



# **EMEP/EEA Guidebook updates – 5C1a Municipal solid waste incineration**

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TFEIP Waste Expert Panel

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**Aether** 

# Intro and summary of changes outside of EF tables / methods

- As with other chapters – this has been a quick update focusing on
  - text that is outdated or hard to understand
  - existing errors (EF tables)
  - full literature review to update EFs has not been completed
- Summary of changes to chapter text
  - Deletion of Figure 2-1 (process scheme)
  - Section 2.3 (Emissions) – note added that the presence and release of organic compounds may vary greatly depending on the composition of waste
  - Section 3.1 (Choice of method) – minor improvements to text
  - Section 3.2.1 (Tier 1 – Algorithm) – clarification added that *the Tier 1 emission factors assume a standard of technology and abatement that can be expected for a modern plant showing implementation of the EU waste incineration directive (see details under section 3.2.2)*
    - see next slides

# EF tables

- Table 3-1 (Tier 1 emission factors)
  - Note added to clarify why TSP, PM<sub>10</sub> and PM<sub>2.5</sub> are equal (3 g/Mg) under T1 approach based on the source material for a WID compliant plant.
  - Newer information may be available, however expert judgement suggests that there will be a greater portion of larger particles emitted only when no (or very limited) abatement is in place, and this is represented in the T2 factors
- Table 3-2 (Uncontrolled T2)
  - No changes

# T2 Abatement efficiencies (Table 3-3)

- There were errors identified in this table
  - original source ref checked (available: <https://www.eea.europa.eu/publications/EMEPCORINAIR4/B921vs4.2.pdf>)
    - Change the name of NFR source category from "Industrial waste incineration" to "Municipal waste incineration"
    - Change the SNAP to 090201 "Incineration of domestic or municipal wastes"
  - Abatement efficiencies fixed for 'particle abatement only' and 'WID compliant plant'
  - Erroneous Lower and Upper 95% Confidence Intervals fixed for WID compliant plant
    - Reference for CI information traced back to (US) AP-42. No CI actually given in the reference document but EF confidence rating of A ("very good") so the new CI proposed for Table 3-3 are based on expert judgement

# T2 Abatement efficiencies (Table 3-3)

<b>NFR Source Category</b>	5.C.1.a	Municipal waste incineration			
<b>Fuel</b>	NA				
<b>SNAP (if applicable)</b>	090201	Incineration of municipal waste			
<b>Abatement technology</b>	<b>Pollutant</b>	<b>Efficiency</b>	<b>95% confidence interval</b>		<b>Reference</b>
		<b>Default Value</b>	<b>Lower</b>	<b>Upper</b>	
Acid gas abatement	SO2	76%	29%	92%	Guidebook (2006)
Particle abatement only	TSP	98.4%	95%	99%	Guidebook (2006)
	PM10	98.3%	95%	99%	Guidebook (2006)
	PM2.5	98.4%	95%	99%	Guidebook (2006)
EU Waste Incineration Directive (WID) compliant plant	TSP	99.7%	98%	99.99%	Guidebook (2006)
	PM10	99.6%	98%	99.99%	Guidebook (2006)
	PM2.5	99.5%	98%	99.99%	Guidebook (2006)
Controlled combustion; minimal APC system	PCDD/F	90%	70%	97%	UNEP (2005)
Controlled combustion; good APC system	PCDD/F	99%	97%	99.99%	UNEP (2005)
Controlled combustion; sophisticated APC system	PCDD/F	99.99%	99.99%	99.99%	UNEP (2005)

# T3 Section 3.4

- New, simple guidance text added related to the potential use of measurement / modelled data

*A detailed Tier 3 method is not provided for this source. Based on the decision tree, the Tier 3 method consists of using emissions data collected from sites, either through the derivation of a national emission factor applied to the total amount of municipal waste incinerated, or by summing the emissions if all MSW incineration facilities report their emissions. Detailed process modelling (likely based on facility measurements) may also be used to derive Tier 3 emission factors.*

*Particular attention should be paid to the completeness of the facilities included and the quality of the data reported by the operators. Using a Tier 1 may be more representative than data reported by few sites or based on few measurements.*

*Tier 3 method is most appropriate for regulated pollutants measured continuously by a monitoring system.*

*Where concentration measurements are available from operators using continuous monitoring systems, compilers should ensure that the confidence interval is not subtracted in the treatment software when deriving the annual mean emission factors reported by operators.*



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