

Mixed Waste Pre-Sort and Anaerobic Digestion

Municipality of Clarington Council

November 2, 2020



Service Excellence for our Communities

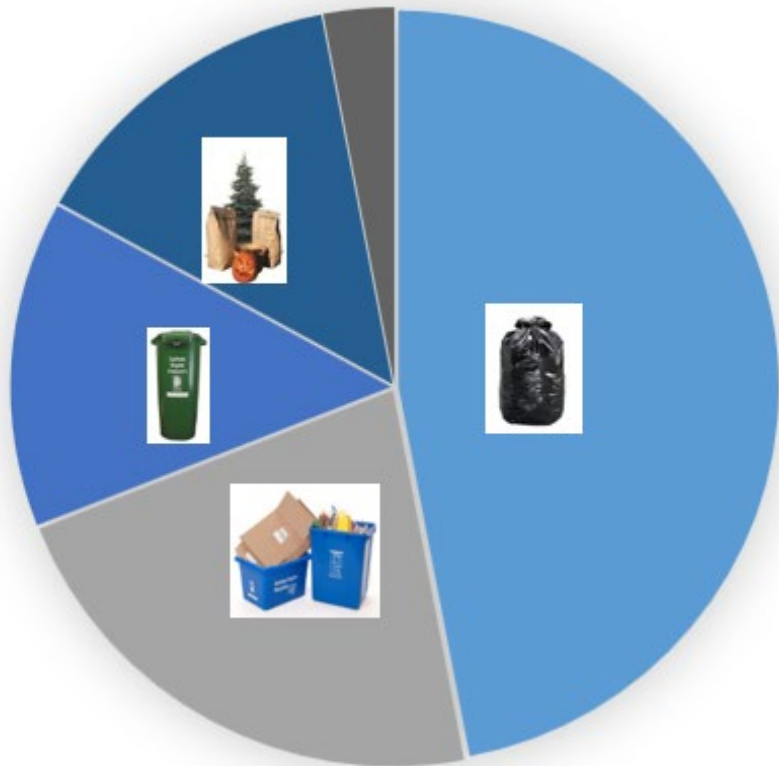
Presentation Outline

1. Opening Remarks
2. Waste Composition
3. Project Drivers
4. Project Concept and Anaerobic Digestion (AD) Process
5. Digestate Management
6. Renewable Natural Gas (RNG) and Climate Change
7. Concerns and Issues
8. Impacts to the Durham York Energy Centre (DYEC)

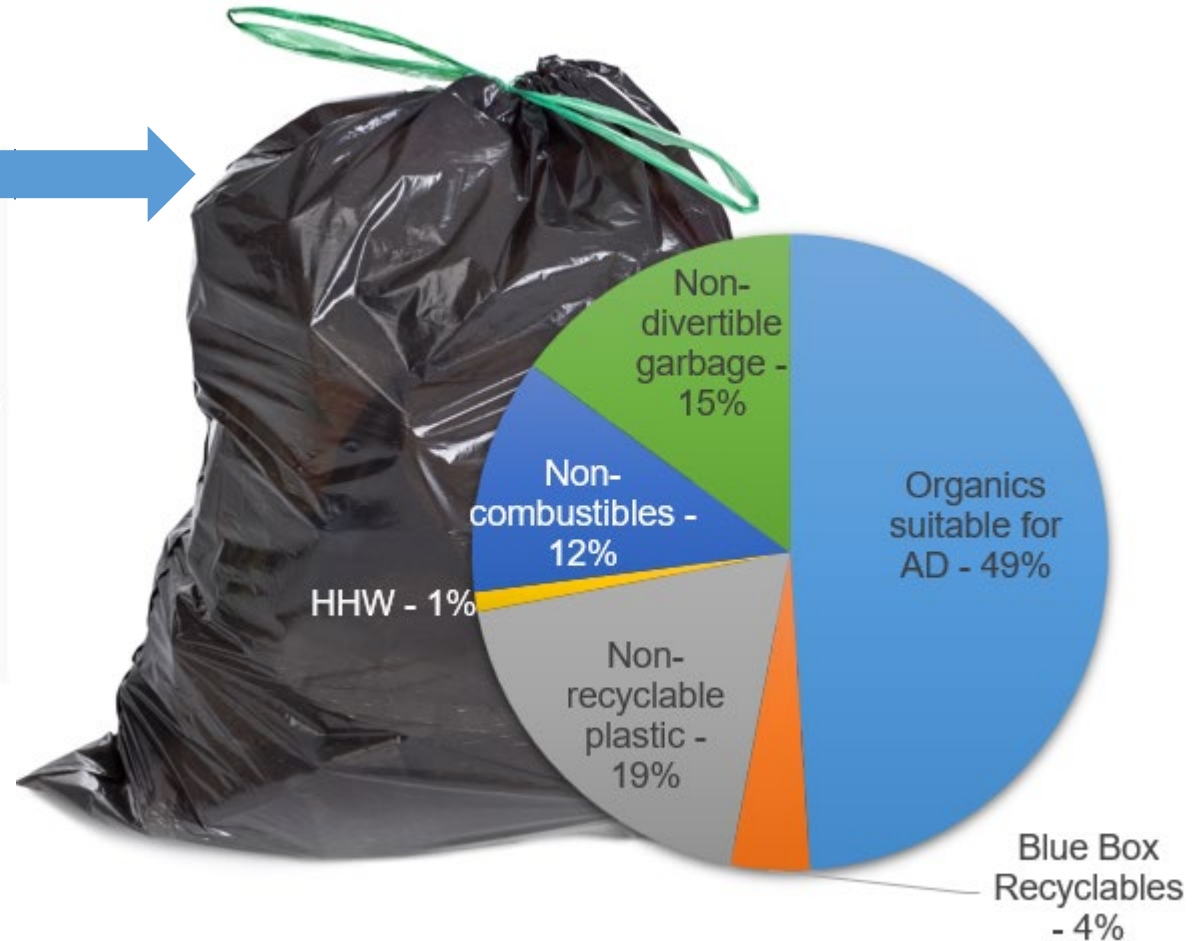


Durham Region's Residential Waste

Composition of Residential Waste Managed



- Garbage - 47%
- Recycling - 22%
- Food Composting - 14%
- Leaf & Yard Waste Composting - 14%
- Other Diversion Programs - 3%



Drivers for Managing Organic Waste

Durham Region Drivers

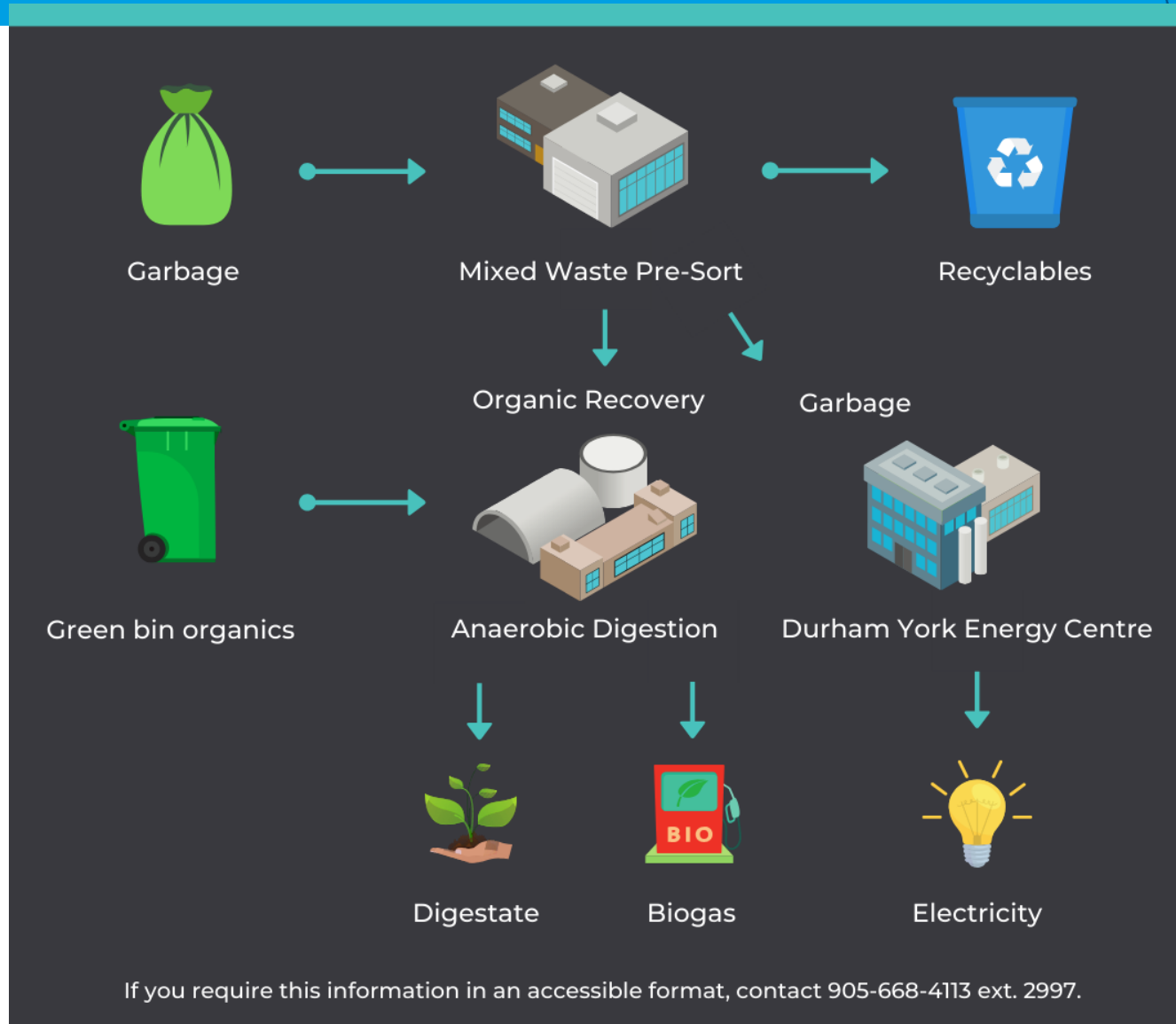
- Growth and diversion
- DYEC capacity
- Regulatory
- Address climate change/reduce Greenhouse Gas (GHG) emissions

Market Drivers

- Landfill capacity
- Green Bin processing capacity
- Renewable natural gas



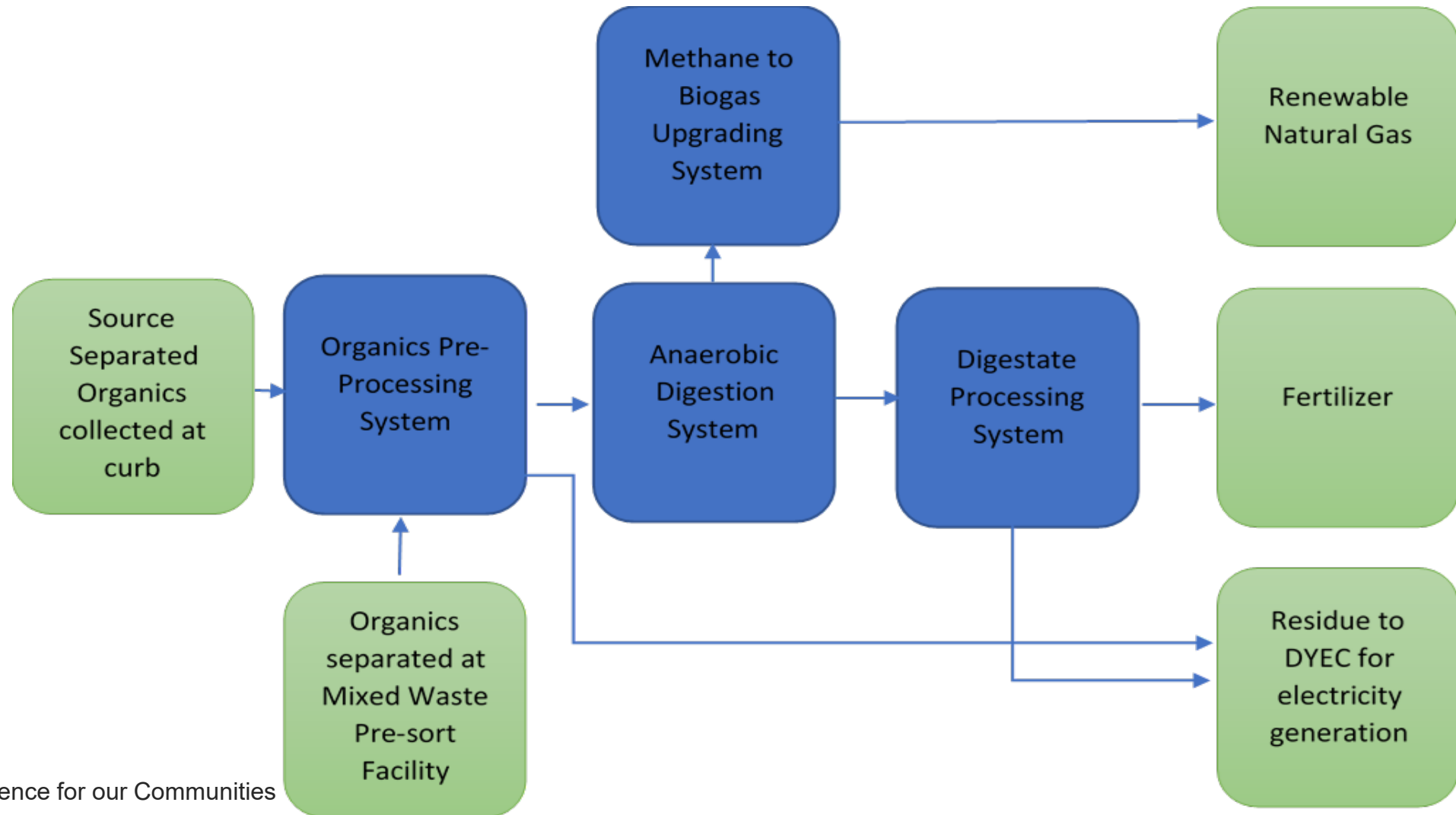
What is Mixed Waste, Presort and Anaerobic Digestion?



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If you require this information in an accessible format, contact 905-668-4113 ext. 2997.

Anaerobic Digestion Process



Digestate Management

- Digestate can be processed for Beneficial Use to create either:
 - **Agricultural Liquid Fertilizer** (Bio-En Power Inc. of Elmira); or
 - Dewatered and Composted solids (City of Toronto AD Facilities).
- Ministry of the Environment, Conservation and Parks (MECP) has guidelines for the above digestate from Source Separated Organics (SSO).
- MECP does not have guidelines for digestate from Facility Separated Organics (FSO)
 - Ongoing discussion with MECP, Peel Region, City of London and Durham Region.
 - Durham Region will **initially** introduce two-stream AD to verify with the MECP that FSO meets applied guidelines.
- **Digestate will not go to the DYEC**



Renewable Natural Gas

- Biogas from the AD is **approximately** 60 per cent methane plus carbon dioxide (CO₂) and other components.
- **Refined** to approximately 90 per cent methane to become RNG.
- RNG is injected into Enbridge pipeline network for use such as:
 - Durham Region's infrastructure or vehicles
 - Used in jurisdictions that receive off-set credits (British Columbia, Quebec, California)
 - **Companies may elect to purchase credits**
- Opportunity to process biogas from Wastewater Pollution Control Facility.
- Significant project to address **Climate Emergency**.



Concerns and Issues

- Minimal impact from Truck Traffic by using existing road to the DYEC.
- No emission impacts.
- No odours off-site.
- Durham Region only owned facility.
- Operating hours consistent with DYEC.
- North Parcel of Land available for development.
- Low risk and does not trigger the Environmental Assessment.
- Impasse in negotiations with EPCOR on key terms such as governance and risk allocation related to change in law.
- Third Party Legal for assistance in developing Procurement Documents.



Impacts on the DYEC

- Mixed Waste Pre-Sort and the enhanced Green Bin capture will make available 30,000 tonnes of capacity at the DYEC per year. This is approximately 15 years of delay for an expansion (to 2035).
- Will create a more efficient steam/electricity generation through the reduction of non-combustible waste and organics (moisture).
- DYEC continues to operate in compliance (next Source Test: November 9 to 13).
- No odours attributed to DYEC.



Questions

