

Press release

Significant CO₂ abatement via European Carbon Price Support possible

Cologne, January 9 2017. In its Climate Action Plan, the German government has proclaimed its intention to realize measures that strengthen incentives within the European Emissions Trading System EU-ETS. During the negotiations for the Climate Action Plan, a Carbon Price Support (CPS) was being considered as one possible measure. Other European countries, such as France, have also talked about introducing a CPS for carbon dioxide emissions in the electricity sector.

If the EU decided to establish a CPS in 2017, the electricity sector could avoid up to 943 million tons of carbon dioxide until 2025, which is equivalent to the entirety of Germany's annual emissions. Overall, more than one quarter of these emissions would be avoided by Germany alone. This is the result of an analysis recently conducted by the research institute [ewi Energy Research & Scenarios](#) (ewi ER&S).

The additional costs associated with an EU-wide CPS would be relatively low. For the period from 2017 to 2025, they would add up to approximately 23 billion euros for all member states taken together, which is equivalent to five euros per EU citizen per year. Jürgen Kruse, coauthor of the analysis, explains: "An EU-wide Carbon Price Support in the electricity sector would help to increase the abatement of greenhouse gas emissions in the EU-ETS. Furthermore, the instrument is cost-efficient: no other instrument avoids the same amount of additional carbon dioxide at a lower cost. However, a Carbon Price Support that is not applied across the EU as a whole will only lead to emission reductions if the amount of traded certificates in the EU-ETS is reduced accordingly."

Politically, due to its substantial distributional effects—between different member states, but also between electricity suppliers and consumers—the implementation of an EU-wide CPS would likely be difficult: European suppliers, in particular operators of renewable energy and nuclear power plants, could expect additional revenues up to 61 billion euros. In contrast, operators of lignite and hard coal power plants would face additional losses of 24 billion euros. European consumers would face extra costs of 170 billion euros over the same period of time. "Having said that, the additional revenues from the trading of certificates in the EU-ETS, which amount to roughly 87 billion euros, as well as the additional revenues generated by power plant operators, could be utilized to partially compensate consumers for the additional financial burden", study author Harald Hecking explains.

The study's results - an overview:

ewi ER&S has released its "Analysis of an EU-wide Carbon Price Support". The analysis quantifies the effects of a CPS on the European electricity sector and its carbon dioxide

emissions for the years 2017 to 2025 and identifies both winners and losers. Key results of the analysis are:

- A CPS will avoid up to 943 million tons of carbon dioxide emissions in the EU. This is equivalent to the entirety of Germany's annual emissions. Germany alone will reduce its carbon dioxide emission by 249 million tons.
- Electricity generation from coal and lignite will decrease at the rate of 28% in the EU and 20% in Germany in 2017 and will be replaced mainly by natural gas. European gas consumption will therefore increase by 5.5% or 25 bcm per annum.
- A CPS will lead to additional costs of 23 billion euros in the EU, which is, set in relation to electricity demand, equivalent to an additional 0.08 ct/kWh_{el} or five euros per annum for each EU citizen. Additional costs in Germany will amount to 1.5 billion euros or 0.03 ct/kWh_{el} respectively.
- A CPS will increase the German wholesale electricity price by 8-11 EUR/MWh.
- European electricity suppliers, mainly the operators of renewable energy and nuclear power plants, will generate additional revenues of 61 billion euros. Operators of lignite and hard coal power plants on the other hand face losses of approximately 24 billion euros. European consumers will face extra costs of 170 billion euros over the same period of time.
- Additional revenues generated from certificate trading (roughly 87 billion euros), as well as additional revenues generated by the power plant operators could be utilized to partially compensate consumers for the added financial burden.
- A CPS is a technology-neutral instrument for cost-efficient carbon dioxide abatement, its realization would have immediate consequences for the electricity market and carbon dioxide emissions.
- An EU-wide CPS is identical to replacing the EU-ETS by a carbon tax (provided that the CPS is higher than the market price for certificates).

Background und methodology of the study:

The study scrutinizes a technology-neutral CPS on the basis of two scenarios:

1. An EU-wide CPS following the price level of the French proposal compared to a
2. reference scenario (REF) without a CPS.

The analysis is carried out using DIMENSION, an European electricity market model developed by ewi ER&S.

The study "Analysis of an EU-wide Carbon Price Support" can be downloaded [here](#) for free.

For editorial questions:

ewi Energy Research & Scenarios gGmbH

Press office

Tel.: +49 (0)221 - 27729 108

E-Mail: presse@ewi.research-scenarios.de

About ewi Energy Research & Scenarios gGmbH:

ewi Energy Research & Scenarios (ewi ER&S) is a non-profit organization that is dedicated to applied research in energy economics and conducts consulting projects for science, industry, politics and society. With a team of approximately 20 academics, ewi ER&S conducts studies on the basis of cutting-edge economic methods and focuses i.a. on the German and European electricity and gas markets, regulation, market design, decentralized energy supply and reduction of greenhouse gas emissions.
