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CARBON CAPTURE AND STORAGE: A NEW TURN IN THE GERMAN COAL DISPUTE?

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Overview

In the context of sustainable development, the use of hard coal and lignite for electricity generation is an issue for heated debates in Germany. While coal proponents point to supply security, low cost and jobs, environmentalists fear the destruction of landscapes, a threat to the earth's climate, and a massive delay for a sustainable restructuring of the energy system. Debates now gain momentum again in face of the massive investment needs in the German electricity industry (until 2020, about 40 GWel of capacity need replacement).

Carbon capture and storage (CCS) is an innovation that promises the low emissions coal power station. Unfortunately, the technology is still under development. It is not at all clear when and at which cost it will be ready for the market. Its economic viability and core environmental and safety issues remain unsolved. Even in this stadium, CCS may provide new avenues for future electricity generation that mix up traditional conflict lines, generating new chances for consensus, but also new areas of concern and potential disagreement. Such changes may influence the acceptability and viability of policy options with regard to future coal use.

Starting from this hypothesis, the paper analyses the viewpoints and strategies of major political and economic actors towards CCS and the future of coal in the German electricity system. Also considering actors' resources and networks, it portrays the actor constellation and tries to determine potential changes caused by CCS.

It argues that, as CCS is still an emerging technology, viewpoints and strategies are characterized by many uncertainties at the moment. Actors are still trying to learn about CCS and form their opinion. This opens up space for dialogue and moderates confrontation. A possible policy option that may result is the use of coal with CCS as a bridging technology towards a sustainable or even fully renewable energy future.

Methods

The paper is based on data on 39 major actors in German coal policy, including power industry, coal industry, trade unions, parties, government representatives, research institutes, counselling bodies and environmental organizations. 27 persons from 25 organizations could be reached for a half-structured telephone or face-to-face interview, following an interview guideline specific to the respective actor type. The interviews were complemented by the analysis of written material (position and strategy papers, articles, conference presentations).

Based on this data, similarities and differences in actor's viewpoints were analyzed as well as actors' linkages with other actors. A picture of the actor constellation was constructed accordingly. Also considering actors' resources and strategies, conclusions for viable future policy options could be drawn.

Results

Concerning actors' viewpoints, there is a considerable degree of consensus on many topics. Most remarkably, there is little fierce opposition towards CCS – though little enthusiastic support, either. The technology seems to promise interesting options for climate protection, but a number of uncertainties and risks remain. All sides therefore agree that it needs further

scientific exploration and public discussion. It is further agreed upon that ocean storage is undesirable and that depleted oil and gas fields and saline aquifers are the most promising storage sites. There is also moderate agreement on some basic features of a future energy system and the role of coal and CCS within it. First, actors acknowledge in principle that, on the one hand, fossil fuels (and specifically coal) will continue to be important for some decades – but on the other, coal with CCS is a temporary solution. Secondly, actors also agree that CCS is no "magic bullet" that will solve the climate issue without further changes in the energy system. And finally, it is also agreed upon that CCS will only be established if favorable framework conditions are in place.

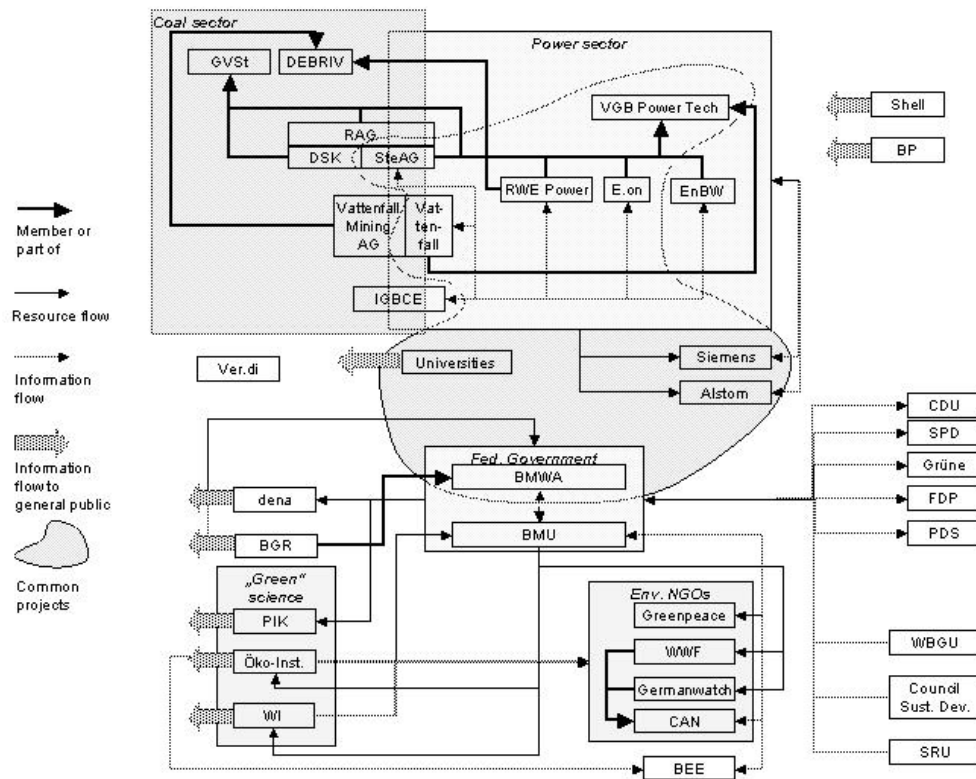


Fig. 1: Actor constellation in the German Coal-to-Electricity System

By contrast, debate is heated when it comes to details. This includes details on the future energy system (such as the conditions, amount and time span for coal and CCS use) as well as on the political framework for CCS, especially R&D policy, environmental and safety regulation.

Conclusions

With regard to possible trajectories of a future electricity system, the debate on CCS and the resulting movement in the actor constellation seems to open up space for the concept of coal as transitional fuel. Environmentalists tend to acknowledge that fossils are necessary for a transition period. Coal proponents do not openly discuss, but neither anymore deny the fact that this period will end one day. CCS could thus help to reconcile fossil fuel use and climate protection during that period, provided that the numerous technical, economic, ecological and safety issues are resolved. Unfortunately, given the uncertainties related to CCS and thus the speculative character of the latter trajectory, none of the actors has yet developed convincing scenarios for such a transition.