

The German Coal Phase Out: Buying out polluters, not (yet) buying into carbon pricing

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The way towards the coal commission and its recommendations

While Germany has been lauded for its 2011 decision to implement the *Energiewende* (energy transition), its 2020 climate target – one of the transition’s central planks – is almost out of reach. In 2010, the German government pledged to (1) increase the share of renewables to 80% by 2050, and (2) achieve a gradual reduction of GHG emission of 80%-95% relative to 1990 levels by 2050. By now it is well on track regarding the first goal; whereas, it fares poorly as regards the reduction of GHG emissions. In the power sector, which accounts for approximately one third of the country’s emissions, emissions have, by and large, stagnated – despite an increase of the share of renewables from 20% in 2011 to 35% in 2018. The primary reason has been that the share of coal has remained high. Indeed, 10 GW of new capacity have gone online in the last years as a consequence of a “dash for coal” (Pahle 2010) triggered by the 2002 decision to phase out nuclear.

Policy makers took a long time to respond to this “renaissance of coal”. With only two years to meet the 2020 climate target, a commission to phase out coal was established. This rather slow response can partly be explained by the expectation – in the early 2010s – that prices in the EU ETS would rise, concomitantly disincen-

tivizing coal generation in the future. In 2013, however, there was no more denying that for the foreseeable future ETS prices would remain at very low levels. Simultaneously, emissions in all other sectors declined rather slowly – and even increased in the transportation sector. Prodded into action by both the 2015 Paris Accord and its aspiration to be a climate front-runner, the German government adopted the “Climate Action Plan 2050” in 2016, setting out measures for achieving its long-term climate targets¹. The (political) linchpin for the power sector was a “Commission on Growth, Structural Development and Employment”, thus framing the coal problem in terms of economic – rather than climate – policy². This reframing, it transpired, would prove most consequential for the commission’s recommendations.

In the commission’s recommendations, published in January 2019, financial compensations of different sorts figure prominently, albeit market-based instruments much less so. The commission, installed in June 2018, consisted of 28 members, representing politicians, civil society, the business and the scientific community. It was tasked with developing an action plan for (a) the structural development of the country’s lignite mining regions, (b) attaining the 2030 climate target for the energy industries (electricity, heating) sector and (c) proposing a timeline, including an exit

date, for phasing out coal. In its recommendations³ the commission believes shutting down the equivalent of 12 GW of coal capacity by 2022, and an additional 13 GW from 2023 to 2030 to be sufficient for meeting the 2030 climate target. It also recommends decommissioning a number of plants commensurate with the required capacity reduction by using direct controls based on bilateral agreements (lignite plants) and voluntary phase-out premiums (hard coal plants) respectively. All remaining capacity is to be closed down by 2038 (see Figure 1).

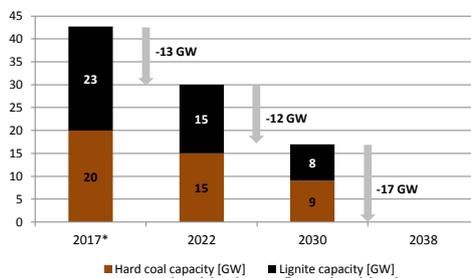


Figure 1. Recommended decommissioning roadmap for coal capacities (*historical capacities)

Furthermore, measures for structural aid, supporting coal workers close to the retirement age, and dampening future power price increases are recommended. The commission only puts a price on some of the measures (see Table 1), making it difficult to evaluate their actual costs. Despite this and the gov-

ernment's ability to influence the costs by modifying the commission's recommendations, the costs will likely be of a double-digit billion order of magnitude.

Evaluation and outlook

At the time this comment is written, thus far only a legislative package to enact the structural aid measures is on the way. This package has been met with much political will for its implementation – not least to keep the populist, anti-climate party AfD in check in this year's upcoming elections in three of the four coal-mining states. In combining climate policy with efforts to curb the populists' political heft, this package might muster sufficient support to be enacted. More broadly, the commission has identified a balance between compensation and concrete action that is agreeable for unions, business associations and NGOs. Striking this balance would have been hardly possible in the current parliament – not least in virtue of the Grand Coalition's internal division on the issue. This in turn puts into perspective the substantial costs associated with structural aid and compensatory measures – both apparently instrumental for having reached a compromise. Indeed, these measures would likely have been implemented anyhow had the generation of coal come to an end. Hence, viewed in a

| Measure | Recommended funding |
|---|--|
| Structural aid for coal regions (infrastructure investments, fostering innovation and research, (re)settlement of government agencies, early retirement / adaptation allowance mechanisms for coal workers, civil society and community support programs) | <ul style="list-style-type: none"> • € 1.5b early action in current legislation period • € 1.3b annually for 20 years for specific measures (controlled by federal legislation) • € 0.7b annually for 20 years at the disposal of the States • If possible re-earmark existing funding mechanisms to reduce required new funding |
| Compensation of consumers for potential power price increases from 2023 onwards | <ul style="list-style-type: none"> • Commission estimates costs of at least 2 billion EUR per year • Exact amount to be determined in 2023 review |
| Compensation of plant owners for early decommissioning | <ul style="list-style-type: none"> • No estimates provided; approximately € 0.6b per GW paid for decommissioning lignite plants in the past years through other measures |

Table 1. Overview of structural aid and compensatory measures recommended by the commission

generous light, the commission's outcome seems to just have reversed the order by putting compensation before termination.

Yet, the commission's proposal is fraught with risks: the recommended shut downs might be (a) insufficient to achieve the 2030 climate target and (b) only marginally important in the European context. In contrast to regulating via carbon pricing, polluters benefit from direct control as inducing exit from partial markets creates rents for remaining producers - at least temporarily (Buchanan and Tullock 1975). In the German debate this is referred to as the "rebound effect": when old coal plants go out of the market the ensuing higher electricity price incentivizes newer coal plants, still in the market, to increase their production and, by extension, increase emissions. The longer it takes to phase out coal and the lower carbon and coal prices will be, compared to the price of natural gas, the larger the rebound effect. Additionally, the lack of a reliable carbon price creates the risk of overinvestment in gas-fired plants which would require yet another commission to phase out gas. Finally, as a new analysis (Osorio et al. 2018) suggests, most of the additional emission reductions will be offset by the waterbed effect in the EU ETS - despite the new cancellation provision from 2023 onwards. The reason being that most coal plants will be shut down only after 2023 when the fraction of a marginal ton of reduction that will be cancelled is relatively small (Burtraw, Keyes, and Zetterberg 2018; Perino 2018). Accordingly, Germany's national effort may well be in vain.

Regarding instrumentation and plant owner compensation, the commission's recommendations can thus be characterized as a lop-sided deal: Its members agreed to buy out vested interest groups while the majority was reluctant to buy into a reliable carbon pricing scheme. The lack of support from energy companies and trade unions is unsurprising since they risk missing out on rents and pending investments in gas infrastructure otherwise. Environmental groups have not supported a carbon price as they distrust market-based instruments

and, from the outset, regarded the concrete exit date, though largely symbolic, as their most important contribution to the commission's recommendations. In short, both the owners' thirst for compensations and environmental groups' infatuation with pyrrhic victories, such as the concrete exit date, bode ill for carbon pricing's implementation, leaving a rather small coalition in its favor.

This coalition, however, may grow now that conflicting interests no longer stand in the way of more effective policy instruments (Pahle et al. 2018). The drawbacks of direct control are already becoming apparent and, in search for better solutions, the economic toolbox has much to offer: A minimum price in the EU ETS can alleviate both the rebound and the waterbed effects while safeguarding against the still prevailing regulatory uncertainty. One step would be a nationally or regionally coordinated minimum price that gradually morphs into an EU-wide one over time. In the mid- to long-term a reform of the broader policy architecture is essential. For one, the country's current 2030 sectoral targets might be useful to initiate a transition, especially in the still laggard non-power sectors (Vogt-Schilb, Meunier, and Hallegatte 2018). But, with more ambitious targets, increasing price spreads between sectors will be very costly. Likewise, at the European level considerably more stringent regulation in the Non-ETS sectors up to 2030 will likely establish another carbon price in the coming decade, which adds yet another piece to the emerging carbon pricing puzzle. Making these pieces fit into a unified whole is the vision Germany should strive to articulate. This requires a reform of energy taxes and fees, including transportation and heating/cooling, with a proposal now on the table (Edenhofer et al. 2018). One can only hope that policy makers sooner - rather than later - realize that carbon pricing is the instrument needed to get the Energiewende back on track.

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Endnotes

1. Initially the government responded by adopting the Climate Action Plan 2020 that included a so called "climate fee", essentially a carbon tax. This proposal, however, failed and as a more feasible default option the government created a "security reserve", which transferred several old coal plants into a reserve for compensation.

2. Because it was clear that this commission had been established in response to the coal problem it has been widely referred to as the "coal commission".

3. https://www.bmwi.de/Redaktion/DE/Downloads/A/abschlussbericht-kommission-wachstum-strukturwandel-und-beschaeftigung.pdf?__blob=publicationFile&v=4