

# AIR & INDUSTRY

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Industrial installations – in particular the biggest ones – emit large amounts of air pollutants in Europe. Emissions of sulphur dioxide (SO<sub>2</sub>), particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), volatile organic compounds (VOCs), mercury (Hg), cadmium, lead, nickel and dioxins are of particular concern both for human health and ecosystems (see Air & Health and Air & Ecosystems factsheets).

## EU legislation

- The Industrial Emissions Directive (IED) aims to both prevent and control pollution from around 50,000 large installations operating in many fields including energy, the production and processing of metals, minerals and chemicals, waste management and the intensive rearing of pigs and poultry [1].
- Installations are granted a permit based on the Best Available Techniques (BATs) in their field. BATs constitute “state of the art” environmental performance and are detailed in BAT Reference Documents (BREFs) which are developed at EU level by EU Member States, industry and environmental NGOs.
- The conclusions of these documents are formally adopted by EU Member States and need to be complied with within 4 years after publication.
- The IED also sets specific minimum binding emission limit values (ELVs) for certain air pollutants and certain sectors such as for Large Combustion Plants (LCPs) and Waste (Co)Incineration - the so-called “safety net”.
- Some sectors are exempted from the IED despite their significant contribution to air pollution, for example cattle farms (see Air & Agriculture factsheet).

### E-PRTR register

The European Pollutant Release and Transfer Register (E-PRTR) [2] was established to improve public access to environmental data. The register contains information about the quantity of 91 types of pollutants emitted annually by more than 28 000 of the largest industrial facilities in Europe. Unfortunately, the register does not give information about emissions concentrations or other parameters that allow the comparison of environmental performance.

### Medium scale combustion plants (1-50MWth)

In December 2013, the European Commission proposed a Directive to limit emissions from combustion plants between 1 and 50 megawatts thermal (MWth). It proposes EU wide limits for three air pollutants (PM, SO<sub>x</sub>, NO<sub>x</sub>). The ambition level and entry into force of the limits differ according to the type of installations (engines or boilers, existing or new). The Commission did not propose a permitting regime despite this already being in place in several Member States [3].

## FACTS AND FIGURES

### THE COST OF AIR POLLUTION

from the 10,000 largest polluting facilities in Europe amounted to between €102 and 169 billion in 2009. This amounts to €200-330 a year for every European [4].



6% OF INSTALLATIONS  
=  
3/4 OF DAMAGE



94% OF INSTALLATIONS  
=  
1/4 OF DAMAGE [4]

### BAT IMPLEMENTATION

The benefits of applying BATs to industrial activities outweigh the costs by a ratio of between 3 to 1 (low estimate) and 10 to 1 (high estimate), even without taking into account damage to ecosystems. It could reduce the number of cases of chronic bronchitis by 14,000 each year and the number of days on which people have to limit their activity for health reasons by 24 million. The annual net benefits are estimated between €28-59 billion [5].



BENEFITS COSTS

## BEST AVAILABLE TECHNIQUES



In most cases, just making sure that industry complies with the current BAT could significantly improve air quality. The LCP BREF was developed between 2000 and 2003 (adopted in 2006), which is more than ten years ago. LCPs' emission reduction potential compared to 2009 levels through rigorous BAT implementation is as follows [6]:

Pollutant	Emission reduction	Instruments to achieve reductions
NO <sub>x</sub>	-36%	IED safety net
	-69%	Stricter BAT associated levels 
SO <sub>2</sub>	-66%	IED safety net
	-94%	Stricter BAT associated levels 
Dust / PM	-64%	IED safety net
	-94%	Stricter BAT associated levels 

Even more reductions are expected if the LCP BREF currently under negotiation provides for stricter BAT associated emission levels, more ambitious energy performance requirements and new pollutants (i.e. mercury) are subject for controls.

## BURNING COAL



The health impacts of coal power generation are estimated at more than 18,300 premature deaths, about 8,600 extra cases of chronic bronchitis, and over 4 million lost working days each year in the EU [7]. Switching energy sources from fossil fuel to wind, solar and geothermal energy would help air quality [8].

## RECOMMENDATIONS

- Control emissions of medium combustion installations by setting limits in line with current best available techniques, ensure their rapid entry into force and an adequate permitting and monitoring regime.
- Extend the IED's "safety net" to new pollutants emitted by key sectors such as emissions of heavy metals from LCPs.
- Ensure the rigorous enforcement of permits based on the stricter BAT emission levels contained in the BREFs and reject derogations.
- Include cattle under the scope of the IED.
- Review the E-PRTR in order to extend its scope and enable comparison of environmental performance of industrial activities. Data should include flue gas volumes and concentrations as well as input data (e.g. type and amount of fuels used).
- Introduce economic instruments such as pollutant taxes / levies or charges. The revenues could be re-invested in cleaner techniques or to stimulate innovation. They could also serve to finance monitoring and inspection activities.
- Adopt ambitious emission reduction commitments in the revised National Emissions Ceilings Directive. Emission reduction commitments must go beyond the Gothenburg Protocol and aim to achieve the health and environmental objectives of the EU's 6<sup>th</sup> and 7<sup>th</sup> Environment Action Programmes by 2030.

### More information

- E-PRTR register <http://prtr.ec.europa.eu/>
- Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control): <http://eur-lex.europa.eu/>
- New Features under the Industrial Emissions Directive, EEB, 2011: <http://www.eeb.org/index.cfm/> library/

For footnotes, please refer to separate reference sheet and to the EEB website.