

Use of municipal waste in thermal energy recovery processes

Overview: This document consolidates legislation, guidelines and standards related to the use of municipal waste¹ in an energy recovery process. Waste management in BC is guided by the 5 R pollution prevention hierarchy (Reduce, Reuse, Recycle, Recover, Residuals Management). The hierarchy is a principle in the [Guide to Solid Waste Management Planning](#), and is a tool used by local government when looking at opportunities to improve their solid waste management system. The order of preference in the pollution prevention hierarchy is for waste management to only be undertaken at one level when all feasible opportunities for pollution prevention at a higher level have been taken. For example, opportunities for recycling should be explored only after all opportunities for reduction and reuse of materials have been exhausted. Planning and capacity for recovery processes should not impede efforts to achieve higher levels of reduction, re-use and/or recycling, as described in the [Information Sheet: Waste to Energy \(WTE\) and Solid Waste Management Plans](#) (SWMP).

Purpose: This document was created for use by local governments, industry and First Nations when determining what to consider when assessing the use of municipal waste as a feedstock for energy recovery processes or the use of refuse-derived fuels. The considerations are based on Ministry of Environment and Climate Change Strategy (ENV) legislation, guidelines and standards and describe what may be applicable for various site-specific scenarios. It is important to note that other provincial agencies, local governments or authorities may have legislation, policies and mandates that must also be considered. This document applies to thermal technologies such as incineration, gasification and pyrolysis, but does not apply to anaerobic digestion and agricultural greenhouses (see Appendix A for associated guidance). Determining the source and type of municipal waste feedstock is an important first step as it can impact the authorization process for the facility, and all Regional Districts that plan to direct a portion of their Municipal Solid Waste (MSW) to the facility must have an approved SWMP that authorizes the facility to accept MSW for recovery and/or disposal. A facility accepting MSW and non-MSW will follow the same authorization process as a facility that only accepts MSW.

Considerations: Energy recovery from waste is an allowable activity under the *Environmental Management Act* (EMA). Before considering the inclusion of an energy recovery process, targets for reduction of waste to be achieved through higher levels of the pollution prevention hierarchy should be set and achieved in a regional district’s SWMP. Facilities are expected to meet a minimum energy efficiency rate of 60% in a BC context as measured over a 12-month period to be considered as resource recovery or would otherwise be considered a disposal facility. Thermal processes generate air contaminants, and the location of the facility and its impacts on the local [airshed](#) should be considered prior to examining the feasibility of energy recovery. The following table highlights additional key considerations.

KEY CONSIDERATIONS				
Local Government*		Private Sector	First Nations	
Solid Waste	Liquid Waste and non-MSW material		Treaty	Non-treaty
<ul style="list-style-type: none">•Determine possible feedstocks•Amend existing SWMP** to incorporate use of waste as a feedstock for energy recovery•Follow existing process , see Guide to Solid Waste Management Planning and Waste Discharge authorization Process•Need authorization: SWMP requires minister’s approval and an operational certificate (OC), or permit issued by the director and may require an Environmental Assessment Certificate (EAC) under the Environmental Assessment Act•For a local government to regulate materials not normally considered as MSW as defined in section 23 of EMA or as recyclable material, a director’s decision is needed and an amendment to the SWMP	<ul style="list-style-type: none">•Determine possible feedstocks•May need to amend SWMP or Liquid Waste Management Plan (LWMP) if feedstock is co-mingled•Need authorization: OC, or permit issued by the director, and may require an EAC• If hazardous waste is being considered as a feedstock, the Hazardous Waste Regulation will also apply	<ul style="list-style-type: none">•Determine possible feedstocks•For MSW:<ul style="list-style-type: none">▪May require amendment to SWMP; work with regional district (RD)▪Will require authorization (permit or OC under existing waste management plan) if discharging air contaminants or other waste, and may require an EAC• For non-MSW materials:<ul style="list-style-type: none">•If working under existing permit may require permit amendment, or may require a new permit if discharging air contaminants or other waste.	<ul style="list-style-type: none">•Determine possible feedstocks•Autonomous/self-governing▪May have existing government-to-government agreement in place▪Need to consult treaty language•May require SWMP amendment (for waste generator RD and/or receiving facility RD)	<ul style="list-style-type: none">•Determine possible feedstocks•Follow any federal regulations where they exist•Determine if any agreements in place, e.g., strategic engagement agreement (SEA)•Provincial regulations may apply, e.g., air discharges (authorization required), laws of general application•May require SWMP amendment (for waste generator RD and/or receiving facility RD)

* For multi-regional projects, need to ensure that all Waste Management Plans are coordinated

** Waste generation and/or receiving projects which would significantly impact a regional district’s or neighbouring regional district’s solid waste system(s) would likely trigger an amendment of any SWMPs involved

Other agencies to contact for related policies and regulatory requirements:

- [Ministry of Municipal Affairs and Housing](#) (MAH)
- [Ministry of Energy, Mines and Petroleum Resources](#) (EMPR)
- [Ministry of Indigenous Relations and Reconciliation](#) (IRR)
- [Ministry of Agriculture](#) (AGRI)
- [Agricultural Land Commission](#) (ALC)
- [Environmental Assessment Office](#) (EAO)
- [Climate Action Secretariat](#) (CAS)
- [Indigenous Services Canada](#) (ISC)

ENV requirements and guidelines (see Appendix A):

- [Environmental Management Act \(EMA\) – Part 3](#)
- [Guide to Solid Waste Management Planning](#)
- [Guidelines for Preparing Liquid Waste Management Plans](#)
- [Waste Discharge Authorization Application Process](#)
- [WTE: A Technical Review of MSW Thermal Treatment Practices](#)
- [Info Sheet: WTE and SWMPs](#)
- [Combustion of MSW Factsheet](#)
- [Recycling Regulation Guide](#)

Contact information:

- Email: envprotdiv@Victoria1.gov.bc.ca
- Web: www2.gov.bc.ca/gov/content/environment/waste-management

¹ [Municipal Waste](#) is defined in section 23 of EMA. For the purpose of this document, industrial waste is out of scope, e.g., wood waste to pulp mills.

This guidance document is not a legal document and the information in it does not constitute legal advice or impose any legally binding requirements. This document does not replace the *Environmental Management Act* or any other applicable law. In the event of an inconsistency between this document and the *Environmental Management Act* or other applicable legislation, the *Environmental Management Act* or other applicable legislation will prevail.

Appendix A

ENV Requirements and Guidance

Environmental Management Act

- Waste definition see [section 1 of EMA](#) and [section 23 of EMA](#)
- Municipal Waste Management – see [Part 3 of EMA](#)
- Municipal Solid Waste and Municipal Liquid Waste – see [section 23 of EMA](#)
- Waste Management Plans (WMPs) – [section 24 of EMA](#)
- Solid Waste Management Plans (SWMPs)* – [section 25 of EMA](#)
- Operational certificates under SWMPs and Liquid WMPs – [section 28 of EMA](#)
- Permits and approvals under EMA – sections [14](#) and [15](#)

Environmental Management Act Codes and Regulations:

- [Organic Matter Recycling Regulation](#)
- [Code of Practice for Soil Amendments](#)
- [Recycling Regulation](#)
- [Hazardous Waste Regulation](#)

Guidance Documents

- [Guide to Solid Waste Management Planning](#)
- [Guidelines for Preparing Liquid Waste Management Plans](#)
- [Waste Discharge Authorization Application Process](#)
- [WTE: A Technical Review of MSW Thermal Treatment Practices](#)
- [Info Sheet: WTE and SWMPs](#)
- [Combustion of MSW Factsheet](#)
- [Recycling Regulation Guide](#)
- [Best Achievable Technology \(BAT\)](#)
- [Airshed management plans](#)

Environmental Assessment Act

- Administered by [Environmental Assessment Office](#)
- See table 11 of [Reviewable Projects Regulation](#)

Guidance Documents on Anaerobic Digestion

On-farm Anaerobic Digestion (ENV)

- <https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/anaerobicdigestionguideline.pdf>

On-farm Biogas Production (AGRI)

- 1-888-221-7141
- AgriServiceBC@gov.bc.ca
- http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/waste-management/manure-management/382600-1_an_overview_of_onfarm_biogas_production.pdf

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