of water resources
- Diversion of waste from landfill
- Production of organic fertilizer
- Creation of “cradle to grave” organic material lifecycle
- Reduction of odours & weedseeds

How to Make Biogas Work for You

Appropriate Feedstock

The key to a successful biogas project is the provision of high quality, reliable feedstocks. Below are some typical feedstocks and their estimated biogas values.

Dairy Manure	20-30 m ³ /ton	Fats, Oils & Greases(FOG)	100 – 300 m ³ /ton
Septage	10-15 m ³ /ton	Dissolve Air Flotation (DAF)	150 - 250 m ³ /ton
Secondary Sludge	15-20 m ³ /ton	Source Sep. Organics (SSO)	75- 150m ³ /ton

Energy Production

In order to achieve desirable energy outputs, a reliable source of feedstocks must be combined to maximize gas yield. The following is an illustrative list of potential combinations of feedstocks needed to achieve certain energy outputs.

100kW

Require: 450,000m³ of biogas/yr (+/- 15%)
Potential Sources: 18,000 tons of dairy manure (approx 400 lactating dairy cows)
Or 4,000 tons of SSO
Or 1,800 tons of FOG

250kW

Require: 1,100,000m³ of biogas/yr (+/- 15%)
Potential Sources 18,000 tons of dairy manure + 5,200 tons of SSO
Or 18,000 tons of dairy manure + 3,250 tons of FOG
Or 30,000 tons of septage + 3,250 tons of DAF

500kW

Require 2,200,000m³ of biogas/yr (+/- 15%)
Potential Sources 18,000 tons of dairy manure + 5,200 tons of SSO + 5,500 tons of FOG
Or 18,000 tons of dairy manure + 4,375 tons of FOG + 4,375 tons of DAF
Or 30,000 tons of septage + 15,500 tons of SSO



A CH-Four Biogas Inc. project in operation.
St. Eugene, Ontario, Canada

**“INCORPORATING AN ETHOS OF
CONNECTIVITY BETWEEN
HUMANS, TECHNOLOGY AND THE
ENVIRONMENT”**



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