

## **(Industrial) Partnerships for CCUS – A start**

### **Executive Summary**

The fast (and good) CCUS deployment is essential and fundamental for the decarbonisation of the energy-intensive industries in the EU27. Major steps have been made recently concerning the acknowledgement of CCUS, such as the Net Zero Industry Act (as well as several national developments). That being said, identified hurdles remain very high. Working together with governments (including the EU27), industry, regions, and all other stakeholders is absolutely needed to overcome these hurdles. Partnerships with an umbrella organisation at EU27 level are inevitable not to delay the deployment further.

The discussions in the CCUS Forum highlighted the need and interest of all stakeholders collaborating within a new organisation, with the suggestion for the initiation of a (Industrial) Partnership. The Partnership at the EU level will be set up as a discussion platform with members from all relevant stakeholder groups. A Governing Board is to be compiled from the various interest groups, including national governments and representatives from the EU Commission. The activities of the Partnership will be organised by Task Forces. The CCUS Forum will be part of the new organisation, and is to be kept as an annual, open and transparent meeting and discussion “theatre” for all stakeholders in the CCUS area.

The focus is put on a Partnership at the EU level to support the EU Commission in further developing and implementing its Industrial Carbon Management Strategy beyond this legislative term. The EU level could be supported by Partnerships at local, regional and national levels, closer to the individual project clusters. The main objective is to reduce the height of the hurdles for fast CCUS deployment at the EU level, as well as at local, regional and national levels. And we have to act together fast, as the challenges for the hard-to-abate emissions of the energy intensive industries cannot wait in order to achieve climate neutrality by 2050 at the latest.

### **Acknowledgements**

The work and the report on the Industrial Partnerships within the CCUS Forum is the result from many discussions and (virtual) meetings in the last year. Important is to mention that specific input has been received from ERCST, ZEP, Bellona, CO2 Value Europe, PNO, EPG and many others. The authors<sup>1</sup> would like to thank all of the contributors.

### **A. Introduction**

The need for CCUS to achieve the EU’s climate targets has been clearly understood and resulted in new political and regulatory initiatives. Prominent examples are the strong support of CCUS in the proposal of the Net Zero Industry Act (March 2022), including a CO2 injection capacity target of 50

---

<sup>1</sup> The document has been drafted by the cochairs of the Working Group Industrial Partnerships of the CCUS Forum: Rodolphe Nicolle (EuLA), Winston Beck (Heidelberg Materials & ZEP) and Rob van der Meer (CEMBUREAU).

million tonnes per annum (mtpa), as well as the ongoing work of the EU Commission concerning an EU industrial Carbon Management Strategy.

Nevertheless, the current progress is not enough to deliver the reductions that are needed to achieve carbon neutrality in 2050 and the intermediate target for 2030. A faster large-scale deployment of CCUS technologies, including capture plants, CO<sub>2</sub> transport infrastructure and storage, is essential. Discussions within the Working Groups on the Vision, Infrastructure and Industrial Partnerships, as part of the CCUS Forum, have identified the following main challenges:

**1. Business case and financing**

CCUS projects are CapEx and OpEx-intensive. Early movers/first-of-its-kind projects cope with the lack of business case. Considering that the CO<sub>2</sub> price under the EU ETS is expected to grow, this might change. Also, new instruments including Carbon Contracts for Difference and possibly carbon removal certificates could further improve the business case. Future investment in CO<sub>2</sub> infrastructure and (renewable) energy (e.g. use, supply, import/export, types, etc.) will also influence the bankability and technical feasibility of CCUS projects. But, fast deployment means that we should not wait till these conditions are met.

**2. Uncertainties around the regulatory and legal framework**

Uncertainties and changes in legislation have a detrimental effect on the longer-term predictability feasibility of CCUS projects. Legal challenges start with the accounting of the captured CO<sub>2</sub>, depending on its source and its use/storage afterwards. Transport and intermediate storage of CO<sub>2</sub> can also raise legal questions. Finally, the use or permanent storage of CO<sub>2</sub> is sometimes not legally clear or obvious, including liability challenges for stored CO<sub>2</sub>.

**3. Insufficient public awareness**

There is a need for a greater understanding in society of how CCUS works and whether it is safe or not. Important is also to demonstrate and verify the climate impact the CCUS solutions have, depending on the pathways chosen. While there is a political focus on emission reduction policies and technologies, CCUS are not yet a priority in achieving climate neutrality by compensating for residual emissions for those sectors that will find it harder to decarbonise due to a lack of alternative technology and solutions. This is particularly true for Member States who hesitate to promote CCUS.

**4. Challenging timeframe**

CCU and CCS deployment should have started already some time ago. Yet only a handful of projects are under construction and with heavy involvement of state or EU resources. If the EU27 cannot significantly accelerate these investments by 2030, the target of achieving carbon neutrality in 2050 will not be met.

**B. Industrial Partnership as the solution: main objectives**

In order to address the above challenges, the CCUS Forum initiated a working group in early 2022 on an industrial partnership. The CCUS forum in October 2022 in Oslo (Norway) repeated in its conclusions the need for considering such a Partnership in order to speed up the deployment of large-scale CCS, CCU and carbon removal value chains at scale.

Discussions within the group concluded that a partnership is absolutely necessary to accelerate the CCUS implementation, but it should not be limited to industry only. Such partnership should position the specific challenges deriving from national deployment to the EU institutions and support public and political engagement towards a comprehensive EU strategy and cross-border regulatory framework. At the same time, partnerships at the national level might be needed in parallel to support project implementation with more targeted approaches and adapted to the individual local circumstances (in4Climate.NRW was presented as an example of a regional network working on CCUS).

The CCUS Forum's Issue Papers on CO<sub>2</sub> Infrastructure and a CCUS Vision already mention several concrete tasks for such a Partnership with a focus on commercialisation and funding of projects. Examples mentioned include demand aggregation for transportation and/or storage, working on de-risking and contractual arrangements, and developing mechanisms that could be used to share and transfer liabilities between project developers and regulatory authorities.

## Objectives

The Partnership would serve as a continuation of work that has been started under the CCUS Forum and help to translate the forthcoming Communication on an EU Industrial Carbon Management Strategy into a work plan and guide as well as monitor its implementation.

The overarching purpose of the Partnership must be the acceleration of CCUS development in the industry at local, regional, national and EU levels.

Based on the inputs received during the Working Group discussions as well as based on the CCUS Vision and Infrastructure issue papers, the specific objectives of such a partnership should be:

1. **Support the development of a framework that allows for creating business models for CCUS and facilitates the de-risking of investments.** The the Partnership should engage in a discussion around best business models for CCUS projects, such as looking into templates for long-term contracts as well as agreeing on mechanisms for risk-sharing and transfer of liabilities between the storage developers and the regulatory authorities. de-risking measures, liabilities).
2. **Act as a forum for aggregating CO<sub>2</sub> flows** to break the chicken and egg issue between capture and storage investments. CCU and CCS projects involve many stakeholders and partners (CO<sub>2</sub> sources, transport and intermediate storage facilities, CO<sub>2</sub> conversion facilities, CO<sub>2</sub> storage plants/facilities, etc.) for which coordination and aggregation are needed. This task becomes even more immanent and concrete with the proposal of the European Commission for a CO<sub>2</sub> storage injection capacity target of 50 mtpa by 2030, which requires the matching CO<sub>2</sub> capture and infrastructure facilities.
3. **Communication on CCUS and improved cooperation along the value chain** and beyond. . Providing transparency across the value chains through communication, education and best-practice sharing with the active involvement of all interested stakeholders will be essential.

Another task mentioned was to strengthen the independent role of Research & Innovation as a knowledge creator and aim for open and transparent interaction with R&D institutes. This is for further discussions

## Participation and Scope

Starting point has been the idea of an Industrial Partnership on CCUS. But during the discussions and meetings of the CCUS Forum in 2022 and early 2023, it has become clear that such a partnership should not be limited to the industrial stakeholders only. From the discussions, the conclusions on the format and structure were:

1. We need partnerships with the involvement of all relevant stakeholders from governments, energy-intensive industries and facilitating industries, environmental NGOs and associations, R&D institutes, industrial clusters, and social partners;
2. We need an umbrella structure with a high-level EU27 partnership supported by national partnerships;
3. The challenges from local, regional and national partnerships should provide input for high-level discussions in the EU and beyond (EEA);
4. The EU-level and national partnerships must serve as a communication forum between industry, EU and Member States’ public authorities, civil society, and other stakeholders.

A partnership targeting a CCUS accelerated deployment must include all relevant stakeholders. All those identified in Table 1 should be considered to be invited for such a Partnership.

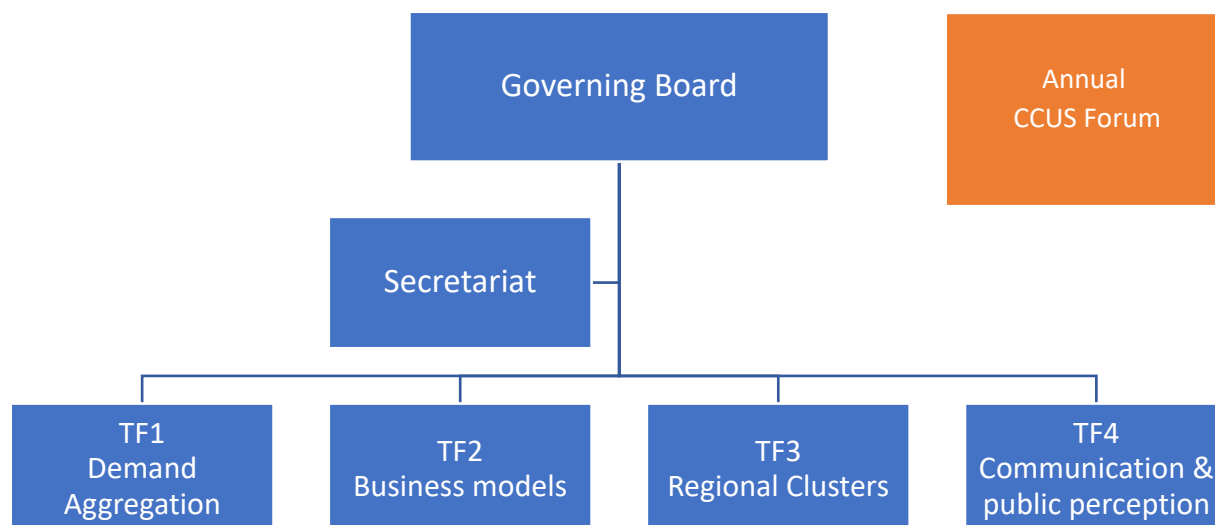
Table 1 – Key Stakeholders and their potential influence on CCUS deployment challenges

Stakeholder	Finance & Funding	Regulatory Framework	Future developments	Public and Social acceptance	Timeframe
European Commission	X	X	X	X	X
Member States	X	X	X	X	X
Regional & local governments		X	X	X	X
Financial sector	X		X		X
CO2 emitters	X	X	X	X	X
CO2 consumers	X	X	X	X	X
Industrial clusters (port, etc.)		X	X	X	X
Environmental NGOs		X	X	X	X
Public/civil society organisation (churches, unions, etc.)			X	X	X
R&D institutes			X	X	X
Industrial equipment suppliers			X	X	
Academia	X	X	X	X	

## C. Proposal for a CCUS Partnership: participation, structure and decision-making process

### Structure

It is proposed that the Partnership consists of a Governing Board, multiple Task Forces and a secretariat. The responsibilities, tasks and composition of each of these bodies are described below. The structure should enable an effective and goal-oriented Partnership that is free and open for membership of all relevant parties.



**Picture 1 – Proposed structure of CCUS Partnership**

### **CCUS Forum**

The Partnership would be conducted in alignment with the annual CCUS Forum plenary session. Task Forces would be asked to report on their individual deliverables and the progress made during the past year.

### **Governing Board**

The Governing Board is steering the CCUS Partnership, consisting of representatives of the European Commission, Member States and the carbon capture value and supply chain. It should take all strategic decisions related to the functioning of the Partnership, including the creation of Task Forces and their deliverables and timelines.

Responsibilities of the Governing Board are to:

- Validate and adopt the annual Work Programme (amend when/where necessary);
- Decide on the composition of the Task Forces, i.e. appoint chairs and its members;
- Monitor the progress made, ensuring that work done is within the mandate and deliverables are finalised within an agreed timeline;
- Validate the final deliverables and decide when a Task Force ceases to exist;
- Disseminate the outcome to relevant interest groups.

Membership of the Governing Board should be comprised of 14 Members, including:

- *European Commission (e.g. Director level)*, if possible, including 4x representatives from DG ENER, DG CLIMA, DG GROW as well as DG RTD
- *Member States, for instance representative from the current and next EU Presidency*

- *Value chain* representatives from hard to abate sectors, CO2 transport operators and CO2 storage operators.
- *Civil society* representatives from unions, Civil Society Organisation , Academia or research institutes and ETIP CCS

Governance: The non-governmental members of the Governing Board are elected by the members of the CCUS Partnership. The Governing Board chooses its chairperson from among its members. The Board should meet at least 3x times a year.

### **Secretariat**

The Secretariat will prepare and coordinate the annual work programme once adopted by the Governing Board. The Secretariat is also responsible for the overall day-to-day management of the partnership and its bodies. As such, the Secretariat will support Task Forces in guiding the process, helping co-chairs guarding agreed timelines and deadlines, and supporting the development of agreed deliverables. It will also lead to organising physical meetings and events. Finally, the Secretariat will facilitate external communication by preparing messages and communication materials, such as position papers, presentations and press releases.

The Secretariat could be run by an existing organisation that has proven experience and a track record in CCUS development at the EU level, such as the Zero Emission Platform. The organisation would need to prove that it has the necessary personnel and organisational capacity as well as know-how to conduct the work.

### **Funding / Budget**

The Partnership should put up a mechanism to be financially viable. This could be done by seeking funding under an EU program or establishing a membership fee for corporate members. Memberships must be made transparent but not lead to any additional decision-making power (the same process applies to any other deliverable).

### **Task Forces**

Set-up and governance: Each Task Force to consist of two to three co-chairs plus a maximum of 25 constant members. Other participants of the Partnership could join as observers but may not be part of the drafting process of documents and reports. The Mandate of each Task Force is decided by the Governing Board as well as its composition and main objectives. Co-chairs are also selected by the Governing Board, with the aim of having a balanced representation of the membership.

Task Forces, as well as their membership, should be limited to a two years term, and deliverables must be decided accordingly. In case a specific deliverable requires a few more months' time, the task force can remain intact based on a decision by the Governing Board.

Priority themes: The themes will be open, but few main WGs could be set up based on the initial objectives and stakeholder table, including:

- **TF1 Demand Aggregation and Infrastructure**
  - Quantifying targets and matching capture volumes with storage and utilisation sites from the input from the regional partnerships. This would also help in decision-making regards types of CO<sub>2</sub> transport that are best suited for each

situation, taking into account their carbon footprint, proximity to CO2 storage, and relevant operational experience.

- Profiting from the existence of mapping tools for CO2 sources, storage sites, utilisation facilities, infrastructure development (CO2 transport, hydrogen backbone, renewable electricity potential), and technology providers.
- **TF2 Business models**
  - Developing template business models (long-term contracts, liabilities, revenues from products, de-risking investment).
  - Clarification of liabilities across the CO2 value chain, e.g. suggest mechanisms for risk-sharing and transfer of liabilities between the storage developers and the regulatory authorities.
- **TF3 Regional clusters**
  - Learning from existing and emerging regional clusters.
  - Pointing out needs for regulatory change, areas of inconsistencies and suggestions for improvement.
  - Identify bottlenecks in our way towards accelerated deployment of CCS and CCU.
- **TF4 Communication**
  - Provide transparent information, education and best-practice sharing on the decarbonisation challenges of the industry and the benefits of CCU and CCS.
  - Establishing and curating a project pipeline and raising visibility through communication
  - Support the communication officer of the partnership team with appropriate channels and tools: workshops, webinars, social media, and publishing of quarterly magazines (see example from Clean Hydrogen [here](#)).

Membership: In general, the Task Forces should be open to all members of the Partnership.

Members shall be able to apply based on a 'call for interest' designed by the Secretariat in alignment with the Governing Board. The following criteria shall apply:

- Each applicant must subscribe to the goal of accelerating the deployment of CCUS also in view of implementing the CO2 injection capacity target of the Net Zero Industry Act and corresponding capture and CO2 transport projects;
- Each applicant must commit to the necessary resources to contribute to the work of the Task Force;
- Diversity among corporate members must be secured to ensure a proper representation of the value chain.

The Secretariat will propose to the Governing Board for the final set-up of the task forces.

If the total number is achieved, but there are additional parties interested, there should also be the possibility to become an "observer", which would provide interested organisations with the possibility to send in position papers and further information, be actively consulted on specific topics and attend workshops organised by the Task Forces given an overview of the work status and discussing specific topics.

### **Advisory Council (Optional)**

In addition, it could be considered to create an Advisory Council in charge of proposing work programs, setting priorities and reviewing publications.

The Industrial Partnership should be set up in due course in order to advance the deployment of CCUS well before 2023. We call upon the Commission to outline the next steps in the forthcoming EU Industrial Carbon Management Strategy and to initiate the next steps as soon as possible. Ideally, the Partnership should assume work no later than the start of the next EU Parliaments legislative term in summer 2024.