Workshop on Implementation of BAT Conclusions for Waste Incineration

Panoramic view of the puzzle: legal framework and background

Alexis Thuau
Panoramic view of the puzzle: legal framework and background

• A pinch of history
• Underlying principles for WtE permits
• Catches
• BREF and BAT conclusions – The Seville process
• Others: Large Combustion Plants (LCP) BREF, Waste Treatment (WT) BREF, Reference Report on Monitoring (ROM)
A pinch of history

WtE plants have been regulated at EU level since 1989 with the first Waste Incineration Directive (WID).

In 2010 the WtE sector was included in the scope of the so-called Industrial Emissions Directive (IED), which was the result of a merger of several directives (including the revised WID 2000/76/EC).

Chapters I & II & Annexes I to IV
GENERAL and INTEGRATED APPROACH

Chapter III & Annex V
LARGE COMBUSTION PLANTS (~ LCP Directive)

Chapter IV & Annex VI
INCINERATION & CO-INCINERATION (~ WID)

Others
(Nothing on other Waste treatment routes)
Legal Framework

Principle-pillar (IED recital (5))

*In order to ensure the prevention and control of pollution, each installation should operate only if it holds a permit […]*. 

In particular:

**IED, Art.14.3 – BAT conclusions shall be the reference for setting the permit conditions.**
Legal Framework

BAT conclusions consist of BATs and their associated environmental performance and are included in a specific chapter of BAT REFerence documents (BREFs), which, since the IED, are defined as (IED, Art 3.11):

‘BAT reference document’ means a document, resulting from the exchange of information organised pursuant to Article 13, drawn up for defined activities and describing, in particular, applied techniques, present emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques, giving special consideration to the criteria listed in Annex III;
However...

There is a catch. The 2006 WI BREF.

The 2006 WI BREF was published before the IED and under the IPPC Directive. It was a for-information document, without any binding nature.

It is a common misunderstanding to make comparison between the BAT conclusions in 2006 WI BREF and BAT conclusions in the upcoming 2019 WI BREF.
<table>
<thead>
<tr>
<th></th>
<th>IPPC Directive 1996</th>
<th>IED 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of BATs in general</td>
<td>Mandatory on the basis of the general definition of BATs.</td>
<td>Mandatory in reference to the list of BAT conclusions given in the BREF</td>
</tr>
<tr>
<td>BREFs</td>
<td>Not mentioned (introduced in EU law by IED).</td>
<td>Defined in the IED (see Art. 3 and 13). Only the BAT conclusions chapter is translated in the EU 23 languages and is the reference for setting the permit conditions (IED, Article 14.3).</td>
</tr>
<tr>
<td>Use of the BATs listed in the BREFs</td>
<td>For information.</td>
<td>Should be used as a reference (see above). However, the list of BATs listed in the BAT conclusions is neither prescriptive nor exhaustive.</td>
</tr>
<tr>
<td>BATAELs</td>
<td>Not mentioned. For information in BREFs, as typical levels normally observed when using BATs.</td>
<td>Future ELVs must be set to ensure that emissions do not exceed BATAELs under NOC (Normal Operating Conditions). (See IED, Article 15.3).</td>
</tr>
<tr>
<td>(Other*) BATAEPLs</td>
<td>Not mentioned. Added for information.</td>
<td>Not mentioned. No requirement related to the BATAEPLs (other than BATAELs). Added by the Commission’s BREF Guidance (Commission decision 2012/119/EU).</td>
</tr>
</tbody>
</table>
However...

There is another catch. IED Annex VI.

IED Annex VI contains specific provisions for the waste incineration sector, including Emission Limit Values (ELVs) and compliance rules. Apart from the WI sector, only LCPs and solvent production have dedicated annexes.

These provisions, e.g. on compliance, are not included in the soon-to-be-published WI BAT Conclusions. How to manage the interlinks between Annex VI and BAT conclusions is still an open question in many cases.
The basis for future permits of WtE plants is the revised WI BAT Conclusions, but not only…
Legal Framework – In practice

IED Article 3 (10): "'best available techniques' means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole:

(a) ‘techniques’ includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

(b) ‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;

(c) ‘best’ means most effective in achieving a high general level of protection of the environment as a whole;"
BATs should be appreciated on Multiple Criteria (= Integrated approach)  
*Introduced in 1996 by IPPC Directive*  
*(Reinforced in 2010 by IED (2010/75/EU))*

Considerations to take into account to determine the Best Available Techniques (IPPC directive Annexe IV and IED Annex III)

Example (see diagram next page)

<table>
<thead>
<tr>
<th>CONSIDERATIONS</th>
<th>INDICATORS</th>
<th>Technique 1</th>
<th>Technique 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMISSIONS</strong></td>
<td>Emissions to air</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Emissions and Impacts (criterion nr. 6 &amp; 10)</td>
<td>Emiss. via residues</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Low waste techniques (criterion nr. 1)</td>
<td>Emissions to water</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Liquid Effluent</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Solid Residues</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>NATURAL RESOURCES CONSERV.</strong></td>
<td>Energy</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Raw material &amp; Efficiency (criterion nr. 9)</td>
<td>Reagents</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>RECOVERIES &amp; RECYCLING</strong></td>
<td>Ash recov.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>criterion nr 3</td>
<td>Metal recov.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>RISKS</strong></td>
<td>Risks fr.em.&amp; chem.</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Risks from haz.subst., env. emiss. and accid. (crit. n° 2,10,11)</td>
<td>Risks from accid.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>TECHNIQUE &amp; ECONOMY</strong></td>
<td>Invest. costs</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Economical and Technical viability (nr 4, 5, 7, 8 &amp; def. of “available technique”, art 10.b)</td>
<td>Operation costs</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TOTAL costs</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Costs/benefits</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

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Legal framework - Integrated approach

Comparison between wet and dry FGC techniques

Environmental RADAR
(Lower figure = better perf.)

Emissions

Risks

Tech & Econ. viability

Costs/benefits
TOTAL costs
Oper. costs
Invest. costs
Risks fr.accid.
Risks fr.em.& chem.
Metal recov.
Ash recov.

Emis.to atm.
Emis.via residues
Emis.to water
Liq. Effluent
Sol. Residues
Energy
Reagents
Water

Natural Res. Conservation

Dry FGC
Wet FGC
## Legal framework – Wording trap

<table>
<thead>
<tr>
<th>Wording</th>
<th>Meaning</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAT conclusions</td>
<td>Chapter of the BREF with the conclusions on BATs</td>
<td>Chapter 5 in the WI BREF</td>
</tr>
<tr>
<td>BAT conclusions</td>
<td>Commission Implementing Decision with conclusions on BATs</td>
<td>The content is the same as the one of the BREF chapter on BAT conclusions</td>
</tr>
<tr>
<td>BAT</td>
<td>Numbered BAT conclusions in a.m. chapter and Decision</td>
<td>In order not to confuse them with BATs, here they are called ‘BAT-c’</td>
</tr>
<tr>
<td>BAT</td>
<td>Techniques listed in individual ‘BAT-c’, usually numbered a), b), c), d) etc.</td>
<td>These are the actual BATs as defined in Article 3.10, neither prescriptive nor exhaustive</td>
</tr>
</tbody>
</table>
Legal framework – BAT conclusions

The “BAT conclusions” chapter of BREFs is
• Intended to be written as a stand-alone document
• Translated in 23 EU languages
• Published as a Commission Implementing Decision

IED Art.21
• "Within four years of publication of decisions on BAT conclusions in accordance with Article 13(5) relating to the main activity of an installation, the competent authority shall ensure that:
  (a) all the permit conditions for the installation concerned are reconsidered and, if necessary, updated to ensure compliance with this Directive [IED];
  (b) the installation complies with those permit conditions.
• The reconsideration shall take into account all the new or updated BAT conclusions applicable to the installation and adopted since the permit was granted or last reconsidered."
Legal framework – BAT conclusions

According to BREF guidance (Comm. Decision 2012/119/EU) include a series of “BAT conclusions” in a standardized format

Derogation from BATAELs allowed in specific & justified cases (IED Art.15.4)
• Need to demonstrate that costs are disproportionately higher than benefits due to local/installation-specific situations
• Member States report to the public/Commission on use of derogations

NB: applicability often includes ‘generally applicable’ that according to EIPPCB does not mean ‘always applicable’.
The legal basis for the exchange of information on BAT

- Article 13(1) of the Industrial Emissions Directive 2010/75/EC:
  - ‘In order to draw up, review and, where necessary, update BAT reference documents, the Commission shall organise an exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission’

- The exchange of information should address:
  - the performance of installations and techniques in terms of emissions and consumptions, etc.
  - the techniques used, associated monitoring, economic and technical viability, etc.
  - best available techniques and emerging techniques identified after considering all the issues concerned
Legal framework – BAT conclusions

The legal basis for the exchange of information on BAT

EU Member States Committee (IED Article 75)

Members of the Committee:
• vote the BAT conclusions

‘Forum’ (IED Article 13) lead by the Commission:
industry, Member States, environmental NGOs

Forum members:
• guidance to COM
• nominate in TWGs
• formal opinion on BREFs

European IPPC Bureau (EIPPCB)

BREF authors team:
• lead TWGs
• validate/check information
• draft BREFs

Technical Working Group (TWG)

• Industry
• Member States
• NGOs
• Commission

TWG members:
• research information
• peer review draft BREFs

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Legal framework – The Seville process

Industry

EU Member States + EFTA and Accession Countries

Environmental NGOs

European Commission/EIPPCB

Comments

Bulk of info. needed (incl. questionnaires)

TWG Kick off Meeting

Draft 1 (D1)

Final TWG Meeting (finalisation of Seville process)

Final draft

* D2 optional
Total duration:
• 24 – 29 months (without D2)
• 29 – 39 months (with D2)

• Forum opinion on BREF
• Adoption of BAT conclusions through the IED Art. 75 Committee

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Implementation of BAT conclusions – starting point

Within 4 years from BAT conclusions publication, competent authority should ensure that:

• all the permit conditions are reconsidered and, if necessary, updated to ensure compliance with IED (and BAT-c)
• the installation complies with those permit conditions.

IED Articles 12, 14 to 16 and 18 to 24 provide

• Elements for the permit application and obligations of the operator
• Measures to be included in the permit and main tasks of the competent authority

BAT conclusions, in practice, summarise most of these measures

• setting ELVs that ensure that, in NOC, emissions do not exceed BATAEL values. Here these future ELVs are called: “BATAEL-based ELVs”

Important: MSs can adopt General binding rules (see IED Art.6)

• In such case, the permit may simply include a reference to such rules. This simplifies the application form and the local negotiations
A glimpse at other BREFs interesting for the sector
LCP (Large Combustion Plants) BREF

• **Scope**
  1) Combustion in plants ≥ 50 MW\(_{th}\) (Sum of Units ≥ 15 MW\(_{th}\))
  2) Gasification of coal or other fuels, if ≥ 20 MW\(_{th}\) and if combustion of syngas
  3) Co-incineration of waste in LCP (see (1) above), if > 3 t/h (or, for haz. waste, if > 10 t/d)

• All fuels (solid, liquid, gaseous)
  • Including biomass and some waste (co-incinerated)
  • Excluded: MSW and similar waste, radioactive waste, animal carcasses

Link:
LCP BREF – New pollutants to be monitored in LCP

- **New pollutants** have been added to the 4 controlled up to now for LCPs (which were Dust, NOx, SO₂ and CO)
  - For coal and lignite, biomass and peat alone or co-incinerated with waste:
    - NH₃, N₂O, HCl, HF, Hg
  - For co-incineration of waste with coal, lignite, biomass or peat
    - In addition to the substances above (NH₃, N₂O, HCl, HF, Hg)
    - TVOC, PCDD/F, Cd + Tl and other metals (Sb + As + Pb + Cr + Co + Mn + Ni + V)

- Although new for LCPs, most of these pollutants, are already limited in Waste-to-Energy plants for a long time
LCP BREF - Dates

- LCP BAT conclusions published 17/8/2017 in OJEU, in 23 EU languages as “Commission Implementing Decision (EU) 2017/1442” of 31/7/2017, ⇒ Implementation before 18/8/2021 (4 years)
- LCP BREF released around 11/2017 on JRC-EIPPCB website, only in English
- Court case by Poland against Commission 18/10/2017. Bulgaria supports 1/2018

- LCP BREF ≈ Chapter 10
- LCP BAT conclusions
Waste Treatment BREF

Scope
• All waste management routes, except
  • Incineration (addressed in the WI BREF)
  • Co-incineration (addressed in WI BREF, LCP BREF and CLM BREF)
  • Landfilling (no BREF)
  • the treatment of IBA, onsite and offsite (addressed in the WI BREF)
• Includes
  • Waste pre-treatment, if any, before incineration or co-incineration
  • WI FGC residues treatment

Structure
• Mechanical treatment of waste
• Biological treatment of waste
• Physico-chemical treatment of waste
• Treatment of water-based liquid waste
Waste Treatment BREF

**Revised WT BAT conclusions published 17/8/2018** in OJEU, in 23 EU languages as “Commission Implementing Decision (EU) 2018/1147”

⇒ Implementation **before 18/8/2022** (4 years)

**Revised WT BREF** published in 11/2018 on JRC-EIPPCB website, only in English

WT BREF ≈ Chapter 6

WT BAT conclusions
Reference Report on Monitoring (ROM)

Aim

• “to inform competent authorities and operators of the general aspects of the monitoring of emissions to air and water […] ;
• to bring together information on monitoring of emissions that may be of use to TWG members including the European IPPC Bureau when working on BREFs and their BAT conclusions.”

Covered topics

• “general aspects of monitoring” including “quality assurance, including personnel and laboratory qualifications, use of EN, ISO and other standards, as well as measurement uncertainty”
• monitoring of emissions to air and water

Excluded: “Monitoring considerations for specific industrial sectors: Industry-specific aspects are covered by sectoral BREFs, if deemed relevant.”
Reference Report on Monitoring (ROM)

ROM is not a BREF but a Reference Report (REF) so it does not have to follow the rules of the information exchange. Also, it does not include BAT conclusions.

• Latest ROM published in 8/2018 on JRC-EIPPCB website, only in English
Thank you!

Questions?