



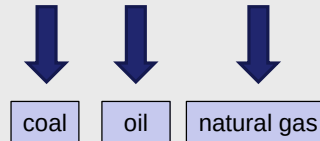
Large combustion plants and their specific situation

Peter VAJDA, Senior Environmental Expert,
Energy Community Secretariat

What is a large combustion plant?



- **LCPD definition: any technical apparatus in which fuels are oxidised in order to use the heat thus generated**
- **Fuels can be solid, liquid or gaseous**



- **Plants for the generation of heat and electricity**
- **50 MW rated thermal input: legislative threshold**

How does a coal-fired power plant work?

Environmental issues related to LCPs



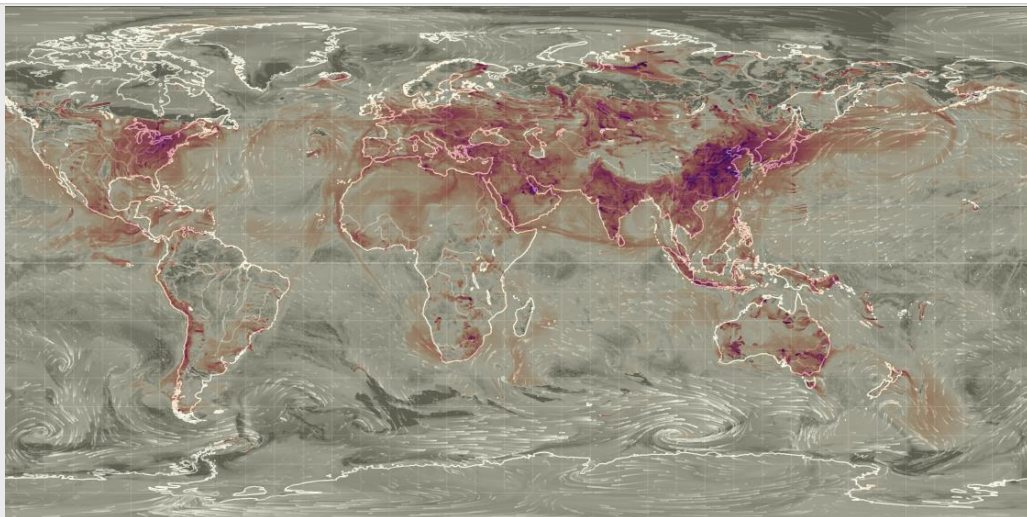
- *SO₂ → acidification (acid rain)*
- *NO_x → smog, ozone precursor, greenhouse effects*
- *Dust (PM) → direct physical effects*
- *Natural sources are present even if industrial ones are reduced*

SO₂ main natural emissions → volcanic eruptions

NO_x → lightning

PM → natural dust (wind)

SO₂ in the atmosphere



Source: Global Modelling and Assimilation Office (GMAO), NASA

US and Europe → significant decrease

China → 27% increase just between 2000 and 2005 (!)

Emissions of China are equivalent to US in the '70s

Brief history of the LCPD



- ***1981: CLRTAP Decision***
- ***1984: Directive on Industrial Air Pollution***
- ***First European legislative instrument in this field adopted in 1988 (88/609/EEC)***
- ***Former LCP Directive adopted in 2001***
- ***Was in force until end 2015***
- ***From 1 January 2016, IED (Chapter III and Annex V) takes over and LCPD repealed***
- ***2017 - BAT Conclusions***

Relation between the IPPC/LCPD/IED



IPPC Directive 2008/1/EC

Large Combustion Plants
Directive 2001/80/EC

Waste Incineration Directive
2000/76/EC

Directive on the limitation of VOC
emissions from solvents
1999/13/EC

Directives related to the
titanium-dioxide industry
78/186, 82/883, 92/112

European Pollutant Release
and Transfer Register
(E-PRTR)
Regulation 166/2006



Industrial Emissions Directive (IED)
2010/75/EU

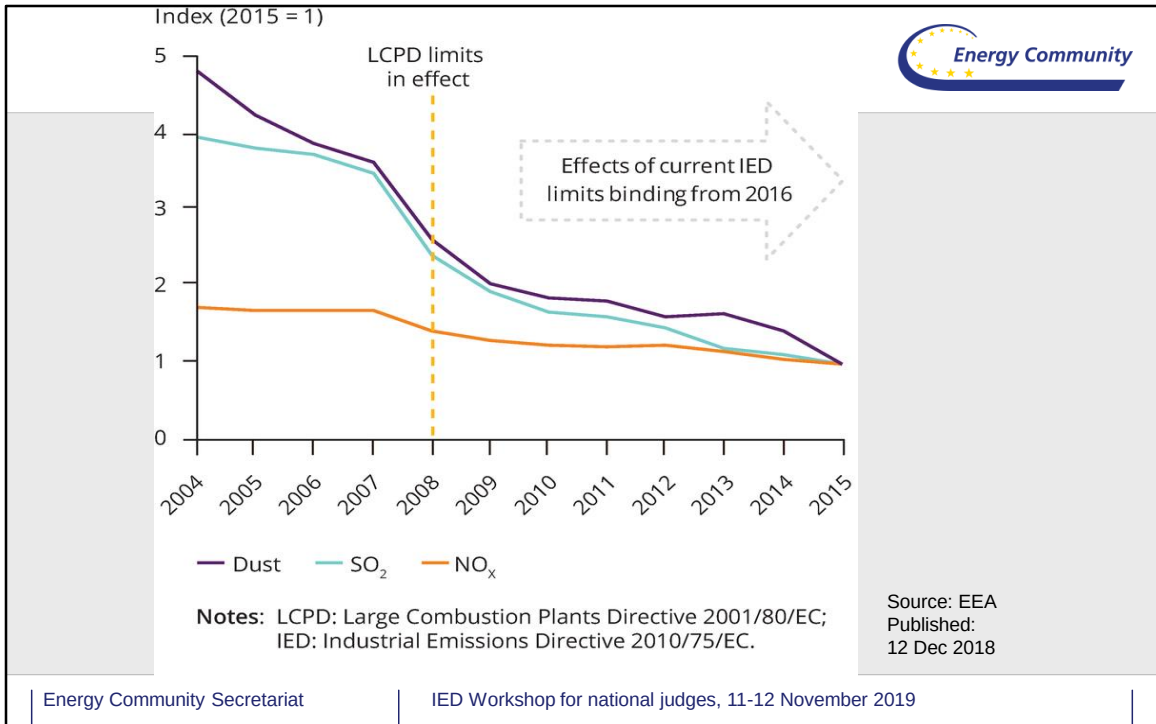
Energy Community Secretariat

IED Workshop for national judges, 11-12 November 2019

The first version of the IPPC Directive was adopted in 1996, then later codified in 2008. It has been in place for over 10 years and the Commission has undertaken a 2-year review with all stakeholders to examine how it, and the related legislation on industrial emissions, can be improved to offer the highest level of protection for the environment and human health while simplifying the existing legislation and cutting unnecessary administrative costs.

The LCP Directive will only be replaced by the relevant provisions of the IED as of 1 January 2016.

The E-PRTR Regulation sets out reporting obligations for the Member States and the data collected is presented on the E-PRTR website: <http://prtr.ec.europa.eu/>



The history of the IED 2007-2010 (the co-decision)



- **Scope** of IPPC/sectoral directives and the IED are highly similar
- Certain **new activities** (waste treatment, wood-based panels production, etc.)
- Most difficult **discussion points** during co-decision
 - BAT conclusions (increased uptake of BAT)
 - **large combustion plants**
 - baseline report
 - inspections
- **Second reading agreement** (with many in-between changes)

Structure of the IED

Ch. I: Common provisions

Ch. II: Provisions for all activities listed in Annex I

**BAT based
permit
conditions**

Ch. III: Special provisions for combustion plants [> 50 MW]

Ch. IV: Special provisions for waste (co-)incineration plants

Ch. V: Special provisions for installations and activities using organic solvents

Ch. VI: Special provisions for installations producing TiO₂

Ch. VII: Committee, transitional and final provisions

Annexes

**Sectoral « minimum »
requirements incl.
emission limit values**



Chapter III: minimum requirements for LCPs

- *Aggregation rules*
- *Emission limit values → link to Annex V*
- *Flexibility instruments*
 - *Transitional National Plan (TNP)*
 - *limited lifetime derogation (opt-out)*
 - *small isolated systems*
 - *district heating plants*
- *Monitoring requirements*



- *IED sets stricter ELVs (Annex V)*
- *Status as “EU minimum requirements” confirmed*
- *IED makes clear that ELVs set out in Annex V are “EU minimum requirements”*
- *IED permits may have to set stricter ELVs if requires by BAT, BAT-AELs and/or the need to ensure compliance with applicable EU EQS.*
- *Stricter ELVs for SO₂, NO_x and dust*
- *Aligned with BAT-AELs (upper-end of range) defined in LCP BREF (2006)*
- *Applicable on 07/01/13 for “new” LCP and on 01/01/16 for “existing” LCP*

Aggregation rule



- *IED Clarification: “Plant” = “common stack” + de minimis rule*
- *Art. 29(1) IED: when 2 “plants” release emissions via a common stack: 1 single LCP*
- *Art. 29(2) IED: when 2 plants authorised post-1987 could release their emissions via a common stack: 1 single LCP*
- *Plants of at least 15 MW are covered by aggregation rule*

Flexibility mechanisms



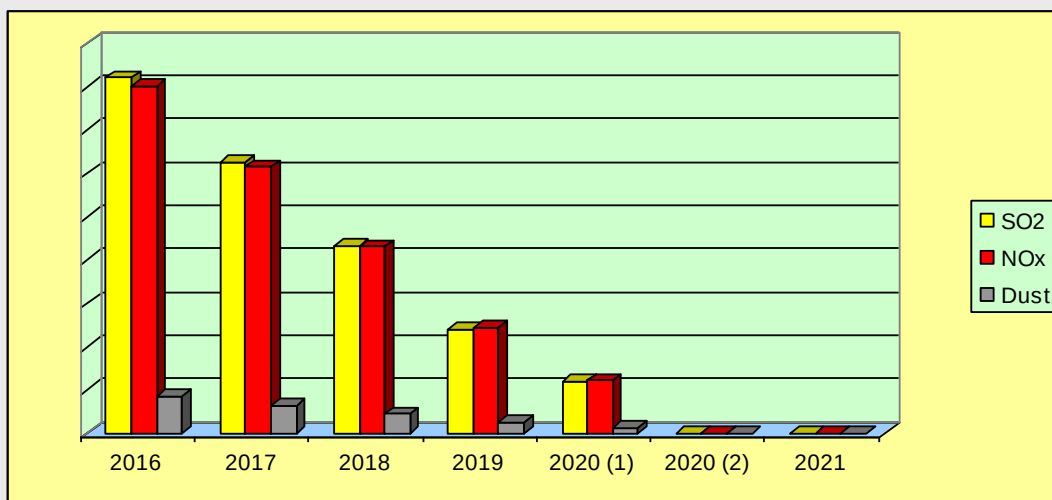
- Only “existing” LCP, save those which were granted an opt-out derogation (2008-2015) under LCP Directive (2001/80/EC)
- Derogation to IED Annex V (Part 1) ELVs
- Operator must commit in written form by 07/01/14 that his LCP will not operate **more than 17.500 h** between 01/01/16 and 31/12/23
- ELVs set in permits must however **maintain** the ELVs that were applicable on 31/12/15 pursuant to the IPPC and **LCP Directives**
- 24 MS (all except AT, LU, MT, and NL) have provided a list

Flexibility mechanisms – TNP (Art. 32)



- 4 ½ years transitional period (01/01/16 – 30/06/20) to some LCP to comply with ELVs
- Only LCPs authorised before 27/11/02 or which completed permit application before that date and were in operation before 27/11/03
- **EXCLUDED:**
 - plants benefiting from a limited lifetime or district heating plants derogation
 - plants opted out under LCP Directive (Art. 4(4))
 - plants firing gasified refining residues or distillation/conversion residues
- emissions of SO₂, NO_x and dust (1 or more pollutants)

TNP - expectations



Flexibility mechanisms – opt-out (Art. 33)



- Only “existing” LCP, save those which were granted an opt-out derogation (2008-2015) under LCP Directive (2001/80/EC)
- Derogation to IED Annex V (Part 1) ELVs
- Operator must commit in written form by 07/01/14 that his LCP will not operate **more than 17.500 h** between 01/01/16 and 31/12/23
- ELVs set in permits must however **maintain** the ELVs that were applicable on 31/12/15 pursuant to the IPPC and **LCP Directives**
- 24 MS (all except AT, LU, MT, and NL) have provided a list

Flexibility mechanisms – SIS (Art. 34)



- Only “**existing**” LCP, which were part to a small isolated systems by 06/01/11
- Derogation to IED **Annex V (Part 1) ELVs**, save for LCP > 500 MW post-1987 that must complied with IED ELVs (Annex V (Part 1) set for NOx)
- Derogation applicable between 01/01/16 and 01/01/20. Installation may then be covered by an opt-out derogation (Art. 33) until 31/12/23
- ELVs set in permits must however maintain the **ELVs that were applicable on 31/12/15** pursuant to the IPPC and LCP Directives.
- 7 MS have provided by 07/01/13 a list of LCP covered with associated info (e.g. energy consumption): **CY, EL, ES, FR, MT, PT and UK**

Flexibility mechanisms – district heating (Art. 35)

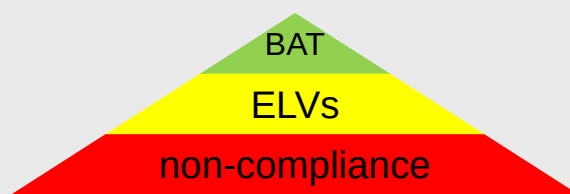


- Only **LCP of maximum 200 MW authorised before 27/11/02** or complete permit application after 27/11/02 and in operation by 27/11/03 and **where 50% at least of useful heat production is delivered as steam or hot water to a public network for district heating**
- Derogation to IED **Annex V (Part 1) ELVs**
- Derogation applicable between 01/01/16 and 01/01/22. Installation may then be covered by an opt-out derogation (Art. 33) until 31/12/23
- ELVs set in permits must however maintain the **ELVs that were applicable on 31/12/15** pursuant to the IPPC and LCP Directives.
- 13 MS have provided by 01/01/16 list of LCP covered with associated info (e.g. rated thermal input): **BG, CZ, DE, DK, FI, HR, HU, LT, PL, RO, SE, SI and SK**
- MS provide annually info on the share of heat production that was delivered as steam or hot water to a public network for district heating

Safety net approach



- IPPC/IED → BAT-based permitting
- LCP / IED Ch. III → emission limit values and associated monitoring
- LCP Chapter should be considered as a „safety net“ for the application of BAT



Derogations from BAT conclusions – Art. 15(4)



- *deviation from the use of BAT conclusions possible on 2 grounds*

(a) the geographical location or the local environmental conditions of the installation concerned;

(b) the technical characteristics of the installation concerned

- *COM guidance on the application of Art. 15(4) – March 2018*

<https://circabc.europa.eu/sd/a/9b59019b-df6c-4e6c-a5c2-1fb25cfe049c/IED%20Article%2015%284%29%20Report.pdf>

Enforcement of the EU acquis on IE - penalties



- **Essential tools** in the effective enforcement and implementation of EU & national environmental legislation
- **Administrative and criminal** sanctions
- Adoption of penalties as an enforcement mechanism for ensuring that legislation is complied with → competence of the Member States → **differences**
- **Wide application** outside the field of industrial emissions (e.g. nature protection, waste management)
- **Discretionary application** of penalties by Member States
- **Market-based instruments** → ideally, enforcement should not be necessary, however, it is very important to safeguard a proper functioning of the market
- **COM study** (Oct 2011): Provisions on penalties related to legislation on industrial installations



- Adopted in Nov 2015 by Council and Parliament
- Covers plants $1 \leq x < 50$ MW from a wide range of sectors (electricity generation, domestic/residential heating and cooling, providing heat/steam for industrial processes, etc.)
- Notable amount of exemptions (<5 MW manure-processing plants in farms, offshore platforms, crematoria, etc.)
- Approx. 143k installations EU-wide
- Gap-filling effect (IED and Ecodesign Directive)
- Applies from 20 December 2018 (new plants), 2025 or 2030 (existing plants, depending on size)
- Transposition deadline: Dec 2017

Exemptions

2. **From 1 January 2025**, emissions into the air of SO₂, NO_x and dust from an existing medium combustion plant with a rated thermal input greater than 5 MW shall not exceed the emission limit values set out in **Tables 2 and 3 of Part 1 of Annex II**. **From 1 January 2030**, emissions into the air of SO₂, NO_x and dust from an existing medium combustion plant with a rated thermal input of less than or equal to 5 MW shall not exceed the emission limit values set out in **Tables 1 and 3 of Part 1 of Annex II**.

PEAK LOAD PLANTS → 3. Member States may exempt existing medium combustion plants which **do not operate more than 500 operating hours per year, as a rolling average over a period of five years**, from compliance with the emission limit values set out in Tables 1, 2 and 3 of Part 1 of Annex II.

Member States may extend the limit referred to in the first subparagraph to **1 000 operating hours** in the following cases of emergency or extraordinary circumstances:

- for backup power production in connected **islands** in the event of an interruption of the main power supply to an island,
- medium combustion plants used for heat production in cases of **exceptionally cold weather events**.

In all cases set out in this paragraph, an emission limit value for dust of 200 mg/Nm³ shall apply for plants firing solid fuels.

SMALL AND MICRO ISOLATED SYSTEMS → 4. Existing medium combustion plants which are part of **SIS or MIS** shall comply with the emission limit values set out in Tables 1, 2 and 3 of Part 1 of Annex II from **1 January 2030**.

DISTRICT HEATING → 5. **Until 1 January 2030**, Member States may exempt existing medium combustion plants with a rated thermal input greater than 5 MW from compliance with the emission limit values set out in Annex II provided that **at least 50 %** of the useful heat production of the plant, as a rolling average over a period of five years, is delivered in the form of steam or hot water to a **public network for district heating**. In the event of such exemption, the emission limit values set by the competent authority shall not exceed 1 100 mg/Nm³ for SO₂ and 150 mg/Nm³ for dust.

Until 1 January 2030, Member States may exempt medium combustion plants firing **solid biomass as the main fuel**, which are situated in zones where, according to assessments under Directive **2008/50/EC**, **conformity with the limit values of that Directive is ensured**, from compliance with the emission limit values for dust set out in Annex II to this Directive. In the event of such exemption, the emission limit values set by the competent authority shall not exceed 150 mg/Nm³ for dust.

The competent authority shall in any case ensure that no significant pollution is caused and that a high level of protection of the environment as a whole is achieved.

6. **Until 1 January 2030**, Member States may exempt existing medium combustion plants with a rated thermal input greater than 5 MW and which are **used to drive gas compressor stations required to ensure the safety and security of a national gas transmission system**, from compliance with the emission limit values for NO_x set out in Table 3 of Part 1 of Annex II.

Directive (EU) 2015/2193



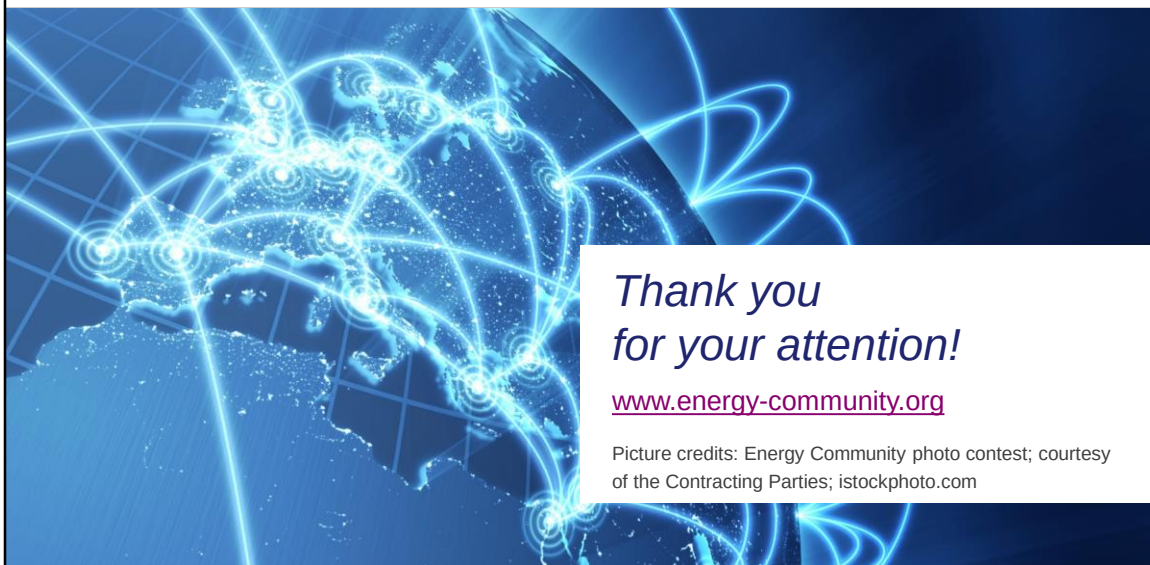
- *ELVs: for plants above 5 MW, quite similar to those of the IED (SO₂ and dust identical, NO_x more lenient),*
- *for the smallest plants (1-5 MW), significantly higher ELVs of SO₂ and dust*
- *flexibility instrument: permit or registration, possibility to use general binding rules*
- *deadline for permitting/registration: 1 Jan 2024 → competent authority shall have a register (inventory) based on these*

E.g. Between 1 and 5 MW, 1100 mg/Nm³ for SO₂ for “other solid fuels” (i.e. Coal), but 400 mg/Nm³ for plants above 5 MW

Energy Community level



- ***Joint application of LCPD and IED Chapter III***
- ***Special NERP and opt-out rules***
 - ***2018-2027***
 - ***20.000 hours until 2023***
 - ***Ukraine***
- ***MC Decisions from 2013, 2015 and 2016***
- ***Decarbonisation targets***



*Thank you
for your attention!*

www.energy-community.org

Picture credits: Energy Community photo contest; courtesy
of the Contracting Parties; istockphoto.com