



Considerations for the Inclusion of Waste-to-Energy Facilities (WTE) in Solid Waste Management Plans

Introduction

The purpose of this document is to help local governments assess their waste management practices and goals before considering the use of waste-to-energy (WTE) to manage municipal solid waste (MSW). The considerations listed below are based on the Ministry of Environment and Climate Change Strategy (Ministry) operational policy used to guide Ministry staff during the review of solid waste management plans (SWMP). These considerations are used to assess WTE proposals within a SWMP. Regional Ministry staff should be consulted to determine if additional considerations apply.

The Ministry expects that local governments will set key waste disposal rate targets before considering the inclusion of WTE facilities within their SWMP. The purpose of this is to ensure that recycling initiatives are enhanced and that the pollution prevention hierarchy (hierarchy)¹ continues to be the tool used for determining best waste management options.

Considerations

- 1) WTE is an allowable activity under the *Environmental Management Act* (EMA).
- 2) The Ministry supports the hierarchy and the goal of minimizing the volume of waste being disposed.
- 3) All Regional Districts that plan to direct a portion of their MSW to a WTE facility must seek an amendment to their SWMP, prior to considering WTE as a waste management option, that adds sufficient detail which:

¹ The Ministry defines the pollution prevention hierarchy as reduce, reuse, recycle, recovery and residual management. The hierarchy is in descending order of preference, such that management is not undertaken at one level unless or until all feasible opportunities for management at a higher level have been taken.

- a) Identifies a municipal solid waste disposal rate target of 350 kg/capita/year² with measurable interim targets set and met throughout the planning and implementation process;
 - b) Highlights that WTE planning and capacity is conducted only after considering the higher levels of the hierarchy and does not impede efforts to achieve higher levels of reduction, reuse and/or recycling initiatives; and
 - c) Authorizes the WTE facility to accept MSW for treatment and/or disposal.
- 4) In order to be considered under the 4th R of the hierarchy, the Ministry expects that the facility has an energy efficiency of at least 60% as measured over a 12-month period³
 - 5) When a WTE facility does not achieve 60% energy efficiency over a period of 12 months, the Ministry will consider that WTE facility as a Residual Management facility (5th R).

² The Ministry anticipates that local governments may have a higher or lower municipal solid waste disposal rate target depending on their access to services (locally and/or provincially) within the first three levels of the hierarchy. Local Governments are encouraged to work collaboratively with other Local Governments as described in the Ministry's Guideline "A Guide to Solid Waste Management Planning".

³ Energy efficiency criteria is modelled after Annex II of the Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (2008/98/EC),

$\text{Energy efficiency} = \frac{\text{Energy produced} - \text{Energy from fuels} - \text{Other energy imported}}{0.97 \times (\text{Energy of waste input} + \text{Energy from fuels})}$

The energy efficiency of WTE facilities should be calculated in a BC context based on energy in/energy out, without the use of equivalence factors comparing the energy from MSW with the energy potential from other fuels (e.g., coal).

- 6) The Ministry expects that the criteria in Table 1 be met for all WTE facilities.

Application

This information applies to thermal treatment technologies such as mass-burn incineration (including cement kilns and pulp and paper mills), gasification and pyrolysis that recover energy from MSW, but does not apply to anaerobic digestion and agricultural greenhouses and does not describe site specific requirements of proposed facilities.

Please note that this information is for the convenience of the reader and may change from time to time. The

current legislation and regulations should be consulted for complete information.

If you require additional information, please contact your regional office of the Ministry of Environment and Climate Change Strategy.

Ministry Contact

For more information, consult our website at:

<https://www2.gov.bc.ca/gov/content/environment/waste-management/garbage/waste-to-energy>

Or email the Ministry at:

envprotdiv@Victoria1.gov.bc.ca

Table 1: Criteria for WTE facilities

(A)Criteria for local governments planning to direct MSW to a WTE Facility		(B)Criteria for WTE facilities utilizing MSW as a feedstock		
Municipal solid waste disposal rate target	Technical assessment	Technology	Management of by-products	Emission requirements
Local governments contributing MSW to a facility must have an approved SWMP that authorizes and/or recognizes the WTE facility to accept and dispose of MSW. The SWMP is expected to include a municipal solid waste disposal rate target of 350 kg/capita/year before considering the use of WTE technologies for managing MSW. In addition, the SWMP should prioritize strategies that would help reduce, reuse and recycle waste, and ensure that WTE is not impeding these efforts.	Assessment and comparison of waste management treatment and disposal options should be completed.	Adopt the best achievable technology. This should be determined by assessing feasible options based on reliability, cost effectiveness and discharge intensity.	Clearly identify viable solutions for disposal or beneficial use of bottom ash, fly ash and/or liquid by-products.	The emissions from a facility must meet the Ministry's Factsheet Air Emissions Combustion of Municipal Solid Waste * and emission requirements set out in the site specific authorization for the facility.

*<http://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/combustionmswfs.pdf>