



2040 Climate Targets & Industrial Carbon Management Strategy: NEP position paper

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The Negative Emissions Platform (NEP) is a Brussels-based partnership of European and international organisations focused on carbon removals. Our members are primarily technology companies, but also include project developers, investors, carbon marketplaces, and buyers of carbon removals. We provide a forum in which diverse like-minded organisations actively collaborate to improve political and public recognition of carbon removals.

The Negative Emissions Platform (NEP) welcomes the timely publication of the 2040 Climate Target Communication and Industrial Carbon Management (ICM) Strategy.

The 2021 European Climate Law demands that the 2040 Climate Targets will need to put the EU on track for achieving climate neutrality by 2050. In its 6th assessment, the Intergovernmental Panel on Climate Change (IPCC) stated that net-zero is unattainable without CDR. The IPCC emphasised that we will need to be removing globally up to 10 gigatonnes of CO₂ per year by 2050 to be aligned with the Paris Agreement [1]. We are currently standing at 2 gigatonnes per year, the vast majority of which comes from shorter-duration CDR [2]. Hence, there is a considerable need to scale highly durable and permanent removals now to ensure a sustainable net-zero.

The 2040 Climate Target Communication falls short on addressing this need. Together with the ICM Strategy, there was an opportunity for the European Commission to articulate how it envisages integrating CDR into the EU's overall climate policy framework, as well as a chance to put forward the necessary policies and funding tools to support this crucial sector in the fight against the climate crisis. The next European Commission should rectify this issue in its legislative package for the 2040 Climate Targets.

[1] IPCC: [AR6 Synthesis Report](#) (2023)

[2] Steven M Smith, Oliver Geden, Jan C Minx, Gregory F Nemet: [The State of Carbon Dioxide Removal](#) (2023)



Executive summary

In the legislative package for the 2040 Climate Targets, it is essential that the European Commission:

1. Set a separate carbon removal target: In the legislative proposal for the 2040 Climate Targets, the Commission needs to set a clear target for carbon removals that is separate from emission reductions and that is further broken down to permanent carbon removals and LULUCF targets. This would recognise the distinct role that LULUCF and permanent CDR plays in reaching the EU's climate targets, and will provide a decisive signal to the market driving investment in permanent CDR.

2. Adopt policies & funding to stimulate immediate demand for permanent CDR: The Commission should set out how it intends to support the CDR sector now to maintain chance of achieving climate objectives in time. This means setting out public policies to support the sector before and even after establishing a compliance market, leveraging the Voluntary Carbon Market (VCM) and other funding tools (e.g. R&D funding, carbon contracts for difference, procurement). The timing is critical: by urgently adopting such policies, the EU would ensure the necessary incentives to effectively scale up the sector from a few to several million tonnes of annual CO₂ removal.

3. Tech-neutrality and portfolio approach: The Commission should acknowledge the central importance of a diverse portfolio approach of carbon removals based on high integrity and permanence, allowing for technological development and innovation. This means dropping the term 'industrial' removals and rather focus on supporting all high quality permanent CDR activities (as defined by the Carbon Removal Certification Framework) that can contribute to the 2040 Climate Target. Moreover, whilst it is essential to build geological storage capacity and the 2040 target is welcomed, there is a need for the Commission to include targets for other forms of permanent carbon storage, thereby creating incentives for other permanent storage mediums.



4. Cooperate globally: The EU should work on the international level to harmonise with international carbon markets. This approach not only enhances the EU's climate ambitions but also encourages global efforts toward carbon neutrality, while simultaneously providing crucial financial resources for carbon removal technologies and contributing to the development of robust methodologies through collaboration with international bodies like the UNFCCC Article 6.4 Supervisory Body. The Commission should establish a mechanism to recognise carbon removal credits from outside the EU, on condition that they align with EU-standards, thus ensuring fairness and readiness for potential future policy developments.

1 Separate Carbon Removal Target

NEP **welcomes the European Commission's support for the most ambitious net-emission reduction target of 90% in its 2040 Climate Target Communication.** This is aligned with the European Scientific Advisory Board's assessment on the 2040 Climate Targets [3], as well as the accompanying Impact Assessment to the Communication [4]. The majority of the effort required to get to net-zero will be to cut emissions in the first instance. The swifter we act to decrease emissions, the less harm we inflict on the planet.

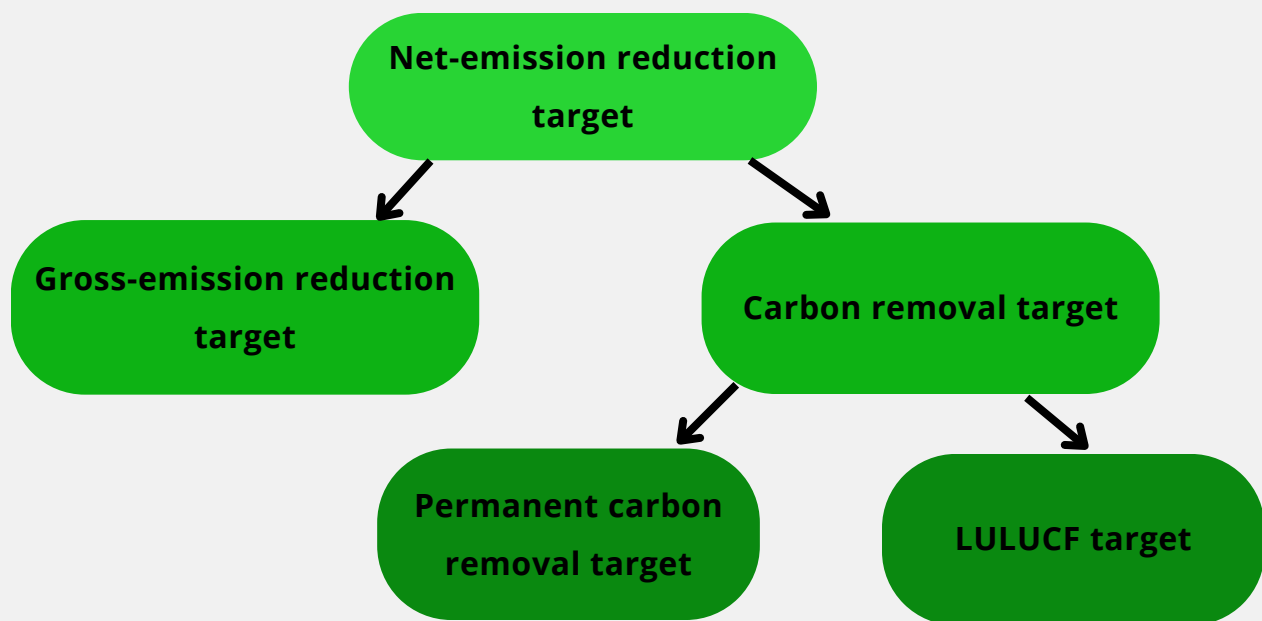
In addition to reducing emissions, carbon removals will be critical in getting to net-zero and to negative emissions thereafter. The 2040 Climate Targets are essential in giving a strong political signal to the carbon removal sector to develop and scale up. The legislative proposal for a 2040 Climate Target should therefore **establish a clear and separate target for carbon removals – expressed both in the form of percentage of the net-emission reduction target, as well as in a number of tonnes of CO₂ that will need to be removed annually.**

[3] European Scientific Advisory Board: [Scientific advice for the determination of an EU wide climate target and a greenhouse gas budget for 2030-2050](#) (2023)

[4] European Commission: [Impact Assessment Report on the 2040 Climate Target Communication](#) (2024)



The **carbon removal target should be further broken down to LULUCF and permanent carbon removal targets**. This recognition is crucial due to the distinct roles, purposes, and outcomes associated with these two categories of removals. Whilst a LULUCF target is important for biodiversity conservation, sustainable land management, and adaptation to climate change, permanent carbon removals are indispensable for achieving sustainable net-zero. Various activities can sequester CO₂ for extended periods, spanning centuries to millennia. Hence, a separate target for permanent removals is vital for providing a clear political signal to the sector regarding its future in EU climate policy and to facilitate current investment.



Graphic: NEP's proposed structure of 2040 Climate Target

Furthermore, the European Commission **should propose a “permanent” carbon removal target as opposed to an “industrial” carbon removal target**. Relying solely on a specific set of technologies raises the risk of the EU falling short of its climate targets. A technology-neutral target that includes all carbon removals demonstrating permanence would address this issue and align with the call for a portfolio approach outlined in the 2040 Climate Target Communication. For a more detailed discussion on this matter, please refer to the Technology Neutrality section below.



Definitions	
Industrial carbon removal (as defined in the 2040 Climate Targets Impact Assessment)	"BECCS, DACCS and biogenic carbon" This definition has the effect of restricting the range of technologies that can actively contribute to achieving the 2040 Climate Target to a limited set.
Permanent carbon removal (as defined under the Carbon Removal Certification Framework - CRCF)	"Means any practice or process that, under normal circumstances and using appropriate management practices, captures and stores atmospheric or biogenic carbon for several centuries including permanently chemically bound carbon in products, and which is not combined with Enhanced Hydrocarbon Recovery" The CRCF definition acknowledges that there is a diverse range of technologies that demonstrate permanence. Alignment with this definition would not only allow for regulatory consistency, but also the inclusion of a variety of permanent removal technologies would reinforce the likelihood of the climate target being reached.

2050 CDR figure

It's crucial to emphasise that after 2040, there will be a heightened dependence on permanent carbon removal methods to achieve net-zero emissions in the following decade. As a result, there is an expectation that the required amount of permanent CDR will need to notably increase before 2050. However, the suggested target of 114 Mt of annual permanent carbon removals for 2050 in the Commission's Impact Assessment poses challenges in evaluation. The methodology behind this figure and its correlation with present-day emissions of 3,000 Mt (according to Eurostat) [5] remains unclear.

Therefore, it is imperative for the Commission to enhance transparency and conduct a detailed assessment, considering residual emissions projected by country and sector from 2040 onward. This ensures that the EU is genuinely on track to net-zero, and net-negative thereafter, and is able to scale the CDR sector to what is needed to reach those targets.

[5] Eurostat, Air Emissions accounts for greenhouse gases by NACE (February 2024)



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Demand for carbon removals & financing

The CDR sector is currently in its infancy, relying on a limited number of tools to get projects off the ground, such as state subsidies and the Voluntary Carbon Market (VCM). The next few years and decades are going to require a steep growth curve for the CDR sector for the EU to be on track for net-zero. There is therefore an urgent need for the European Commission to **provide a comprehensive strategy on how it intends to support the sector in the coming years**, in particular through the VCM as well as other funding tools, thereby establishing a robust foundation for the sector's growth.

Voluntary Carbon Market

The predominant source of funding for the CDR sector at present comes from the VCM. The VCM operates by facilitating upfront purchases, providing crucial financial support for a diverse array of CDR projects. Given that a significant portion of the CDR sector comprises start-ups, this injection of investment is indispensable for the growth and development of these innovative ventures.

Compensation claims are a big motivation for companies to buy carbon removal credits. In the EU, clarification is needed on how companies can use carbon removal credits to make climate claims. The uncertainty on the issue has the potential of being extremely damaging to the VCM. The EU institutions need to step up to remedy the situation, otherwise the sector cannot develop and scale up, and the EU therefore risks missing climate targets. This was a big omission from the Commission's ICM Strategy.

The EU has set out various pieces of legislation that address carbon removal credits and their use, including the Carbon Removal Certification Framework (CRCF), Empowering Consumers Directive, Green Claims Directive and Corporate Sustainability Reporting Directive (CSRD). Whilst these pieces of legislation should naturally complement each other, lack of harmonisation in the rules has caused market uncertainty. The EU's regulatory framework, including the legislation listed above, must provide a clear signal to the market that EU policy supports corporate investment in permanent carbon dioxide removals.



To support the necessary investment in the sector whilst also avoiding mitigation deterrence, the EU institutions should allow company-level climate claims based on high-quality permanent removals. This is in line with the CSRD's Sustainability Reporting Standards and the rules should be extended to the Green Claims Directive which similarly looks at corporate climate claims.

Compliance Market

NEP welcomes the European Commission's forthcoming assessment on how carbon removals will fit into emissions trading. A compliance market will be an indispensable tool to spur demand and fund the sector, as well as acknowledge the crucial role CDR plays in supporting emission reduction efforts.

The European Commission will need to explore various options for a compliance market, considering integration into the Emissions Trading Scheme with different approaches (e.g., full integration, integration of specific activities, setting a cap) or the potential effectiveness of a separate Removal Trading Scheme. A clear understanding of the primary objectives of a compliance market is vital for determining the most suitable policy to fulfill these requirements.

It should be noted that until a compliance market is established, the sector will be relying on the VCM as a key source of funding in the coming years. Moreover, even after a compliance market is established, it is well understood that it will be insufficient by itself in fully funding the sector and that the VCM will likely continue to play a key role.

Other funding tools

The EU boasts some of the most developed funding tools globally, but there has been a noticeable limitation in their allocation towards CDR projects. This stands in stark contrast to other countries and regions worldwide, notably the US [6], where a significant surge in funding opportunities for CDR has occurred. This discrepancy emphasises the urgent need for the EU to assess and strategise the mobilisation of its existing funding tools as well as introduce new tools; otherwise, it risks lagging behind in the global efforts in fighting the climate crisis.

[6] According to Carbon Gap's [CDR Strategy](#) (March 2024), the US has spent €1.86bn on CDR RD&I, whilst the EU has only spent €613mn.



The EU should explore the use of the following instruments:

a) Innovation Fund

In line with separate carbon removal and emission reduction targets, the EU's key funding tools for climate should reflect a similar split of funding allocation. So far, the Innovation Fund has been assigned to only one CDR project, namely Stockholm Exergi's BECCS plant. However, considering the significant financial incentives in the US and the missed opportunity under the Net-Zero Industry Act to facilitate funding for CDR, the EU risks talent and business relocating elsewhere.

Therefore, the European Commission should earmark a certain percentage of the Innovation Fund to go to a diverse range of CDR. This percentage should align with the permanent carbon removal target, ensuring a systematic and purposeful allocation of resources, promoting innovation and inclusivity within the CDR sector.

Additionally, the European Commission should differentiate between CDR and non- CDR call for proposals. This dedicated CDR call would serve as a catalyst for encouraging a diverse range of initiatives within the CDR landscape. It would provide a platform for supporting not only early-stage pilot projects but also facilitating the development and implementation of larger-scale demonstration plants, as well as commercialisation of full-scale plants. Such a differentiated approach acknowledges the unique and evolving nature of carbon removal technologies, fostering innovation across the spectrum of maturity levels.

b) Horizon Europe

Horizon Europe stands as the EU's most substantial funding instrument exclusively dedicated to R&D. However, the financial support designated for CDR projects within the program is limited. In specific terms, the funding for CDR projects constituted only 1.1% of the total budget for 2021-2022 and 0.9% of the 2023-2024 budget, encompassing both early-stage support and prototypes [7].

[7] Carbon Gap: [Mapping CDR funding – Where is carbon removal in Horizon Europe?](#) (2023)



This allocation falls short of what NEP deems necessary to adequately propel technological research and innovation in CDR, a pivotal element in achieving the EU's ambitious climate targets. To effectively address the urgency and magnitude of climate challenges, there is a clear call for increased financial backing through Horizon Europe for a diverse portfolio of CDR activities.

To optimise the impact of this financial support, it is imperative to diversify the scope of calls within Horizon Europe to encompass activities at various technological readiness levels (TRLs). This approach recognises that different technologies may be at different stages of development and maturity, requiring tailored support to progress towards scalable and impactful solutions.

c) Carbon contracts for difference

Contracts for Difference (CfDs) are gaining prominence as a valuable tool to assist companies engaged in low-carbon technologies in generating revenues. This has been used in several countries in the context of renewable energy, serving to offer revenue certainty to the private sector. On the EU-level, the European Commission is considering Contracts for Difference to subsidise the purchase of green hydrogen for offtakers.

To further advance CDR initiatives, the European Commission should consider applying CfDs within this sector. Funding for such an initiative could be drawn from the Innovation Fund. In practical terms, a government would establish a long-term contract with a carbon removal project, guaranteeing a specific price for each tonne of CO₂ removed and stored by the project. Should the market price for CDR surpass the agreed-upon CfD price, the project has the flexibility to sell additional carbon credits or removal services at the prevailing market rate, generating supplementary revenue. Conversely, if the market price falls below the CfD price, the project is still guaranteed the agreed-upon income, mitigating financial risks associated with market volatility.



CfDs would ensure a consistent and foreseeable income for carbon removal projects, thereby augmenting their financial viability and attractiveness to potential investors. This proves especially advantageous for currently expensive permanent CDR technologies, as it establishes financial incentives for project operation, drawing in long-term investments. Consequently, this influx of long-term investment is anticipated to drive down the overall costs associated with the respective CDR activities.

d) Public procurement

Public procurement can be an extremely effective deployment incentive that would allow the EU to become the customer of CDR credits. Similarly to carbon contracts for difference, procurement acts as a catalyst, providing long-term certainty for CDR companies, enabling effective planning, and facilitating the expansion of their operations.

The United States has taken a lead in recent months, as evident in its [announcement](#) in September 2023 of a \$35 million pilot prize for various CDR activities. Additionally, the more recent [CDR Leadership Act](#) would see the US Department of Energy allocating \$10 billion to procure 40,000,000 tonnes of CDR from now until 2035.

The EU and its Member States should emulate such initiatives to build demand for a diverse range of CDR activities in Europe.

e) IPCEIs & PCIs

Important Projects of Common European Interest (IPCEI) is a framework that allows EU Member States to jointly support and finance strategic projects that are deemed crucial for the EU's competitiveness and sustainability. In the EU, IPCEIs have so far been used for batteries and hydrogen.

In the ICM Strategy, the European Commission is considering to an IPCEI for transport and storage. This is a welcome initiative as building storage capacity in the EU will be essential to the success of scaling up CDR. However, NEP urges the European Commission and Member States to set up a dedicated IPCEI for CDR. This could be employed to advance and support



large-scale carbon removal projects that often demand significant financial investments. Member States would be able to pool their resources, exchange knowledge and technology, and harmonise standards.

Similarly, the implementation of Projects of Common Interest (PCIs) would facilitate the deployment of CDR projects through streamlined permitting procedures and financial support. Additionally, it would foster cross-border collaboration among EU Member States, an essential component for the effective scaling up of the CDR sector.

f) Coordinating Member State funding

Funding for carbon removals will need to happen simultaneously on the EU-level as well as the national level, given the multifaceted nature of financial resources available. It is essential for all Member States to proactively engage in the development of their own CDR industries to collectively achieve overarching climate objectives. Financial tools on the national level may include public-private partnerships, research grants, tax incentives, and subsidies tailored to the unique needs and capabilities of each region. However, a potential challenge lies in the risk of imbalances, where smaller Member States might face difficulties keeping pace with larger counterparts in developing their CDR sectors.

At the EU level, the European Commission plays a crucial role as the overarching coordinator, fostering collaboration among Member States. Recognising the diverse economic capacities and potential within each Member State, the Commission must strive to create a harmonised approach that help level the playing field, ensuring that smaller nations do not lag behind in the crucial pursuit of carbon removal targets.



3 Technology neutrality

To achieve the goal of attaining 75 million tonnes of technological permanent removals by 2040, we have a 15-year timeframe to establish a burgeoning industry. The diversity among EU Member States offers the EU the opportunity to implement a diverse range of activities. Capitalising on this diversity, the EU should adopt a portfolio approach, ensuring that all CDR activities demonstrating permanence and that comply with strong monitoring, reporting and verification standards receive both financial and policy support. Additionally, these activities should have the capacity to contribute to the 2040 Climate Target.

This reference in the 2040 Climate Targets Communication on a portfolio approach is welcome. However, in both Communications, there appears to be undue emphasis on selected technologies. For example, the definition of 'industrial carbon removal' only refers to DACS, BECCS and biogenic carbon, thus excluding a diverse range of other permanent carbon removals.

At a time when the CDR sector is nascent and innovating rapidly, limiting the 2040 target to 'industrial' removals risks closing EU to the wide array of technologies that are promising permanent CO₂ storage as well as future impactful technologies [8]. NEP, therefore, strongly urges the European Commission to **establish a tech-neutral "permanent" carbon removal target.**

No single technology will be sufficient in addressing the expected demand of carbon removals to meet climate targets. Moreover, given that all carbon removal activities will have unique combinations of advantages and disadvantages, the adoption a portfolio approach is essential to mitigating potential risks, allowing different countries to reach their full CDR potential, and ensuring that climate targets are reached. **All high-integrity permanent solutions (as defined by the CRCF) should be able to contribute to the 2040 Climate Targets** and receive regulatory and financial support through the Industrial Carbon Management Strategy.

[8] [Open letter on the need for a tech-neutral and open Carbon Removal Certification Framework](#), signed by 350 companies (January 2024).



EU & Member States CDR capacity: adopting a portfolio approach

EU Member States have different economic and socio-cultural circumstances as well as have vastly different environments (e.g. different geological environment, land-locked countries, countries with access to a sea/ocean). This will lead to differing activities and scale of CDR deployment in Member States.

To address this diversity, **Member States should undertake their own mapping of CDR capacities**, considering the scalability of different technologies based on their unique characteristics. The European Commission should collaborate with Member States in evaluating various avenues for CDR investments, ensuring fairness and proportionality tailored to each Member State. One potential approach could involve establishing a new EU funding mechanism, drawing insights from the EU's Just Transition Mechanism.

Additionally, to ensure that Member States are contributing towards the EU-target, **National Energy and Climate Plans (NECPs) should be revised to include the long-term plans and investment in CDR technologies.**

Storage capacity & tech-neutrality

NEP welcomes the storage capacity target of 250 Mt for 2040 as set out in the Industrial Carbon Management Strategy. Recognising the strategic importance of this goal, NEP emphasises the critical role of developing cross-border transportation and infrastructure across the EU and neighboring countries in successfully realising the specified target.

Whilst expanding geological storage capacity is critical, NEP urges the European Commission to consider targets for other permanent storage methods beyond geological storage. By incorporating a broader range of permanent carbon storage mediums, the European Commission will enhance the resilience and adaptability of the storage target, ensuring its efficacy and relevance in the face of evolving technological advancements and environmental considerations.



4

International dimension

The climate crisis is a global crisis. 93% of the emissions are outside of the EU. To effectively achieve the goals set in the Paris Agreement and address the severe impacts of the climate crisis, it is imperative for other countries and regions to swiftly embrace comparable climate objectives and initiatives. The EU must play a global role in this effort, forging robust partnerships worldwide. By doing so, the EU can not only elevate its own climate aspirations but also inspire other countries to pursue more ambitious measures in the journey towards carbon neutrality.

Carbon Markets

One crucial tool here is carbon markets, not only as a tool to support countries cutting their emissions, but also an important funding source for the CDR sector. By participating in international carbon markets, the EU can access additional financial resources to invest in research, development, and deployment of innovative carbon removal technologies.

The European Commission should therefore actively seek enhanced collaboration with international partners, in particular with the UNFCCC Article 6.4 Supervisory Body. The body is also currently setting up a market-based instrument for trading credits in carbon removals and will prepare recommendations on methodologies. Strengthening ties with this process will enable the EU to facilitate knowledge sharing and contribute to the development of comprehensive and robust methodologies grounded in international consensus and expertise.

Cooperating with international carbon markets is crucial for the EU to leverage global resources, encourage ambitious climate action, foster innovation, and address the interconnected and global nature of the climate crisis.



Recognition of CDR credits from outside the EU

While the EU has taken substantial strides in defining high-quality carbon removal credits through the Carbon Removal Certification Framework (CRCF), it's essential to note that the CRCF is currently restricted to carbon removal activities within the EU. The treatment of carbon removals from outside the EU within the EU market remains unclear.

To align with the global reach of the Voluntary Carbon Market, the EU should create a mechanism that approves the use of carbon removal credits from outside the Union, provided they adhere to the standards set at the EU-level. Such an approach not only ensures a fair and equitable playing field, but it also would prepare the EU for future policy developments such as potential integration of CDR into a compliance market, as well as developments under the Article 6.4 mechanism.

The legislative package on the 2040 Climate Targets should:

- **include separate carbon removal targets, broken down to LULUCF and permanent carbon removal;**
- **establish a clear EU strategy to boost funding in the CDR sector;**
- **recognise and establish policies and funding tools to support a portfolio approach to CDR; and lastly**
- **acknowledge the international dimension of the climate crisis and the growth in the CDR sector.**



Annex

Annex I: CCS & CDR

Definitions

Both the Industrial Carbon Management Strategy and the 2040 Climate Targets appear to have confused and conflated carbon capture and storage (CCS) from fossil sources and CDR. In the ICM Strategy, for example, the definition of CCS includes carbon from biogenic and atmospheric sources. However, the permanent storage of these two sources of CO₂ actually leads to negative emissions and thereby should be categorised as carbon removal.

This confusion in the definitions is problematic as fossil-CCS and CDR serve distinct purposes and yield different outcomes. Fossil-CCS primarily involves the capture and sequestration of carbon dioxide emissions from industrial processes, preventing them from entering the atmosphere. On the other hand, CDR focuses on actively removing atmospheric or biogenic CO₂, using a diverse range of different technologies and methods. In short, fossil-CCS leads to emissions reductions whilst CDR leads to negative emissions.

Given the divergent objectives and consequences of fossil- CCS and CDR, it becomes imperative to clarify these definitions to avoid any misunderstanding or misclassification. Properly distinguishing between the two is crucial for effective climate action planning and ensuring that strategies align with the intended goals of emission reduction and carbon removal.