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## Summary

*In this investigative piece of pan-European journalism, EuroScientist focuses on a case study showing how an evidence-based approach could inform policies that are better suited to protect EU citizens. In this article, we focus on the case of the steel industry. It appears to have managed to render ineffective in protecting the health of EU citizens a 2010 Directive regulating industrial emissions, due to come into force in 2016. The piece reveals how decision-making mechanisms have ultimately been dampened down by many lobbying and political compromises. As a result, industry has been left to decide which tests are to be implemented to control harmful emissions, without the obligation of implementing what available evidence considers the most effective technology.*

## Nerves of steel: carte blanche to Europe's atmospheric polluters



steel factory

**A classic example of how evidence-based policy does not prevail to the detriment of EU citizens' health**

A new European environmental Directive designed to protect EU citizens against fine dust emissions is unlikely to be very effective. Indeed, it appears that the Industrial Emission Directive 2010/75/EU, also called IED, has been weakened due to industry's pressures. The aim of the IED was to prevent or reduce as much as possible environmental pollution by fine dust emanating, among others, from industrial facilities. The trouble is that the very industries such Directive is designed to regulate have had tremendous amount of influence on how it will ultimately work.

The Directive expects industry to apply the best available techniques (BAT) to reduce fine particles emissions. But, in the case of steel production, industries alone is left to decide how much efforts they are to invest in environmental protection. In this article, *EuroScientist* publishes the conclusion of a collaborative investigation by a team of European journalists. It reveals how little evidence-base has been taken into account to inform policy in this instance, following a year-long policy-making process.

## Health impact

Using the best available techniques to reduce industrial emissions is key. Indeed, among all industrial emissions, fine dust is one of the most dangerous for health as it is carcinogenic. Comprehensive European and international [studies](#) confirm that air pollution significantly increases the risk of lung cancer.

This means that air pollution has to be taken seriously. "There is no known safe level of air pollution," says Francine Laden, epidemiologist at the Harvard School of Public Health in Boston, Massachusetts, USA, and [IARC](#) working group member on this topic. Her working group at IARC, which is the cancer research agency of the World Health Organisation (WHO), branded outdoor air pollution as carcinogenic for humans in late 2013. And there is no evidence of a threshold for such harmful effects. Therefore, prolonged exposure to these particles can lead to lung cancer as well as respiratory and cardiovascular illnesses. The European Environment Agency (EEA) claims this dust has been responsible for the deaths of an [estimated](#) 430,000 people in 2011 alone.

Germany has been the worst hit by the atmospheric pollution caused by industry between 2008 and 2012, [the EEA notes](#). Indeed, the country lost an estimated €58 million based on costs associated with healthcare (by social security and individuals), sick leave and the death of family members contributing to household income. Then, the UK is right behind Germany with losses totalling €40 million and followed by France and Italy, each with €23 million in estimated losses.

The steel industry is Europe second largest major emitter of this dust with about 200,000 tons, after the energy sector, which emits 935,000 tons, based on 2013 estimates by [EPER](#), the EU Pollutants Register. The EU, in a bid to alleviate the problem, adopted the IED directive in 2010 to regulate such industrial emissions. Steel producers are expected to comply with the regulation by 2016.

Even though the largest share of fine dust is generated by domestic heating, which accounts for 30%, industrial emissions account for around 17%, with the steel industry being one of the [major emitter](#) of particulate matter in the air we breathe. In Europe, particulate matter levels are often above the [safety levels](#) set out by WHO. Each ton of fine particulate matter in the atmosphere represents an estimated additional €23,000 in costs for all of Europe's health services combined.

## Regulatory farce

To better understand the dynamic of the convoluted policy-making path, let's take the example of how the IED Directive has worked out in the case of the steel industry. The Directive states that, by 2016, national governments will have to renew permits for steelworks and other industrial installations. Permit renewal will depend on companies adopting the best available technology (BAT) on the market to reduce fine particulate matter as well as other pollutants.

Therein lies the rub. According to the new regulation, companies themselves decide what the BAT actually is. In reality, these industries do not necessarily choose the technology proven to be the most innovative and efficient.

In the end of a year-long process, European policy makers have approved general rules to compel European industries to pollute less. But those such as the steel industry have now been left to decide both how and by how much emissions should be reduced. Metaphorically speaking it is akin to telling a motorist: you must stop at the red light, but you can turn it off if you'd like. Giants of the steel industry have managed to strip the new rules bare, by applying much of their weight to influencing technical working groups, according an informed participant of the policy process who wished to remain anonymous.

## Evidence-based policy?

To understand how we came to this situation, it is useful to examine how the policy process works. Legislators gave the task of defining the Best Available Technologies to a number of committees known as "technical working groups". Each industrial sector, such as steel, chemicals, food, thermoelectrical energy, has its own dedicated group. "The idea is to avoid definitively fixing technical criteria in normative texts, given that they are prone to become obsolete over time," explains an environmental policy officer at the European Commission.

Instead, the EU adopted a more flexible approach, allowing criteria to keep up with improvements in technology without having to pass through long parliamentary procedures, each time. These committees are meant to review the most effective technologies regularly and impartially, before adding them to a list sent to the European Commission for approval. The list is then added to the annexes of the Directive. The Directive itself becomes binding for each sector four years after the Commission's decision containing the recommended technologies has been adopted.

The trouble is that these committees are almost exclusively made up of representatives from the companies facing regulation and from governments supporting these companies in the name of national interest. Their presence in high numbers dwarfs the number of civil society representatives taking part to the process. In addition, independent scientific advisers are nowhere to be seen. Indeed, EU nomination rules do not include their mandatory participation, as confirmed by the confidential list of the members of the committee on steel obtained in the course of this investigation.

Indeed, the technical working group on iron and steel industry includes 94 participants from industry, 113 representatives of Member States, 18 from the EU Commission and 6 participants from

environmental Non-Governmental Organisations (NGOs) and private research organisations. "The [European Environmental Bureau] is one of only three NGOs involved. Member States have a strong say. It is worrying is that these have also been infiltrated by industry operators," says Christian Schaible, senior policy officer for Industrial Production at the Brussels-based European Environmental Bureau (EEB).

## Hapless technology

In 2012, the steel committee adopted what they called the "best" technology in the sector. The [committee minutes](#) obtained during this investigation reveal how industry representatives successfully applied pressure on the committee's secretariat, which is there to guarantee the impartiality of the decision-making. "Steelmakers' heavy lobbying aimed to kill the strengthening of the [Best Available Technology]-based permitting requirements under the Industrial Emissions Directive," says Schaible. He adds that they pursued an implementation delaying tactic as "they wanted to start the review all over again after the Directive was published."

"Discussions between the secretariat and members of the committee were mostly divided around the issue of the [sinter plants](#). These are the most polluting piece of apparatus in integrated steelworks [present in] the most common type of steel plants," says Sebastian Plickert, an engineer working for the unit Resource Conservation, Material Cycles, Mineral and Metal Industries at the German Federal Environment Agency in Dessau, Germany, who was part of the committee. Integrated steelworks, he says, are responsible for 84% of the total particulate matter emissions of all steel plants in the EU. And such sinter plants are responsible for [about 50% of the dust](#) produced by steel plants. Technically, sinter plants are called agglomerators; they transform raw iron into a material optimised for use in blast furnaces.

The secretariat of the committee on steel had initially proposed the adoption of baghouses, equipped with bag filters, an innovative technology that directly captures dust as it is emitted. Thus, reducing dust emissions down to less than 15 milligrams per cubic metre of treated air. The method is already used in Germany and by Tata Steel in the Netherlands. Experts like Plickert, consider it to be applicable to every steelworks prepared to make the necessary investment of around €23 million on average.

But the steel industry does not share this opinion, pointing to the crisis hitting their sector. They blame energy costs and competition from producers outside the EU, particularly from China, which are not subject to the same environmental regulations. "All this created a situation where many plants are not profitable anymore and so they can hardly afford a further raise of the environmental costs, which are already quite high," argues Thorsten Hauck, head of the department for iron making process technology at the VDEh-Betriebsforschungsinstitut (BFI), a research institute for steel-making technology in Düsseldorf, Germany.

## Exceptions

In this context of economic pressure, "the steel industry coalition successfully called for keeping a technique known as electrostatic precipitation, in the list of Best Available Techniques for dust abatement," at the decisive stage of the policy making process, according to Plickert. He points out

that the technique has already been adopted by the majority of European steelworks. But he also says that it is outdated and almost three times less efficient than bag filters with fine dust emissions of 40 milligrams per cubic metre remaining in the exhaust gases—much higher than the 15 milligrams per cubic metre obtained with baghouses.

Eurofer, the Brussels-based European federation of steel producers, claims that these limits did not go against the Directive. Excluding electrostatic precipitators from the BAT options for existing sinter installations would not have been in line with the definition of BAT in the Industrial Emissions Directive, according to Danny Croon, environment director at Eurofer. He believes the Directive defines technologies in the broadest sense, including which technologies are to be used and how the installation is designed. What is more, the Directive allows for more efficient technology to be waived, should its adoption incurs costs that are disproportionate to its environmental benefits.

A waiver within the document approved by the technical committee allows steel plants to keep on using electrostatic precipitation whenever bag filters are not applicable. “This wording of the waiver in the committee’s decision is so vague, though, that it protects steelworks from the need to invest in bag filters without any real restriction, as long as the state authorities shy away from conflict,” counters Plickert.

Because of this decision, 3,800 tonnes of additional particulate matter will therefore enter the atmosphere, according to the same experts. To put this figure in context: this amount of emissions represents less than 1% of the fine particulate matter emitted in Europe—as such emissions remain dwarfed by domestic heating and vehicle emissions. Yet, the extra dust emitted by the European steel industry has a potential total estimated cost of €524 million, over six years. It is a sum greater than the €460 million that steelworks without bag filters would have to invest.

## **What's next?**

The Best Available Technologies list for a given sector will only become definitive after validation by supervisory committee formed uniquely by representatives of national governments. This investigation demonstrates that EU policy leading to collective binding decisions remain the fruit of a consensus and decisions aligned with national governments priorities.

In essence, the steel mills are entitled to flag up the need to protect their profitability when faced by new requirements for environmental protection. However, the steel industry should not decide on its own types of technologies that are required for environmental protection. In this context, there are renewed expectations of the new [Scientific Advice Mechanism](#), whose creation was recently announced by the EC, to help shift the balance towards greater evidence-base to inform policy in future Directives.

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