



# Impact of the EU ETS across Member States and Sectors

## Insights from the 2016 data

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The most recent official data<sup>1</sup> on the EU's Emissions Trading System (EU ETS) show that greenhouse gas emissions dropped by about 2.7% in 2016. This reduction would go somewhat beyond the proposed annual reduction of the cap of 2.2% in the fourth trading period (2021-30). The EU ETS covers many different sectors, however, including the power sector and various energy-intensive industries. And both the EU ETS provisions for allocation as well as climate policies at EU and national level differ across sectors. What does the data reveal when we zoom in to examine different sectors and countries in particular?

The first conclusion is that the overall reduction in ETS emissions is mainly attributable to the power sector. The power sector, which was responsible for just under 3/5<sup>th</sup> of total ETS emissions in 2016, reduced their emissions by roughly 40 million tonnes, representing over 4% of the sector's total emissions. What's more, the total emissions reductions realised by the power sector account for slightly more than the total emissions reductions in the EU ETS as a whole. Hence, the energy-intensive industrial sectors that make up the rest of the EU ETS on aggregate increased their emissions slightly.

Indeed, when looking at the largest industrial sectors – steel, refineries, cement and chemicals, which together are responsible for about 2/3rds of industrial emissions – these show emissions levels that are flat or just slightly raised year-on-year. The principal difference in ETS rules between the power and industrial sectors is that the latter receives a large share of its allowances for free, as these sectors are considered to be at risk of carbon leakage. Perhaps

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<sup>1</sup> The data presented in this Commentary are taken from the European Union Transaction Log (EUTL). The data for 2016 are preliminary, with about 8% of emissions not accounted for. In those cases, 2015 data were used. The EUTL data were aggregated and analysed jointly by CEPS and the Wegener Center at the University of Graz.



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more important, however, is the fact that the power sector is also subject to a variety of other climate policies, at both the EU and national level.

These differences between member states become clear when zooming in on the emissions trajectories within a single sector. The power sector again provides the starkest illustration: for example, of the total emissions reductions realised in the power sector, 60% can be attributed to the UK alone. A further one-third took place in Spain. Conversely, in a number of member states, power-sector emissions actually increased compared to 2015. Most notably, this happened in the Netherlands and France, where emissions grew by over 8 million tonnes.

What can explain these variations between member states, considering that they are part of the same EU-wide carbon market? The explanation for the UK is perhaps the most obvious, owing to the top-up to the ETS price that the government provides. This creates a de facto carbon price floor, which triggered the closure of many coal-fired power plants.<sup>2</sup> Of the ten installations that registered the biggest YoY emissions reductions (all of them power plants), eight were located in the UK, including the now-closed Longannet power station in Scotland and the Drax power station which continues to replace coal with biomass.

In Spain, which also significantly reduced its power sector emissions, the picture is more complicated. Virtually every installation showing the highest emissions reductions (in absolute terms) was a coal-fired power plant. At the same time, many of the installations that registered the highest emissions growth in Spain in 2016 were also power plants, although gas-fired generation is more common there. Additionally, renewable energy (RES) growth may have played a significant role. Data from [Red Eléctrica](#), the Spanish transmission system operator, show that the share of RES in the electricity-generation mix increased by over 4 percentage points, to 41.1%. Moreover, electricity demand increased slightly, showing that the drop in emissions cannot simply be attributed to lower demand. Rather, the increase in renewables makes it more feasible, or necessary, to close down conventional power plants that may have become uneconomical to operate.

In France, where power-sector emissions increased, the impact of output reductions in its nuclear power plants is visible. To counteract this reduced output, a number of conventional power plants increased their output significantly, resulting in higher emissions. Meanwhile, in the Netherlands, two new coal-fired units contributed significantly to the country's increase of power sector emissions. While these plants are amongst the most efficient coal plants in the world, they are still using one of the most polluting fuels available, prompting ongoing political debate in the Netherlands about additional closures of these plants, including the new ones. While these more efficient plants were built to comply with 2020 climate targets, their continued operation endangers the achievement of higher targets adopted post-Paris. Nevertheless, there is a lot of opposition to closing any power plant that has only started operating in recent years.

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<sup>2</sup> [Sandbag](#), the Brussels and London-based non-profit organisation, offers an in-depth discussion of recent developments in (UK) power-sector emissions.

In industrial sectors, similar variations across member states are found. While on the whole, emissions have only increased marginally, there are some significant outliers in both directions. In the steel sector, Italy and Germany stand out for their remarkable growth in emissions, while the UK recorded the greatest reduction in emissions, coming primarily at the Port Talbot site. In the cement sector, Portugal registered the biggest reduction (ostensibly due to diminished demand in export markets<sup>3</sup>), which accounted for over 1/5<sup>th</sup> of the country's total cement emissions. As a share of total EU emissions, however, the country's cement emissions are negligible.

These examples illustrate the diverse impact the EU ETS has on different member states and sectors from one year to the next. It also shows the impact that national and other EU policies may have on GHG emissions. Additionally, the relatively flat level of emissions in industrial sectors suggests that the ETS has a very different impact there. Furthermore, in sectors and countries alike where reductions have been realised, lower output and demand, rather than more efficient production, may have been a driving factor.

As legislators across the EU finalise the EU ETS legislation for the post-2020 period and decide whether to adopt additional climate policy measures, these diverse impacts and interactions throughout different countries and sectors should be taken into account to ensure a coherent, credible and cost-effective policy mix.

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<sup>3</sup><http://www.theportugalnews.com/news/faro-port-empty-since-june-as-cement-hits-hard-times/40235>