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Germany Opens the Door to CCS

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On 21 November, the Bundesrat approved an amendment to the Carbon Dioxide Storage Act (*Kohlendioxid-Speicherungsgesetz*), previously passed by the Bundestag, which establishes a legal framework for developing infrastructure to deploy carbon capture and storage (CCS) technology on an industrial scale in Germany. The new law permits the construction of storage sites for industrial CO_2 beneath the seabed in Germany's exclusive economic zone (beyond its territorial waters), as well as on land – provided individual federal states explicitly opt in. It also creates a regulatory basis for developing CO_2 pipeline networks to transport captured emissions to storage or export points (such as ports) and classifies investment in CO_2 transport and storage infrastructure as being in the overriding public interest. This status is intended to simplify and accelerate the permitting process. Additionally, the legislation defines a broad group of potential beneficiaries. Industries in which eliminating emissions is technologically unfeasible, disproportionately difficult, or prohibitively expensive will be eligible to use the pipeline and storage infrastructure. The only sector explicitly excluded from access to the planned infrastructure is coal-fired power generation.

The law paves the way for CCS-related investment and aligns with Germany's decarbonisation strategy, as achieving net-zero emissions will not be possible without capturing and storing CO_2 from selected industrial sectors. However, the creation of a legal framework marks only the first step towards large-scale CCS implementation in Germany. State-backed support mechanisms – such as subsidies or guarantees – will be essential to mitigate financial and investment risks for businesses.

Commentary

- **Enabling the use of carbon capture and storage (CCS) is another component of Germany's climate policy toolkit. Without CCS, achieving climate neutrality remains unfeasible.** In certain industrial sectors, there are no technological solutions capable of fully eliminating emissions. This applies, for instance, to the cement and lime industries, as well as waste incineration. For these sectors, CO_2 capture is the only viable route to decarbonisation. In other sectors – such as chemicals or steel – there are low-emission alternatives to conventional production methods, including electrification or the use of hydrogen. However, at the current stage, these options are considered either too complex or too costly to implement. German industry has strongly advocated the rapid and widespread deployment of CCS, regarding it as essential to maintaining competitiveness under tightening climate regulations. Some sectors, such as cement, have long had relevant projects ready for implementation.

- **The most contentious aspect of the amended legislation concerns the approval of CO_2 capture in gas-fired power plants.** Environmental organisations, some industrial sectors (concerned about competing for limited infrastructure access), the Green Party (in opposition), and the SPD (within the governing coalition) all argued for excluding this option – just as CCS was ruled out for coal-fired plants. Ultimately, it was the CDU/CSU that pushed through the inclusion of gas power in negotiations with the Social Democrats. Notably, this provision has been met with scepticism even within Germany's energy sector. Most industry representatives argue that, given the limited operating hours of gas units in a system increasingly dominated by renewables, capturing emissions via CCS would be more expensive than converting such plants to run on hydrogen. Many experts believe this option will only be viable for gas-fired units located within chemical clusters and that the lobbying power of the chemical industry was key to its inclusion. By contrast, the exclusion of coal-fired power from CCS eligibility was uncontroversial. During months of debate, only a handful of voices advocated including hard coal power plants, but these did not elicit any significant response.
- **Establishing a legal framework marks only the initial step in introducing carbon capture and storage on a large scale in Germany.** Under current conditions, investments in both capture facilities and CO_2 transport and storage infrastructure remain financially unviable from the perspective of private enterprises. To move projects forward, state support mechanisms will be essential. These are expected to include subsidies – particularly the planned inclusion of CCS within the framework of carbon contracts for difference (see '*Carbon contracts for difference: Germany's new instrument to decarbonise its industry*') as well as investment guarantees to reduce financial risks, which industry stakeholders have been calling for. The design and funding model for a CO_2 pipeline network also remains unresolved. Discussions are ongoing regarding potential solutions modelled on those used for hydrogen infrastructure (see '*Germany: The Hydrogen Core Network Financing Act*'). In addition, the government has yet to deliver its long-promised, comprehensive strategy for the deployment of CCS technologies (Carbon Management Strategy).