



# Edmonton Waste-to-Biofuels Project

[www.edmontonbiofuels.ca](http://www.edmontonbiofuels.ca)

## **Project Overview:**

The City of Edmonton, the Government of Alberta, via Alberta Innovates – Energy and Environment Solutions (EES, formerly the Alberta Energy Research Institute), and Enerkem Alberta Biofuels have joined forces to develop the world's first municipal waste-to-biofuels project. It includes a commercial Waste-to-Biofuels facility, a world-class research center and a waste processing facility.

## ***Commercial Waste-to-Biofuels Facility:***

Enerkem Alberta Biofuels is currently building and will operate a plant that will produce and sell next-generation biofuels, including methanol and cellulosic ethanol, from municipal solid waste. This is the world's first agreement between a large urban centre and a biofuel producer to convert municipal waste into ethanol. As part of this 25-year agreement, the City of Edmonton will supply 100,000 tonnes of sorted municipal solid waste per year. This waste is what remains after recycling and composting, the portion that would otherwise be landfilled. Enerkem uses its proprietary thermochemical conversion technology to create a synthetic gas from the waste that is then converted into methanol, then ethanol. The facility will produce 36 million litres of ethanol per year.

## **Location:**

Edmonton Waste Management Centre, 13111 Meridian Street NE, Edmonton, Alberta Canada

## **Size of Facility:**

5 hectare site

**Project Chronology and status:** Please visit [www.edmontonbiofuels.ca/status](http://www.edmontonbiofuels.ca/status)

## Biofuels Project Overview:

Facility	Owner/Operator	Capital Cost
Biofuels Facility	Enerkem Alberta Biofuels	\$80 million
Integrated Processing and Transfer Facility	City of Edmonton	\$40 million (feedstock preparation component)
Advanced Energy Research Facility	City of Edmonton (Enerkem to conduct research at the facility with its technology)	\$11 million

*The Government of Alberta has supported the overall project through Alberta Innovates – Energy and Environment Solutions (\$29 million) and Alberta Energy (\$3.35 million).*

## Material to be converted into Biofuels:

- Feedstock for conversion to biofuels is prepared from residuals from the City of Edmonton's composting, recycling and processing facilities – waste that would otherwise be landfilled. Annual amount 100,000 tonnes.
- Biofuels production together with existing reduction, recycling and composting operations will divert 90% of Edmonton's residential waste stream from landfill.

## Benefits of the Project:

- *Environmental:*
  - Will reduce Alberta's carbon dioxide (CO<sub>2</sub>) footprint by more than 6 million tonnes over the next 25 years – the equivalent of taking 42,000 cars off the road every year.
  - Reduces the need for landfilling municipal solid waste
  - Uses an environmentally-sound process:
    - *High energy efficiency* - Chemical reactions in the thermal phase produce most of the energy and heat needed in the process.
    - *Low water usage* - Water is reused in a closed circuit (is a net producer with some feedstocks).
    - *Minimal air emissions* - Thermochemical conversion of feedstock is conducted in enclosed vessels. Meets regulatory environmental standards.
- *Economic:*
  - Will create "green" jobs.
  - Produces advanced biofuels locally
- *Energy:*
  - Contributes to meeting the Province of Alberta's Renewable Fuel Standard
- *Technological:*
  - Uses an innovative, green, and Canadian technology to transform waste into biofuels