Green Week 2013

The Review of the Large Combustion Plants BREF
Industrial Emissions Directive 2010/75/EU (IED)

Key instrument for minimising emissions and consumptions from industrial activities in Europe

General framework:
- **prevent** and, if not feasible, reduce pollution
- high level of **protection for the environment as a whole**
- **permit** based on **Best Available Techniques (BAT)**

BAT are determined by a Technical Working Group (TWG) steered by the JRC (EIPPCB) and documented in **BREFs**

‘BAT conclusions’ are secondary legislation
IPPC operating scheme

Prevention and control of pollution arising from industrial installations


Application of the best available techniques (BAT) described in BAT reference documents (BREFs)

BAT-based permit and emission limit values (ELVs)

1 legislation

35 BREFs

~ 50 000 installations…
Annex 1 to the IED (ref. to IED Chapter II)

- Wide range of industrial activities listed:
  - Energy industries – **LCP**, refineries
  - Production and processing of metals
  - Mineral industries
    - Cement, lime, glass, ceramics
  - Production of chemicals
  - Waste management industries
    - Incineration
    - Some recovery or disposal operations
  - ‘Other’ industries:
    - Pulp and paper, textile processing
    - Tanning of hides and skins
    - Intensive farming of pigs and poultry, slaughterhouses and animal by-product processing, food drink and milk processing, surface treatment using solvents

~ 50 000 IPPC installations in Europe
Scope of the LCP BREF review

Combustion in installations with total rated thermal input of 50 MW or more, including plants composed of aggregated units and including diesel engines, gas turbines.

Fuels considered:

- Primary solid fuels (coal, lignite, peat, oil shale)
- Biomass (grass, straw, wood, bark, forestry residues, etc.)
- Primary liquid fuels (heavy and light fuel oils)
- Gaseous fuels (natural gas, liquefied gas, biogas, hydrogen and syngas)
- Industry-specific fuels (from Chemical, Iron and Steel, Pulp and Paper industries when not yet covered by other BREFs)
- Waste (used in co-incineration process).
How combustion plants are covered in the series of BREFs

- Boilers, Gas Turbines, Engines producing steam, hot water, electricity, mechanical energy → **LCP BREF**
  - Exception: Turbines / Boilers combusting internal by-products in refineries

- Process heaters / dryers, post-combustion plants → **sectoral BREFs** e.g.
  - **Iron & Steel BREF**: Blast Furnaces, Coke Ovens → Published 08.03.2012
  - **Glass BREF**: Melting furnaces → Published 08.03.2012
Key environmental issues in the LCP BREF review

Emissions to air:
- $NO_x$, $CO$, $SO_x$, dust emissions
- Other emissions e.g. heavy metals, dioxins and furans, VOCs, PAHs, HCl, HF are assessed

Energy Efficiency

Emissions to water

Residues and byproducts
Focus of the review

Focus on BAT conclusions

Sections of the BREF not directly linked to BAT conclusions are not the main target of the review

Real installation data to target key environmental issues; for the LCP it means mainly:

\[ \text{NO}_X, \text{SO}_X, \text{CO} \text{ and dust emissions to air} \]

\[ \text{energy efficiency} \]
The information on key environmental issues is obtained through a plant-specific questionnaire covering:

- emissions to air
- efficient energy use
- emissions to water
- generation of solid by-product, residues and wastes
- techniques potentially candidates for BAT
- contextual information (process, production, monitoring, fuels…).

550 questionnaires received, almost all of them shared with the TWG.

Other Information is derived from reports, scientific articles, technical information, case studies and environmental permits provided by the TWG (‘Bulk information’).
**Definition of BAT**

**Best**
Most effective in achieving a high general level of protection of the environment as a whole;

**Available**
Developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions;

**Techniques**
Both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.
Elements assessed for the BAT conclusions of the LCP BREF review

- Plant / unit size
- Fuel characteristics
- Load factors and modes
- Purpose of the combustion plant (thermal / electrical / mechanical energy production)
- Age of the plant / unit / equipment and retrofits
- Costs, performances and cross-media effects of the techniques
- ...
In order to reduce dust emissions from biomass-fired combustion plants, BAT is to use one or a combination of the following techniques:

- Bag filter
- High performance electrostatic precipitator

### Objective/Environmental Benefit

- Reduce emissions to air
- Minimise water consumption
- Optimise energy consumption
- Prevent soil contamination
- Minimise the use of raw materials

### BAT-associated emission levels (BAT-AELs) (or BAT-associated environmental performance levels): range (e.g. 1 – 20 mg/Nm³)

### Technique | Description | Applicability
--- | --- | ---
Bag filter | Bag or fabric filters are constructed from porous woven or felted fabric through which gases are flowed to remove particles... | Applicable within the constraints given by space availability.
High performance electrostatic precipitator | Electrostatic precipitators operate such that particles are charged and separated under the influence of an electrical field. Abatement efficiency may depend on... | Applicable within the constraints given by space availability.

Techniques that satisfy the objective and meet the performance

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**Elements in an individual BAT conclusion**
## Timeline

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<th>Timeline</th>
<th>Main milestones to review the LCP BREF</th>
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<tr>
<td>January 2011</td>
<td>√ LCP TWG re-activation</td>
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<td>October 2011</td>
<td>√ LCP TWG kick-off meeting (scope and key environmental issues agreed)</td>
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<td>February 2012</td>
<td>√ Finalisation of the plant-specific questionnaire</td>
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<tr>
<td>May 2012 to September 2012</td>
<td>√ Main submission of information by the TWG members and industrial operators</td>
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<tr>
<td>September 2012 to June 2013</td>
<td>√ Assessment and drafting period</td>
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<tr>
<td>June 2013</td>
<td>➢ Announced Draft 1 release</td>
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<tr>
<td>Early 2014</td>
<td>➢ Planned LCP TWG final meeting</td>
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<tr>
<td>2014 (provisional)</td>
<td>➢ Planned IED art. 13 Forum meeting</td>
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<tr>
<td>2014 (provisional)</td>
<td>➢ Planned IED art. 75 Committee meeting</td>
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Existing BREF approved in 2006
Conclusions

- BAT conclusions have strong influence on permits
- BAT conclusions are based on sound data collection exercises
- Combustion processes covered by several BREFs
- Deep stakeholders (industry organisations, environmental association) involvement in the LCP BREF review
- LCP BAT conclusions including numerous BAT-AELs: several subsectors covering most of real situations in terms of load, fuel, variety of fuels, energy output
Thank you for your attention

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