

# Support stakeholders on Carbon Capture Utilisation and Storage of ETIP ZEP and IWG9

## Deliverable 1.1 Delivery of a work programme





## **Support stakeholders on Carbon Capture Utilisation and Storage of ETIP ZEP and IWG9**

This is a Horizon Europe project (Coordinated and Support Action) funded by the European Union for 3 years (from 1 July 2022 until 30 June 2025).

### **Project summary**

Support Stakeholders on Carbon Capture Utilisation and Storage of ETIP ZEP and IWG9.

The overarching goal of this project is to bring together and further develop a strong inclusive network of CCUS stakeholders – effectively interconnecting and coordinating the activities of CCUS European Technology Innovation Platforms (ETIP ZEP) and the CCUS SET Plan Implementation Plan Working Group (IWG9) – to support the development and implementation of the SET Plan.

Supporting the alignment and efficient coordination of stakeholders – including industry, researchers, public authorities, civil society – in order to accelerate the delivery of the CCUS research and innovation (R&I) activities and to progress the emerging policy priorities at EU and national level for the implementation of CCUS, will be crucial over the coming years for Europe to reach the ambitious climate targets for 2030 and 2050.

This will be achieved by efficiently aligning and coordinating the activities of ETIP ZEP and the IWG9 in a joint work programme; establishing networks and other fora to enable the stakeholders to collaborate and coordinate effectively, pooling expertise, experience and resources to address common challenges; engaging also with other programmes and external stakeholders; facilitating engagement and creating greater interaction and cohesion between the different CCUS activities; supporting the CCUS community to develop clear strategies and recommendations; accompanied by a strong continuous programme for outreach, dissemination and communication.

### **Disclaimer**

Funded by the European Union. This document has been prepared on behalf of the Zero Emissions Platform Advisory Council and the SET-Plan Implementation Plan working group on CCUS (IWG9) Plenary. Views and opinions expressed are the collective views of the Advisory Council and the Plenary, not of individual members or participants, nor do they necessarily reflect those of the European Union. The European Union cannot be held responsible for them.

### **Contact details:**

+32 2 882 50 07

[iwg9@zeroemissionsplatform.eu](mailto:iwg9@zeroemissionsplatform.eu)

[www.ccus-setplan.eu](http://www.ccus-setplan.eu)

[www.zeroemissionsplatform.eu](http://www.zeroemissionsplatform.eu)



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## 1 INTRODUCTION

*D1.1: Delivery of a work programme for the Networks and TWGs as well as for the ERG (dissemination and communication plan) in line with EU policy agenda (Month 5).*

This is the work programme for End 2022 and 2023, presented for input at AC72/Plenary in September 2022, discussed with Networks, ERG and Government Group, and approved at AC73/Plenary on 14 December 2022.

An updated work programme will be published in December 2023.

### 1.1 Background

ETIP ZEP is the technical adviser to the EU on the deployment of Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) – a European Technology and Innovation Platform (ETIP) under the Commission’s Strategic Energy Technologies Plan (SET-Plan). The SET-Plan Implementation Working Group on CCUS (IWG9), composed of eleven European Countries and chaired by the Norwegian and Dutch Governments together with ETIP ZEP, was established in 2017 to help advance the research and innovation (R&I) activities required to achieve the CCS and CCU targets agreed by the European Commission, SET Plan countries, and industry.

The objectives of the project ‘Support stakeholders on Carbon Capture Utilisation and Storage of ETIP ZEP and IWG9’ is to

- Support the alignment and efficient coordination of stakeholders’ activities through the IWG9 and ETIP ZEP – also coordinating with other initiatives and projects – to ensure active engagement in implementing the SET Plan.
- Deepen participation and foster cooperation between stakeholders relevant to CCUS and the clean energy transition, including industry, research and universities, EU institutions, Member States, civil society, and international initiatives on the clean energy transition.
- Accelerate the clean energy transition by progressing the delivery of the CCUS R&I activities, based on defined cross-cutting aspects, and contributing to the development of a European Research Area (ERA) in the field of Energy.
- Engage all stakeholders in supporting the progress of emerging policy priorities at EU and national level for the implementation of CCUS.
- Develop and implement robust outreach approaches and engagement with societal actors for CCUS development and deployment, across the EU and associated countries.

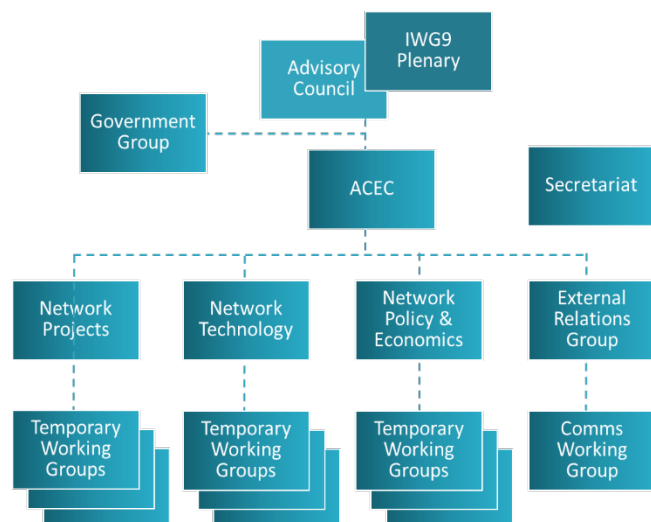
### 1.2 Efficient coordination

The approach builds on and takes into account the strengths from the existing ETIP ZEP and IWG9 structures, that have been developed and approved by the stakeholders, combined with efficient coordination of the workstreams across these structures. This way, *the project* provides a very good basis to efficiently ensure that the work packages meet the needs and expectations of stakeholders in order to

give appropriate support to the delivery of the SET Plan. The efficient coordination of these two bodies brings together stakeholders, including industrial sectors, academics and researchers, civil society and public stakeholders, including the European institutions and Member States governments.

- *The Advisory Council (AC)* is the body of ETIP ZEP members that meets quarterly, it is responsible for all decisions and sets the strategic direction for ETIP ZEP, oversees the work and deliverables etc., and guides on actions. AC members serve for a renewable three-year term and appoint a Chairperson and Vice Chairpersons. The Advisory Council Executive Committee (ACEC), consisting of ZEP Chair, Vice-Chairs and Co-Chairs for the Networks and ERG, is convened once per month to guide and take decisions between AC meetings.
- *The Plenary* is the body of IWG9 members that meets quarterly, oversees the work and deliverables etc., guides on actions, is responsible for all decisions and sets the strategic direction for the IWG9. The Plenary appoints three Chairpersons, of which two from country representatives and one representing ETIP ZEP.

ETIP ZEP and IWG9 have been supported by separate grants. In order to deliver as impactful a support as possible for the CCUS SET Plan Implementation Plan, *the project* will align and coordinate activities and measures (see *coordinated governance structure*). One of the challenges when coordinating activities between ETIP ZEP and IWG9 is that European countries (SET Plan countries) are members of the IWG9, while they can only be observers in ETIP ZEP – since representatives from country governments and authorities cannot be involved in deciding on the ETIP’s positions and views on specific EU or Member State policy, legislation, funding mechanisms, etc. Taking this into account, *the*



*ETIP ZEP and IWG9 coordinated governance structure project* will use and coordinate the strengths of the stakeholders and governance from both structures, bringing forward aligned and coordinated activities in an efficient way, see structure.

The quarterly meetings of the AC and Plenary will converge and be held back-to-back on the same day – open to all CCUS stakeholders and representatives of the EU institutions – to increase knowledge sharing and ensure support to and enhanced coordination of the stakeholders. The agendas will be coordinated and there will be joint send-outs ahead of the meetings, including the agendas and pre-reads for both meetings, all to enhance coordination of stakeholders. The AC meeting/AC members will decide on matters that are specific to ETIP ZEP, while the IWG9 Plenary will decide on matters that are specific to the SET-Plan Implementation Plan.

### 1.3 Well-established and efficient governance and way of working

The work of ETIP ZEP and IWG9 will be supported by the secretariat, guided and undertaken by three Networks (committees) and the associated Temporary Working Groups (TWG), as well as the External Relations Group (ERG), the linked Communications Group and the Government Group (GG). Each Network and the GG will meet three times per year and the ERG eight times per year.

- *Network Policy and Economics (NWPE)* and linked TWGs will focus on the political economy. In the European Commission's communication on a European Green Deal, CCS and CCU have been identified as 'breakthrough technology' in support of the trajectory towards climate neutrality by 2050. The work of ETIP ZEP/IWG9 will thus be embedded in a political scenario where the EU needs to deliver on higher climate objectives. Coordination with Member States, EU policymakers and the different parts of the CCUS value chain – represented in the ETIP ZEP/IWG9 membership – is crucial to ensure that these technologies can become operational by 2030 and to support the EU's decarbonisation pathway.
- *Network Technology (NWT)* and linked TWGs will focus on CCS/CCU technologies. As CCS and CCU technologies move into operations and are integrated in Europe's industrial value chain, it will be vital to keep a focus on technological developments and ensure that these are shared within and beyond the CCUS community. Technology developments are foreseeable in all the segments of the value chain – capture, transport, storage, and utilisation. Technical reports will be needed to assess the continuous developments on CCS and CCU and offer an overview on the current status of the technologies. The Network will support continued work on the prioritised R&I activities, crucial to bring down costs, improve efficiency and solve barriers and challenges for upcoming and planned projects.
- *Network Projects (NWP) and linked TWGs will focus on supporting CCS/CCU market-ready projects. An ever-rising number of CCS/CCU projects are progressing towards becoming operational by mid to late 2020s. These are projects in all parts of the value chain, linked to industrial processes, combined with the production of low-carbon hydrogen, some offering the possibility to remove CO<sub>2</sub> from the atmosphere, etc. Among these are the IWG9 so called Exemplary Projects, that were chosen for the 2021 SETIS Reporting Exercise, to help highlight the work undertaken by the IWG. It will be crucial to support these ongoing and upcoming European CCS/CCU projects from a policy, funding and technological point of view, addressing existing barriers for implementation, and enabling the sharing of knowledge on enablers, supportive policy frameworks and funding mechanisms. There will be strong focus on public perception/social acceptance of CCS/CCU projects. The proposal to introduce a new network has been endorsed by the ZEP AC, to effectively support the many upcoming projects in Europe.*
- *The External Relations Group (ERG)* and the linked Communications group. Outreach towards the European institutions and national governments will be pursued and increased to further communicate on the role of CCS and CCU in achieving the EU's climate goals. Given the increasing international climate awareness – with approximately 90 percent of the world economy having announced net-zero GHG emissions targets by mid-century and there about – and increasing interest in CCUS technology, the *project* will engage strongly in international collaboration with existing CCUS initiatives – such as the Mission Innovation, the Clean Energy Ministerial CCUS, the

ERA-NET ACT, etc. Activities in support of this – events, knowledge-sharing seminars, meetings, and other communication channels – will be aimed at raising the profile of CCS and CCU, highlighting their current status, potential and developments, enablers and hurdles, and connecting the stakeholders along the value chain.

- *The Government Group (GG)* is chaired by a national government representative, appoints its own members, operates independently from the ZEP Advisory Council and meets regularly. While national government representatives are directly involved in the work on delivering the CCUS SET Plan Implementation Plan, through the IWG9, they can only be observers in ETIP ZEP – since they cannot be involved in deciding on positions or views on specific EU or Member State policy, legislation, or funding mechanisms. With the strongly increasing interest in CCS and CCU across Europe, interaction with the GG will be crucial: input and support on the work and the delivery of the Implementation Plan, as well as dissemination of project outputs and recommendations. Members of the GG will be invited to attend meetings of the ZEP Advisory Council and the IWG Plenary.
- The Networks and ERG will guide and drive the support to deliver the R&I activities and updated targets identified in the CCUS SET Plan Implementation Plan/IWG9. This will draw on the experience and knowledge sharing from the iterative process where CCS and CCU R&I projects address specific challenges with the results implemented in large-scale projects, which then will identify new challenges that can best be solved by undertaking R&I activities. The described challenges for CCS and CCU development for the coming years are:
  - Getting the commercial framework right.
  - Accelerating timely deployment at scale of CCS and CCU technologies.
  - Driving costs down – through R&I, learning by doing and economies of scale.
  - Enabling rapid scale-up to deliver on the climate goals.
  - Enabling EU citizens to make informed choices regarding the benefits that CCS and CCU bring.

TWGs, proposed by the Networks, will be established after Terms of References, timelines and participation are approved by the AC/Plenary to complete specific work packages under the guidance of the Networks. The Networks and TWGs will be populated by experts from stakeholders. Networks and TWGs will be crucial for knowledge sharing and interaction with key stakeholders, which will be further strengthened by outreach, communication and dissemination activities.



## 2 WORK PROGRAMME 2023

The draft joint ZEP and IWG9 work programme, with both common areas and areas that are specific for ZEP and IWG9 respectively, was approved at the ZEP AC and IWG9 Plenary in December 2022. Terms of References (ToR) for the workstreams highlighted in the work programme will, as usual, be drafted for approval.

The work programme is a living document based on the EU (and member state) policy agenda with a focus on CCS and CCU, and directly linked to the coordinated ZEP and IWG9 governance structure: the Networks and TWGs, the ERG and Communication Group, and the Government Group.

### 2.1 Focus areas on overarching level

- Coordination and close cooperation between ZEP and the IWG9, to continue providing strong support and input to the CCUS SET-Plan (IWG9) activities – necessary to reach Europe’s ambitious 2030 climate goals – and a high level of coordination with other European and global programmes. A review of the coordination and governance structure will also be in the plans.
- The [CCUS Forum](#) is the key vehicle for the EC regarding the development of CCUS in Europe. ZEP is engaged in the Forum working groups (WG) as co-chair of two of the three WGs and an active member in the third. It is crucial to continue the strong engagement in this work – that includes two of ZEP’s key: an EU strategy for CCS and CCU, and a regulatory framework for CO<sub>2</sub> transport infrastructure.
- As more and more CCS/CCU projects are becoming market-ready, there is a need to intensify the support for these projects, cooperate closely and monitor their development.

### 2.2 Delivering on the day-to-day work

#### Network Policy & Economics (NWPE)

The Network and the TWG Policy & Funding remains the main point of contact for the preparation of responses to consultations and other input to the EC. Focus areas for the NWPE:

- The CCUS Forum and the ongoing and planned working groups: For the consultation on the 2023 EC Communication, CO<sub>2</sub> infrastructure, Industrial partnership, and Public awareness. Providing support to the Forum work, with the special aim of enabling an EU strategy for CCS and CCU and the proposed regulatory framework for CO<sub>2</sub> transport infrastructure, will be of key importance to maintain the positive momentum and drive implementation.
- The two EC studies – the technical study on CO<sub>2</sub> transport infrastructure and the study on regulatory issues on CO<sub>2</sub> transport and storage infrastructure. The upcoming revision of the National Energy and Climate Plans (NECP).
- Provide insights on EU and national support instruments for CCUS R&I and deployment and how they interact (in cooperation with the Network Technology (NWT)).

- The policy instruments under the ‘Fit for 55 package’, with a focus on the EU ETS, the Carbon Border Adjustment Mechanism, the Innovation Fund, and the Renewable Energy Directive.
- The upcoming work on a revision of the Monitoring and Reporting Regulation.
- Follow and contribute to the revision of the CO<sub>2</sub> Storage Directive Guidance Documents. The NWT will focus on technical aspects and the NWPE will support on regulatory and funding aspects.
- CO<sub>2</sub> transport by ship, follow-up from the first WG on CO<sub>2</sub> transport by ship. The aim is to investigate the scope and trade routes for CO<sub>2</sub> ship transport, follow up on interoperability and the work done by ISO, IMO, and SIGTTO, address existing barriers to commercialisation, and identify possible work needed for a Europe-wide CO<sub>2</sub> storage market.

### Network Technology (NWT)

The Network will continue its very active work programme, engaging experts from members and observers on technical aspects regarding deployment of CCS and CCU. Focus areas for the NWT:

- Carbon Dioxide Removals (CDR) – The TWG CDR will continue to follow and give input to the ongoing international work of Mission Innovation on CDR. Moreover, it will follow up on the Communication on Sustainable Carbon Cycles – notably, the recently adopted EC proposal on a certification framework for carbon removals, incentive schemes, the development of voluntary carbon markets, accounting, standards and methodologies, including compliance with article 6 of the Paris Agreement. The TWG will be the central focus for ZEP’s work on CDR and will be supported by the NWPE.
- Recommendations on CCUS R&I priorities for the Horizon Europe work programme.
- Progress review and recommendations on the key IWG9 R&I activities. The plan is to have six reports updating R&I activities over the coming three years, starting with a report focused on CO<sub>2</sub> transport infrastructure and PCIs (2023). For 2024 and 2025 there will be reports on Capture, Storage, Utilisation, Commercial-scale CCS and Linking EU and national strategies and plans on CCS and CCU. These reports will follow up and be based on the eight R&I activities reports prepared by the IWG9.
- Analysis of the implications that the energy crisis – specifically the reduced access to energy – will have on the different CCS and CCU technologies (and thus the transition towards net-zero).
- Analysis of the risks involved in the CCUS supply chain – including materials, technology, and expertise.
- Follow and provide input on the EC/JRC technical study on optimal CO<sub>2</sub> networks.
- Provide guidance and input to the CCUS Forum Working Group on CO<sub>2</sub> infrastructure, regarding CO<sub>2</sub> specifications in the context of an integrated European CO<sub>2</sub> transport and storage network. The aim is to build a common understanding on CO<sub>2</sub> specifications along the value chain. The focus will be on the need for standards and the framework under which such these could be

developed. How this work will be set up and undertaken will be discussed with the Network Technology co-chairs.

- Follow and contribute to the revision of the CO<sub>2</sub> Storage Directive Guidance Documents. The NWT will focus on technical aspects and the NWPE will support on regulatory and funding aspects.
- The NWT will support the TWG on CO<sub>2</sub> transport by ship regarding objective 1 and 2 of the appended.

#### New Network Projects (depending on other EU grants)

*Creation of this Network in the ZEP structure will depend on the extent to which other EU grants cover this topic. Focus areas for this Network:*

- *Supporting market-ready projects from a policy, funding and technological point of view*
- *Addressing existing barriers*
- *Improving public perception, and*
- *Enabling knowledge sharing.*

#### External Relations Group (ERG)

For the areas of specific interest for ZEP – highlighted above – the ERG will guide communications and outreach activities. Given the many ongoing EU policy initiatives and legislative processes, the initial focus of communications for end-2022 and 2023 will be to secure meetings with policymakers and provide input to EU policy initiatives. In parallel, the ERG will guide the execution – on behalf of the AC – of the communications and dissemination activities connected to the ZEP reports, hosting events and webinars, and communicating through social media and the newsletter. The ZEP Communications Group will play an important role here, as a direct channel to the wider group of members for coordination and information exchange on messages and activities.

#### Government Group

With several countries preparing national strategies for CCUS and an increasing number of ongoing and planned CCUS projects across Europe, the ZEP Government Group – where the interest from member states and permanent representations is growing – will be crucial in the coordination between EU and national strategies, policies, and funding opportunities.