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## **Cover note to the GUIDANCE DOCUMENT**

### **Purpose of this document**

In accordance with Article 13(1) of the Industrial Emissions Directive (IED)<sup>(1)</sup>, the European Commission organises an exchange of information between itself, Member States, the industries concerned, and non-governmental organisations promoting environmental protection in order to draw up, review and, where necessary, update BAT reference documents (BREFs).

According to Article 13(3) of the IED, the Commission shall obtain the opinion of a forum composed of representatives of Member States, the industries concerned and non-governmental organisations promoting environmental protection on the practical arrangements for the exchange of information and, in particular, on the following:

- (c) guidance on the collection of data;
- (d) guidance on the drawing up of BAT reference documents and on their quality assurance including the suitability of their content and format.

This draft document contains the aforementioned guidance referred to in Article 13(3)(c) and (d) of the IED, which is submitted to the IED Article 13 Forum to provide its opinion.

This paper builds largely on the various guidance documents that were developed within the framework for the implementation of Directive 2008/1/EC concerning integrated pollution prevention and control (the IPPC Directive) that has been replaced by the IED, namely:

- BREF Outline and Guide (dated 2005);
- Generic schedule for the reviews of BREFs (IEF 22-4-3, dated April 2010);
- Strategy to review the chemical BREFs (dated March 2007);
- Guidance document on improving the collection and submission of data for the review of the BREFs (IEF 20-4, dated June 2008);
- Participation of 'equipment suppliers' in the 'Sevilla Process' (IEF 19-6, dated March 2007).

The document has been developed further in 2011 by the Commission, in close cooperation with the Members of the IED Article 13 Forum and, in particular, with a multi-stakeholder

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<sup>(1)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast), OJ L 334/17 of 17.12.2010.

subgroup of experts thereof. Meetings of the subgroup to discuss draft versions of the document took place on 8 March and 2 May 2011.

The terms used in this document do not constitute legal interpretations of the same terms used in the Industrial Emissions Directive.

# **GUIDANCE DOCUMENT**

**on**

**the practical arrangements for the exchange of  
information under the Industrial Emissions Directive  
(2010/75/EU),**

**including the collection of data, the drawing up of best  
available techniques reference documents and their  
quality assurance**

as referred to in Article 13(3)(c) and (d) of the Directive

# TABLE OF CONTENTS

<b>GUIDANCE DOCUMENT .....</b>	<b>1</b>
<b>TABLE OF CONTENTS.....</b>	<b>2</b>
<b>INTRODUCTION.....</b>	<b>5</b>
<b>1 AIM AND GENERAL PROCEDURE FOR DRAWING UP AND REVIEWING A BAT REFERENCE DOCUMENT (BREF).....</b>	<b>5</b>
1.1 General context.....	5
1.1.1 What a BREF is and its aim.....	5
1.1.2 'Horizontal' and 'vertical' BREFs .....	6
1.1.3 General procedure for the drawing up and reviewing of BREFs .....	6
1.1.4 General procedure for the drawing up of a BREF .....	7
1.1.5 Aim and general procedure for the review of a new BREF .....	7
1.1.6 Objective of a BREF review .....	7
1.2 Typical workflow for the drawing up and reviewing of BREFs .....	8
1.3 Opinion of the IED Article 13 Forum .....	11
1.4 Adoption of the BAT conclusions and publication of the BREF.....	11
<b>2 BREF CONTENTS AND SCOPE.....</b>	<b>13</b>
2.1 Introduction.....	13
2.2 BREF structure.....	13
2.3 BREF content.....	13
2.3.1 General information on the BREF content.....	14
2.3.2 Preface .....	14
2.3.3 Scope.....	14
2.3.4 General information .....	14
2.3.5 Applied processes and techniques.....	14
2.3.6 Current emission and consumption levels.....	15
2.3.7 Techniques to consider in the determination of BAT .....	15
2.3.7.1 General information on techniques to consider in the determination of BAT.....	15
2.3.7.2 Information provided on each technique.....	16
2.3.7.2.1 Description .....	17
2.3.7.2.2 Technical description .....	17
2.3.7.2.3 Achieved environmental benefits.....	17
2.3.7.2.4 Environmental performance and operational data.....	17
2.3.7.2.5 Cross-media effects.....	18
2.3.7.2.6 Technical considerations relevant to applicability .....	18
2.3.7.2.7 Economics.....	18
2.3.7.2.8 Driving force for implementation.....	19
2.3.7.2.9 Example plants.....	19
2.3.7.2.10 Reference literature .....	19
2.3.8 Best available techniques (BAT) conclusions.....	19
2.3.9 Emerging techniques.....	20
2.3.10 Concluding remarks and recommendations for future work.....	20
2.3.11 References.....	21
2.3.12 Glossary of terms and abbreviations .....	21
2.3.13 Annexes .....	21
<b>3 BAT CONCLUSIONS.....</b>	<b>22</b>
3.1 Introduction.....	22
3.2 Elements in an individual BAT conclusion.....	22
3.2.1 General.....	22
3.2.2 Description of techniques .....	23
3.2.3 Information to assess the applicability of techniques.....	23
3.3 Individual BAT conclusions with associated environmental performance levels .....	23
3.3.1 Individual BAT conclusions with associated emission levels.....	24
3.3.2 Individual BAT conclusions with associated environmental performance levels other than emission levels .....	25
3.4 Individual BAT conclusions without BAT-associated environmental performance levels.....	26
<b>4 ORGANISATION OF THE EXCHANGE OF INFORMATION.....</b>	<b>27</b>
4.1 Introduction.....	27
4.2 The role of the IED Article 75 committee.....	27

4.3	The role of the IED Article 13 Forum .....	27
4.4	The role of the technical working groups (TWGs).....	28
4.4.1	Establishment of TWGs .....	28
4.4.2	TWG responsibilities and tasks .....	28
4.4.3	TWG subgroups .....	29
4.4.4	Site visits .....	30
4.4.5	Involvement of equipment suppliers in the exchange of information .....	30
4.5	The role of the EIPPCB.....	30
4.6	Milestones in the information exchange.....	31
4.6.1	Establishment of the 'wish list' .....	31
4.6.2	TWG meetings .....	32
4.6.2.1	General .....	32
4.6.2.2	Kick-off meeting .....	32
4.6.2.3	Final TWG meeting.....	33
4.6.2.3.1	General .....	33
4.6.2.3.2	Split views .....	34
4.6.3	First round of data collection following the kick-off meeting.....	34
4.6.4	Requests for additional information .....	34
4.6.5	BREF working documents and formal drafts .....	35
4.6.5.1	Formal drafts .....	35
4.6.5.2	Working drafts.....	35
4.6.6	Commenting on formal drafts of the BREFs.....	35
4.7	Information exchange tools .....	36
4.7.1	BAT information system (BATIS).....	36
4.7.2	EIPPCB website .....	37
4.8	Security of personal data .....	37
<b>5</b>	<b>DATA COLLECTION AND SUBMISSION.....</b>	<b>38</b>
5.1	Introduction .....	38
5.2	General principles for collecting and submitting data for the drawing up and reviewing of BREFs .....	38
5.2.1	Type of data.....	38
5.2.2	Format of data .....	39
5.2.3	Quality of data.....	39
5.3	Confidentiality issues .....	39
5.4	Environmental performance and operational data needed for the BREF chapters entitled 'Techniques to Consider in the Determination of BAT' and 'BAT Conclusions' .....	40
5.4.1	General information on environmental performance and operational data .....	40
5.4.2	Consumption .....	40
5.4.2.1	General information on consumption .....	40
5.4.2.2	Consumption of raw and auxiliary materials/feedstocks .....	40
5.4.2.3	Water use.....	41
5.4.2.4	Energy use .....	41
5.4.3	Emissions to water.....	42
5.4.4	Air emissions.....	43
5.4.5	Residues/waste .....	43
5.4.6	Other information .....	43
5.4.7	Reference information that must accompany emission data.....	44
5.4.7.1	General .....	44
5.4.7.2	Monitoring.....	44
5.4.7.3	Averages, ranges and distributions of emission values .....	45
5.5	Specific issues under the remit of each technical working group.....	45
<b>6</b>	<b>QUALITY ASSURANCE OF THE DRAWING UP AND REVIEWING OF THE BREFS ....</b>	<b>47</b>
	<b>GLOSSARY OF TERMS AND ABBREVIATIONS.....</b>	<b>48</b>
	<b>ANNEXES.....</b>	<b>49</b>
	Annex 1: Data quality rating system.....	50
	Annex 2: Typical workflow for the drawing up and reviewing of BREFs .....	51
	Annex 3: Legal provisions related to public access to environmental information .....	52



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## INTRODUCTION

This document constitutes the guidance on the practical arrangements for the exchange of information as referred to in Article 13(3), points (c) and (d) of the Industrial Emissions Directive (IED)<sup>(2)</sup> on the following issues:

- the collection of data,
- the drawing up of BAT reference documents (BREFs) and their quality assurance including the suitability of their content and format.

This document builds upon the important work of Don Litten, previous Head of the European IPPC Bureau (EIPPCB), who pioneered the development of the BREF elaboration process, but sadly passed away on 18 September 2009.

## 1 AIM AND GENERAL PROCEDURE FOR DRAWING UP AND REVIEWING A BAT REFERENCE DOCUMENT (BREF)

### 1.1 General context

#### 1.1.1 What a BREF is and its aim

Article 13(1) of the IED requires the Commission to organise an exchange of information between it and Member States, the industries concerned and non-governmental organisations promoting environmental protection in order to draw up, review and, where necessary, update BAT reference documents.

According to Article 13(2) of the IED, this exchange of information shall, in particular, address the following:

- a. the performance of installations and techniques in terms of emissions, expressed as short- and long-term averages, where appropriate, and the associated reference conditions, consumption and nature of raw materials, water consumption, use of energy and generation of waste;
- b. the techniques used, associated monitoring, cross-media effects, economic and technical viability and developments therein;
- c. best available techniques and emerging techniques identified after considering the issues mentioned in points (a) and (b).

A **best available techniques (BAT) reference document (BREF)**, resulting from this exchange of information, is defined in Article 3(11) of the IED. It is a document drawn up for defined activities describing, in particular, applied techniques, present emission and consumption levels, techniques considered for the determination of BAT as well as BAT conclusions and any emerging techniques, giving special consideration to the criteria listed in Annex III of the IED. Therefore, by definition, a BREF is a descriptive document and it does not prescribe the use of any technique or specific technology, nor does it interpret the IED.

**Best available techniques (BAT)** are defined in Article 3(10) of the IED as the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other

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<sup>(2)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast), OJ L 334/17 of 17.12.2010.

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permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole.

- a. 'Techniques' includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.
- b. 'Available techniques' means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator.
- c. 'Best' means most effective in achieving a high general level of protection of the environment as a whole.

Article 3(12) of the IED also defines '**BAT conclusions**' as the parts of a BREF laying down the conclusions on BAT, their description, information to assess their applicability, the emission levels associated with the BAT, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures. The BAT conclusions are to be adopted through the procedure referred to in Article 75(2) of the IED (implementing acts). They shall be the reference for setting permit conditions for the installations covered by the IED (Article 14(3)).

As mentioned in Recital 13 of the IED, the main aim of a BREF is to determine BAT, and to limit imbalances in the Union as regards the level of emissions from industrial activities. BREFs should provide information to the competent authorities of Member States, industrial operators, the Commission and the public at large on what BAT and emerging techniques are for the activities covered by the IED. The process of determining BAT and emerging techniques should be transparent and objective, based on sound technical and economic information. A BREF should also serve as a driver towards improved environmental performance across the European Union.

To serve its main purpose and ensure its user-friendliness, the content of the BREF should be limited to the relevant information for enabling the determination of BAT (and the associated environmental performance levels, see Section 1) and emerging techniques in the context of implementing the IED. A BREF is not meant to be a textbook on techniques to prevent and control pollution. Extensive literature exists on the subject to which the BREF can refer where needed. However, it is essential that the BREF provide information on the main techniques that were considered by the technical working group (TWG, see Section 4.4) for the determination of BAT, and on the grounds for the BAT conclusions reached by the TWG.

### **1.1.2 'Horizontal' and 'vertical' BREFs**

BREFs may either be restricted to issues related to particular industrial activities ('vertical' BREFs) or may deal with cross-sectoral issues ('horizontal' BREFs), such as monitoring, economics and cross-media effects, industrial cooling systems, emissions from storage, common waste water and waste gas treatment/management systems in the chemical sector and energy efficiency.

'Horizontal' and 'vertical' BREFs should be developed so as to be complementary for the purpose of setting permit conditions for installations covered by the IED. The 'horizontal' BREFs include information of a generic nature that can be used across many activities which fall under the scope of the IED. Information should be included in 'horizontal' BREFs where this supplements the information contained in 'vertical' BREFs on aspects that cut across several industrial sectors. In order to facilitate the use of both 'vertical' and 'horizontal' BREFs in a complementary way, appropriate cross-references need to be made in a BREF to other relevant 'vertical' and 'horizontal' BREFs.

### **1.1.3 General procedure for the drawing up and reviewing of BREFs**

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The Commission organises and coordinates the exchange of information through the involvement of the European IPPC Bureau (EIPPCB, within DG Joint Research Centre) and DG Environment. The stakeholders involved in the exchange of information as stipulated in Article 13(1) of the IED (Member States, industries concerned, environmental NGOs, and the Commission) oversee the process through the Forum established according to IED Article 13(3). They contribute to the drawing up and reviewing of BREFs by participating in the technical working groups (TWGs). More information on the role of the stakeholders and the functioning of the Forum and the TWGs is given in Section 4.

The decision to draw up a BREF or to start reviewing a BREF is taken by the Commission. In accordance with Article 13(3)(b), it takes into account the opinion of the Forum on the work programme for the exchange of information.

#### **1.1.4 General procedure for the drawing up of a BREF**

Since the IED covers some new activities in its Annex I compared with Annex I of the IPPC Directive 2008/1/EC, new BREFs need to be drawn up.

The workflow for the drawing up of a new BREF presents many similarities with the workflow for the review of a BREF described in Section 1.2. The main differences are that for newly drafted BREFs 'wishes' (see Section 4.6) may not be required, that the collection of more information is needed and that two formal drafts of the BREF are generally expected before holding the final TWG meeting.

#### **1.1.5 Aim and general procedure for the review of a new BREF**

The reviewing of BREFs is a continuing process, due to the dynamic nature of BAT. For example, new measures and techniques may emerge, science and technologies are continuously developing, and new or emerging processes are being successfully introduced into the industry. In order to reflect such changes and their consequences for the BAT, BREFs have to be periodically reviewed and, if necessary, updated accordingly. This is explicitly addressed by recital 13 of the IED, which indicates that the Commission should aim to update the BREFs no later than eight years after the publication of the previous version.

The decision to review a BREF should take into account information in the 'Emerging Techniques' chapter and 'Concluding Remarks and Recommendations for Future Work' section of the BREF (see Section 2.2) together with other factors such as an indication that new techniques might be available, the need to expand the scope of the BREF, and the need to include products/substances or processes that were not yet covered.

#### **1.1.6 Objective of a BREF review**

The objective of a BREF review is to identify evolutions in BAT. This is achieved primarily by examining the parts of the BREF laying down the conclusions on BAT and by revising or updating those conclusions where new information is available that allows for doing so.

The review of a BREF is, therefore, not expected to involve a complete rewrite or modification of the whole BREF. It is, however, recognised that in some cases the first reviews of BREFs could involve substantially more modifications than subsequent reviews.

Clearly, the most relevant new information that needs to be identified, collected and submitted in the framework of the exchange of information for a BREF review is that which might lead to revised or updated BAT conclusions. For this purpose, it is crucial that data be collected on the basis of the guidance laid down in Section 1 of this document.

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Additionally, the review of a BREF should include:

- updating and complementing old background information on the basis of more recent data;
- removing obsolete and outdated information;
- correcting errors and removing any inconsistencies with other BREFs.

The review of a BREF will focus on the chapters entitled 'Techniques to Consider in the Determination of BAT', 'Best Available Techniques (BAT) Conclusions' and 'Emerging Techniques'. The review of the other chapters of the BREF should be given a lower priority.

Overall, there is a need to ensure that all the information that remains within the BREF is as up-to-date, as consistent and as accurate as reasonably achievable.

## 1.2 Typical workflow for the drawing up and reviewing of BREFs

The typical workflow for the drawing up and reviewing of BREFs (see Annex 2) includes as major milestones a kick-off meeting, one or two formal drafts of the BREF and a final TWG meeting (see Section 4.6.2.3). Depending on the type of process (drawing up or reviewing of a BREF), the following variants of the workflow exist:

- a. for a new BREF, or a BREF review with a major scope expansion, two formal drafts are generally considered necessary; the overall process in these cases should take between 30 and 38 months;
- b. for the first review of a BREF without a major scope expansion two formal drafts may be necessary, although as a general rule one formal draft of the BREF is expected to be sufficient; and hence the process will generally take between 23 and 28 months (in the case of one formal draft or between 28 and 38 months in the case of two formal drafts);
- c. for subsequent reviews of a BREF without a major scope expansion, one formal draft is expected to be sufficient and the process should take between 23 and 28 months.

These workflow variants are reference points for the TWGs. They can be adapted to the specifics of particular BREF, also taking into account the experience gained from the drawing up and reviewing of other BREFs. The main steps for the drawing up and reviewing of BREFs and their timescales are described in more detail in Table 1.

These steps take into account the aim set out in recital 13 of the IED that BREFs should be updated no later than eight years after the publication of the previous version.

The timescales indicated above should be taken as representative of a typical 'vertical' BREF (see Section 1.1.2).

The exact steps and timing of the work for each BREF will depend on a number of factors, including the scope of the BREF (and the possible extension of the scope in the case of BREF reviews), the number and complexity of topics that need to be addressed, the resources of the EIPPCB (given its central role in the information exchange process) and, above all, the level of active and effective participation of the TWG. The flexibility that exists to adapt the workflow to the specifics of a particular BREF applies without prejudice to the overall objective to complete the work within the time limits indicated above.

It is expected that, in principle, two plenary TWG meetings will be held during the course of a BREF review (the kick-off meeting and the final meeting, see Section 4.6.2). However, in certain exceptional cases (e.g. where a lot of new information has been provided, or when the determination of BAT is particularly controversial), an additional plenary TWG meeting may be held. In addition to these plenary TWG meetings, subgroup meetings can be organised to facilitate the work (see Section 4.4.3).

Also, it is expected that, in principle, one formal draft will be published before a final plenary TWG meeting (see Section 4.6.2.3), except in the case of a new BREF, or a particularly complex review, including, for example, a review with a major scope expansion, where a second formal draft is necessary. In addition to this (these) formal draft(s), working drafts may be distributed to facilitate the work (see Section 4.6.5).

In order to make the most efficient use of resources from all those involved in the drawing up or reviewing of a BREF, there needs to be a clear cut-off point for submission of the bulk of information promised or identified in the conclusions of the kick-off meeting (see Section 4.6.2.2). Information submitted after this deadline will be accepted only in exceptional circumstances and will only be taken into account by the EIPPCB when it contributes substantially to deriving or updating conclusions on BAT.

Should it be necessary, the EIPPCB will submit requests for additional information (RAI) to the TWG in order to collect any important missing information that is considered necessary in particular for deriving BAT conclusions according to the guidance laid down in Chapters 1 and 1 of this document (see Section 4.6.4).

**Table 1: Main steps for the drawing up and reviewing of a BREF**

Step No.	BREF review step	Expected step time (months)	Accumulated time (months)	Comments
0	Preparation for the review			After finalising a BREF, the EIPPCB maintains the BATIS forum for this BREF (see Section 4.7.1), in particular as regards follow-up actions to the recommendations for future work made in the BREF (see Section 2.3.10) and in view of the future review of the BREF. BATIS should serve as a forum for discussion and exchange of information in support of the next review process.
1	TWG (re)activation and call for wishes	2	2	The EIPPCB (re)activates the TWG (calling for confirmation of membership and contact details). In the case of a BREF review, the EIPPCB asks TWG members to submit their wishes regarding information they would like considered during the review process or modifications/corrections they wish to see introduced into the existing text (see Section 4.6.1).
2	Kick-off meeting	3	5	In the case of a BREF review, the EIPPCB structures and establishes a consolidated list of wishes and, if necessary, develops standard templates for each issue on the wish list, for the TWG to provide information in a structured, efficient and directly usable way.  The EIPPCB calls a meeting (see Section 4.6.2.2) of the TWG in order to clarify the process, to discuss the wish list (in the case of a BREF review), to agree on the scope of the review and to agree on the data to be collected and its format based on the guidance on data collection (see Chapter 4).

3	New information (deadline)	6	11	<p>The TWG collects and submits the information promised or identified in the conclusions of the kick-off meeting. Information readily available is submitted to the EIPPCB without delay so that drafting can start as soon as possible after the kick-off meeting.</p> <p>During this period, the EIPPCB can:</p> <ul style="list-style-type: none"> <li>• participate in site visits, which might be agreed at or after the kick-off meeting (see Section 4.6.2.2);</li> <li>• research information;</li> <li>• start drafting using the available information submitted early.</li> </ul> <p>The information submitted by members of the TWG and collected by the EIPPCB is shared with the TWG members in 'real time' via BATIS (see Section 4.7.1). The TWG members can comment on the submitted information.</p>
4	Elaboration of the first formal draft	4 – 6	15 – 17	<p>The EIPPCB produces a first formal draft of the BREF (or of the revised parts of the BREF in the case of a BREF review) for formal consultation of the TWG (see Sections 2.2, 4.6.5.1 and 4.6.6).</p> <p>It is expected that the information submitted during the consultation period will normally provide the background needed to achieve a high degree of consensus on the chapter entitled 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7), whereby the chapter entitled 'BAT conclusions' (see Section 2.3.8) will be included in the first formal draft of a BREF review.</p>
5	TWG comments	2 – 3	17 – 20	<p>The TWG comments on the draft are to be received within two months. When consultation is foreseen over the summer or year-end holidays then the period of consultation may be extended to three months maximum.</p>
6	Elaboration of the second formal draft (optional)	3 – 7	[20 – 27]	<p>The EIPPCB takes into account the comments and the submitted information and produces a second formal draft containing at least an updated version of the chapter entitled 'BAT Conclusions' and the latest version of the chapters entitled 'Current Emission and Consumption Levels' (see Section 2.3.6) and 'Techniques to Consider in the Determination of Bat' (see Section 2.3.7).</p>
7	TWG comments (optional)	2 – 3	[22 – 30]	<p>The second formal draft is issued for formal consultation for TWG comments to be received within two months. When consultation is foreseen over the summer or year-end holidays, the period of consultation may be extended to three months maximum.</p>
8	Final meeting	3 – 5	20 – 25 [25 – 35]	<p>The EIPPCB analyses the comments and prepares for a final TWG meeting. The EIPPCB elaborates a background paper including at least an assessment of the 'major' comments received (see Section 4.6.6), and provides at least the latest version of the chapters entitled 'Current Emission and Consumption Levels' (see Section 2.3.6), 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7) and 'BAT Conclusions' (see Section 2.3.8).</p> <p>This final TWG meeting seeks consensus for a final draft (see Section 4.6.2.3).</p>

9	Final draft	3	23 – 28 [28 – 38]	<p>The final draft is produced for a short commenting period to the TWG that should focus on the changes made as a result of the final meeting's conclusions. The EIPPCB ensures that feedback is given to the TWG on how these comments have been taken into account.</p> <p>The updated final draft and the assessment of the final comments received are made available to the Forum at least eight weeks before the Forum meeting.</p>
10	Presentation at a Forum meeting			<p>The updated final draft is presented to the Forum, which is asked to provide its opinion on the document (see Section 1.3).</p> <p>The Commission makes the opinion of the Forum publicly available.</p>
NB: The timing between square brackets refers to cases when two formal drafts are distributed.				

In order to increase efficiency in the preparation of work, the EIPPCB will inform the Forum (see Section 4.3) as much in advance as is reasonably possible of the dates/periods a TWG is expected to be reactivated or set up. In the same way, the EIPPCB will inform TWG members of the next steps and possible deadlines.

### 1.3 Opinion of the IED Article 13 Forum

Following the finalisation of the work within the TWG, the updated final draft of a BREF will be sent to the Forum established under Article 13 of the IED (see Section 4.3), which will be asked to provide its opinion on the document. The document will be discussed during a meeting of the Forum. Members of the Forum will be asked to submit all of their comments on the draft final version of the BREF in writing in advance of the meeting.

The Forum may address, *inter alia*:

- issues raised in the TWG for which the dissenting view of the TWG member concerned is not accurately reflected in the final draft text;
- proposals to remove or modify an opposing view expressed by their own TWG representative on the basis that the latter has not followed the principles of the information exchange as laid down in this document;
- clarification of text, which is unclear due to clumsy English language used in the final draft;
- textual revisions that reflect more accurately the conclusion reached by the TWG;
- corrections of typographic errors in the final draft;
- proposals to bring important issues, which are already reported within the body of the BREF, to the 'Concluding remarks and recommendations for future work' section (see Section 2.3.10).

In accordance with Article 13(4) of the IED, the Commission will make the opinion of the Forum on the proposed content of the BREF publicly available and will take it into account for the procedures for the adoption of decisions on the BAT conclusions and in the final published BREF.

### 1.4 Adoption of the BAT conclusions and publication of the BREF

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The draft decision on the BAT conclusions (see Section 2.3.8 and Chapter 1) will be submitted by the Commission to the IED Article 75 committee for delivering its opinion in accordance with the procedure referred to in Article 75(2) of the IED (see Section 4.1).

After the adoption of the decision on the 'BAT conclusions', the EIPPCB will modify, if necessary, the BREF according to the adopted decision on the BAT conclusions and, without delay, will make the English version of the final BREF publicly available. The decisions on the BAT conclusions will be published in the Official Journal in the official languages of the Union.

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## 2 BREF CONTENTS AND SCOPE

### 2.1 Introduction

A BREF is a technical document presenting factual technical and economic information, reflecting the outcome of the information exchange under Article 13 of the IED and containing the necessary elements leading to the BAT conclusions for the activities concerned.

Where a TWG identifies issues which are outside the scope of the BREF or of the IED, these issues should not be included in the BREF.

If it serves the specific purpose of assisting the reader to seek further information on an issue, companies (i.e. installations or suppliers), trade names, contributors or TWG members can be named in a BREF unless this goes against competition laws.

### 2.2 BREF structure

The definition of a BREF given in Article 3(11) of the IED stipulates that a BREF describes, in particular, applied techniques, present emission and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques. A BREF should generally contain the parts given in the table below:

<b>Preface</b>
<b>Scope</b>
<b>Chapter 1: General Information</b>
<b>Chapter 2: Applied Processes and Techniques</b>
<b>Chapter 3: Current Emission and Consumption Levels</b>
<b>Chapter 4: Techniques to Consider in the Determination of BAT</b>
<b>Chapter 5: Best Available Techniques (BAT) Conclusions</b>
<b>Chapter 6: Emerging techniques</b>
<b>Concluding remarks and recommendations for future work</b>
<b>References</b>
<b>Glossary of terms and abbreviations</b>
<b>Annexes (dependent upon relevance to the sector and availability of information)</b>

The structure of all BREFs should follow the general principles set out in this section. However, the order of chapters given here is illustrative and any BREF may be structured differently where this is more appropriate to the subject of the BREF. The 'horizontal' BREFs (see Section 1.1.2) may depart substantially from this outline and some chapters may not be relevant at all. However, also for 'horizontal' BREFs, the TWG should try to agree on BAT conclusions insofar as they are relevant and possible.

If a BREF covers different sub-sectors or clearly distinct process steps within a sector, it may be more appropriate to have separate chapters for each of these sectors or process steps and apply the aforementioned structure ('General information' up to 'Emerging techniques') to each of those chapters.

### 2.3 BREF content

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### **2.3.1 General information on the BREF content**

The drawing up and reviewing of the BREFs will aim to release concise documents, focusing on the BAT conclusions and keeping the descriptive parts as short as possible. In order to minimise the duplication of information, cross-references to other BREFs (or topics within these documents) can be made.

### **2.3.2 Preface**

This concise standard section will describe the structure of the document, recall briefly the legislative context (without interpreting the IED), and the way in which the document was drafted (e.g. how information was collected and assessed). The text will be tailored to reflect the individual structure of each BREF.

### **2.3.3 Scope**

This generally concise section will describe which activities are covered by the document.

This will include at least a reference to the relevant activity descriptions listed in Annex I to the IED. Where relevant, further details on the production processes and sub-processes covered by the document will be included.

This section will also indicate activities/processes which are intentionally excluded from the scope of the BREF, while providing the reasons for such exclusions. It will also mention the main 'directly associated' activities covered by the document, even when these are not Annex I activities themselves.

The relevance of other BREFs should be mentioned when considered necessary, by cross-referencing these relevant BREFs (or topics within them).

It should be clearly defined where the scope of a BREF is either broader or narrower than the scope of the corresponding Annex I activity/activities under the IED. The definition of the scope of a BREF does not constitute a legal interpretation of the activity descriptions in Annex I of the IED.

For the 'horizontal' BREFs, the issues covered will be described as well as their applicability in relation to the activities mentioned in Annex I of the IED.

### **2.3.4 General information**

This brief introductory chapter will provide recent general information about the industry sector addressed by the BREF in terms of numbers and size of installations, geographical distribution, production capacity and economics. It will give an indication of the key environmental issues for the sector, where possible, with some overall emission and consumption data (focusing on the key environmental issues) as background information.

This chapter should not be a principal focus for the drawing up or reviewing of a BREF.

### **2.3.5 Applied processes and techniques**

This chapter will briefly describe the production processes currently applied in the industrial sector(s) covered by the BREF along with an indication of the techniques used to prevent and reduce emissions.

The activities covered will include the activities described in Annex I to the Directive and 'directly associated activities' while noting the relevance of other BREFs to certain aspects of some 'associated

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activities'. There will be descriptions of process variants, developing trends and alternative processes to the extent that they are relevant for the determination of BAT. To shorten it, the description will be aided by diagrams or flow charts.

This chapter will reflect the sequential steps in a typical manufacturing unit. Some or all of the following issues will be included, as they are possibly relevant in the determination of BAT:

- raw materials (including secondary/recycled) and consumables used, including water and energy
- auxiliary chemicals/materials used
- raw material preparation (including storage and handling)
- material processing
- product manufacture
- product finishing
- techniques applied to prevent or reduce emissions
- intermediate and final product storage and handling
- handling and fate of by-products and residues/wastes.

The actual or possible relationships and linkages between various activities/process steps will be described, in particular where these may affect the overall environmental performance (for example where residues/wastes from one activity could be used as feedstock to another).

### **2.3.6 Current emission and consumption levels**

This chapter will report on the range of currently observed emission and consumption levels for the overall process (or processes) and its (their) sub-processes along with an indication of the techniques used. The information contained in the data sets referred to in Section 5.2 can be used for this purpose. To provide an idea of the relative environmental performance of comparable activities, information regarding production levels could be mentioned.

Information will include currently observed usage of energy, water and raw materials. Data will include emissions of the key pollutants to air and water and the generation of residues/wastes arising from the activities as well as an indication of emissions of noise and odour, where relevant. Insofar as the information is available, inputs to and outputs from sub-processes will be indicated, thus highlighting the more environmentally significant sub-processes and addressing options for the recycling and reuse of materials within the whole process or beyond. The information and data in this chapter provide the basis for assessing the key cross-media effects and interdependencies.

### **2.3.7 Techniques to consider in the determination of BAT**

#### **2.3.7.1 General information on techniques to consider in the determination of BAT**

This chapter is crucial in developing BAT conclusions. It will provide a catalogue of techniques and associated monitoring used for:

- preventing emissions to air, water (including groundwater) and soil or, where this is not practicable, for reducing emissions
- preventing or reducing waste generation.

The techniques described in this chapter are considered the most relevant for the determination of BAT for the activities concerned. They will include both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned.

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The techniques described will cover those which reduce the use of raw materials, water and energy, as well as measures used to prevent or to limit the environmental consequences of accidents and incidents and site remediation measures. They will also cover measures taken to prevent or reduce pollution under other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations).

Obsolete techniques will not be presented.

Since BREFs are not meant to be textbooks on pollution prevention and control techniques, the techniques in this chapter will be described in a concise manner.

If a technique is already adequately described in another BREF, a cross-reference to that BREF can be made. When sector-specific variations exist, these will be reported under the 'Technical description' heading in the BREF being updated. The BREF will also include sector-specific information under the headings 'Environmental performance and operational data', 'Applicability' and 'Example plants'.

This pool of possible techniques will cover both pollution prevention and control measures, recognising that emission prevention, where practicable, is preferred over emissions reduction. Good operating practices will be addressed and consideration will be given to (preventive) maintenance systems, process control methods and contingency provisions. Techniques which are emerging in practice within the sector and are established techniques in other sectors will be included where relevant.

This chapter will aim to include as much information as needed in order to assess whether or not the technique may qualify, alone or in combination with others, as a BAT for the sector concerned, as well as to assess its applicability within the sector. In this chapter, each technique will be discussed without prejudging whether it meets all the BAT criteria (cf. Article 3(10) and Annex III of the IED).

It will be specified if the techniques presented are applicable to existing plants, or if they are applicable only to new plants or to both new and existing plants. The range of techniques presented will aim to include both low-cost and high-cost techniques.

Whenever the best of the achieved performance levels reported on in this chapter are excluded from the BAT conclusions, the reason for this should be explained <sup>(3)</sup>.

### 2.3.7.2 Information provided on each technique

Information on each technique should preferably include all of the elements shown in the table below.

Description
Technical description
Achieved environmental benefits
Environmental performance and operational data
Cross-media effects
Technical considerations relevant to applicability
Economics
Driving force for implementation
Example plants
Reference literature

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<sup>(3)</sup> The plant achieving the best performance for a given environmental indicator may not be able to be the best performer for other indicators.

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The general principles for gathering data including the aforementioned information are set out in Chapter 1.

#### **2.3.7.2.1 Description**

A brief description of the technique with a view to being used in the BAT conclusions (see Section 3.2) will be included.

#### **2.3.7.2.2 Technical description**

A more detailed and yet concise technical description using, as appropriate, chemical or other equations, pictures, diagrams and flow charts will be included.

#### **2.3.7.2.3 Achieved environmental benefits**

The main potential environmental benefits to be gained through implementing the technique (including reduced consumption of energy; reduced emissions to water, air and land; raw material savings; as well as production yield increases, reduced waste, etc.) will be reported.

#### **2.3.7.2.4 Environmental performance and operational data**

Actual plant-specific performance data <sup>(4)</sup> (including emission levels <sup>(5)</sup>, consumption levels – of raw materials, water, energy – and amounts of residues/wastes generated) from well-performing plants (with respect to the environment taken as a whole) applying the technique accompanied by the relevant contextual information as outlined in Section 5.4, will be mentioned.

Any other useful information on the following items will be included:

- how to design, operate, maintain, control and decommission the technique (see also Section 5.4);
- emission monitoring issues related to the use of the technique (see also Section 5.4.7);
- sensitivity and durability of the technique;
- issues regarding accident prevention.

Linkages between inputs (e.g. nature and quantity of raw material and fuel, energy, water) and outputs (emissions, residues/wastes, products) will be highlighted, in particular where they are relevant to enhancing an understanding of different environmental impacts and their interaction, for example where some trade-off has been made between different outputs such that certain environmental performance levels cannot be achieved at the same time.

Emission and consumption data will be qualified with details of relevant operating conditions (e.g. percentage of full capacity, fuel composition, bypassing of the (abatement) technique, inclusion or exclusion of other than normal operating conditions, reference conditions), sampling and analytical methods, and statistical presentations (e.g. short and long-term averages, maxima, ranges and distributions, see in particular Section 5.4.7).

Information on conditions/circumstances hampering the use of the (abatement) technique at full capacity and/or necessitating full or partial bypassing of the (abatement) technique and measures taken to restore full (abatement) capacity will be included.

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<sup>(4)</sup> Subject to the conditions imposed by competition laws and the protection of confidential business information, see Section 5.3.

<sup>(5)</sup> Both the concentration and specific load of pollutant(s) (if available) or the data needed to derive this information including monitoring methods used and reference conditions. For specific load data, the product referred to should be clearly defined.

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The information in this section is key for deriving environmental performance levels associated with BAT (see Section 3.3).

#### **2.3.7.2.5 Cross-media effects**

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. This may include issues such as:

- consumption and nature of raw materials and water
- energy consumption and contribution to climate change
- stratospheric ozone depletion potential
- photochemical ozone creation potential
- acidification resulting from emissions to air
- particulate matter in ambient air (including microparticles and metals)
- eutrophication of land and waters resulting from emissions to air or water
- oxygen depletion potential in water
- persistent/toxic/bioaccumulable components (including metals)
- generation of residues/waste
- limitation of the ability to reuse or recycle residues/waste
- generation of noise and/or odour
- increased risk of accidents.

The Reference Document on Economics and Cross-media Effects (ECM) is a document that should be taken into account where there are significant cross-media effects.

#### **2.3.7.2.6 Technical considerations relevant to applicability**

If the technique can be applied throughout the sector, this will be indicated. Otherwise, the main general technical restrictions on the use of the technique within the sector will be indicated.

The main sector-specific restrictions expected to be cited are:

- an indication of the type of plants or processes within the sector to which the technique cannot be applied
- constraints to implementation in certain generic cases, considering, e.g.:
  - whether it concerns a new or an existing plant, taking into account factors involved in retrofitting (e.g. space availability) and interactions with techniques already installed;
  - plant size, capacity (large or small) or load factor;
  - quantity, type or quality of product manufactured;
  - type of fuel or raw material used;
  - climatic conditions.

These restrictions should be indicated together with the reasons for them.

These restrictions are not meant to be a list of the possible local conditions that could affect the applicability of the technique for an individual plant.

#### **2.3.7.2.7 Economics**

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 from their application (e.g. reduced raw material or energy consumption, waste charges, reduced payback

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time compared to other techniques), revenues or other benefits including details on how these have been calculated/estimated will be included.

Cost data will preferably be given in euro (EUR). If a conversion is made from another currency, the data in the original currency and the year when the data were collected will be indicated. This is important as conversion rates vary over time. The price/cost of the equipment or service will be accompanied by the year it was purchased.

Information on the market for the sector will be indicated where available in order to put costs of techniques into context.

Information relevant to both new and existing plants should be included. This should allow for assessing, where possible, the economic viability of the technique for the sector concerned.

Information on the cost-effectiveness of the technique (e.g. in EUR per abated mass of pollutant) can be reported where relevant.

The Reference Document on Economics and Cross-media Effects (ECM) and the Reference Document on the General Principles of Monitoring (MON) should be taken into account with regard to economic aspects and monitoring costs, respectively.

#### **2.3.7.2.8 Driving force for implementation**

Where applicable, specific local conditions, requirements (e.g. legislation, safety measures) or non-environmental triggers (e.g. increased yield, improved product quality, economic incentives – e.g. subsidies, tax breaks) which have driven or stimulated the implementation of the technique to date will be included.

This subsection should be very short using bullet point lists.

Examples of information that should be submitted in this context include:

- information on type/quality of receiving waters (e.g. temperature, salinity)
- information on environmental quality standards
- information on the increase of production or productivity.

#### **2.3.7.2.9 Example plants**

Reference(s) to a plant(s) where the technique has been implemented and from which information has been collected and used in writing the section will be listed, including an indication of the degree to which the technique is in use in the EU or worldwide.

#### **2.3.7.2.10 Reference literature**

Literature or other reference material (e.g. books, reports, studies) that was used in writing the section and that contains more detailed information on the technique will be included. When the reference material consists of a large number of pages, reference will be made to the relevant page(s) or section(s).

### **2.3.8 Best available techniques (BAT) conclusions**

This chapter will set out the conclusions on what are BAT for the sector based upon the information exchange as reflected in the previous chapters and taking account of the Article 3(10) definition of 'best available techniques' together with the criteria listed in Annex III to the IED. In the process of

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establishing these BAT conclusions, the overarching criteria of the environmental performance of the techniques, including cross-media implications, as well as their costs, are considered in relation to the industry sector.

This chapter will be drafted in such a way that no substantial changes are needed for its inclusion into a document suitable to be adopted pursuant to Article 13(5) of the IED and used as 'BAT conclusions' as defined in Article 3(12) of the IED.

It should be noted that evidence (i.e. solid technical and economic information) to support a technique as being BAT can come from one or more installations applying the technique somewhere in the world. In cases where the information on the technique comes from only one installation, a thorough assessment of the applicability within the sector will be carried out by the TWG.

More information on BAT conclusions and the elements they should contain according to Article 3(12) of the IED is given in Chapter 1.

### **2.3.9 Emerging techniques**

Article 3(14) of the IED defines an 'emerging technique', as a novel technique for an industrial activity that, if commercially developed, could provide either a higher general level of protection of the environment or at least the same level of protection of the environment and higher cost savings than existing best available techniques.

This chapter will identify such emerging techniques. Care should be taken to include only techniques that are at a sufficiently advanced stage of development so that there is a good chance that they may become part of the BAT in the (near) future.

As a minimum, information for each emerging technique will include its description, its potential performance compared to existing best available techniques, a preliminary cost-benefit estimate, and an indication of the timescale of when the technique might become commercially 'available'.

This chapter can also include techniques to address environmental issues that have only recently gained interest in relation to the sector at hand.

Techniques already applied on an industrial scale will be presented in the chapter entitled 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7) and not in the 'Emerging Techniques' Chapter.

### **2.3.10 Concluding remarks and recommendations for future work**

This short section will state the start date and duration of the process by which the BREF has been drawn up or reviewed as well as the key milestones (e.g. TWG meetings, formal draft documents issued).

Mention will be made of the institutions and organisations represented in the TWG which have actively contributed to the information exchange and of the key sources of information on which the BREF was based, highlighting any particularly noteworthy reports or submissions which have contributed to the confidence in the results.

The degree of consensus reached in the information exchange will be indicated by reporting the valid split views expressed by TWG members and their degree of support by TWG members.

A reference to the opinion of the Forum on the proposed content of the BREF and an indication of any issues that had to be resolved during the adoption procedure of the BAT conclusions will be provided in this section.

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Any key open issues or gaps in knowledge will be identified. Recommendations will be included for further research or information gathering in view of the next review of the document.

### **2.3.11 References**

This section will list the sources of information used by the EIPPCB in drafting the document and in particular the documents provided by the TWG members to the information exchange. These documents shall also be made available to the members of the TWG through BATIS (see Section 4.7.1), unless they contain confidential information (see Section 5.3) or may not be further distributed because of copyright.

### **2.3.12 Glossary of terms and abbreviations**

This section, with a standard structure and introduction, will summarise and define the specific technical terms and define all acronyms used in the document.

### **2.3.13 Annexes**

Dependent upon the relevance to the sector and the availability of information, the main document may be supplemented by annexes containing supporting information taken from literature and/or case studies.

Summaries of legislation shall not be included in the BREF.

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## 3 BAT CONCLUSIONS

### 3.1 Introduction

'BAT conclusions' are defined in Article 3(12) of the IED as 'a document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures'.

The BREF chapter entitled 'Best Available Techniques (BAT) Conclusions' will therefore be drafted in such a way that it covers all of the aforementioned aspects and no substantial changes are needed for its inclusion into a document suitable to be adopted pursuant to Article 13(5) of the IED and used as BAT conclusions as defined in Article 3(12) of the IED (see Section 2.3.8).

For the sake of clarity, the activities subject to the BAT conclusions will be unambiguously defined in the document.

The BAT conclusions will consist of a number of individual conclusions indicating which technique(s) or combination(s) of techniques is (are) BAT for achieving a particular environmental objective. Those techniques should have been mentioned in the chapter(s) entitled 'Techniques to Consider in the Determination of BAT'. The BAT conclusions should also contain, when considered useful for competent authorities and operators, statements which indicate when certain techniques are not BAT and thus have been deliberately excluded from the BAT conclusions due to factors such as poor or non-credible environmental performance, lack of availability, economics, technical and/or economic considerations for retrofitting, cross-media effects, or operational reliability.

As per Article 3(12) of the IED, BAT conclusions should also address monitoring associated with BAT (frequency and methods of monitoring). This can be done either by including separate conclusions on monitoring or as part of other conclusions such as where an environmental performance range is provided.

BAT conclusions should address other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations) when these are considered of concern with respect to environmental protection.

The BAT conclusions are structured in such a way that several individual conclusions are grouped according to common features, e.g. environmental issues, production process steps, or final product(s), as considered appropriate.

### 3.2 Elements in an individual BAT conclusion

#### 3.2.1 General

Each individual BAT conclusion should be presented using a standard format, the structure of which essentially depends on whether or not an environmental performance level is associated with BAT.

Each individual BAT conclusion will be numbered so as to facilitate referencing and will start with the indication of the environmental objective(s)/benefit(s) pursued (e.g. prevent/reduce dust emissions, prevent/reduce water consumption, prevent/reduce the generation of waste) followed by 'BAT is to use' and the technique or combination of techniques that can be used to achieve this(these) objective(s).

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Each BAT conclusion will contain a description of the technique(s) or combination of techniques to satisfy the environmental objective(s)/benefit(s) referred to and will include information to assess its applicability in the sector concerned.

### **3.2.2 Description of techniques**

The description of the techniques will be short but informative enough to be useful to the competent authorities and operators. Undefined acronyms and technical jargon will be avoided. The brief descriptions of techniques included in the chapter entitled 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7) should provide the basis for the descriptions in the BAT conclusions.

When relevant, this description will also cover aspects mentioned in the BAT definition (e.g. maintenance, design, operation, decommissioning).

### **3.2.3 Information to assess the applicability of techniques**

Unless otherwise stated, techniques mentioned in the BAT conclusions are generally applicable for the activity concerned. Where there are restrictions on applicability for a certain technique, this will be explicitly mentioned. The information included in the chapter entitled 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7, especially information under the 'Technical considerations relevant to applicability', 'Economics' and 'Cross-media effects' headings) should provide the basis for indicating applicability issues in the BAT conclusions.

Information to assess the applicability of particular techniques shall in particular address the following, if relevant: 'new' versus 'existing' plants, size of the plant, type of process used, type of fuel or raw material used, load factor, yield or productivity, climatic conditions and space requirements. No cross-media effects will be mentioned unless they result in restrictions on applicability.

## **3.3 Individual BAT conclusions with associated environmental performance levels**

Environmental performance levels associated with BAT may include:

- emission levels
- consumption levels
- other levels (e.g. abatement efficiency).

An environmental performance level associated with BAT will be included where there is a sound basis for doing so. This will be done based on the information exchanged by the TWG taking into account the quantity and quality of the plant-specific data received during the exchange of information.

The environmental performance levels associated with BAT will be expressed as ranges, rather than as single values. A range may reflect the differences within a given type of installation (e.g. differences in the grade/purity and quality of the final product, differences in design, construction, size and capacity of the installation) that result in variations in the environmental performances achieved when applying BAT.

It is preferable to use a true range rather than an expression of the type '<X', because this gives less information. It is acceptable to use an expression of the type '<X to Y' (i.e. '<X' for the lower end of the range, Y for the upper end), where the lower end of the range cannot be accurately defined, e.g. when the data reported in the information exchange is close to the detection limit.

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The EIPPCB and the TWG will assess the data collected during the exchange of information (see Chapter 1) to derive both the lower and the upper end of the range.

For defining the lower end of the range, it is necessary to take the performance of plant(s) achieved under normal operating conditions by the BAT obtaining the best environmental performance <sup>(6)</sup> as provided in the information exchange, unless this performance is excluded from the range by the TWG. In that case, there will be an explanation in the BREF of why it has been rejected.

The upper end of the BAT-associated environmental performance level range is derived by considering the range of performance associated with the application of the BAT <sup>(7)</sup> under normal operating conditions.

When defining the environmental performance levels associated with BAT, rounded values may be used to take into account limitations of the data collection or technical issues (e.g. use of different monitoring methods, uncertainty of measurements).

### 3.3.1 Individual BAT conclusions with associated emission levels

Article 3(13) of the IED defines 'emission levels associated with the best available techniques' as 'the range of emission levels obtained under normal operating conditions using a best available technique or a combination of best available techniques, expressed as an average over a given period of time, under specified reference conditions'.

Article 3(4) of the IED defines 'emission' as 'the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the installation into air, water or land'.

Article 14(1)(f) indicates start-up and shutdown operations, leaks, malfunctions, momentary stoppages as examples of 'other than normal operating conditions'.

An individual BAT conclusion with BAT-associated emission levels (BAT-AELs) will contain a numerical range of emission levels. The units, the reference conditions (e.g. flue-gas oxygen level, temperature, pressure) – if applicable – and the averaging period (e.g. hourly/daily/weekly/monthly/yearly average) must be unambiguously defined (see also Section 3.2.3). If considered necessary, and if the data submitted allows for doing so, BAT-AELs may be expressed as short-term and long-term averages (see also Section 5.4.7).

Information can be added to explain under what conditions the lower end of the BAT-AELs can be achieved or to reflect different performances of different techniques.

An example of an individual BAT conclusion which includes emission levels associated with BAT is provided in Figure 3.1.

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<sup>(6)</sup> The plant(s) achieving the best performance for a given environmental indicator may not be able to be the best performer for other indicators.

<sup>(7)</sup> Including both the technology used and the way in which the plant is designed, built, maintained, operated and decommissioned.

**42. In order to reduce VOC emissions from process AA, BAT is to use one or a combination of the techniques given below.**

	<b>Technique</b>	<b>Description</b>	<b>Applicability</b>
a	aa	[description]	new plants
b	bb		existing plants
c	cc		

**The BAT - AELs for VOC are:**

- **for new installations: 10 – 20 mg C/Nm<sup>3</sup> as a daily average under reference conditions xx, yy, ...**
- **for existing installations: 20 – 30 mg C/Nm<sup>3</sup> as a daily average under reference conditions xx, yy, ...**

**Figure 3.1: Example of an individual BAT conclusion which includes emission levels associated with BAT (BAT-AELs)**

BAT-AELs can be expressed in one or more ways depending on the information that is available, including the ways given below.

- As concentrations (mass of pollutant released per volume). This is generally the most common way of expressing emission levels, but reference conditions and averaging periods are crucial for their comparability.
- As specific loads (mass of pollutant released per mass of product manufactured or mass of raw material used). In certain cases, specific loads are a better indicator of performance than concentrations, for example where pollutant concentrations are increased as a result of measures to reduce effluent volumes and to conserve energy, e.g. closing water circuits. Also in this case, averaging periods are crucial for comparability.

### **3.3.2 Individual BAT conclusions with associated environmental performance levels other than emission levels**

Environmental performance levels other than emission levels can be associated with certain BAT. Examples include consumption of material, water or energy, the generation of waste, abatement efficiency on pollutants and duration of visible emissions.

BAT-associated consumption levels should preferably be expressed in consumption (e.g. of raw material, energy, water) per mass of product manufactured (e.g. in kg/t, MJ/t).

For energy and water consumption, BAT-associated performance levels may also be expressed in consumption per mass of raw material (e.g. MJ/t, m<sup>3</sup>/t).

With regard to waste generation, BAT-associated environmental performance levels should preferably be expressed in mass of waste generated per mass of product manufactured (e.g. in kg/t of product). They may also be expressed in other ways such as in mass of waste generated per mass of raw material (e.g. in kg/t).

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Individual BAT conclusions including associated environmental performance levels other than emission levels will have a similar structure as shown in Figure 3.1 (with other environmental performance levels instead of BAT-AELs).

### **3.4 Individual BAT conclusions without BAT-associated environmental performance levels**

Individual BAT conclusions without BAT-associated environmental performance levels, e.g. concerning monitoring, site remediation or environmental management systems, will be structured similarly as shown in Figure 3.1, with the exception of the information related to the BAT-associated environmental performance levels.

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## 4 ORGANISATION OF THE EXCHANGE OF INFORMATION

### 4.1 Introduction

The different steps in the process of the exchange of information and the adoption of the BAT conclusions stipulated in Article 13 of the IED are described in Section 1.2.

This information exchange process is often referred to as the 'Sevilla process' due to the fact that it is coordinated by the EIPPCB based in Seville, Spain.

The roles of the main participants involved in this process are described in Sections 4.2 to 4.5.

Important milestones of the information exchange process, information exchange tools and personal data security issues are described in Sections 4.6 to 4.8.

### 4.2 The role of the IED Article 75 committee

Article 75 of the IED provides for the establishment of a committee, consisting of representatives from all Member States, to assist the Commission in the framework of the implementation of the IED.

As mentioned in Article 13(5) of the IED, this 'IED Article 75 committee' is involved in the adoption of decisions on BAT conclusions resulting from the exchange of information.

As stipulated in Article 13(3), this committee is also involved in the discussion and adoption of the 'guidance on the collection of data' and of the 'guidance on the drawing up of BAT reference documents and on their quality assurance including the suitability of their content and format' (i.e. this document).

The IED Article 75 committee will carry out its tasks according to the examination procedure as laid down in Regulation 182/2011.

### 4.3 The role of the IED Article 13 Forum

The Article 13 Forum is an expert group convened and chaired by the Commission and consists of representatives of Member States, the industries concerned and non-governmental organisations promoting environmental protection. The appointment of members to the Forum is carried out in accordance with Commission Decision 2011/C 146/03 of 16 May 2011 establishing the Forum <sup>(8)</sup>, which also sets out the task of the Forum.

The Forum's role, as described in Recital 14 and in Article 13 of the IED, is to ensure an effective, active and transparent exchange of information resulting in high quality BREFs by discussing and giving its opinion on the practical arrangements for the exchange of information.

Specifically, in accordance with Article 13(3), the Forum shall provide its opinion on:

1. the rules of procedure of the Forum
2. the work programme for the exchange of information
3. guidance on the collection of data
4. guidance on the drawing up of BAT reference documents and on their quality assurance including the suitability of their content and format.

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<sup>(8)</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:146:0003:0004:EN:PDF>

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The Forum is also the place where general issues relating to the exchange of information are discussed. Through the Forum, stakeholders can express their opinions on the information exchange process. The Forum may, if deemed necessary, suggest specific aspects that should be addressed during the drawing up or reviewing of a BREF.

The main task of the Forum is to evaluate the outcome of the BAT information exchange taking into account this guidance document and to provide its opinion on the proposed content of the BREFs resulting from the work carried out at the technical level (see Section 1.3). Forum members are responsible for the nomination of their representatives to TWGs (see in particular Section 4.4.2 that addresses the tasks and profile of TWG members) and for keeping in contact with them throughout the drafting process to ensure an active and effective exchange of information.

## **4.4 The role of the technical working groups (TWGs)**

### **4.4.1 Establishment of TWGs**

For the drawing up or reviewing of a BREF document, a TWG is set up (or reactivated) by the Commission. Each TWG consists of technical experts representing Member States, industries, non-governmental organisations (NGOs) promoting environmental protection and the Commission.

TWG members are nominated to participate in the information exchange primarily based on their technical, economic, environmental or regulatory expertise (especially in permitting or inspecting industrial installations) as well as on their ability to bring into the information exchange process the BREF end-user perspective.

The experts for each TWG are nominated by the representatives in the Forum. To this end, Forum members send the names and contact details of their TWG nominees to the EIPPCB.

In order to enhance the efficiency of participation of the industrial sectors concerned in TWGs, their nomination may be coordinated by the European industrial associations.

### **4.4.2 TWG responsibilities and tasks**

The TWG draws up or reviews a BREF document recording the outcome of the exchange of information for a given sector.

The TWG is the main source of information for the drawing up and reviewing of a BREF. It is therefore essential that the TWG members are active in the exchange of information. By joining the TWG, the members commit to actively collecting and delivering information by the deadlines agreed by the TWG or proposed by the EIPPCB.

The TWG members are responsible for reporting back to the Forum representative that nominated him/her, in particular when issues arise with the information exchange.

The main tasks of a TWG member are:

- to gain an awareness and understanding of the guidance in this document;
- to identify and list new/updated key data and issues relevant for deriving or updating BAT conclusions for the sector;
- to actively collect targeted technical and economic information important for the drawing up/reviewing of a BREF, including in particular new/updated emission and consumption level data from installations covered by the BREF (for the sector/Member State that he/she is

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representing) according to the approach agreed by the TWG in line with the principles set out in Chapter 5 of this document;

- to check the quality of the data and information collected before submitting them to the EIPPCB, in particular the data contained in filled-in templates/questionnaires used to gather plant-specific information (see Sections 5.4 and 5.5);
- to share the data collected with other TWG members and the EIPPCB by posting the information directly onto BATIS (see Section 4.7.1);
- to respond in a timely manner to requests for additional information or clarifications from the EIPPCB (see Section 1.2);
- to comment within the set deadlines on formal draft BREFs and other documents prepared by the EIPPCB;
- to attend the TWG meetings and actively participate in them;
- to share experience with the EIPPCB and other TWG members (e.g. during site visits);
- to identify and establish contacts/networks with non-TWG members (e.g. shadow groups of experts, competent authorities, operators or groups of operators, national groups) to gain more experience to be shared with the rest of the TWG and the EIPPCB.

TWG members are responsible for uploading all the information they have collected and submitted for the BREF drawing up or review process onto BATIS (see Section 4.7.1, with the possible exception of confidential or sensitive data, see Section 5.3). Exceptionally, data may be submitted through other electronic means, e.g. via e-mail.

Most of the work for TWG members can be expected to take place outside of the plenary meetings in submitting information and reviewing draft text proposals. In particular, the successful development of a BREF requires the TWG to respond in detail to substantial draft documents within a limited time period. Whilst consensus of the TWG is sought throughout the work, it is not a prerequisite and it is the task of the EIPPCB to reflect the relevant available information in the BREF.

#### **4.4.3 TWG subgroups**

To address specific issues within the scope of the work, the TWG may decide to establish subgroups in order to undertake specific tasks such as to collect, analyse, structure and discuss information and data, discuss comments to proposed draft texts, or to prepare and develop templates or documents. The functioning of such subgroups is managed in a transparent way by the EIPPCB enabling all TWG members to have access to the groups and allowing them to follow and understand the subgroup's activities and its outcome (e.g. meeting agendas and minutes and reports are uploaded onto BATIS in a timely manner).

Meetings of TWG subgroups can be held on the premises of the Commission in Seville, Spain or at other locations.

Discussions and work in the subgroups will not replace the plenary TWG meetings where decisions are made involving the whole TWG.

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#### **4.4.4 Site visits**

Site visits may be instrumental in gathering and validating information for drawing up and reviewing BREFs. Site visits may be proposed by TWG members to the EIPPCB and other TWG members. Information on site visits are shared with the whole TWG sufficiently in advance of the dates of the visits to allow the possible participation of interested TWG members and representatives of the local competent authority. Brief reports of such site visits are made available to the whole TWG through BATIS (see Section 4.7.1).

#### **4.4.5 Involvement of equipment suppliers in the exchange of information**

'Equipment suppliers' which can provide valuable technical and economic data and information for the drawing up and reviewing of BREFs should be invited to actively participate in the exchange of information either directly as TWG members, or indirectly as experts providing information to the EIPPCB or to other TWG members.

The term 'equipment suppliers' should be understood in a rather broad sense in order to extend the knowledge boundaries of the information exchange. The main criterion for their involvement in the information exchange process is that the 'equipment suppliers' should have the relevant technical and economic knowledge/information that could be beneficial to the information exchange on BAT and associated monitoring. This will, in principle, exclude the mere commercial intermediaries (wholesalers) that sell equipment or services to the operators/owners of the installations for a profit, without necessarily having a sufficient technical understanding of the 'equipment' function and knowledge of its operational performance.

The technical and economic knowledge/information held by the 'equipment suppliers', may apply to a broad range of activities such as the conception, design, licensing, manufacture/construction, supply, operation, maintenance, monitoring and decommissioning of an IED plant or part of a plant (e.g. process, system, component).

A representative of an 'equipment supplier' company nominated to a TWG should de facto act as a representative of 'equipment suppliers' in general or of a particular subsector (not solely as a representative of the company which employs him/her) in order to ensure appropriate representation of the sector.

It is therefore recommended to involve representatives of associations of equipment suppliers, whenever possible through which individual companies could provide information.

### **4.5 The role of the EIPPCB**

The role of the EIPPCB is to coordinate the exchange of information and to ensure that information is collected and processed according to the guidance in this document in order to draw up or review the BREFs.

For each BREF, the scientific staff of the EIPPCB leads the work of the TWG established for the purpose.

The EIPPCB steers the work on determining BAT as defined in the IED, guided by the principles of technical expertise, transparency and neutrality. Its work entails the independent verification and analysis of the information collected to derive BAT conclusions.

If TWG members provide incomplete or insufficient information, the EIPPCB informs the TWG and the Forum of this and asks for completion. Additionally, the EIPPCB tries to close the information gaps by actively looking for missing or incomplete data (e.g. during site visits – see Section 4.4.4 – or by contacting persons/institutions which are not directly represented in the TWG). Furthermore, phone

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conferences or video conferences may be organised by the EIPPCB if there is a need to discuss certain issues regarding the drawing up or reviewing of a BREF.

To fulfil its role, the EIPPCB carries out, in particular, the following tasks:

- actively participates in and supports the collection of information and drafts the BREF documents;
- checks/verifies the data/information submitted and asks for complements/clarifications to the provider of the data/information as deemed necessary;
- leads technical discussions in plenary and subgroup TWG meetings and chairs those meetings (see also Section 4.6.2 and 4.4.3);
- ensures the overall management of the BATIS collaborative tool (see Section 4.7.1) to ensure the transparency of the exchange of information;
- presents the final draft BREFs at Forum meetings (see Section 4.3).

Other tasks carried out by the EIPPCB are mentioned in other parts of this document, in particular in Sections 4.6 to 4.7.

The EIPPCB staff member leading the information exchange on a specific BREF is expected to have a very good understanding of process engineering; environmental issues; industry regulations; environmental permitting processes; environmental policy in the EU and particular knowledge and understanding of the relevant industrial sector.

The key competencies needed are technical knowledge, organisational skills, communication skills, drafting skills, neutrality, integrity and an ability to work and write technical documents in the English language.

## 4.6 Milestones in the information exchange

### 4.6.1 Establishment of the 'wish list'

In the case of a BREF review, at the time of the reactivation of a TWG, Forum members will be requested to nominate their TWG representative(s) and those TWG members are sent a request to provide a list of 'wishes', which will be used to organise and structure the discussions at the kick-off meeting (see Section 4.6.2.2).

In order to focus the review of the BREF, the wishes should primarily address **major issues** such as those concerning:

- the scope and structure of the BREF (see Sections 2.3.3 and 2.2);
- missing, obsolete, incomplete or unclear BAT or BAT-associated environmental performance levels (see Section 2.3.8 and Chapter 1);
- the type and format of the plant-specific data that should be collected to inform the review (see Section 5.4);
- new 'techniques to consider in the determination of BAT' as well as new 'emerging techniques' and processes, the implementation of which would bring environmental and/or economic benefits to the sector (see Section 2.3.7 and 2.3.9);
- improvements of existing techniques and processes with respect to the protection of the environment and/or economic aspects (see Section 2.3.7).

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Consequently, the parts of the BREF on 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7), on 'Best Available Techniques (BAT) conclusions' (see Section 2.3.8), on 'Emerging techniques' (see Section 2.3.9) and on 'Concluding remarks and recommendations for future work' (see Section 2.3.10)' should be the primary focus for proposing wishes.

**Minor issues** (e.g. spelling mistakes) should not be reported in the 'wishes'. The initial data collection period as well as the commenting period organised for each draft BREF provide opportunities to TWG members to bring such issues to the rest of the TWG.

The 'wish list' should cover a collection of new and available information that the TWG would like to gather and to provide.

To be fully usable, a wish should be accompanied by:

- a. a relevant rationale
- b. supporting documents/information, if available
- c. suggestions on the type and format of relevant information and on how to collect the information considered necessary for the review.

## **4.6.2 TWG meetings**

### **4.6.2.1 General**

Plenary TWG meetings (e.g. kick-off meetings and final TWG meetings) are organised and chaired by the EIPPCB and held on the premises of the Commission in Seville, Spain. English is the working language used in these meetings. These TWG meetings are supported by a background paper prepared by the EIPPCB laying down the issues proposed for discussions and sent in advance of the meeting to all TWG members (see Section 1.2).

The EIPPCB may organise additional ad hoc meetings with an individual or a group of TWG members to discuss or explain individual issues or comments made by TWG members with the aim of enhancing a successful outcome of the information exchange process (see also Section 4.4.3 on TWG subgroups).

Brief minutes or notes of plenary and ad hoc TWG meetings will be prepared by the EIPPCB and will be uploaded onto BATIS.

### **4.6.2.2 Kick-off meeting**

As indicated in Section 4.6.1, for a BREF review the list of wishes will be the basis upon which to organise and structure the discussions at the kick-off meeting.

The kick-off meeting will in particular address and reach conclusions on the items listed below.

- The scope and structure of the BREF.
- The nature and extent of the information to be collected during the review. In particular, conclusions should be reached on:
  - the sector-specific template(s) for collecting and reporting information (see also Sections 5.4 and 5.5) as well as on the strategy for the diffusion of these templates in particular to prevent operators from receiving multiple data requests and to prevent large amounts of data from being generated that cannot be used;

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- ways to ensure the representativeness of the data set needed to derive BAT conclusions.
  - A process for the TWG to identify where relevant and make clear in the BREF:
    - what are considered 'normal' and 'other than normal' operating conditions for the activities under the scope of the BREF;
    - what the measures are to prevent or, where this is not practicable, to reduce pollution under other than normal operating conditions (such as start-up or shutdown, bypassing of abatement systems; see also Section 2.3.7).
  - A general timeline for the work, based on the typical workflow indicated in Section 1.2, in particular on the deadline to receive the bulk of information after the kick-off meeting.
  - The specific tasks to be carried out by the TWG, especially indicating which TWG member promised to deliver what information.

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

- Ways to deal with potentially confidential and sensitive information (see Section 5.3).
- The interactions with other BREFs (both 'horizontal' and 'vertical' ones, see Section 1.1.2).
- The specific tool that the TWG will use to collect, exchange and analyse information. In particular, the BATIS system (see Section 4.7.1) will be presented to the TWG as well as the procedures to submit information identified at the kick-off meeting (see Section 4.6.3).

The main issues to be discussed at the kick-off meeting and proposals from the EIPPCB will be outlined in a background paper distributed to the TWG at least four weeks in advance of the meeting.

### **4.6.2.3 Final TWG meeting**

#### **4.6.2.3.1 General**

The final TWG meeting aims at resolving outstanding issues with a view to conclude the technical discussions within the TWG.

It will in particular address and reach conclusions on the items listed below.

- the content and structure of the BAT conclusions (see Section 1);
- any modifications to be made to the content of the chapters entitled 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7) and 'Emerging techniques' (see Section 2.3.9).
- issues to be mentioned in the 'Concluding remarks and recommendations for future work' section of the BREF (see Section 2.3.10).

The main issues to be discussed at the final TWG meeting and proposals from the EIPPCB will be outlined in a detailed background paper distributed to the TWG at least four weeks in advance of the meeting.

In the final TWG meeting, the objective is to reach conclusions by consensus of the TWG members present. When there are well founded dissenting views, these will be recorded as indicated in Section 4.6.2.3.2 below.

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#### **4.6.2.3.2 Split views**

BAT as well as environmental performance levels (see Section 3.3) associated with BAT will be drafted by the EIPPCB on the basis of information available at the time of distributing the draft to the TWG for its final meeting (see Section 4.6.2.3). Such information may include any specific proposals for BAT or associated environmental performance levels received from the TWG.

TWG members are expected to provide sound technical, cross-media and economic arguments as relevant to their case when they do not agree with the draft BAT conclusions. Such arguments should be submitted initially as comments to the formal draft BREF within the consultation period set (see Section 1.2).

If the TWG in the end reaches no consensus on an issue, the dissenting views and their rationale will be reported in the 'Concluding remarks and recommendations for future work' section of the BREF only if both the following conditions are fulfilled:

- the dissenting view is based on information already made available to the EIPPCB at the time of drafting the conclusions on BAT for the BREF or has been provided within the commenting period corresponding to such a draft;
- a valid rationale supporting the split view is provided by the TWG member(s) concerned. A rationale is considered valid if it is supported by appropriate technical, cross-media or economic data or information relevant to the definition of BAT.

The Member States, environmental NGOs or industry associations that bring or support the split view will be explicitly named in the document (see Section 2.3.10).

#### **4.6.3 First round of data collection following the kick-off meeting**

With the exception of filled-in templates/questionnaires (see Section 5.4), the information promised or identified in the conclusions of the kick-off meeting (see Section 4.6.2.2) and submitted to the EIPPCB will be accompanied by one or more 'information mapping sheets' indicating the parts of the BREF to which each piece of submitted information relates.

The information should preferably be accompanied by concrete proposals in the form of draft texts for the BREF, and the section(s) where they should be inserted. These text proposals will meet the requirements set out in this guidance, especially those in Section 2.3.

The information should preferably be submitted in English to facilitate access to the various TWG members.

The EIPPCB will assess the 'information mapping sheets' submitted and provide feedback to the TWG in particular on whether and how the information submitted has been taken into account in the BREF. The EIPPCB will provide such feedback when releasing the first draft of the BREF. If the data provided by a TWG member cannot be taken into account, the EIPPCB should inform the contributor as soon as possible in order to improve the information provided.

#### **4.6.4 Requests for additional information**

Requests for additional information (RAI) are sent by the EIPPCB to the TWG in order to gather important information to determine BAT and BAT-associated environmental performance levels that were either not identified at the kick-off meeting (see Section 4.6.2.2) or were not provided during the

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first round of data collection. An RAI should not require a long data collection period. Feedback will be provided to the TWG on the result of an RAI.

## **4.6.5 BREF working documents and formal drafts**

### **4.6.5.1 Formal drafts**

Formal drafts of a new or revised BREF, as foreseen in Section 1.2, include all the parts indicated in Section 2.3 with the possible exception of the BAT conclusions chapter and the section on 'Concluding remarks and recommendations for future work'.

Each formal draft of a revised BREF will be in the form of a consolidated version, highlighting the new information and changes carried out in comparison with:

- the version of the BREF published previously;
- the information contained in the previous draft(s) elaborated during the review process.

Formal drafts are distributed by the EIPPCB to the TWG with a view to having the document peer reviewed and to gather missing information. Comments are to be submitted to the EIPPCB within a fixed deadline (see Sections 1.2 and 4.6.6) and using specific formats.

### **4.6.5.2 Working drafts**

In addition to the formal drafts of a BREF, and in order to increase the transparency of ongoing work during the drawing up/reviewing of a BREF, the EIPPCB may decide to send out a draft version of the BREF or parts of the BREF as a working document for information and consultation of the TWG where members may choose to volunteer comments.

However, the EIPPCB shall make clear to the TWG the issues upon which their comments are sought while making clear that it is an informal consultation which does not replace the formal consultation process. This informal consultation could for instance be used to highlight possible data gaps and trigger the further collection of information. It will be the responsibility of the TWG members to consult other experts if they deem this to be necessary.

For the BAT conclusions (see Section 2.3.8), this approach shall not be used and only the proposed structure (table of contents) may be distributed prior to issuing the formal draft.

## **4.6.6 Commenting on formal drafts of the BREFs**

Following the distribution of each formal draft of a BREF, there will be a commenting period of at least 8 weeks so that TWG members can provide their comments and suggestions on the document (see Section 1.2). This does not apply to final drafts produced after the final TWG meeting (see Section 4.6.2.3) where a short commenting period is organised to focus on the changes made as a result of the final meeting's conclusions.

The main objective of the consultation is to invite TWG members to peer review and validate the information included in the document, as well as to fill in gaps in the information by submitting additional data. In exceptional and justified cases, when more detailed information needs to be collected to support the comments submitted, this should be clearly indicated with the comments and such information should be submitted no later than three months after the deadline for submitting comments.

In order to focus and accelerate the review of the BREF, the comments submitted on the first draft (or on a first and second draft, see Section 1.2) will be divided into two groups:

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1. a first group will include comments considered 'major' by the TWG member (i.e. comments that have a bearing on the BAT conclusions, to the scope of the BREF, to the structure of the BREF);
  2. the second group will include 'minor' comments (e.g. typos, comments that have no bearing on the BAT conclusions).

TWG members will ensure that each comment they make is classified into one of these two groups before sending their comments to the EIPPCB. The EIPPCB will in turn collate and disseminate statistics on the basis of that distinction to provide a rough indication of the workload involved and to help identify major issues at an early stage of the process.

The comments considered 'major' will be treated with priority by the EIPPCB and will be taken into account **before** releasing the following formal draft. The comments considered 'minor' may not be fully reflected in the following formal draft. However, both types of comments will be fully taken into account before a final draft is produced.

Detailed feedback is provided from the EIPPCB to the TWG on how their **major** comments have been taken into account when sending out a new formal draft or when sending the background paper for the final TWG meeting (see Section 4.6.2). Feedback is provided from the EIPPCB to the TWG on how all the comments have been taken into account before presenting the BREF to the Forum (see Section 4.3).

## 4.7 Information exchange tools

### 4.7.1 BAT information system (BATIS)

BATIS is a web-based software application set up to facilitate the exchange of information on BAT as well as the internal process carried out within the EIPPCB in order to produce or review BREFs. In addition to EIPPCB staff, only nominated Forum and TWG members have access to BATIS. Contact details of TWG members are available in BATIS in order to facilitate the exchange of information within each TWG.

The key objective of the system is to support the EIPPCB to organise and manage BREF-related information, to enable transparency and to produce high quality BREFs.

BATIS helps to maintain transparency in the BREF drawing up and reviewing process. To this end, all information collected in the framework of the drawing up or reviewing of a BREF is available on BATIS, except for confidential or sensitive information (see Section 5.3).

The EIPPCB is responsible for the overall management of information within BATIS. The EIPPCB structures the information/documents in BATIS (eventually by relocating documents uploaded directly by TWG members) in such a way that they can easily be found, especially by TWG and Forum members.

In particular, the EIPPCB is responsible for making available on BATIS information regarding TWG meetings and subgroup meetings (e.g. background papers, meeting minutes, meeting slides) as well as TWG comments received on draft BREFs and the EIPPCB feedback on those comments (see Section 4.6.6).

TWG members are responsible for uploading their individual contributions onto BATIS. An online user manual is available in BATIS to BATIS users. When, it is not practicable or possible to use BATIS to submit information (e.g. when a book is sent to the EIPPCB), other methods of submitting information to the EIPPCB can be used (e.g. regular mail, fax). However, this is not expected to be the general case, and information available electronically should be uploaded directly onto BATIS as indicated above.

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BATIS has a functionality which allows TWG members to know automatically (i.e. daily) if new information has been uploaded or if members of the group have accessed the information uploaded in the last 24 hours.

Information collected in preparation of the drawing up or reviewing of a BREF is made available through BATIS (see Section 4.7.1).

#### **4.7.2 EIPPCB website**

The EIPPCB website (<http://eippcb.jrc.ec.europa.eu>) constitutes the main tool for the dissemination of the BREFs and the BREF drafts. The website contains:

- general information about the IED and the EIPPCB
- access to adopted BREFs and information on their status (e.g. adopted, under review)
- access to finalised and formal draft BREFs
- access to committee guidance documents (such as this guidance)
- Forum opinions and documents
- notification of IED events and EIPPCB meetings
- indications of EIPPCB workplans on the drawing up and reviewing of the BREFs
- information regarding employment opportunities within the EIPPCB
- an access to the BATIS electronic workspace for TWG and Forum members.

#### **4.8 Security of personal data**

The personal data of TWG and Article 13 Forum members, which consists of each member's name and contact details, will be collected by the EIPPCB upon their appointment as a TWG or Forum member with the exclusive purpose of allowing the EIPPCB to manage TWG and Forum member participation in the drawing up/reviewing of a BREF and to allow TWG and Forum members to access management tools for the editing and reviewing of BREFs and other documents.

The Commission is committed to user privacy. The policy on 'protection of individuals with regard to the processing of personal data by the Union's institutions' is based on Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000. For further information, a privacy statement is available for TWG and Forum members from the EIPPCB website. Therefore, the EIPPCB does not publish TWG contact details on its website.

The Commission, as the institution responsible for the treatment of the personal data mentioned above, will retain the data.

At any time, TWG and Forum members may exercise their right to access and modify the data by contacting the EIPPCB Secretariat at:

email: [jrc-ipts-eippcb@ec.europa.eu](mailto:jrc-ipts-eippcb@ec.europa.eu)  
Tel: +34 954 488 284  
Fax: +34 954 488 426.

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## 5 DATA COLLECTION AND SUBMISSION

### 5.1 Introduction

This section presents guidance on the collection of data for the exchange of information under the IED as referred to in Article 13(3)(c) of that Directive.

### 5.2 General principles for collecting and submitting data for the drawing up and reviewing of BREFs

The data to be collected and submitted to the EIPPCB regarding the environmental performance of plants and applied techniques as well as their technical and economical viability, should allow for drawing up, reviewing and, where necessary, updating the BREFs and the BAT conclusions therein as described in Chapter 3.

The general principles that TWG members will follow for collecting and submitting data are outlined below.

- Data sets at the level of single plants, indicating both the environmental performance achieved and the techniques used to achieve it are essential for determining BAT.
- It is therefore crucial that TWG members supply complete data sets at least at the plant level as is detailed in Section 5.4. Data aggregated from several plants are usually not sufficient to allow for concluding on BAT and/or BAT-associated environmental performance levels (see Sections 3.3.1 and 3.3.2). In exceptional cases, issues of confidentiality may necessitate the information being aggregated/anonymised by the EIPPCB for the purpose of reporting it in the BREF (see also the paragraph on confidentiality issues in Section 5.3 below).
- Both in-process and end-of-pipe techniques utilised in the installation to minimise its impact on the environment should be mentioned and documented. Where relevant, a full description of the technique(s) will be submitted (together with the data sets) following the 10-heading structure described in Section 2.3.7.
- The data submitted should be accompanied by clear indications on whether they relate to normal or other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations), see Section 4.6.2.2.

#### 5.2.1 Type of data

The main data/information should be collected down to at least the plant level or even at a more discrete level (e.g. production line, unit, process, furnace), making clear reference to the applied technique(s). Where available, data/information already collected for other purposes should be reused.

Information providing a global overview of the sector – which might include industry capacity, production levels, market information, prices and other possibly sensitive information – can be provided in an aggregated form, but this will be mainly useful for developing or updating the chapters entitled 'General Information' and 'Current Emission and Consumption Levels' of a BREF (see Sections 2.3.4 and 2.3.6).

The information submitted on techniques should address, as much as possible, all aspects mentioned in Section 5.4, in order to allow for drafting the chapter on 'Techniques to Consider in the Determination of BAT' (see Section 2.3.7). Performances of techniques should be put into context and supported in particular by the relevant operational and economic data (see Section 5.4).

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Information from what are considered best performing installations (with respect to the environment taken as a whole) should be provided. For these installations, the information referred to in Section 5.4 should include sufficient detail in order to help understand how the observed high level of environmental performance has been achieved. This does not mean that only information on best performing plants should be collected and submitted. Updating the chapter entitled 'Current Consumption and Emission Levels' (see Section 2.3.6) necessitates that information be submitted on the range of currently observed emission and consumption levels for the overall process and its sub-processes.

### **5.2.2 Format of data**

Information at the plant level will mainly be submitted to the EIPPCB using a common template agreed by the TWG, without restricting the possibility of submitting additional supporting documents if considered useful. For minimising the work of completing this common template, the TWG is encouraged to take into account periodic reporting requirements and the availability of data. Templates are particularly useful for gathering a great deal of information, to enable a comparison of data as well as to identify gaps and anomalies. This does not exclude the use of supplementary data (e.g. case studies, technical and cost data concerning specific techniques) if considered instrumental for deriving BAT conclusions.

The essential data/information that a template for gathering complete data sets at the plant (or a more discrete) level should contain is indicated in Section 5.4 (detailing the environmental performance and operational data needed).

### **5.2.3 Quality of data**

The information submitted should be at a sufficient level of detail so as to enable its assessment and comparison with other data and finally to be used to conclude on BAT (see Chapter 1). Although the focus of the information exchange is on available measured data, it is recommended to take into account the data quality rating system shown in Annex 1 to ensure the quality of estimated data.

The data provided (especially emission and consumption data) should be from recent years.

All figures submitted should be given in SI units or in units commonly used within the sector and agreed on by the TWG preferably at the kick-off meeting.

All data, in particular the information contained in filled-in templates, should be carefully checked before being submitted to the EIPPCB in order to ensure completeness and to identify and correct errors and inconsistencies. Submitted templates which are considered largely incomplete or containing too many errors will not be taken into account by the EIPPCB.

## **5.3 Confidentiality issues**

Confidential sensitive information with respect to competition law, is generally not an issue because the information exchange focuses on emission data that are in the public domain as can be derived from Article 24(3) and (4) of the IED and Article 4 of Directive 2003/4/EC on public access to environmental information (see Annex 3).

However, it may happen that confidential/sensitive information is needed/useful to the EIPPCB for its assessments (e.g. cost, production volume).

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If any information submitted to the EIPPCB is considered confidential and should therefore not be reported in the BREF, this should be clearly stated when sending the information and the reason/justification for the confidentiality/sensitivity should be given.

Confidential or sensitive information will not be reported in the BREF, unless the information provides an important basis for BAT conclusions and reporting the information in the BREF is specifically authorised by the provider of the information.

There are several ways to deal with confidential/sensitive data in BREFs such as the aggregation or the anonymisation of information. This can be done by the EIPPCB if necessary with the help of those who supplied the information.

The period when a template is developed (see Sections 4.6.2.2 and 5.4) is the time to discuss in detail which information is needed and the degree of confidentiality (if any) of the data requested.

The citation of plant names under the heading 'Example plants' given in Section 2.3.7 is considered very useful and should generally not pose difficulties.

## **5.4 Environmental performance and operational data needed for the BREF chapters entitled 'Techniques to Consider in the Determination of BAT' and 'BAT Conclusions'**

### **5.4.1 General information on environmental performance and operational data**

This section deals with environmental performance and operational data. However, in order to draw up, review and, where necessary, update BAT conclusions, all techniques to be considered in the BAT decision making will be presented in the BREF according to the standard structure as per Section 2.3.7, where other data needed to draw BAT conclusions (especially on economics, cross-media effects and technical considerations) are given.

Currently, there is no agreed common template for gathering data and due to the diversity of the activities covered by the IED, it is unlikely that such a common template can be elaborated. Therefore, the TWG kick-off meeting should decide on the format and content of the template for the sector it is addressing (see Sections 4.6.2.2 and 5.5).

However, the main types of environmental performance and operational data that a template for gathering plant-specific data should contain are outlined in the sections below.

### **5.4.2 Consumption**

#### **5.4.2.1 General information on consumption**

The information submitted should include data on the use of raw and auxiliary materials/feedstocks, water and energy in the relevant processes.

#### **5.4.2.2 Consumption of raw and auxiliary materials/feedstocks**

Information should include, to the extent that it is relevant for the activities concerned:

- the quantity of raw and auxiliary materials/feedstocks used (including secondary/recycled material) and the composition;

- 
- an indication of the techniques used (including both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned) to maximise the efficient use of resources.

#### **5.4.2.3 Water use**

The information submitted should distinguish between cooling water and process water, and indicate whether water is reused and if so how much. Data/information should include, if relevant for the activities concerned, the items specified below.

- Information about the origin of the water used and about the receiving water (e.g. name, type – surface water, i.e. lake, river, stream, sea, or ground water; when relevant also temperature, flow, quality).
- Whether treatment of supply waters is carried out on site and an indication of the type of treatment performed (e.g. desalination, filtration).
- An indication of the techniques used (including both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned) to reduce the consumption of water. If efforts made to reduce water consumption lead to more concentrated effluents, this will be indicated as well as measures taken to minimise the environmental impact of more concentrated effluents.

#### **5.4.2.4 Energy use**

The information submitted should include, if relevant for the activities concerned:

- Inputs:
  - The type and quantity of fuel/energy used (e.g. fuel oil, liquefied petroleum gas, natural gas, steam, electricity, waste or biomass used as fuel), including cooling and technical gases (e.g. N<sub>2</sub>, O<sub>2</sub>). If steam is used, the temperature and pressure of the steam will be indicated.
  - Fuel/energy consumption (per type), making a distinction between thermal and electrical energy.
- Outputs:
  - Whether energy is produced (e.g. electricity production) and how much. If steam is produced, the temperature and pressure of the steam will be indicated.
  - Whether energy is sold or heat energy is used on or off site (e.g. district heating).
- Other:
  - Whether there is recovered energy and in what part of the installation, under which form and how much.
  - Whether there are exothermic reactions and in what part of the installation and how much.
  - Heat losses in what part of the installation and how much.
  - Whether energy benchmarking is used.

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System boundaries (included parts of a plant) and reference conditions should be provided when presenting energy consumption/efficiency values.

Energy data should be expressed in kWh or MJ per mass of product (or per mass of raw materials), indicating whether net or gross calorific values were used to determine this.

The BAT Reference Document on Energy Efficiency (ENE) should be taken into account for collecting and reporting energy data.

### 5.4.3 Emissions to water

The information submitted should distinguish between cooling water and process water, and indicate whether water is reused and, if so, how much. Data/information should include the items listed below, if relevant for the activities concerned.

- The amount and flow rate of discharged process waste waters as well as an indication of whether exceptional discharges are included.
- An indication of the sources (e.g. unit processes) of discharged process water.
- The amount, flow rate and temperature of discharged cooling water.
- Whether rainwater is collected and treated in the installation and how much.
- Whether waste waters coming from other plants (including municipal waste waters) are treated in the installation and how much.
- The emission levels (as concentrations and/or (specific) loads if considered relevant <sup>(9)</sup>, see Section 3.3.1) of discharged pollutants for each waste water stream considered and whether the waste water is discharged directly or indirectly to the receiving water. The information will also specify whether or not other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations) are included. This information should be submitted together with the relevant reference information indicated in Section 5.4.7.
- An indication of whether the water effluents are treated in a waste water treatment plant (WWTP) located on site or off site (e.g. municipal or central for a whole industrial site) of the installation.
- An indication of the techniques used (including both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned) to prevent, and where this is not practicable, to reduce emissions to water.
- The quantity of pollutant(s) before and after the (abatement) technique(s) in order to determine abatement efficiency(ies).
- Information on conditions/circumstances hampering the use of the (abatement) technique at full capacity and/or necessitating full or partial bypassing of the (abatement) technique and measures taken to restore full (abatement) capacity.

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<sup>(9)</sup> Information on loads (e.g. mass of pollutants released per year) may assist in identifying priorities on pollution reduction.

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#### **5.4.4 Air emissions**

Data/information submitted should include the items listed below, if relevant for the sector concerned.

- The emission levels (as concentrations and/or (specific) loads if available <sup>(5)</sup>; see Section 3.3.1) of pollutants emitted, making a distinction between channelled (e.g. stack) emissions and non-channelled (e.g. diffuse/fugitive) emissions as well as an indication of whether emissions under other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations) are included. For specific load data, the product referred to should be clearly defined. This information should be submitted together with the relevant reference information indicated in Section 5.4.7.
- An indication of whether the gas effluents are treated in a central waste gas treatment plant located on site or off site.
- An indication of the sources (e.g. unit processes) of both diffuse/fugitive and stack emissions.
- Flue-gas flow rate.
- Reference conditions (e.g. concentration data will refer to dry waste gases – if not, this will be indicated – and the reference oxygen content will be mentioned, if applicable).
- An indication of the techniques used (including both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned) to prevent, and where this is not practicable, to reduce emissions to air.
- The quantity of pollutant(s) before and after the (abatement) technique(s) in order to determine abatement efficiency(ies).
- Information on conditions/circumstances hampering the use of the (abatement) technique at full capacity and/or necessitating full or partial bypassing of the (abatement) technique and measures taken to restore full (abatement) capacity.

#### **5.4.5 Residues/waste**

Information submitted should include, if relevant for the sector concerned, the items listed below.

- The type(s) and quantities of residues/waste (e.g. sludge) generated/created by the activity.
- The (physical/chemical) characteristics of the residues/waste generated/created by the activity (e.g. metals content, average dry solid content).
- The specific weight of organic and inorganic residues/waste disposed of and the specific weight which is recycled/reused internally or externally.
- An indication of the techniques used (including both the technology used and the way in which the installations are designed, built, maintained, operated and decommissioned) to prevent the generation of residues/waste or, when this is not practicable, to reduce the generation of residues/waste.

#### **5.4.6 Other information**

The environmental performance and operational data provided should be accompanied by all the relevant general information such as, where applicable:

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- the year the installation was built and commissioned, and an indication of the nature and dates of major retrofits;
  - the type of production processes, catalysts, process equipment (e.g. mill, heat exchanger and furnace) used;
  - the main operating conditions of the process (e.g. continuous or batch process, recurring events such as furnace decoking, catalyst regeneration, production load, process temperature);
  - the different types of products manufactured and how their quality/composition may affect the consumptions/emissions;
  - Measures taken to prevent or, where this is not practicable, to reduce pollution during other than normal operating conditions (such as start-up and shutdown operations, leaks, malfunctions, momentary stoppages and the definitive cessation of operations);
  - Measures taken to reduce the likelihood (frequency) and/or environmental effects of incidents/accidents.

#### **5.4.7 Reference information that must accompany emission data**

##### **5.4.7.1 General**

For emission data, in addition to the value and unit for the parameter monitored, the information submitted should include, where applicable:

- the emission source (e.g. reactor, furnace)
- an indication of the type of emission pattern (e.g. minimum/maximum values, percentiles or a graphic presentation, see Section 5.4.7.3).

##### **5.4.7.2 Monitoring**

For emission monitoring data, the information submitted should include, where applicable, the items listed below.

- The frequency of the measurement/sampling/monitoring.
- The averaging period used to report the data (see detailed information below).
- The type of monitoring method used (e.g. direct measurement, indirect measurement, mass/heat balances, emission factors) and an indication of the EN/ISO (or other) monitoring standard(s) used including the sampling method and sample pretreatment. If available, the limit of detection (LOD) and the limit of quantification (LOQ) will be given for the parameter monitored. In cases where the monitoring standard used is not an EN/ISO standard, a description of the standard will be provided.
- An indication of the measurement/sampling/monitoring uncertainties.
- Details of the data source, e.g. who collected, analysed and submitted the data.
- Whether the data was taken during normal operation or under other than normal operating conditions (e.g. start-ups/shutdowns, regular maintenance, exceptional conditions).

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The Reference Document on General Principles of Monitoring (MON) should be taken into account with respect to the expression of monitoring results and how to deal with uncertainties, direct measurements and monitoring requirements.

#### 5.4.7.3 Averages, ranges and distributions of emission values

When providing emission monitoring information, the period over which the values have been collected and averaged should be unambiguously indicated. Information collected during other than normal operating conditions should be reported separately.

The exchange of information should address the performance of plants and techniques in terms of emissions, expressed both as short- and long-term averages (see Section 1.1.1). The availability of both types of information, the relevance as well as the feasibility of their collection and subsequent analysis should be discussed at the kick-off meeting (see Section 4.6.2.2).

A set of data containing short-term averages (e.g. half-hourly, hourly, daily averages) covering a longer time span (e.g. one or several years) allows for subsequent calculations of short- and long-term averages and percentiles. Particularly the variation range and distribution functions (e.g. maximum, mean, standard deviation from the spot measurements) of daily or hourly averages collected over a long period of time (e.g. one year or more) is necessary to identify the emission pattern and possible peak emissions that may occur.

Yearly averages generally give a good image of the environmental performance related to a process/technique, independently of local disturbances or short-term variations as they include emissions at installation levels from all sources and conditions throughout the year, i.e. in a relative steady-state situation. Yearly averages are also of interest in the context of benchmarking candidate techniques. For yearly averages, it is important to indicate how they were derived or calculated (e.g. from continuous or spot measurements and, if the latter, how many) and if emissions during other than normal operating conditions are included.

### 5.5 Specific issues under the remit of each technical working group

The TWGs set up for the drawing up or reviewing of a BREF should adhere to the general principles indicated in Section 5.4 of this paper. For the purpose of the information exchange, as defined in Article 13(1) and (2) of the IED, **TWG members should therefore provide information (especially consumption and emission data) at least down to the activity/plant level.** The TWG will determine whether or not to go to a more disaggregated level (e.g. reactor, furnace, unit operation, process). However, data aggregated from several plants can be used to elaborate the chapter entitled 'Current Emissions and Consumption Levels'.

In the case of a BREF review, TWG members should suggest in their list of wishes the type and format of sector-specific data that should be collected for the review of the BREF in question. The background paper prepared by the EIPPCB for the kick-off meeting should present the TWG suggestions and make concrete proposals for the outline of a **sector-specific** data collection template and for discussions regarding the type and format of data to be collected and submitted.

The TWG should decide at the kick-off meeting whether the general principles provided in this guidance document on data collection will have to be supplemented by sector-specific aspects for the BREF in question.

The TWG should discuss and develop **sector-specific template(s)** for collecting and submitting information to the EIPPCB following the general principles given in Section 5.2. The TWG should in particular determine the type of data, averages, ranges, distributions, units, reference conditions to be

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used/submitted, taking into account the data available and the units and reference conditions used by the producers. Agreeing on these issues will therefore be one of the objectives of the kick-off meeting and there should be enough time foreseen for this.

Important: the template(s) should be created in a format to allow for easy data compilation and analysis such as Excel, XML or other statistical tools. Preference should be given to multiple-choice questions. The use of questions allowing open answers should be limited as much as possible because they inherently lead to necessary clarifications because inconsistent terminology is used. An option to facilitate data validation is to be built in to the templates. The template could be tested during site visits for further improvements.

The TWG should define at their kick-off meeting the schedule for gathering and submitting data to the EIPPCB (in accordance with the Generic Schedule for the Review of BREFs set out in Section 1.2). Last minute data should be avoided because it is difficult for the whole TWG to peer review them. Information submitted after the set deadline(s) may not be taken into account (see also Section 1.2).

For emissions data, the TWG should decide, on the basis of the concentration and (specific) load data gathered (if both data are available, they should both be submitted), if one or both types of data would contribute to deriving useful BAT conclusions.

Both concentration and specific loads can be useful for the BREFs.

**Specific loads** (e.g. mass of pollutants released per mass of product manufactured) allow for the comparison of the environmental performance of installations irrespective of their different production volumes and are not influenced by mixing or dilution.

**Concentrations** (accompanied by reference conditions and averaging periods) generally give more information on short-term performance of individual processes or unit operations and thus can reveal fluctuations and peak emissions. They also establish environmental performance at any given moment. Combining them with flow data, allows for establishing the pollution load at any given moment. When continuous measurements are used, concentrations can be used to provide information on performance over a longer time period (e.g. a year).

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## 6 QUALITY ASSURANCE OF THE DRAWING UP AND REVIEWING OF THE BREFS

Quality assurance of the process of drawing up and reviewing of the BREFs largely rests on the adherence to the guidance contained in this document, in particular regarding the BREF content and boundaries and the collection of data for deriving BAT.

The quality of a BREF depends upon both the quality of the participants involved in the process (high level of technical expertise and involvement) and also the quality of the 'Sevilla process' itself. To guarantee this quality, Member States, industries concerned, non-governmental organisations promoting environmental protection and the Commission are each expected to have in place a quality system that includes:

- clear definitions of responsibilities and allocation of tasks
- methods and procedures
- the allocation of sufficient resources (in particular staff)
- an internal control system leading to continuous improvements.

The quality of the BREF is a day-to-day activity which is based on the personal commitment of all those involved in the exchange of information. Generally at the origin of the information collected, each individual TWG members has, as a **first level controller**, a special role to play to guarantee the quality of his/her contributions.

The EIPPCB staff which drafts the BREFs based on contributions from the TWG is a **second level controller** of the quality of the information submitted. The EIPPCB operates within the Institute for Prospective Technological Studies (IPTS) of the Commission's Joint Research Centre (JRC). The IPTS holds an ISO 9001 certification and the JRC operates within the Internal Control Standards and Underlying Framework of the Commission, which is based on international good practice. This provides further assurance of the capacity of the EIPPCB to carry out its tasks.

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## GLOSSARY OF TERMS AND ABBREVIATIONS

<b>English term or abbreviation</b>	<b>Meaning</b>
BAT	Best available techniques
BAT-AEL or BAT-associated emission levels	Emission levels associated with the best available techniques
BATIS (BAT information system)	A web-based software application set up to facilitate the exchange of information on BAT as well as the internal process carried out within the EIPPCB in order to produce or review BREFs
BREF	BAT reference document
EIPPCB	European Integrated Pollution Prevention and Control Bureau of the European Commission Joint Research Centre
IED	Industrial Emissions Directive (2010/75/EU)
IPPC	Integrated pollution prevention and control
RAI	Requests for additional information

## **ANNEXES**

## **Annex 1: Data quality rating system**

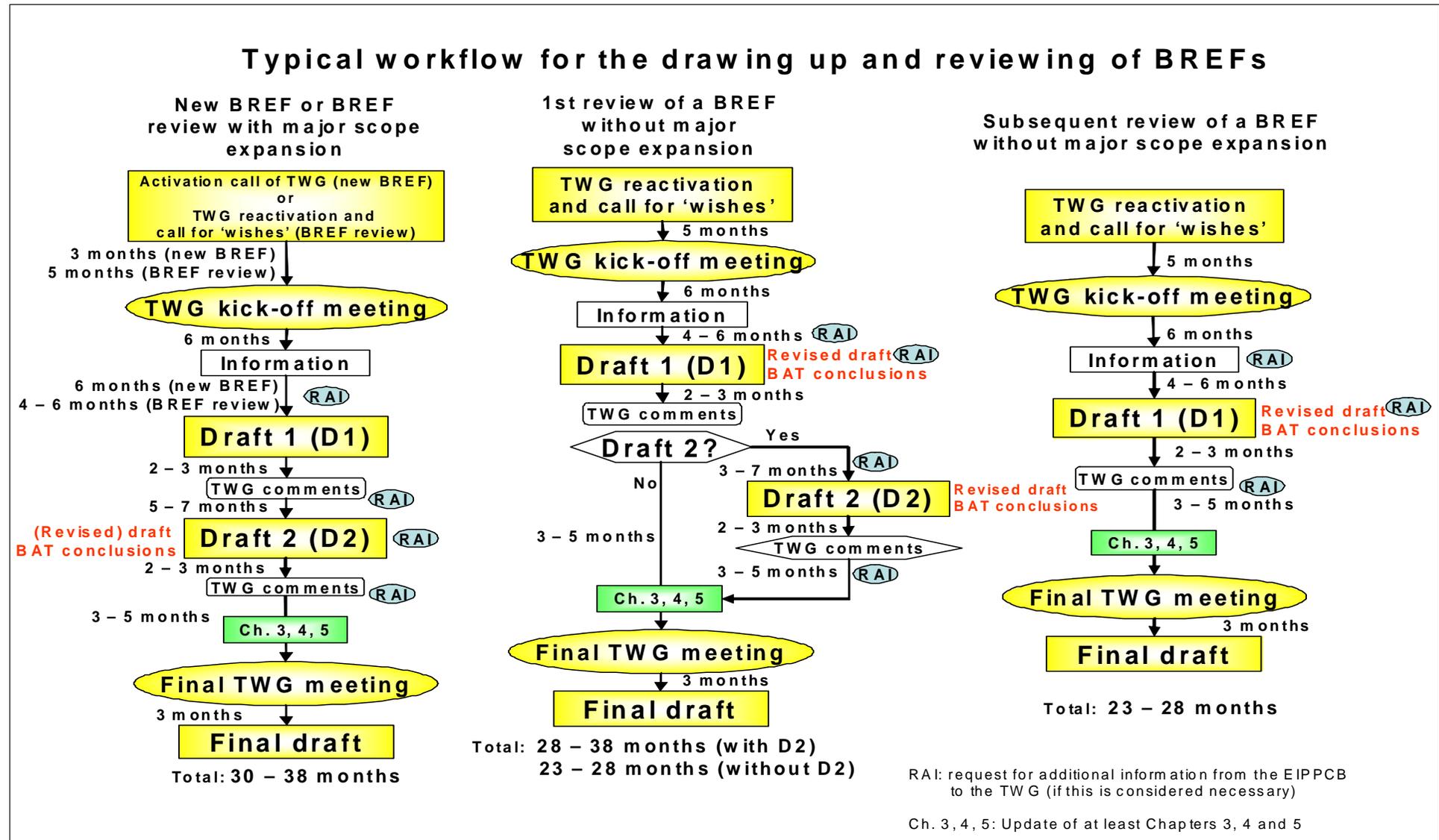
The information below has been drawn from the Reference Document on Economics and Cross-media Effects (ECM) (Section 2.4.1 of the ECM Reference Document adopted in July 2006).

Data quality rating systems have been used for emission estimates to give a qualitative indication of the reliability of data estimates. This approach has been extended to a generic data quality rating system. The following data quality rating system is recommended for all collected data:

- A. an estimate based on a large amount of information fully representative of the situation and for which all background assumptions are known;
- B. an estimate based on a significant amount of information representative of most situations and for which most of the background assumptions are known;
- C. an estimate based on a limited amount of information representative of some situations and for which background assumptions are limited;
- D. an estimate based on an engineering calculation derived from a very limited amount of information representative of only one or two situations and for which few of the background assumptions are known;
- E. an estimate based on an engineering judgement derived only from assumptions.

Data of A or B quality are the most appropriate for determining BAT.

## Annex 2: Typical workflow for the drawing up and reviewing of BREFs



## **Annex 3: Legal provisions related to public access to environmental information**

In the context of confidentiality issues the following provisions of the IED should be noted:

Article 24(3):

*'The competent authority shall also make available to the public, including via the Internet at least in relation to point (a):*

- *relevant information on the measures taken by the operator upon definitive cessation of activities in accordance with Article 22;*
- *the results of emission monitoring as required under the permit conditions and held by the competent authority.'*

Article 24(4):

*'Paragraphs 1, 2 and 3 shall apply subject to the restrictions laid down in Article 4(1) and (2) of Directive 2003/4/EC.'*

According to Article 4 of Directive 2003/4/EC on public access to environmental information, Member States may refuse to provide environmental information if disclosure of the information would adversely affect, inter alia:

- *'the confidentiality of commercial or industrial information where such confidentiality is provided for by national or Union law to protect a legitimate economic interest, including the public interest in maintaining statistical confidentiality and tax secrecy;*
- *intellectual property rights;*
- *the confidentiality of personal data and/or files relating to a natural person where that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for by national or Union law;*
- *the interests or protection of any person who supplied the information requested on a voluntary basis without being under, or capable of being put under, a legal obligation to do so, unless that person has consented to the release of the information concerned;'*

However, according to the same article of that Directive, these grounds for refusal shall be interpreted in a restrictive way, taking into account for the particular case the public interest served by disclosure. In every particular case, the public interest served by disclosure shall be weighed against the interest served by the refusal. Member States may not, by virtue of the above elements, with the exception of the intellectual property rights, provide for a request for access to information to be refused where the request relates to information on emissions into the environment.