

# Integrated Gas Recovery Services Inc.

## Turning landfill gas into green energy

### About Integrated Gas Recovery Services Inc. (IGRS)

Integrated Gas Recovery Services Inc. is a partnership company between Walker Environmental Group and Comcor Environmental Limited, based in Cambridge Ontario. IGRS specializes in harnessing landfill gas and using it for energy, displacing our need for non-renewable forms of energy.



### Who uses the energy harnessed at our landfill site?

- At Walker Environmental Group, landfill gas is harnessed as an energy source and used as a fuel both at a nearby papermill and here onsite in an engine-generator set (genset) to produce electricity.
- At the papermill, the landfill gas is combusted in boilers to generate steam to run machines at the mill.
- By using landfill gas, the mill is able to reduce its reliance on natural gas.
- At our genset, the landfill gas is used as a fuel to produce approximately one megawatt of electricity every hour, enough to power approximately 1,000 Canadian households.

Capturing, flaring and/or utilizing landfill gas prevents significant amounts of greenhouse gas from being emitted to the atmosphere.

### What is landfill gas?

- Landfill gas is generated from the decomposition of waste in the landfill.
- The decomposition occurs without oxygen.
- This gas typically consists of
  - approx. 50% methane (CH<sub>4</sub>),
  - approx. 45% carbon dioxide (CO<sub>2</sub>), and
  - trace amounts of other gases and compounds.
- Landfill gas has very small amounts of other compounds that even in very low concentrations can cause unpleasant odours.
- Methane is a potent greenhouse gas and has a global warming potential that is 21 times that of carbon dioxide.



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A Landfill Gas Utilization Company

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### Harnessing energy at Walker Environmental Group

At the landfill, landfill gas is harnessed as an energy source and used as a fuel both at a nearby papermill and here onsite in an engine-generator set (genset) to produce electricity.

#### How the process works:

##### 1. Gas collection

Landfill gas is collected through a series of vertical wells drilled into the landfill. These wells are connected to collection pipes that are connected to the gas plant.

At the gas plant, a series of compressors exert vacuum on the wellfield and draw the gas from the landfill.



Extraction well



Compressors exerting vacuum on wellfield



Compressing the gas

##### 2. Dehydration and compression

Once at the gas plant, the gas goes through a dehydration and compression process where moisture is removed from the gas.

Then it is pressurized for delivery to the papermill or the genset.

##### 3. Combustion

At the mill, the landfill gas is combusted in boilers to generate steam to run their machines.

Once at the genset, the landfill gas is combusted in a 1,500 horse power internal combustion engine connected to a generator. The generator produces approximately one megawatt of electricity every hour.



Genset



Flaring station

*IGRS also operates a flaring station to ensure gas does not build up in the landfill and cause odour problems.*

