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KICK-OFF MEETING
FOR THE REVIEW OF THE
REFERENCE DOCUMENT ON BEST AVAILABLE TECHNIQUES
FOR WASTE INCINERATION

SEVILLE

19 – 22 JANUARY 2015

BACKGROUND PAPER

INTRODUCTION

The Industrial Emissions Directive (IED) (2010/75/EU), through its Chapters I and II, lays down a framework requiring Member States to issue operating permits for certain installations which carry out the industrial activities described in its Annex I (energy industries, production and processing of metals, mineral industry, chemical industry, **waste management**, and other activities).

The Directive stipulates that permits must contain conditions based on the **Best Available Techniques (BAT)** as defined in Article 3(10) of the Directive, to achieve a high level of protection of the environment as a whole.

The BAT conclusions of the BAT reference documents (BREFs), such as the Waste Incineration (WI) BREF, serve as the reference for the competent authorities when setting permit conditions for installations. BREFs are also used by the industry concerned when preparing applications for operating permits. Additionally, BREFs are a source of information for other interested parties on ways to minimise the environmental impacts of industry.

BAT is a dynamic concept because new techniques may emerge; science and technologies are continuously developing, and new environmental processes are being successfully introduced into industry. Since the elements of BAT change over time, BREFs have to be reviewed and updated as appropriate. In addition, with the entry into force of the IED, the existing BREFs, which were adopted under the former IPPC Directive (2008/1/EC), need to be revised and brought in line with the new provisions.

This Kick-off meeting (KoM) will determine/clarify the review process for the existing WI BREF (August 2006) so that TWG members are aware of the specific tasks needed to deliver a high-quality BREF review according to the agreed timetable.

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Acronyms used in this background paper

| | |
|-----------------|---|
| BAT | Best Available Techniques |
| BAT-AEL | BAT-Associated Emission Level(s) – BAT_AELs are a subset of BAT-AEPLs |
| BAT-AEPL | BAT-Associated Environmental Performance Level(s) |
| BREF | Reference Document on Best Available Techniques |
| BP | Background Paper |
| CER BREF | Best Available Techniques (BAT) Reference Document for the Ceramics Manufacturing Industry |
| CHP | Combined Heat and Power |
| CLM BREF | Best Available Techniques (BAT) Reference Document for the Production of Cement, Lime and Magnesium Oxide |
| CO | Carbon monoxide |
| CWW BREF | Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector |
| D1 | First draft |
| ECM REF | Reference Document on Economics and Cross-Media Effects |
| EFS BREF | Reference Document on Best Available Techniques on Emissions from Storage |
| EIPPCB | European IPPC Bureau |
| ENE BREF | Reference Document on Best Available Techniques for Energy Efficiency |
| EMAS | EU Eco-Management and Audit Scheme |
| EMS | Environmental Management Systems |
| EOW | End-of-Waste |
| E-PRTR | European Pollutant Release and Transfer Register |
| EQS | Environmental Quality Standard |
| FGT | Flue gas treatment |
| GWP | Global warming potential |
| HW | Hazardous waste |
| ICS BREF | Reference Document on the application of Best Available Techniques to Industrial Cooling Systems |
| IPPC | Integrated Pollution Prevention and Control Directive 2008/1/EC (repealed and replaced by the IED) |
| KoM | Kick-off Meeting |
| LCP BREF | Reference Document on Best Available Techniques for Large Combustion Plants |
| MCP | Medium sized combustion plants |
| NEC | National Emissions Ceiling Directive 2001/81/EC |
| NOCs | Normal Operating Conditions |
| NO _x | The sum of nitrogen (II) oxide (NO) and nitrogen dioxide (NO ₂), expressed as NO ₂ |
| OTNOCs | Other Than Normal Operating Conditions |
| PAHs | Poly cyclic aromatic hydrocarbons |
| PCBs | Polychlorinated bi-phenyls |
| PCDD/F | Polychlorinated dibenzo-p-dioxins and dibenzofurans |
| PP BREF | Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board |
| RDF | Refuse-Derived Fuel |
| ROM | JRC Reference Report on Monitoring of emissions from IED-installations (Final Draft, 2013) |
| SCR | Selective catalytic reduction |
| SNCR | Selective non-catalytic reduction |
| SRF | Solid Recovered Fuel |

| | |
|---------------------------------------|--|
| Total nitrogen (N _{tot}) | Total nitrogen, expressed as N, includes free ammonia and ammonium, nitrites and nitrates and organic nitrogen compounds |
| Total organic carbon (TOC) | Total organic carbon, expressed as C, includes all organic compounds |
| Total phosphorous (P _{tot}) | Total phosphorous, expressed as P, includes all inorganic and organic phosphorous compounds, dissolved or bound to particles |
| Total suspended solids (TSS) | Mass concentration of all suspended solids, measured via filtration through glass fibre filters and gravimetry |
| WID | Waste Incineration Directive 2000/76/EC (repealed and replaced by the IED) |
| WFD | Waste Framework Directive 2008/98/EC |
| WI BREF | Reference Document on the Best Available Techniques for Waste Incineration |
| WT BREF | Reference Document on Best Available Techniques for Waste Treatment |
| WWTP | Waste Water Treatment Plant |

Member states

| | |
|----|--------------------|
| MS | Member State |
| AT | Austria |
| BE | Belgium |
| CZ | Czech Republic |
| DE | Germany |
| DK | Denmark |
| ES | Spain |
| FI | Finland |
| FR | France |
| IE | Ireland |
| IT | Italy |
| NL | Netherlands |
| PL | Poland |
| PT | Portugal |
| RO | Romania |
| SE | Sweden |
| UK | The United Kingdom |

Other organisations

| | |
|-------------|--|
| CEFIC | European Chemical Industry Council |
| CEMBUREAU | European Cement Association |
| CEWEP | Confederation of European Waste to Energy Plants |
| EEB | European Environmental Bureau |
| ESWET | European Suppliers of Waste to Energy Technology |
| EULA | European Lime Association |
| Eurits | European Union for Responsible Incineration and Treatment of Special Waste |
| Eurelectric | European Union of the Electricity Industry |
| FEAD | European Federation of the Waste Management Industry |
| HWE | Hazardous Waste Europe |
| IMA Europe | Industrial Minerals Association Europe |

1 GENERAL INFORMATION

1.1 The Waste Incineration (WI) BREF

The work on the original Waste Incineration (WI) BREF was carried out between 2001 and 2004 with the BREF formally adopted by the Commission in 2006 under the IPPC Directive (96/61/EC). The review of the WI BREF is the seventeenth review of an existing BREF to be launched. A list of BREFs can be found at the webpage of the European IPPC Bureau (<http://eippcb.jrc.ec.europa.eu/reference/>).

1.2 Objectives of the WI BREF review

As described in the scope section of the current WI BREF, the BREF covers, in general, all waste incineration plants without a capacity restriction; whilst recognising that limited information had been supplied concerning smaller incineration installations (i.e. those below the capacity thresholds mentioned in the IPPC Directive).

Co-incineration of waste in combustion plant or manufacturing activities is, in general, not covered by the current WI BREF, but under the scope of those sectorial BREFs where the process activity takes place. For instance co-incineration of waste in large combustion plants (i.e. those plants of 50MW rated thermal input or more) is addressed in the LCP BREF, and co-incineration of waste in cement plants is addressed in the CLM BREF.

The main goals of the review are:

- to bring the WI BREF in line with the IED (also in terms of scope);
- to update the information, data and techniques contained in the WI BREF; and
- to revise the BAT conclusions.

The review should also address those issues identified in the ‘Concluding remarks’ chapter of the current WI BREF (Chapter 7), where these are still deemed relevant by the TWG. Its recommendations include:

- Reviewing Member State and Industry experience of implementing the WID, examining in particular the difference between newly constructed installations and those that have been upgraded.
- Reviewing studies that establish and gather data that allow a more precise assessment of:
 - the impact of plant size on the economics of the adoption of various techniques, e.g. SCR
 - the comparative affordability and benefits of the adoption of techniques in the subsectors of the industry (i.e. municipal waste, hazardous waste, sewage sludge, etc.)
 - comparative emissions avoided with the cost of applying various techniques
 - the change in waste treatment costs that result from the use of various emission reduction techniques with respect to plant type and size.
- Establishing BAT-associated emission performance ranges that more closely take account of plant size and waste type factors. In addition, it is also recommended that the revision examines whether it is possible to draw more specific BAT conclusions for:
 - mixed waste installations (e.g. techniques used and possible benefits of mixing various waste streams)
 - industrial non-hazardous waste installations.
- Studying combustion design features in more detail with a view to evaluating their role in pollution prevention.
- Considering the development of suitable standards for the use of bottom ash – such standards have proved helpful in improving markets for the use of bottom ash.

1.3 Process to review the WI BREF

The general timeline for the review of a BREF is given in the BREF Guidance¹ (Section 1.2.4) and the approach to take was further agreed at the IED Article 13 Forum meeting of 6 June 2013². The WI TWG will work using the following approach:

- 'Front-load' the exchange of information to achieve the best preparation for the Kick-off meeting (KoM). The frontloading corresponds to Step 3 "call for expression of initial positions on core issues" in Table 1.
- Adopt a more focused approach to the overall WI BREF review process by:
 - targeting the most polluting aspects of the sector;
 - targeting a limited number of key environmental issues;
 - collecting sound and reliable data, followed by appropriate data processing;
 - focusing on BAT conclusions (and the associated BAT candidate chapter);
 - building upon, where appropriate, the BAT conclusions of the current BREF.
- Tackle difficult issues with working drafts, if necessary.
- Strictly limit the possibilities for time slippages.

The timetable for the next steps for the review of the WI BREF will be discussed at the KoM but the main envisaged milestones and deadlines are summarised in Table 1.

Table 1: Milestones for the review of the WI BREF (indicative)

| Step | BREF review milestones | WI BREF review |
|------|---|--|
| 1 | <i>Reactivation of the TWG</i> | <i>12/05/2014</i> |
| 2 | <i>Nomination of TWG members</i> | <i>The deadline was 09/06/2014</i> To date, 185 members have been nominated |
| 3 | <i>Call for expression of initial positions on core issues</i> | <i>20/06/2014 – the deadline for receiving initial positions was 12/09/2014.</i> Initial positions have been received from 14 MS, 1 Environmental NGO and 10 industrial associations. |
| 4 | Kick-off meeting (KoM) | 19-22 January 2015 |
| 5 | TWG members submit to the EIPPCB a list of environmentally well-performing installations/plants which will participate in the data collection | 30 April 2015 (tentatively) |
| 6 | Release of questionnaires for the data collection | 2 nd / 3 rd quarter 2015 (tentatively) |
| 7 | Collection of information and data (3-month period) | 3 rd / 4 th quarter 2015 (tentatively) |
| 8 | First draft of the revised BREF | 1 st / 2 nd quarter 2016 (tentatively) |
| 9 | Commenting period on the first draft | 3 rd quarter 2016 (tentatively) |
| 10 | Final TWG meeting | 2 nd quarter 2017 (tentatively) |
| 11 | Final draft delivered to the IED Article 13 Forum | 3 rd quarter 2017 (tentatively) |

¹ Commission Implementing Decision (2012/119/EU) of 10 February 2012 laying down rules concerning guidance on the collection of data and on the drawing up of BAT reference documents and on their quality assurance referred to in the Industrial Emissions Directive 2010/75/EU (IED): <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:063:FULL:EN:PDF>

² Work programme for the exchange of information under Article 13(3)(b) of the IED for 2014, section 4. Consequences for the working methods of the TWGs.

1.4 Objectives of the Kick-off meeting

The aim of the KoM is to agree on the main issues that the review of the WI BREF will focus upon, including:

1. the scope of the BREF and BAT conclusions (see Section 2.1);
2. the key environmental issues to focus the review on (see Section 2.2);
3. the type and format of the data/information needed for the review, (see Sections 2.2 and 2.3).

The above aims will be facilitated by:

- getting to know each other as members of the TWG for the review of the WI BREF;
- discussing the initial positions expressed by the TWG members in view of the objectives of the review;
- identifying specific contributors for data/information;
- setting deadlines for the provision of new information (see steps 5 to 7 in Table 1 above);
- agreeing to a forward plan for the whole project (see steps 5 to 11 in Table 1 above).

As a result of this KoM, the review process for the WI BREF will be clarified so that the EIPPCB can present the planned work schedule and the TWG can be assigned clear tasks.

In particular, conclusions should be reached on the nature and extent of the information to be collected during the review, as follows:

- on how to develop, distribute and collect questionnaires for data and information collection;
- on how to ensure the quality and representativeness of the data set needed to derive BAT conclusions.

The KoM will also provide the opportunity to inform TWG members on issues that need to be treated consistently among BREFs, in particular:

- the interactions with other BREFs;
- ways to deal with potentially confidential business information and sensitive information under competition law, conflicts of interest and related matters;
- the specific tool that the TWG will use to collect, exchange and analyse information. In particular, BATIS (the BAT information system) will be presented to the TWG, as well as the procedures to submit information identified at the KoM.

During the KoM, there will be time to discuss the TWG members' initial positions (see step 3 in Table 1). The discussions will necessarily be kept general, and discussions will not enter into deep technical debates. For example, positions on techniques and on whether a particular technique is BAT will not be discussed at this stage, as answers to questions of this nature need to be informed by the upcoming data collection exercise. However, these initial positions will be looked at later together with the other information collected (e.g. data from the questionnaires, other contributions).

1.5 Structure and overview of this background paper

In response to the call for the expression of initial positions (EIPPCB e-mail dated 20/06/2014), submissions have been received from 14 Member States, 1 Environmental NGO and 10 Industry Associations.

These positions have been grouped where they refer to similar issues. This background paper (BP) examines these groups in the context of determining the main issues for the review of the WI BREF, according to the indications given in the BREF Guidance.

In order to facilitate the discussion during the KoM, the TWG initial positions have been analysed and grouped into subject groups described in the next sections.

Items grouped in Section 2 represent the issues that the EIPPCB proposes to be discussed at the KoM. These are the items considered the most important in terms of obtaining clarification before starting the process to revise the WI BREF.

Although it is not anticipated that the positions on items described in Section 3 will be discussed at the Kick-off meeting, the EIPPCB have included these in this BP together with an assessment and proposal of how to handle the positions and the related information. Whenever necessary, the EIPPCB will provide clarification during the Kick-off meeting if useful to the discussion.

Each individual item in this background paper is presented in a table that is structured as follows.

Table 2: Explanation of how the items in this background paper are presented

| |
|---|
| Summary of initial positions |
| This cell contains a summary of the TWG members' initial positions. The full text of the position is not usually provided. For more details on the initial positions (in particular, the underlying rationale), please refer to BATIS where the initial positions of all the contributors can be found in full. |
| New information identified |
| This cell identifies if the information: <ul style="list-style-type: none"> a) has already been provided (usually with the initial position sent); or b) has already been identified and will be provided later in the review process; or c) has not yet been identified by the initial positions. |
| EIPPCB assessment |
| This cell contains the EIPPCB's assessment of the positions and new information, and forms the basis for the proposal(s). |
| EIPPCB proposal |
| This cell contains the EIPPCB's proposal(s) to develop or resolve the issue. |

1.6 Before coming to the meeting

If a TWG member considers that issues other than the ones proposed in Section 2 need to be discussed at the KoM, they are invited to send their request to the WI BREF review team (e-mail JRC-IPTS-EIPPCB-WI@ec.europa.eu) before 9 January 2015. Such a request must also include the rationale for each new item proposed.

TWG members are asked to bring to the meeting at least the following documents:

- a copy of this background paper;
- the initial positions posted in the BATIS forum for the WI BREF;
- the original WI BREF (adopted by the European Commission in August 2006);
- the BREF Guidance (Commission Implementing Decision 2012/119/EU);
- the guidelines for the expression of initial positions on the review of the WI BREF (dated 20/06/2014).

To enable meaningful discussion at the KoM, it is important that TWG members have read this background paper in advance of the meeting.

2 ITEMS FOR DISCUSSION AT THE KICK-OFF MEETING

The IED Article 13 meeting of 16 June 2013 agreed to adopt a more focused approach to the overall Sevilla process based on the following principles:

- focusing on BAT conclusions (and the associated BAT candidate chapter);
- targeting the most polluting sectors/sub-sectors;
- targeting a limited number of key environmental issues; and
- collecting sound and reliable data, followed by appropriate data processing.

The IED Article 13 forum members supported the idea that there is a *need for TWG members to focus on 'must-have' vs. 'nice to have'*.

2.1 SCOPE

This section aims to steer discussion on the scope of the WI BREF and BAT conclusions. It includes proposals from the EIPPCB on the issue. A proposal for defining the scope of the BREF is presented in Annex I.

2.1.1 Scope of activities and sectors

| Summary of initial positions |
|---|
| <p>IED Annex I</p> <ul style="list-style-type: none"> • Limit the scope to plants with capacity more than Annex I, 5.2 capacity thresholds (AT, BE, BG, CZ, ES, FI, FR, IT, NL, PL, SE, UK, CEFIC, CEMBUREAU, CEWEP/ESWET, EULA, Eurits, Eurelectric, FEAD, HWE, IMA Europe) • Do not limit the scope to plants exceeding the IED capacity threshold (DE, DK, EEB) <p>Co-incineration</p> <ul style="list-style-type: none"> • Initial positions on co-incineration are discussed in Section 2.1.4 Combustion Plants and interface with WI BREF <p>Pyrolysis/gasification and plasma plants</p> <ul style="list-style-type: none"> • Include pyrolysis/gasification plants (AT, BG, DE, DK, ES, FI, FR, IT, NL, SE, EEB, CEFIC, CEMBUREAU, CEWEP/ESWET, EULA, Eurits, FEAD, HWE, IMA Europe). • Although few plants are permitted, a dedicated section in the BREF will help (UK) • Exclude pyrolysis/gasification if the syngas does not emit more than the natural gas (IT, PL) <p>IED Article 42(2) plants</p> <ul style="list-style-type: none"> • Include Article 42(2) plants, because Article 42(2) only exempts plants from the provisions of Chapter IV, but not of Chapter II (EEB), but exclude radioactive waste and animal carcasses (ES, UK) • Exclude Article 42(2) plants (AT, BE, BG, CZ, DK, FI, FR, IT, NL, PL, SE, CEFIC, CEMBUREAU, EULA, Eurelectric, IMA Europe) • Exclude Article 42(2) plants, but only if these plants are covered by other BREFs (CEWEP/ESWET) • Exclude those plants for which Regulation (EU) No 142/2011 prescribes emission limit values (NL) • Include under WI BREF scope the Article 42(2) plants that are not covered by other BREFs (FEAD) • State that incineration of all types of woods or vegetal impregnated with hazardous substances, including creosote or other PAH (polycyclic aromatic hydrocarbons), fall under the scope of WI BREF (HWE) <p>Waste gases (gaseous effluents)</p> <ul style="list-style-type: none"> • Include the incineration of hazardous gases (FR) • Include the incineration of waste gases (DE, CEFIC, CEWEP/ESWET, Eurits, HWE) <p>Pre-treatment of the waste before the incineration</p> <ul style="list-style-type: none"> • Exclude pre-treatment of the waste before the incineration (BE, DK, FI, NL, PL, SE, |

| |
|--|
| <p>CEFIC, CEMBUREAU, EULA, Eurits, Eurelectric, FEAD, IMA Europe)</p> <ul style="list-style-type: none"> • Pre-treatment of waste influencing the BAT conclusions for energy efficiency and emissions to air shall be included in the BREF WI (NL) • Pre-treatments directly linked to the incineration process that are not covered by the WT BREF should be covered by the WI BREF (CZ, DE, FR, CEWEP/ESWET) • Exclude offsite pre-treatment but include onsite pre-treatment of waste before incineration (IT, UK, HWE) <p>Treatment of slags and ashes</p> <ul style="list-style-type: none"> • Include both offsite and onsite treatment of slags and ashes in the WI BREF (AT, BE, BG, CZ, DE, DK, ES, FR, NL, SE, EEB, CEFIC, CEMBUREAU, CEWEP/ESWET, EULA, Eurits, Eurelectric, FEAD, HWE, IMA Europe) • Ensure common standards for both onsite and offsite treatment of slags and ashes (UK) • Include in both WT and WI BREF the slags, ashes, fly-ash and FGT residues treatment (PL) • Consideration of boiler ash should not be outside the scope of both the WI BREF and the WT BREF (UK) <p>Treatment of fly ash and FGT residues</p> <ul style="list-style-type: none"> • Exclude the processing of fly-ashes and FGT residues (AT, BE, CZ, DE, DK, FI, FR, IT, NL, SE, CEWEP/ESWET, CEFIC, EULA, Eurits, Eurelectric, FEAD, HWE, IMA Europe) • Exclude off-site treatment of fly-ashes and FGT residues but leave on-site treatment (as far as it exists) in the scope of WI BREF (BG) • Exclude fly-ash and FGT residue treatment, but not its storage and handling (ES, UK) • Include the treatment of fly ash and FGT (CEMBUREAU) <p>Others</p> <ul style="list-style-type: none"> • Extend the scope to crematoria (EEB) |
| <p>New information identified</p> <ul style="list-style-type: none"> • Data on plant performance of pyrolysis/gasification plant is needed (AT, BG, DE, DK, ES, FI, FR, IT, NL, PL, SE, UK EEB, CEFIC, CEMBUREAU, CEWEP/ESWET, EULA, Eurits, FEAD, HWE, IMA Europe). • Data on gasification is available from FI |
| <p>EIPPCB assessment</p> |
| <p>IED Annex I</p> <ul style="list-style-type: none"> • The scope of the current WI BREF states that no size threshold has been applied when gathering information, while noting that limited information had been supplied concerning smaller incineration processes. • As BAT reference documents (BREFs) and their BAT conclusions are defined by the Directive 2010/75/EU (Chapter II), their scope should be determined by Annex I of that Directive. Smaller incineration plants are not subject to Chapter II. <p>Pyrolysis/gasification and plasma plants</p> <ul style="list-style-type: none"> • If pyrolysis, gasification or plasma plants are producing syngas (and/or other fuels) from waste, which is subsequently incinerated in a connected process, these plants are considered to be waste (co-)incineration plants. • When gases from pyrolysis, gasification or plasma plants are used without subsequent combustion, these plants are not waste (co-)incineration plants. • Information on the number and environmental impact of pyrolysis / gasification plants is not yet available. <p>IED Article 42(2) plants</p> <ul style="list-style-type: none"> • The IED Article 42(2) defines those plants that are not under the scope of Chapter IV. But plants incinerating these wastes could still be under the scope of Chapter II. Hence, such plants could be considered for coverage under the WI BREF, were they to be recognised by the WI TWG as a key environmental issue. <p>Waste gases (gaseous effluents)</p> <ul style="list-style-type: none"> • The IED chapter IV scope is limited at the incineration of solid and liquid waste. • The incineration of exhaust gases, flue-gases, off-gases and waste gases coming from a production activity is regarded as gas treatment and it is covered by the other BREFs. |

| |
|---|
| <p>Pretreatment of the waste before incineration</p> <ul style="list-style-type: none">• Off-site waste pretreatment before incineration is in the scope of the WT BREF.• If the on-site waste pretreatment techniques applied are found to be the same as those that take place off site, a cross-reference to the WT BREF can be made. <p>Treatment of slags and ashes</p> <ul style="list-style-type: none">• The treatment of slags and ashes (incinerator bottom ash), both on site and off site, is not included in the WT BREF. <p>Treatment of fly ash and FGT residues</p> <ul style="list-style-type: none">• The treatment of fly ash and other residues from flue-gas treatment system are already under the scope of WT BREF and a cross-reference to the WT BREF can be made.• Boiler ashes are part of fly ashes. <p>Others</p> <ul style="list-style-type: none">• Crematoria are not an activity listed in Annex I to the IED. |
| <p>EIPPCB proposal</p> |
| <p>IED Annex I</p> <ul style="list-style-type: none">• Define the scope based on the IED Annex I, item 5.2. <p>Pyrolysis/gasification and plasma plants</p> <ul style="list-style-type: none">• TWG members to share through BATIS the list of the pyrolysis, gasification or plasma operating plants in the EU-28, when the resulting gas is incinerated. Depending on the number of plants affected the EIPPCB will propose to the WI TWG the best way to address this issue taking into account the environmental impacts throughout the EU-28. <p>IED Article 42(2) plants</p> <ul style="list-style-type: none">• Exclude from the scope of the WI BREF plants burning only radioactive waste or animal carcasses. <p>Waste gases (gaseous effluents)</p> <ul style="list-style-type: none">• Do not include under the scope of the WI BREF those plants which only incinerate gaseous effluents, functioning as abatement devices. These are addressed under the BREFs relating to the activity generating those gases, where relevant. <p>Pretreatment of the waste before the incineration</p> <ul style="list-style-type: none">• Do not cover waste pretreatment before incineration since it is dealt in the WT BREF. <p>Treatment of slags and ashes</p> <ul style="list-style-type: none">• Include under the scope of the WI BREF the treatment of slags and ashes (incinerator bottom ash). <p>Treatment of fly ash and FGT residues</p> <ul style="list-style-type: none">• Do not include under the scope of the WI BREF the treatment of fly ash and FGT residues; the storage and handling of fly ash and FGT residues is not specific to waste incineration. A cross-reference can be made to the WT BREF. <p>Others</p> <ul style="list-style-type: none">• Do not include crematoria under the WI BREF scope. |

2.1.2 Interaction with Chapter IV of the IED

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| <p>Summary of initial positions</p> <ul style="list-style-type: none"> • Introduce BAT conclusions that supplement and ease the application of Chapter IV and Annex VI to the IED, including exemptions and relaxations (SE) • To save additional fuel for combustion it can be useful to reduce the temperature in the post combustion chamber (CEFIC) • It might be interesting that the WI BREF emphasises certain if any elements of the IED so that during the next review, the IED can be reviewed on these areas.(??) • Need to define existing and new plant (UK). • Need to define start up and shut down (UK) • Need to define normal / abnormal operating periods (UK). • Need to define reference conditions (UK) |
| <p>New information identified</p> <ul style="list-style-type: none"> • No new information identified at this stage. |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • The initial positions raise issues concerning the inter-relationship of Chapters I, II and IV (and Annex VI) of the IED. • A BREF does not interpret or modify EU legislation. The IED is primary legislation, while BAT conclusions are secondary legislation and can thus not override primary legislation. The parameters set by IED Chapter IV and Annex VI must be considered as "minimum requirements", from which no deviation is possible. • Plants that do not comply with the IED minimum requirements of Chapter IV and Annex VI cannot be considered to be applying BAT. The temperature of the post-combustion chamber is one of a number of such parameters set by the IED (Chapter IV). • There is a need to ensure a common understanding of key terms (e.g. the differences between existing and new plants; as well as between normal and other than normal operating conditions). In particular the relationship between start-up, shutdown and effective operating time (referenced in Section 1.2 or Part 8 of Annex VI) is important; as is the relationship between OTNOCs and Article 46(6) of the IED. • Start up and shutdown are not normal operating conditions according to Article 14(2)(f). • All incineration plants should have the same reference conditions. Although different reference conditions may apply to co-incinerators, for the avoidance of doubt, incineration reference conditions can be used throughout. • Agreement on reference conditions is crucial in order to assess properly the data that will be gathered and to derive sound BAT conclusions and BAT-AEPLs. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • To exclude from the data collection those plants that do not comply with Chapter IV and Annex VI to the IED. • Together with the questionnaire development, the EIPPCB will propose, for the data collection purposes, a definition for new and existing plants. • Reference conditions will be those for waste incineration plants, as described in Section 1, Part 3 of Annex VI to the IED • TWG members should submit a list of other than normal operating conditions to the EIPPCB to be included in the BREF, with a goal of drawing conclusions useful for operators and permitting. • Based on the information gathered, the TWG should identify other than normal operating conditions for which BAT-AEPLs do not apply and, if information / data allow, will propose measures to prevent or reduce pollution during those stages. |

2.1.3 Co-incineration of waste

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| Summary of initial positions |
| <p>Co-incineration</p> <ul style="list-style-type: none"> • All co-incineration activities should be covered by the WI BREF in order to provide a level playing field among sectors (BE, IT, HWE, EEB) • Co-incineration should be excluded from the WI BREF scope (CEMBUREAU, EULA, IMA Europe) • Include co-incineration under the scope of WI BREF for activities not covered in other BREFs (DE, DK, ES, FR, NL, SE, CEFIC, CEWEP/ESWET, Eurits, FEAD) • Co-incineration plants covered by other BREFs should be excluded, to avoid doubt a list of co-incineration plants included should be provided (FR, UK). • Do not make a distinction between incineration and co-incineration plant. Include in the WI scope all the plants that predominantly treat non-hazardous commercial waste or pre-treated municipal solid waste and whose main purpose is the generation of energy and not the production of material products (AT) • Include co-incineration if > 40% of the heat comes from hazardous waste (BE, BG, CZ, DE, DK, FI, FR, IT, NL, PL, UK, CEFIC, CEWEP/ESWET, Eurits, Eurelectric, FEAD, HWE), however not for co-incineration plants in processes industries (SE) • Include co-incineration if > 40% of the heat comes from waste (CEFIC) • Do not include co-incineration plants where > 40% of the heat comes from hazardous waste or that co-incinerate untreated mix municipal waste (AT) • Include co-incineration of untreated mixture of municipal waste (BE, BG, CZ, DE, DK, FI, NL, PL, UK, CEFIC, CEWEP/ESWET, Eurits, Eurelectric, FEAD, HWE), however not for co-incineration plants in processes industries (SE) • Include co-incineration of combustion plants not under the scope of the LCP BREF (BG, CZ, DE, DK, FR, NL, PL, UK, CEFIC, CEWEP/ESWET, Eurits, FEAD), however not for co-incineration plants in processes industries (SE) • Do not include the co-incineration of plants < 50 MW (AT, FI, Eurelectric) |
| New information identified |
| <ul style="list-style-type: none"> • No new information identified at this stage. |
| EIPPCB assessment |
| <p>Co-incineration</p> <ul style="list-style-type: none"> • IED Annex I, 5.2 distinguishes between incineration and co-incineration plants. • Article 3(40) defines waste incineration plants as 'dedicated to the thermal treatment of waste, with or without recovery of the combustion heat generated'; whereas Article 3(41) defines waste co-incineration plants being 'whose main purpose is the generation of energy or production of material products and which uses waste as a regular or additional fuel or in which waste is thermally treated for the purpose of disposal'. • There may be different interpretations between Member States as to whether an individual plant should be regarded as a waste incineration or as a waste co-incineration plant. This is an implementation issue that cannot be addressed by the BREFs. • IED Article 46(2) specifies that waste co-incineration plants with more than 40% of the resulting heat release coming from hazardous waste and plants co-incinerating untreated mixed municipal waste shall be subject to the same provisions as waste incineration plants (defined in IED Annex VI, Part 3) • Co-incineration of waste is already under the scope of a number of sectorial BREFs (e.g. LCP, CLM). Duplication of what is covered in other BREFs should be avoided. • In many cases, the aim of co-incineration is to substitute "conventional" fuel with waste and how and which wastes are used depend on a connected process. As a result, the emissions from the co-incineration of waste depend to some extent on the process and therefore can best be dealt with in the relevant specific BREFs. |
| EIPPCB proposal |

- Within the WI BREF, not to make judgements on whether a particular plant or type of plant should be considered an incineration or co-incineration plant.
- To exclude from the scope of the WI BREF those co-incineration plants whose main purpose is the generation of material products. These plants should be covered in other BREFs where relevant (e.g. CLM and CER)
- To include within the scope of the WI BREF only waste co-incineration plants (other than those whose main purpose is the generation of material products) where >40% of the heat release comes from hazardous waste or which incinerate or co-incinerate untreated municipal waste.

2.2 KEY ENVIRONMENTAL ISSUES

As clarified in the BREF Guidance for the exchange of information under the IED (2012/119/EU) and further agreed at the IED Article 13 Forum meeting of 6 June 2013, there is a need to focus on the key environmental issues for each sector in order to derive BAT conclusions related to the main environmental impacts of the sector. The TWG members are therefore asked to decide during the KoM the key environmental issues on which it is relevant to focus the data collection. This chapter summarises the positions expressed by the TWG members and the consequent EIPPCB proposals on this topic. The agreed points will be used to build an accurate questionnaire to gather relevant plant specific data.

2.2.1 General issues

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| Summary of initial positions |
| <ul style="list-style-type: none"> • The updated WI BREF and its BAT conclusions should primarily promote techniques and measures that increase the efficient use of resources, combined with maintained or increased reduction of persistent organic pollutants and metals (SE) • How to avoid the loss and destruction of resources in general, the loss of phosphorus in the incineration of organic waste and the loss of rare earth types in the incineration process (DK) • The list of the pollutants covered by the IED is a good compromise (FR) • Key environmental issues which are described in the current BREF should be kept and updated (AT) • BAT conclusions must be relevant to the key issues of protection of the environment and human health (UK) • It has to be checked by means of the data collection which are the parameters that can be considered key environmental issues (CEFIC, CEWEP/ESWET, Eurelectric, FEAD) |
| New information identified |
| <ul style="list-style-type: none"> • No new information identified at this stage. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • Decisions on the best option on how to treat waste (e.g. incineration v mechanical-biological treatment, etc.) are outside the scope of the WI BREF. • In accordance with the "focused approach" the data that should be gathered will target key environmental issues. Data should be gathered with all the contextual information in order to have sound bases to derive BAT-AEL or BAT-AEPLs and evaluate properly the environmental performance of the plants. • Information on the cost of the techniques will also be gathered. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • Do not consider treatment options other than waste incineration. • Discuss and agree at the KOM on the list of key environmental issues that the revision of the WI BREF will focus on. |

2.2.2 Water, energy and resource efficiency

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| Summary of initial positions |
| <p>Water</p> <ul style="list-style-type: none"> • Data on water and raw material use for abatement should be collected (UK). • Define a BAT conclusion on the recovery of rainwater on the waste incineration site (BE) <p>Energy</p> <ul style="list-style-type: none"> • Waste to energy plants should ensure a high level of utilisation of the waste energy content (DK) • Use energy efficiency instead of energy recovery (SE) • It is more important to utilise the energy in waste to generate electricity and heat and to ensure good and low emissions from the facility, than to focus on the facility's own usage of energy in the individual processes (DK) • Levels to delineate between disposal and energy recovery, such as the R1-formula, should not be implemented in BREF documents or BAT conclusions (SE) • Consideration should be given to opportunities of using the energy for production of heat, steam and electricity, but also for cooling purposes when designing BAT conclusions. These conclusions should focus on locating new facilities in places where energy from incineration can be widely utilised. In the case of existing plants, where the process primarily focuses on the destruction of waste, a minimum level of utilized energy should be required (SE) • BAT AEPLs established for energy efficiency should describe the total efficiency of the incineration plant excluding any energy consumption for the operation of the distribution system for heating and power that is used outside of the plant (SE) • The internal energy consumption needs to be considered (EEB) |
| New information identified |
| <ul style="list-style-type: none"> • No new information identified at this stage. |
| EIPPCB assessment |
| <p>Water</p> <ul style="list-style-type: none"> • The WI sector is not an intensive water consumer. Most of the water is consumed by the cooling systems and the wet off-gases abatement systems. Some of this water can be used in bottom ash quench. • Indirect cooling with water is covered by the ICS BREF. <p>Energy</p> <ul style="list-style-type: none"> • Energy efficiency is considered to refer to the efficient use of energy within the installation, i.e. minimising the use of support fuels and the parasitic electrical demand of the plant. • A number of aspects of energy efficiency are horizontal issues. • Energy recovery is considered to refer to the conversion of the thermal energy liberated during the incineration process into useful heat and / or electrical power. • Energy recovery is considered a key environmental issue in the current WI BREF. • Energy recovery is a key environmental issue for the sector. This may need to take into account situations where the overriding objective is the safe destruction of highly toxic substances, e.g. some hazardous wastes and clinical waste. • The availability of suitable local infrastructure for utilising waste heat for heating (but also possibly for cooling) is a key factor in achieving high levels of energy recovery. This can also be influenced by local climatic conditions. • The R1 formula for energy efficiency is used for determining whether some types of incineration plant with energy recovery are classified as waste 'recovery' or 'disposal' operations. The Waste Directive refers to the BREF in this respect. • High energy consumption (e.g. burning of supplementary fuel, high electricity demand of plant and equipment) can have a detrimental impact on the overall energy balance and the net recovery of energy from the waste incineration process. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • Update, if possible, the information in the current BREF regarding water consumption |

without necessarily deriving BAT conclusions or BAT-AEPLs.

- To cover only those energy efficiency measures specific to waste incineration; general energy efficiency measures are covered in the ENE BREF. An appropriate cross-reference can be made to the ENE-BREF in the WI BREF.
- To include energy recovery as a key environmental issue for the WI BREF.
- Update the information regarding the consumption of energy – the derivation of BAT conclusions and BAT-AEPLs on energy efficiency should be considered alongside the consideration of energy recovery.

2.2.3 Key pollutants for emissions to air and water

2.2.3.1 Emissions to air

Summary of initial positions

Dust

- Dust is a key environmental pollutant (AT, BE, DE, FR, IT, SE, EEB, CEFIC)
- Set a BAT-AEL for total dust only, not for size fractions (UK)
- Information on behaviour of nano particles in waste incinerators may lead to BAT measures preventing emissions (EEB)

Metals + Arsenic

- Hg is a key environmental pollutant (AT, BE, DE, FR, IT, EEB, CEFIC)
- Cd and Tl are key environmental pollutants (AT, BE, DE, FR, IT, EEB, CEFIC)
- Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V are key environmental pollutants (AT, BE, DE, FR, IT, EEB, CEFIC)
- There is a possible issue with emissions of Cr(VI), but no data available (UK)

Inorganic gases

- HCl, HF, SO₂ are key environmental pollutants (AT, BE, DE, FR, IT, EEB, CEFIC)
- CO is a key environmental pollutant (AT, BE, DE, FR, IT, EEB)
- CO is not a key environmental pollutant (DE, SE, CEFIC, CEWET/ESWET, Eurits, HWE)

Nitrogen compounds

- NO, NO₂ are key environmental pollutants (AT, BE, DE, FR, IT, EEB)
- NH₃ is a key environmental pollutant (AT, BE, DE, IT, EEB)
- N₂O is a key environmental pollutant (AT, BE, DE, IT, EEB)
- N₂O is not a key environmental pollutant (CEFIC, CEWEP/ESWET, Eurelectric)

Organic compounds

- TOC is a key environmental pollutant (AT, DE, FR, IT, EEB, CEFIC)
- TOC is not a key environmental pollutant (CEFIC, CEWEP/ESWET)
- TOC or methane should be chosen as the pollution control parameter for the emission of hydrocarbons in the form of BAT-AEL (SE)
- PCDD/F are key environmental pollutants (AT, DE, FR, IT, EEB, CEFIC)
- For PCDD/F, no further constriction of the BAT-AEL should be implemented. The emission of PCDD/F and other similar halogenated hydrocarbon pollutants is limited by the BAT for appropriate incineration and by specifying the BAT-AEPL for CO or BAT-AELs on TOC/methane and dust (SE)
- Benzo(a)pyrene is a key environmental pollutant (AT, BE, DE, IT, EEB)
- PCBs are key environmental pollutants (AT, BE, DE, DK, EEB)
- Dioxin-like PCBs should be considered key environmental pollutants along with PCDD/F (IT)
- PAHs are key environmental pollutants (AT, BE, DE, IT, EEB)
- Analyse the need to measure PAH (ES)
- The environmental impact of Benzo(a)pyrene, PAHs, PCBs appears negligible (CEFIC, CEWEP/ESWET, Eurelectric)
- CH₄ is a key environmental pollutant (EEB)

CO₂ emissions

- Include information on the techniques applied and the relative emission levels for the prevention and reduction of pollutant responsible for the climate change (BG)
- Global Warming Potential GWP/CO₂ emissions are key environmental pollutants (ES, CEMBUREAU)
- Do not set a BAT-AEL or a BAT-AEPL for CO₂ emissions (DK, FI, SE, Eurelectric, HWE)
- It is important to describe the determination of the biogenic carbon from emissions (CEMBUREAU)

| New information identified |
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| <p>In order to fulfil the initial positions set out above; data on the following would need to be collected</p> <ul style="list-style-type: none"> • Emissions of PM₁₀ and PM_{2.5} (UK) • Emissions of Ammonia and N₂O (UK) • Emissions of dioxin-like PCBs (UK) • Emissions of Cr(VI) (UK) • Information on the use of continuous monitoring for measuring NH₃ and Hg (DK) • Information on the use of continuous sampling of PCDD/F (DK) |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • In general, the pollutants regulated under IED Chapter IV (Annex VI, Part 3) are considered key environmental pollutants. Some of these pollutants can be less relevant in very specific cases where the waste composition can be controlled (no presence of metals, chlorine-containing compounds, etc.). • The quantity and composition of emissions to air from incineration depend on the composition of the waste, the way in which the combustion is conducted and the techniques applied to reduce / prevent them. • CO emissions are linked with the NO_x emissions. • NH₃ emissions are linked with the use of SNCR or SCR for NO_x abatement. Emissions of NH₃ are covered by the NEC Directive 2001/81/EC. Ammonia is together with SO_x, NO_x and particulate matter among the most important air pollutants in terms of damage to the environment and public health. • Emissions of fine particulates are potentially a key environmental issue for the sector. However, emissions of fine particulates or particulates of any size fraction cannot be determined through current continuous monitoring methods. Measurement would need to be done through sampling and offline measurement. If data on PM₁₀ and PM_{2.5} were collected, it would also be necessary to collect contextual data on waste types and abatement techniques to establish whether there was any relationship. • The current WI BREF also considers PCBs, Benzo(a)pyrene, PCBs, and other PAHs. From E-PRTR data it appears that incinerators may not be a major source for emissions of these pollutants. Since the techniques applied to reduce these pollutants are the same as the ones applied to reduce PCDD/F emissions there might be a correlation between the emissions of PCDD/F and the emissions of Benzo(a)pyrene, PCBs and PAHs in certain circumstances. • Emissions to air of Cr(VI) are not considered a key environmental issue because the level of emission is likely to be below the detection limit of the available monitoring equipment. There is no EN standard for measuring Cr(VI) in stack emissions. It may be possible to infer something from measuring the Cr(VI) portion of total Cr in flue-gas residues. If data on Cr(VI) were collected, it would also be necessary to collect contextual data on waste types and abatement techniques to establish whether there was any relationship. • According to the IED Article 9(1), emissions limits for greenhouse gases should not be set for activities specified in Directive 2003/87/EC Annex I, as in these cases, the emissions of greenhouse gases are regulated through emissions trading. Hazardous waste and municipal waste incinerators are not under the scope of Directive 2003/87/EC, while some co-incineration plants may be. See guidance issued by DG-CLIMA http://ec.europa.eu/clima/policies/ets/docs/guidance_interpretation_en.pdf • Energy efficiency/recovery is the key factor in determining greenhouse gas emissions of waste incineration plants, which should be regulated by IED permits. • CH₄ is not a significant emission from incineration plants (e.g. only 4 installations incinerating non-hazardous waste reported methane emission above the E-PRTR threshold in 2012). |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • All the pollutants listed in IED Chapter IV/Annex VI Part 3 are considered as key environmental pollutants for emissions to air (i.e. dust, TOC HCl, HF, SO₂, NO_x, metals, |

PCDD/F, CO). Additionally, ammonia emissions to air should be considered a key environmental issue.

- To gather information on the emissions of PM₁₀ and PM_{2.5} in order to update the information in Chapter 3. BAT-AELs for PM₁₀ and PM_{2.5} will not be proposed unless the data can be linked to specific techniques to prevent or reduce their emissions.
- Not to gather data on emissions to air of Cr(VI).
- To gather data on the emissions of Benzo(a)pyrene, PCBs and PAHs in order to evaluate if the setting of additional BAT-AELs could be appropriate.
- Not to gather data on the emission of greenhouse gases (i.e. CO₂, N₂O and CH₄) as the issue of greenhouse gas emissions is considered sufficiently addressed through appropriate BAT conclusions and BAT-AEPLs for energy efficiency/recovery.

2.2.3.2 Emissions to water

| Summary of initial positions |
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| <ul style="list-style-type: none"> • Collect data and set BAT-AELs for the emission of chlorides (Cl⁻), sulphates (SO₄²⁻), total N (N_{tot}) and total P (P_{tot}) (BE) • Set BAT conclusions on water emissions only on such parameters that should be limited regardless of receiving water. No BAT conclusions intended to limit emissions of salts to water or other site specific parameters should be included in the WI BREF (SE, CEWEP/ESWET) • No more substances than the ones that are already in the IED (DE, CEWEP/ESWET, Eurelectric) • Lower the current BAT-AELs from 10 up to 100 times (DK) • Molybdenum and antimony are key pollutants (DK) • Add as key pollutants PAH and dioxin-like PCBs (IT) • Only waste water from flue gas cleaning should be under the WI BREF scope (Eurelectric) • Heavy metals, TSS and PCDD/F are the key pollutants (CEFIC) • All pollutants listed in Directive 2013/39/EU as regards priority substances in the field of water policy are key pollutants for the WI activity (EEB) • Not an issue for UK plant (UK) |
| New information identified |
| <ul style="list-style-type: none"> • Data on dioxin-like PCBs should be collected (IT) • Data on molybdenum and antimony should be collected (DK) |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • Emissions to water (other than cooling water) do not arise in many incineration plants and are therefore generally not a key environmental issue. • Emissions to water need to be considered when they arise from techniques to reduce emissions to air (integrated approach avoiding cross-media effects). • Emissions to water also need to be considered when they arise from the cleaning of syngas (from pyrolysis and gasification) prior to its combustion. • Emission to water need to be considered when they arise from the treatment of slags and ashes. • In the above cases, all the pollutants listed in IED Chapter IV (Annex VI, Part 5) are considered key environmental pollutants. Some of these pollutants can be less relevant the waste composition can be controlled (no presence of metals, chloride compounds, etc.). • The key environmental pollutants to be considered are thus the ones linked emissions to air; namely TOC, metals, chlorides (Cl⁻), sulphates (SO₄²⁻), total N (N_{tot}) and total P (P_{tot}). |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • All the pollutants regulated under IED Chapter IV/Annex VI Part 5 are considered as key environmental pollutants for emissions to water. • Collect data only from the water emissions coming from the cleaning of waste gases, syngas and the treatment of slags and bottom ash for the following parameters: |

- TSS
- Metals
- Dioxins and furans
- TOC
- Chlorides
- Sulphates
- Total N
- Total P.
- To gather data on the emissions of dioxin-like PCBs and PAHs in order to evaluate if the setting of additional BAT-AELs could be appropriate.

2.2.4 General issues for residues

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| <p>Summary of initial positions</p> <ul style="list-style-type: none"> • Due to the risks for the environment, bottom ashes resulting from the incineration of hazardous waste must be disposed of in specifically engineered landfills (HWE) • Knowing that fly-ashes and flue gas treatment residues concentrate the main part of the pollutants of the waste, their characterization and particularly their hazardousness must be assessed in order to define the environmentally soundest treatment (HWE) • The key issues are the TOC content and the leaching of metals (CEFIC) • Recovery of the residues components have to be taken in account (CEFIC) • Quality of burnout should be monitored to detect deficits (EEB) |
| <p>New information identified</p> <ul style="list-style-type: none"> • HWE will provide information on the treatment of the bottom ashes. |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • The composition of the bottom ash will determine whether it can be recovered for reuse or require disposal. The composition of ash for disposal will determine the type of disposal required. The composition of the treated bottom ash will also determine for what uses the recovered ash can be applied. • The treatment of flyash and flue-gas treatment residues are under the WT BREF and a cross-reference to the WT BREF can be made. • Burnout is monitored through the TOC content and/or the loss on ignition of the bottom ash. Chapter IV of the IED lays down mandatory standards on these parameters. • Since the current BREF was published, developments in treatment techniques mean that more materials can be recycled with less requiring disposal and so the WI BREF will need updating. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • To collect information on the techniques applied to slag and bottom ashes including techniques to enhance the level of metal recovery. • To include a cross-reference to the WT BREF regarding the treatment of flyash and flue-gas treatment residues. • To collect data on composition and characteristics of residues as described in Section 2.2.5.3. |

2.2.5 Expression of BAT-AELs and other BAT-AEPLs

2.2.5.1 Emissions to air

| Summary of initial positions |
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| <p>General</p> <ul style="list-style-type: none"> Take account of availability of EQSs before deciding averaging period for a given BAT-AEL (UK). Where BAT-AELs represent a major change from current ELVs they should be accompanied by a cost-benefit analysis (CZ, UK) <p>Short-term BAT-AELs (30 minutes – daily)</p> <ul style="list-style-type: none"> The IED refers to a half-hourly average and a daily average. It's necessary to go along with to IED regulations (AT, BG, FR, SE, EULA, Eurelectric, IMA Europe). Annual averages should be only shown for information purposes in chapter 3 (FR) Express BAT-AELs in concentration as half hour averages (DE, EEB) and 10 minute averages for CO (CZ) Express BAT-AELs in concentration as daily (BE, CZ, DE, DK, ES, FI, IT, NL, PL, SE, UK, EEB, CEFIC, CEMBUREAU, CEWEP/ESWET, Eurits, HWE) <p>Long-term BAT-AELs (yearly)</p> <ul style="list-style-type: none"> Favour long term averages as this reflects normal performance (UK) Express BAT-AELs in concentration as yearly (FI, UK, CEFIC) Annual average BAT-AELs can be considerate if the 30-minute averages are not considered for short term BAT-AELs (ES). Express NO_x BAT-AEL in concentration also as yearly average (BE) Do not express BAT-AELs as long term average (not monthly or yearly) (AT, CZ, DE, DK, IT, SE, CEFIC, Eurits, FEAD) Do not express the BAT-AELs as monthly average (EEB, CEFIC) BAT-AEL ranges should reflect the abatement system (UK) <p>BAT-AELs expressed as loads</p> <ul style="list-style-type: none"> Express BAT-AELs in load (as mass of emitted substances per unit of waste incinerated) as yearly (IT, PL, EEB) Do not express BAT-AELs in load term (AT, DE, ES, FI, SE, CEFIC) The BAT AELs expressed in load term for heavy metals should be at lowest level. Especially for Ni, As, Cd and Cr (DK) |
| New information identified |
| <ul style="list-style-type: none"> No new information identified at this stage. |
| EIPPCB assessment |
| <p>General</p> <ul style="list-style-type: none"> According to the BREF guidance section 3.3, the BAT-AEL is based on the plant-specific data received during the exchange of information. BAT-AELs need to be expressed in a way that represents the performance of the techniques applied to prevent or reduce the emissions concerned. Judgement of the economic viability of a technique for the sector is required when determining whether a particular technique is. This judgement together with technical viability and giving a high level of protection for the environment as a whole are the three key judgements that are needed. <p>Short-term BAT-AELs (30 minutes – daily)</p> <ul style="list-style-type: none"> Depending on the monitoring method used, the IED Annex VI sets emission limits for air pollutants as half-hour averages, daily averages or averages over the sampling period. This implies that all of these data should be readily available. Half-hour averages are more useful for process control. In fact, Chapter IV of the IED gives some flexibility in respecting the limit values as half-hour averages. Emission limits set according to IED Article 15(3) have to guarantee that emissions do not exceed the BAT-AEL values. Daily average emission levels may therefore be more appropriate for |

use as the basis for setting short-term BAT-AELs.

Long-term BAT-AELs (monthly – yearly)

- According to the BREF guidance section 3.3, *"if considered necessary, and if data submitted allows for doing so, BAT-AELs may be expressed as short-term and long-term averages"*.
- Long-term BAT-AELs are useful in describing the overall environmental performance of an installation and reflect the way how the plant is operated and maintained.
- Long-term BAT-AELs are also useful to address properly cases in which there are considerable variations in the performance of the techniques applied during the year/month.

BAT-AELs expressed as loads

- The quantities of certain pollutants in the waste gas (e.g. metals, chloride, fluoride) depend on the volume and composition of the waste that is burned. In order to set sound BAT-AELs in loads, it may be necessary to compare plants which incinerate waste with a similar volume and composition. Meanwhile the concentrations represent the performance of the techniques applied in order to prevent or reduce the emissions.
- For the typical pollutants coming from combustion (dust, NO_x, CO, TOC) which are measured continuously, it would be possible to complement BAT-AELs in concentration with BAT-AELs in load terms, if these are required.

EIPPCB proposal

- To express short-term BAT-AELs in concentrations and as a daily average or as an average over the sampling period depending on the availability of continuous monitoring for a given pollutant.
- To express long-term BAT-AELs as a yearly average.
- To express long-term BAT-AELs preferably in concentrations. Instead of concentration BAT-AELs, depending on the information that is gathered on the best available techniques and the performance data available the EIPPCB could propose to set yearly load BAT-AELs.
- Derive BAT-AEPLs (including BAT-AELs) in accordance with the Commission Implementing Decision of 10 February 2012, i.e. making judgements on the economic viability of the sector and not on the basis of cost-benefit analysis.

2.2.5.2 Emissions to water

Summary of initial positions

- The way to express BAT-AELs depends on the pollutant characteristic (DK)
- The averaging periods, the units and the assessment of compliance for BAT-AELs should be in line with the ones in Directive 2010/75/EU on industrial emissions (BG, SE, EULA, Eurelectric, IMA Europe)
- An appropriate consistency between the technical provisions of IED and the contents of table 1.2 should be ensured (IT)
- Express BAT-AELs in concentration as daily average (BE, CZ, DE, ES, IT, PL, EEB, CEFIC, CEMBUREAU, CEWEP/ESWET, FEAD, HWE)
- Do not express BAT-AELs as short term average (FI)
- Express BAT-AELs in concentration as monthly average (FI)
- Express BAT-AELs in concentration and load as yearly average (CZ)
- Do not express BAT-AELs as monthly average (EEB)
- Do not express BAT-AELs as long term average (no monthly neither yearly) (DE, IT)
- Express BAT-AELs in load (as mass of emitted substances per unit of waste incinerated) as yearly average (CZ, IT, PL, EEB)
- BAT AEPL/AEL for emission to water in the event of recycling should be considered to have the unit [mg/tonne of processed waste] as yearly averages taking into account the waste is being treated (SE)

New information identified

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| <ul style="list-style-type: none"> No new information identified at this stage. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> Waste water emissions in general are not a key environmental issue for waste incineration sector. Waste water emissions only arise where there is an air emissions abatement system that produces waste water, or processes for the cleaning of syngas, or for the treatment of bottom ashes. So the types of pollutants and emissions regime are similar to those described for air emissions. According to Chapter VI of the IED, the data available on the emissions to water should generally be based on spot samples or from flow-proportional representative samples over a period of 24 hours. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> To use the same basis as that set out in Part 6 of Annex IV of the IED and set BAT-AELs as an average of a flow-proportional representative sample taken over a period of 24 hours. |

2.2.5.3 Residues

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| Summary of initial positions |
| <ul style="list-style-type: none"> Express BAT-AEPL only for TOC as mass of residues per unit of waste incinerated in a year (PL) Set a BAT-AEPL for the TOC content of the bottom ash burnout (BE, SE) Express long term BAT-AEPLs (monthly/yearly) as ratio between generated residues and treated waste (IT, NL) Set BAT-AEPLs expressed in concentration (AT, ES) Set BAT-AEPLs expressed in concentration and in load and as monthly and yearly average (CZ, EEB) Sampling, reduction and analyses should be carried out according to European standards (CEN/TC 292) (AT) Consideration of boiler ash should not fall between the WI BREF and the WT BREF (UK) Need separate sections to consider ash arising from different types of processes, e.g. grate, fluidised bed, gasification; and waste types, e.g. MSW, clinical waste (UK) Storage and handling; techniques for wet, dry and thermal treatments (UK) Agree monthly averages expressed as concentration for residues (UK) The numerical BAT-AEPLs are not necessary (FI, FEAD) The updated BREF shall contain information on the quality of ashes and slags. We propose to collect data on the total content (Pb, Cd, Cr, Ni, TOC) and content in the eluate (PH-value, Sb, As, Pb, Cr, Cu, Mo, Ni, chloride, sulphate) of slags, ashes designated for further use (e.g. roadworks) (AT). Set a BAT-AEPL for the waste recovery efficiency (BG) Set BAT-AEPL expressed in concentration and only for periodic measurement (DE) The test for TOC should demonstrate whether the oven is operated so it incinerates waste sufficiently or if it needs to be taken out of the oven after incineration (and not after the slag has been stored for maturity) (DK) For residues sent to recirculation long term BAT-AELs is not enough. For residues for disposal, long term BAT can be enough, if it is necessary to have a limited value (DK) Do not set BAT-AEL or BAT-AEPL for residues except for TOC (SE) For hazardous waste incineration do not set BAT-AEPL for residues (HWE) There is no need of BAT-AEPLs (Eurelectric) Express BAT-AEPL in concentration as periodic measurement (CEFIC, CEWEP/ESWET) |
| New information identified |
| <ul style="list-style-type: none"> Data on physical / chemical properties of treated residues including leachate analysis (UK). |

EIPPCB assessment

- Article 50(1) of the IED requires that the total organic content of slags and bottom ashes should not exceed 3% or that the loss on ignition should not exceed 5% of the dry weight of the material. If necessary waste pretreatment techniques will be used.
- Article 53(3) of the IED requires that appropriate tests are carried out on residues to establish their physical and chemical characteristics prior to determining the routes for disposal or recycling; and that these tests shall concern the total soluble and heavy metals soluble fractions.
- The IED sets no requirements as to how the monitoring required by Articles 50(1) and 53(3) should be carried out.
- Since the current BREF was published, developments in treatment techniques mean that more residues can be recycled with less requiring disposal.
- The uses to which residues can be put will be determined by the requirements (i.e. input specifications) of the prospective end-user. Where these specifications cannot be achieved, the residues will require (further) treatment or disposal (probably by landfill). Where disposal by landfill is carried out, the specification required will be the waste acceptance criteria of the receiving landfill.
- The purpose of flue-gas treatment is to prevent and reduce emissions of pollutants to air. Techniques which minimise the amount of reagents used in flue-gas treatment will also result in an increased pollutant concentration in flue-gas residues. The setting of BAT-AEPLs for pollutants in FGT residues may therefore be counterproductive.
- Setting BAT-AEPLs on the composition of (treated) residues is not needed as the level of treatment required and will be driven by end-user specifications for the treated residues.

EIPPCB proposal

- To collect data on the TOC content of slag and bottom ashes as this is an important parameter in the operation of the incineration plant. Data will also be collected on the sampling and monitoring methods applied and their frequency; and whether any pre-treatment techniques are applied.
- To collect data on the tests carried out to establish the physical and chemical characteristics (as well as the quantity) and the polluting potential of the slag and bottom ashes prior to their disposal or recycling. This will include data on the sampling and monitoring methods applied and their frequency.
- Subject to the data collection, to consider setting BAT-AEPLs for the TOC content in slag and bottom ashes and for the proportion of metals and minerals that are recovered, (e.g. % of residues not requiring disposal).
- Not to set BAT-AEPLs for the composition of the residues after treatment as the level of treatment of residues required will be dictated by the end-user specifications of the recovered materials.

2.2.5.4 Energy recovery**Summary of initial positions**

- Set BAT-AEPL as annual average as % transfer from flue gas, heat only systems, electricity only systems, combined heat and power and for the electricity demand (EB, FI, IT, EEB, CEFIC, CEMBUREAU)
- BAT conclusion should lead to use as much as possible of the energy content of the incinerated waste (FI)
- Express BAT-AEPL as annual average only for combined heat and power and for electricity demand (PL)
- Do not set BAT-AEPLs differentiating between the type of energy recovered (heat vs power) (FI)
- When dealing with energy recovery performance take into account the location of a plant. Planning of the location for an incineration plant is important with respect to the energy utilisation (NL)
- The performance in terms of recovered energy depends on third parties and should not be

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| <p>part of BAT conclusions (FR, CEWEP/ESWET)</p> <ul style="list-style-type: none"> • Do not set BAT-AEPL for energy efficiency (AT, CEFIC, FEAD) • Express BAT-AEPLs as a % of recovered energy or as MWh/NCV (net calorific value) (FI) • Set BAT-AEPLs as net plant efficiency (design value), energy demand for the waste incineration process including flue gas treatment, energy production etc. and annual net efficiency (yearly average value, including shut-down periods) (AT) • Measures that ensure a high level of energy recovery should be defined but without specifying hard number (UK) • All plants must be CHP ready (UK) • An assessment of possible heat use should be carried out every 2 years (UK) • Notes that plants >20MW are subject to Article 14 of the Energy Efficiency Directive (UK) • Electrical output of larger plants should be at top of range of current BREF, but a numeric limit is not justified. • Agree annual averages for energy efficiency (UK) • BAT-AEPL for thermal energy demand (where applicable) is missing (BG) • BAT-AEPL for electrical energy demand should be provided for all types of thermal waste treatment (BG) • Set BAT-AEPLs as a short term average for heat only systems, electricity only systems and for combined heat and power (DE) • Set BAT-AEPLs as monthly and yearly average or only when the plant is in operation (DK) • The energy efficiency in the BREF should be a design value. Other efficiency averages shall be streamlined with the waste framework directive 2008/98/EC (NL) • Set long term BAT-AEPL as annual average that will be focus on the total efficiency of the plant (SE) • For hazardous waste incineration, do not set BAT-AEPL for energy recovery (HWE) • BAT-AEPLs on energy efficiency need to be revised (Eurelectric) • The overall energy efficiency of the techniques considered is more important than the energy recovery (CEWEP/ESWET) • The recovered energy needs to be compared with the energy consumed by the plant (CEFIC) |
| New information identified |
| <ul style="list-style-type: none"> • Energy recovered from the flue-gas prior to its use as heat or conversion to electricity. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • In general maximising the recovery of energy from the incineration process is a key environmental issue. However, where there is an overriding objective for the safe destruction of highly toxic materials, this would need to be taken into account, e.g. through an applicability restriction. • Heat-only systems recover more energy than CHP systems, which in turn recover more energy than electricity-only systems. However, the ability to recover energy as heat can be restricted by low heat demand (which may also be seasonal) and by the (lack of) availability of a local heat distribution network. It is also possible that the ability to recover energy as electricity may be restricted by low demand (e.g. excess of supply on the grid from other sources). |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • To collect data on both the design energy recovery of the plant and on its actual performance over a full year to take into account seasonal and climatic factors; including contextual information on energy demand (e.g. presence of a district heating network). • To collect data on the energy consumption of incineration plants (e.g. parasitic electrical energy and combustion of support fuels), also over a full year. • To set BAT-AEPLs based on actual performance, but to consider also setting a BAT-AEPL based on design values for new plant. |

- To decide whether there should be one BAT-AEPL for energy recovery minus consumption, or whether separate consumption and recovery BAT-AEPLs should be set. To express BAT-AEPLs either as % recovery or as MWh/tonne of waste incinerated, based on a standard NCV (net calorific value), as an annual average.

2.2.6 Monitoring

| Summary of initial positions |
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| <p>General</p> <ul style="list-style-type: none"> • A specific caution should be given not to prescribe lower BAT-AELs than the ones that can be detected by the measuring devices available on the market (FR) • The list of the pollutants to be continuously monitored should only be extended in the light of the article 48(5) of the IED (FR) • Type and frequency of monitoring (continuous or periodic) should be compatible with the requirements of IED (Eurelectric). In the case of contaminants like mercury and dioxins and furans the obligation to conduct continuous monitoring should depend on the amount of pollutants released into the environment (PL) • Any additional monitoring requirements should be justified on cost / environmental benefits grounds (UK) • The BAT conclusion monitoring should be consistent with the IED monitoring (CZ) • No more substances to be monitored than in the IED (CEFIC, Eurelectric) • There should be no additional requirements such as continuous monitoring for mercury and/or continuous sampling for PCDD/F (FEAD) <p>Dust</p> <ul style="list-style-type: none"> • UK would like to have a monitoring of on the PM₁₀ and PM_{2.5} on an annual basis, but no BAT-AEL for PM₁₀ and PM_{2.5} (UK) <p>PCDD/F and PCB</p> <ul style="list-style-type: none"> • Continuous PCDD/F emissions sampling and subsequent monitoring as BAT for the incineration of hazardous waste (BE, Eurits, HWE) • Continuous PCDD/F emissions sampling should not be considered (DK, FI, Eurelectric) • Frequency of dioxin sampling should be increased to 6/year in first year and then quarterly (UK). • Dioxin-like PCBs should be monitored on same frequency as dioxins, but no BAT-AEL (UK) • Consider the continuous sampling of PCB (DK) <p>Ammonia</p> <ul style="list-style-type: none"> • NH₃ should be monitored continuously (DK) • Add the monitoring of ammonia emissions (ES) • Would like continuous monitoring of NH₃ and periodic monitoring of N₂O to demonstrate effectiveness of SNCR, but no BAT-AEL for NH₃ or N₂O (UK) <p>Mercury</p> <ul style="list-style-type: none"> • Analyse the use of continuous monitoring for Hg emissions (ES) • Consider the continuous monitoring of Hg as well established technique (AT, DE, DK, Eurits, HWE) • Continuous monitoring of Hg is not justified (Eurelectric) <p>Water</p> <ul style="list-style-type: none"> • The sampling frequency, for emission to water, should be the same as in the current WI BREF (FI). • Sampling of wastewater misses requirements on minimum number of subsamples in 24 h sample (EEB) <p>Greenhouse gases</p> <ul style="list-style-type: none"> • For CO₂ emissions determine common measurement methods (EEB) |
| New information identified |
| <ul style="list-style-type: none"> • No new information identified at this stage. |
| EIPPCB assessment |
| <p>General</p> <ul style="list-style-type: none"> • The list of pollutants to be monitored, other than those that are required by IED will depend on the decisions that the TWG takes on the key environmental pollutants for the WI sector. |

- The information on monitoring that will be exchanged through the questionnaire will be based on the monitoring practices in the WI sector applied by plants in the EU-28.
- Information on the use of EN standards will be one of the pieces of information requested in the questionnaire.
- The data assessment will take into account the monitoring used with regard to the size of the plant and its location.
- Due to the IED requirements, the monitoring methods and averaging periods that should be applied should be the same throughout the EU-28.

Dust

- The monitoring of PM₁₀ and PM_{2.5} will only be BAT if the TWG decides that they should be seen as key environmental pollutants for the WI sector.

PCDD/F and PCB

- Techniques for the continuous sampling of PCDD/F and dioxin-like PCBs are well established and applied in the WI sector.
- No EN standard on the continuous sampling of PCDD/F and dioxin-like PCB emissions is available yet, but validation steps of EN-1948-5 are in preparation.
- If during the sampling period the PCDD/F emissions are affected by the plant going into other than normal operating conditions, it will not be possible to disaggregate the resultant measurement to determine the emissions under normal operating conditions.

Ammonia

- Techniques for the continuous monitoring of NH₃ are well established and applied in the WI sector and EN standards are available (EN 15267 and EN 14181).
- The effect of ammonia on the environment is comparable with the effect caused by NO_x.

Mercury

- Techniques for the continuous monitoring of Hg are well established and applied in the WI sector and EN standards are available. (EN 13211)
- Mercury is a recognised key environmental pollutant for the WI sector.

Water

- The sampling frequency and the sampling method will be decided by the TWG according to the information gathered and the best way to characterise the water emissions.

Greenhouse gases

- Monitoring of CO₂ emissions is not generally carried out. Some plants monitor N₂O emissions from NO_x abatement. CH₄ emissions are not a key pollutant for the WI sector.

EIPPCB proposal

- To collect data on key environmental issues from plants performing continuous/discontinuous monitoring and PCDD/F continuous sampling.
- To collect data on the use of continuous monitoring of mercury emissions in order to evaluate whether or not current BAT conclusions are sufficient or should be modified in order to keep the emission of mercury under control.
- To collect all the data over one year for each parameter monitored discontinuously, but to collect data for additional years if needed.
- To collect contextual information on monitoring information (e.g. other than normal operating conditions data included or not; samples filtered or not; uncertainty removed or not; length of sampling for spot samples; and monitoring standard used).
- To collect data for the year 2014 (reference year in WI BREF data collection), but to collect data for additional years if needed.

2.2.7 Odour and noise

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| Summary of initial positions |
| <ul style="list-style-type: none"> • Welcome data on noise reduction techniques (a common cause of public complaints) (UK) • Noise and vibration are not key environmental issues in WI plants (Eurelectric) • No requirement for measuring or BAT-AELs for noise should be implemented in BAT conclusions. This is a matter for national legislation and local authorities (SE) • Odour emissions should be taken into account (IT) • Do not include odour (SE) |
| New information identified |
| <ul style="list-style-type: none"> • No new information identified at this stage. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • There is little information on the techniques applied in order to prevent or reduce noise emissions in the current WI BREF (2006). • The WI sector is not a noise-intensive sector. • Several techniques are described in the current WI BREF in order to prevent or reduce odour emissions. • Waste treatment in general can be a cause of odour emissions and, due to the storage of waste, the WI sector is one of them. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • Update the information on the techniques applied in order to reduce noise emissions taking into account the possibility to cross-reference other BREF (e.g. LCP). • According to the data and information gathered, evaluate the need to update the information on the techniques used to prevent and reduce odour emissions in the WI sector but not setting BAT-AEPLs. |

2.3 DATA AND INFORMATION COLLECTION

The exchange of information is the core of the Sevilla process. The data and related contextual information, updated information on techniques and other information are a vital part of reviewing a BREF and the most important contribution from TWG members and the sectors or interests that they represent.

The consumption and emissions data in particular are important for identifying the best performers, and to identify an environmental performance range (a BAT-AEPL) that is associated with the use of BAT.

The data, related contextual information, updated information on techniques and proposals for text amendments should be provided following the structure and format indicated by the EIPPCB.

The EIPPCB follows the provisions of the BREF Guidance and will provide an installation-specific questionnaire, a standard for describing techniques (standard 10-heading format) and information mapping sheets for submitting additional information.

The performance data submitted in the past from the TWG members to the EIPPCB were often not sufficient in terms of either quality or quantity, and were not always accompanied by the necessary supporting operational and contextual information. Therefore, these performance data were of limited use in the process of determining BAT and environmental performance levels associated with the use of BAT.

Therefore, the focus of the review will be to collect data and information on installation specific emission and consumption levels in order to have a firm basis for the determination of BAT.

It is important at this KoM to discuss and agree on the consequences of the following statements concerning the data and information collection:

- Data and information should lead to the determination of BAT;
- Data and information should be manageable in terms of amount;
- Data and information should be representative;
- Deadlines should be set to enable a broad participation delivering good data, but also taking the overall progress of the review into consideration.

2.3.1 Questionnaire development and data collection

Summary of initial positions

- The questionnaire should ask for measured values and for the measurement uncertainty (AT)
- The latest determined standard deviation between the emission monitoring instrument and its standard reference method (SAMS) according to the QAL2 procedure should be recorded in the questionnaire for each parameter undergoing QAL2. For off-line parameters, the highest detection limit should be recorded in the questionnaire. For those of these parameters where the emission performance of BAT plants is close to the detection limit, BAT-AELs should be set at a level corresponding to at least five times the detection limit (SE)
- The data collection must (SE):
 - Use the same classification and averaging times that are used in Chapter IV and Appendix VI to the IED.
 - Couple collected data with information about the processes (furnace types, fuels, waste fuels, abatement techniques, degree of recycling, etc.) that the data comes from.
 - Comprise the age of the plant and equipment (e.g. if an older plant is updated

- with retrofitted abatement equipment).
- Take known cross-media effects into account in its design.
- Comprise information on what EN-standards was used to determine provided values.
- Determine whether or not reported data are validated (subtracted with allowed measurement error) and normalised.
- Determine whether or not reported data are normalised.
- Collect information on measurement range on raw data level.
- Exclude data from time of non-operation.
- Include standard deviation determined at the latest QAL2 according to EN-14 181.
- Include highest calibrated measured value.
- Include costs for the techniques described in WI BREF and especially those implemented as BAT conclusions.
- Gather data on PM₁₀ emissions and on PAH/Benzo(a)pyrene (AT)
- Include abnormal operations (start-up / shut down (dioxin memory)) (UK)
- Include whether use of bypass systems is BAT (UK)
- Include firewater retention and runoff protection (UK)
- Include control systems and interlocks (UK)
- Data quality is vital, must be generated in accordance with IED requirements, should include information on plant size, load, waste types, sampling, etc. (UK)
- There is a need to collect information on waste wood incineration, on sewage sludge incineration and on phosphorus recycling from sewage sludge incineration (DE)
- Gather data on cost of measuring, sampling and analysis through the questionnaire. Suggestions about indicative measurements that can replace more expensive procedures and be used to control operation should be collected (SE)
- Data should be collected so that the BAT-AEPL or BAT-AEL that are determined does not constitute a hindrance to the recycling and utilisation of waste water (SE)

New information identified

- No new information identified at this stage.

EIPPCB assessment

General issues

- The revision of the BAT conclusions is one of the main goals of the WI BREF review, where the data and information collection is the most important step in the exchange of information within the TWG.
- In order to be able to derive environmental performance levels associated with BAT (and in particular BAT-associated emission levels) in the revised WI BREF, it will be necessary to collect new and updated representative, reliable and installation-specific real-life data.
- The data and information collection will therefore also serve the purpose of updating the entire WI BREF, but in particular Chapter 3 "Current emission and consumption levels" and Chapter 4 "Techniques to consider in the determination of BAT".
- The BAT-AEL range should take account of the ability of available monitoring equipment to measure emissions at the levels indicated with a reasonable degree of accuracy. This should take into account the need for periodic calibration of the monitoring equipment

Data collection specific

- The data and information should generally cover:
 - quantitative data (e.g. emission data, consumption data and plant operational parameters);
 - qualitative data (e.g. information regarding techniques used, type of furnace/incineration process and waste used).
- A common questionnaire template will be drafted, which will be able to capture most of the information needed to characterise the WI sector.
- The format and extent of the questionnaire should ensure that the data and information submitted are:

- relevant to the determination of BAT;
 - The TWG should agree on the pollutants and parameters for which data and information should be collected, which might be related to the waste used. This is already foreseen and considered in Section 2.2.5.
 - provided in a common format that allows uniform assessments and comparisons;
 - Data should preferably be submitted from an agreed reference year with the newest information available (2014). Additional years can be allowed if needed.
 - Data obtained by the same monitoring approach are more easily comparable when assessing the environmental performance.
 - Data provided should be clearly related to units, reference conditions and averaging periods. This is already foreseen and considered in Section 2.2.5.
 - Data should be clearly related to applied sampling and monitoring standards. Information on the use of EN/ISO or (other) monitoring standards will be part of the information requested and should be further used in the definition of BAT for monitoring. This is already foreseen and considered in Section 2.2.5.
 - manageable and expressed in a manner that fully relates the environmental performance with the operating context.
- The activities included in the data collection will be those corresponding to the scope on which the TWG agrees at the KoM.
 - The participation of installations in the data collection is on a voluntary basis. Each TWG member's organisation should propose a list of installations willing to participate, focusing on environmentally well-performing plants. The deadline to submit these lists is proposed to be 30/04/2015.
 - The number of installations in each subsector varies and it may not be feasible to collect data from all installations, since a criterion of the data collection is to be able to manage the quantity of data submitted.
 - The data collection should be performed among well-performing plants, since this will be the basis for determination of BAT.
 - For the purpose of comparability, the number of installations taking part in the data collection should reflect the possible variation in emission and consumption levels.
 - The criteria for selecting installations should therefore include factors already mentioned in some of the initial positions concerning the distinction between different categories of installations:
 - Installations should be representative of the sector in terms of waste incinerated, processes and techniques used;
 - Both recently built, retrofitted and older plants should be represented;
 - Based on the incineration capacity of the plant/installation, both smaller and larger plants/installations should be included;
 - Installations in both cold and warm climates should be covered.

Questionnaire development

- Based on the positions received, the EIPPCB intends to draft a common questionnaire for the collection of data on emissions to air and water, energy recovery and residues generated.
- The content should not be discussed in detail at the KoM, but will be further developed based on the general discussions and agreements during the KoM.
- The TWG will contribute further to the refinement of the questionnaire templates by active participation on BATIS, or via a workshop if required.
- It is foreseen that the development the questionnaire will take place in the coming months and be finalised by 2nd / 3rd quarter of 2015.
- The draft questionnaire template could be tested by a small number of installations as a quality check before the final version is distributed.
- Any potential need for creation of specific TWG subgroups should be discussed during the KoM.

Data collection process

- The final questionnaire template should be sent to and collected from operators with a preliminary check by the Member State representative (or other organisation if the Member State is not present in the WI TWG). This quality assurance check is foreseen in the BREF Guidance, Section 4.4.2. In this step, each Member State representative is asked to:
 - ensure the quality, completeness and consistency of data;
 - check the validity of any confidentiality claims: if some information is claimed to be confidential, the Member State representative extracts the confidential part of the questionnaire and sends this separately to the EIPPCB by email;
 - post non-confidential questionnaires onto BATIS.
- A quality check of the submitted data is however the responsibility of all TWG members, including the EIPPCB. All organisations and individual TWG members are encouraged to participate in the evaluation and assessment of data from their MS or organisation.

EIPPCB proposal

- TWG to collect data using a common questionnaire template.
- TWG to collect data in all sectors covered in the BREF scope as agreed in Section 2.1 and to include those key environmental issues agreed in Section 2.2 in the questionnaire.
- TWG to collect representative, reliable, real-life data, at least at installation level from installations that at a minimum fulfil the following criteria:
 - are representative of the sector as a good environmental performer, including best performers;
 - are representative of the sector in terms of type of waste incinerated;
 - include preferably both new and existing installations;
 - include preferably both small and large incineration capacity installations;
- To set 2014 as the reference year for the data collection (additional years can be allowed if needed).
- The EIPPCB will provide a draft questionnaire template on BATIS that will be discussed and further developed by the TWG.
- The final draft questionnaire template should be tested by a small number of installations.
- TWG to submit a list of environmentally well-performing plants/installations (including best performers) that are willing to participate in the data collection. The EIPPCB will provide a list template to be used.
- Member State representative to collect the filled-in questionnaires from operators and to check the quality of the data and information before posting them on BATIS. The quality check implies that the Member State representative:
 - will ensure the quality, completeness and consistency of data;
 - will check confidentiality claims: if some information is claimed to be confidential, the Member State will extract the confidential part of the questionnaire and send it to the EIPPCB by email;
 - will post all the non-confidential questionnaires onto BATIS.

2.3.2 Techniques to consider in the determination of BAT

2.3.2.1 General principles

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|--|
| Summary of initial positions |
| <ul style="list-style-type: none"> • Include in the Techniques to consider in the determination of BAT chapter only those techniques which are able to achieve the relevant ELVs, equivalent parameters and technical measures, described in Chapter IV and Annex VI of the IED (CZ) |
| New information identified |
| <ul style="list-style-type: none"> • It is implicit that those techniques which are unable to achieve the ELVs, equivalent parameters and technical measures described in Chapter IV and Annex VI to the IED are not BAT. Such techniques should not be in operation unless under a derogation allows for under Chapter IV, Article 51. Should TWG members wish to see such techniques included, it will be necessary to collect data on the application of derogations under Article 51. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • Techniques unable to achieve the standards of Chapter IV/Annex VI of the IED should normally not be included in the section on 'techniques to consider'. • Not to collect data from those plants that operate under an IED Article 51 derogation. |

2.3.2.2 Techniques for review

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| Summary of initial positions |
| <p>This list is indicative of the many responses received in this section.</p> <ul style="list-style-type: none"> • Accreditation of EMS should be a norm (UK) • Applicability must be based on multiple plants operating in different Member States (UK) • NO_x of 150 mg/m³ can be achieved with optimised SNCR (UK) • Greater emphasis on furnace / boiler design as a control measure to prevent dioxin emissions rather than excessive use of activated carbon (UK). • Plasma gasification techniques – 2 plants have been permitted in UK (UK) • Chinook (RODECS) – application in UK under consideration for treating automotive shredder residues (UK) • Expansion of residue treatments (UK) • Current BATs which simply relate to good housekeeping should be deleted (UK) • Current BATs with numeric values need to be validated with new data collection (UK) • Add pyrolysis and gasification as established techniques (ES, IT) • Gasification and pyrolysis for mixed municipal and hazardous waste are obsolete techniques (DE) • A combined dry sodium bicarbonate + SCR + scrubber FGT system has become well established technique (??) • Add trigeneration and cooling networks (AT) • Oxygen enrichment of Combustion air (as described in Section 6.6 of the current BREF) has become well established technique (AT) • Draining the air from the space of bunker at the time of the shutdown into the smokestack (CZ) • Reduction of temperature. To save additional fuel for combustion it can be useful to reduce the temperature in the post combustion chamber (DE) • Add the Control and Maintenance System (CMS) (DK) • Add the Electrical Systems and Emergency Diesel (DK) • Add the Preventive Maintenance of the plant (DK) • Add the Emission monitoring station (DK) • Describe the importance of the hopper/chute design in order to avoid fire and/or clogging could be better focused. (Section 4.1) (DK) |

- Add a sub-section about grate, fluidised bed and rotary kilns Section 4.2. Also more information on brickwork in boilers should be included (DK)
- Add in the section 4.2.14 and in the section 4.2.15 the cooling of grates and rotary kilns. Cooling of fluidised bed should also be included in a separate section (DK)
- Section 4.3 should include information on: protection of boiler tubes, cooling of boiler walls, inlet recovery of water cooled grate, energy improvements with better turbine (i.e. gear vs. no gear) and generator (DK)
- Section 4.4.4 should also include low dust high-temperature SCR (DK)
- Section 4.5.13 should include more details on precipitation and absorption of components (DK)
- Boiler ash should also be included in Section 4.6 (DK)
- The re-burn of flue gas residual and especially not the filter for dioxins which contains Hg and PCB should be not considered BAT (DK)
- Use of clean wooden waste (less than 1,0% pollutants) at start up and close down of ovens (DK)
- Describe alternatives to conditions for operation which are determined in the incineration directive (DK)
- In case of non-hazardous waste add the control of incoming waste and limit values for metals (DK)
- Design and operation of incineration plant under non-standard operation conditions. Within the design bypass of the FGT can be prevented (NL)
- Add the techniques relating to incineration in co-incineration plants (both medium size combustion plants and other co-incineration plants, that will not be covered by other BAT-conclusions) (SE)
- Add the techniques relating to the treatment of bottom ash and other residues (SE)
- For pyrolysis / gasification it should be made clear when these techniques are applicable and there should be dedicated BATCs for these techniques which must provide the same level of environmental control and protection as other sections of the BATCs. For permitting authorities it would also be useful to indicate where these techniques have not worked historically (Eurits)
- The status of SNCR as BAT must be preserved. The separate BAT-AELs for the SCR and SNCR are still needed. Both techniques are considered as BAT, but associated levels differ remarkably (Eurelectric)
- Stable operation conditions and process control are keys for high efficiency and low emissions. Techniques and management tools should be addressed and BAT conclusions drawn (AT)
- Avoid not planned shutdown and start-up through a regular incineration of waste, buffering is needed (NL)
- Define BAT conclusions on the detection of presence of radionuclides in the incoming waste (at the entry of the site) (BE)
- Consider what is the most appropriate supportive fuel 1. Biogas, 2. Natural gas 3. gas from oil refineries, 4. Oil (DK)
- Dust suppression in ash treatment (UK)
- The following techniques are missing in the current WI BREF (HWE):
 - mercury abatement in dry flue gas treatment
 - new technologies for the measurement of dust in the gases
 - new technologies for multigas online measurements
 - continuous sampling of dioxins and furans
 - continuous measurements of mercury
- To save additional fuel for combustion it can be useful to reduce the temperature in the post combustion chamber. (Eurelectric)
- The use of brominated activated carbon injection is missing (CEFIC)

New information identified

- Data on the oxygen enrichment of combustion air from an Austrian plant
- DK has data for incineration of clean wood in incineration ovens

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| <ul style="list-style-type: none"> • DK has data for different fuel types that can be added via supportive burners • DK data on the pollutants present in the incoming waste • DK has data for different fuel types that can be added via supportive burners • NL plant design to avoid bypass of FGT |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • The long list of proposals listed above indicates a need to review and update the techniques currently listed in the 'techniques to consider' sections of the WI BREF. The initial positions above also include a number of techniques which are not described in the current WI BREF. • Techniques which are not able to achieve the standards set out in Chapter IV and Annex VI of the IED should not generally be considered BAT. • The WI BREF review will need to consider whether the techniques considered as 'emerging techniques' in the current WI BREF should now be considered BAT or whether they should be retained or removed from the emerging techniques sections. • The status of pyrolysis, gasification and plasma techniques will need to be determined, i.e. should they still be considered as emerging techniques; or are they BAT (with appropriate applicability restrictions); or, as some would argue, are they not BAT? See also Section 2.3.3 of this background paper. • There are a number of BAT conclusions in the current BREF, mainly around housekeeping, which might be better taken into account in a generic BAT conclusion on EMS. Some of the management practices described above might also be included in appropriate 'management plans' within the EMS. • There could be a need for more detailed or specific information on techniques concerning furnace and boiler design features and their impact on emissions and energy recovery. • The disposal of flue-gas treatment residues is outside the scope, unless these become a feed to an incineration plant. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • TWG members to identify and submit information on recent developments for both in process and end-of-pipe techniques, which meet the definition of candidate or emerging technique given in the IED and the BREF Guidance, following the 10-heading structure of BREF Guidance Section 2.3.7. • Based on the information and data collected, to update the 'techniques to consider' Chapter of the WI BREF, including amendments to existing techniques, addition of new techniques and the deletion of obsolete techniques. • To establish at the KOM what should fall within the scope of the EMS for incineration plants and what should be considered as stand-alone techniques. • To take into consideration the initial positions and information from the TWG members on techniques together with the additional issues mentioned in Chapter 7 "Concluding Remarks" of the current WI BREF. |

2.3.3 Emerging techniques

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| Summary of initial positions |
| <ul style="list-style-type: none"> • Pyrolysis / gasification techniques that achieve non waste status to be considered for emerging techniques (UK) • Dry de-slagging, leaching of filter ash and combustion control are new emerging techniques (DE) • Add wastewater treatment for metals distinct cations and anions as new emerging technique (DK) |
| New information identified |
| <ul style="list-style-type: none"> • DK has data for incineration of clean wood in incineration ovens • DK has data for different fuel types that can be added via supportive burners • DK data on the pollutants present in the incoming waste • Information on emerging techniques may be available from research sources |
| EIPPCB assessment |
| <ul style="list-style-type: none"> • Emerging techniques are those which are not yet at a sufficiently advanced stage of development to be considered as BAT, but which have the potential to become BAT in the near future (e.g. prior to the next BREF review). • Determining which of the techniques in the 'techniques to consider' are BAT and which should be considered as emerging (i.e. possible future BAT) is a judgement that should be made based on the data collection. • It should be unlikely (although not impossible) that techniques currently listed as 'emerging' in the current BREF should still be emerging. Such techniques should by now either be BAT or have been proven either to be technically or economically non-viable for the sector. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> • Judgements on emerging techniques should be made in parallel with updating the information on techniques to consider and BAT. |

2.3.4 Cross-media effects and economic viability

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| <p>Summary of initial positions</p> <ul style="list-style-type: none"> • Before determining the BAT-AELs of interconnected parameters, their relative environmental impact must be evaluated (SE) • Any changes to BATCs or BAT AELs should be carefully assessed for the overall environmental impact (Eurits, Eurelectric, HWE) • Where BAT-AELs represent a major change from current ELVs, should be accompanied by cost-benefit analysis (CZ, UK) • Add as cross-media effect when reducing one emission leads to increased emissions of another parameter (CEWEP/ESWET) |
| <p>New information identified</p> <ul style="list-style-type: none"> • No new information identified at this stage. |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • According to the BREF Guidance: <ul style="list-style-type: none"> ○ relevant negative environmental effects due to implementing the technique, allowing a comparison amongst techniques in order to assess the impact on the environment as a whole will be mentioned in the BREF; ○ the Reference Document on Economics and Cross-media Effects (ECM) is to be taken into account where there are significant cross-media effects. ○ Information on the cost and cross-media effects of the techniques will also be gathered. • The only economic judgement that is required when determining whether a particular technique is BAT is whether it is economically viable for the sector. This judgement together with technical viability and giving a high level of protection for the environment as a whole are the three key judgements that are needed. Cost-benefit analysis is only required when seeking a derogation under Article 15(4) from a BAT-AEL. • Information on the costs of techniques (capital/investment, operating and maintenance including details on how these costs have been calculated/estimated) and any possible savings following their application (e.g. reduced raw material or energy consumption, waste charges, reduced payback time compared to other techniques), revenues or other benefits including details on how these have been calculated/estimated will impact on economic viability and will be included in the BREF where relevant. • Data will be gathered with all the contextual information in order to have sound bases to derive BAT-AELs or BAT-AEPLs and evaluate properly the performance of the plants. BAT-AELs and BAT-AEPLs can only be based on the application of BAT. • There is a specific section of the BREF for the emerging techniques; BAT conclusions including BAT-AELs are not based on them. Cutting-edge techniques are not defined in IED and the term will not be used. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • To collect information and data on cross-media effects and economics of the techniques, see also section 2.3.2. • To derive BAT-AEPLs (including BAT-AELs) according to the Commission Implementing Decision of 10 February 2012 without a cost-benefit analysis. |

2.4 STRUCTURE

2.4.1 BREF structure

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| <p>Summary of initial positions</p> <ul style="list-style-type: none"> • Keep the structure of the WI BREF as it is (AT, BE, BG, DK, FI, Eurelectric, HWE) • The BREF should not be structured with the type of incinerators but on the nature of the waste processed: hazardous and non-hazardous waste (AT, BE, BG, DK, ES, FI, FR, NL, SE, Eurits, Eurelectric, HWE) • The main system of points is considered to be adequate. However, under these main points should be added divisions, which clearly define the requirements for the respective processes (PL). • Supports the standard structure but states need for a distinct section on pyrolysis/gasification including plasma systems (BG, UK). • Add a section on batch processes (UK) • For hazardous waste, it is necessary to determine the pathway of the toxic elements and their mass balance (Eurits, HWE) • Add mass flow analysis / sink - knowledge of the destination of key pollutants (Eurits) • A section (or annex) on slags and ashes treatment should be drafted (BG) • It is not appropriate to create mini-BREF (a separate chapter) on the treatment of slags and ashes or pyrolysis / gasification (AT, DE, FR, SE). • A dedicated chapter should be considered for the treatment of slags and ashes (IT) • Add a link to other BREFs, where advantageous (CZ) • Add new legislation (CZ) • The draft of the WI BREF should respect the current status of the draft 1 of BREF LCP (concerning waste co-incineration) (CZ) • Treatment of slag and ashes should be included within the "normal" structure of the WI BREF (there is already some content on this topic). (Eurits) |
| <p>New information identified</p> <ul style="list-style-type: none"> • Collect data on batch incineration processes (UK). • Data and information on the incineration of hazardous waste (Eurits) |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • There is a high level of consensus that the standard BREF structure is appropriate for the WI BREF and that a mini-BREF approach or partial mini-BREF approach (where the content is organised into themed chapters with each chapter following the BREF structure) is not required. • There is a good level of consensus that the structure of the sub-headings is broadly satisfactory, although this may need to be reviewed to ensure these remain so. In particular, within the framework of the standard BREF structure, there is a need to include distinct sections on pyrolysis/gasification/plasma systems and on the treatment of slag and bottom ashes. • The links between the WI BREF and other BREFs including LCP will be described in overall terms within the section on scope. However, cross-references to specific parts of these other BREFs can be included where required, although this is difficult where the other BREF is still in draft. • The impact of new legislation can be included within Chapter 1 under a heading of 'technical and legislative' trends. It could also be part of the driving force within the 10-heading format for describing techniques. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • To keep the same structure as the current WI BREF, and review the appropriateness of the sub-headings. • To include distinct sections on pyrolysis/gasification and plasma processes within the sections on thermal treatment, energy recovery flue-gas treatment and solid residues. |

2.4.2 BAT conclusions structure

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| <p>Summary of initial positions</p> <ul style="list-style-type: none"> • The appropriate break-down level of the BAT conclusions will reflect the level of details and development of technical assessment undertaken within the work of the TWG, also taking into account the exchange of information (CZ, IT) • It might not be relevant to include separate requirements for the different nature of the waste processed. However HW would need separate requirements (SE) • Specific sections could be required for MCP < 50 MW (SE) • Add a separate section for the pyrolysis and gasification (PL) • Include RDF and SRF (ES, UK) • Avoid the use of undefined terminology (FR) • If small co-incineration plants (<50 MW, >3 t/h) are included in WI BREF there should be a separate BAT conclusion section for them (FI, SE) • The draft of the BAT conclusions for WI should respect the current status of the draft 1 of BREF LCP (concerning waste co-incineration) (CZ) • Arrange the BAT conclusions in 3 levels: political decision makers and planning authorities; what the applicant should document and describe in connection with an application for environmental approval; precise requirements for operations and emissions (DK) • Add the recycling of the waste water (DK) • Add a list of material that should not be incinerated but recovered (DK) • Create a section for waste wood and waste biomass incineration (Eurelectric) |
| <p>New information identified</p> <ul style="list-style-type: none"> • No new information identified at this stage. |
| <p>EIPPCB assessment</p> <ul style="list-style-type: none"> • The structure of the BAT conclusions should be by waste types and not by the types of incinerator; this position is widely supported. • Having separate sections on pyrolysis/gasification and on batch processes would be inconsistent with the approach set out in the bullet point above. • Having separate sections on RDF/SRF, hazardous waste and on waste wood/biomass would be consistent with the above approach, although consideration should be given to the number of sub-divisions that might be appropriate. • The IED, and therefore BAT conclusions, apply at the installation level. For the WI sector, whilst it is clear that public policy decisions may be an influence on the applicability of particular techniques (e.g. use of waste heat), seeking to apply BAT conclusions to public policy decisions (e.g. the construction of a district heat network) would be outside the scope of the IED. These types of decisions require different legislative drivers. • Whether or not specific waste types should be incinerated or otherwise treated is considered outside the scope of WI BAT conclusions, such decisions should be guided e.g. through consideration of the Waste Framework Directive. • Specific requests for BAT conclusions on recycling of waste water, component mass balances for hazardous waste disposal should be guided by the data collection and its subsequent assessment. |
| <p>EIPPCB proposal</p> <ul style="list-style-type: none"> • To have a similar structure to the current WI BREF for the BAT conclusions, i.e. that where possible BAT conclusions for the whole of the WI sector be identified with additional conclusions (where appropriate) based on the nature of the waste processed. • The number of sub-divisions of BAT conclusions by waste type should be minimised and that these sub-divisions should be based on the data collection. • Not to propose to make BAT conclusions on those matters which are within the realm of public policy making. • That BAT conclusions and BAT-AEPLs should reflect the data gathered and the level of technical assessment carried out. |

3 ITEMS NOT FOR DISCUSSION AT THE KICK-OFF MEETING

The European IPPC Bureau considers that the items covered in Sections 1 and 2 of this Background Paper deal with the most important issues to be discussed by the TWG members at the KoM.

The TWG's initial positions on other items are included in this section of the Background Paper, but it is proposed not to discuss these at the TWG KoM. (Only one initial position has been identified in this category)

A position belonging to the following categories has been placed in this section when:

- it refers to techniques and their performance or applicability, which will be assessed in the following step of the BREF review itself;
- it debates what is, or what is not, BAT and how to formulate the BAT; this is also not the main purpose of the discussions at the KoM;
- it refers to horizontal, methodological or procedural issues that have already been agreed at the appropriate level (e.g. IED Article 13 Forum, IED Article 75 Committee);
- it is related to minor items, such as formatting issues, typos or unclear positions.

At the same time it should be mentioned that positions including those in this section will be taken into consideration for the drawing up of the first draft of the revised WI BREF. In the collection of positions there are very valuable contributions and a number of promises to provide more information for updating.

Candidate techniques, environmental performances and BAT will be discussed at a later stage of the review process, when the data needed to assess any changes in the BAT conclusions of the original BREF have been submitted by members of the TWG, and when these have been verified, commented on and discussed.

However, if a TWG member considers that any of the following items in this chapter deserves discussion at the KoM, they **are invited to indicate this to the WI BREF review team by e-mail at JRC-IPTS-EIPPCB-WI@ec.europa.eu before 9 January 2015**. This will then allow us to allocate sufficient time for the discussion of these items. Such an indication must also contain a justification/rationale.

3.1 Additional items not for discussion

3.1.1 Other than normal operating condition

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| Summary of initial positions |
| <ul style="list-style-type: none"> The WI BREF should clarify the BAT-AELs definition and frame (terms and conditions for determining values, explicit references of operation (inclusion or non-inclusion of stopping and starting phases, correction of the oxygen concentration ...), the precise scope of the relevant pollutants) in order to harmonize the implementation of this notion in the European territory insofar as it is a prescription. Answers on this point must be made before sending the forms / questionnaires to plants so that they can complete them correctly (the problem is encountered in the context of the revision of combustion LCP BREF) and the BAT AELs can be established on relevant hypothesis (FR) |
| New information identified |
| <ul style="list-style-type: none"> No new information identified at this stage. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> This comment relates to establishing a common understanding of OTNOC, in particular the relationship between start-up, shutdown and effective operating time as described in Annex VI to the IED. This issue is addressed in Section 2.1.2. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> A common understanding on OTNOC in the context of waste incineration is an important issue and will be part of the discussions at the KOM. |

3.1.2 Emissions to water

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| Summary of initial positions |
| <ul style="list-style-type: none"> Clarify that all BAT-Conclusions containing requirements for waste water are not applicable for hazardous waste incineration placed on chemical sites (CEFIC) |
| New information identified |
| <ul style="list-style-type: none"> No new information identified at this stage. |
| EIPPCB assessment |
| <ul style="list-style-type: none"> Waste water in waste incineration plants principally arises when there is the use of wet abatement systems for treating emissions to air. Many waste incineration plants however use dry abatement systems. Chapter IV and Annex VI of IED include requirements for emissions to water from wet abatement systems, including when the effluent is mixed and treated with other effluents. Waste water may also arise from the cleaning of syngas or from the treatment of residues including bottom ashes. The BAT conclusions of the final draft of the CWW BREF cover the combined treatment of waste water from different origins if the main pollutant load originates from chemical activities. |
| EIPPCB proposal |
| <ul style="list-style-type: none"> WI BREF deals with the waste water coming from the cleaning of the waste gases, cleaning of syngas and/or the treatment of residues including bottom ashes. |

4 Annexes

ANNEX I: Proposal for the scope of the revised WI BREF

This BREF covers the following activities within the scope of Annex I to Directive 2010/75/EU, namely:

- 5.2 Disposal or recovery of waste in waste incineration plants:
- (a) for non-hazardous waste with a capacity exceeding 3 tonnes per hour;
 - (b) for hazardous waste with a capacity exceeding 10 tonnes per day.

This BREF also covers the disposal or recovery of waste in waste co-incineration plants covered by activity 5.2 of Annex I to Directive 2010/75/EU, whose main purpose is the generation of energy, in the following cases:

- where more than 40% of the heat release comes from hazardous waste;
- where the plant co-incinerates untreated mixed municipal waste

This BREF covers the treatment of slags and bottom ashes from waste incineration and co-incineration plants, taking place either on-site or off-site.

This BREF does not address the following:

- disposal or recovery of waste in co-incineration plants, other than as described above.
- pre-treatment of waste for incineration or co-incineration
- the incineration of radioactive waste and animal carcasses.

Other reference documents which are relevant for the activities covered by this document are the following:

| Reference document | Activity/Subject |
|---|--|
| Economics and Cross-Media Effects (ECM) | Economics and cross-media effects of techniques |
| Emissions from Storage (EFS) | Storage and handling of fuels and additives |
| Energy Efficiency (ENE) | General energy efficiency techniques |
| Industrial Cooling Systems (ICS) | General cooling techniques |
| Large Combustion Plants (LCP) | Co-incineration |
| Monitoring of Emissions to Air and Water from IED-installations (ROM) | Monitoring of Emissions to Air and Water |
| Waste Treatment (WT) | Storage and handling of waste, pre-treatment of waste before the incineration, bio-digestion, treatment of fly ashes |

ANNEX II: Proposal for the structure of the revised WI BREF

Preface

Scope (of the BREF)

1. General information about the Waste Incineration sector

1.1 Overview of the waste incineration sector in Europe

- 1.1.1 Current status and capacity
- 1.1.2 Technical and legislative trends
- 1.1.3 Economic trends

1.2 Key environmental issues

- 1.2.1 Emissions to air
- 1.2.2 Emissions to water
- 1.2.3 Energy recovery
- 1.2.4 Materials recovery

2. Applied processes and techniques

2.1 Overview and introduction

2.2 Receipt, storage and handling of waste

- 2.2.1 Common processes and techniques applied in the WI sector
- 2.2.2 Processes and techniques applied in specific parts of the WI sector
 - 2.2.2.1 Municipal solid waste
 - 2.2.2.2 Mixed non-hazardous wastes
 - 2.2.2.3 Hazardous wastes
 - 2.2.2.4 Sewage sludge
 - 2.2.2.5 Clinical waste

2.3 Pre-treatment of waste

(Where processes and techniques are described in the WT BREF, these will not be repeated, but a cross-reference will be included. Only additional processes and techniques not part of the WT BREF will be included.)

2.4 The thermal treatment stage

- 2.4.1 Grate incinerators
- 2.4.2 Rotary kiln incinerators
- 2.4.3 Fluidised bed incinerators
- 2.4.4 Pyrolysis and gasification systems
- 2.4.5 Other processes and techniques
 - 2.4.5.1 ...

2.5 The energy recovery stage

- 2.5.1 Recovery as heat, electricity or combined heat and power
 - 2.5.1.1 External factors
 - 2.5.1.2 Design of energy recovery system
- 2.5.2 Applied techniques for improving energy recovery
- 2.5.3 Energy recovery techniques applied in specific parts of the WI sector
 - 2.5.3.1 Hazardous waste incinerators
 - 2.5.3.2 Fluidised bed incinerators
 - 2.5.3.3 Combustion of syngas in gas engines

- 2.6 Flue-gas treatment and control
 - 2.6.1 Design of integrated flue-gas treatment systems
 - 2.6.2 Techniques for the reduction of emissions to air
 - 2.6.1 Carbon monoxide and total organic carbon
 - 2.6.2 Particulate emissions
 - 2.6.3 Acid gas emissions
 - 2.6.4 Nitrogen oxide emissions
 - 2.6.5 Mercury emissions
 - 2.6.6 Other heavy metal emissions
 - 2.6.7 Dioxins, furans and other organic pollutants
 - 2.6.8 Greenhouse gases
 - 2.6.3 Techniques for the pre-treatment of syngas prior to combustion
 - 2.7 Waste water treatment and control
 - 2.7.1 Design principles for waste water control
 - 2.7.2 Techniques for the reduction of emissions to water
 - 2.8 Solid residues treatment and control
 - 2.8.1 Slag and bottom ashes
 - 2.8.2 Fly ash and residues from flue-gas treatment
(Where processes and techniques are described in the WT BREF, these will not be repeated, but a cross-reference will be included. Any additional processes and techniques not part of the WT BREF will be included.)
 - 2.8.3 Residues from pyrolysis and gasification processes
 - 2.9 Noise control
 - 2.10 Odour control
 - 2.11 Monitoring and control
- 3. Current emission and consumption levels**
- 3.1 Raw materials and chemicals consumption
 - 3.2 Energy consumption and recovery
 - 3.3 Water consumption
 - 3.4 Emissions to air
 - 3.5 Emissions to water
 - 3.6 Generation of residues
 - 3.7 Others?
 - 3.7.1 ...
- 4. Techniques to consider in the determination of BAT**
- 4.1 General techniques
 - 4.1.1 Environmental management systems

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- 4.1.2 Waste reception and pre-treatment
 - 4.1.3 Materials storage and handling
 - 4.1.4 Emissions monitoring
 - 4.1.5 Odour
 - 4.1.6 Noise
 - 4.1.7
 - 4.2 Thermal treatment
 - 4.3 Energy efficiency and energy recovery
 - 4.4 Flue-gas treatment
 - 4.5 Waste water treatment
 - 4.6 Treatment of solid residues
- 5. Best available techniques (BAT) conclusions**
- 5.1 Scope (of the BAT conclusions)
 - Including definitions
 - 5.2 General considerations
 - Including reference conditions
 - 5.3 General BAT conclusions for all waste incineration
 - 5.3.1 Management
 - 5.3.2 Materials consumption
 - 5.3.3 Energy efficiency and recovery
 - 5.3.4 Emissions to air
 - 5.3.5 Emissions to water
 - 5.3.6 Treatment of solid residues
 - 5.3.7 Other than normal operating conditions
 - 5.4 BAT conclusions for specific parts of the WI sector
 - 5.4.1 Municipal waste and mixed non-hazardous waste incineration
 - 5.4.2 Hazardous waste incineration
 - 5.4.3 Sewage sludge incineration
 - 5.4.4 Clinical waste incineration
 - 5.5 Description of techniques
- 6. Emerging techniques**
- 6.1 Common techniques
 - 6.2 Techniques to consider in individual WI sectors
 - 6.2.1 Municipal waste and mixed non-hazardous waste incineration
 - 6.2.2 Hazardous waste incineration
 - 6.2.3 Sewage sludge incineration
 - 6.2.4 Clinical waste incineration
- 7. Concluding remarks and recommendations for future work**