

Report No. PW 2022-23  
Attachment No. 2

## **Reducing Methane Emissions from Canada's Municipal Solid Waste Landfills Discussion Paper, Environment and Climate Change Canada**

---

### **Overview**

Oxford County is a regional municipality in Ontario with a population of approximately 120,000 and is responsible for delivering municipal solid waste management services to eight (8) Area Municipalities. Waste management services includes curbside garbage and recycling collection services, as well as the processing of municipal solid waste at the Oxford County Waste Management Facility (OCWMF).

The County owns and operates one active municipal non-hazardous solid waste landfill site and eight (8) closed municipal landfill sites. In 2019 the County undertook an inventory of the eight (8) closed municipal landfill sites as many of them were inherited with limited historical records. The County is currently in the process of implementing annual environmental monitoring and measurement programs at each of these sites which includes such activities as surface and groundwater, private well, and landfill gas monitoring.

Due to landfill capacity at the OCWMF, the County was required under provincial regulation to install a landfill gas collection and flaring system (LGCFS). The LGCFS system has been in operation since mid-2010 and consists of 18 extraction wells and a mechanical pumping system that draws gas to the flare for combustion.

Oxford County has been very successful in diverting biodegradable material from landfill over the last 15 years. Approximately 20,000 tonnes of brush, leaf, and yard waste is diverted annually through numerous collection depots located throughout the County, with final processing occurring at the County's Composting Facility. Construction and demolition material is diverted for recycling at approximately 7,000 tonnes annually, and 6,000 tonnes of municipal biosolids is diverted annually for land application.

In addition to biodegradable waste diversion programs the County actively promotes backyard composting to reduce residential yard and food waste. Over the last five (5) years the County has collectively sold over 3,700 units (composters and green cones) to residents.

Oxford County has also committed to Zero Waste with the goal of diverting 90% of waste to extend landfill capacity to 2100. To achieve these goals the County has evaluated emerging technologies for waste processing (aerobic/anaerobic digestion, advanced thermal treatment) and to recover resources for beneficial use.

The County is currently undertaking a feasibility study to examine options for organic waste diversion and processing technologies in order to meet provincial diversion targets by 2025.

### **Comments**

Oxford County supports ECCC's objectives for the development of new federal regulations to reduce methane emissions from Canada's municipal solid waste landfills. We appreciate the opportunity to

provide comments and feedback on ECCC's discussion paper and offer the following comments for consideration.

[Should federal regulations be developed to increase the number of landfills that take action to reduce methane emissions? Which landfills should be regulated?](#)

There is a need for federal regulatory involvement in the management and reduction of methane gas emissions. As a toxic substance listed on Schedule 1 of the *Canadian Environmental Protection Act, 1999 (CEPA)*, methane gas can have an immediate and long-term harmful effect on the environment and human health. Federal regulatory involvement in the management of methane gas will encourage greater consistency among the provinces and territories in their execution of methane gas emission targets which should decrease the amount of methane gas released into the environment.

Determining which landfills should be regulated should be based on qualitative data through environmental monitoring to assess landfill gas emissions and offsite migration. Routine monitoring programs at a frequency of every five (5) years will provide valuable insight into whether landfill gas emission control is required and identify which landfill sites should be subject to regulatory requirements.

Installation and operation of traditional gas recovery systems at small closed landfill sites could pose a financial burden for many municipalities. The use of emerging technologies (biocovers) may offer more economically feasible options to control emissions.

Federal regulatory requirements to control and reduce methane gas emissions may conflict with provincial and territorial regulations. It is very challenging to comply with regulatory requirements when federal and provincial regulations do not align and therefore, consideration to what has been done at the provincial and territorial levels must be taken into consideration.

[How can the regulations be designed to ensure that regulated landfills maximize methane recovery?](#)

For regulated landfill sites, it is important that proper landfilling operations are implemented. This means that LGCFs should be either installed or expanded within a reasonable timeframe following waste disposal. To do this, landfill operators will need to be more strategic in their landfill operations by opening and closing active landfill areas in tandem with temporary and permanent LGCFs.

That being said, the cost to monitor and implement a LGCFs can be considerable and, therefore, the County recommends standardizing the methane gas approaches eligible for implementation by the amount of waste landfilled annually, thus allowing sites to customize their LGCFs operations. Through the routine monitoring of the LGCFs, landfill operators will be alerted to when changes in the system are needed to continuously capture available methane gas. Additionally, routine monitoring of surface emissions should also be undertaken to demonstrate the effectiveness of the LGCFs.

[Should federal regulations be designed to require or stimulate diversion of organic waste from landfills?](#)

Federal regulations should require diversion of organic waste and should be developed to establish a uniform framework that compliments and/or increases the effectiveness of provincial and territorial regulations. Landfilling of organic waste should be a last resort and priority should be placed on diverting material from landfills.

Organic waste diversion through regulatory requirements will promote innovative treatment technologies and prevent waste export to cross border and/or private landfills that can typically offer reduced tipping fees compared to most municipally run landfill sites.

Should federal regulations require or encourage the utilization of recovered methane to produce low-carbon fuels and energy?

Where opportunities exist, landfills should be encouraged to use recovered methane to produce low-carbon fuels and energy where economically feasible. The size and age of landfills will affect the amount of methane gas generated and captured through a LGCFS. The proximity of landfills to utility infrastructure (pipelines, electrical grids) will also affect the viability of gas utilization undertakings.

Incentives to increase the demand for low carbon fuels and renewable energy such as the federal *Clean Fuel Standard* are necessary to promote innovation and make utilization of captured methane more viable.

---

**Prepared for:**

Waste Reduction and Management Division, Environment and Climate Change Canada  
(ges-dechets-ghg-waste@ec.ca)

**Further Information:**

Frank Gross, Manager of Transportation and Waste Management (fgross@oxfordcounty.ca)