

A carbon floor price for Germany or the countries of the Central-Western European electricity market – and its alternatives

Institut français des relations internationales (Ifri)

» Ditching Coal in North-Western Europe: Options on the Table «

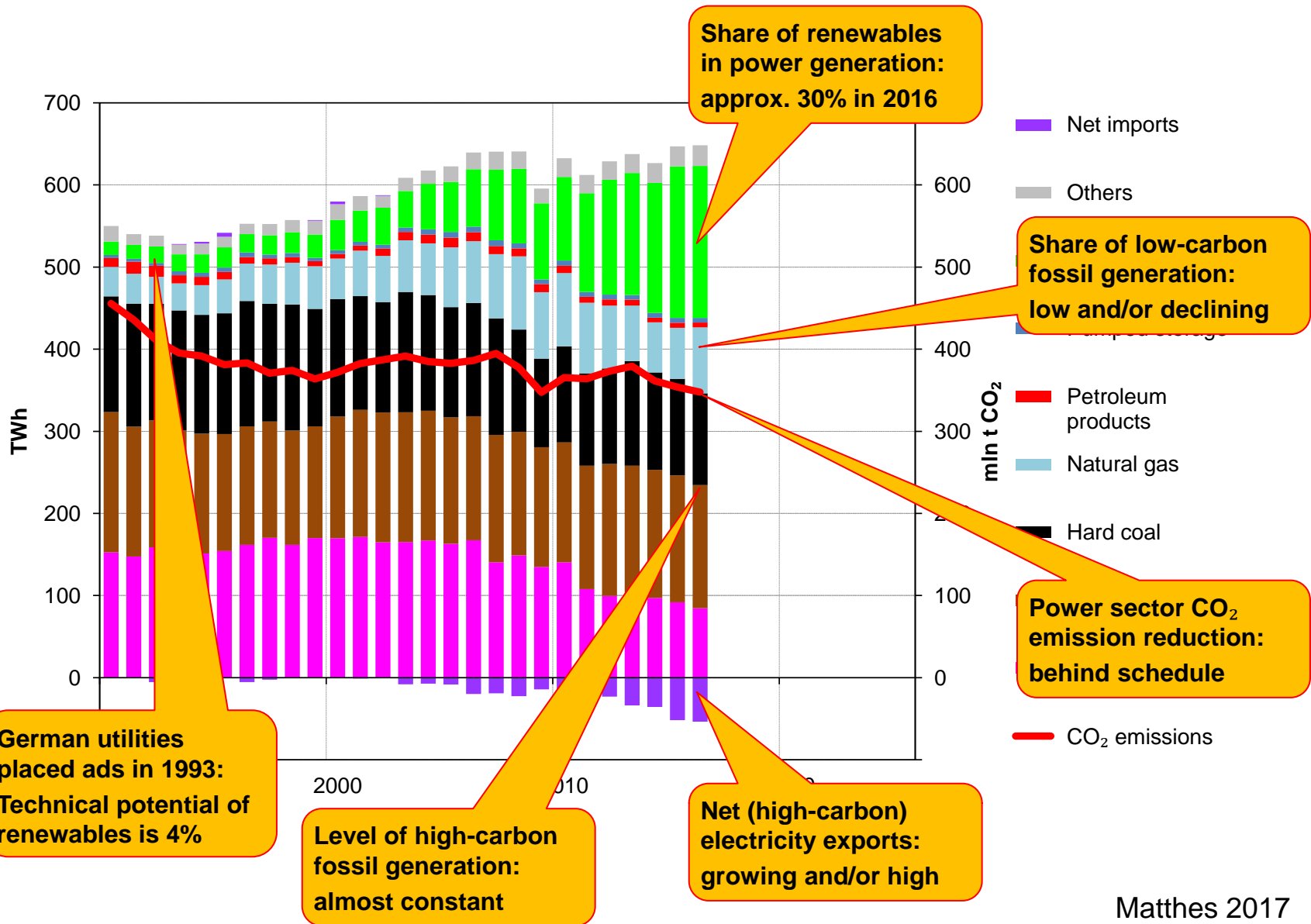
Dr Felix Chr Matthes

Brussels | 4th May 2018

- **Electricity generation from coal (lignite and hard coal)**
 - represents 17% of total GHG emissions of EU-28, is the second largest single source of GHGs and emits 72% of total GHGs from the EU-28 power sector
 - represents 38% of total GHG emissions of Germany and is the largest single source of GHGs and emits 70% of total GHGs from the German power sector
- **Significant GHG emission reductions from the power sector and phase-out of electricity generation from coal**
 - are crucial for achieving all (!) GHG emission targets
 - are crucial for decarbonisation of transport and heat sector
 - will not be triggered by the EU ETS in the necessary time frame
 - carbon pricing gap will remain for a decade
 - recent increase of carbon prices (to still moderate levels) is not driven by fundamentals - rather an effect of lower auctioning volumes in the next few years (next price collapse in 2020?!)

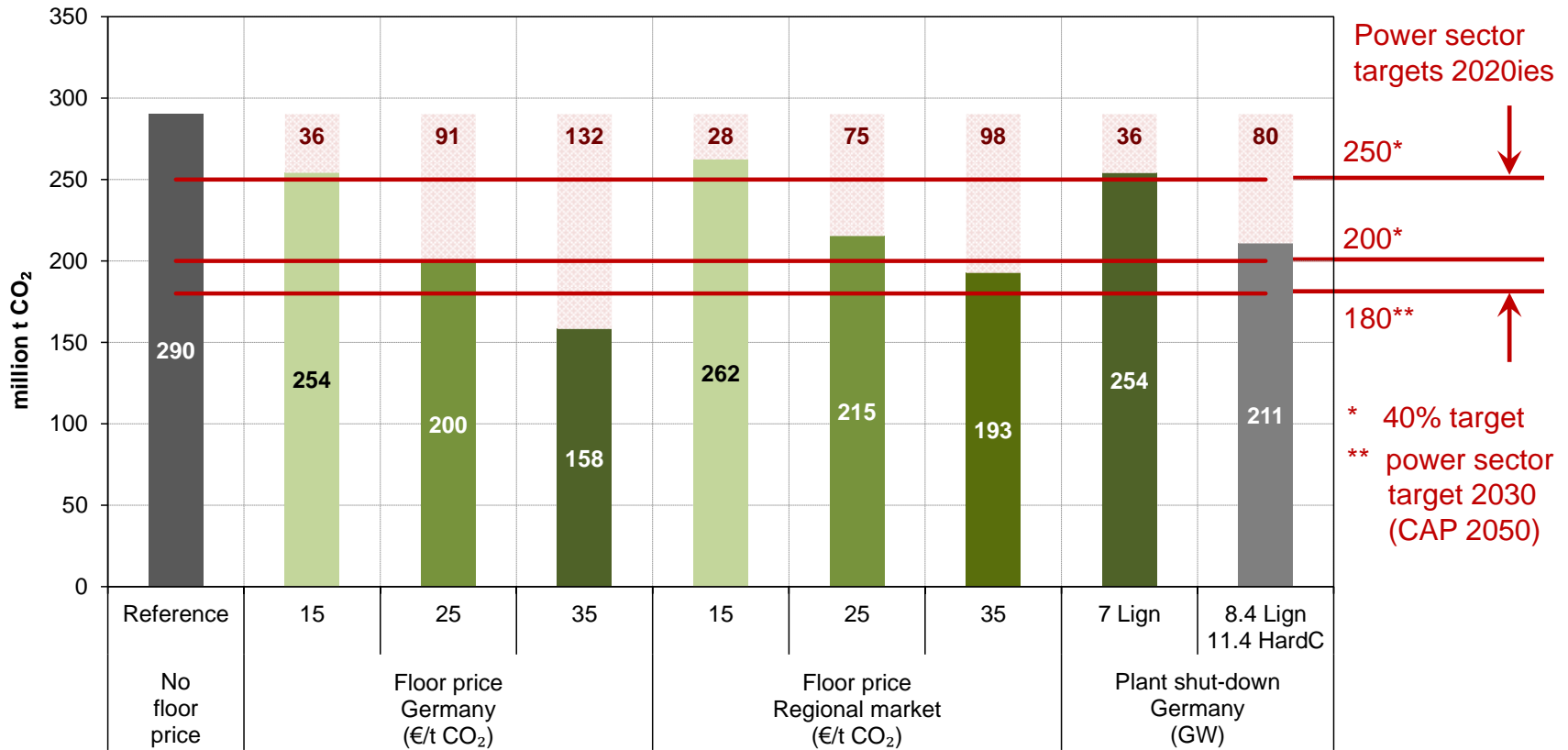
German power system: the most important sector

Progress & shortfalls, coal phase-out ante portas

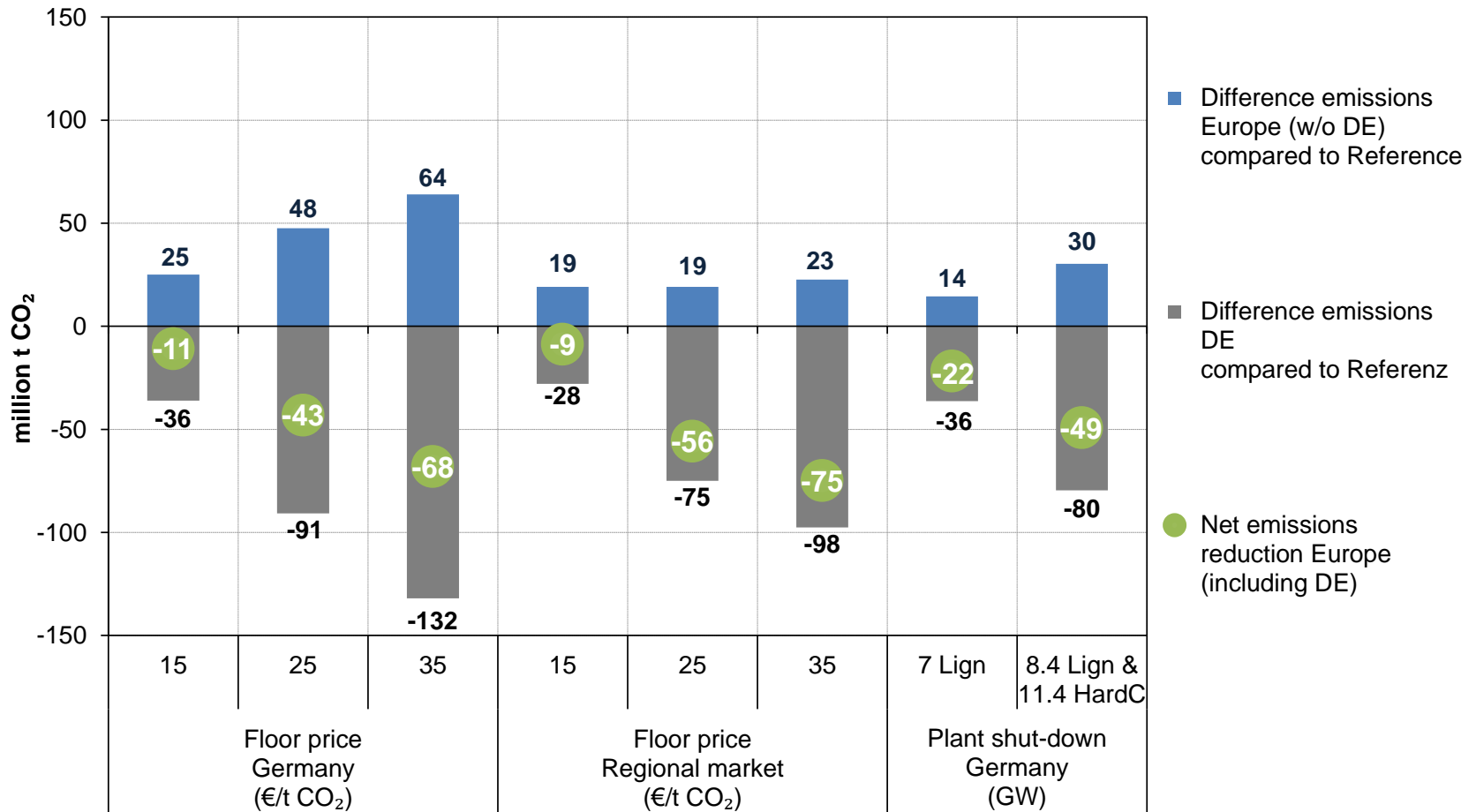


- **Policy toolbox for coal phase-out**
 - forced plant shut-downs without compensation (push-out)
 - forced plant shut-downs with compensation (buy-out)
 - explicit emission/production limits (stand-alone EPS)
 - carbon floor price at EU-28/27 level (next window of opportunity in 5 years?, political feasibility?)
 - carbon floor price at the national level
 - carbon floor price at the regional level (coalition of the willing)
 - how long will the window of opportunity from the French and Dutch proposals/projects remain open?
 - any hybrids
- **Numerical analysis for Germany and its neighboring countries**
 - national carbon floor price for the power sector
 - carbon floor price for the power sector for the CWE region
 - forced shut-downs of coal-fired power plants in Germany

Emission reductions in the German power sector from different policy tools



The challenges from national floor-prices (Very) significant cross-border effects



- **Coal phase-out and carbon pricing are on the political agenda, will it be possible to advance on both issues or linking them?**
 - probability is still 50:50
- **Modelling and analysis of policies and politics shows**
 - many benefits from a FR-Benelux-DE carbon floor price (higher emission reductions with lower losses of firm capacity, lower electricity costs for electricity-intensive industries due to compensation of indirect CO₂ costs)
 - Dutch approach (start with 18 €/t CO₂ -> 43 €/t CO₂ in 2030) is an interesting blueprint for the CWE carbon floor price
 - British model needs to be the role model for implementation (legal constraints for Germany, compensation of indirect CO₂ costs for electricity-intensive industries)
 - overcoming the political narrative “French nuclear is the big/only beneficiary” against the carbon floor price is crucial
 - hybrid approach (carbon floor price + some early capacity buy-out) seems to be a promising approach for Germany

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 - http://www.cerre.eu/sites/cerre/files/151006_CERREStudy_EnergyTransition_Final.pdf
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 - <https://link.springer.com/article/10.1007/s40844-016-0066-x>
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 - https://www.ifri.org/sites/default/files/atoms/files/matthes_decarbonizing_germany_power_sector_2017.pdf
- **Matthes, Felix Chr. et al (2017): Renewables versus fossil fuels – comparing the costs of electricity systems**
 - https://www.agora-energiewende.de/fileadmin/Projekte/2016/Stromwelten_2050/Agora_Gesamtkosten-Stromwelten-EN_WEB.pdf
- **Matthes, Felix Chr. (2017): The current electricity costs of energy-intensive industries in Germany**
 - <http://reinhardbuetikofer.eu/wp-content/uploads/2017/09/Matthes-2017-Memo-Electricity-costs-of-energy-intensive-industries-in-Germany-1.pdf>
- **Matthes, Felix Chr. (2018): Energy transformation in Germany. Progress, shortfalls and prospects**
 - http://www.enecho.meti.go.jp/committee/studygroup/ene_situation/006/pdf/006_005_02.pdf
- **Matthes, Felix Chr. et al (2018): Dem Ziel verpflichtet CO₂-Mindestpreise im Instrumentenmix einer Kohle-Ausstiegsstrategie für Deutschland**
 - http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Studie_Kohleausstieg_CO2_Mindestpreise.pdf

**Thank you
very much**

**Dr. Felix Chr. Matthes
Energy & Climate Division
Berlin Office
Schicklerstraße 5-7
D-10179 Berlin
f.matthes@oeko.de
www.oeko.de
twitter.com/FelixMatthes**

