

EUROMOT POSITION

Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on industrial emissions (integrated pollution prevention and control - 2022/0104(COD))

28th of October 2022

1. Executive Summary

EUROMOT welcomes the EU Commission's aim to update the IED to deliver the objectives of the EU Green Deal. With this position paper we point out important points for improvement for the update as it is discussed today:

- Today the BAT ranges address the differences between installations, such as location, age, operation mode and other technical parameters - this approach should remain paramount.
- The current proposal to set ELV (Emission Limit Value) by default at the strictest end of the BAT-AELs range will be very challenging to implement and undermines the flexibility and integrated approach principles, which are keys of the IED process.
- This strict approach violates major pillars IED/IPPC is based on, in particular 1) integrated approach, 2) use of best available techniques and 3) flexibility.^{1A, 1B} For more information see ANNEX 2 of this document.
- To select just the strictest ELV from different individual plant technologies does not represent BAT-AEL – this would just be cherry picking. The emission-ranges given today are justified and are not interchangeable between technologies/plants and can therefore not be disregarded. Thus, maintaining the current mechanism for competent authorities to define the ELVs within the whole BAT-AELs is of outmost importance.
- As the last amendment of the current German 13. BImSchV is ambitious, reflecting the current state of the art of existing abatement technologies, we consider it reasonable to implement the ELV of the German 13. BImSchV into the IED as the lower end of the range.

Thus, the set BAT-AEL range for CH₄ for the gas fired SG type lean burn engine should be as following:

- New spark ignited (SG) lean burn gas engine:
 - Up to 15.6 2024: 395 – 500 mg/Nm³ (15 % O₂), calculated as C at full engine load.
 - From 16.6 2024: 340 – 500 mg/Nm³ (15 % O₂), calculated as C at full engine load.
 - Existing spark ignited (SG) lean burn gas engine: 395 – 500 mg/Nm³ (15 % O₂), calculated as C at full engine load.
 - The set BAT-AEL range for dust for the new HFO/gas oil fired engine should be as following: 7.5 ... 10 mg/Nm³ (15 % O₂)
- The competent authority shall have the flexibility to use the whole BAT-AEL range when setting the plant emission limits in the operational license.

2. Introduction

Industrial Emissions Directive (IED) /2/ is revised as part of the EU Green Deal, notably the “Zero Pollution action Plan”. EU Commission adopted IED 2010/75/EU revision proposal on April 5th - 22.

The revision of the Directive will amongst all seek to:

- improve IED effectiveness in preventing or, when impractical, minimising the emission of pollutants by agro-industrial installations at source, *as evidenced by continued or accelerated decreasing trends of emission levels*, to avoid or reduce adverse impacts on health and the environment, *considering the state of environment in the area affected by these emissions*.
- to secure a progressive reduction in pollution from the EU’s largest agro-industrial installations, while *preserving a competitive level playing field*.
- widening the Directive’s scope, encouraging the development of new technologies to reduce emissions, improving resource and energy efficiency, promoting water reuse, ensuring better controlled *and more integrated¹ permitting requirements*, and introducing a mandatory environmental management system. The proposal will *strengthen the integrated approach* by clarifying requirements for cooperation between relevant competent authorities. This cooperation includes reviewing and updating permits, *depending on the status of the receiving environment, and/or planning measures to comply with environmental quality standards...*
- a cease in under-delivery of emission reductions. Rules are proposed to be tightened under Article 15. The competent authority shall according to Article 15(3) as default set the strictest possible emission limit values of the BAT-AEL emission range (based on an assessment by the operator analysing the feasibility of meeting the strictest end of the BAT-AEL range and demonstrating the best performance the installation can achieve by applying BAT as described in BAT conclusions)

EUROMOT welcomes the Commission’s aim to update the IED to deliver the objectives of the EU Green Deal.

However, EUROMOT would like to point out that the proposal to set ELV (Emission Limit value) **by default** at the strictest end of the BAT-AELs range will be *very challenging to implement* and *undermines the flexibility and integrated approach principles* which are keys of the IED process.

In below text, EUROMOT concerns are described more in detail. Some main concern BAT-AEL lowest range emission limit levels for the reciprocating engine sector are also discussed and technical meaningful lower range counter BAT-AEL proposals for these are proposed.

3. General IPPC/IED principle - flexibility of outmost importance

BAT ranges address the differences between installations, such as location, age, operation mode and other technical parameters. BAT-AELs are a range derived from plant operating data. The environmental *performance in the local context*^{1B} was in focus of the original IPPC Directive and this approach should remain paramount.

Some more details and aspects in contradiction with the Article 15(3) approach are listed in below points:

- 1) In general, the strictest BAT-AELs are the *best performances for an individual facility for an individual pollutant*:
 - this does not mean that the same plant can reach strictest (lowest) levels for all other pollutants.
 - *it is important to note that the lower ends of BAT-AEL ranges were often verified with data from very few plants, in some cases from only one plant and for a single or a few pollutants rather than all pollutants*
 - it might be technically impossible for a single facility to achieve the strictest (lowest) BAT-AEL for each pollutant due to different BAT pollution abatement techniques.
 - Energy/reagent use will increase at higher emission reduction rates. E.g., FGD (Flue Gas Desulfurization) unit reagent (consumption) and end product mass flows will increase.

I.e., the proposal “*by default to set the strictest possible emission limit values of the BAT-AEL emission range*” is **not** according to the integrated approach – *principle of protecting the environment as a whole* - a fundament of the original IPPC Directive^{1B} and also of today's IED^{1A}.
- 2) ELVs or permit values are levels which must not be exceeded. Therefore, plants have routinely under normal operating conditions to be run at a lower level than the set permit level. BAT-AEL range provides the needed flexibility for the integrated permitting approach considering what is technically achievable along with cross-media and design choices of various plant concepts.
- 3) No BAT technique should be preferred as the techniques listed and described in the BAT conclusions are neither prescriptive nor exhaustive, The BAT conclusions cannot be specific to a technique and thus it is wrong to expect each facility should comply with the strictest (lower end) emission range value.
- 4) The new requirement imposed by Article 15(3) will also add complexity of the implementation and timeline of the BREFs. It is stated that the emission limit values are based on the operator's assessment analysing the feasibility of meeting the strictest end of the BAT-AEL range and demonstrating the best performance the installation can achieve by applying BAT or (as default) the strictest possible emissions resulting from BAT application are binding. But it is not clear/defined which kind of “proof” an operator has to provide to be able to justify an ELV different from the lowest/strictest BAT-AEL threshold level! This will increase discretion, uncertainty and will affect the timing of the issuance of permits. With the possibility to appeal against issued decisions (according to revised Article 25(1)) by an entity this may cause a complete paralysis of the authorities to issue permits, appeal bodies and courts.
- 5) Additionally, strictest (lower end) BAT-AELs are often set at a level close to measuring instruments detection limits: for compliance and enforceability emission limit values require legal certainty, which might not be guaranteed under such conditions.

Conclusion:

IED revision proposal Article 15(3) sets requirement “*The competent authority shall set the strictest possible emission limit values that are consistent with the lowest emissions achievable by applying BAT in the installation .. The emission limit values shall be based on an assessment by the operator **analysing the feasibility** of meeting the strictest end of the BAT-AEL range and demonstrating the best performance the installation can achieve by applying BAT as described in BAT conclusions ..*”.

But it is not clear/defined which kind of “proof” an operator has to provide to be able to justify an ELV different from the lowest/strictest BAT-AEL threshold level! This will increase discretion, uncertainty and will affect the timing of the issuance of permits (due to revised Article 25(1)). Thus the flexibility principle a key of the IED process is undermined.

Flexibility aims at reducing emissions according to a cost/environmental benefits ratio. The original IPPC^{1B} flexibility spirit is paramount (flexibility is also an important pillar of IED^{1A})– thus maintaining current mechanism for competent authorities to define the ELVs within the whole BAT-AELs is of outmost importance

4. CH₄ lower range BAT-AEL level (gas fired SG engine plant)

LCP BREF /3/ and IED regulate ≥ 50 MWth combustion plants consisting of ≥ 15 MWth units. BAT-associated emission limits (BAT-AELs) for CH₄ emissions to air from the combustion of natural gas *in a spark-ignited (SG) lean-burn gas engine* are given as BAT 45 in the LCP BREF.

*Note! For the DF (Dual Fuel) gas fired lean burn engine type **no** CH₄-limit is set in LCP BREF.*

The lower range threshold value of the BAT AEL for CH₄ set in LCP BREF was based on a questionable **single (one) sample** (i.e. of “*data quality rating C**”) measurement **at one gas engine plant**. Thus this is not a representative CH₄-limit value for the SG-type lean burn gas engines in the market and *it is unreliable*. Praxis in the power industry for a manual measured emission value, is to base the reported average value of at least three samples! Commission Implementation Decision of February 10th 2010 /4/, Appendix 1 quote: “*Data of A or B quality are the most appropriate for determining BAT*”, i.e. “**quality rating**” **C data is not recommended to be used for BAT conclusions!**

EUROMOT highlighted many times throughout the Sevilla process that this lower BAT-AEL range level was too low (not correct) and needed to be corrected **but** without success – during the writing phase (2013 →), EIPPCB did **not** assess the EUROMOT raised split view (in year 2016) on this topic either.

*To set a limit value based on a single emission sample obtained from one installation is **neither reliable nor correct!***

*C, an estimate based on a limited amount of information representative of some situations and for which background assumptions are limited /4/

In recent (published in Federal Law Gazette July 2021) German 13 BImSchV /5/ (implementation of most recent LCP BREF 2017) the CH₄ limit for the gas fired spark ignited (SG) lean burn engine type was set to equivalent about 394 mg/Nm³ (15 % O₂) until 15.06-2024 and afterwards to 338 mg/Nm³ (15 % O₂) calculated as C at full engine load.

Conclusion:

The lowest BAT-AEL range CH₄-limit in LCP BREF (BAT 45) for the SG-type lean burn (natural) gas engine based on a single sample measured at one plant is **not** a reliable limit value - not a representative emission limit for the gas fired spark ignited lean burn engine fleet. EUROMOT is of

the opinion (based on the engine performance of today) that the set BAT-AEL range for CH₄ for the (natural) gas fired SG type lean burn engine shall be as following:

- **New** spark ignited (SG) lean burn gas engine:
 - o Up to 15.6 2024: 395 – 500 mg/Nm³ (15 % O₂), *calculated as C at full engine load.*
 - o From 16.6 2024: 340 – 500 mg/Nm³ (15 % O₂), *calculated as C at full engine load.*
- **Existing** spark ignited (SG) lean burn gas engine:
 - o 395 – 500 mg/Nm³ (15 % O₂), *calculated as C at full engine load.*

The competent authority shall have the flexibility to use the whole BAT-AEL range when setting the plant emission limits in the operational license, by this the original IPPC spirit^{1B} and fundamental IED pillars^{1A} are fulfilled.

5. Dust lower range BAT-AEL (New HFO/gas oil fired engine)

BAT-associated emission levels (BAT-AELs) for dust emissions to air from the combustion of HFO and/or gas oil in reciprocating engines are given in BAT 35 of the LCP BREF.

The dust BAT-AEL limit range of dust in LCP BREF was based on measurement data **from one HFO/gas oil fired diesel engine plant in Malta equipped with a novel bag filter FGD-type.** In source /6/ (see graph 1) or Annex 3 of this paper, one year dust emission measurement data obtained from the plant was assessed by EUROMOT. Assessment showed that the achievable dust limit value should be set much higher than 5 mg/Nm³ (15 % O₂), the BAT-AEL upper span dust limit was later raised to 10 mg/Nm³ (15 % O₂) in the BREF process as a result. As can be seen from graph 1, the dust limit value of 5 mg/Nm³ (15 % O₂) was **very** frequently (> 2200 .. 3800 h/year depending on FGD unit) exceeded during the year and should thus **not** be used/set as a BAT-AEL threshold! According to /7/ (chapter 2.3), the “correct” set dust limit should have been 20 mg/Nm³ (15 % O₂) based on the measurement data obtained from this plant. This Maltese plant has since many years been operating on natural gas /8/ and was thus not a credible/good oil fired engine plant BAT reference candidate!

In recent (anno 2021) German 13 BImSchV /5/ (implementation of LCP BREF 2017) the dust limit for the HFO/gas oil fired engine type was set to a value equal to about 7.5 mg/Nm³ (15 % O₂). In late years ULSD has become more available. A prerequisite to fulfil the German particulate limit is a very clean ULSD.

Conclusion:

The lower BAT-AEL dust limit in LCP BREF (BAT 35) was based on measurement results from only one reference plant. Based on above text, to set as default the very questionable BAT-AEL low range limit of 5 mg/Nm³ (15 % O₂) is not correct. EUROMOT is of the opinion that the set BAT-AEL range shall be as following, lower BAT-AEL threshold according to German 13 BImSchV:

- **New** HFO/gas oil fired engine plant: 7.5 ... 10 mg/Nm³ (15 % O₂)

The competent authority shall have the flexibility to use the whole BAT-AEL range when setting the plant emission limits in the operational license, by this the original IPPC spirit^{1B} and fundamental IED pillars^{1A} are fulfilled.

6. Conclusion

The proposal (Article 15(3)) states “*The competent authority shall set the strictest possible emission limit values that are consistent with the lowest emissions achievable by applying BAT in the installation ... The emission limit values shall be based on an assessment by the operator analysing*

the feasibility of meeting the strictest end of the BAT-AEL range and demonstrating the best performance the installation can achieve by applying BAT as described in BAT conclusions.”

The default limit proposal with the strictest possible BAT-AEL level will be very challenging to implement and will also *undermine the flexibility principle* which is a key of the IED process.

It is important to note that the lower ends of BAT-AEL ranges were often verified with data from very few plants, in some cases from only one plant and for a single or a few pollutants rather than all pollutants! It might be technically impossible for a single facility to achieve the strictest (lowest) BAT-AEL for each pollutant due to different techniques, energy/reagent use and end product amount increase also of the secondary emission abatement technique equipment (such as SCR, FGD) at higher emission reduction rates. I.e. the integrated approach – *principle of protecting the environment as a whole* - a fundament/pillar of the original IPPC Directive^{1B} and IED^{1A} might get violated.

It is not clear/defined which kind of “proof” an operator has to provide to be able to justify an ELV different from the lowest/strictest BAT-AEL threshold level! This will increase discretion, uncertainty and will affect the timing of the issuance of permits. With the possibility to appeal against issued decisions (according to Article 25(1)) by an entity this may cause a complete paralysis of the authorities to issue permits, appeal bodies and courts.

Competent authorities thus to be able to define the ELVs within the whole BAT-AELs.

In above text 2 main concern lower emission range BAT-AEL examples for the reciprocating engine sector are discussed – these low BAT-AEL range levels were derived based on questionable conclusions and counter proposals are given.

7. Sources

/1A/ “Industrial Emissions Directive” (IED) at web:

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

/1B/ “ Summary of Directive 2008/1/EC concerning integrated pollution prevention and control (the IPPC Directive) “ at web

<https://ec.europa.eu/environment/archives/air/stationary/ippc/summary.htm>

/2/ Revision proposal of IED 2020/75/EU, 5th April 2022, at web: https://eur-lex.europa.eu/resource.html?uri=cellar:32d55555-c550-11ec-b6f4-01aa75ed71a1.0001.03/DOC_1&format=PDF

/3/ LCP BREF 2017 at web https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/JRC_107769_LCPBref_2017.pdf

/4/ “Commission Implementation Decision of February 10 2010 “ at web <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012D0119&from=EN>

/5/ 13. BImSchV at web https://www.gesetze-im-internet.de/bimschv_13_2021/_34.html

/6/ EUROMOT Position paper at web [EUROMOT Comments LCP BREF EEB Maltese plant data 2015-01-23](#)

/7/ EUROMOT Position at web [EUROMOT Position Paper 2017](#)

/8/ <https://www.enemalta.com.mt/about-us/history-of-electricity/> and [Gas conversion reduces power plant emission levels \(wartsila.com\)](#)

Annex 1: Abbreviations

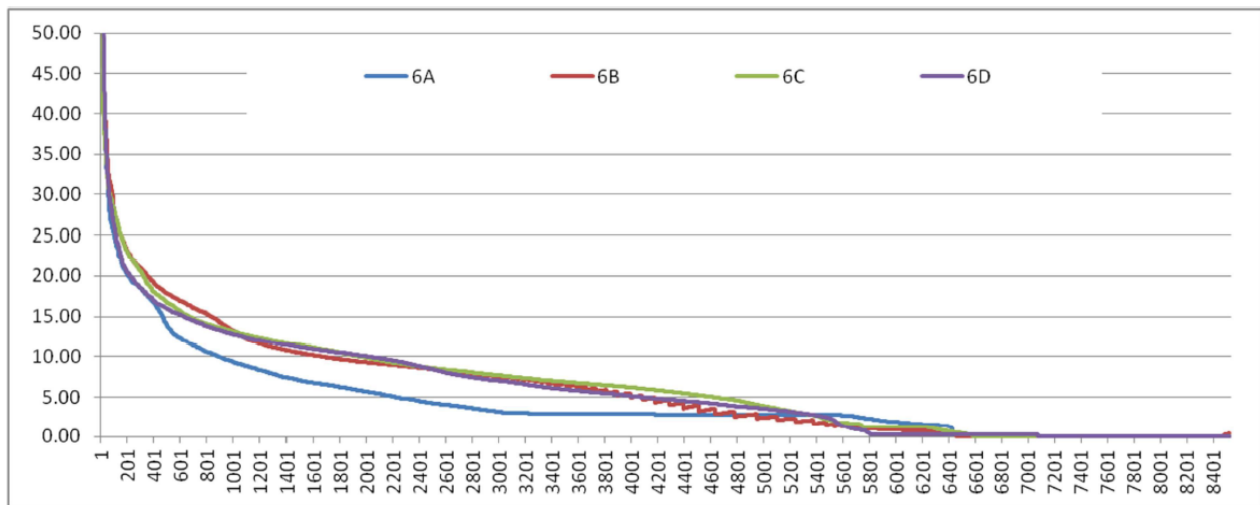
BAT	Best Available Techniques
BImSchV	Ordinance on the Implementation of the (German) Federal Immission Control Act
CEMS	Continuous Emission Monitoring System
BAT-AEL	Emission levels associated with the best available techniques
DF	Dual Fuel
EIPPCB	European IPPC Bureau
ELV	Emission Limit Value
EU	European union
FGD	Flue Gas Desulphurisation
HFO	Heavy fuel Oil
IED	Industrial Emissions Directive
IPPC	Integrated Pollution Prevention and Control
LCP BREF	Large Combustion Plant Best Available Techniques reference document
LFO	Light Fuel Oil
MWth	MegaWatt thermal energy (fuel input energy)
SCR	Selective Catalytic Reduction
SG	Spark Ignited
ULSD	Ultra Low Sulfur Diesel

ANNEX 2: Pillars of IED and IPPC

Quote: “The *IED* is based on several pillars, in particular (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation.” /1A/

The *IPPC Directive* is based on several principles, namely (1) an integrated approach, (2) best available techniques, (3) flexibility and (4) public participation. /1B/

1. The **integrated approach** means that the permits *must take into account the whole environmental performance of the plant, covering e.g. emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, and restoration of the site upon closure*. The purpose of the Directive is to ensure a high level of protection of the environment taken as a whole.
2. The permit conditions including emission limit values (ELVs) must be based on **Best Available Techniques (BAT)**, ...
3. The IPPC Directive contains elements of **flexibility** by allowing the licensing authorities, in determining permit conditions, to take into account:
 - (a) the technical characteristics of the installation,
 - (b) its geographical location; and
 - (c) the local environmental conditions

ANNEX 3: Malta Diesel Engine Plant Particulate Emission data of year 2013 /6/

Graph 1: Frequency of measured 1 hour averaged Dust values ("raw measurement data") in unit mg/Nm³ (15 % O₂) for the different stacks during year 2013. On the y-axis dust emission and on the x-axis operational hours of the year.

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THIS IS EUROMOT

Founded in 1991, EUROMOT is the European association of internal combustion engine and alternative powertrain manufacturers. Representing the key global manufacturers for over 30 years, we provide an invaluable centre of expertise for businesses, authorities, regulators and public stakeholders worldwide. We are the industry's united voice to drive smart and gold standard global regulations for sustainable mobile machinery and stationary applications, helping the manufacturers shape innovations and markets for the future.

With an ecosystem of working groups spanning current and future power and mobility systems, we facilitate cross-fertilisation of innovation across industries. EUROMOT provides an essential gateway to the EU Single Market and forms a bridge for the transition from traditional to alternative energy and advanced powertrains.

Since our foundation, we have been facilitating ever increasing environmentally friendly and sustainable products as well as the decarbonization of our sector and its transition to low/zero-carbon emissions and renewable energy. With a membership encompassing all major ICE and alternative powertrain manufacturers and well-established connections to regulators, EUROMOT is uniquely positioned to decarbonise entire industries from agriculture to construction and from land-based to marine alongside stationary power for heat and electricity.

Headquartered in Brussels, EUROMOT is a European interest group, and our profile is registered in the EU Transparency Register under the identification number 6284937371-73. We have been granted consultative status at the United Nations IMO (International Maritime Organization, London) and United Nations ECE (Economic Commission for Europe - Geneva) and other relevant stakeholders.

OUR MEMBERS

