

Evaluation of the Industrial Emissions Directive

Comments by the European Copper Institute

5 September 2019

The European Copper Institute welcomes the opportunity to provide input into the evaluation of Directive 2010/75/EU (Industrial Emissions Directive, IED). We support and echo the feedback provided by Eurometaux on behalf of the collective non-ferrous metals sector. We would like to further emphasize the following points:

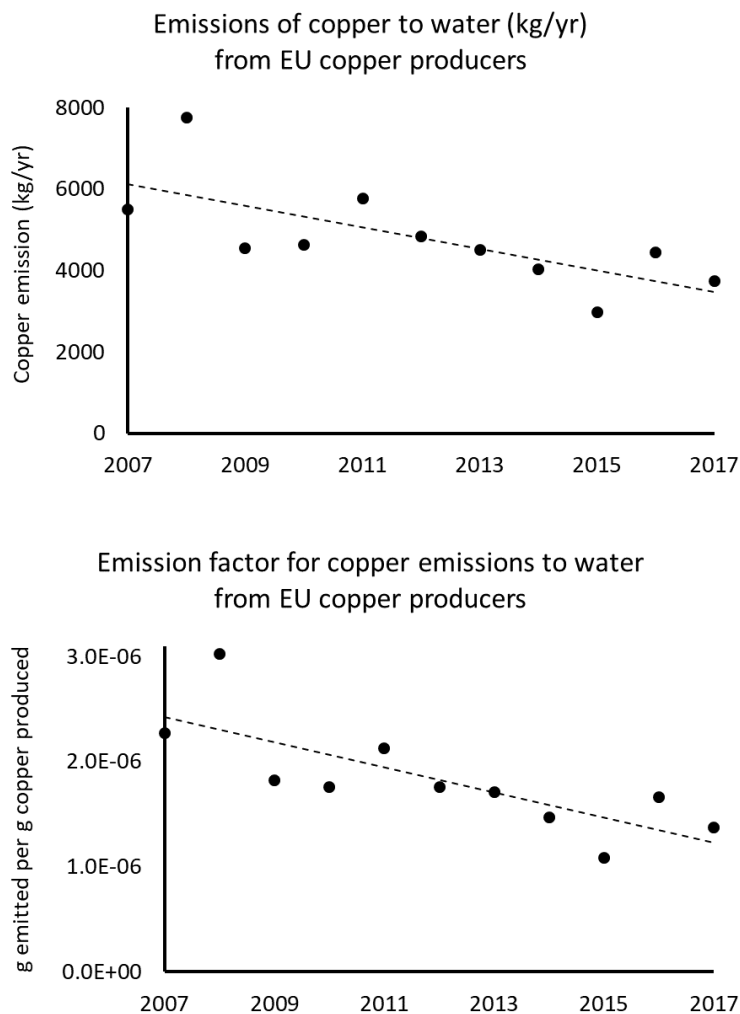
- The implementation of the “Best available techniques reference document for the non-ferrous metals sector” (NFM-BREF) is still ongoing. It will be implemented in national legislation by 30 June 2020. The evaluation of the IED for our industry is therefore somewhat premature. Some investments and the corresponding reductions in emissions may still be ongoing.
- The IED is robust, coherent, effective, and fit-for-purpose;
- The Seville process must be secured and further developed. The transparency and in-depth technical discussions must be maintained, as they are essential to ensure the IED is fit-for-purpose. Industry is a key contributor to this process as it provides information about the installations, techniques, applicability, cross media effects, and cost;
- In developing BREFs, an integrated approach must be pursued to protect the environment as a whole. The approach must cover emissions to air and water, generation of waste, use of raw materials, energy efficiency, etc., as was done for the NFM-BREF. Without a holistic view, there is a risk to shift the burden from one environmental compartment to another;
- The technological feasibility and economic viability of the industry must continue to be considered when deriving the emission levels associated with the best available techniques (BAT-AELs). Considering the cost and benefits will help to ensure proportional emission reduction measures;
- Reliable, robust, and high-quality data, collected over long timeframes and under varying conditions, must remain the basis for establishing BAT-AELs;
- The IED is a living regulation. It does not need to be revised, since its inherent revision processes will ensure continuous reduction in emissions and innovation in the future;

The Industrial Emissions Directive clearly contributes to lower industrial emissions and a cleaner environment. This is illustrated by the reduction in emissions achieved by copper producers since 2007. We focussed on two key pollutants: emissions of copper to water and emissions of dust to air. These pollutants are reflected in the BAT-AELs for the non-ferrous metals sector, which confirms their pivotal role in evaluating emission levels by the sector. **In recent years, the emissions of copper to water have decreased by approximately 43%, and emissions of dust to air have decreased by 54% (details below).** This confirms that the IED is effective in its current form to achieve its objective of reducing industrial emissions.

1. Copper emissions to water

The copper emissions to water are on a clear downward trend. Between 2007 and 2017, copper producers cut emissions by approximately 43%. This is directly due to investments in emission reduction technology by the industry to ensure compliance with the IED, showing the effectiveness of the Directive. For example, a major Bulgarian copper smelter significantly reduced its copper emissions to water through the installation of a rainwater treatment plant in 2014¹. As a consequence, the copper emissions to water at this plant were reduced from around 1000 kg/year before 2013 to around 100 kg/year from 2015 onwards, a 90% decrease. More information on how these data were obtained is provided in the Annex.

The trend in the reduction of copper emissions to water is hardly affected by changes in copper production over time. Refined copper production in the EU remained relatively stable between 2007 and 2017. Due to the limited changes in copper production, the emission factors (emissions normalized per unit copper produced) show a trend similar to the emissions data reported above.

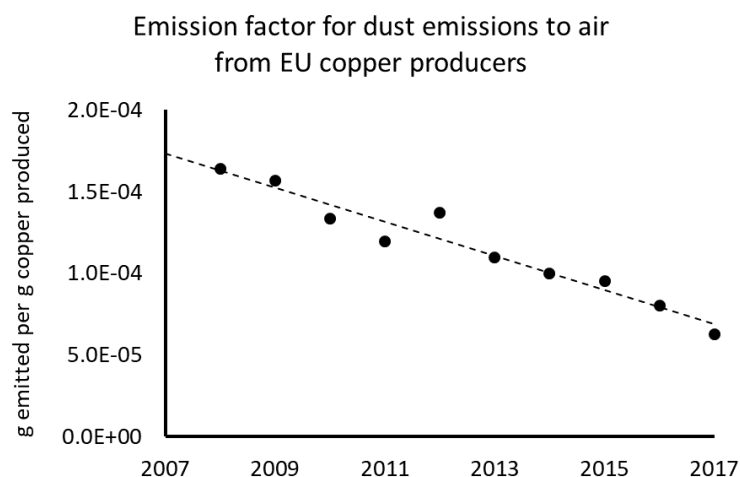
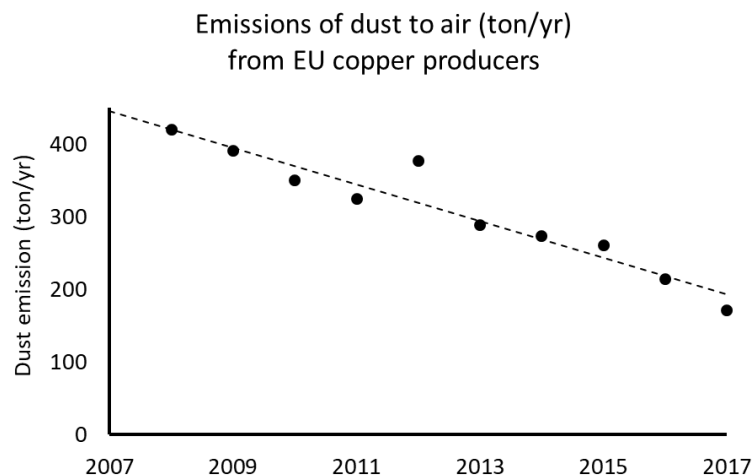


¹ More information: <https://bulgaria.aurubis.com/news-and-publications/press-releases/aurubis-bulgaria-opens-rainwater-treatment-plant-worth-eur-63-million/>

2. Dust emissions to air

Dust emissions to air are also on a very clear and consistent downward trend. Between 2008 and 2017, copper producers cut dust emissions to air by 54%. This reduction is related to investments in emission reduction technology to ensure compliance with the IED, showing the effectiveness of the Directive. For example, following investment in high-efficiency filters, a major Spanish copper smelter has reduced its emissions of dust to air by 75% between 2008 and 2014. More information on how these data were obtained can be found in the Annex.

The reduced dust emissions imply that the emissions of metals to air were also cut, because many metals are emitted to air in the form of dust. For example, arsenic and cadmium emissions from the copper sector were reduced by 60% and 58% respectively over the same timeframe, which shows that they are clearly interlinked with the reduction in dust emissions.



Finally, it must be noted that the reduction of emissions did not start in 2007. The present analysis only considers data from 2007 onwards, because it was not possible to obtain data for all copper plants before that date. However, the most drastic reductions in industrial emissions occurred before 2007. This also applies e.g. to the SO_x emissions to air by the copper sector, which have been reduced drastically over the past 20 years through implementing state-of-the-art techniques such as secondary

hoods, high efficiency scrubbers, lime addition in gas streams, and reusing process gases. This is illustrated by the case of a Bulgarian copper smelter, where a drastic reduction of SOx emissions was obtained following numerous modernizations in the sulphuric acid plant lines (2001-2014), replacement of heavy fuel dryers by steam dryers (2001-2002), and instalment of two gas cleaning systems (2007, 2016)². Further emission reductions become progressively more difficult and costly. In the future, the potential for further emission reductions must therefore consider past efforts and technical limitations.

Conclusion

Based on the above, we can conclude that emissions from the copper industry in the EU have significantly declined in recent years, thanks to significant investments by the industry in advanced emissions prevention and reduction techniques. These trends show that the IED is effective in its current form to achieve its objective of reducing industrial emissions.

About the European Copper Institute

The European Copper Institute represents Europe's copper industry, which comprises copper mines, copper producers (smelters & refineries), and semi-fabricators. It is made up of 500 companies, has an annual turnover of €45 billion and employs 50 000 people.

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² More information: <https://www.aurubis.com/en/responsibility-x/environmental-protection-at-sites/environmental-protection-at-pirdop>

Annex: Data sources

Data on copper emissions to water were gathered from the European Pollutant Release and Transfer Register (E-PRTR) and aggregated across all copper smelters and refineries based in the EU-28. The reporting threshold for copper emissions to water for each site is 50 kg/year according to Regulation (EC) 166/2006. Similar data were gathered for copper mines and semi-fabricators, but their copper emissions to water were far below those of copper producers (smelters and refineries).

Data on dust emissions to air were not available from the E-PRTR. Only PM10 (a subfraction of dust) is reported to the E-PRTR, and most copper smelters and refineries emit less than the reporting threshold of PM10 (50 000 kg/year). Therefore, data were gathered from the companies' annual and environment reports, from national emission inventories, and through personal contacts. Data could be retrieved for almost all copper smelters and refineries. The aggregated data reflect emissions from 93% of the refined copper production in the EU-28. The data for Cd and As emissions to air, which were shown for comparison, were obtained from the E-PRTR.

Production volumes of refined copper in the EU-28 were gathered from the Statistical Yearbook by the International Copper Study Group (ICSG). Refined copper production in the EU did not fluctuate more than 13% between 2007 and 2017. Overall, it has slightly increased from approximately 2.5 Mton in 2007 to 2.7 Mton in 2017.