



JOINT RESEARCH CENTRE  
 Institute for Prospective Technological Studies (IPTS)  
 Sustainable Production and Consumption Unit  
**European IPPC Bureau**

Seville, 29 April 2015

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

**SEVILLE, 19 – 22 January 2015**

**MEETING REPORT**

**INTRODUCTION**

The Technical Working Group (TWG) for the review of the Reference Document on the Best Available Techniques (BAT) for Waste Incineration (WI BREF) held its first plenary meeting at the Hotel Meliá Lebreros in Seville, Spain on 19 – 22 January 2015. This meeting report is a record of this first plenary TWG meeting and gives a summary of the results.

TWGs are set up to facilitate the exchange of information under Article 13(1) of Directive 2010/75/EU on Industrial Emissions (Integrated Pollution Prevention and Control). The BREF Guidance for the exchange of information under the IED (Commission Implementing Decision 2012/119/EU of 10 February 2012) is an essential document which sets the framework for the work of the WI TWG.

The current WI BREF (available on the European IPPC Bureau (EIPPCB) website at <http://eippcb.jrc.ec.europa.eu/reference/>) was formally adopted by the European Commission in 2006 under Directive 96/61/EC.

This first plenary WI TWG meeting, also called the kick-off meeting (KoM), officially started the work on the review of the WI BREF, which will be a document based on the exchange of information between the members of the TWG set up for this purpose. By virtue of Article 14(3) of Directive 2010/75/EU, the BAT conclusions of the revised WI BREF (that will be adopted by the Commission in accordance with Article 13(5) of the Directive) will be the reference for setting permit conditions for the activities covered.

The Head of the EIPPCB chaired the meeting and the WI BREF co-authors (the WI BREF review team of the EIPPCB) led the technical discussions.

The WI TWG is made up of more than 200 experts representing EU Member States, Industry, Environmental non-governmental organisations and Commission services. The kick-off meeting was attended by 86 TWG members.

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The meeting agenda included presentations and discussions on the exchange of information on best available techniques (as stipulated in Article 13 of Directive 2010/75/EU):

- on the definition of the scope of the work to review the WI BREF;
- on the key environmental issues to consider in this BREF review;
- on issues related to the data and information collection and on the structure and content of the WI BREF and the BAT conclusions (BATC).

These discussions were covered during the first two and a half days of the meeting. The final half day covered the conclusions of the meeting. Following the KoM, there was a further exchange of information via the BAT Information System (BATIS) to further develop and improve on some of the conclusions of the meeting.

In order to facilitate discussions at the meeting, a background paper highlighting the items proposed to be discussed was prepared by the EIPPCB and sent to the TWG members in advance of the meeting (10 December 2014). The items had been derived from the initial positions sent by the TWG members (14 Member States, one Environmental NGO and 10 Industrial Associations) in advance of the meeting. In this context, the term 'initial position' used in this document stands for suggestions, comments or wishes provided by the members of the TWG on the basis of the invitation for the '*expression of the positions on the review of the WI BREF*', sent by the EIPPCB on 20 June 2014, and of the documents attached to this 'initial position'. The term 'EIPPCB proposal' used in this document refers to the way forward that the EIPPCB proposed to the TWG after taking into account the TWG members' 'initial positions'.

### **Meeting and structure of this meeting report**

During the meeting, discussions were held on the TWG members' initial positions and on the EIPPCB proposals made based on these positions. The key issues for which agreements were sought were the scope and structure of the revised WI BREF and the key environmental issues for the review of the WI BREF. Furthermore, agreement was sought on what information and data should be collected and shared in order to revise and improve the WI BREF (data and information collection) and on the basic principles of this collection.

The items were discussed by following a common pattern at the meeting. The EIPPCB gave an introductory presentation based on the background paper and proposed a way to take the issue at stake forward. The participants then had the opportunity to discuss each issue and ultimately reach conclusions.

This document presents the main issues discussed for each item and the conclusions reached at the meeting.

All presentations delivered at the meeting are available to TWG members on the BATIS workspace together with the interim conclusion slides presented on the last day of the meeting. The final conclusions are set out in this report.

The presentation given by the Commission's DG Environment (DG ENV) set out the legal context of the information exchange and stressed the importance of focusing the information exchange so that BAT conclusions target the current key environmental issues of the sector. In particular, it was reminded that this sector has been regulated in detail at EU level for 25 years, which is reflected in a dedicated chapter in the Industrial Emissions Directive. In this respect, efforts need to go where the BAT conclusions may achieve the highest 'added environmental value', i.e. where further significant emission reduction potential exists and BAT may have evolved since 2006. TWG members were invited to share their expert views on these issues. The Head of the EIPPCB gave a general introduction on BREF reviews, including the process for setting the BAT-AE(P)Ls.

Some TWG members explained the key points of their initial positions with opening presentations. Germany presented its general considerations regarding mercury emissions to air. FEAD highlighted that this BREF review should be focused on aligning the current BREF with the IED provisions; and that the data collection should be focused only on the key environmental issues and proposals related to energy efficiency. CEWEP and ESWET made a joint presentation about some of the issues from the background paper. In particular they asked to take into account when setting deadlines, the time needed for the shadow groups to express

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their position; also the importance of set BAT-AELs within the framework of 'effective operating time' and the importance of discussing how BAT-AELs will be derived before beginning the data collections exercise. HWE presented a study on the life cycle analysis of the incineration of hazardous waste. EuLA shared their views on some issues from the background paper (co-incineration, new BAT). Eurits made a presentation explaining the 'sink' principle for hazardous substances and gave an overview of the different approaches followed in other BREFs dealing with co-incineration.

All these presentations are available to TWG members on BATIS.

## DISCLAIMER

This document should not be considered as representative of the Commission's official position. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of the following information.

## Acronyms

BAT	Best Available Technique(s)
BAT-AEL	BAT-Associated Emission Level(s)
BAT-AEPL	BAT-Associated Environmental Performance Level(s)
BREF	Reference Document on Best Available Techniques
BP	Background Paper
CLM BREF	Best Available Techniques (BAT) Reference Document for the Production of Cement, Lime and Magnesium Oxide
EFS BREF	Reference Document on Best Available Techniques on Emissions from Storage
EIPPCB	European IPPC Bureau
ELV(s)	Emission Limit Value(s)
ENE BREF	Reference Document on Best Available Techniques for Energy Efficiency
FGT	Flue-gas treatment system
ICS BREF	Reference Document on the application of Best Available Techniques to Industrial Cooling Systems
IPPC	Integrated Pollution Prevention and Control
KoM	Kick-off Meeting
LCP BREF	Reference Document on Best Available Techniques for Large Combustion Plants
MS	Member State(s)
NOC	Normal operating conditions
NO <sub>x</sub>	The sum of nitrogen (II) oxide (NO) and nitrogen dioxide (NO <sub>2</sub> )
OTNOC	Other Than Normal Operating Conditions
PCDD/F	Polychlorinated dibenzo-dioxins and -furans
TOC	Total organic carbon. Total organic carbon, expressed as C, includes all organic compounds
TSS	Total suspended solids. Mass concentration of all suspended solids, measured via filtration through glass fibre filters and gravimetry
TVOC	Total volatile organic compounds (in air), expressed as C (EN 12619)
WT BREF	Reference Document on Best Available Techniques for Waste Treatment

## Member States and Organizations (participants in the Kick-off Meeting)

AT	Austria
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DE	Germany
DK	Denmark
ES	Spain
FI	Finland
FR	France
HR	Croatia
IT	Italy
NL	Netherlands
PL	Poland
RO	Romania
SE	Sweden
SK	Slovakia
UK	United Kingdom
EEB	European Environmental Bureau
CEFIC	European Chemical Industry Council
CEMBUREAU	The European cement association
CEPI	Confederation of European Paper Industries
CEWEP	Confederation of European Waste-to-Energy Plants
ERFO	European Recovered Fuel Organisation
ESWET	European Suppliers of Waste to Energy Technology
Eucopro	European Association for Co-processing
EuLA	European Lime Association
Eurits	European Union for Responsible Incineration and Treatment of Special Waste
FEAD	European Federation of Waste Management and Environmental Services
HWE	Hazardous Waste Europe
IMA Europe	Industrial Minerals Association Europe
Orgalime	European Engineering Industries Association

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## TABLE OF CONTENTS

<b>1</b>	<b>SCOPE .....</b>	<b>7</b>
1.1	GENERAL POSITIONS .....	7
1.2	PYROLYSIS, GASIFICATION AND PLASMA PLANTS.....	7
1.3	IED ARTICLE 42(2) PLANTS .....	8
1.4	PRETREATMENT OF WASTE BEFORE INCINERATION AND RESIDUES TREATMENT .....	8
1.5	CO-INCINERATION.....	9
1.6	OTHER ISSUES .....	9
<b>2</b>	<b>KEY ENVIRONMENTAL ISSUES.....</b>	<b>11</b>
2.1	GENERAL KEY ENVIRONMENTAL ISSUES.....	11
2.2	WATER, ENERGY AND RESOURCE EFFICIENCY.....	11
2.3	KEY ENVIRONMENTAL ISSUES IN THE CONTEXT OF THIS WI BREF REVIEW .....	12
2.3.1	Pollutants for emissions to air.....	12
2.3.2	Pollutants for emissions to water .....	14
2.4	GENERAL ISSUES FOR RESIDUES.....	14
2.5	EXPRESSION OF BAT-AELs AND OTHER BAT-AEPLs .....	15
2.5.1	Emissions to air.....	15
2.5.2	Emissions to water.....	15
2.5.3	Residues .....	16
2.5.4	Energy efficiency and recovery .....	16
2.6	MONITORING AND AVERAGING PERIODS .....	17
2.7	ODOUR AND NOISE .....	18
<b>3</b>	<b>DATA/INFORMATION COLLECTION .....</b>	<b>19</b>
3.1	DATA COLLECTION – INTERACTIONS WITH IED CHAPTER IV .....	19
3.2	QUESTIONNAIRE DEVELOPMENT AND DATA COLLECTION .....	19
3.3	TECHNIQUES TO CONSIDER IN THE DETERMINATION OF BAT AND EMERGING TECHNIQUES .....	21
3.4	CROSS-MEDIA EFFECTS AND ECONOMIC VIABILITY .....	22
<b>4</b>	<b>STRUCTURE.....</b>	<b>23</b>
4.1	BREF STRUCTURE.....	23
4.2	BAT CONCLUSIONS STRUCTURE .....	23
<b>5</b>	<b>FORWARD PLANNING FOR THE WI BREF REVIEW AFTER THE KICK-OFF MEETING .....</b>	<b>24</b>

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# 1 SCOPE

## 1.1 General positions

In Annex I to Directive 2010/75/EU (IED), the incineration (and co-incineration) of waste is covered under point 5.2. Installations operating these activities and meeting the capacity thresholds set out therein are subject to the provisions of Chapter II of the IED. In addition, Chapter IV of the IED sets out the 'minimum' requirements for waste incineration and co-incineration plants, which apply to all such plants including those below the capacity threshold, set out in Annex I.

The initial positions from the TWG members included enlarging the scope of the WI BREF to include activities not covered by the current WI BREF with an emphasis on the co-incineration of waste and activities not regulated by the IED (crematoria and gaseous waste incineration plants under the IED thresholds). Specific issues in relation to the WI BREF scope are discussed later as separate items.

The EIPPCB proposed to define the scope of the WI BREF based on waste incineration plants falling under point 5.2 of Annex I to the IED (Note: the scope also includes treatment of slags and ashes falling under points 5.3(a)(iv) and 5.3(b)(iii) of Annex I to the IED). Under the IED, BAT conclusions are only applicable to installations covered by Chapter II, i.e. those operating activities above the Annex I capacity threshold. During the discussion this proposal was generally accepted with an exception regarding gaseous waste incineration. Further clarifications about the WI BREF scope will be made in the course of the WI BREF review taking into account the relevance of the incineration of gaseous waste.

### *Conclusions reached by the TWG for the revised WI BREF*

- 1) Define the scope of the WI BREF primarily based on the capacity thresholds set in point 5.2 of Annex I to the IED, .
- 2) Do not include under the scope of the WI BREF those plants which only incinerate gaseous effluents, functioning as abatement devices.
- 3) TWG members to share through BATIS the list of the plants incinerating only gaseous waste in the EU-28. Depending on the number of plants, 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.

## 1.2 Pyrolysis, gasification and plasma plants

Most of the initial positions were in favour of covering pyrolysis, gasification and plasma plants in the WI BREF review (whilst recognising that few plants are in operation in the EU-28). Some initial positions were in favour of excluding these plants from the scope of this WI BREF review.

The EIPPCB proposal was to share through BATIS the list of the pyrolysis, gasification or plasma operating plants in the EU-28, when the resulting gas is combusted. Depending on the number of plants, the EIPPCB would propose to the WI TWG the best way to address this issue taking into account the environmental impacts throughout the EU-28.

The discussion showed that very few plants are operating in the EU-28 but some Member States, the environmental NGO and industrial associations asked to include these processes in the WI BREF review. The EIPPCB proposal was slightly amended to take into account the discussion. However, in view of the more focused approach taken for this BREF review, a first step will be to collect information on the number and the relevance of the plants in operation in the EU-28, prior to reaching a conclusion on the coverage of these plants in the revised WI BREF.

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### ***Conclusions reached by the TWG for the revised WI BREF***

- 4) TWG members to share through BATIS the list of the pyrolysis, gasification or plasma operating plants in the EU-28, if the substances resulting from the treatment are subsequently incinerated. Depending on the number of plants, the EIPPCB will propose to the WI TWG the possible inclusion of these plants under the scope of the WI BREF.

*This conclusion is not supported by: BG, DE, FI, ES, UK, EEB, ESWET, Eurits, EuLA, HWE, CEWEP, Orgalime and FEAD who would have preferred to cover these plants in the scope of this WI BREF review.*

## **1.3 IED Article 42(2) plants**

There were various views in the initial positions of the TWG members regarding the inclusion of plants referred to in IED Article 42(2), and thus excluded from Chapter IV, in the scope of the WI BREF.

The EIPPCB proposal was to exclude from the scope of the WI BREF wastes listed in Article 42(2) that are excluded from scope of the Waste Framework Directive 2008/98/EC (i.e. radioactive waste or animal carcasses).

There was a discussion focusing on the interaction with the LCP BREF. It was noted that co-firing of biomass (as defined in IED Article 3(31)) in combustion plants will be covered by the LCP BREF (if the total rated thermal input of the plant is  $\geq 50 \text{ MW}_{\text{th}}$ ), and consequently the KoM conclusions need to take account of this.

### ***Conclusions reached by the TWG for the revised WI BREF***

- 5) Exclude from the scope of the WI BREF the plants referred to in IED Article 42(2)(a)(ii),(iii),(iv) and (b). Include the plants referred to in IED Article 42(2)(a)(i), when they are not covered by another BREF (e.g. LCP BREF).

## **1.4 Pretreatment of waste before incineration and residues treatment**

There were various views in the initial positions of the TWG members regarding the inclusion or not in the scope of the WI BREF of the pretreatment of waste before incineration and the treatment of residues from incineration.

Since most of the waste pretreatment processes are in the scope of the WT BREF, the EIPPCB proposal was to not cover waste pretreatment before incineration in the WI BREF since this is dealt in the WT BREF. A cross-reference would be made in the WI BREF to the WT BREF.

The EIPPCB proposal was to include under the scope of the WI BREF the treatment of slags and ashes (incinerator bottom ash) (IED Annex I, point 5.3(a)(iv) and 5.3(b)(iii)), but not to include under the scope of the WI BREF the treatment of fly ash and FGT residues. Again, a cross-reference would be made in the WI BREF to the WT BREF.

During the discussion it was pointed out that there could be some waste pretreatment before incineration and fly ashes treatment integrated in the incineration process that were not covered in WT BREF. Another issue raised during the discussion was the control of the incoming waste. The proposal was therefore amended to take these points into account.

### ***Conclusions reached by the TWG for the revised WI BREF***



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- 6) Do not cover waste pretreatment before incineration if it is dealt with in the WT BREF. A cross-reference will be made to the WT BREF. Consider other relevant pretreatment techniques that are specific to the WI sector.
  - 7) Control of the incoming waste is in the scope of the WI BREF.
  - 8) Include under the scope of the WI BREF the treatment of slags and ashes (incinerator bottom ash).
  - 9) Do not include under the scope of the WI BREF the treatment of fly ash and FGT residues. A cross-reference will be made to the WT BREF. Consider other relevant techniques that are specific to the WI sector.

## 1.5 Co-incineration

There were various views in the initial positions of the TWG members on whether or not to include the co-incineration of waste in the scope of the WI BREF.

The EIPPCB proposals were:

- 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, 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.

There was a general agreement on the first and second EIPPCB proposals. On the third proposal, TWG members wanted a more explicit wording on the type of co-incineration plants covered by the WI BREF in order to cover within the scope of the WI BREF those plants mainly dedicated to the incineration of waste, but that may have been classified differently by MS (either as incinerators or co-incinerators).

### *Conclusions reached by the TWG for the revised WI BREF*

- 10) Within the WI BREF, not to make judgements on whether a particular plant or type of plant should be considered an incineration or a co-incineration plant.
- 11) 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, CER).
- 12) 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 co-incinerate mainly municipal and/or commercial waste, and which are not covered by the LCP BREF.

*ES does not support the inclusion of the phrase in brackets in conclusion 12.*

## 1.6 Other issues

One TWG member asked that crematoria be covered in the WI BREF because of the relevance of air emissions of mercury and PCDD/F.

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Crematoria are not in the IED scope and their operation was not considered an issue fitting within the WI BREF by the TWG.

The EIPPCB proposal was to not include crematoria under the WI BREF scope.

Several Member States indicated that they are available to share information on how this issue is regulated in their country but this should not be done using BATIS.

***Conclusions reached by the TWG for the revised WI BREF***

- 13) Do not include crematoria under the WI BREF scope.

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## 2 KEY ENVIRONMENTAL ISSUES

### 2.1 General key environmental issues

The initial positions expressed by TWG members confirmed that the current WI BREF is a well-structured document that already deals with the most important environmental issues for the sector. Some TWG members asked to promote techniques that increase resource efficiency.

The EIPPCB proposals were:

- Not to consider treatment options other than waste incineration in the WI BREF.
- The current version of the WI BREF is a good starting point so the WI BREF review has to be focused on the general update of the information in the current BREF.
- Discuss and agree at the KoM on the list of key environmental issues that the revision of the WI BREF will focus on.

There was a general agreement on the EIPPCB proposals but the participants commented that the last bullet point was redundant.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 14) Do not consider treatment options other than waste incineration in the WI BREF.
- 15) The current version of the WI BREF is a good starting point so the WI BREF review has to be focused on the general update of the information in the current BREF.

### 2.2 Water, energy and resource efficiency

On the issue of water use, the initial positions expressed by the WI TWG members pointed out the need to collect data on water use for air pollutant abatement and to address the recovery of rainwater.

On the issue of energy efficiency, the initial positions expressed by TWG members were wide-ranging; whilst energy efficiency/recovery is recognised as a relevant issue. In general, there are many factors to take into account in order to properly evaluate the quantity of energy recovered by the incineration.

The EIPPCB proposal recognised that energy recovery is a key environmental issue for the WI BREF and decided to cover only those energy efficiency measures specific to waste incineration. The EIPPCB proposed to update the information in the current BREF regarding water consumption without necessarily deriving BAT conclusions or BAT-AEPLs.

During the discussion, TWG members emphasised that, in general, water consumption is not an issue in waste incineration but that the use of water is a cross-media effect and it will be part of the assessment of each technique. On the energy issue, TWG members agreed with the EIPPCB proposal.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 16) The TWG considers that, while water consumption should be taken into account as a cross-media effect of some techniques, it is not a key environmental issue for the WI sector.
- 17) To cover only those energy efficiency measures specific to waste incineration; for general energy efficiency measures, cross-reference can be made to the ENE BREF in the WI BREF.
- 18) 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.

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- 19) To include energy recovery as a key environmental issue for the review of the WI BREF.

## **2.3 Key environmental issues in the context of this WI BREF review**

### **2.3.1 Pollutants for emissions to air**

The initial positions of the TWG confirmed that emissions to air are considered a key environmental issue for the WI sector with most of them asking to consider the pollutants already addressed by the IED, with the possible exception of CO and TOC. Other initial TWG positions asked also to extend the list of pollutants, e.g. PCBs, PAH, greenhouse gases, and NH<sub>3</sub>.

The EIPPCB proposal was to consider as key environmental pollutants for emissions to air all the pollutants listed in IED Chapter IV/Annex VI Part 3 and to also consider ammonia emissions as a key environmental pollutant. The EIPPCB proposed to gather information on PCBs, benzo(a)pyrene, other PAHs, PM<sub>10</sub> and PM<sub>2.5</sub>, but not to focus on emissions of greenhouse gases.

However, since the WI sector has been well regulated for many years (now under IED Chapter IV/Annex VI), and in order to ensure that the WI BREF review process focuses on issues where environmental improvement is most likely to be expected, the Commission asked the participants of the meeting, based on their experience, to share their views on:

- for which pollutants have the techniques to prevent or to reduce emissions evolved in the last ten years, so that this WI BREF review can represent a step forward (in comparison with Chapter IV/Annex VI of the IED) for the environment; and on the other hand,
- for which pollutants the IED provisions are still state-of-the-art and it is not expected that this WI BREF review would bring a significant improvement for the environment.

The views of the participants were wide-ranging, going from very few pollutants should be considered as key environmental issues for this BREF review to all the possible pollutants emitted by waste incineration should be considered as key environmental issues for this BREF review.

In order to help focus this WI BREF review on the issues where a significant environmental improvement can be expected, the EIPPCB proposed to distinguish between three groups of pollutants:

First group: Pollutants that are considered key environmental issues for this BREF review and for which it is expected to derive BAT-AELs, and techniques to prevent and reduce the emissions to air.

Second group: Pollutants that would need further investigation in order to decide if this BREF review will represent a step forward for the environment.

Third group: Pollutants where a significant environmental improvement cannot be expected by this BREF review, and information is needed only for contextual information and for which the BREF review will not come up with BAT-AELs.

There was a very lengthy discussion on this issue, which the TWG clearly considered to be of major importance. While some found merits in the EIPPCB proposal many commented that an extensive data collection was indispensable before deciding which pollutants should be in which group.

In order to improve the consensus reached at the KoM on this important topic for the WI BREF review and to give more time for TWG members to check their data, the Commission invited the TWG for a further exchange via BATIS after the KoM. Further contributions were received from 7 industry associations, EEB and 7 Member States (Austria, Belgium, Germany, Denmark, Italy, Sweden and the UK). The key outcome of the further exchange is that whilst the TWG generally supports the principle of prioritisation of key environmental pollutants, the comments received support the view that this should be done only after the

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data collection; particularly since the data for the pollutants regulated under the IED Annex IV should be readily available. As a result of this further exchange, the following conclusions have been put forward.

**Revised conclusions reached for the revised WI BREF following further exchange of information among the TWG**

- 20) The pollutants listed in IED Chapter IV/Annex VI Part 3 are key environmental pollutants for air emissions.
- 21) In order to focus the review of the WI BREF, to distinguish environmental issues according to the following three categories or groups:
  1. Key environmental issues in the context of this WI BREF review:
    - NO<sub>x</sub>, NH<sub>3</sub>, Hg, PCDD/F.
  2. Potential key environmental issues in the context of this WI BREF review, if demonstrated by the data collection:
    - Dust and metals.
    - PCBs and PAHs including benzo(a)pyrene.
    - SO<sub>2</sub> and HCl.
  3. Issues not initially considered to be a priority in the context of this WI BREF review:
    - HF.
    - TOC and CO.
    - CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O.
    - PM<sub>10</sub> and PM<sub>2.5</sub>.

*This conclusion is not supported by DK, EEB and FEAD.*

- 22) Collect data through questionnaires on the pollutants in the IED (NO<sub>x</sub>, PCDD/F, TOC, dust, Hg, Cd+Tl, Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V, SO<sub>2</sub>, HCl, HF and CO) and in addition for emissions on NH<sub>3</sub>; PCBs and PAHs including BaP.

*This conclusion is not supported by DK.*

- 23) Based on the outcome of the data collection, a review of the above prioritisation of these key environmental pollutants will be made based on the following principles:
  - The potential for the BREF and BAT conclusions to identify techniques that would further, significantly reduce emissions from the pollutant within the WI sector taking into account any cross-media effects.
  - The potential for the BREF to set BAT-AELs that would significantly improve the level of environmental protection for the environment as a whole from the WI sector in comparison with the current performance (which will mainly be driven by the ELVs in Annex VI of the IED).

*This conclusion is not supported by: AT, EEB, FEAD, CEWEP and ESWET.*

- 24) The TWG does not anticipate setting BAT-AELs for those pollutants for which the data collection shows that a BAT-AEL would not significantly improve the current level of environmental protection already provided by the Chapter IV/Annex VI ELVs.

*This conclusion is not supported by: AT and EEB.*

- 25) Where contextual data on PM<sub>10</sub>/PM<sub>2.5</sub>, CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> are provided, this would be used in order to improve the 'Current emissions and consumption levels' chapter of the WI BREF, but it is not expected that BAT-AELs will be set for these parameters.

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*This conclusion is not supported by EEB.*

### **2.3.2 Pollutants for emissions to water**

The initial TWG positions confirmed that emissions to water are not a key environmental issue for the WI sector, but they are important in order to assess the performance of the wet gas cleaning system. There were several requests to gather information on pollutants not listed in IED Annex IV.

The EIPPCB proposal was to collect data only from the water emissions arising from the cleaning of waste gases, syngas and the treatment of slags and bottom ashes for all the parameters listed in IED Annex VI plus other useful parameters in order to assess the performance of the air cleaning system and 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.

In order to focus the review of this BREF, the Commission asked the KoM meeting participants which techniques have been improved in the last ten years and targeting which pollutants. Several comments pointed out the importance of metal emissions as well as TOC emissions. Some TWG members indicated that they would prefer to first collect as much data as possible and then decide the pollutants on which to focus this BREF review.

#### ***Conclusions reached by the TWG for the revised WI BREF***

- 26) Emissions to water (other than cooling water) do not arise in many incineration plants and are therefore generally not a key environmental issue in the WI sector.
- 27) Collect data only on waste water arising from the cleaning of waste gases, syngas and the treatment of slags and bottom ashes, and on the techniques used to treat it, for the following parameters:
  - TSS
  - Metals
  - PCDD/F
  - TOC.

*This conclusion is not supported by: AT, BE, BG, DE, DK, EEB or Orgalime.*

### **2.4 General issues for residues**

Initial positions expressed by the WI TWG members pointed out the need to collect information on slag and bottom ashes characteristics and on the techniques used to recover the valuable components.

The EIPPCB proposals were to collect information on the techniques applied to slag and bottom ashes including techniques to enhance the level of metal recovery and to collect data on the composition and characteristics of residues.

The discussion stressed the importance of the recovery of the metals contained and of the phosphorus in the residues when sewage sludge is incinerated. Discussions on which data need to be collected in order to better characterise the residues also took place.

#### ***Conclusions reached by the TWG for the revised WI BREF***

- 28) To collect information on the techniques used to treat slag and bottom ashes including techniques to enhance in particular the recovery of metals and phosphorus from sewage sludge incineration .

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- 29) To include a cross-reference to the WT BREF regarding the general treatment of fly ashes and flue-gas treatment residues. To collect information on those techniques that are specific and relevant for the WI sector.
  - 30) To collect data on the physical/chemical characteristics of residues, including:
    - on the destruction efficiency and the burnout quality in case of incineration of hazardous waste, independent of the installations where it takes place;
    - for slags and ashes, when applied as a waste recovery operation.

## **2.5 Expression of BAT-AELs and other BAT-AEPLs**

### **2.5.1 Emissions to air**

Most of the positions expressed by TWG members were in favour of having BAT-AELs expressed as a daily average concentration. Very little support was expressed for setting BAT-AELs expressed as a yearly average while a few positions supported half-hourly BAT-AELs.

The EIPPCB proposals were 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. The EIPPCB also proposed to express long-term yearly BAT-AELs preferably in concentrations (where justified). Exceptionally, depending on the information that is gathered on the best available techniques and the environmental performance data available, the EIPPCB could propose to set yearly load BAT-AELs.

There was a general agreement to express BAT-AELs in concentrations as a daily average, while at the same time most of the participants commented that they were not in favour of having yearly BAT-AELs. Most of the participants also asked for alignment with IED Annex VI ELVs, to include half-hourly average BAT-AELs for those pollutants which are continuously monitored. The EIPPCB pointed out that when the waste characteristics change drastically the waste gas cleaning devices may not be able to react as quickly, therefore a half-hourly average is not appropriate in order to represent the performance of the BAT under normal operating conditions. The views of TWG members were not to exclude setting BAT-AELs as a half hourly average, but to include them where practicable and justified.

#### ***Conclusions reached by the TWG for the revised WI BREF***

- 31) To express BAT-AELs in concentrations as a daily average or as an average over the sampling period depending on the availability of continuous monitoring for a given pollutant.
- 32) Subject to the data collection, where practicable and justified, to also express BAT-AELs in concentrations as half-hourly averages for those pollutants monitored continuously.
- 33) To gather information on annual average emissions in order to update Chapter 3 of the WI BREF, but not to express additional long-term average BAT-AELs (with the possible exception of NO<sub>x</sub> and Hg, subject to data collection).

### **2.5.2 Emissions to water**

Most of the positions expressed by TWG members were in favour of having BAT-AELs expressed in concentrations and as a daily average.

The EIPPCB proposal was to use the same basis as that set out in Part 6 of Annex VI to the IED and set short-term BAT-AELs as an average of a flow-proportional representative sample taken over a period of 24 hours.

There was a general agreement on this proposal.

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### *Conclusions reached by the TWG for the revised WI BREF*

- 34) To use the same basis as that set out in Part 6 of Annex VI to the IED and set short-term BAT-AELs as an average of a flow-proportional sample over a period of 24 hours.

#### **2.5.3 Residues**

The initial TWG positions confirmed that an important parameter for the slag and bottom ashes is their TOC content and were in favour of setting a BAT-AEPL. A few other TWG positions asked to also collect data on the metals content.

The EIPPCB proposal was to collect data on the TOC content of slags and bottom ashes and to also 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 slags and bottom ashes prior to their disposal or recycling. Subject to the data collection, the EIPPCB proposal was also 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.

Finally, the EIPPCB proposed 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.

There was a general agreement on the EIPPCB proposal; most of the discussion was focused on the parameters that are needed for the data collection exercise. (EEB)

### *Conclusions reached by the TWG for the revised WI BREF*

- 35) To collect data on the TOC content of slags 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 on whether any pretreatment techniques are applied.
- 36) 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 slags and bottom ashes prior to their disposal or recycling. This will include data on the sampling and monitoring methods applied and their frequency.
- 37) Subject to the data collection, to consider setting BAT-AEPLs for the TOC content in slags and bottom ashes and for the proportion of materials (e.g. metals) that are recovered (e.g. % of residues not requiring disposal, % of phosphorus recovered from sewage sludge incineration).
- 38) 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.
- 39) To establish a TWG subgroup on residues.

### *Information identified or promised to be delivered by the TWG for the revised WI BREF*

- AT, DE, Eurits and ERFO will share their information on the recovery of materials from slags and bottom ashes. FEAD will provide information concerning residues.

#### **2.5.4 Energy efficiency and recovery**

There were initial TWG positions in favour of having BAT-AEPLs dealing with energy (recovery and/or efficiency) and other initial TWG positions not in favour of having them since the quantity of energy that it is possible to recover sometimes depends on factors beyond the control of the plant operator.



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The EIPPCB proposals were:

- To collect data on the energy consumption of incineration plants and to collect data on both the design energy recovery values 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.
- To set BAT-AEPLs based on actual performance, but to consider also setting a BAT-AEPL based on design values for new plants.
- 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 net calorific value, as an annual average.

There was an extensive discussion on this issue, showing how important it is for the WI sector. There was a general agreement on the EIPPCB proposals, but TWG members pointed out the importance of defining a clear system boundary in order to properly address this topic and to compare the data coming from the example plants. The TWG also asked to take into account the specific circumstances of plants burning hazardous waste.

TWG members asked to change the emphasis for BAT-AEPLs for net energy recovery by firstly setting BAT-AEPLs based on the design values for new plants and to consider, if deemed valid and justified, setting BAT-AEPLs for existing plants based on the actual performances.

#### ***Conclusions reached by the TWG for the revised WI BREF***

- 40) To establish a clear system boundary, including e.g. definitions of terms and calculation methods used, necessary to address energy issues before developing the questionnaire for the collection of data.
- 41) To collect data on both the design energy recovery values of the plant and on its actual performance to take into account seasonal and climatic factors; including contextual information on energy demand (e.g. presence of a district heating/cooling network).
- 42) To collect data on the energy consumption of incineration plants (e.g. energy demand and combustion of support fuels).
- 43) To set BAT-AEPLs for the design of new plants to be verified during the performance testing and to consider setting BAT-AEPLs based on actual performance for existing plants.
- 44) To take into account the specific issues of hazardous waste incineration due to its primary function in relation to hazardous waste.
- 45) To establish a TWG subgroup on energy issues.
- 46) To get inspiration from the current work of the LCP BREF on similar issues.

## **2.6 Monitoring and averaging periods**

There were initial TWG positions in favour of having conclusions on monitoring aligned with the IED Annex VI requirements and initial TWG positions pointing out the importance of the continuous monitoring of NH<sub>3</sub> and of Hg and the long-term sampling of PCDD/F.

The EIPPCB proposal was to collect data on the monitoring performed in the EU-28 with all the necessary contextual information.

There was general agreement on the EIPPCB proposal. TWG members pointed out the importance of taking into account the type of waste treated by the plant.

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***Conclusions reached by the TWG for the revised WI BREF***

- 47) To collect information on the monitoring methods used in the WI sector and on the frequency of monitoring, taking into account especially the different types of waste treated.
- 48) To collect such monitoring data from plants performing continuous/discontinuous monitoring and PCDD/F long-term sampling.
- 49) To collect data on the use of continuous monitoring of mercury emissions.
- 50) 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).

## **2.7 Odour and noise**

Few initial positions were expressed by the WI TWG members, most of them expressing the fact that odour and noise are not an important issue for the WI sector.

The EIPPCB proposal was to update the information on the techniques applied in order to reduce noise emissions taking into account the possibility to cross-reference other BREFs and to evaluate the need to update the information on the techniques used to prevent and reduce odour emissions in the WI sector.

The discussion confirmed that these issues are not important for the WI sector.

***Conclusions reached by the TWG for the revised WI BREF***

- 51) Not to actively seek information on odour and noise issues but to update the WI BREF if relevant information is provided.

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## 3 DATA/INFORMATION COLLECTION

### 3.1 Data collection – Interactions with IED Chapter IV

Initial positions expressed by the WI TWG members pointed out the need to clarify prior to the start of the WI BREF revision the interrelationships of certain provisions in IED Chapters I, II and IV.

The EIPPCB proposal was not to collect information from plants authorised to work under operating conditions different to those set by IED Article 50. The EIPPCB also proposed to collect information on other than normal operating conditions in line with the provisions of IED Chapters I and II.

In order to take into account the different interpretations of IED Article 50, most of the participants pointed out the need to include in the data collection plants operating under different conditions. On the issue of NOC and OTNOC, the positions expressed by the participants varied, with a number of them wishing to see the definitions of NOC and OTNOC aligned with the effective operating time as referred to in IED Annex VI.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 52) Not to exclude from the data collection those plants that operate under an IED Article 51 derogation, but to collect data on the derogations granted so this can be taken into account in the data analysis
- 53) Information on if a plant is an existing waste incineration plant or a new one, according with the IED Annex VI definition, can be collected through the questionnaire.
- 54) Reference conditions for the reporting of the data will be those for waste incineration plants, as described in Section 1, Part 3 of Annex VI to the IED.
- 55) To establish a TWG subgroup on data collection and questionnaire development.
- 56) With a view to facilitating the comparison of data, this subgroup will meet in advance of the data collection to discuss what are considered to be normal operating conditions (NOC) and other than normal operating conditions (OTNOC).
- 57) To this end, TWG members will submit and discuss a list of other than normal operating conditions, with the goal being to derive BAT conclusions that are useful for operators and permitting.
- 58) 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.

#### *Information identified or promised to be delivered by the TWG for the revised WI BREF*

- Information to facilitate the discussion about NOC and OTNOC will be made available by ESWET/CEWEP.

### 3.2 Questionnaire development and data collection

The aim of the questionnaire is to collect sufficiently representative data and contextual information to be able to derive sound BAT conclusions.

Initial positions expressed by the WI TWG members were mainly related to the importance of the quality and comparability of the data collected.

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The EIPPCB also proposed to develop a common questionnaire template to collect data in all sectors covered by the WI BREF scope according to the type of waste incinerated and for the key environmental issues for this BREF review. The reference installations should fulfil minimum criteria so that representative, reliable, real-life data can be collected.

In order to ensure the quality, completeness and consistency of the data provided via the completed questionnaires, and to ensure an appropriate management of valid confidentiality issues, the EIPPCB proposed that the Members States check the filled-in questionnaires before posting them onto BATIS, after the confidential part has been extracted when justified and sent separately to the EIPPCB.

During the discussion it was agreed that the EIPPCB will provide a draft questionnaire template for discussion and a related subgroup will be established for its finalisation. There was discussion on how to identify the good and best performing plants and on what constitutes a reasonable and manageable number of plants for the data collection purpose.

It was decided that the TWG will initially propose a list of environmentally well-performing plants/installations taking into account, for instance, the environmental performance levels of the current WI BREF.

Regarding the reference year for the data collection, in view of the availability of data, it was agreed to use 2014.

Industrial representatives asked that the method to derive BAT-AE(P)Ls be defined before designing the questionnaire. The EIPPCB remarked that BAT-AE(P)Ls are representative of the performance of the BAT and cannot be derived using a statistical approach. At the beginning of the KoM, the EIPPCB gave a presentation in order to clarify how the BAT-AE(P)Ls are set in accordance with the BREF Guidance (2012/119/EU).

### ***Conclusions reached by the TWG for the revised WI BREF***

- 59) TWG to collect data using a common questionnaire template.
- 60) TWG to collect data in all sectors covered by the BREF scope as agreed in the KoM conclusions numbers 1 to 12, and to include those key environmental issues agreed in conclusions numbers 22, 27 and 36 in the questionnaire template (EEB).
- 61) TWG to collect representative, reliable, comparable real-life data, at least at installation level, from a manageable number of installations that as a minimum fulfil the following criteria:
  - are representative of the sector as a good environmental performer, including best performers; (e.g. meeting the environmental performance levels of the current WI BREF).
  - are representative of the sector in terms of waste incinerated, processes and techniques used, geographical location when climate conditions are relevant;
  - include preferably both recent and less recent installations and plants;
  - include preferably both small and large incineration capacity installations.
- 62) To set 2014 as the reference year for the data collection (additional years can be allowed if needed).
- 63) The EIPPCB will provide a draft questionnaire template on BATIS that will be discussed and further developed by the ad hoc TWG subgroup.
- 64) The final draft questionnaire template should be tested by a small number of installations.
- 65) TWG to propose 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 for this purpose.

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- 66) Member State representatives to collect the filled-in questionnaires from operators and to check the quality of the data and information before posting them on BATIS;
  - 67) The quality check implies that the Member State representatives:
    - will ensure the 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.

#### *TWG tasks*

- The EIPPCB will provide a template for the TWG to propose a list of environmentally well-performing plants/installations which will finally be agreed by the TWG.
- The TWG members will post onto BATIS the filled-in list templates.
- The EIPPCB will provide a draft questionnaire template on BATIS that will be discussed and further developed by a TWG subgroup.
- The EIPPCB will post onto BATIS the mandate for the questionnaire development subgroup.

### **3.3 Techniques to consider in the determination of BAT and emerging techniques**

The initial positions expressed by the WI TWG members highlighted the development of the techniques applied in the WI sector for the reduction of its emissions in the last ten years. Some initial positions also highlighted the need to assess the technical considerations relevant to applicability based on plants operating in different Member States.

The EIPPCB proposal was to ask TWG members to identify and submit information on recent developments in techniques, to critically check whether the emerging techniques mentioned in the current BREF still match the IED definition of 'emerging technique' or could be considered a 'technique to consider in the determination of BAT' or if they should instead be deleted from the BREF. The EIPPCB proposed to take into consideration the initial positions of the TWG members on techniques during the writing of the revised WI BREF Draft 1.

During the discussion, the importance of collecting information on candidate BAT and on emerging techniques in order to appropriately update the relevant chapters of the WI BREF was agreed on.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 68) The EIPPCB will work proactively with the TWG members to identify and submit information on techniques (both in process and end-of-pipe) which meet the definition of candidate or emerging techniques given in the IED and the BREF Guidance (2012/119/EU), following the 10-heading structure of the BREF Guidance Section 2.3.7.
- 69) A consequence of this is that techniques which do not meet the definition of candidate or emerging techniques given in the IED and the BREF Guidance will not be included in the descriptions of candidate BAT or emerging techniques.
- 70) 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 deletion of obsolete techniques.
- 71) 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.

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- 72) A proposal for a template for collecting information on candidate BAT and on emerging techniques will be posted on BATIS.
  - 73) Judgements on emerging techniques should be made in parallel with updating the information on techniques to consider and BAT.

***Information identified or promised to be delivered by the TWG for the revised WI BREF***

- IT and EuLA to submit information on new techniques.

***TWG tasks***

- The EIPPCB will post on BATIS a template for collecting information on candidate BAT and on emerging techniques.
- TWG members will post the filled-in template on techniques onto BATIS.

### **3.4 Cross-media effects and economic viability**

The initial positions expressed by the WI TWG members underlined the need to collect economic information and include potential cross-media effects for each candidate BAT. The EIPPCB proposal was in line with these requests.

During the discussion, it was highlighted that the EIPPCB proposal was already included in the BREF Guidance and so there was no need to repeat it.

***Conclusions reached by the TWG for the revised WI BREF***

- 74) Delete the EIPPCB proposal and stick to what is already contained in the BREF Guidance.

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## 4 STRUCTURE

### 4.1 BREF structure

The initial positions expressed by the WI TWG members confirmed that the structure of the current WI BREF is a good one and does not need to be radically changed. There were also initial positions pointing out the necessity to add sections on pyrolysis, gasification and plasma plants.

The EIPPCB proposal was to keep the same structure as the current WI BREF, and review the appropriateness of the subheadings and to include distinct sections on pyrolysis, gasification and plasma processes.

There was an agreement that the structure of the current BREF should be kept and that the decision on the inclusion of distinct sections on pyrolysis, gasification and plasma processes can only be made after, as agreed when discussing the scope issues, considering the number of plants operating in EU-28.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 75) To keep the same structure as the current WI BREF, and review the appropriateness of the subheadings.
- 76) To include, subject to KoM conclusion number 4, distinct sections on pyrolysis, gasification and plasma processes within the sections on thermal treatment, energy recovery, flue-gas treatment and solid residues.

### 4.2 BAT conclusions structure

The initial positions expressed by the WI TWG members on the BAT conclusions structure were wide-ranging:

- BAT conclusions should include separate requirements for the different nature of the waste processed.
- BAT conclusions should include separate sections for pyrolysis, gasification and plasma plants.
- WI BAT conclusions should be harmonised with LCP BAT conclusions.

The EIPPCB proposal was to have, where possible, BAT conclusions be identified for the whole of the WI sector with additional conclusions (where appropriate) based on the nature of the waste processed and not to propose BAT conclusions on those matters that are within the realm of public policymaking.

There was general agreement with the EIPPCB proposal but here again it was decided not to conclude on topics already dealt by the BREF Guidance.

#### *Conclusions reached by the TWG for the revised WI BREF*

- 77) To have a similar structure to the current WI BREF for the BAT conclusions, i.e. that where possible BAT conclusions be identified for the whole of the WI sector with additional conclusions (where appropriate) based on the nature of the waste processed.
- 78) Based on the nature of the waste processed, further subdivision(s) could be made on the basis of the data collected, if deemed necessary.

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## 5 FORWARD PLANNING FOR THE WI BREF REVIEW AFTER THE KICK-OFF MEETING

The WI TWG agreed at the Kick-off Meeting on the following forward planning.

<b>BREF review milestones</b>	<b>Tentative deadline</b>
EIPPCB drafts the mandate for the subgroups	February 2015
EIPPCB provides a preliminary draft questionnaire template	May 2015
Submission of additional information (BAT template)	31 August 2015
TWG members submit to the EIPPCB a list of well-performing installations/plants participating in the data collection	30 September 2015*
Release of questionnaire for the data collection	November 2015
Deadline for collection of data via main questionnaire	February 2016
<b>First draft of the revised WI BREF</b>	<b>December 2016</b>
Commenting period on the first draft	March 2017
Final TWG meeting	December 2017
Final draft delivered to the IED Article 13 Forum	May 2018
* At the WI BREF review kick-off meeting May 2015 was agreed on. However, due to the pending decision on how to properly address pyrolysis, gasification and plasma plants and on gaseous waste plants, the EIPPCB has proposed to postpone this deadline.	