



# **A Wasted Opportunity?**

EU environmental standards for waste incineration plants under review

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## Executive Summary

More than 80 million tons of waste is burnt in Europe each year. Waste incineration plants across Europe are responsible for toxic emissions of health-harming substances including dioxins, heavy metals and particulate matter known to cause respiratory diseases, cancers, immune system damage and reproductive and developmental problems.

More than a decade after previous standards were agreed, European environmental standards for waste incineration plants are now finally being updated. Yet rather than tackling toxic pollution, in line with what is already being achieved by some of the best performing plants, the latest draft proposals for the updated standards mostly just maintain the status quo – and in some cases even weaken existing protections.

This report examines the proposals and compares them to existing rules and to the best-performing plants in Europe. It shows that while some progress is being made to improve environmental standards, a golden opportunity could be missed to reduce harmful emissions from one of Europe's toxic activities, further in line with tested and economically proven techniques.

The report makes recommendations for changes that could improve the new rules. It calls for a tightening of levels for the emissions of key pollutants to air and water. It demands that current flexibilities be removed and that certain exceptions be tightened or erased. It also recommends that certain techniques be made compulsory and that the requirements to monitor harmful emissions be strengthened.

Finally, the report includes a national scorecard that rates the positions taken by the EU Member States that were active during the drafting process. While the Netherlands, Sweden, Austria and Belgium are commended for their efforts to raise standards, Germany, the UK, Spain, Portugal, Hungary and the Czech Republic are condemned for their efforts to weaken the new rules.

Ultimately, Europe must stop burning 'waste' and move to truly circular economy, where precious resources are reused or recycled. But while 'waste' is still being burnt, Europeans expect and deserve the very best protections. The review process aims to set emission levels achieved by the use of Best Available Techniques to prevent or reduce pollution to the best possible levels of operation. A high amount of data was provided to justify a tightening of the now decade old previous rules, however the Commission led process has overall maintained the status quo. This report reveals a worrying picture of a review process that threatens to have been a wasted opportunity to offer those protections.

## Introduction

The Industrial Emissions Directive (IED)<sup>1</sup> is an EU law that aims to prevent and control the environmental impact of industrial activities.

All industrial installations, including waste incineration and co-incineration plants in the EU, must have an environmental permit based on the requirements of the IED.

Operating permits include binding emission limits for harmful substances. These limits are based on what can be achieved using the Best Available Techniques (BATs). Which techniques are considered as 'BAT' is defined in the binding conclusions of industry-specific reference documents known as 'BREFs'.

### Drafting BREFs

The preparation of the BREFs is co-ordinated by the European Commission through the European Integrated Pollution Prevention and Control (EIPPC) Bureau of the Institute for Prospective Technological Studies at the EU Joint Research Centre in Seville (Spain).

A consultation process is conducted with a Technical Working Group (TWG), which for the waste incineration BREF was composed of 261 members. 123 of which represent Member States and Norway, 16 the European Commission, 113 industry and 9 from environmental protection NGOs (represented by the EEB).

The first BREF on waste incineration was published more than a decade ago ('2006 WI BREF') and its review started in January 2015; a first proposal for its revision was presented by the EIPCCB in May 2017<sup>2</sup>, aiming to adapt the document to technological advances and changes in scientific knowledge and understanding.

An updated proposal for revised BAT Conclusions was presented to WI BREF Working Group members in February 2018 and will be discussed at the Final WI BREF Meeting in Seville at the end of

April 2018.<sup>3</sup>

The BREF revision process included the gathering of performance data from hundreds of plants currently operating across Europe.

Despite the fact that this data is supposed to be gathered from the best-performing plants, in order to demonstrate what the 'best available' techniques are, a high percentage of the reference plants were even failing to meet current minimum standards set in European law.

This is one of the reasons why this BREF review, which included very comprehensive data collection and detailed data analysis, has ultimately fallen short of expectations.

The BAT Conclusions defined at the end of April 2018 following the final Technical Working Group meeting must be approved by a vote by Member States. They are expected to be published in the Official Journal at the end of 2019. A maximum four year compliance deadline will then begin for the operators. The updated BAT conclusions will therefore be unlikely to produce effects prior to 2024, but will set the standards for the sector for the decade to come.

<sup>1</sup> Directive 2010/75/EU on industrial emissions (Integrated Pollution Prevention and Control Recast): <http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

<sup>2</sup> First draft of the revised WI BREF (2017): [http://eippcb.jrc.ec.europa.eu/reference/BREF/WI/WI\\_5\\_24-05-2017\\_web.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/WI/WI_5_24-05-2017_web.pdf)

<sup>3</sup> This document is referred to throughout this report as "the draft proposal(s)"

The voice and interests of EU citizens is supposed to be represented in the Sevilla Process by both environmental NGO and Member State delegates. However, rather than sending neutral environmental experts or if not available give up their seat, some countries chose to send industry representatives to occupy their national seats (see infobox).

### 'Emissions Ranges' in 'BAT Conclusions'

In the EU operating permits are issued to industrial installations by environmental authorities at the local or national level. These permits must set maximum Emission Limit Values (ELVs). ELVs must be set in line with the emission ranges obtained by the application of the best available techniques as detailed in the BAT Conclusions of the relevant industry-specific BREF. These emission ranges are known as the 'Best Available Techniques-Associated Emissions Levels', or 'BAT-AELs'.

Because the BAT Conclusions define a range of achievable emissions (e.g. BAT-AEL mg/Nm<sup>3</sup> for NO<sub>x</sub> emissions to air: existing plant 50-150\* \*The lower end of the BAT-AEL range can be achieved when using SCR. The higher end of the BAT-AEL range is 180mg/Nm<sup>3</sup> where SCR is not applicable"), permit writers have some flexibility when setting limits. As ELVs should not normally exceed the upper end of the BAT-AEL range, the upper end of this range can be considered as de facto limits. For simplification reasons, the upper BAT-AEL range is also referred to as 'upper level' in this report. It is also important to note that plant operators may even be granted a derogation to these *de facto* limits as described in Article 15.4 of the IED<sup>1</sup>.

### Industry infiltration in Member State delegations

The delegations of Hungary and Croatia were made up of 6 out of 10 and 2 out of 3 members respectively that were employees of industry groups. Other cases include: the Czech Republic (3 out of 7); Spain, Bulgaria, Finland and Malta (1 out of 3); Slovakia (1 out of 4) and the UK (2 out of 11).

This infiltration raises the number of industry representatives to 131 – making them the largest group represented and out numbering independent Member State delegates.

### Germany and France: Old Europe's old plants

Maximum emission levels set by the Commission in the WI BREF are derived from the data submitted by Member States as part of the revision process. This has led to levels set on a flawed basis for harmful emissions including nitrogen oxides and mercury.

#### **In a conscious decision intended to dilute overall average emissions levels, Germany and France submitted also data linked to poorly-performing plants.**

Furthermore, the Commission's methodology lacked a basic, logical reality check against emissions ranges set in the previous standards: the 2006 WI BREF\* or even against existing national rules within the EU 28. This has led to proposed emission levels that are weaker than existing limits in current guidelines and in binding national rules.

The European Commission (JRC) paper '*Compilation and presentation of plant-specific WI data in D1 of the revised WI BREF*' includes an estimate of how many of the reference lines used for data collection would comply with the currently binding EU limits and with their draft proposals for the revised BREF. It found that between 20-40 % of the reference lines exceeded one or more of the current legally-binding levels.




\* See WI BREF 2006: [http://eippcb.jrc.ec.europa.eu/reference/BREF/wi\\_bref\\_0806.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/wi_bref_0806.pdf)

## Air Pollution

### Levels of critical air pollutants

The following table compares emission levels of critical air pollutants for the sector set in the 2006 WI BREF with current draft proposals (expected to represent 'state of the art' for this sector for the decade to come) and current emission levels achieved by plants operating in Europe, based on data gathered in 2014.

#### Overview on proposed weakening of critical air pollution parameters (existing installations<sup>4</sup>), max daily average:

Parameter	2006 WI BREF	Proposed draft	Data collection results (2014)	EEB Demand	Overall assessment
<b>NOx</b> upper level	100 mg/Nm <sup>3</sup> (SCR) <sup>5</sup> 180 mg/Nm <sup>3</sup> (without SCR)	150 mg/Nm <sup>3</sup> (SCR) 180 mg/Nm <sup>3</sup> (without SCR)	<b>10% of reference lines<sup>6</sup> achieve &lt; 55 mg/Nm<sup>3</sup><sup>7</sup></b>	<b>100 mg/Nm<sup>3</sup>:</b> approx. 1/3 of reference lines achieve ≤ 100 mg/Nm <sup>3</sup>	
<b>Mercury</b> upper level	20 µg/Nm <sup>3</sup>	25 µg/Nm <sup>3</sup>	<b>10% of reference lines achieve ≤ 0,5 µg/Nm<sup>3</sup></b>	<b>10 µg/Nm<sup>3</sup>:</b> 57% of reference lines achieve < 10 µg/Nm <sup>3</sup>	
<b>Dust</b> upper level	5 mg/Nm <sup>3</sup>	5 mg/Nm <sup>3</sup> 7 mg/Nm <sup>3</sup> for existing plants where a bag filter 'is not applicable'	<b>10% of reference lines achieve: &lt; 0,4 mg/Nm<sup>3</sup></b>	<b>4 mg/Nm<sup>3</sup>:</b> 70% of reference lines achieve ≤ 4 mg/Nm <sup>3</sup>	

<sup>4</sup> Existing installation (IED definition): 'existing waste incineration plant' means one of the following waste incineration plants:  
 (i) which was in operation and had a permit in accordance with applicable Union law before 28 December 2002;  
 (ii) which was authorised or registered for waste incineration and had a permit granted before 28 December 2002 in accordance with applicable Union law, provided that the plant was put into operation no later than 28 December 2003;  
 (iii) which, in the view of the competent authority, was the subject of a full request for authorisation before 28 December 2002, provided that the plant was put into operation not later than 28 December 2004'

<sup>5</sup> SCR = Selective Catalytic Reduction, a technique used to reduce NOx pollution

<sup>6</sup> waste incineration line: any furnace used to combust waste, including the furnace feeding system, the flue gas cooling system, most often a (steam and/or hot water) boiler, the flue gas cleaning system and its stack or duct;  
 reference line: incineration line, proposed for the waste incineration BREF review data collection exercise, having only one flue-gas release point where air emissions are monitored. The reference line can be a grouped line as long as there is only one monitored point of release for air emissions

<sup>7</sup> The data filter considered throughout this report is: 'OP OC1 ELV 43'. For more information, please consult the European Commission (JRC) paper 'Compilation and presentation of plant-specific WI data in D1 of the revised WI BREF': [http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum\\_showPost&forumID=123884&postID=123911](http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum_showPost&forumID=123884&postID=123911)

Emission ranges for air pollutants have largely remained unchanged or even been weakened. **The emissions levels for the critical parameters mercury, NOx and dust have all been raised.**

For NOx emissions, upper levels as high as 180 mg/Nm3 are proposed for existing plants<sup>8</sup>. Yet data collected to inform the revision of the levels shows that even plants equipped with the (generally less efficient) SNCR technique can achieve levels of less than 100 mg/Nm3. Moreover, almost all of the lower ends of the BAT-AEL ranges have been raised.

**Lower ends of BAT-AEL ranges 2006 WI BREF v 2018 Draft Proposal:**

Pollutant	2006	Draft Proposal	Increase
Mercury (Hg) (µg/Nm3)	1 <sup>*§</sup>	5 <sup>*</sup> ; 15 <sup>§</sup>	400% <sup>*</sup> - 1,400% <sup>§</sup>
Metals <sup>9</sup> (mg/Nm3)	0,005 <sup>#</sup>	0,05 <sup>#</sup>	900%
Sulphur dioxide (SO2) (mg/Nm3)	1 <sup>*</sup>	5 <sup>*</sup>	400%

<sup>\*</sup> Daily Average | <sup>§</sup> Indicative half-hourly average | <sup>#</sup> non-continuous measurement, different sampling periods may apply

Rather than setting stricter standards for newly built plants, the levels proposed for new installations are also almost identical to the weakened levels set for existing ones.<sup>10</sup>

**Nitrogen oxides (NOx) emissions to air**

**Nitrogen oxides (NOx)** contribute to the acidification and eutrophication of waters and soils, and can lead to the formation of particulate matter and ground-level ozone. The adverse health and environmental impact of this kind of pollution is well documented.

Several Member States already apply emission limits that are much stricter than the currently proposed new upper levels. If adopted, the revised EU levels for NOx, due to be complied with by 2024, could still be more than double current limits that have already been in place for a number of years.

**NOx air emissions, max daily average:**

Current EU levels (2006 WI BREF) (mg/Nm3)	Draft Proposal (mg/Nm3)	Current average emission level (mg/Nm3) <sup>11</sup>	Average performance of 10% of plants with the lowest emissions (mg/Nm3)	Stricter limits already in place in EU Member States (mg/Nm3)	EEB proposed level (mg/Nm3)
100 (SCR)	150	149	< 55	NL: 70 <sup>12</sup> FR: 80 <sup>13</sup>	<b>100</b>

<sup>8</sup> If the generally more effective SCR deNOx abatement technique 'is not applicable'

<sup>9</sup> Total (Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V)

<sup>10</sup> It is very common for BREFs to differentiate between emission levels for 'new' and 'existing' installations. New installations are not bound to technical applicability restrictions that could face existing plants.

<sup>11</sup> This is the median value of the daily averaged data (max daily averages) of all plants included in the data collection

<sup>12</sup> Monthly average; Dutch general binding rules published at: <http://wetten.overheid.nl/zoeken/> and <https://zoek.officielebekendmakingen.nl/zoeken/staatsblad>



180 (no SCR)	180 (no SCR)			AT: 100 <sup>14</sup> SE: 100 <sup>15</sup> DE: 150 <sup>16</sup>	Approx. 1/3 of reference plants ≤ 100 mg/Nm <sup>3</sup>
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✓ **For NO<sub>x</sub> emissions to air, a maximum level of 100mg/Nm<sup>3</sup> (daily average) should apply**

Much lower levels than 100mg/Nm<sup>3</sup> are achieved with the more effective SCR technique, as is the standard in Austria. However, those levels can also be achieved using cheaper Selective Non-Catalytic reduction (SNCR) technology<sup>17</sup>.

Plants already operating below 100 mg/Nm<sup>3</sup> include:

- MVR Müllverwertung Rugenberger Damm (Germany) (76.27 mg/Nm<sup>3</sup>\*)
- SET Mont Blanc (France) (93.42 mg/Nm<sup>3</sup>\*)
- I/S Vestforbrænding (Denmark) (99.83mg/Nm<sup>3</sup>\*)

\* Max daily average

The levels in the current proposal would allow polluters maximum flexibility and would not require the optimisation of NO<sub>x</sub> abatement. Even future plants, that are yet to be built, would be allowed to pollute at levels significantly above what is technically possible and proven economically viable for the operators.

Failure to ensure Europe-wide levels for harmful pollutants are set based on frontrunners performance is unfair to European citizens living in countries that have weaker limits. It would also represent an absurd setback for those countries that have acted to protect human health and the environment by requiring a higher level of protection (e.g. the Netherlands, Austria, France and Sweden).

### Mercury emissions to air

**Mercury** is a harmful neurotoxin that has been recognized as a chemical of global concern, owing to its long-range atmospheric transport, its persistence in the environment, its ability to bio-accumulate in ecosystems and its significant negative effects on human health and the environment.

The most significant anthropogenic releases of mercury globally are through emissions to air. The Minamata Convention<sup>18</sup>, which was signed by the EU, requires a progressive phase out of mercury emissions, including the application of best available techniques for waste incinerators.

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<sup>13</sup> In areas with elevated levels of background pollution; national legislation transposing the IED in France: <https://www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT000006074220&idArticle=LEGIARTI000027387203&dateTexte=&categorieLien=cid>

<sup>14</sup> Plant capacity > 6t/h; Waste incineration in Austria – Best Available Techniques, Austria Environment Agency (2017): [http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum\\_showPost&forumID=120478&postID=120781](http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum_showPost&forumID=120478&postID=120781)

<sup>15</sup> Monthly average; Swedish Industrial Emissions Ordinance (SFS 2013: 250): [http://www.riksdagen.se/sv/dokument-lagar/svenskforfattningssamling/\\_sfs-2013-253](http://www.riksdagen.se/sv/dokument-lagar/svenskforfattningssamling/_sfs-2013-253)

<sup>16</sup> Rated thermal input > 50 MW; BlmSchG, Ordinance 17: <https://www.ecolex.org/details/legislation/17th-federal-immission-protection-ordinance-lex-faoc126921/>

<sup>17</sup> Optimisation may be necessary

<sup>18</sup> UN Minamata Convention on mercury (adopted in 2013): <http://www.mercuryconvention.org/Portals/11/documents/Booklets/COP1%20version/Minamata-Convention-booklet-eng-full.pdf>

Waste is generally a highly heterogeneous material, consisting essentially of organic substances, minerals, metals and water. Emissions of mercury can be particularly high if waste is not controlled or sorted before incineration.

The maximum mercury emission levels in the Commission's draft proposal do not reflect the performance of proven, effective techniques widely applied in the sector.

**Mercury air emissions, maximum daily average:**

<b>Current EU levels</b> (2006 WI BREF) (µg /Nm <sup>3</sup> )	<b>Draft Proposal</b> (µg /Nm <sup>3</sup> )	<b>Current average emission level</b> (µg /Nm <sup>3</sup> ) <sup>19</sup>	<b>Average performance of 10% of plants with the lowest emissions</b> (µg /Nm <sup>3</sup> )	<b>Stricter limits already in place in EU Member States</b> (µg /Nm <sup>3</sup> )	<b>EEB proposed level</b> (µg /Nm <sup>3</sup> )
20	25	7.6	≤ 0.5	DE: 10 <sup>20</sup>	10  <b>57% of reference lines (51 lines) &lt; 10 µg/Nm<sup>3</sup></b>

The draft proposes increasing the upper level from 20 to 25 µg/Nm<sup>3</sup> for existing installations compared to the 2006 WI BREF. A level of 10 µg/Nm<sup>3</sup> is proposed only for long-term sampling, which allows too much flexibility for operators. For new installations, the more-than-ten-year-old level of 20 µg/Nm<sup>3</sup> is retained, meaning that the future BAT standards would be unchanged for three decades.

✓ **For mercury emissions to air, levels of < 1-10 µg/Nm<sup>3</sup> should apply**

Techniques such as the injection of activated carbon upstream of a fabric filter, which can reduce mercury emissions by more than 95%, or the use of high efficiency scrubbers, which are 85% effective, can achieve significantly lower levels of mercury emissions. Using activated carbon in combination with other techniques can be particularly effective.<sup>21</sup>

Some plants in Europe and Japan show mercury concentrations below 1 µg/Nm<sup>3</sup> when activated carbon is used. This is confirmed by the data collection underpinning the BREF review.

Examples of lowest emissions achieved:

- MVA Pfaffenau, Austria (0.02 µg/Nm<sup>3</sup>\*)
- MVA Bielefeld-Herford, Germany (0.07 µg/Nm<sup>3</sup>\*)
- Kymijärvi II, Finland (0.1 µg/Nm<sup>3</sup>\*)

\* Max daily average

<sup>19</sup> This is the median value of the daily averaged data (max daily averages)

<sup>20</sup> Annual average, rated thermal input > 50 MW; BImSchG, Ordinance 17:

<https://www.ecolex.org/details/legislation/17th-federal-immission-protection-ordinance-lex-faoc126921/>

<sup>21</sup> In the UNEP 2016 BAT/BEP Guidance on Hg abatement from WI plants, it is noted that under normal operating conditions emissions of < 1µg/Nm<sup>3</sup> (yearly averaged) can be achieved with a well-designed waste incineration plant and that new plants could be expected to achieve these levels:

[http://www.mercuryconvention.org/Portals/11/documents/forms%20and%20guidance/English/BATBEP\\_waste.pdf](http://www.mercuryconvention.org/Portals/11/documents/forms%20and%20guidance/English/BATBEP_waste.pdf)

57% of the reference plants have achieved maximum daily emissions below 10 µg/Nm<sup>3</sup> since at least 2014. The BAT/BEP guidance developed under the Minamata Convention confirms that the BAT levels should not exceed 10µg/Nm<sup>3</sup> for waste incineration<sup>22</sup>. Maintaining the level beyond 10µg/Nm<sup>3</sup> (annual average) would mean the EU is breaching international commitments.

### Dust emissions to air

**Dust** emissions can be very harmful, depending on the type and size of dust particles. Exposure to smallest toxic particulate matter (PM2.5) is the largest environmental health threat in Europe.

PM exposure is lined to increased risk of death from heart disease, respiratory diseases and lung cancer and shortens life expectancy by 6-12 months in most European countries.<sup>23</sup> PM2.5 was recently identified as a leading environmental cause of cancer deaths by the World Health Organisation’s cancer agency<sup>24</sup>.

#### Dust air emissions, maximum daily average:

<b>Current EU levels</b> (2006 WI BREF) (mg/Nm <sup>3</sup> )	<b>Draft Proposal</b> (mg/Nm <sup>3</sup> )	<b>Current average emission level</b> (mg/Nm <sup>3</sup> ) <sup>25</sup>	<b>Average performance of 10% of plants with the lowest emissions</b> (mg/Nm <sup>3</sup> )	<b>Stricter limits already in place in EU Member States</b> (mg/Nm <sup>3</sup> )	<b>EEB proposed level</b> (mg/Nm <sup>3</sup> )
5	5  7 (without bag filter)	2.5	< 0.4	NL: 5 <sup>26</sup> DE: 5 <sup>27</sup>	4  <b>70% of reference lines (219 plants!) already ≤ 4 mg/Nm<sup>3</sup></b>

Measures taken to reduce dust emissions are also effective in preventing heavy metals emissions as these are particulate-bound and captured by dust abatement equipment.

Some of the best-performing plants, none of which are equipped with a bag filter, already achieve much lower emission levels:

- MVA Bielefeld-Herford, Germany (0.3 mg/Nm<sup>3</sup>)\*

<sup>22</sup> ibid

<sup>23</sup> Loss of statistical life expectancy attributed to anthropogenic contributions to PM2.5, 2000 and 2020, EEA (2007): <http://www.eea.europa.eu/data-and-maps/figures/loss-of-statistical-life-expectancy-attributed-to-anthropogenic-contributions-to-pm2-5-2000-and-2020>

<sup>24</sup> Outdoor air pollution a leading cause of cancer deaths, WHO (2013): <http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/news/news/2013/10/outdoor-air-pollution-a-leading-environmental-cause-of-cancer-deaths>

<sup>25</sup> This is the median value of the daily averaged data (max daily averages)

<sup>26</sup> Dutch general Binding Rules published at: <http://wetten.overheid.nl/zoeken/> and <https://zoek.officielebekendmakingen.nl/zoeken/staatsblad>

<sup>27</sup> Rated thermal input > 50 MW; BlmSchG, Ordinance 17: <https://www.ecolex.org/details/legislation/17th-federal-immission-protection-ordinance-lex-faac126921/>

- I/S Reno-Nord, Denmark (0.3 mg/Nm<sup>3</sup>)\*
  - SAKO Brno, Czech Republic (0.05 mg/Nm<sup>3</sup>)\*
- \* Max daily average

✓ **For dust emissions to air, an upper level of 4 mg/Nm<sup>3</sup> should apply**

The 4 mg/Nm<sup>3</sup> level was already met by 70% of plants as far back as 2014 by using a variety of common dust abatement techniques.



✓ **The higher upper level for dust from plants not equipped with a bag filter should be removed**

Many plants, including those listed above, are already achieving much lower emissions without being equipped with a bag filter.

### Air pollution monitoring

IED Article 48(5) states: *'As soon as appropriate measurement techniques are available within the Union, the Commission shall, by means of delegated acts in accordance with Article 76 and subject to the conditions laid down in Articles 77 and 78, set the date from which continuous measurements of emissions into the air of heavy metals and dioxins and furans are to be carried out'.*

The draft proposal includes some progress compared to the 2006 WI BREF including improved mercury and dioxins monitoring and measures to tackle very high dioxin emission levels that may occur during start up. However, further work is still needed to remove flexibilities currently offered to operators to derogate from this stricter monitoring regime.

Parameter	2006 WI BREF	Proposed draft	Overall assessment
Monitoring requirements (hg)	Both continuous and periodic measurements	Continuous monitoring with flexibilities	
Monitoring requirements dioxins and furans	Non-continuous sampling of dioxins (sampling over 6-8 hour period)	Monthly monitoring with long-term sampling (period of at least 2 weeks) with flexibilities	

### Mercury air emissions monitoring

Despite measures to control or minimize the input of mercury in waste incineration plants, significant amounts do still occasionally slip through.

To be able to promptly detect changes in the mercury content of the waste and high concentrations of mercury in flue gas, so that countermeasures can be quickly initiated:

✓ **Incineration plants should continuously measure mercury air emissions**

Continuous monitoring is currently being carried out in some EU Member States but is not yet required by EU rules<sup>28</sup>, which instead demand a minimum of two measurements per year. **In some cases national or regional authorities may even decide to require just one measurement of mercury emissions every two years.**<sup>29</sup>

The draft proposal includes continuous monitoring requirements for mercury, which is a clear improvement on the standards set in the WI BREF 2006. However, the draft offers flexibilities to operators that could undermine effective implementation.

The Commission has proposed that continuous monitoring may be replaced by long-term sampling or periodic monitoring (with a minimum frequency of only once every six months) for plants with a capacity of less than 100,000 tonnes per year that incinerate exclusively non-hazardous waste, and for plants incinerating wastes with an intrinsically low and constant mercury content. The latest draft proposal still retains the flexibility for *'plants with an intrinsically low and constant mercury content'*.

✓ **Flexibility for the monitoring of mercury emissions should be removed**

Unexpected or illegal mercury input can occur at any plant, regardless of its size or the type of waste being burnt.

A case study conducted in the sewage sludge incineration plant, Frankfurt Sindlingen, demonstrates that even in plants with mono-streams of the same kind of waste can experience peaks of mercury emissions. The Sindlingen plant even exceeded the 25 µg/m<sup>3</sup> level while burning sewage sludge<sup>30</sup>. Discontinuous mercury monitoring is a random measurement that is obviously totally ineffective in addressing mercury peaks.

### Mercury emission peaks

Peaks in mercury emissions are unavoidable when incineration plants burn highly contaminated waste and use unreliable detection methods.

While the draft proposal includes various techniques for mercury abatement and the latest version explicitly mentions the challenge of emission peaks, it still offers operators the flexibility to choose a single technique from a provided list. This fails to ensure that the most effective method is used to address the issue.

✓ **Dedicated BAT conclusion highlighting the techniques most suitable to prevent or minimise mercury peaks should be included**<sup>31</sup>

### Dioxin emissions monitoring

#### Semi-continuous monitoring of dioxins

The draft proposal includes monthly monitoring requirements via long-term sampling (sampling period of at least 2 weeks),

**Dioxin Monitoring: Current Member State practice**

Long-term sampling in France has been required by law since July 2014, in Belgium since 2004, and is already applicable in some plants in Italy and Sweden.

<sup>28</sup> Industrial Emissions Directive, see pre-cited Article 48(5)

<sup>29</sup> For example if the operator can prove that mercury emissions are always below 50% of the ELVs. How it is possible to prove this without a continuous monitoring system already having been installed is unclear.

<sup>30</sup> Information provided by Ms Susanne Schmidt, Stadtentwaesserung Frankfurt on 10.10.2013;

SEF 2013 Description of the sewage sludge incineration plant in Frankfurt Sindlingen:

<http://www.stadtentwaesserung-frankfurt.de/index.php/anlagen/abwasserreinigung/sewa-sindlingen.html?limitstart=0>

<sup>31</sup> Fixed bed adsorption or injection of highly reactive Activated Carbon (AC), in combination with continuous mercury raw gas measurement

also called 'semi-continuous monitoring', for dioxins. This is an improvement compared to the current 2006 WI BREF standards that merely mention the non-continuous monitoring of dioxins.

However, the draft offers flexibilities to operators that could undermine effective implementation: in the first draft of May 2017, the Commission proposed that monthly long-term sampling may be replaced by periodic measurements (with a minimum frequency just once every 6 months) for plants

**Judgement by the Land and Environmental Court<sup>1</sup> and by the Swedish Supreme Court<sup>1</sup>:  
'Long term sampling is 'best possible technique' and is economically viable'**

In a judgement in January 2016 regarding environmental permitting for the SYSAV WI plant in Malmö, the Land and Environmental Court of Appeal decided that the use of long-term sampling of PCDD/F emissions to air:

- is the 'best possible technique'<sup>1</sup>, and
- is economically viable\*.

The operator appealed also against the judgement by the Land and Environmental Court of Appeal - to the Swedish Supreme Court. In a judgement in November 2017, the Supreme Court decided that the decision by the Land and Environmental Court of Appeal shall continue to apply. The Supreme Court also gave the company ten months to buy and install the monitoring equipment.

**\* It was calculated that the costs would just be 10 eurocent/tonne:** this represents a very low cost compared to the incinerator's revenue and the price paid for the incineration of one tonne of municipal waste. The price differs between installations, but in Sweden plants are usually paid between 40 and 60 €/tonne to incinerate waste. In addition to this, the incinerator has revenues from selling heat and electricity.

incinerating exclusively non-hazardous waste, and for plants where dioxin emission levels are proven to be sufficiently stable. The latest draft still retains the flexibility for *'plants where dioxin emission levels are proven to be sufficiently stable'*.

✓ **The dioxin emissions monitoring derogation's wording should be amended:**

The following wording would be more appropriate: *'(...) for incineration plants where PCDD/F emission levels are proven to be sufficiently stable via analysing long-term samples using at least monthly monitoring frequency periods during one year, the monthly long-term sampling of PCDD/F emissions can be replaced by periodic measurements with a minimum monitoring frequency of once every six months. The procedure shall be repeated every 5 years'*

With periodic measurements stable emissions conditions cannot be proved. Therefore long term sampling with monthly monitoring frequency has to be established in all cases. Only if these measurements show stable emissions, can the regime be replaced by periodic measurements.

## Alarmingly high dioxin emissions at the start-up phase of operation

Dioxin peaks have been observed while plants are starting up<sup>32</sup>, before the incineration of waste has even begun.

Polychlorinated dibenzo(p)dioxin and furan, or PCDD/F, are significant environmental pollutants. The extent of the formation of PCDD/F at the start-up phase of operation, especially at the very first stage when the boiler is heated and before waste feeding starts, has been underestimated until now – because no waste is normally being incinerated at this point.

The start-up phase was seen as unsuspecting for PCDD/F formation, until results of different trials in several waste incineration plants made the case for de-novo synthesis<sup>33</sup> of the harmful pollutant. Research has shown that the de-novo-synthesis of PCDD/F occurs especially in the temperature range between 250 to 350°C, when sufficient carbon and chlorine in form of inorganic chloride is available. This is due to soot deposits from the previous operating phase. Metals are able to catalyse this reaction. Despite intensive cleaning of the boiler area during revision, there will be dust and soot residue remaining which provide a sufficient source for chloride and heavy metals.

Monitoring at different waste incineration plants has shown very high concentrations of PCDD/F, up to 267 ng TEQ/Nm<sup>3</sup> during start-up<sup>34</sup>.

At the municipal waste incineration plant Hamburg Borsigstraße, **PCDD/F concentrations in the raw gas were measured under start-up conditions that were 350 times higher than under normal operating conditions**. These emission peaks led to exceedances of the emission limit value for PCDD/F (0.1 ng/m<sup>3</sup>) for days and, due to storage effects, there was a significantly increased amount of PCDD/F in the clean gas weeks and months after the start-up – a load calculation based on the average clean gas concentrations in the following days showed that **the PCDD/F mass flow of one cold start-up alone is equivalent to the one of approximately half a year of normal plant operation**<sup>35</sup>.

Unaware of the issue, or due to the lack of regulatory requirements, **many plants are currently operating during start-up with a bypass for part of the flue gas cleaning system or even of the entire system (!)** to avoid technical problems such as bonding of used sorbents at the fabric filter at low temperatures.

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<sup>32</sup> A report by the British Society for Ecological Medicine states that the dioxin emissions within a couple of days at start-up and shut-down may equal the emissions usually made over a period of six months of operating under standard conditions: [http://www.bsem.org.uk/uploads/IncineratorReport\\_v3.pdf](http://www.bsem.org.uk/uploads/IncineratorReport_v3.pdf)

<sup>33</sup> De-novo synthesis : the de novo synthesis of dioxins refers to their formation from carbon, soot, biomass, or any organic structure unrelated with PCDD or PCDF

<sup>34</sup> Research project EULV24 Pollutant emissions during start-up and shutdown of (large) technical thermal plants, Bavarian State Office for the Environment (2008): <https://d-nb.info/989121240/34>;  
Optimisation of the start-up procedures in a municipal waste incinerator – impact on the emissions of dioxins and related compounds, Lüder et. al (2003): [https://www.researchgate.net/publication/287253285\\_Optimization\\_of\\_the\\_start-up\\_procedures\\_in\\_a\\_municipal\\_waste\\_incinerator\\_-\\_impact\\_on\\_the\\_emissions\\_of\\_dioxins\\_and\\_related\\_compounds](https://www.researchgate.net/publication/287253285_Optimization_of_the_start-up_procedures_in_a_municipal_waste_incinerator_-_impact_on_the_emissions_of_dioxins_and_related_compounds);  
Start-up of a hazardous waste incinerator – impact on the PCDD/PCDF-emissions, Dehoust et. al (2003): [https://www.researchgate.net/publication/292587604\\_Start-up\\_of\\_a\\_hazardous\\_waste\\_incinerator\\_-\\_impact\\_on\\_the\\_PCDDPCDF-emissions](https://www.researchgate.net/publication/292587604_Start-up_of_a_hazardous_waste_incinerator_-_impact_on_the_PCDDPCDF-emissions);

<sup>35</sup> PCDD/F emissions during cold start-up and shutdown of a municipal waste incinerator, Wilken et. al (2002): [https://www.researchgate.net/publication/281466470\\_PCDDF-emissions\\_during\\_cold\\_start-up\\_and\\_shut-down\\_of\\_a\\_municipal\\_waste\\_incinerator](https://www.researchgate.net/publication/281466470_PCDDF-emissions_during_cold_start-up_and_shut-down_of_a_municipal_waste_incinerator)

The draft proposals include monitoring requirements during start-up and shutdown (while no waste is being incinerated), explicitly referring to PCDD/F emissions, that may be estimated based on at least one measurement campaign per year, carried out during a planned start-up/shutdown operation. This will enable the compilation of an EU-wide database so that the magnitude of the issue is realised and then properly addressed. However, when it comes to the operation of the flue gas cleaning system during these phases, there is no clear requirement but only a mention as an example<sup>36</sup> that operators or permit writers could easily neglect in the implementation stage.

- ✓ **In order to avoid increased emissions of PCDD/F, flue gas cleaning systems should be in full operation before start-up and all bypasses must be closed**

There are techniques, such as pre-heating of the fabric filters to avoid bonding of the used sorbents at low temperatures<sup>37</sup> that ensure an undisturbed start-up operation without the use of a bypass.

- ✓ **It should be clearly noted that it cannot be considered as using Best Available Techniques to exploit a bypass system during start-up**

### Averaging Periods

The proposed draft contains emission levels for air pollutants expressed as daily averages, a significant weakening compared to the half-hourly averages included in the 2006 BREF.

Daily averages provide no protection from emissions peaks that could represent significant threats to the environment and human health. Such peaks are disguised as more frequent measurements are averaged out over a 24 hour period.

The European Commission has claimed that *'the IED Annex VI half-hourly ELVs might be considered to already provide, in general, sufficient safety net levels for short-term emissions'*. However, the BREF standards should not simply provide a *'sufficient safety net level'* for emissions but rather the best available techniques for the protection of human health and the environment.

It is particularly crucial to maintain half-hourly averaged levels for critical air pollutants such as dust, NOx and SOx in order to protect local communities that are particularly sensitive to emission peaks.

Half-hourly average emission levels are included in the draft for mercury, but are currently labelled as "indicative", which means they are not binding for plants operators. These levels should be mandatory as the effective monitoring and abatement of mercury emission peaks is a key issue for the sector.

Nevertheless, the European Commission has proposed that this issue not to be discussed at the Final meeting.

- ✓ **Emissions levels for air pollutants should be expressed as half-hourly averages**

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<sup>36</sup> BAT 19 excerpt (draft proposal): *'BAT is (...) appropriate design of critical equipment (e.g. supplementary burners to heat up the flue-gas and obviate the need to bypass the bag filter and ensure full operation of the FGC system during on start-up and shutdown, etc.)'*

<sup>37</sup> These are widely applied in plants in Germany



## Water Pollution

While the majority of attention is given to the environmental impact of air pollution from waste incineration plants, waste water is also an issue for many installations. The cleaning of waste gases and the treatment of slags and bottom ashes leads to the production of toxic residues and, where wet processes are used for pollution abatement, to pollutants emissions to water.

The most significant water pollutants are metals, dioxins, organic compounds (parameter: TOC<sup>38</sup>) and various suspended solids (parameter: TSS<sup>39</sup>). Some of these are priority hazardous substances which must be phased out under the EU's Water Framework Directive.

### Mercury and Cadmium emissions to water

Measures should be taken to end emissions of substances categorised as Priority Hazardous Substances (PHS) under the EU Water Framework Directive<sup>40</sup>, such as mercury and cadmium.

The draft proposal includes tighter levels for mercury (down from 30 to 10 µg/l) and cadmium (down from 50 to 30 µg/l), but these levels do not reflect the performance of proven, effective techniques applied in the sector.

- ✓ **The upper level for mercury emissions to water should be further decreased to 7.5 µg/l**

More than half of the plants have maximum mercury emission values below 7.5 µg/l.

- ✓ **Abatement techniques for metals should be optimized for the removal of mercury: chemical precipitation, combined with selective ion exchange or sand filtration and activated carbon filtration**
- ✓ **The upper level for cadmium emissions to water should be decreased to 20 µg/l**

Around half of the plants used in the data gathering exercise are already achieving emissions below 20 µg/l.

- ✓ **Abatement techniques for metals should be optimized for removal of cadmium: flocculation and precipitation, combined with selective ion exchange or sand filtration and activated carbon filtration.**

### Waste-water-free flue gas cleaning

The draft proposal includes techniques to reduce water usage to prevent waste water entirely. 'Waste-water-free' Flue Gas Cleaning techniques, such as dry sorbent injection or semi-wet absorbers, are mentioned, but the proposal misses further important techniques for wet systems, through which waste water arising from wet scrubbers is evaporated by injection into the flue gas system. Well-established techniques are already used in municipal waste incineration plants in Germany.

- ✓ **Waste-water-free techniques should be promoted for wet Flue Gas Cleaning (FGC) systems**

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<sup>38</sup> Total Organic Carbon

<sup>39</sup> Total Suspended Solids

<sup>40</sup> Directive 2013/39/EU regarding priority substances in the field of water policy:  
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0039&from=EN>

## Indirect emissions derogation

The current draft proposal includes a worrying derogation regarding indirect emissions<sup>41</sup> to a receiving water body.

While an important improvement to explicitly tackle indirect emissions has been included, the current draft proposal offers flexibility to operators that could seriously undermine effective implementation. It states that the proposed indirect discharge emission levels for metals and dioxins *'may not apply if the downstream waste water treatment plant abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment'*.

This vaguely-formulated derogation is not in line with the principles of the EU Water Framework and Industrial Emissions directives: abatement at source, the polluters pays principle, no dilution of hazardous substances, equivalent level of protection.

A downstream (biological) waste water treatment plant does not guarantee an equivalent level of protection for many critical pollutants e.g. for toxic heavy metals: the removal efficiency is lower than in case of a physico-chemical treatment, there is dilution and, often, it is not the polluter who pays.

The weak wording of the derogation will inevitably make effective enforcement challenging as leaves room for misinterpretation and abuse undermines the purpose of introducing requirements for indirect discharges in the first place. It is most cost-effective to prevent the pollution at source.

### ✓ **The indirect emissions derogation should either be deleted or modified**

The following wording would be more appropriate: *'The lower range of the BAT-AELs may not apply if the downstream waste water treatment plant is appropriately designed and equipped to abate the pollutants concerned, provided this does not lead to a higher level of pollution in the environment'*.

## When things don't go to plan

### 'Other Than Normal Operating Conditions': monitoring & management

Emissions during Other Than Normal Operating Conditions (OTNOC) such as leaks, malfunctions and momentary stoppages, can be significantly higher. The operator should take steps to prevent or minimise such occurrences.

It is very positive that dedicated BAT conclusions to monitor emissions during OTNOC and to implement an OTNOC management are included in the draft proposal.

However, the current wording in the draft leaves room for operators and authorities to neglect key measures that could reduce the frequency of OTNOC occurrences, such as the use of supplementary burners to heat up the flue-gas and obviate the need to bypass the bag filter and ensure full operation of the FGC system during start-up and shutdown (these measures are only mentioned as "e.g." in parenthesis).

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<sup>41</sup> Indirect emissions refers to waste water discharges to a receiving water body, after further treatment, e.g. at a downstream waste water treatment plant

- ✓ **The Other Than Normal Operating Conditions management plan wording should be strengthened to make key measures absolute requirements**

As noted above, there are techniques, widely applied in plants in Germany that ensure an undisturbed start-up operation without the use of a bypass.

The wording should be adapted accordingly so that the use of supplementary burners and the full operation of FGC (without bypass) during the whole operation cycle of the incineration activity become mandatory requirements for all plants across Europe.

### **The right to know**

Further, for transparency reasons it is essential that the procedures applied to ensure environmental safety in the event of an interruption to normal operation should be recorded. This information should be made available to the competent authority and published to ensure that the operator is effectively managing each type of OTNOC and there is no concern for the neighbouring communities.

- ✓ **Information about all industrial activities should be made available to all concerned citizens online**<sup>42</sup>

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<sup>42</sup> In line with the recommendations contained in the EEB report: "Burning: The Evidence",  
<https://eeb.org/publications/61/industrial-production/47539/burning-the-evidence.pdf>

### **“The new normal”: how industry lobbyists exploited loopholes to inflate emissions**

Waste incineration plants can run under “Normal Operating Conditions” or “Other Than Normal Operating Conditions” – known as NOC and OTNOC respectively. OTNOC includes times when critical emissions abatement equipment is malfunctioning or is bypassed. OTNOC is therefore associated with high emission peaks.

At the start of the review process industry lobbyists claimed that plant operators cannot distinguish between NOC and OTNOC\*. The argument followed that all emissions data – from both ‘normal’, and ‘other than normal’ operation – should be included in the data gathering exercise that would inform the updated emissions levels.

However, a comprehensive analysis and filtering of the data revealed that it included values not representative of the use of best available techniques. As a result, some data was rightly discarded.

Following this development, industry lobbyists changed their argument and claimed that it was actually possible to distinguish between normal and other than normal operation. They then argued that the updated emissions levels should only apply when the plant was operating normally. But this means that operators can now claim OTNOC when failing to meet NOC emissions levels.

The EEB regrets that the current legislation risks allowing for interpretations that run counter to the intention of the law. Exchanges, both during the development of standards, and once implementation has begun, should focus on how to best protect the environment and human health. People do not stop breathing when plants operate under OTNOC, all necessary measures to protect human health and the environment should be taken throughout the whole cycle of incineration operations.

\*The industry argument is based on compliance assessment rules stipulated in IED, according to which plant operators have to comply with emission limits within the ‘Effective Operating Time (EOT)’. There is no legal definition of EOT in the IED nor are there provisions clarifying the NOC-OTNOC-EOT association. Industry took advantage of the lack of clarity in the law and introduced the following disputed explanation: *‘operators can only provide emissions data obtained during EOT. And EOT, **as per the industry lobby interpretation**, includes periods of normal operation but also some OTNOC periods e.g. when leaks and malfunctions occur’.*

## National Scorecard

A number of Member States have been active participants in the BREF review process. The following table is an assessment of positions taken on a variety of issues covered in this report, as well as a final overall assessment of all of the positions taken. The overall general assessment is based on their overall contribution incl. industry infiltration in the delegation, reference plants submitted, position on Key Environmental Issues i.e. issues to be tackled in the review, useful interventions, general ambition level of official submissions made<sup>43 44</sup>.

**Key** - **green**: position strengthens the draft; **yellow, arrow up**: position improves the draft (but limited ambition); **yellow, arrow down**: position weakens the draft (but limited damage); **yellow, no arrow**: rather neutral; **red**: position weakens the draft.

	NOx level	Mercury level	Mercury monitoring	Mercury peaks abatement	PCCD/F emissions at start-up	PCCD/F monitoring	Dust level	OTNOC monitoring and management	NO/OTNOC/FOT and abuse of BAT-AELs derivation methodology / compliance assessment	Overall general assessment of involvement in BREF review
Austria	😊	😞	😊↑			😞	😊↑	😞		😊↑
Belgium								😊		😊↑
Czech Republic			😞			😊↓	😞	😞		😞
Denmark	😞	😞	😊↓					😊		😊↓
European Commission	😞	😞	😊↑	😞	😊↑	😊↑	😞	😊	😊	😊↓
Finland								😞		😊
France	😞					😊		😊	😊↓	😊↓
Germany			😊↑			😞		😊↓	😞	😞
Hungary			😊↓			😊		😞	😞	😞
Italy						😊↓				😊
Netherlands	😊↑	😊↑			😊		😊	😊		😊
Poland			😞					😊		😊
Portugal			😊↓			😊↓				😞
Spain	😞		😊↓					😞	😞	😞
Sweden	😊	😊↑	😊↑	😊	😊	😊	😊	😊		😊
UK			😞				😞			😞

<sup>43</sup> A more detailed table with explanations for the scores awarded is available to download from:

[https://www.dropbox.com/s/hadpcw4yf6ltgsw/WI%20D1\\_%20MS%20overview%20key%20points\\_for%20report.xlsx?dl=0](https://www.dropbox.com/s/hadpcw4yf6ltgsw/WI%20D1_%20MS%20overview%20key%20points_for%20report.xlsx?dl=0)

<sup>44</sup> The ranking on specific demands is based on the countries positions, as these are compiled by the European Commission (JRC) in the background paper for the Final Meeting. Available here:

[http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum\\_showPost&forumID=123803&postID=123807](http://eippcb.jrc.ec.europa.eu/batis/console/forumIndex.jsp?fuseAction=forum_showPost&forumID=123803&postID=123807)

## National Scorecard – explanations for assessments

	Overall general assessment of member in BREF revision	Explanation for overall general assessment regarding the EU Member States, the overall general assessment is based on their overall contribution incl. industry infiltration in the delegation, reference plants submitted, position on Key Environmental Issues i.e. issues to be tackled in the review, useful interventions, general ambition level of official submissions made etc
Austria	😊↑	Overall contribution raises the ambition level of the draft, but in some key issues they do not go beyond the status quo
Belgium	😊↑	Overall contribution raises the ambition level of the draft, but in some key issues they do not go beyond the status quo
Czech Republic	😞	Overall contribution weakens the ambition level of the draft Further notes: Industry infiltration in delegation: 3 out of 7 members
Denmark	😊↓	Overall contribution weakens the ambition level of the draft; they had positive interventions but in some key issues they do not go beyond the status quo Further notes: Siding more with industry approach regarding the BAT-AELs derivation methodology
European Commission	😊↓	Despite the data collection proving that much lower emissions are already achieved at best performing plants across Europe, the draft proposal largely reflect the status quo, especially regarding air pollution: almost all maximum emission levels have remained unchanged compared to the existing guidance; furthermore, the already outdated levels of critical pollutants NOx and mercury have been raised. Another problematic point is that the proposed levels are only based on daily averages - which could allow plants to spew out at much higher 'peak pollution' rates for hours at a time. It is important to maintain existing short-term levels based on half-hourly averages for critical air pollutants such as dust, NOx and SOx to protect the affected local communities. The issue of mercury peaks is further well-known to the industry, but not effectively tackled in the draft. The proposal also fails to properly address dioxin peaks which may occur during start-up periods by demanding measures such as the prohibition of by-passing the flue gas cleaning system, before the incineration of waste starts. Progress has been made regarding the monitoring of mercury and dioxin emissions to air, where continuous measurements are promoted against periodic ones, measures for effective management of abnormal operating conditions often associated with very high emissions, water pollution and POPs destruction in hazardous
Finland	😊	neutral Industry infiltration in delegation: 1 out of 3 members
France	😊↓	Overall contribution weakens the ambition level of the draft; they had positive interventions but in some key issues they do not go beyond the status quo Further notes: 'Diluted' the sample of plants with low emissions Siding more with industry approach regarding the BAT-AELs derivation methodology Main positive is position regarding dioxin monitoring
Germany	😞	Overall contribution weakens the ambition level of the draft. Despite emissions data showing much lower emissions performance, the German government -represented by the UBA- did not make any comments that would lead to an increased level of ambition in environmental protection. The only positive position is taken on improved monitoring of mercury. Surprisingly the German delegation does not even object to BAT-AEL that are higher than emission limits set in national binding rules (e.g. NOx and Hg). The new 17. BImSchV requires WI plants not to exceed an ELV of 150mg/Nm³ (including those with SNCR (to apply from 1.1.2019) For new plants the ELV is set at 100mg/Nm³ yearly average). A mercury limit is set at 10µg (yearly average) as from 2019. Despite this no tightening is proposed. Overall the German delegation wants to maintain the status quo compared to what has been set in 2006 in order to protect interests of domestic industry. Further notes: Further the German delegation listed almost all of its WI plants as "BAT candidates", "diluting" the plant samples. Worst moment: joint 'propaganda' publication with industry (WI BREF revision criticised', DWMA, November 2016)
Hungary	😞	Overall contribution weakens the ambition level of the draft Further notes: All comments are drafted by SARP Industries; Hungary demands to include in the revised draft monitoring flexibilities noted in IED Annex VI part 6; Industry infiltration in delegation: 6 out of 10 members
Italy	😊	neutral
Netherlands	😊	Overall contribution raises the ambition level of the draft
Poland	😊	neutral
Portugal	😞	Overall contribution weakens the ambition level of the draft Further notes: Most comments from Portugal are co-drafted with AVALER (Portuguese CEWEP member) and APEQ (Portuguese Association of Chemical Companies); Spain demands footnote for all parameters to reduce the monitoring frequency to once per year in the cases where the emission levels are proven to be low and stable
Spain	😞	Overall contribution weakens the ambition level of the draft Further notes: Most comments from Spain are drafted by AEVERSU (Spanish CEWEP member) and SARP Industries; Industry infiltration in delegation: 1 out of 3 members
Sweden	😊	Overall contribution raises the ambition level of the draft
UK	😞	Overall contribution weakens the ambition level of the draft Further notes: Industry infiltration in delegation: 2 out of 11 members

## Conclusions

This report has made a number of recommendations that could ensure that the revised WI BREF is able to drive forward the environmental performance of waste incineration plants in Europe.

It has also revealed some worrying trends with both industry lobbyists and member state representative consistently attempting to limit the ambition of the new rules. We expect that industry affiliated groups would be not be able to formally represent any Member State at the final meeting.

It is clear that, as with all BREFs, the WI BREF is a complex and multi-faceted document. The industry's wide variety of human health and environmental impacts sometimes demands complex solutions.

However, it is also undeniable that existing and available techniques – already being widely used across Europe – could significantly reduce emissions from waste incineration plants. There is a wealth of data making the case for improvements on several counts, to really reflect 'state of the art'.

The revision of any BREF is a chance to make progress towards less harmful and less environmentally destructive industry. Yet current proposals largely fall short of the levels of expected ambition.

The fact that the current draft proposes key emissions levels be weakened compared to the previous version is inexcusable. While the latest draft brings some improvements that must be recognised, after years of discussions the rules have taken one step forward and two steps back.

In order to achieve a circular economy, where resources are reused or recycled rather than disposed, Europe will need to move away from the inherently wasteful practice of burning waste. Until then, Europeans expect protections based on the truly best available techniques. It remains to be seen if the revised BREF will meet that expectation.

### Full list of recommendations:

- ✓ For NO<sub>x</sub> emissions to air, a maximum level of 100mg/Nm<sup>3</sup> (daily average) should apply
- ✓ For mercury emissions to air, levels of < 1-10 µg/Nm<sup>3</sup> should apply
- ✓ For dust emissions to air, a maximum level of 4 mg/Nm<sup>3</sup> should apply
- ✓ The higher upper level for dust from plants not equipped with a bag filter should be removed
- ✓ Incineration plants should continuously measure mercury air emissions
- ✓ Flexibility for the monitoring of mercury emissions should be removed
- ✓ Dedicated BAT conclusion highlighting the techniques most suitable to prevent or minimise mercury peaks should be included
- ✓ The dioxin emissions monitoring derogation's wording should be amended
- ✓ In order to avoid increased emissions of PCDD/F, flue gas cleaning systems should be in full operation before start-up and all bypasses must be closed
- ✓ It should be clearly noted that it cannot be considered as using Best Available Techniques to exploit a bypass system during start-up
- ✓ Emissions levels for air pollutants should be expressed as half-hourly averages
- ✓ The upper level for mercury emissions to water should be further decreased to 7.5 µg/l
- ✓ The upper level for cadmium emissions to water should be decreased to 20 µg/l
- ✓ Waste-water-free techniques should be used for wet Flue Gas Cleaning (FGC) systems
- ✓ The indirect emissions derogation should either be deleted or modified
- ✓ The Other Than Normal Operating Conditions management plan wording should be strengthened to make key measures absolute requirements
- ✓ Information about all industrial activities should be made available to all concerned citizens online