CARBON CAPTURE AND STORAGE IN GERMANY – NEW OPPORTUNITIES FOR PROJECT DEVELOPERS AND INVESTORS

The German Government has announced that it will enable Carbon Capture and Storage (**CCS**) and facilitate Carbon Capture and Utilisation (**CCU**) on an industrial scale, paving the way for a future CO_2 pipeline network. The Government has introduced a long-awaited draft bill to revise the Carbon Dioxide Act (*Kohlendioxid-Speicherungsgesetz* (**KSpG**)) and published the first key points of its Carbon Management Strategy (*Eckpunkte der Bundesregierung für eine Carbon Management-Strategie*).

Key issues

- The German Government has announced a long-awaited draft bill to revise the Carbon Dioxide Act together with the key points of its Carbon Management Strategy.
- The draft revisions of the Carbon Dioxide Act would make the permanent storage of CO_2 on an industrial scale permissible for the first time in Germany, but limited to offshore sites.
- The German Government also has plans for a national CO_2 pipeline network.
- The German Government's approach is in line with several newly introduced EU laws and initiatives.
- Multiple funding programs for CCS and CCU are available in Germany and at EU-level.

THE IMPORTANCE OF CCS/CCU FOR ACHIEVING CLIMATE GOALS

The concept of CCS is to capture carbon emissions produced by the industry and to use geological storage sites underground to store them. CCU on the other hand refers to the further usage of sequestrated carbon emissions, e.g. for the synthesis of basic chemicals. CCS and CCU are especially crucial for carbon emissions that are difficult or impossible to avoid, for example in waste incineration or cement, limestone, or glass production. In contrast to other industrial processes, these production processes cannot be decarbonised in a cost-effective manner. Against this background, the German Government highlights the importance of CCS/CCU and concludes that CCS and CCU need to be implemented in Germany from 2030 onwards to achieve the ambitious goal of reaching climate neutrality by 2045**.**

THE CURRENT LAW IN GERMANY PROHIBITS CCS

Currently, permanent CO_2 storage is not allowed under the applicable laws, including the KSpG. When the KSpG was introduced in 2012, there was a strong pushback from the Federal States (*Bundesländer*) and civil society against CCS in Germany, mainly due to assumed safety concerns and environmental risks. This is why the German Government decided to only allow CCS for testing and demonstration purposes back in 2012.

With increasing pressure to reach climate goals and to decarbonise industries, the German Government has now reconsidered its position on CCS/CCU and intends to enable it on an industrial scale.

CURRENT LEGAL CONSTRAINTS FOR CCS REMOVED

In the draft bill for a revision of the KSpG, the German Government has removed currently existing legal constraints for the enablement of CCS/CCU.

Permanent offshore CCS permissible

With the introduced draft bill, the German Government extends the scope of the KSpG to **permanent CO_2 storage**. Currently, the KSpG only allows the implementation of CCS technologies for research, testing and demonstration purposes which is one of the legal constraints that hinders the implementation of CCS on a large-scale in Germany.

It is important to note that permanent CO_2 storage will **only be permitted offshore** and not onshore. The German Government states that storage infrastructure can generally expected to be developed faster offshore than onshore because it will be easier in offshore areas to comply with safety and monitoring obligations.

However, this does not mean that onshore storage is already completely ruled out in Germany. According to the German Government, a legal basis in the KSpG **allowing Federal States to opt-in for onshore storage** could be considered, upon request of Federal States during the legislative process. This is one of the key points in the German Government's Carbon Management Strategy. The wording in the German Government's Carbon Management Strategy seems to suggest that a general political impulse needs to come from the Federal States. The proposed legal basis in the KSpG seems to be intended to give individual Federal States the (flexible) option to opt-in for onshore storage. It remains to be seen whether Federal States make use of this option in the course of the legislative process.

Time limit, opt-out provision and volume limits removed

Further, the German Government intends to remove further legal constraints for the enablement of CCS such as:

- the current time limitation for applications for CO_2 storage sites, which expired at the end of 2016;
- the volume limitations for CO_2 storage projects of 1.3m MT/year for each CO_2 storage site and 4m MT/year for the entire German territory; and
- the opt-out provision for Federal States which allows them to declare CO_2 storage projects in their territory as inadmissible (which some of the Federal States made use of in the past).

Export of CO_2 for offshore storage

The export of CO_2 for storage purposes in "neighbouring" countries such as Denmark or Norway is currently restricted by Art. 6 of the London Protocol. While Art. 6 of the London Protocol was amended, allowing the aforementioned transport of CO_2 via bilateral agreements between the countries concerned, the amendment has not yet come into force as the necessary two-thirds majority of parties has not ratified the amendment (including Germany). Nevertheless, until the (full) ratification of the amendment, provisional application of the amendment is possible but has not been declared by Germany yet.

In the key points of the Carbon Management Strategy, the Federal Government explicitly recommends ratifying the amendment of Art. 6 of the London Protocol. However, the German Government has not yet announced a timeline for the ratification process.

IMPORTANT REGULATIONS FOR CO_2 PIPELINES

In addition to removing existing legal constraints for CCS/CCU in Germany, the German Government plans to introduce important revisions to facilitate the construction and permitting of CO_2 pipelines.

Common permitting regime for CO_2 pipelines

Currently, the KSpG only governs and allows the permitting of CO_2 pipelines transporting CO_2 to a CO_2 storage site. The draft bill expands the existing permitting regime to all pipelines transporting CO_2, i.e. in addition to pipelines for transporting CO_2 to a CO_2 storage site, **CO_2 pipelines for any other purpose will also be permissible**. As a consequence, the permitting of all CO_2 pipelines will be governed and streamlined under the KSpG in order to pave the way for a CO_2 pipeline network and to incentivise private investment.

To achieve the goal of a national CO_2-pipeline network, the draft bill provides for, *inter alia*, **a facilitated rededication of natural gas pipelines for the transportation of CO_2** without a requirement to conduct a new permitting procedure. For this, the provisions facilitating the rededication of natural gas pipelines for the transport of hydrogen in the German Energy Industry Act will also apply to the rededication for the transportation of CO_2. Further revisions include the possibility to begin construction early (prior to obtaining the final permit) and to enable expropriation for all future CO_2 pipelines (if necessary).

No grid connection for coal combustion

CO_2 pipeline operators will be obliged to reject requests to connect companies to their CO_2 pipeline network if the CO_2 such companies want to feed in has been produced by way of coal combustion to generate electricity in Germany. Thus, emissions from coal-fired power generation plants may not be transported via CO_2 pipeline networks. The German Government intends to exclude the use of CCS and CCU in such cases which aligns with the German Government's general decision to phase out from coal in Germany.

THE EU'S STRATEGY AND FUNDING

CCS and CCU are technologies increasingly in the focus of policymakers in Germany and at EU level.

This transition goes hand in hand with the latest report from the Intergovernmental Panel on Climate Change (IPCC, *Weltklimarat* – Sixth Assessment Report AR6) that mentions CCS/CCU as an important measure for reaching the 1.5°C threshold.

The EU Commission is driving forward the EU-wide use of CCS/CCU technologies via the recently **published Industrial Carbon Management Strategy and the Net Zero Industry Act** (**NZIA**). The EU's Industrial Carbon Management Strategy aims to develop and support CCS, CCU and the industrial removal of CO_2 from the atmosphere. CO_2 transport infrastructure is viewed as a key enabler for all three technologies. The Commission envisages multiple measures to ramp-up those technologies, for example a platform for matching CO_2 suppliers with storage operators, an investment atlas of potential CO_2 storage sites and guidance for permitting processes for CCS net-zero strategic projects.

CCS is intended to be a strategic net zero technology within the meaning of the NZIA which is currently subject to the ongoing European legislative process. As a strategic net zero technology, CCS would benefit from easier access to funding via the **Strategic Technologies for Europe Platform** (**STEP**), a soon-to-be-created platform leveraging and steering resources across eleven EU funding programs. STEP projects will thus be connected to several EU programs and funds, many of which already support carbon management technologies. Notably, one of them is the Innovation Fund which, according to the EU Commission, has to date provided 26 large and small-scale CCS and CCU projects with more than EUR 3.3 billion in grants as well as the **Horizon Europe program** concerning research and innovation under which the EU Commission has invested more than EUR 540 million in innovative CCS/CCU solutions.

Additionally, the **EU Emissions Trading System** (**EU-ETS**) already incentivizes the use of CCS/CCU. According to the EU-ETS, for CO_2 that is captured and permanently stored, no emission allowances have to be surrendered which is an economic incentive for CCS. For CCU, there is also no obligation to surrender emission allowances in case of a permanent sequestration of CO_2 in products.

FUNDING IN GERMANY

Furthermore, the German Government has announced in the key points of its Carbon Management Strategy that there will be **government funding for CCS/CCU**, focusing on emissions that are difficult or impossible to abate. Comprehensive details on this are expected to be included in the final and detailed Carbon Management Strategy. However, on 12 March 2024, the German government published **a new subsidy program for the conclusion of carbon contracts for climate-neutral production processes in the industry** (so called "climate protection contracts", *Förderprogramm Klimaschutzverträge*). Accordingly, plants with otherwise unavoidable production process emissions, where emission reductions are significantly achieved through CCS or CCU, are eligible for funding if they fulfil certain requirements, such as the proof that the CO_2 storage or the CO_2 sequestration in products are of a long-term nature. The first tender under this funding scheme provides for a **funding volume of EUR 4 billion**.

OUTLOOK

The draft bill for the revision of the KSpG has to pass through the legislative process which is likely to take several more months at least. After the bill has been adopted by the German Parliament, it will become binding law upon publication in the Federal Gazette.

The key points of the German Government's Carbon Management Strategy released so far constitute only a few high-level considerations summarising the content of the long-awaited final and detailed Carbon Management Strategy. Currently, it cannot be estimated with sufficient certainty when the final and detailed Carbon Management Strategy will be published. It remains to be seen if it will indeed serve as an accelerator for the implementation and ramp-up of CCS/CCU in Germany.

At the EU level it is expected that the NZIA will be adopted in due course.

With these regulatory developments in Germany and at EU level, it can be expected that the technologies of CCS/CCU will soon start to ramp-up with numerous opportunities on the horizon, *inter alia*, for project developers and investors.

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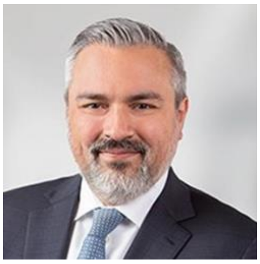

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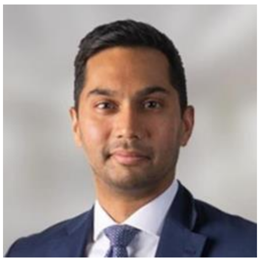

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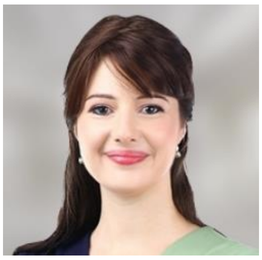

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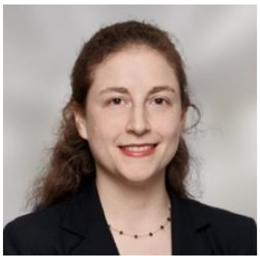

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