

# TEN-E missing puzzle piece on pathway to net-zero



## 1. CO<sub>2</sub> Capture and Storage is the missing piece of the puzzle to reach net-zero by 2050

While [several dozen carbon capture and storage projects](#) are in various stages of development in Europe, current development and deployment rates of CO<sub>2</sub> capture and storage projects are insufficient to meet the needs for net-zero by 2050. A monumental shift in policy is needed to scale carbon capture and storage. The aim is within reach if the necessary steps are taken to facilitate the investment appeal of full value-chain CO<sub>2</sub> capture and storage. The EU is at a watershed moment. Not acknowledging TEN-E and CO<sub>2</sub> storage's role on the pathway to net-zero by 2050 is a missed opportunity taking us down the wrong path. Ultimately, with ever more stringent CO<sub>2</sub> constraints, the provision of CO<sub>2</sub> storage is a prerequisite for a level playing field for industry across Europe's Single Market.

## 2. Revised TEN-E misses the mark

The failure of the current proposal to propose any changes to the criteria of CO<sub>2</sub> transport networks is in direct contradiction with the underlying justification of the revision as outlined in the European Green Deal. It does not address market failures standing in the way of a commercialized European CO<sub>2</sub> network, despite this being one of its stated aims. There is no justification for the current exclusion, and the substantial cross-border benefits of CO<sub>2</sub> storage and transport modalities other than pipelines are disregarded.

CO<sub>2</sub> storage must be developed and deployed in line with transport infrastructure. If storage sites in Member States are scaled only with domestic considerations in mind, free and fair access to CO<sub>2</sub> storage across the EU Single Market is an unlikely outcome. The TEN-E is the key tool in the hands of the EU to incentivize cross-border considerations in this respect.

## 3. CO<sub>2</sub> storage in TEN-E key to climate change mitigation

The current proposal correctly acknowledges the significant contributions of CO<sub>2</sub> networks on the pathway to net-zero by 2050, but it misses the mark by ignoring that it is at the point of permanent storage of CO<sub>2</sub> that climate change mitigation contributions materialize. It also fails to reflect that geologic storage resources are unequally distributed across Europe, meaning that not all countries will be able to store their CO<sub>2</sub> within their borders, making CO<sub>2</sub> storage an important cross-border good for collective EU climate mitigation. [Nearly all](#) EU net-zero by 2050 scenarios rely on large-scale carbon dioxide capture, and storage. The TEN-E has an important role to play to facilitate the investment appeal of climate change mitigation through CO<sub>2</sub> capture and storage, not only by beneficial treatment in permit granting procedures and access to finance, but by sending positive market signals, boosting investor confidence, and incentivizing project development and deployment. Inclusion of CO<sub>2</sub> transport modalities and storage would signal long-term government commitment to decarbonization.

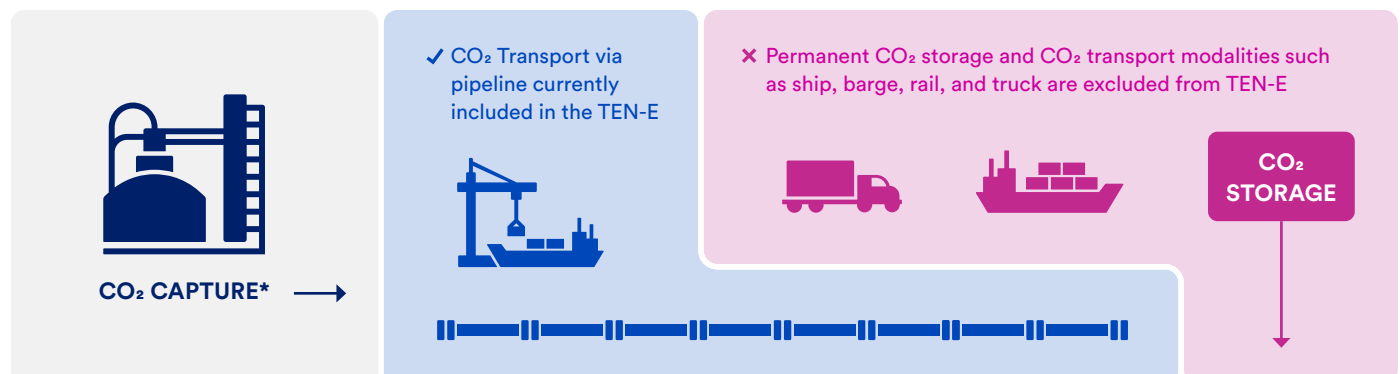
## 4. Solution

The current TEN-E proposal must therefore be amended to:

1. Ensure the climate change mitigation potential of carbon dioxide networks by including CO<sub>2</sub> storage on equal footing to CO<sub>2</sub> transport.
2. Ensure optimized cross-border benefits for EU Member States by including transport modalities other than pipelines.

**The TEN-E's current exclusion of CO<sub>2</sub> storage and transport modalities, other than pipelines, fails to contribute to much-needed market and project development and deployment. It reduces flexibility and increases the overall cost of decarbonisation.**

*\*Examples include, but are not limited to, Industrial CO<sub>2</sub> capture, Direct Air Capture, waste incinerators, etc.*



## TEN-E recognition of CO<sub>2</sub> storage is vital to EU decarbonization efforts

Carbon capture is real and happening. There are several dozen facilities under way in Europe. Now is the time to build on this progress by showing clear commitment to net-zero emissions by 2050 through coherent policies, helping attract private finance by creating the business case for investment in carbon capture and storage. Investment in CO<sub>2</sub> transport and value chains enable more high-emitters to capture CO<sub>2</sub> while reducing cost. This highlights the vital role of the TEN-E in boosting investor confidence in carbon dioxide capture and storage and, ultimately, in boosting confidence in the future of EU industry in a CO<sub>2</sub>-constrained environment. An exclusion will not only be perceived as a negative market signal, further exacerbating perceived investor risk, it will seed doubt of the EU's dedication to reach its climate targets.

## CO<sub>2</sub> storage exclusion in direct contradiction to intention as outlined in the EU Green Deal

Although the current proposal for a revised TEN-E regulation improves the legal text across several of the included categories, no changes have been made to the Priority Thematic Area (12) "Cross-border carbon dioxide network".

The current proposal still excludes CO<sub>2</sub> storage facilities and transport modalities other than pipelines to be eligible for PCI status and the benefits which it entails – leading to significant opportunity costs and potential delays to reach the 2030 and 2050 climate targets.

By not addressing or amending the category of carbon dioxide networks, the current proposal is in direct contrast with the underlying justification for the ongoing revision of the TEN-E Regulation, as outlined in the EU Green Deal:

*"The regulatory framework for energy infrastructure, including the TEN-E Regulation, will need to be reviewed to ensure consistency with the climate neutrality objective. This framework should foster the deployment of innovative technologies and infrastructure, such as smart grids, hydrogen networks or **carbon capture, storage and utilization, energy storage, also enabling sector integration**".*

## Climate change mitigation contribution of CO<sub>2</sub> storage ignored in TEN-E

The proposal itself takes no account of the climate change mitigating impact of carbon dioxide storage, stating that the sustainability of any such PCI will be limited to its ability to transport CO<sub>2</sub>. The transportation of CO<sub>2</sub> alone cannot automatically be considered sustainable without accompanying and available storage facilities, as it does not result in actual CO<sub>2</sub> reduction. The significant climate change mitigation

contributions provided by CO<sub>2</sub> networks materialize by transport and storage in conjunction - the full value chain should therefore be eligible for PCI status through the TEN-E. Substantial increase in cross-border benefits are reached when including transport modalities other than pipeline (such as ship, barge, truck and train) in the TEN-E.

## No justification for CO<sub>2</sub> storage's exclusion

The current exclusion of CO<sub>2</sub> storage is not justified, and any claim of CO<sub>2</sub> storage infrastructure's lacking relevance to the TEN-E due to it not physically crossing borders is a moot point in light of the TEN-E's newly-introduced category of electrolyzers. Just as electrolyzers are vital to achieve the set objectives of the European Green Deal and support a European market for hydrogen, so too is CO<sub>2</sub> storage the ultimate goal of any CO<sub>2</sub> transport. If the purpose of the TEN-E is to support EU decarbonisation, provision of CO<sub>2</sub> storage for industrial clusters across the EU Single Market must be a key element. Without it, the transport of CO<sub>2</sub> alone does not ensure avoidance of emissions, hence CO<sub>2</sub> storage should be included in the TEN-E.

## TEN-E exclusion misaligned with EU climate objectives and regulatory framework

The exclusion of CO<sub>2</sub> storage is in direct contradiction with other EU policy such as the Sustainable Finance Taxonomy, which clearly states that abatement technology such as carbon capture and storage, when contributing to the activity in question reaching the set emission threshold, will be seen as eligible. The TEN-E, in its current form, thus fails to reduce the very investor risk and barriers for technological development it is intended to alleviate, with harmful effects to EU's decarbonisation efforts. The incoherence between TEN-E and the objectives set out in the European Green Deal risks creating distrust in the ongoing process and the EU's chances of reaching its climate targets.

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