Revised Best Available Techniques (BAT) Reference Document for the Production of pulp, paper and board

Final Draft for the opinion of the IED Article 13 forum

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Outline of the presentation

- Scope of the PP BREF / Activities not addressed
- Overview of the PP BREF review process, data collection and site visits
- Structure of the revised PP BREF
- Main changes in the revised PP BREF
- Structure of the BAT conclusions
- Key features of the BAT conclusions
- Degree of consensus and split views
- Comments received from IED forum members
- Items for clarification
- Key point for discussion
Scope of the PP BREF

Industrial activities concerned with (specified in Annex I to Directive 2010/75/EU):

6.1: Production in industrial installation of:

(a) pulp from timber or other fibrous materials;
(b) paper or cardboard with a production capacity exceeding 20 tonnes per day; ...

Activities covered by the PP BREF:

- kraft / sulphite pulping
- mechanical and chemimechanical pulping
- processing paper for recycling with and without deinking
- papermaking and related processes
Activities not addressed by the PP BREF

- Production of pulp from non-wood fibrous raw material
- Stationary internal combustion engines
- Combustion plants for steam and power generation other than recovery boilers
- Dryers with internal burners for paper machines and coaters
## Overview of the PP BREF review process, data collection and site visits (1/3)

<table>
<thead>
<tr>
<th>Main steps</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWG reactivation</td>
<td>April 2006</td>
</tr>
<tr>
<td>Call for wishes</td>
<td>May 2006</td>
</tr>
<tr>
<td>Kick-off meeting</td>
<td>November 2006</td>
</tr>
<tr>
<td>Collection of information</td>
<td>2007-2009</td>
</tr>
<tr>
<td>Draft 1</td>
<td>April 2010</td>
</tr>
<tr>
<td>Commenting period (1836 comments received)</td>
<td>June 2010</td>
</tr>
</tbody>
</table>
## Overview of the PP BREF review process, data collection and site visits (2/3)

<table>
<thead>
<tr>
<th>Main steps</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional collection of information (air)</td>
<td>Spring 2011</td>
</tr>
<tr>
<td>Draft 2</td>
<td>May 2012</td>
</tr>
<tr>
<td>Commenting period (1451 comments received)</td>
<td>July 2012</td>
</tr>
<tr>
<td>Final TWG meeting</td>
<td>April 2013</td>
</tr>
<tr>
<td>Revised draft after final meeting</td>
<td>May 2013</td>
</tr>
<tr>
<td>Final draft for the opinion of the IED forum</td>
<td>July 2013</td>
</tr>
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</table>
Overview of the PP BREF review process, data collection and site visits (3/3)

- Around 130 questionnaires received, corresponding mainly to 2 reference years (2006 and 2008)

- 469 references included in the final draft BREF

- Around 30 site visits carried out in 8 EU countries (FR, DE, ES, PT, SE, FI, IT, AT) covering all PP subsectors and various sizes, configurations and levels of complexity
Structure of the revised PP BREF

- Preface
- Scope
- Chapter 1 – General information
- Chapter 2 – Common processes and techniques for the whole pulp and paper sector
- Chapter 3 – The kraft pulping process
- Chapter 4 – The sulphite pulping process
- Chapter 5 – Mechanical and chemimechanical pulping
- Chapter 6 – Processing paper for recycling
- Chapter 7 – Papermaking and related processes
- Chapter 8 – BAT conclusions
- Chapter 9 – Concluding remarks and recommendations
- References and glossary
- Chapter 10 - Annexes
Main changes in the revised PP BREF (1/2)

- General update of the document
- Inclusion of a new chapter on "Common processes and techniques for the whole pulp and paper sector"
- Significant increase in the number of figures showing plant-specific data
- General improvement in monitoring-related sections (techniques and BAT)
Main changes in the revised PP BREF (2/2)

- General improvement in the comparability of the data gathered (reference conditions, averaging periods)

- Inclusion of general BAT conclusions

- Techniques and BAT-AELs more specific for emissions to air (e.g. recovery boilers, lime kilns and TRS burners in kraft pulp production)
Structure of the BAT conclusions

✓ Scope
✓ General considerations
✓ Definitions and acronyms

8.1 General BAT conclusions for the pulp and paper industry
8.2 BAT conclusions for the kraft pulping process
8.3 BAT conclusions for the sulphite pulping process
8.4 BAT conclusions for mechanical pulping and chemimechanical pulping
8.5 BAT conclusions for processing paper for recycling
8.6 BAT conclusions for papermaking and related processes
8.7 Description of techniques
Key features of the BAT conclusions

**TOTAL: 53 BAT conclusions**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>BAT-AEL (concentrations and loads)</th>
<th>BAT-AEPL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short-term average</td>
<td>Long-term average</td>
</tr>
<tr>
<td>Emissions to air (SO$_2$, TRS, gaseous S, dust, NO$_x$)</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Emissions to water (COD, TSS, Tot-N, Tot-P, AOX)</td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>97</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
A high degree of consensus was reached on the BAT conclusions

Nevertheless, after a careful assessment, only 5 split views were accepted and registered in Table 9.2 of Chapter 9
Comments received from IED forum members on the final draft of the PP BREF

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>Considered consensual</th>
<th>Considered consensual subject to certain amendments</th>
<th>Considered as representing the views of certain members</th>
<th>Supports current wording</th>
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<tbody>
<tr>
<td>78</td>
<td>13</td>
<td>5</td>
<td>53</td>
<td>7</td>
</tr>
<tr>
<td>8 MS</td>
<td></td>
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</tr>
<tr>
<td>8 MS</td>
<td>AT, DE, DK, FI, IT, PL, PT, SE</td>
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<td>CEPI</td>
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<td>EEB</td>
<td></td>
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</tbody>
</table>
Biofuels:

"Renewable fuels originating from plants, including those obtained as by-products of the pulping process (non-condensable gases, methanol, turpentine)"

Term occurs only in footnotes (1) and (2) of Table 8.8 (BAT 26)

term is used with different definition in other pieces of EU legislation, so to be avoided
Biofuels:

Proposed clarification:

- delete definition
- modify footnotes (1) and (2) of Table 8.8 (BAT 26) as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Long-term average mg/Nm$^3$ at 6 % O$_2$</th>
<th>Yearly average kg NO$_2$/ADt</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_x$</td>
<td>Liquid fuels</td>
<td>100 – 200 (1)</td>
</tr>
<tr>
<td></td>
<td>Gaseous fuels</td>
<td>100 – 350 (2)</td>
</tr>
</tbody>
</table>

(1) When using liquid fuels originating from vegetable matter, including those obtained as by-products of the pulping process, emission levels up to 350 mg/Nm$^3$ may occur (corresponding to 0.35 kg NO$_2$/ADt), based on a gas flow of 1000 Nm$^3$/Adt.

(2) When using gaseous fuels originating from vegetable matter, including those obtained as by-products of the pulping process, emission levels up to 450 mg/Nm$^3$ may occur (corresponding to 0.45 kg NO$_2$/ADt), based on a gas flow of 1000 Nm$^3$/Adt.
Residual weak gases:

Proposed clarification: replace definition

"Weak gases that are not collected and/or by-passed (i.e. that are collected, but not incinerated"

by

"Weak gases that are emitted in other ways than through the recovery boiler, the lime kiln and the TRS-burner"
"Where emission levels associated with the best available techniques (BAT-AELs) are given for the same averaging period in different units (e.g. as concentration and specific load values (that is per tonnes of net production)), those different ways of expressing BAT-AELs are to be seen as equivalent alternatives.

Where emission levels associated with the best available techniques (BAT-AELs) are given for different averaging periods, all of those BAT-AELs apply."
Key point proposed for discussion (2/2)

BAT-AELs with different averaging periods
(General considerations, page 780 of Final Draft)

Comments received

➤ Delete second sentence (FI, PT, CEPI)

➤ Replace paragraph by: (SE)

"Where emission levels associated with the best available techniques (BAT-AELs) are given for different averaging periods and/or different units (e.g. as concentration and specific load values (per tonne of net production)), those different ways of expressing BAT-AELs are to be seen as equivalent alternatives, if it is not specifically expressed for a certain BAT-AEL."