RIFS-Blogpost

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["Technology Openness" Is a Poor Fit for CCS]

Fließtext

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Although climate change was rarely mentioned in recent election campaigns, the next government will play a decisive role in shaping Germany's future climate policy. The CDU/CSU campaign manifesto emphasised the importance of "technology openness". In practice, this position often merely serves to delay crucial policy decisions and slow emission reductions. Carbon Capture and Storage (CCS) is likely to be a key point of contention for the future government.

However, plans to adopt CCS technology met with **considerable resistance**, particularly around the proposed storage sites. Strategic errors on the part of the companies and a widespread lack of interest from other sectors, coupled with an activist campaign that publicised **exaggerated risk assessments**, caused the plans to be abandoned. In political terms, CCS was dead in the water: the future belonged to **renewables**; coal-fired power generation coupled with CCS was no longer a viable option for governments.

It was "game over" for CCS until the traffic light coalition (2021-24) dragged it back out of obscurity. **Robert Habeck** (Vice Chancellor and Minister for Economic Affairs and Climate Action), who had spoken out against CCS during his time as a state politician in Schleswig-Holstein, suddenly came out in favour of pursuing CCS under the concept of "**carbon management**". CCS had never disappeared from the **Intergovernmental Panel on Climate Change** 's future scenarios. Almost all modelling calculations that achieve the goal of limiting global warming to 1.5 degrees Celsius in line with the Paris Agreement include CCS.

1.1 A new hope: "negative emissions"

CCS could help to mitigate emissions that are difficult to avoid, for example from the **lime and cement industries** (so-called "hard-to-

abate” emissions). It might also be possible to achieve **"negative emissions"** if CCS is coupled with bioenergy generation or with the direct capture of carbon dioxide from the ambient air. Then not only could emissions be avoided, but **CO2 could also be removed from the atmosphere**.

It was against this backdrop that the traffic light coalition set out to formulate a **"carbon management strategy"** focussing on CCS and the utilisation of carbon dioxide as an industrial raw material. It also initiated a **"long-term strategy for negative emissions"** to deal with unavoidable residual emissions and began to implement an amendment to the **Carbon Dioxide Storage Act**, which came into force in 2012. However, following the collapse of the coalition in autumn 2024, work on these processes remained unfinished.

These unfinished policies are reflective of the traffic light coalition’s **ambivalent record on climate policy**. Between 2021 and 2024, greenhouse gas emissions in Germany fell from 762 million tonnes per year to around 656 million tonnes, i.e. by 14 percent. This was primarily due to the **expansion of renewable energies** in the electricity sector and Germany’s weaker economic performance in this period. Emissions reductions in the areas of agriculture, buildings and transportation remained insufficient. This is one of the reasons why the traffic light government scrapped its **mandatory sector targets** and watered down the previous government's **Climate Action Act**.

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1.2 Proof pending

But what are the prospects for **the new German government's climate policy**? The election manifesto of the CDU and CSU, who

will in all likelihood lead the next government together with the SPD, makes frequent mention of the concept of “**technology openness**”, according to which, government should not favour any particular technology. Instead, policymakers should remain open to **technologies that have yet to be developed**.

However, their feasibility is subject to **major uncertainties** – as evidenced by CCS in its various forms. The fact is that while CCS works in the modelled worlds of computer simulations, whether it can actually be implemented in practice on a sufficiently large scale is entirely another matter. **The total annual capacity of all existing CCS plants worldwide is just 0.045 gigatonnes of carbon dioxide.** 80 per cent of the captured carbon dioxide is used for so-called enhanced oil recovery, i.e. it is injected into oil fields in order to produce more oil.

Around 70 per cent of the planned CCS projects that should have started by 2020 **were not realised**. Despite this, the future government envisages the creation of an enormous "carbon management" industry, which would have to build new infrastructures for the capture, transport and storage of carbon dioxide. This is of interest to some companies, but **it is not necessarily in the interest of sustainability** – especially as new electricity grids, storage facilities and hydrogen infrastructures are already being built.

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1.3 CCS in discourses of climate delay

A group of scientists led by **William Lamb**, who now works at Potsdam Institute for Climate Impact Research, identified the technological optimism inherent in the concept of technological

openness as a discourse of climate delay back in 2020. Whenever people prefer to rely on **speculative future technologies** instead of making clear political decisions, there is a risk that efforts to reduce emissions will be postponed.

When it comes to CCS, policymakers would do well to **develop a clear perspective on its use for certain sectors and processes** that takes into account the uncertainties and risks associated with the technology. However, this is the **opposite** of the openness propagated by the CDU/CSU. **Clear and effective policies are needed** if Germany is to achieve the goal of only emitting as much carbon dioxide as is removed from the atmosphere by 2045. If the future German government wants to take decisive action on climate change, it must **abandon the delaying tactic** of betting on speculative future technologies.


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