Ontario Ministry of Agriculture, Food and Rural Affairs

Proposal to Support On-Farm Renewable Natural Gas - *Nutrient Management Act, 2002*

February, 2021

Ontario

Agenda

- Welcome and Introductions
- Context and Background
- Proposed Regulatory Amendments
- Questions, Discussion, Feedback and Next Steps

Context

- **The Nutrient Management Act** regulates materials containing nutrients in ways that support agricultural operations while protecting the environment.
  - Appropriate storage and application of manure to farmland.
  - Use of off-farm materials (e.g. food processing waste, municipal biosolids) as nutrient sources for agricultural crops while diverting more materials from landfill.
  - Use of additional agricultural materials (e.g. milkhouse washwater) as nutrient sources for agricultural crops.
  - Requirements for anaerobic digestion facilities built on farms that use manure and other agri-food waste to produce biogas, supplying electricity to market and digestate as a nutrient source for crops.

Proposal

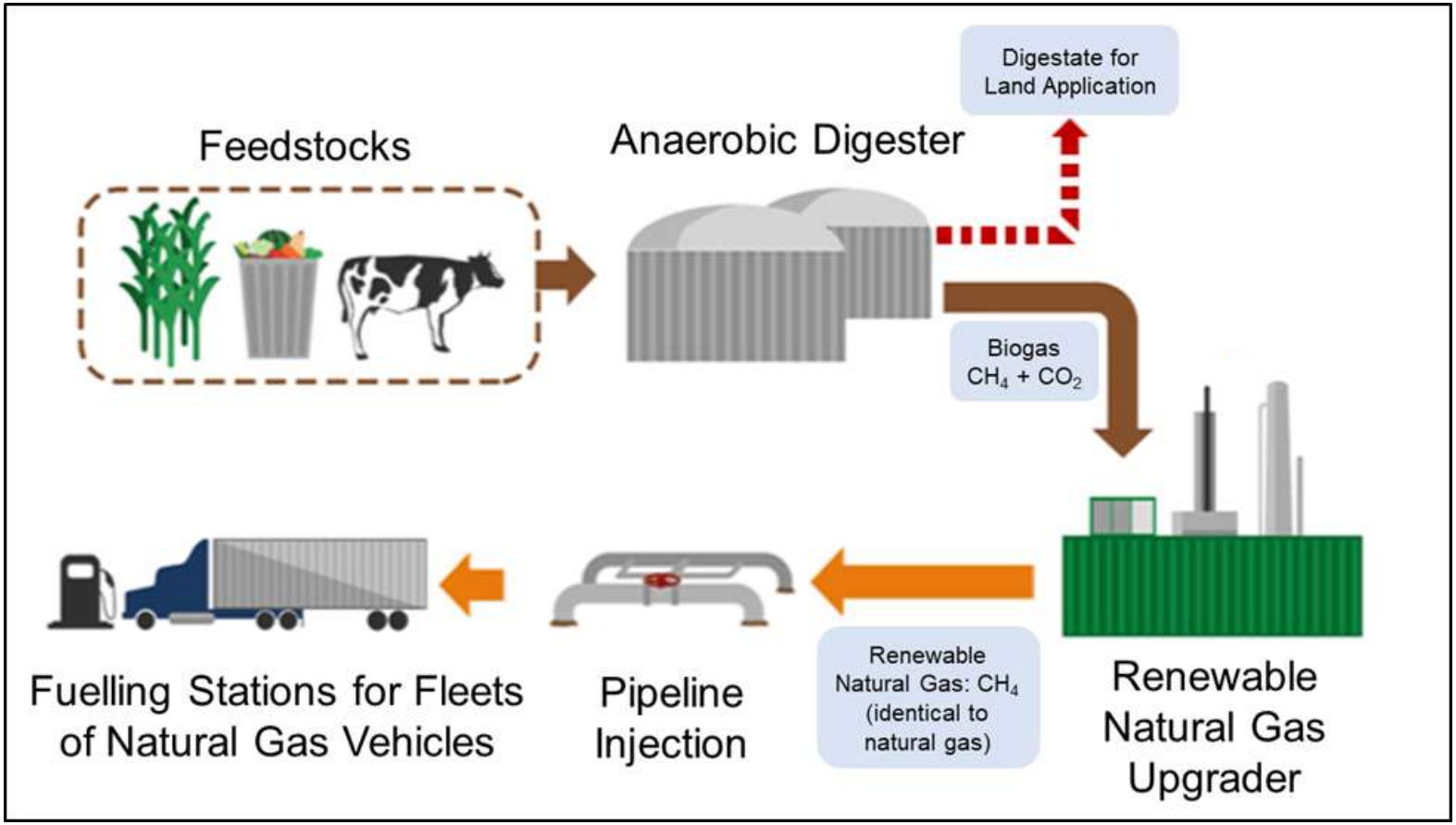
- The Ministry of Agriculture Food and Rural Affairs and the Ministry of Environment Conservation and Parks are proposing changes to anaerobic digestion facility rules under the *Nutrient Management Act, 2002*.
- The proposed changes intend to:
  - Create opportunities for agricultural producers to process manure and other agricultural source materials in on-farm Regulated Mixed Anaerobic Digestion Facilities (RMADFs); and
  - Enable production of renewable natural gas (RNG), while avoiding noise and odour concerns and maintaining environmental oversight.

Anaerobic Digestion

Anaerobic digestion can create and increase revenue streams on-farm and reduce the amount of food and organic waste that goes to landfill.

- Farm-based anaerobic digesters are sealed, heated containers, in which organic waste materials are broken down to produce biogas and solid and liquid digestate effluent.
- Biogas can be used to produce electricity and heat, burned as a fuel, or can be upgraded and processed into renewable natural gas (RNG) and transportation fuel.
- Replacing natural gas or diesel fuel with RNG results in significant greenhouse gas emission reduction, reduced emissions from landfills and manure storages, and reduced reliance on conventional fertilizer.
- Ontario has the largest biogas industry in Canada with 34 on-farm and 8 commercial facilities in the province. The majority of Canadian biogas companies are headquartered in Ontario.

On-Farm Anaerobic Digester Producing Renewable Natural Gas



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Proposed Regulatory Amendments

1. Design and Construction Requirements

- As the Renewable Natural Gas sector develops, it is important to update these regulations to ensure the rules allow for on-farm RNG production that protects people and the environment.

Proposed Changes:

A. Clarify design requirements to enable biogas upgrading to renewable natural gas on an agricultural operation under the Nutrient Management Act.

B. Clearly define what components fall under the definition of an on-farm RMADF and therefore are required to meet certain rules within the regulation, for example setback requirements, and systems required to reduce potential noise and odour.

C. Clarify digester tank design to ensure liner and containment requirements provide the same environmental protections as other permanent storage systems on the farm.

Proposed Regulatory Amendments

2. Permitted Feedstocks

- Farmers have told the government that they need a greater quantity and variety of feedstocks to make renewable gas generation effective, efficient and economical.

Proposed Changes:

A. Increase the quantity limits of off-farm materials (materials that do not come from an agricultural operation) with requirements to mitigate possible noise and odour impacts. (from 10,000 cubic meters/year to 40,000 cubic meters/year)

B. Remove restrictions on the quantity of on-farm materials (materials from agricultural operations).

C. Provide greater flexibility for the types of off-farm materials that can be used in the digester, for example allowing Source Separated Organics to be used in the digester, along with new odour and set-back requirements.

Proposed Regulatory Amendments

3. Simplify Operational Requirements

- Farmers who operate digesters have identified the need for flexibility in case of unexpected feedstock management challenges.

Proposed Changes:

A. Reduce requirements (i.e. lab analysis) for accepting a single load of off-farm anaerobic digestion materials that is to be diverted to another on-farm RMADF if it is already known to be acceptable under the *Nutrient Management Act, 2002*.

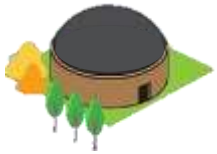
Questions & Next Steps

- Feedback gathered here today will be used in finalizing the proposed changes.
- The target date for the new regulation to be effective is July 1, 2021.

Questions for Discussion:

1. Do you have any questions or concerns with any of the proposals discussed?
2. Beyond the design and construction requirements proposed, is there any other way we can better accommodate anaerobic digestion systems that generate renewable natural gas on farms?
3. Do you have any suggestions on how we can further simplify operational requirements for on-farm RNG production while managing risk and ensuring environmental protection?
4. Do you have any feedback on how to optimize flexibility related to the quantity and type of feedstocks permitted for on-farm RMADFs?
5. Do you have any additional suggestions that would help on-farm producers of RNG to maximize opportunities for their businesses?
6. Are the environmental protection measures we've outlined adequate for dealing with the increased volumes and varieties of feedstocks enabled through the proposed regulatory changes?

Appendix: Key Terms



Anaerobic Digestion: A sequence of processes by which microorganisms break down biodegradable material in the absence of oxygen. The process is used to manage waste and/or to produce fuels.

Feedstock: Raw material to supply or fuel a machine or industrial process.

Biogas: Gaseous fuel produced by the fermentation of organic matter.

Digestate: The material remaining after the anaerobic digestion of a biodegradable feedstock.

Nutrient: A substance that provides nourishment essential for growth, energy, and the maintenance of life.

Solid and Liquid Digestate Effluent: Liquid material remaining after the anaerobic digestion process that can be spread on land/fields.

Source Separated Organics (SSO): Municipally collected material that is biodegradable and comes from either a plant or an animal, separated from other types of waste (e.g., recycling, garbage).

Thank you for your participation!