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**EXPLANATORY & GUIDANCE  
document (E&G-d)  
on IED-based (draft)  
Waste Incineration BREF  
and BAT conclusions**

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**Executive summary**

## 1 Context

All installations included in the scope of the Industrial Emissions Directive (IED, Directive 2010/75/EU) must prevent and reduce pollution, use energy efficiently, prevent accidents and limit their impact by applying Best Available Techniques (BATs). In order to define at European Union level BATs and BAT Associated Environmental Performance Levels (BATAEPLs), which include BAT Associated Emission Levels (BATAELs), the European Commission organises an exchange of information with experts under the coordination of the European Integrated Pollution Prevention and Control Bureau (EIPPCB).

The experts, nominated by Member States, industry and environmental organisations, are organised into Technical Working Groups (TWGs), one for each industrial sector covered by the IED. This process results in Bat REference documents (BREFs). Each BREF document contains the so-called BAT conclusions chapter, which is intended to be designed as a stand-alone document. After the Member States' approval, the BAT conclusions chapter, adopted by the Commission, is published in the Official Journal of the European Union (OJEU) as a Commission Implementing Decision, which is directly applicable without transposition.

Within 4 years of the publication of a decision on BAT conclusions, the environmental permits of all installations involved must be adapted to the new requirements. If necessary, retrofitting work must be done in order to ensure that BATs are implemented and, in particular, that Emission Limit Values (ELVs) are set to ensure that emissions do not exceed the BAT Associated Emission Levels (BATAELs).

The BAT conclusions on Waste Incineration (WI) have been adopted on 12/11/2019 as Commission Implementing Decision XXX and published in OJEU on XX/XX/2019.

## 2 Implementation Unclear

At first glance, the WI BAT conclusions seem quite straightforward. However, when the time for implementation comes it will become apparent that there is a lack of background information on how to understand them, how to apply them and especially the applicability of the BATAE(P)L ranges. In fact, BAT conclusions in general often do not reference other complementary legal requirements, nor its useful contextual information shared during the exchange within the respective Technical Working Group.

There are a number of sources for concern in the WI BAT conclusions. Very little information was collected by the EIPPCB on cross-effects and costs. BATAELs are based on data provided by operators of well-performing plants in response to a questionnaire. Most of the BATAEL ranges were derived by selecting from the reported emissions (after filtering) and substance by substance, independently of each other.

In the WI BAT conclusions, BATAELs are expressed as ranges, often quite wide. Contextual information, which is needed to understand and use these ranges is almost never provided. It is important to note that none of the plants whose data were used to derive BATs/BATAEPLs, were at the same time fulfilling the maximum performances of the BAT conclusions: no plant was able to comply at the same time with the lower end of all BATAELs as well as the upper end of BAT Associated Energy Efficiency Levels (BATAEELs). Moreover, BATAELs are directly derived from operating values. When setting Emission Limit Values from BATAELs, the need for a margin for operating contingencies and uncertainty has to be taken into consideration by the competent authority because this was not done during the derivation of the BATAEL ranges.

The IED defines BATAELs (see IED Article 3 (13)) and requires that ELVs be set by competent authorities to ensure that emissions do not exceed BATAELs. However, the IED does not mention the BATAEPLs (BAT Associated Environmental Performance Levels) that were introduced by the non-binding guidelines for the drawing up of BREFs (Commission Implementing Decision of 10 February 2012). Nevertheless, the different legal status between BATAELs (that are required to be applied by the IED) and BATAEPLs (such as the energy efficiency levels, i.e. BATAEELs) is not mentioned in the text of the WI BAT conclusions.

In the two following chapters, issues that have not been clarified in the WI BAT conclusions but are of particular concern will be looked at.

### 3 Operating Conditions (NOC/OTNOC/R-EOT)

It is important to highlight that for future requirements regarding Emission Limit Values for the waste incineration sector, the legal picture will become twofold: a set of new (BATAEL-based) ELVs in Normal Operating Conditions (NOC) in addition to the existing (IED Annex VI-based) ELVs in the Relevant Effective Operating Time (R-EOT= NOC + OTNOC, Other Than Normal Operating Conditions)<sup>1</sup> for a number of continuously monitored substances.

In other words, on the one hand there will be BAT conclusions and their BATAELs. In accordance with the IED (Art. 3.13 and 15.3) all BATAELs are defined under NOC (IED Art. 3.(13)) and future ELVs<sup>2</sup> should therefore be established under NOC (IED Art. 15.3). This will apply to averages that are covered by BATAEL ranges (i.e. daily average values of continuously monitored substances and periodically monitored substances). On the other hand, the incineration sector is the only industrial sector for which compliance with the current ELVs (the ones laid down in IED Annex VI) of the continuously measured emissions is required within the R-EOT, i.e. as soon as and as long as waste is burning (see IED Annex VI, Part 8, Section 1.2). Since BAT conclusions will not override the provisions of IED Annex VI, waste incineration plants will still have to be compliant with the daily and half-hourly ELVs included in IED Annex VI, based on R-EOT.

A summary of this dual requirement is shown in **Table 5** of the E&G-d **Main** document and in **Table 2.a-2 of its Annex 2.a**.

For this issue of operating conditions some specific aspects require clarification. Among them:

- The WI BAT conclusions do not remind the reader that BATAELs are defined in NOC.
- The IED does not define NOC nor OTNOCs. There are a number of examples of OTNOC situations in the IED (Articles 14.1.f and 47) and in the BREF guidelines (Decision 2012/119/EU, in Section 4.6.2.2.3.ii and Section 5.4.7.2.6), but the list is not exhaustive and the OTNOC situations not clearly defined.
- The WI BAT conclusions do not say how to calculate a daily average in NOC when some ½-hr readings are in OTNOC.

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<sup>1</sup> Compliance with IED Annex VI ELVs for continuously monitored substances is required when waste is burning and not when only the burner(s) is/are in operation for start-up or shutdown. To differentiate this period, it is referred to as relevant EOR (R-EOT).

<sup>2</sup> Which must be set to ensure that emissions do not exceed BATAELs in normal operating conditions.

The Commission and the EIPPCB repeatedly stated that the calculation and compliance conditions for BATAEL-based ELVs are not necessarily the same as for IED Annex VI ELVs, but did not define these since "rules for the assessment of compliance are not within the scope of BAT conclusions"<sup>3</sup>.

More information on these issues can be found in [Section 4.3](#) of the E&G-d [main](#) document and in [its Annexes 2.a and 2.b](#).

## 4 Uncertainty

The main concern is related to the uncertainty issue. Starting from the operational data collected from well performing plants, the EIPPCB checked Limit of Quantifications (LoQ) of available AMSs (Automated Measuring System, the online instruments). But did not take into account the overall uncertainty of measurements and, in particular, the significant part resulting from online calibration of instruments with SRMs (Standard Reference Methods) by control bodies, from the sampling system and of the Data Acquisition and Handling System. The collected data were then used to set BATAEL ranges, which are therefore expressed without information on uncertainty.

A study conducted by INERIS, the official French institutional expert on monitoring, within the context of the WI BREF revision at the request of CEWEP, ESWET and FEAD was shared with the Technical Working Group, including the EIPPCB. The study shows that most often the performances of monitoring techniques available on the market, mainly Standard Reference Methods (SRMs), do not meet the requirements of standards on monitoring made compulsory by the IED in respect of the maximum levels of uncertainty:

- Already, for most of the regulated substances, at the level of IED Annex VI ELVs
- *A fortiori* for the BATAEL ranges in the WI BAT Conclusions, all of which are equal to or below IED Annex VI ELVs.

From a legal point of view, the situation can be accepted when ELVs are set equal or close to the IED Annex VI ELVs, since operating values will in practice be significantly lower than the limits. The margin between operating values and limits compensates for the fact that uncertainty is greater than required by the standards. However, in many cases there will be no margin or it will be insufficient to compensate, when BATAEL-based ELVs will be implemented (See [Figure 2](#) of this E&G-d [Main](#) document and [Figure 3.a-1.of its Annex 3.a](#)).

One may consider that, to be on the safe side, it is appropriate to set BATAEL-based ELVs systematically at the lower ends and to set performance standards at the higher ends of BATAEELS. However, as seen above, a certain amount of crucial information must be taken into account when implementing WI BAT conclusions. Setting ELVs based on BATAEL values that are consistent with the overall legal framework will require extreme caution and background work. In fact the challenge does not relate to abatement techniques which can meet very low emissions, but to providing evidence that the measurements comply with the requirements of the monitoring standards in respect of uncertainty.

The incineration sector's emissions are already the lowest of all combustion industries and the plants have minimised their impact on environment and human health. When concentrations decrease, the relative uncertainty will significantly increase, making – in the context of new and more ambitious limits – compliance with standard requirements in respect of maximum acceptable

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<sup>3</sup> Letter of the Commission to CEWEP, dated 20/09/2019.

uncertainty even more impossible to reach. No significant improvement is foreseen in the next 4 years to counteract this problem.

One of the basic principles of the IED is that *“Different approaches to controlling emissions into air, water or soil separately may encourage the shifting of pollution from one environmental medium to another rather than protecting the environment as a whole. It is, therefore, appropriate to provide for an integrated approach [...]. Such an approach will also contribute to the achievement of a level playing [...]”*<sup>4</sup>. The question that arises when it comes to the waste incineration sector is whether pushing as far as possible the already extremely stringent requirements for emissions will actually decrease the impact on the environment as a whole.

Given the complexity of the uncertainty issue, it is on purpose that there is no information in the WI BAT conclusions on how to deal with it. Indeed, the Commission considers that *“Member States have flexibility to determine how to assess compliance with the permit conditions and hence how to take measurement uncertainty into account for activities covered by Chapter II [of the IED].”*<sup>5</sup>

However, in the same letter, the Commission recognises that: *“Both BAT conclusions and some parts of the IED refer to EN and/or other available standards to measure emissions. DG Environment continues to cooperate with DG GROW and CEN on work to improve standard measuring methods. It is also recognised that standard reference methods need to be validated at lower concentrations. In view of these needs, DG Environment is exploring the technical issues and to explore financing that work. The results of such work also depends on technical progress in instruments and methods. It is also to be noted that the established procedures are complex and time consuming.”*

In other words, at the low concentrations encountered in WI BATAELs, the Best Available Techniques in monitoring do not allow for the time being and the foreseeable future to meet the requirements of the monitoring standards, mandatory according to the IED. A clear solution to this issue has not been found yet, as shown by the scattered pattern of approaches considered in different regions/Member States.

More information on these issues can be found in **Section 4.8** of this E&G-d **Main** document and in **its Annexes 3, in particular Annex 3.a**.

## 5 Why this Explanatory & Guidance document (E&G-d)?

In addition to complementing the WI BAT Conclusions with contextual information that is not contained in the Commission’s text but is necessary to understand it, the goal of this Explanatory and Guidance document (E&G-d) is to advise stakeholders against a hasty use of the WI BAT conclusions and to help harmonising the implementation of WI BAT conclusions throughout Europe and everywhere it may be used.

To this end, the structure follows a simple approach: first, the background information and open issues, then, at the end, a set of proposals to fill the gaps.

The annexes provide details on the most important points, step by step comments, detailed practical proposals and example forms to facilitate implementation of BAT conclusions and checking the plant state in respect of the BATs.

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<sup>4</sup> Industrial Emission Directive of 24 November 2010, Recital 3

<sup>5</sup> Letter of the Commission to CEWEP, dated 20/09/2019.