



## NEWSLETTER DEBT FINANCE

### **Financing CCUS (Carbon Capture, Usage and Storage): opportunities and challenges towards the Net Zero and Carbon Neutral Targets**

#### **1. The Green Deal, the Net Zero and Carbon Neutrality – What to know**

In the context of the “European Union’s Green Deal”, the EU enacted in the period between 2019 and 2024 a series of policy initiatives aiming at transforming the EU into a modern, resource-efficient and competitive economy, ensuring no net emissions of greenhouse gases by 2050 and economic growth decoupled with resource use. This will make Europe the first climate-neutral continent by 2050. To this end, the EU has adopted a set of proposals to make the EU’s climate, energy, transport and taxation policies adequate for the reduction of net greenhouse gas emissions by at least 55% by 2030, compared to the levels of emission detected in 1990.

As the target to be reached by 2050 is net zero or a balanced budget for emissions, the European countries shall no longer add a single metric ton of greenhouse gases to the atmosphere, and thus will have to offset each amount emitted with an equal amount absorbed by biomass or other systems.

To get to Net Zero, the Green Deal outlines a joint-action plan along a set of seven strategic building blocks, namely energy efficiency, deployment of renewables (currently, the EU hosts six of the largest renewable energy businesses and employs around 1.5 million people in the sector), clean, safe and connected mobility (transport accounts for a quarter of the EU’s GHG emissions), competitive industry and circular economy, infrastructure and interconnections, bioeconomy and natural carbon sinks and tackling remaining emissions with Carbon Capture, Usage and Storage (CCUS).

## 2. Carbon Capture, Usage and Storage (CCUS) - What this is all about

CCUS was originally viewed as a major decarbonization option for electricity production as some industrial emissions, for instance CO<sub>2</sub>, although remaining tough to eliminate, can still be captured, stored and used. Today, especially after the rebound of coal consumption because of the Ukrainian war outbreak, CCUS remains a highway to lower carbon's levels in the atmosphere and to produce hydrogen, a combination where industrial and financial players are paying more and more attention today.

CCUS involves the capture of CO<sub>2</sub>, generated from energy intensive sources, such as industrial facilities and power generation plants. CCUS carries significant strategic value as a climate mitigant. Once captured, CO<sub>2</sub> is used on-site or transported and then permanently stored underground or used for alternative purposes resulting in significant reduction of CO<sub>2</sub> released into the atmosphere.

CCUS deployment has been behind expectations in the past, but momentum has grown substantially in recent years, with over 700 projects in various stages of development across the CCUS value chain. In 2023, the expected capture capacity for 2030 has increased by 35%, while expected storage capacity increased by 70%. This brings the total amount of CO<sub>2</sub> to be captured in 2030 to around 435 million tonnes per year and expected storage capacity to 615 million tonnes per year. Around 45 commercial facilities are already in operation applying CCUS to industrial process, fuel transformation, and power generation.

## 3. Financing CCUS – Opportunities beyond challenges

As of today, CCUS deployment remains well below what is required to meet the target of the Net Zero Scenario, primarily given the wariness of investors in financing CCUS and low-carbon hydrogen projects (which are mostly complementary each other) compared to the massive investments needed to realize them (the estimate in private sector is in the range of \$13 trillion). This is essentially due to the perceived risk, particularly from financial institutions, for several reasons. *In primis*, the “offtake risk”, as the CCUS technologies, and possibly the hydrogen produced therefrom, are ultimately expected to be sold to third parties, and a borrower with stable counterparties is essential to make a CCUS project “bankable”. Additionally, there is the technical, operational and environmental risk to consider, as captured carbon dioxide is often pressurized through energy-intensive plants, transported via underground pipelines or by ship and stored on board or injected into depleted gas field in the sea (potentially harming sensitive marine species and changing the ocean's chemistry in case of leakage).

Last but not least, it's ever-increasing the need to give value in the regulated markets (i.e., the ETS (Emission Trading System)) to the amount of CO<sub>2</sub> abated by CCUS, at a price which, to make the abatement costs marginal, shall necessarily be lower than that of purchasing CO<sub>2</sub> emission allowances on the same markets.

Nevertheless, since the EU policy measures are clearly meant to accelerate carbon capture, and CCUS technologies continue to improve with the aim of matching the risk profile of investors and cost considerations of counterparties. Investors, on the one hand, must be prepared to be more far-sighted and flexible if they want to catch the enormous opportunities in the market to support (existing, new and perspective) clients and match their own sustainability target. On the other hand, the volumes and risks intrinsically connected to the investment necessarily require the involvement of multiple stakeholders on such projects, going from private to public and from financial

institutions, export credit agencies and insurance companies to accelerator funds and other capital providers, without forgetting energy giant companies, which have even more interest in partnering with emerging “carbon techs”. Each of them shall be ready to choose at which level of the CCUS value chain to position its investment (in other words, if it is keen to finance the R&D, the construction of capture or re-use facilities or any of their components, the CO<sub>2</sub> transportation or storage) and, in such capacity, to take a larger or smaller portion of risk on the investment and participate to the payment waterfall accordingly.

A suitable legal framework is clearly a key driver in doing so. Within the “ESG financing” possible structures, “purpose financing” (i.e., the evolved structure of project financing and green loans or bonds) best serves the purpose, to the extent it is adapted to keep the pace of such a changing and complex market. Bespoke protective covenants, including internal and external information undertakings on the borrower and monitoring rights of the lenders on the project, the borrower and its counterparties and the proceeds coming from them should in fact be embedded in the legal and contractual structure of the transactions. As a matter of security and guarantee package, the structure shall be construed on a case-by-case basis, considering the type and size of the financing, the underlying project, the capital structure of the borrower, its business plan and financial strength. But it also needs to be said that, never more than in this relatively young market, the role of public institutions is paramount to enhance the confidence of banks and other stakeholders in CCUS. Financings with state and/or para-state guarantee (most recently, in Italy, the “Green” “Archimede” and “Futuro” guarantees made available by SACE S.p.A. and the Republic of Italy) appear to be, for example, an ideal compromise to boost confidence of financial institutions in CCUS and to mild their risk assessment. Within such framework, the transactions shall be tailored in structure to support the underlying projects with adequate funding, embed risks which can be acceptable by each category of stakeholders involved and comply with applicable laws and regulations.

#### **4. Carbon tax, carbon capture tax credits and other fiscal incentive to drive CCUS projects – Where we are**

Carbon tax, carbon capture tax credits and other tax incentives are crucial factors to promote a transition to a low-carbon economy and to support CCUS.

The carbon tax is one option governments can use in their efforts to reduce pollution from fossil fuels and encourage investments in cleaner technology. It is a tax levied on the carbon emissions (it can also apply to other greenhouse gases) required to produce goods and services. This tool has proven to be effective in reducing carbon emissions by stimulating technological innovation. However, its implementation varies widely between countries, with differences in the level of the tax and the use of the resulting revenue (for example: reinvestment in clean energy projects, or reduction of other taxes). According to the World Bank there are 75 direct carbon pricing national instruments operating as of early 2024. These comprise 39 carbon tax regimes and 36 ETSs. These measures have positive impact as they raise revenue, act as disincentives to the production of harmful emissions and place the costs of pollution on the polluters. An important part of the carbon tax framework is the EU’s carbon border adjustment mechanism (CBAM). Charging an additional price for the emissions embodied in relevant imports, this tax aims at preventing “carbon leakage”, which occurs when carbon taxes in one country create incentives for reallocating the production to a country without carbon taxes.

In terms of carbon capture tax credits and other tax incentives for CCUS, the technology’s most famous incentive is the Section 45Q tax credit of the Internal Revenue Code through which the US

provides federal tax credits for every tonne of carbon captured and stored. In last years this tax credit has been expanded by increasing the tax credit value, extending the construction deadline, and lowering the required threshold. Canada also introduced by 2024 the Clean Economy Investment Tax Credits that include CCUS investment tax credit. In Europe, it is worth mentioning that CCUS is one of the key sectors identified by the Net Zero Plan for benefitting from the amendments made by the European Commission to the State aid General Block Exemption Regulation to raise the State aid notification thresholds and block exempt aid measures by Member States to regulate prices for energy.

There is a general need for well-designed fiscal incentives to promote CCUS adoption and also some critical issues should be managed, for example clear international standards would be essential to avoid the risk of “carbon leakage”. Carbon tax measures should be complemented with other research and development support tax measures to accelerate the technological innovation needed to reach CCUS large-scale deployment in multiple industries, as the availability of tax credits can be an important factor in the decision to invest capital to equip an industrial facility to incorporate CCUS technologies.

## 5. Conclusions

Carbon Capture, Usage and Storage (CCUS) is one of the seven strategic building blocks of the joint-action plan outlined in the EU Green Deal to achieve Net Zero. Although the perceived risk on CCUS remains considerable, it's time for investors to get the momentum and secure a position in the market on most worthy projects (going from the early stages of R&D to construction of facilities and ultimately to transportation, usage and storage). Partnering among stakeholders is a key to deploy such a changing and complex market, including public entities and State-guarantee providers. In Italy, the SACE “Green” Guarantee as well as “Archimede” and “Futuro” Guarantees, undoubtedly lay a good starting point, within the wider ESG and purpose/project financing framework, from which most suitable and tailored legal structures can be built to sustain innovative funding models on a case-by-case basis. The mix of carbon tax, carbon capture tax credits and other tax incentives can be an effective strategy to support CCUS. Increased tax incentives mainly are expected to incentivise the progress of carbon capture technologies and the development of CCUS projects. However, it is essential that all these instruments are implemented in an internationally coordinated manner to boost their environmental and economic effects.

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We remain available for any further information.

**GATTI PAVESI BIANCHI LUDOVICI**

**Debt Finance**

**Andrea Novarese** [andrea.novarese@gpblex.it](mailto:andrea.novarese@gpblex.it)

**Tiziana Germinario** [tiziana.germinario@gpblex.it](mailto:tiziana.germinario@gpblex.it)

**Edoardo Manera** [edoardo.manera@gpblex.it](mailto:edoardo.manera@gpblex.it)

**Tax**

**Marlinda Gianfrate** [marlinda.gianfrate@gplex.it](mailto:marlinda.gianfrate@gplex.it)

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