

LEGISLATIVE CHALLENGES FOR ROMANIAN LARGE COMBUSTION PLANTS (LCPs)

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The purpose of this paper is to outline the contents of the proposed Directive for industrial emissions and to present the new emissions limit value (ELV) that should be achieved by new and existent LCPs, in comparison with the existent values. To prevent and control pollution industrial activities have to achieve a high level of protection of human health and the environment.

The new Directive proposal introduces a number of changes compared to the provisions of the current LCP Directive and the IPPC Directive that may have potential impacts on combustion processes. In this paper will be presented modification of the existent legislation.

Keywords: ELV, IPPC, Directive on Industrial Emissions.

1. Introduction

The IPPC directive, the directive on integrated prevention and control, which is up for revision in the Environment committee, aims at minimising pollution from various industrial sources throughout the European Union. Operators of industrial installations covered by the Directive are required to obtain an environmental permit from the authorities in the EU countries. The permit can only be issued if certain environmental conditions are met. About 52 000 installations are covered by the IPPC Directive in the EU. Emissions to air from these installations represent a large share of total emissions of key pollutants. Without further reduction of emissions from IPPC installations, the positive health and environmental effects to be obtained from these objectives will not materialise. In this sense, would increase utilization of "best available technology" (BAT) and force operators to use cost-effective techniques in order to achieve a high level of environmental protection [1].

Purpose of the Proposal for a Directive of the European Parliament and of the Council on industrial emissions is to strengthen the existing legislative framework in this area and reducing emissions from industry.

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This proposal simplifies the existing legislation by combining seven directives.

2. Objectives of the proposal Directive on industrial emissions

The Commission has published a proposal and an impact assessment for a Directive on industrial emissions, IE (IPPC) Directive, on 21st December 2007, which compiles together seven existing Directives related to industrial emissions into a single clear and coherent legislative instrument. These existing Directives include Large Combustion Plants (LCP) Directive (2001/80/EC), the IPPC Directive (96/61/EC), the Waste Incineration Directive (2000/76/EC), titanium dioxide industry related directives (78/176/EEC, 82/883/EEC, 92/112/EEC), the Solvent Emission Directive (1999/13/EC). The European Commission identified a number of problems related “(1) to shortcomings in the current legislation that lead to unsatisfactory implementation and difficulties in Community enforcement actions and, thereby, to loss of health and environmental benefits and (2) to the complexity and lack of coherence of parts of the current legal framework” [2].

The overall objective of the proposed Directive is to prevent and control pollution and its impacts arising from industrial activities so as to achieve a high level of protection of human health and the environment; and to achieve this in the most cost-effective and efficient way while ensuring the reduction of unnecessary administrative burdens [5]. To achieve this overall objective, the proposed Directive has a number of specific objectives and these are outlined below:

- ✚ increase the effectiveness of the legislation by supporting Member States in implementing BAT-based permitting. The Directive aims to improve and clarify the concept and use of BAT and increases transparency by requiring that the use of flexibility must be justified and documented leading to a more coherent and EU-wide application of BAT. It also strengthens existing minimum requirements in certain sectors such as Large Combustion Plants to ensure the achievement of environment objectives;
- ✚ further increase the effectiveness of the legislation by strengthening provisions on enforcement and environmental improvement, while stimulating innovation;
- ✚ cut all identified unnecessary administrative burden and simplify current legislation. The Directive tackles the shortcomings of current EU legislation on industrial emissions by overhauling the seven existing pieces of legislation on industrial emissions.

3. Main Amendments to the Existing Legislation

The background to amendments, including the reasons for them and the options considered by the European Commission are explored in the Commission's Impact Assessment of the proposed Directive. Main amendments to the existing legislation are [3]:

Operators and Permits

The proposed Directive provides that a permit may cover two or more installations or parts of installations operated by the same operator on the same site or on different sites.

BAT

Articles of the proposed Directive requires that BAT reference documents are the reference for setting permit conditions and that emission limit values do not exceed the emission levels associated with the best available techniques as described in those BAT reference documents.

Competent authorities will be in a position to grant derogations to allow emission limit values to exceed the emission levels associated with the best available techniques as described in the BAT reference documents. However, such derogations will be required to be based on well defined criteria and should not exceed the emission limit values set out in Chapters III to VI of the Directive; and such derogations and their justification will be required to be made available to the public.

Compliance and Reporting Requirements

The proposed Directive lays down more specific provisions to ensure an effective implementation and enforcement of this Directive and as such in Article 8 it introduces a requirement for operators to report regularly on compliance with permit conditions to the competent authority. Member States are also required to ensure that the operator and the competent authority take necessary measures in a case of non-compliance with this Directive.

Emission Limit Values - Combustion Plants

The proposed Directive sets more stringent emission limit values, aligned with best available techniques, for certain categories of combustion plants and pollutants.

Inspections

The proposed Directive introduces a requirement for Member States to provide a system of environmental inspections and that all installations are covered by an inspection plan.

Incentives relating to environmentally friendly technologies

The proposed Directive defines and introduces the term, "emerging technique" as a novel technique that could provide a higher general level of protection of the environment or higher cost savings than existing best available techniques. In addition, the Directive provides the competent authority with the option to grant temporary derogations from emission levels associated with the best available techniques as described in the BAT reference documents to enable an operator to test and use emerging techniques that might provide for higher level of environmental protection.

Soil Monitoring and Remediation

The proposed Directive introduces a new requirement to monitor periodically the soil and groundwater on the site of the installations in order to ensure that appropriate information is available to protect these media from contamination by dangerous substances.

In relation to site closure and remediation, the proposed Directive requires that a baseline report is established by operators to provide quantified information on the initial state of soil and groundwater contamination. Upon definitive cessation of activities, the operator is required to remediate the site and return it to that state.

Penalties

The proposed Directive requires Member States to determine penalties applicable to breaches of the national provisions adopted pursuant to this Directive. Similar provisions were included in the LCP, Waste Incineration and the VOC Solvents Directives.

IPPC Activities

Annex I of the proposed Directive clarifies the scope of the IPPC activities to be covered under this Directive. In some cases, the Directive provides a rewording of some activities, incorporates new thresholds for other activities, and includes additional activities. One of the significant amendments is inclusion of combustion plants between 20 and 50 MW (Small Combustion Plants).

3. Implications of the Directive Proposal

The new IPPC proposal will introduce a number of new elements and requirements that will have an impact on various organizations at different levels. This new proposed legislation will have effects on the combustion sector, both large and small combustion plants.

3.1 LCPs (>50MWth)

The following sectors and public bodies will be affected:

- ✚ Large combustion plants that are already under the current requirements of the LCP Directive; these are categorised into:
 - Power Plants;
 - Petroleum refineries;
 - Iron & Steel;
 - Other large industrial sites (non-ferrous metals, chemical, food & drink, paper producing companies, etc).
- ✚ Competent authorities and government (Ministry of Environment, Ministry of Economy, ministry of Administration and Interior, Environmental Protection Agency);
- ✚ Others (abatement technology manufacturers and suppliers, fuel suppliers, environmental monitoring companies, etc).

3.2 SCPs (20-50 MWth)

The following sectors and public bodies will be affected:

- ✚ Plants with a total thermal input of 20 – 50 MW; this may include electricity generation, agriculture, public buildings (universities, hospitals, government offices, and other smaller industries);
- ✚ Competent authorities, local authorities and government (Ministry of Environment, Environmental Protection Agency).
- ✚ Others (abatement technology manufacturers and suppliers, environmental monitoring companies, etc).

4. Tables

The proposed IE (IPPC) Directive is setting the upper range of the BAT-AELs as the new ELVs that LCPs will be required to meet in the future. The proposed ELVs are more stringent than the current LCP Directive ELVs (see Table 1.1-1.3) in many cases but in some cases the same ELVs have been maintained e.g. NO_x ELVs (post 2016) for coal and lignite fuels with thermal input > 500 MWth i.e. referring to large coal fired power stations. Additionally the determinative fuel paragraph referring to petroleum refineries (Article 8(2) in current LCPD) has been removed and all multi fuel LCPs will determine their mandatory ELVs based on the fuel weighted approach (Article 8(1) of current LCPD).

Table 1.1-1.3 compares the Emission Limit Values (ELV) as set in the current LCP Directive (for existing plants and new plants i.e. licensed before 27th November 2002) and the new IPPC proposal (for existing plants i.e. licensed before 2016) as applied from 1st January 2016 [4,5].

Table 1.1.

Comparison of LCP Directive and IPPC ELVs for SO₂

Fuel type	LCPD/ new IPPC	ELVs (mg/Nm ³)			
		50-100 MWt	100-300 MWt	300-500 MWt	>500 MWt
Coal & lignite	LCP Directive	2000	2000 to 400 (sliding scale)	2000 to 400 (sliding scale)	400
	new IPPC	400	250	200	200
Biomass	LCP Directive	2000	2000 to 400 (sliding scale)	2000 to 400 (sliding scale)	400
	new IPPC	200	200	200	200
Liquid fuels	LCP Directive	1700	1700	1700 to 400 (sliding scale)	400
	new IPPC	350	250	200	200
Gaseous	LCP Directive	In general Liquefied gas Low calorific gases from gasification of 800 refinery residues, coke oven gas & blast			35 5 800
	new IPPC	In general Liquefied gas Low calorific gases from coke oven Low calorific gases from blast furnace gas			35 5 400 200

Table 1.2

Comparison of LCP Directive and new IPPC ELVs for NO_x

Fuel type	LCPD/ new IPPC	ELVs (mg/Nm ³)			
		50-100 MWt	100-300 MWt	300-500 MWt	>500 MWt
Coal & lignite	LCP Directive	600	600	600	200
	new IPPC	300	200	200	200
Biomass & peat	LCP Directive	600	600	600	200
	new IPPC	300	250	200	200
Liquid fuels	LCP Directive	450	450	450	400
	new IPPC	450	200	150	150
Gas turbines (including CCGT), using natural gas as fuel	LCP Directive	50	50	50	50
	new IPPC	120	120	120	120
Gas turbine (including CCGT), using other than natural gas as fuel	LCP Directive	50	50	50	50
	new IPPC	90	90	90	90
Gas engines	new IPPC	100	100	100	100

Table 1.3

Comparison of LCP Directive and new IPPC ELVs for dust

Fuel type	LCPD/ new IPPC	ELVs (mg/Nm ³)			
		50-100 MWt	100-300 MWt	300-500 MWt	>500 MWt
Coal & lignite	LCP Directive	100	100	100	50
	new IPPC	30	25	20	20
Biomass & peat	LCP Directive	100	100	100	50
	new IPPC	30	20	20	20
Liquid fuels	LCP Directive	50	50	50	50
	new IPPC	30	25	20	20
Gaseous	LCP Directive	In general			5
		Blast furnace gas			10
		Steel industry gases that can be used elsewhere			50
	new IPPC	In general			5
		Blast furnace gas			10
		Gases produced by steel industry which can be used elsewhere			30

5. Conclusions

In the proposed IE (IPPC) Directive have been identified a number of changes in relation to the LCP sector > 50MWth. These include, but are not limited to:

- ✚ Inclusion of gas turbines licensed before 2002, in addition to those licensed since then and of engines, which could include landfill gas and coal mine methane engines;
- ✚ New Emission Limit Values (ELV) for SO₂, NO_x, CO and Dust (including particulate matter);
- ✚ The National Emissions Reductions Plan option is removed from the new IPPC proposal and all LCPs are required to meet the set ELVs.

The Commission's proposal will lead to significant benefits to the environment and human health by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques. For the large combustion plants, alone it will achieve net benefits of 7-28 billion € per year, including the reduction of premature deaths and years of life lost by 13,000 and 125,000 respectively [4].

This directive will improve clarity and coherence both for Member States and for operators, has the potential to reduce unnecessary administrative burdens through combined permitting and streamlined reporting requirements, and will achieve some environmental benefits. The Directive is expected to enter into force in 2014. The ELVs are to enter into force 2016 [6].

The implementation of new directive will reflect an important financial effort in order to fulfill new requirements regarding environmental protection.

REFERENCES

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- [4]. *COM(2007)844* Proposal for a Directive of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control) (Recast)
- [5]. Directive 96/61/EC concerning integrated pollution prevention and control
- [6]. *COGEN Europe*, Integrated Pollution Prevention and Control Directive