

IWG9 Plenary and ZEP 72nd Advisory Council 14 September 2022, 10:30-17:00 CEST

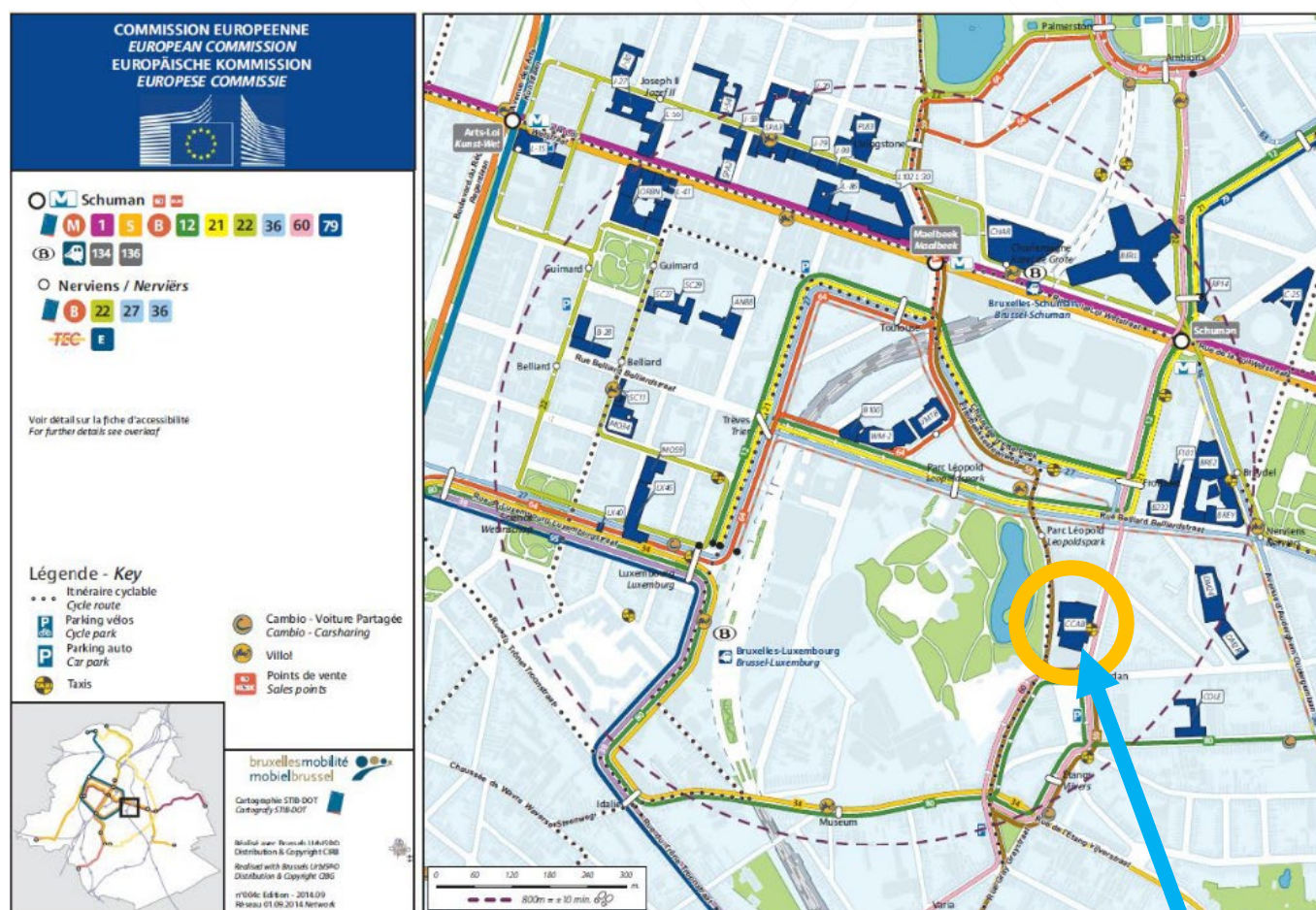
Agenda Item 1: Introduction and welcome

1.a. Meeting instructions

The IWG9 Plenary and ZEP AC72 meeting will be a physical meeting. It will be held in Room 4B, Centre Albert Borschette, European Commission, 36 rue Froissart, Brussels.

Virtual participation will be facilitated for those who needed, with Microsoft Teams. The link to join virtually can be found in the Outlook calendar invitation, but you can also [click here to join](#).

Detailed instructions on how to reach the Centre Albert Borschette, where the physical meeting will take place, are provided below



Conference Centre
Albert Borschette



1.b. Draft meeting agenda

The draft agenda for the 72nd meeting of the ZEP Advisory Council and IWG Plenary is appended as pre-read 1.b.

1.c. ZEP AC71 draft meeting minutes

The draft meeting minutes from the 71st meeting of the ZEP Advisory Council, which took place on 15 June 2022, are appended as pre-read 1.c.

1.d. ZEP ACEC July meeting minutes

The ZEP ACEC July meeting minutes are appended as pre-read 1.d.

IWG9 Plenary and ZEP 72nd Advisory Council

14 September 2022, 10:30-17:00 CEST

Draft meeting agenda

Item	Lead Presenter	Time
1 Welcome and introduction – for information	ZEP chair and IWG9 co-chairs: Graeme Sweeney, William Christensen, Joëlle Rekers	10:30-10:45
2 The new grant and set-up for ZEP and IWG9 – for information and guidance <ul style="list-style-type: none"> Coordination and work programme ZEP accounts 	Per-Olof Granström	10:45-11:30
3 State of play CCUS Implementation Plan/IWG9 – for information <ul style="list-style-type: none"> Presentation of IWG9 R&I activities, status, and progress Comments and insights Revamping of the SET-Plan 	IWG9 Co-chairs, Subgroup chairs Vassilios Kougionas, DG RTD	11:30-12:15
4 Updates from the Networks	Network Co-Chairs	12:15-12:45
5 Updates from the ERG	ERG Co-Chairs	12:45-13:00

LUNCH BREAK

6 PCI, Innovation Fund, and projects – for information and guidance <ul style="list-style-type: none"> Results of second and preview of third large-scale Innovation Fund call Cross-border liability Next PCI list Project presentation: Antwerp@C 	Daniel Kitscha, DG CLIMA Chris Bolesta, DG ENER Anne-Frédérique Demaerel, Port of Antwerp-Brugge	14:00-14:30
7 CCUS Forum – for information and guidance <ul style="list-style-type: none"> Updates on the Forum and working groups Follow-up on CO2 infrastructure studies 	DG ENER, WG co-chairs Zoi Kapetaki, JRC	14:30-15:15
8 Horizon Europe work programme – for information and guidance	Vassilios Kougionas, DG RTD	15:15-15:45
9 Carbon Dioxide Removal – for information and guidance <ul style="list-style-type: none"> Update from the European Commission Updates on Mission Innovation CDR 	Fabien Ramos, DG CLIMA Mark Ackiewickz, US Department of Energy	15:45-16:30
10 ZEP and IWG9 actions	ZEP chair and IWG9 co-chairs	16:30-16:50
11 Closing remarks and next meeting	ZEP chair and IWG9 co-chairs	16:50-17:00

DRAFT MEETING MINUTES
ZEP 71st ADVISORY COUNCIL MEETING

15 June 2022, 10:00—13:00 CET

Virtual meeting

1. Introduction and welcome

Chair, **LE**, opens the meeting. Shares Graeme Sweeney's apologies not to be able to join.

Chair asks AC members if there are further items for the meeting agenda – no further items and the agenda is adopted. Chair asks AC members for approval of minutes from AC70, ACEC April – provisionally approved at ACEC May – and ACEC May. All approved.

Chair welcomes new member Hydro and AC representative Liv Rathe to ZEP and the Advisory Council.

2. ZEP development and grant

POG gives an update on ZEP financial status and budget for 2022, highlighting that the ZEP AC has anticipated gaps in grant funding, prepared the funding of the provision on secretarial support during the gap, with the endorsement of the AC and the approval of the ZEP-C Board of Directors. In this context ZEP and IWG9 also asked the EC/CINEA for support, with the response to fast-track the grant agreement process for a possible start in July. During the funding gap there are no funds dedicated specifically to IWG, so the ZEP and IWG9 Chairs decided that the provision of services should be exclusively for ZEP until the next grant starts.

POG notes that the CCSA has been selected by the CINEA and that grant agreement preparations are ongoing, and that the ZEP and IWG9 Chairs will meet on 24 June to discuss how to coordinate the work of the two platforms under the combined grant.

POG finally presents the finances outlook and proposed budget for 2022 and invites the AC to endorse the budget ahead of the approval by the ZEP-C AGM.

JH congratulates ZEP for the work and for achieving the shortening of the gap in grant funding. Chair reiterates this.

Chair asks for endorsement of the 2022 budget – the ACEC endorses.

3. Updates from Networks

a. NWPE

CS provides an update from NWPE, highlighting the following:

- ZEP is also looking at how to help creating equivalence between the EU and UK ETS frameworks, so that emitters in both jurisdictions can obtain credits from each other's systems.
- The EC is to propose a certification framework for removals by the end of the year and set up an expert group to that end. ZEP is therefore planning its contribution and input to that group.
- Within TWG P&F, members are currently thinking through how to best implement the TEN-E regulation and ensure that PCI projects meet its requirements, to give input to CINEA and the JRC. Workgroup participants also discussed Carbon Contracts for Difference in relation to CCS. Discussions on CDR within TWG P&F also seek to identify best policy practices and policy elements in other jurisdictions that can be brought into the EU discussions.

SC asks about the thought process on CBAM and the MRV with regards to high-quality CO₂ storage. **CS** considers this a key point and refers to the equality between the EU and UK ETS. **POG** notes that the MRR will come up over the coming months in the EU policy work and be crucial in the ZEP work.

CM asks for more information regarding the questionnaire on CO₂ infrastructure, adding that IOGP would like to contribute to this critical area of work. **POG** highlights that this questionnaire specifically concerns the PCIs and that the EC is coordinating this work with the JRC.

Chair asks AC to approve the submitted draft ZEP paper on EU-UK ETS. Approved.

POG gives a brief update on the CCS+ Initiative, reminds attendants that ZEP is a member of the Advisory Group, note some crucial items – such as the differentiation between reductions and removals, and informs that the work has been further postponed with the public consultation coming up in 3-4 weeks.

b. NWT

FN gives an update on NWT, mentioning the latest meeting that took place two weeks ago, discussing ongoing activities and exploring new topics: REPowerEU, Mission CDR, and ISO. He informs that three new reports are publicly available on the ZEP website:

- Experience in developing CO₂ storage under the Directive on the geological storage of carbon dioxide
- Guidance for CO₂ transport by ship
- CCS for clean flexibility

FN further highlights that a temporary working group has been set up to support Mission CDR. Members of the TWG will participate in the Mission CDR meeting next week Tuesday. **FN** informs that a new working group started in within the ISO work, coordinated by Owain Tucker. The working group aims to revisit the currently existing ISO standard on CO₂ storage.

AH provides an update on the TWG CCS from a Biodiversity and land use perspective, highlighting the report that is being drafted. The aim is to formulate key principles in this perspective. One important question is the integration of biodiversity assessment for projects. He highlights that the report will feature examples from the industry and overviews of the costs and emissions mitigation potential of various practices. The TWG has also identified a lack of understanding in how to measure sustainability in this area.

- **PM** asks if the report will provide information related to offer of biomass and land use. **AH** replies that a lot of literature was considered and taken into the study. Chair informs that this is an excellent opportunity to join the working group. **PM** says she would be happy to contribute.
- **WB** asks if the report will refer to other biodiversity issues, such as impact of CO2 storage on maritime life. **AH** replies that there is a strong focus on onshore biomass.
- **LR** asks if there will be a study on classification. **AH** replies that classification will not be included.
- **JH** highlights the possibility to take onboard biomass expertise outside of ZEP, referring the ETIP Bioenergy where a joint taskforce on Bio-CCS was created. **AH** replies that there are several references to that work in the current report literature.

AH updates on the latest ZEP report on CCS for clean flexibility, that has been endorsed by the ACEC in May and is up for approval today at AC71.

- **SS** remarks that the world has changed drastically with Russia's war of aggression against Ukraine, highlighting that we should avoid focusing on CCS for gas-fired plants.
- Chair notes the ZEP aim to focus on the CCS element and technology-neutrality to avoid a political debate.
- **SO** agrees, noting that BP would be happy to contribute with its expertise. The outlook for gas might change in the future, so it is important to have all the options on the table.
- **SS** notes that a new generation of coal fired plants can be flexible today and would like the report to be updated with this.
- **POG** proposes to keep the report as is, since it has already been widely distributed and instead to add a short description on this linked to the report on the ZEP website.

Chair asks the **AC** for approval of the presented report. Approved.

CAB provides a brief update regarding the EP's EU ETS report that was rejected by the EP plenary. The new possibility to vote the report through will be on 22 June. Regarding the EU Taxonomy the EP's ENVI and ECON committees voted yesterday against the inclusion of nuclear and gas – the EP plenary is to vote on this issue in early July.

4. Updates from External Relations Group

JH updates on latest discussions within the ERG, mentioning the REPowerEU communication and the challenge posed by replacing Russian gas with gas from other countries, which attests to the

continued need for CCS in this area. **JH** also states that the context for the cement industry has not changed at all, while discussions within the steel industry have evolved regarding green hydrogen. **MS** follows with an update on the latest and upcoming ZEP events – covering the EU Green Week, report launches, and EU Sustainable Energy Week.

5. REPowerEU

CB presents the latest REPowerEU Plan and outlook for CCS technologies within this context, highlighting that there are some connections to CCUS that can be established. **CB** highlights policy areas where CCS plays an important role including the EU strategy on international energy engagement that includes a key action to bring CCS to market maturity.

CJ gives a presentation on the Florence School of Regulation (FSR) views on REPowerEU Plan, stating that the basic premise is correct – to increase domestic production, including renewables, biomethane and energy efficiency. He also highlights challenges: (1) there is no impact assessment, (2) there is no analysis of cost efficiency, (3) the targets on renewable energy will be hard to receive, which can lead to counterproductive results. He describes the scale of the challenge and notes that if we fail to meet these targets we will still be reliant on Russian gas:

- The targets aim to install 274GW of wind energy in 8 years. This would mean 91 000 of the largest onshore turbines that we have today.
- To meet the PV targets, land use twice the size of Luxembourg would be needed.
- REPowerEU hydrogen targets would need 100 projects like the Neon plant in Saudi Arabia (the biggest hydrogen plant in the world) to be deployed in 8 years.

CJ notes the cost issue, highlighting that green hydrogen can be competitive if in a sunny place at low cost, but that this is not the case in all scenarios: Blue hydrogen will still play a competitive role, why CCS is a big hole in REPowerEU. An FSR study puts the ETS price needed for green hydrogen to be competitive at 600€/ton. He concludes that REPowerEU has the right premises but is hardly achievable, possibly leading to a scenario where Russia will have power for longer. In that context the use of indigenous gas reserves combined with CCS, producing blue hydrogen, will be crucial.

- **CB** reiterates that one can see areas where CCS is still relevant.
- Chair notes that REPowerEU reflects a political consensus regarding the increased ambitions in terms of renewable energy, and that domestic production of gas is outside the scope of ZEP.
- **SC** congratulates **CJ** for a fantastic summary, and remarks that the implementation of the infrastructure element of the REPowerEU plan will require careful spatial planning in already congested areas. Wonders if there is a role for ZEP in this urban planning.

LSN and **CS** present the latest developments in formulating a ZEP response to the two calls of evidence announced under REPowerEU, stating that an agreement was not possible with regards

to additionality, and that there is the need to reconcile the position of additionality and those of companies that wish to put a premium on the fast deployment of electrolyzers.

- **POG** notes that to support blue hydrogen, a level playing field between green and blue hydrogen, taking into account the additionality principle, is crucial.
- **SO** agrees about the need to work together to find a common text.

6. CCUS Forum and CO2 infrastructure

CB updates on the latest developments for the CCUS Forum that is to be organised in October this year. Highlights that each working group will include approx. 70 participants – highlighting the vast interest. The EC is now working to appoint co-chairs for the working groups, aiming to organise the first meetings (online) in June. Regarding the studies, the work has not yet been started. **CB** states that REPowerEU will be a topic for the CCUS Forum, and especially with regards to the LNG terminals.

ZK provides an outlook for the upcoming study on CO2 infrastructure, which will be based on a 10 years old JRC study. **ZK** remarks the many changes in recent years and the need for an appropriate scenario with the correct assumptions, responding to the current and future potential landscape for decarbonisation in Europe. Highlights that ZEP is a very important stakeholder in this workstream, which is expected to be start later in 2022 and end in the spring of 2023.

- **FRM** highlights that IOGP has requested a study from consultants on the repurpose and reuse of gas pipelines in Europe.
- **ZK** reiterates that ZEP is one of the most important stakeholders in this process and invites ZEP to have a chat with **CB** and find a way to put this together. Chair proposes to include this in future meetings of the ZEP Networks.
- A discussion ensues with **SC**, Chair and **POG**, about intergovernmental agreements, crucial issues to be taken into account, as well as ZEP's role in providing support for governments and the EC to achieve the climate targets.
- **CB** highlights that in addition, an EC study on CO2 infrastructure regulatory frameworks and led by external consultants will be started. ZEP will be invited to provide input for the TOR. **KBB** proposes for ZEP to look at the regulatory blockers and provide input to the study. **CB** confirms that this would be of great help.
- **FRM** highlights that IOGP would be pleased to give input regarding ambitions for CO2 storage in Europe in collaboration with ZEP. Chair asks if IOGP has something on paper that could be shared. **FRM** replies that a memo will be shared with ZEP. **JH** agrees that ZEP members can sympathise with this concept and suggests expressing the ambition in percentage levels with regards to CO2 emissions. Chair suggests having further discussions once the IOGP has shared a written document.

7. CDR

DK provides the latest information on CDR from the EC, highlighting that the EC is preparing a legislative proposal aimed for Q4 2022, and that an expert group on the certification method will be set up. **DK** states that storage is perceived a key issue for the EC at the moment, mentioning a gap of 10Mtpa CO₂ storage by 2030 for the Innovation Fund projects.

VK gives a presentation on Mission Innovation CDR, of which the EC is a supporting member, and that a final draft of the HE working programme will be presented before the summer holidays. On the CDR Mission, **VK** highlights the Roadmap and that ZEP TWG CDR can provide good input, starting with the workshop to be held on 21 June. **VK** highlights other upcoming events: The Carbon Sequestration Leadership Forum (CSLF) Mid-Year Meeting and CDR workshop in Bergen, Norway, on 27 and 28 June. The 2022 Clean Energy Ministerial, 22-23 September, in Pittsburgh, USA.

8. Closing remarks and next meeting

Chair thanks all ZEP AC members and guests for participating. As the calendar stands, the AC72 meeting will be organised on 14 September as a full day physical meeting in Brussels.

List of participants

AC members		
1	Vicente Cortés	AICIA/University of Sevilla
2	Jonas Helseth	Bellona
3	Shirley Oliveira	BP
4	Chris Littlecott (tentative)	E3G
5	Salvatore Giammetti (<i>proxy to Roberto Ferrario</i>)	ENI
6	Lamberto Eldering	Equinor
7	Robin Clowes	ExxonMobil
8	Constantin Sava	GeoEcoMar
9	Winston Beck	HeidelbergCement
10	Florence Delprat-Jannaud	IFPEN
11	Kim Bye Bruun	Northern Lights
12	Syrie Crouch	Shell
13	Nils Røkke (<i>proxy to Chair</i>)	SINTEF

14	Charles Soothill (<i>proxy to Chair</i>)	Sulzer
15	Stijn Santen	EBN
16	Ward Goldthorpe	Sustainable Decisions
17	Filip Neele	TNO
18	Dorus Bakker (<i>proxy from Allard Castelein</i>)	Port of Rotterdam
External speakers		
19	Chris Bolesta	European Commission
20	Vassilios Kougionas	European Commission
21	Daniel Kitscha	European Commission
22	Zoi Kapetaki	Joint Research Centre
23	François-Régis Mouton	IOGP
24	Christopher Jones	Florence School of Regulation
Guests		
25	Fatiha Housni	Air Liquide
26	Marc David	Air Liquide
27	Eric Deconinck	ArcelorMittal
28	Frederik Pieters	BASF
29	Hanna Biro	Bellona
30	Lina Strandvåg Nagell	Bellona
31	Esmé Brandon	BP
32	Oskar Gehrmann	BP
33	Ceri Vincent	British Geological Survey
34	Robert van der Meer	CEMBUREAU
35	Alessia Virone	Clean Air Task Force
36	Rowan Emslie	Clean Air Task Force
37	Toby Lockwood	Clean Air Task Force

38	Eve Tamme	Climate Principles
39	Anastasios Perimenis	CO ₂ Value Europe
40	Cat Reynolds	Drax
41	Tom Mikunda	Dutch Ministry of Economic Affairs and Climate
42	Roberto Ferrario	ENI
43	Lucie Boost	Equinor
44	Federico Benito Donà	EUROFER
45	Adrian Nicolae	European Commission
46	Amir Bahrami	ExxonMobil
47	Antonella Sopranzetti	ExxonMobil
48	Marine Valdois	ExxonMobil
49	Yelda Guven	ExxonMobil
50	Jørild Svalestuen	Gassnova
51	Angus Gillespie	Global CCS Institute
52	Guloren Turan	Global CCS Institute
53	Marlene Arens	HeidelbergCement
54	Axel Scheuer	IOGP
55	Caterina de Matteis	IOGP
56	Arthur Heberle	Mitsubishi Power Europe
57	Mark McCrory	Neptune Energy
58	Thomas Vanhauwaert	Neptune Energy
59	Ana Mingo	Norsk Hydro
60	Liv Rathe	Norsk Hydro
61	Charlotte Elvsaas	Norwegian Ministry of Petroleum and Energy
62	Henriette Nesheim	Norwegian Ministry of Petroleum and Energy
63	Stig Svenningsen	Norwegian Ministry of Petroleum and Energy

64	Raphael de Loenen	Port of Antwerp
65	Bram Sommer	Port of Rotterdam
66	Dorus Bakker	Port of Rotterdam
67	Christian Schwarck	Shell
68	Kristin Jordal	SINTEF
69	Heinz Felder	Storaenso
70	Ian Phillips	Storegga
71	Tim Peeters	Tata Steel
72	Cyril Vock	TotalEnergies
73	Hernan Silva	TotalEnergies
74	Morten Gjetting Stage	TotalEnergies
ZEP Secretariat		
75	Per-Olof Granström	ZEP Secretariat
76	Charles-Albert Bareth	ZEP Secretariat
77	Murillo Salvador	ZEP Secretariat

ACEC July meeting

12 July 2022

9:00-10:15 CEST

Draft meeting minutes

1. Introduction and welcome

Chair, GS, welcomes all, confirms quorum, and reminds all of meeting instructions.

Chair asks for approval of the ACEC July meeting agenda – agenda is approved.

Chair asks for endorsement of draft meeting minutes from the ACEC May meeting. Minutes are endorsed.

Chair asks for endorsement of draft meeting minutes from the 71st Advisory Council meeting, held in June. Minutes are endorsed.

2. The new grant work programme

POG welcomes Ana Faria, who has joined the CCSA as Policy and Communications Officer and will support ZEP's work. **AF** greets the ACEC members and describes her background, experiences and expertise.

POG gives an update regarding the new Grant, highlighting the reasons for the delay, and the agreement between the ZEP Chair and IWG9 co-Chairs regarding the structure and setup, and coordination of the work between the two platforms based on the guidance document produced in 2021. He highlights the basis for the upcoming work and how to coordinate the work and governance structures and notes the constrained budget and thus the need to find a solution to separately fund crucial experts, e.g. to continue the IWG9 work on CO2 storage.

POG notes the proposed process to prepare draft work programmes for guidance at the September AC/Plenary and for endorsement in December. For this reason, it is proposed to reschedule the ACEC August meeting to end-August/beginning of September, and to use this meeting as a strategic seminar, focusing on the coordination with the IWG9 and the work programmes. Finally, he asks the ACEC to endorse the proposed way forward and to decide on the date for the next ACEC meeting.

Chair reminds the ACEC that he is also Co-chair of IWG9 and welcomes the proposed full-day coordinated AC/Plenary meetings every quarter, highlighting that this will help maximise attendance. Referring to funding expert resources, he notes that ZEP does not have this issue thanks to contributions from membership, and that the difficulty is to find a funding setup while maintaining the independence from financial contributors. **POG** notes the importance of public funding as a basis for the grant work, something that many ZEP members have highlighted. *Chair* notes the difference between Norway and

the Netherlands, both co-Chairs of IWG9, regarding the possibility to add further public funding. **MB** highlights that Norwegian CLIMIT funding may be available and that she would be pleased to contribute to this discussion.

Chair notes support for the way forward and for the ACEC meeting to be organised on Thursday 1 September at 9:30-12:00.

3. Updates from Networks

a. NWPE

CS gives an update on NWPE, highlighting items discussed at the latest meeting of TWG P&F on 10 June:

- Differences of views within the TWG P&F on how renewable power should be additional to electrolyser deployment. This has made it impossible for the TWG to propose a draft ZEP response to the REPowerEU consultation response. There will be a renewed discussion on this in the TWG this Friday.
- The importance of Carbon contracts for difference, e.g., as an incentive for low-carbon hydrogen will be discussed in the next TWG information session. Discussions will also focus on whether such a mechanism will be needed at the EU level.
- The action to include non-pipeline CO₂ transport in the TEN-T revision, where there is a difficulty to identify elements for funding.
- Providing input to the EC regarding the methodology to assess candidate PCI CO₂ infrastructure projects, given the inclusion of CO₂ storage.

Finally, **CS** highlights the latest EU policy developments, covering the EU Taxonomy and the revision of the EU ETS.

CAB gives an update regarding two possible draft ZEP responses to new EC calls for feedback, mentioning that these will be discussed with the TWG P&F on Friday.

- The chapters on the resilience and recovery plans regarding REPowerEU only include 'renewable and fossil free hydrogen'. The short draft response suggests to also include low-carbon hydrogen.
- Response on the revision of the TEN-T Regulation, that reiterates the need for large-scale CCS deployment and open-access cross-border CO₂ transport infrastructure in Europe, highlighting non-pipeline transport and that the TEN-T regulation therefore should introduce funding mechanisms for this.

POG highlights that ZEP has a clear and established view on additionality but that in this case, as noted in the pre-reads, the TWG could not reach an agreement on the details. The TWG will make a new try at their meeting on Friday. *Chair* concludes that it is difficult to see how this issue could be solved on a short notice.

On the response related to the TEN-T, **POG** highlights the need to come up with a clear list of which items within non-pipeline transport that could be funded by the TEN-T. **CS** notes potential candidates, such as onboard CO₂ capture modules for the ships, CO₂ metering systems, as well as granular aspects of inland barges, and notes the difficult balance between ambitious proposals and proposals that are too small to be considered.

It is noted that, after the TWG P&F meeting on Friday, possible endorsement of the draft responses by the *Chair* alternatively by engaging the ACEC will be needed.

b. NWT

FN gives update on NWT, highlighting the Mission CDR workshop and the latest discussions in TWG Mission CDR, where ZEP is supporting the European Commission's work.

AH gives an overarching presentation of the draft ZEP report on CCS in a Biodiversity and Land Use Perspective, highlighting the proposed report conclusions. There are no comments or questions referring to the presentation. The report will be shared with the ACEC on 15 July for endorsement, with a deadline for endorsement on 22 July.

4. Updates from External Relations Group

LB gives an update on the ERG, highlighting the latest Northern Lights Summit – noting the increasing interest in capture sites within the discussions – and the newly established LinkedIn page for ZEP. **MS** follows to present the program for the upcoming ZEP events on 18 July, related to the Directive on geological storage of CO₂ and titled “Learning from experience in geological CO₂ storage”.

5. CCUS Forum

POG gives an update regarding the CCUS Forum working groups (WG), and their respective co-Chairs as recently communicated by the EC. Informs that ZEP will co-Chair the WG on CO₂ infrastructure with Bellona and IOGP, and the WG on Industrial partnership, along with Cembureau and the European Lime Association (ELA). ACEC endorses that POG will personally represent ZEP as Co-chair of the WG on CO₂ infrastructure.

The aim of WG CO₂ infrastructure, where a first meeting will be organised on 20 July, is to guide the EU and produce an issue paper – 2-3 pages – ahead of the CCUS Forum Plenary in October/November, and to follow-up with a full report for the 2023 Plenary and the EC Communication that is expected end 2023. The proposed structure for the paper is presented, focusing on Technical, Regulatory and economic development as well as clear guidance for Governments and the upcoming revision of the National Energy and Climate Plans (NECP). **POG** highlights that the ZEP Governance structure – focused on the ACEC and the TWG P&F due to timing issues – will be guiding and giving input in the WG work.

POG asks the ACEC for support on the described way forward, and that **POG** will be the ZEP co-chair for the CO2 infrastructure WG, and proposals regarding who to take up ZEP's role as co-Chair in WG Industrial partnership. Here it would have been logical to propose ZEP Industry constituency Vice Chair, Winston Beck, however, this is impossible since the other co-Chairs will be taken up by Cembureau and the ELA.

The way forward, and the ZEP co-chair for the CO2 infrastructure WG, is endorsed, and *Chair* proposes that possible candidates be prompted to see who could take on this role.

6. Closing remarks

Chair thanks all for participating in the meeting. Reminds that AC72 will take place on 14 September. The next ACEC meeting is planned for 1 September, as agreed under item 2. Closes the meeting.

List of participants

Dr Graeme Sweeney	ZEP Chair
Michal Wendolowski (<i>proxy from Jonas Helseth and Nils Røkke</i>)	Bellona SINTEF
Lucie Boost (<i>proxy for Lamberto Eldering</i>)	Equinor
Per-Olof Granström (<i>proxy for Winston Beck</i>)	HeidelbergCement
Filip Neele	TNO
Arthur Heberle	Mitsubishi Power Europe
Marie Bysveen	SINTEF
Christian Schwarck	Shell
Ana Faria	ZEP Secretariat
Charles-Albert Bareth	ZEP Secretariat
Murillo Salvador	ZEP Secretariat
Per-Olof Granström	ZEP Secretariat

Agenda Item 2: The new grant and set-up for ZEP and IWG9

2.a. The new grant – coordination and governance

Background

In the call for proposals for the new Coordination and Support Action – HORIZON-CL5-2021-D3-02-15: Support to the activities of the ETIPs and technology areas of the SET Plan ([link to the call text](#), page 171) – the European Commission (EC) highlighted the following:

- Only one project funded per sector (*previously there were separate ETIP ZEP and IWG9 grants*)
- Decreased budget: €1 million over three years (*previously the total budget for the two platforms were > €2 million*)
- Advancement towards more interconnected activities, both in terms of contents and implementation mechanisms.

[The IWG9/ZEP guidance document](#), that was prepared to guide applicants, highlights the aim to preserve the strengths from both IWG9 and ZEP and to coordinate the activities to increase impact, efficiency, and benefits for stakeholders.

There will be an update regarding the status of the grant at the AC/Plenary meeting.

Basis for the new grant

The general aim of the new grant is to facilitate effective cooperation between relevant CCS and CCU stakeholders based on ETIP ZEP and the IWG9, to support the existing SET Plan Implementation Plan, and to advance towards more interconnected activities both in terms of contents and implementation mechanisms. In short, the objectives are to:

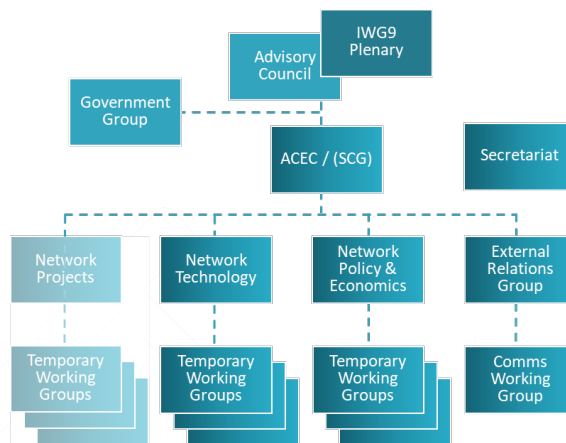
- Support alignment and efficient coordination of stakeholders' activities through the IWG9 and ETIP ZEP to ensure active engagement in implementing the SET Plan
- Deepen participation and foster cooperation between stakeholders relevant to CCUS and the clean energy transition
- Accelerate the clean energy transition by progressing the delivery of the CCUS R&I activities
- Support the progress of emerging policy priorities at EU and national level for the implementation of CCUS
- Develop and implement robust outreach approaches and engagement across the EU and associated countries.

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.

Governance

To deliver as impactful support as possible for the CCUS SET Plan Implementation Plan (and considering the decreased budget), the aim is to fully align and coordinate all ZEP and IWG9 activities and measures in one ZEP/IWG9 governance structure:

- *Quarterly meetings with the ZEP AC and the IWG9 Plenary:* Coordinated meetings on the same day with one combined agenda, pre-read and send-outs, etc. but with a clear divide regarding the respective decisions between the IWG9 Plenary and the ZEP AC.
- *Meetings with the Advisory Council Executive Committee* for follow-up and decisions between the quarterly meetings. IWG9 co-chairs will be invited.
- *Three networks: Network Policy and Economics, Network Technology, and Network Projects* will each meet 3-4 times per year and handle items for both ZEP and IWG9. Temporary Working Groups (TWG) under each Network to deliver work for the specific items, based on ToRs approved by the ZEP AC and/or the IWG9 Plenary depending on the item. The work within Networks and TWGs will also be coordinated with other European and international CCS and CCU initiatives. (*Network Projects – inclusion previously endorsed by the AC – and linked TWGs will focus on supporting market-ready projects from a policy, funding and technological point of view, addressing existing barriers and public perception, and enable knowledge sharing. This Network will be included depending on if and how other EC grants takes this into account*).
- Outreach and external relations (towards the European institutions, national governments, etc.) relating to the technical, policy, regulatory, and economic work both ZEP and the IWG9 will be guided/handled by *the External Relations Group and the Communications Group*.
- Given the strong momentum with more than 20 governments participating in its meetings over the last year, the *ZEP Government Group* is crucial to get input from, support and liaise with European governments.
- *The Secretariat* will facilitate and coordinate all the work of ZEP and IWG9.



The ZEP Chair and the IWG9 Co-Chairs, as well as the ZEP ACEC have discussed and supported the proposed coordination and governance structure of the two platforms. The AC and Plenary are invited to endorse the governance structure.

2.b. ZEP-C finance update per 31 August 2022 and end-year outlook

Appended is ZEP-Communications (ZEP-C) financial management report of 31 August 2022.

- Income: Income for 2022 is expected to be €290,000, including new member joining in June 2022.
- Expenditure: Due to Covid-19, the expenditure for January through August 2022 is lower than budgeted. Virtual meetings have given the opportunity to strongly increase ZEP activities, while at the same time keeping costs low. In-person and hybrid meetings are in the plans from September 2022.
- ZEP-C funding for the provision of services during the gap in grant funding from January through June 2022 is budgeted to €140,000.
- The ZEP-C financial reserves are expected to increase from €301,506 at the end of 2021 to approximately €326,014 at the end of 2022.

There have been long and prolonged gaps between the previous ZEP and IWG9 grants and the new grant. The ZEP AC has anticipated this risk and built up financial reserves in ZEP-C for the provision of secretariat support. With the AC's endorsement, the ZEP-C Board of Directors approved funding during the grant gap period. ZEP and the IWG9 have also been in contact with the EC regarding these long gaps in grant funding.

2.c. Basis for the grant work programme

The aim is to have a joint ZEP and IWG9 work programme, with both common areas and areas that are specific for ZEP and IWG9 respectively.

The work programme is a living document based on the EU (and member state) policy agenda with a focus on CCS and CCU. The current EU policy agenda holds many areas that have an impact on the development and deployment of CCS and CCU in Europe (see table below). The work programme will be based on the governance structure: the Networks and TWGs, the ERG and Communication group, and the Government Group.

An early outline of the joint work programme will be presented to the ZEP AC and IWG9 Plenary for guidance (see outline below). Based on the AC/Plenary guidance, the programme will then be discussed at Network and ERG meetings and the final version will be presented to the ZEP AC/IWG9 Plenary in December for endorsement. Both the AC and the Plenary will be invited to endorse the whole joint work programme, the common part as well as the respective separate parts.

There will be an introductory presentation of the EU policy agenda focused on CCS and CCU at the meeting. Based on this and the early outline, the AC and Plenary are invited to give input and guidance for the work programme.

The policy agenda with a focus on CCS and CCU

	September 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Infrastructure	EU framework for CO ₂ cross-border transport agreements					
	TEN-T (TRAN Committee)			EP vote on TEN-T		TEN-T Implementation Report
	EC studies on CO ₂ infrastructure					
Fit for 55		<ul style="list-style-type: none"> EU ETS (final act) CBAM (final act) EP vote on AFIR revision 	AFIR revision (final act)			
				MRR Revision		
	EP vote on RED II revision		RED II revision (final act)			
CCUS Forum		<ul style="list-style-type: none"> Plenary (Nov/Oct 2022) WG CO₂ infrastructure Issue Paper WG Vision Paper 	<ul style="list-style-type: none"> WG CO₂ infrastructure Full Report 			<ul style="list-style-type: none"> EC Communication on CCUS Forum Plenary
CCS Directive		Revision of Guidance Documents				
CDR		<ul style="list-style-type: none"> EP resolution SCC EC proposal on CDR 				
				<ul style="list-style-type: none"> Expert group Mission Innovation CDR 		
REPowerEU		<ul style="list-style-type: none"> EC adopts DAs 				
NECPs			Member States' revision of NECPs			
Innovation Fund		3rd call for large-scale projects			Results of 3rd call	
Horizon Europe	Work programme 2023-2024					
PCI / PMI		<ul style="list-style-type: none"> Revised methodology Results of CEF call 	6 th PCI list			
SET-Plan	Call for evidence – alignment with EGD (Sep / Q4)					
Hydrogen		EP vote on H2 and gas		H2 and gas (final acts)		
	Hydrogen alliance					
Voluntary carbon Markets		CCS+ initiative				
		ICVCM CCPs	CDR and Article 6 Report			

Work programme outline – for AC/Plenary discussion and guidance:

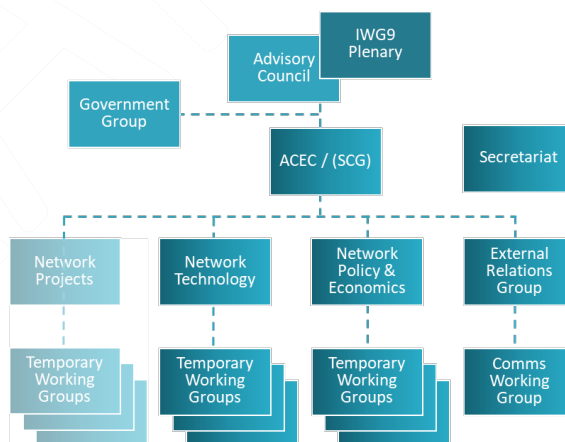
Focus areas on overarching level:

- 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 CO₂ 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.

The work programme is a living document based on the EU (and member state) policy agenda. 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 preparation of responses to consultations and other input to the EC.
Focus areas for the NWPE:

- The CCUS Forum and the three working groups on Vision, CO₂ Infrastructure, and Industrial partnership
- The two EC studies on EU-wide CO₂ infrastructure and on regulatory issues related to CO₂ infrastructure
- An EU strategy for CCS and CCU and the development of a new regulatory framework for CO₂ transport infrastructure.
- The upcoming revision of the National Energy and Climate Plans (NECP)
- Work following the Communication on Sustainable Carbon Cycles – the upcoming EC proposal on certification for CDRs, and the development of voluntary carbon markets, accounting, standards and methodologies, including compliance with article 6 of the Paris agreement



- Provide insights on EU and national support instruments for CCUS R&I and deployment and how they interact
 - 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.
- Network Technology (NWT): The Network will continue its very active work programme, engaging experts from members and observers. Focus areas for the NWT:

Existing TWGs

 - For TWG Directive for geological storage of CO₂ to follow up on and contributing to the EC review of the guidance documents.
 - The TWG Mission CDR will continue to follow and give input to the ongoing international work of the Mission Innovation CDR. This TWG will also follow and give input to the work of the Mission Innovation clean hydrogen.
 - The TWG on transport by ship to follow up on the further development of standards.

New workstreams

 - Recommendations on CCUS R&I priorities for the Horizon Europe work programme
 - Progress review and recommendations on the key IWG9 R&I activities
 - Analyses of implications the energy crisis – specifically the reduced access to/supply of energy – will have on the different CCS and CCU technologies (and thus the transition towards net-zero).
 - Analyses of the risks involved in the CCUS supply chain – including material, technology, and expertise.
 - Follow-up and input on the EC technical CO₂ infrastructure study.
- *The new Network Projects – The creation of this Network will depend on the extent to which other EU grants cover this topic. Focus areas for NWP:*
 - *supporting market-ready projects from a policy, funding and technological point of view*
 - *Address existing barriers*
 - *Improving public perception, and*
 - *Enabling knowledge sharing.*
- The 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.

- 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.

DRAFT

Budget management: Expenditure against 2022 budget

Activity	Contractor	Budget 2022	Comments	To date Spent	Comments	To Date Committed	Comments
Administration / Auditing	Adams accountants / Vandelanotte	€ 8 000		€ 2 848			
Website maintenance	Karakas	€ 1 000		€ 0			
Legal advice	Lawsquare	€ 4 000		€ 0			
Chair	Ardnacraggan Energy Services	€ 67 992		€ 45 328		€ 22 664	
Contingency		€ 4 000		€ 1 394			
Communications and events		€ 28 000					
Funding 2022 +Strategic work		€ 152 500				€ 140 000	
Total		€ 265 492		€ 49 569		€ 162 664	

Spent: Actually paid or contractually due for delivered work

Committed: Based on signed contracts, yet to be approved invoices or founded estimates

Spent + Committed

€ 212 233

Remaining total budget

€ 53 259

Cash management of ZEP Communications VZW / ASBL

Category	Source	Issued invoices	Comments	Received/pending	Comments		
2022 contributions	O&G			€ 167 500	Total, Equinor, ENI, BP, Exxon Mobil, Shell		
	OEM						
	Others (confirmed)			€ 122 500	Port of Rotterdam, HeidelbergCement, Gassnova, EBN, Northern Lights, Norsk Hydro, Celsio		
	Others (Potential)						

General	VAT return	€ 7 556	VAT declar 2022/08	€ 371	Invoices 2022 to be rec.	€ 0	VAT on sales invoices
Total outstanding / pending ZEP-C		€ 7 556		€ 290 371			

Cash situation (of 31 August 2022)

Current account (KBC - Business compact rekening)			€ 441 156
Savings account (KBC - Spaarrekening)			€ 101
Actual cash at bank and in hand			€ 441 257

Expenditure situation

Source	Outstanding invoices	Comments	Pending invoices	Comments
Short term creditors	€ 0		€ 7 433	VDL + CA + Ardna
Outstanding invoices in spent to date, to be paid	€ 0		€ 7 433	

Cash boundaries

Minimum virtual financial position (all creditors paid, no more income)

€ 433 825

Maximum virtual financial position (all creditors paid, all income realised)

€ 731 752

Forecast

301 506	Starting point 2022 (= Left over budget 2021)
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2022 Total Spend	Comments Relative to budget
€ 8 000	
€ 1 000	
€ 4 000	
€ 67 992	
€ 4 000	
€ 28 000	
€ 152 500	
€ 265 492	Total budget spent 2022

€ 167 500	
€ 0	
€ 122 500	

€ 290 000	Total forecasted income 2022
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326 014,00	Forecasted Left over budget 2022
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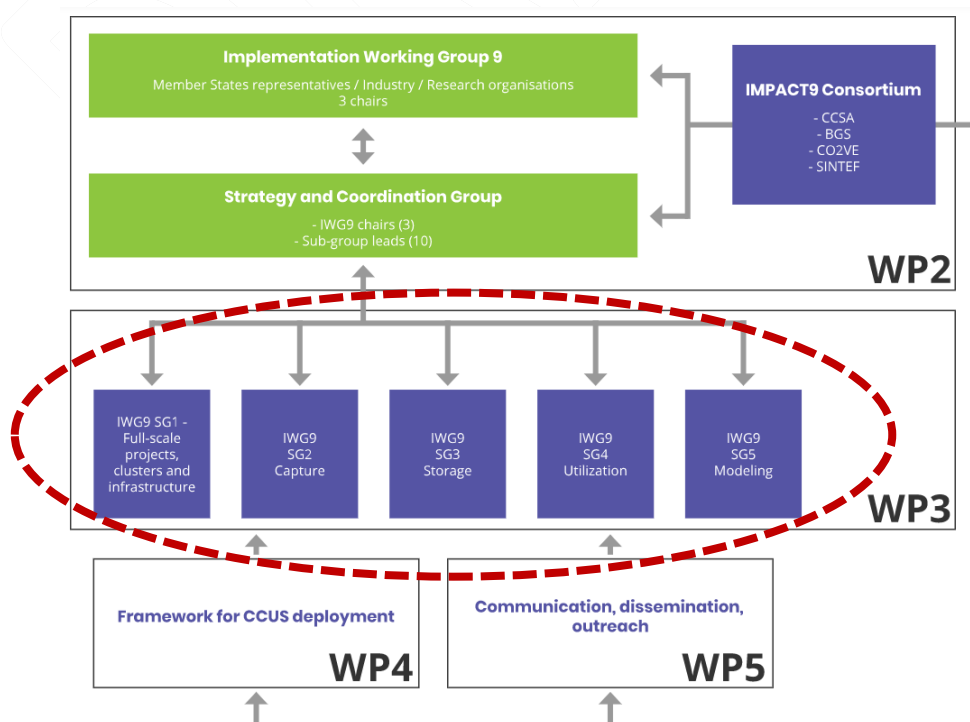
Agenda Item 3: State of play CCUS Implementation Plan IWG9

3.a. Presentation of IWG9 R&I activities, status, and progress

Over the course of the previous grant period that ended in April 2022, the IMPACTS9 Consortium has delivered comprehensive support to the IWG9, focused on recommendations on the delivery of the 8 CCS and CCU R&I activities under the SET-Plan ([link to webpage](#)). A CCUS Roadmap to 2030 was also produced, identifying key actions that are urgently needed to set the foundations for a cost-efficient trajectory to climate neutrality by 2050. [Link to the roadmap](#)

The eight CCUS R&I activities:

1. Delivery of a whole chain CCS project operating in the power sector
2. Delivery of regional CCS and CCU clusters, including feasibility for a European hydrogen infrastructure
3. EU Projects of Common Interest for CO₂ transport infrastructure
4. Establish a European CO₂ Storage Atlas
5. Unlocking European Storage capacity
6. Developing next-generation CO₂ capture technologies
7. CCU Action
8. Understanding and communicating the role of CCS and CCU in meeting European and national energy and climate change goals



There will be introductory presentations highlighting the IWG9 R&I activities, status, and progress:

- *Lamberto Eldering on subgroup 1: focused on full-scale CCS projects, clusters, and CO2 infrastructure.*
- *Marie Bysveen on subgroup 2: CO2 Capture.*
- *Jonathan Pearce on subgroup 3: CO2 storage.*
- *Anastasios Perimenis on subgroup 4: CCU.*
- *Per-Olof Granström on the overall project and subgroup 5: Modelling.*

After this, there will be comments and insights by the EC, *Vassilios Kougionas*, and if possible, a discussion regarding what the revamping of the SET-Plan will entail.

Agenda item 4: Updates from Networks – *for information and guidance*

4.a. Network Policy and Economics

The latest Network Policy & Economics meeting took place on 4 May 2022. The next Network Policy & Economics meeting will take place on 26 October 2022.

The TWG Policy & Funding held its latest meeting on 7 September 2022. The group discussed:

- *TWG Policy & Funding work programme:* Participants discussed and agreed on the policy priorities for the TWG for 2023-2024. Priorities include the revision of national energy and climate plans (NECPs) by Member States and guidance to national governments, the CCUS Forum and the two European Commission (EC) studies on CO₂ infrastructure, carbon dioxide removals and voluntary carbon markets, and the revision of the Monitoring and Reporting Regulation.
- *CCUS Forum:* Participants discussed the timeline of the CCUS Forum and the role of its three Working Groups, in view of the EC Communication on CCUS at the end of 2023. The Working Group (WG) CCUS vision will use input from the WG CO₂ infrastructure to avoid a duplication of tasks. Participants discussed the best way to have the EC take into account the recommendations of the report of the WG CO₂ infrastructure. The TWG Policy & Funding will be central to ZEP's work on the CCUS Forum. The TWG will provide input to the two EC studies and will contribute to the revision of the Guidance Documents. Participants provided elements for the draft issue paper.
- *ICVCM consultation:* The secretariat presented the consultation of the Integrity Council for the Voluntary Carbon Market (*see below*) and the draft response. Participants agreed that ZEP should respond to the consultation and provided possible inputs. The EC proposal on the certification of carbon removals is expected to use geological storage as a benchmark for CDR in terms of permanence. The mechanism is expected to focus more on carbon accounting than on certification *per se*. Three pillars are expected: geological storage, CCU with permanence, and carbon farming.
- *CCS+ Initiative's Compliance Guidance notes:* The secretariat provided an update on the CCS+ Initiative work on EU and Article 6 Compliance Guidance notes (*see below*). The draft Guidance notes will be sent to the members at the beginning of 2023 for feedback. Participants agreed that the TWG should closely monitor the progress of the CCS+ Initiative on the various work packages, noting that ZEP is a member of the Advisory Group.
- *Inflation Reduction Act:* CATF gave a presentation on the Inflation Reduction Act and its impact on the deployment of CCS and CCU in the US. Companies in the US will benefit from large tax credits when deploying CCS, CCU, and hydrogen production activities. Participants discussed the transferability of the tax credits in the US system along the CCS chain. Participants discussed the risk for the EU of falling behind the

US in terms of CCS leadership and proposed to discuss lessons that could be taken from the US model at the next meeting.

The next TWG Policy & Funding meeting will take place on 3 November.

EC consultations and calls for feedback

Upcoming consultations of potential interest to the Network are:

- “EU energy policy – revamping the Strategic Energy Technology Plan” ([link to the consultation](#)) – expected before the end of the year
- “EU emissions trading system (ETS) – revised rules (e.g. competitive bidding under the Innovation Fund)” ([link to the consultation](#)) – expected before Q2 2023

ZEP sent a response to the call for evidence ‘Development of trans-European transport (TEN-T) network in light of war in Ukraine – amended proposal for guidelines’ on 20 July. ZEP called for “*funding mechanisms for CO2 transport infrastructure, supporting upcoming projects, especially in Eastern Europe, that rely on non-pipeline transport to store CO2 in a safe and permanent manner*” (link to [ZEP response](#)).

ZEP sent a response to the call for feedback ‘Energy – updating EU legislation to make the EU independent from Russian fossil fuels (REPowerEU)’ on 20 July. ZEP stated for “*renewable and fossil-free hydrogen are among the solutions described in the plan, while low-carbon hydrogen is not included*” and that “*low-carbon hydrogen must therefore be included in the plan*” (link to [ZEP response](#)).

Following their preparation by the TWG Policy & Funding, their presentation at the ACEC, and their endorsement by the Chair, the AC is invited to approve the two responses.

Consultation from the Integrity Council for the Voluntary Carbon Market

The Integrity Council for the Voluntary Carbon Market ([ICVCM](#)) is an institution working on voluntary carbon markets. ICVCM intends to set standards for voluntary carbon markets that will set a global benchmark for carbon credits. The approach is based on the definition of 10 Core Carbon Principles (CCPs), which are assessed against a set of criteria proposed under the Assessment Framework.

The ICVCM is running a public consultation on the draft CCPs, Assessment Framework and Assessment Procedure ([link to the consultation](#)). The deadline for the submission of comments is 27 September. The ICVCM expects to issue the CCPs and Assessment Framework in Q4 2022.

On the last meeting of the TWG Policy and Funding, on 7 September, members proposed for ZEP to respond to the consultation, together with the CCSA if possible. The TWG Policy and Funding have been invited to send further comments on the draft response by 14 September. The draft response is attached as a separate document.

The AC is invited to send comments on the draft by 21 September close of business and to delegate to the Chair to endorse the draft response to the consultation.

Consultation on the third call for large-scale projects under the Innovation Fund

The EC announced in July the results of the second call for large-scale projects. This second call had a very positive outcome for CCS/CCU projects, with 7 of the 17 CCS and CCU projects selected for funding ([link to ZEP briefing](#)).

The third call for large-scale projects is planned for November 2022 with available funding of approximately €3 billion. Following discussions with the TWG Policy and Funding, a ZEP response was prepared and endorsed by the Chair, and shared with the Innovation Fund Expert Group, highlighting, among others, that:

- The current Innovation Fund framework already sufficiently rewards project readiness under the Project Maturity assessment criteria. The existing framework should be kept unchanged.
- The whole value-chain of CCS and CCU should be taken into account during the assessment of project applications.
- The IF scoring methodology should reflect the degree of innovation of project applications, considering not only the technological dimension of innovation, but also other elements of innovation, through a sectoral, regional and business lenses.
- No further limitations to the scope of the IF should be introduced.
- Both hydrogen demand and supply should be targeted.
- There should not be a ceiling for project funding or project size, as this could cause an overlap with the Innovation Fund call for small-scale projects.

Upcoming EC paper on the London Protocol

DG CLIMA is expected publish a paper on the London Protocol. Daniel Kitscha from DG CLIMA highlighted that some elements in the London Protocol are covered by the EU ETS directive and the CO₂ storage directive, making bilateral agreements on the London protocol unnecessary.

Carbon removals expert group

The EC launched a [call for applications](#) for an expert group on carbon removals. The group will “consist of about 70 experts and assist the Commission in the preparation of policy initiatives and legislative proposals on the voluntary certification of carbon removals”. The call for applications will remain open until **15 September 2022**. The selected experts will meet at least twice a year and will start working in December 2022. The group will follow up on the call for evidence for the certification of carbon removals.

The AC is invited to approve Mark Preston Aragonès as ZEP representative for the expert group.

Questionnaire on the PCI assessment methodology

The EC is currently reviewing the PCI assessment methodology for candidate CO₂ infrastructure projects. DG ENER has published a questionnaire on the assessment methodology. After discussions with the TWG P&F, ZEP discussed important principles with the EC:

- The methodology on cost-benefit analysis is usable and sufficiently practical. Apart from the inclusion of storage, no additional aspects should be added, and the methodology should not be further detailed.
- In the longer time perspective, it would be beneficial to express a monetary value regarding the security of supply that the candidate PCI can bring.
- CO₂ storage criteria should recognise volume of capacity, whether re-purposing or greenfield development is planned, ease of access for emitters, e.g., geographical proximity and whether ship or pipeline will be needed.
- Clarifications would be welcomed regarding the meaning of 'permanence' and 'neutralisation'. A recommendation is to use the same language as in other related EU pieces of legislation.

According to the EC, the 6th PCI list will be published next year and that companies can still apply this year for PCI status.

Policy timeline (2022-2023)

Key policy developments are expected during 2022-2023, including on the Fit for 55 package, Carbon Dioxide Removals, cross-border CO₂ transport, and CO₂ infrastructure.

The detailed policy timeline is presented below. This is an indicative timeline and will be updated on a monthly basis, in particular following the adoption of the 2023 EC work programme in October 2022.

	September 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Infrastructure	EU framework for CO ₂ cross-border transport agreements					
	TEN-T (TRAN Committee)			EP vote on TEN-T		TEN-T Implementation Report
	EC studies on CO ₂ infrastructure					
Fit for 55		<ul style="list-style-type: none"> EU ETS (final act) CBAM (final act) EP vote on AFIR revision 	AFIR revision (final act)			
		MRR Revision				
	EP vote on RED II revision		RED II revision (final act)			
CCUS Forum		<ul style="list-style-type: none"> Plenary (Nov/Oct 2022) WG CO₂ infrastructure Issue Paper WG Vision Paper 	<ul style="list-style-type: none"> WG CO₂ infrastructure Full Report 			<ul style="list-style-type: none"> EC Communication on CCUS Forum Plenary
CCS Directive		Revision of Guidance Documents				
CDR		<ul style="list-style-type: none"> EP resolution SCC EC proposal on CDR 				
		<ul style="list-style-type: none"> Expert group Mission Innovation CDR 				
REPowerEU		EC adopts DAs				
NECPs			Member States' revision of NECPs			
Innovation Fund		3rd call for large-scale projects			Results of 3rd call	
Horizon Europe	Work programme 2023-2024					
PCI / PMI		<ul style="list-style-type: none"> Revised methodology Results of CEF call 	6 th PCI list			
SET-Plan	Call for evidence – alignment with EGD (Sep / Q4)					
Hydrogen		EP vote on H2 and gas		H2 and gas (final acts)		
	Hydrogen alliance					
Voluntary carbon Markets		CCS+ initiative				
		ICVCM CCPs	CDR and Article 6 Report			

CCUS Forum

Work is ongoing under the working groups that the European Commission has engaged in preparation of the 2022 CCUS Forum Plenary.

Further information about the CCUS Forum work is provided under item 7 of this pre-read document.

Legislative progress of the 'Fit for 55' package

a) Revision of the EU ETS

A revision of the EU ETS was proposed by the EC in 2021 with the aim of aligning the directive with the objective of 55% reduction of greenhouse gas emissions by 2030 as part of the Fit for 55 package. Negotiations between the three institutions (trilogues) are ongoing, with a final text being expected by the end of the year. Issues of interest to the CCUS industry that are being discussed include:

- The coverage of all means of CO₂ transport under the EU ETS.
- No obligations of surrendering EU ETS allowances for CO₂ that is permanently chemically bound in a product.
- Empowering the EC to adopt delegated acts on CO₂ that is permanently chemically bound in a product, including the conditions under which it could obtain a carbon removal certificate.
- Obligation for the EC to present a report, by 2025, on the possible inclusion of CDR in the EU ETS.
- Inclusion of price-competitive tendering in the IF, such as carbon contracts for difference (CCfDs).

b) Carbon Border Adjustment Mechanism (CBAM)

The EC put forward a regulation for the creation of a carbon border adjustment mechanism in 2021 as part of the Fit for 55 package. The aim of the proposal is to set a carbon price imported from non-EU countries to avoid the risk of carbon leakage on certain products. The EP has proposed the phase-out of free allowances from 2027 to 2032, starting one year later but ending three years earlier than in the EC and Council positions. Negotiations between the institutions (trilogues) are ongoing. The second round of trilogue will be held during the EP plenary session taking place between 3 and 6 October 2022.

Entry into force of the Complementary Climate Delegated Act

The EC adopted a delegated act on 2 February 2022 to include gas and nuclear activities as sustainable under the EU Taxonomy under certain conditions ([ZEP note](#)). The EU Taxonomy Climate Complementary Delegated Act was published in the Official Journal of the European Union on 15 July ([link to the delegated act](#)). The delegated act will apply from 1 January 2023.

Communication on Restoring Sustainable Carbon Cycles

The EC adopted the Communication on Restoring Sustainable Carbon Cycles in December 2021 ([link to Communication](#)), focusing on actions to upscale carbon farming as a business model incentivising practices on ecosystems that increase carbon sequestration, and foster new industrial value chains for the sustainable capture, recycling, transport and storage of carbon.

The Communication is being discussed in the ENVI (lead), and ITRE and AGRI Committees (associated), with MEPs debating, among other items:

- Strategy for CCS – MEPs called on the EC to adopt a dedicated strategy for CCS and a plan for the development of CO₂ infrastructure.
- Definitions – MEPs suggested that carbon removals should be *“based on the permanent removal of GHG from the atmosphere, including associated upstream and downstream GHG resulting from removal and storage, and on the principle that the total amount of permanently removed atmospheric GHG is greater than the total emitted GHG”*, excluding carbon captured at point sources, EOR and temporary storage.
- The role of carbon removals as a complement to deep emissions reductions.
- Elements that the certification framework for carbon removals should take into account, including differentiating “permanent storage” and “short-term storage” solutions, monitoring, reporting and verification rules for carbon removals, (including monitoring of reversals), robust reporting and carbon accounting on an LCA basis, and liability provisions.

The ENVI Committee is provisionally scheduled to vote on its draft report and amendments on 7 November. The ITRE and AGRI committees are expected to vote on their opinions and amendments on 10 and 24 October, respectively.

CCS+ initiative

The CCS+ initiative work on carbon accounting methodologies for the Voluntary Carbon Markets is being developed across five work packages (WP).

WP1a includes overarching modules, as well as the capture, transport and geological storage modules. Progress on crunch issues is underway, namely on additionality and CO₂ monitoring and quantification at storage sites. The revised documents will be sent to Verra and, if approved, a public consultation will be launched. The Guidance and Principles document is expected to be published ahead of the public consultation. While the public consultation is expected soon, there is no exact timeline at this stage.

The concept note for WP1b (long-term CCU methodology package) is being finalised and working groups will be launched soon. Methodology and additional technical modules are expected to be finalised by EOY 2023.

Work on the EU and Article 6 Compliance Guidance notes (under WP2a) started in late August with a first meeting and the creation of working groups. Working group interactions are expected to start in September and run until the end of 2022. The aim is for the Compliance Guidance notes to be finalised in March 2023.

The concept note for WP2b (CO₂ storage in igneous rock formations) is being finalised and will be shared with Verra when ready. The CCS+ initiative is working closely with Carbfix and 44.01 on this WP, with a particular focus on their MRV approaches.

A final decision on WP3 (long-term CCU methodology package and other compliance guidance) still needs to be taken by the Steering Committee, namely on the EOR and e-fuels modules.

As a member of the Advisory Group (AG), ZEP's role in this initiative is to highlight compliance, clear definitions, the need for rigorous and coherent standards and a clear pathway towards Article 6 compliance. The next AG meeting will take place on 22 September.

Inflation Reduction Act of 2022

US President Joe Biden signed the Inflation Reduction Act (IRA) into law on 16 August 2022. The IRA aims, among other things, to deploy renewable energies and reduce annual greenhouse gas emissions by approximately 1 gigatonne in 2030. The IRA includes a tax credit that would significantly increase public subsidies for CCS, CCU, and low-carbon hydrogen production:

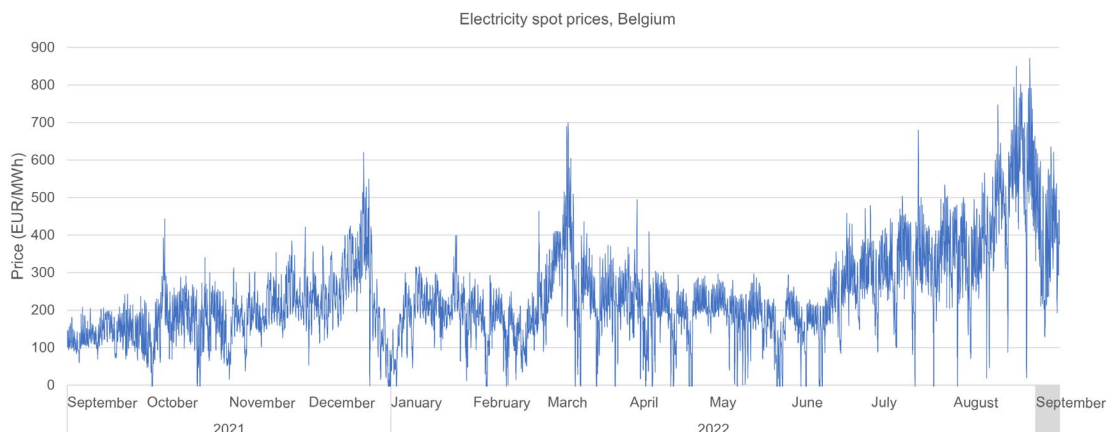
- Tax credit of €177¹ per tonne of CO₂ captured by Direct Air Capture (DAC) and stored in geologic formations
- Tax credit of €128 per tonne of CO₂ captured by DAC and stored in oil and gas fields
- Tax credit of €128 per tonne of CO₂ captured by DAC and used
- Tax credit of €84 per tonne of CO₂ stored in geologic formations by industrial facilities and power plants
- Tax credit of €59 per tonne of CO₂ stored in oil and gas fields
- Tax credit of €59 per tonne of CO₂ used
- Tax credit of €590 per tonne of low-carbon and renewable hydrogen
- Tax credit of €2,950 per tonne when the hydrogen's lifecycle carbon intensity ranges between 0 and 0.45 kg of CO₂ equivalent per kilogram of hydrogen
- Possibility to combine tax credits for renewable power generation facilities with tax credits for low-carbon and renewable hydrogen production and storage infrastructure

The substantial increase in the support given to CCS and CCU can put the US on track to become the world leader on CCUS and set the trend for future industry and policy developments. At the same time, the EU risks missing out on its potential to lead on CCUS.

¹ EUR/USD exchange rate on 18 August 2022 on [XE](#).

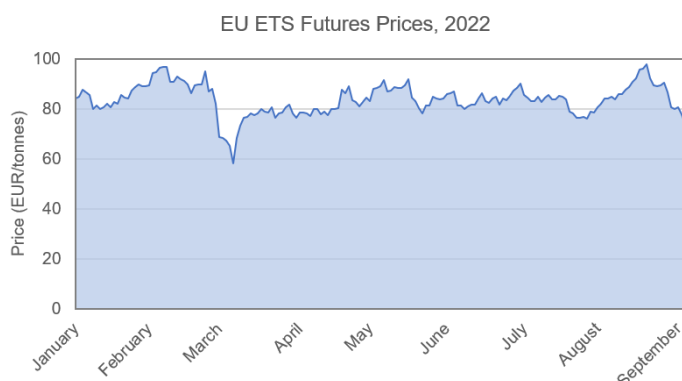
Energy crisis and EU ETS allowance price

The graph below describes the evolution of Belgian electricity spot prices from September 2021 to September 2022 (day ahead auction)². Electricity prices have increased drastically, mainly because of Russia's gas export restriction to Europe following Russia's invasion of Ukraine³. Russia suspended natural gas deliveries through the Nord Stream 1 pipeline on 3 September⁴. European gas prices have increased by approximately 400% compared to 2021⁵.



The price of EU ETS allowance futures stood at €69 on 7 September 2022, a decrease of almost 20% compared with the previous month⁶. The EPP Group is proposing a short-term intervention in the EU ETS – through the Market Stability Reserve – to reduce the price of EU ETS allowances⁷. MEP Peter Liese (EPP – DE) put forward 11 amendments to the EC proposal on REPowerEU chapters in recovery and resilience plans (link to the [proposal](#) and [amendments](#)) on 5 September. Amendment 10 proposes that the increase of the Recovery and Resilience Fund (RRF) financial envelope by €20 billion from the sale of EU ETS allowances takes place for a one-year period following the entry into force of the regulation. The EC proposal includes a period spanning until the end of 2026.

MEP Liese calls on a rapid co-decision process to enable the reduction in EU ETS prices, and its related impact on energy prices, to take place quickly. There is a risk that these proposals and other similar proposals could prove counter-productive to the EU climate policy in general and to CCS and CCU development.



² [Energy-Charts](#). Fraunhofer ISE.

³ [Why Europe's Electricity Prices Are Soaring](#) (25/8/2022). New York Times.

⁴ [Russia indefinitely suspends Nord Stream gas pipeline to Europe](#) (3/9/2022). Financial Times.

⁵ [EU gas price rockets higher after Russia halts Nord Stream flows](#). Reuters.

⁶ [EU carbon price tracker](#). Ember.

⁷ [Reduce burdens from European emissions trading in the short term without jeopardizing 2030 targets](#) (8/9/2022).

4.b. Network Technology

The latest Network Technology meeting took place on 3 June 2022. The next Network Technology meeting will take place on 13 October 2022.

ZEP's report on CCS in a biodiversity and land use perspective

The report produced by the TWG CCS in a Biodiversity and Land Use Perspective describes key principles for the deployment of CCS to avoid excessive negative impacts on biodiversity and land use. The report describes biomass usage and volumes needed by different industrial sectors, the potential available biomass, and its limitations. Finally, the report highlights the challenges and conflicts between biomass availability and demand. ([link to report](#)). The report makes the following recommendations and guiding principles.

From the report, regarding biomass and raw materials:

- Biomass should not be extracted at a faster rate than the land sink's regeneration capacity.
- Biomass demand should be kept within manageable levels and avoid replacing solutions that have a better net CO₂ abatement or removal potential.
- Biomass use for energy and feedstock purposes should never be used at the expense of food production.
- A cascading principle/merit order should be applied to all biomass use, to ensure judicious application of limited biomass resources.
- Research should be conducted and funded at the EU level on the potential industrial deployment and impact on biodiversity of seaweed for bioenergy and biomass feedstock.

From the report, regarding CO₂ capture:

- An LCA should systematically be conducted for CCS/BECCS/DACCS projects including a full set of environmental impact indicators.
- EU funding for CO₂ capture should focus on concentrated flue sources at industrial plants rather than DACCS.
- Further research should be funded at the EU level to better understand and compare the impacts of fossil fuel power plants with and without CCS.
- CCS on existing biogenic and partially biogenic flue gas sources should be investigated for its potential to deliver CDR with minimal additional impacts on biodiversity and land use.
- For DACCS, it is necessary to assess the land use and biodiversity implications for both the capture facility and the energy provision.

From the report, regarding CO₂ transport and storage:

- Minimise corridors.

- Use trenchless underground or elevated pipelines.
- Monitoring and restoration of disturbed land with native species.
- Facilitate the strategic location of capture installations at industrial hubs and near coastlines to avoid the dispersion of emitter and facilitate offshore storage.
- Strict measures need to be put in place by operators to prevent CO₂ leakage.

From the report, regarding Waste-to-Energy activities with CCS:

- Should be incentivised at EU and national level to fulfil the existing potential. These facilities should not compete with recycling activities.

The report is presented to the AC for approval, following the endorsement by the ACEC.

TWG CDR Mission

The TWG CDR Mission held its latest meeting on 24 June. The group discussed:

- The general scope of the CDR Mission, its organisation, and the expected next steps.
- Feedback to the CDR Mission draft roadmap.
- Activities that the TWG could undertake to support Mission Innovation.
- The regulatory work on CDR in the EU and internationally.

The next TWG CDR Mission meeting will be held on 8 September 2022.

Horizon Europe work programme 2023-2024

The publication of the new Horizon Europe work programme for 2023-2024 is expected soon. Three calls linked to CCS and CCU are expected on:

- CO₂ transport and storage
- CCU and
- Direct Air Capture and Removals.

Together with the European Energy Research Alliance (EERA) ZEP has been actively involved in this process, providing input to the EC to support the definition of the new work programme.

Draft Joint CCSA and ZEP response to the ICVCM consultation: Core Carbon Principles (CCPs), Assessment Framework and Assessment Procedure

The Carbon Capture Association (CCSA) and the Zero Emissions Platform (ZEP) support the initiative outlined by the ICVCM and the thorough consideration to ensure the activity of the voluntary carbon market crediting schemes are transparent, can drive good behaviour and promote industry best practice while instilling trust in carbon credits.

The CCSA represent members across the CCUS value chain, and represent members interested in deploying projects which can achieve the at scale, permanent removal of carbon dioxide through engineered solutions such as BECCS and DACCS.

ZEP is a European Technology and Innovation Platform (ETIP) under the European Commission's Strategic Energy Technology Plan (SET-Plan) and acts as the EU's technical adviser on the deployment of Carbon Capture and Storage (CCS), and Carbon Capture and Utilisation (CCU).

As noted by the recent publications from the IPCC, reaching net zero requires both carbon reductions and removals. CCS enabled carbon dioxide removals offers one of very few permanent solutions to remove CO₂ from the biosphere. It is imperative that accreditation schemes recognise and effectively communicate the critical role that permanent solutions can play to prevent catastrophic climate change and achieve global net zero targets.

ZEP and CCSA stand behind the 10 Core Carbon Principles (CCPs), provided that the additionality, permanence and quantification requirements can be clarified, and that a level playing field between nature-based and engineered solutions is fostered in the assessment framework. We share the ICVCM's view that high-quality robust and transparent systems for monitoring, verification, reporting and accounting should be at the core of certification schemes. Furthermore, it is crucial to be precise about what constitutes carbon removals and align carbon accounting principles with a full life-cycle methodology. This is essential to ensure that certificates are reliable and support real net zero removals and reductions.

Please find our comments below. We are pleased to contribute to the work process and remain available to expand on any element of our response, should you have any questions.

Section G – Additionality

1- Are there any specific criteria which the draft Assessment Framework should take into account in its guidance on additionality?

It is possible that compliance with additionality is harder to justify for projects receiving support from national or regional programmes (e.g., grant funding, business models), since they can be less dependent on revenues from carbon credit sales. For instance, it is not clear at the moment how Government supported capture on Energy from Waste projects, which contain both fossil and biogenic components, would be robustly viewed through the approach of the ICVCM, especially when considering the proposed additionality criteria.

2- The Council proposes in its draft Assessment Framework a risk-based assessment of additionality, to be conducted by the Expert Panel by project type, as a first step in the overall assessment of additionality for CCP.

a) Please provide comment as to the feasibility and desirability of this additional level of risk-based analysis by project type.

Criterion 8.2 “Barriers to implementation” lists a set of questions to be answered by the Expert Panel to determine if the implementation of mitigations activities is prevented by non-financial obstacles. CCSA and ZEP would like to highlight that the answers to the questions are likely to be very context specific, especially given the wide range of different technologies involved. Finally, the resulting expert judgement – which applies a quantitative scoring to considerations which appear to be more qualitative – would benefit from additional clarity regarding how the qualitative assessment is translated into quantitative values (e.g., through a scoring card).

Section H – Permanence

1- Are there alternative approaches to permanence that should be considered and that are not covered under the draft Assessment Framework?

ZEP and CCSA note that the storage of CO₂ in geological reservoirs is regulated under the CCS Directive¹ for European Member States, and the 2010 CO₂ Storage Regulations in the UK², which establishes a legal framework for the safe geological storage of CO₂. Namely, it includes provisions for site selection and characterisation which are designed to minimise the risk of leakage, conditions for permitting, as well as monitoring and reporting requirements to verify storage, including remediation obligations in case of reversals.

According to Article 4 of the CCS Directive, “A geological formation shall only be selected as a storage site, if under the proposed conditions of use there is no significant risk of leakage, and if no significant environmental or health risks exist”. Article 13 of the CCS Directive further requires operators to carry out monitoring based on an approved monitoring plan which is updated every 5 years “to take account of changes to the assessed risk of leakage, changes to the assessed risks to the environment and human health, new scientific knowledge, and improvements in best available technology”. Operators are also required to report to competent authorities at least once a year.

Moreover, the conditions for the issuance of permits require operators to have an approved corrective measures plan which must be implemented in case of leakages (Article 8). Both in the UK and in the EU, operators are required to surrender emission allowances equivalent to the leaked emissions.

Finally, it is noted that, under the CCS Directive, at least 20 years must elapse between closure and transfer of responsibility to the competent authority.

Given the stringent criteria that storage operators must comply with in the EU and in the UK, the ICVCM should make sure that the high-integrity requirements do not impose further, more stringent, disproportional requirements on operators. Instead, the assessment criteria should strive to be aligned with the regulatory frameworks that can be considered good/best practice, also taking into account that a degree of flexibility must be preserved given the limited practical experience in the implementation of CCS projects.

In practice, nonalignment between the monitoring requirements and the regulatory frameworks could lead to disparities between the regulations defined by competent authorities and the criteria defined by the carbon crediting organisation. This is particularly challenging as, in most circumstances, the final ‘mixture’ of stored CO₂ in a subsurface storage reservoir will comprise of many sources of CO₂, including the CO₂ for which carbon credits have been allocated. In practice, this could result in a scenario where the storage site will require continual monitoring to satisfy carbon credit schemes (e.g. 50 years post injection), past the

¹ Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006

² <https://www.legislation.gov.uk/uksi/2010/2221/contents/made>

required period to satisfy the competent authority (e.g. 20 years post injection). Given that monitoring technologies are costly, and the survey would have to account for the mixed volume of CO₂, the economics/project liabilities may not be viable to encourage investment.

Option 3 of the requirements for **Criterion 9.2a** ("Length of commitment to monitor and compensate for reversals") appears to allow for regulatory alignment; however, an explicit example would be valuable for wider positive interpretation of the permanence assessment.

Moreover, the assessment of **Criterion 9.2b** ("Sufficiency of the compensation mechanism") should also take into account the provisions in the CCS Directive, according to which operators must offset reversals (in the EU or UK ETS). The requirement to set up buffer reserves would, in this context, impose extra obligations on EU/UK storage operators, as well as have potentially significant implications on revenue streams. In this context, it is important to introduce an alternative requirement/option - similar to option 3 under criterion 9.2a - that is meant to avoid conflicts with national / regional legislation while keeping the essence of the requirements.

Section I – Robust Quantification

ZEP and CCSA welcome the consideration of system/accounting boundaries in the assessment of the quantification methodologies. However, we emphasize that the achievement of carbon dioxide removals or reductions should be verified through a robust full life-cycle analysis (LCA) – this is the only way to ensure that real removals or reductions are occurring, and it must be a high integrity criterion in the ICVCM Assessment Framework.

Furthermore, underpinning a full LCA must be a clear definition of carbon emissions reductions and removals. ZEP has highlighted in its [report](#) that four principles must be met for activities to be considered as achieving removals:

1. CO₂ is physically removed from the atmosphere.
2. The removed CO₂ is stored out of the atmosphere in a manner intended to be permanent.
3. Upstream and downstream greenhouse gas emissions, associated with the removal and storage process, are comprehensively estimated and included in the emission balance.
4. The total quantity of atmospheric CO₂ removed and permanently stored is greater than the total quantity of CO₂ emitted to the atmosphere.

We urge ICVCM to align its definition of removals to the four principles outlined above, supporting a clear and precise understanding of what constitutes removals across carbon crediting schemes.

Section K – Attributes

1- Should the Integrity Council consider the establishment of an attribute to differentiate credits according to the type of underlying mitigation activity? If so, at what level should types be differentiated (e.g., reductions vs removals, tech-based vs nature-based)?

ZEP and CCSA welcome the proposal to differentiate carbon credits, not only distinguishing removals from reductions, but also considering the different types of removals. This approach would be beneficial to investors by reflecting the diversity of carbon removal solutions and their characteristics (e.g., duration of storage/removals), while clearly articulating the 'high standard' that permanent removals can provide.

The ICVCM should where possible and appropriate strongly highlight permanence as a key label (perhaps with a weighting type system).

Furthermore, we would like to see the wider benefits of engineered solutions better reflected in the assessment framework. The assessment framework consistently references how the co-benefits for the deployment of carbon removals will be assessed, including the contribution of mitigation activities towards the UN Sustainable Development Goals (SDG). However, little consideration is given to the wider co-benefits that are unique to the deployment of engineered solutions. These have several important elements:

- Early engineered carbon reductions and removal projects can help de-risk CO₂ networks. By providing reliable volumes of CO₂ into CO₂ transport and storage networks, the projects can reduce stranded asset risk for early and First of a Kind CO₂ networks. These projects will be an important consideration as the CCUS industry nucleates and scales up.
- Early projects can help provide economies of scale for other users of CO₂ networks.
- Engineered carbon removals can help accelerate the growth of a healthy CCUS ecosystem.
- Engineered carbon reductions and removal projects can contribute significantly towards regional decarbonisation agendas (e.g., cluster projects).
- By contributing to the decarbonisation of the power supply sector, CCS projects can provide clean flexibility to electricity grids.
- Reductions and removals projects benefit wider innovation, both technical and commercial.

These elements should be better reflected in the assessment framework (e.g., Criterion 11.1 – Transition towards net zero emissions, or as an extra label/attribute), as they capture the wider social value of engineered solutions, while providing valuable information to investors.

Moreover, we note that the current proposals have more attributes designed for nature-based solutions, which can lead to an unlevel playing field when considering the value that permanent engineered solutions can offer.

Agenda item 5: Updates from External Relations Group – for information and guidance

5.a. Overview of ZEP communications activities and events

ZEP Communications group meetings

The ZEP Communications group and the External Relations Group have met twice since AC71 in June, on 1 July and 8 September, discussing among other things ongoing communications and events activities by the group members – identifying opportunities to coordinate strong CCS and CCU- related communications within ZEP.

On 1 July, there was a presentation by Kim Bye Bruun, Northern Lights, about the latest Northern Lights Summit – including reflections about the organisation, set-up, but also key messages and outcomes to take away from the event. On 8 September, Aurelia Leew from Bellona highlighted two key events for September and members also pointed at other external events of CCS and CCU interest, such as the French-Norwegian decarbonisation forum ([link](#)), the PCI Days ([link](#)), or the European Sustainable Energy Week ([link](#)).

ZEP CCU and CCS projects map

The ZEP CCS and CCU projects map has been updated over the summer, highlighting the strong momentum we see today for deployment of these technologies. The map can be consulted on the website, [by clicking here](#).

ZEP Newsletters

Four ZEP newsletters have been published so far since the last AC meeting. You can [click here to subscribe](#) to the ZEP bimonthly Newsletter. Links to the Newsletters: [20 June](#); [8 July](#); [22 July](#); [30 August](#)

ZEP Social media – new LinkedIn page

ZEP has an active Twitter account, [accessible here](#). It now also has a brand-new LinkedIn page. [Click here to access](#)

Meetings with policymakers

Meeting with Cabinet of Commissioner for Energy Kadri Simson, 22 June 2022

Participants: Tatiana Marquez Uriarte (member of the cabinet), Per-Olof Granström, and Charles-Albert Bareth.

Aim for the meeting

The aim of the meeting was to meet with the advisor responsible for CCS in the Simson cabinet, to present ZEP, ask how ZEP can be of help, start a constructive dialogue, and invite to upcoming ZEP meetings. The meeting was also a good opportunity to

reiterate the importance of CCS to achieve carbon neutrality, to raise concerns since CCS is not included among the core technologies mentioned in the REPowerEU plan.

Some takeaways from the meeting

After a presentation of ZEP, the latest reports and input to the EC, there was a discussion regarding the REPowerEU and the importance of CCS.

The EC highlighted that CCS is crucial for decarbonisation and unavoidable to reach climate neutrality. The CCUS Forum work plan with the three working groups, including an alliance of industrial CCUS stakeholders, and an EC CCUS Communication at the end of the current mandate, was also presented.

The importance of large-scale CCS deployment and a robust infrastructure for CO₂ transport and storage was highlighted, and the EC highlighted that the same infrastructure can be used for fossil fuel imports and CO₂ transport. The EC mentioned the possibility to use its experience in regulating the gas and electricity markets also for CO₂. Here, the planned Communication at the end of the current mandate could provide support, and the work of DG GROW was also mentioned as important regarding the development of the CO₂ infrastructure.

ZEP's concerns regarding CCUS not being mentioned in the REPowerEU plan and the risk for CCUS development becoming more difficult was discussed. The EC highlighted the declining use of gas in the EU as countries are seeking to distance themselves from Russia. It was clear that the EC had difficulty to include low-carbon hydrogen in the plan due to the link to Russian gas.

Meeting with DG CLIMA on 24 June 2022

Present: Stefaan Vergote – Head of Unit at DG CLIMA (Maria Velkova is the deputy head of unit), and Daniel Kitscha – Policy Officer in Stefaan Vergote's Unit, Jonas Helseth and Per-Olof Granström.

Aim for the meeting

Both Stefaan and Daniel are new in their roles. The aim of the meeting was to meet with them, present ZEP, ask how ZEP can be of help and start a constructive dialogue. Areas of interest for ZEP are:

- EU strategy/vision for CCS and CCU
- Regulatory framework for CO₂ infrastructure
- New [expert group](#) on carbon removals.

The meeting was a good opportunity to discuss the reduced importance of CCS for the EC following the REPowerEU plan, the need for technology-neutrality, the importance of CCS funding under the Innovation Fund to deploy on a large scale, and the need for definitions of low-carbon and renewable gasses to create a level playing field.

Some takeaways from the meeting

ZEP presented itself and mentioned the latest reports and inputs sent to the EC.

The EC highlighted the focus for the next call in the Innovation Fund – based on the REPowerEU plan – on renewable electricity and renewable hydrogen, heat pumps, electrolyzers, and linked supply chains. The letter sent by the director general of DG CLIMA Mauro Petriccione highlights the need for technology-neutrality and the importance of continued support for CCS in the Innovation Fund. The EC confirmed that the next call of the Innovation Fund will also include CCS.

ZEP mentioned the importance of an open-access European CO₂ transport and storage infrastructure. The EC mentioned that the CCUS community will have to clearly communicate this message. The EC highlighted that it sometimes seems as if this is communicated in order not to have to invest in capture and other technologies.

ZEP and the EC discussed [ZEP proposal for a regulatory framework for CO₂ transport infrastructure](#) and the ZEP's report [Experience in developing CO₂ storage under the Directive on the geological storage of carbon dioxide](#). The EC was very appreciative of both documents. The EC highlighted that the technical study conducted by the European Commission's Joint Research Centre (JRC) will include a mapping of CO₂ emission sources and possible CO₂ storage sites, as a basis for the development of the CO₂ transport infrastructure. ZEP asked the EC if biogenic CO₂ will be included in the mapping. The EC is expected to come back to us with a response.

The EC declared that the CCUS Forum and its working groups will be the main point of focus of the EC on CCUS, and that the work of the CCUS Forum will be key ahead of the update of the national energy and climate plans (NECPs) next year.

The EC will hold a follow-up meeting with national governments that are included in the 5th PCI list – also the Dutch government. This is a follow-up meeting from DG CLIMA's meetings during the winter and spring, in order to conclude on cross-border issues and the challenge around CO₂ storage liability.

Webinar: *Learning from experience in geological CO₂ storage*

On 18 July, the Zero Emissions Platform (ZEP) held an online seminar titled Learning from experience in geological CO₂ storage. The event showcased the latest report by ZEP on geological CO₂ storage ([link](#)), released in the context of the European Commission's upcoming update of the guidance documents that are linked to the Directive on the geological storage of CO₂.

The event was chaired by ZEP and featured authors and experts: Filip Neele – Co-Chair of ZEP's Network Technology, Maria Velkova – Deputy Head of Unit at DG CLIMA, Gloria Thurschmid – EBN, Thomas Le Guénan – BRGM, as well as Toby Lockwood – Clean Air Task Force.

After a presentation of the report, which suggests key amendments to the guidance documents, participants engaged in a discussion and Q&A session. It was an excellent opportunity to highlight the ongoing call for tenders by DG CLIMA to support the update of the guidance documents.

The experts highlighted the importance for competent authorities to engage early on in the process with storage projects – managing expectations among stakeholders and providing clarity about the technical details and functional requirements of a successful permit

application. These elements are among many other required steps to accelerate the learning curve for fast deployment, at a time when CO₂ storage is considered to be a bottleneck in Europe. This revision of the guidance documents will therefore be crucial for successful CCS-based climate mitigation at large-scale.

4 ZEP reports available since 2022

A total of four ZEP reports have already been made available in 2022. One of them is submitted for approval by the 72nd Advisory Council on 14 September. Details and links available below:

- On 29 March, ZEP published a report titled '*Guidance for CO₂ transport by ship*'. This report looks at how the future development of CO₂ transport infrastructure by sea and inland waterways can connect all European emitters to safe and permanent offshore CO₂ storage. [Click here to read the report](#). [Click here to read the infographic](#).
- On 11 April, ZEP published a report titled '*Experience in developing CO₂ storage under the Directive on the geological storage of carbon dioxide*'. It aims to facilitate the work of operators and public authorities working on the deployment of CO₂ storage projects, for example, by providing clear guidance based on experience. [Click here to read the report](#). [Click here to read the infographic](#).
- On 19 May, ZEP published a report titled '*Carbon capture and storage for clean flexibility*', completing the work of the associated TWG. The report looks at the important role CCS technologies will play in energy system integration as the European Union increases the share of renewables in the energy mix. It concludes that CCS is critical in enabling the increase of renewable electricity and balancing the European energy system. [Click here to read the report](#).
- ZEP submitted its latest report for approval at the AC72. The report is titled '*CCS from a biomass and land-use perspective*'. Further details about the report are provided in item 4 of this documentation.

Upcoming Article on CDR

The ZEP ERG and Communications group are preparing an article on CDR. Considering the strong momentum that we see today to develop CDR methods, especially with DACCS, a timely op-ed by ZEP could shed light on:

- ▶ How to separate the hype from practical, hands-on solutions that are ready today to be used at scale with sufficient political and commercial support?
- ▶ What are the hurdles for deployment, and how to co-develop removals and reductions most efficiently? How does this issue fit into the more important challenge of building the CO₂ infrastructure that Europe needs?
- ▶ What are the key questions to ask by EU governments that wish to develop CDR?
- ▶ What are the important questions to ask today by investors, industry and other stakeholders that consider CDR for their decarbonisation pathways?

A first draft article will be circulated within the Communications group this month for comments on before being submitted for ERG approval.

There will be an oral update at the meeting.

Agenda Item 6: PCI, Innovation Fund, and projects – for information and guidance

6.a. Projects of Common Interest, Innovation Fund

Details about this topic are provided in item 4, “Updates from Networks”

There will be an oral presentation at the meeting by Daniel Kitscha from DG CLIMA.

6.b. Project presentation: Antwerp@C

Anne-Frédérique Demaerel, Program Manager Sustainable Industry at the Port of Antwerp, will provide a presentation about the Antwerp@C project.

Antwerp@C, Port of Antwerp – Belgium

In the Port of Antwerp, the local petrochemical industry is assessing pathways to connect captured CO₂ to the Porthos CCS network in the future. The project is a combined effort of Port of Antwerp, Air Liquide, BASF, Borealis, ZEP Member ExxonMobil, INEOS, Fluxys, and ZEP Member Total Energies.

A backbone of pipelines will be installed along the Scheldelaan to transport this CO₂. This project contributes to the strong development of CCS and CCU in the European North Sea and aims to store 9 Mtons per year of CO₂ by 2030. Fluxys, Air Liquide and Pipelink (a subsidiary of Port of Antwerp) have organised an ‘Open Season’ in order to map the initial demand for the CO₂ infrastructure which is proposed to be built. A final investment decision is expected in early 2023. [Project webpage](#)

Agenda Item 7: CCUS Forum – *for information and guidance*

7.a. Update on CCUS Forum

The CCUS Forum is the EC's key vehicle for the development and deployment of CCS and CCU in the European Union. It is intended to become a regulatory forum for CCS and CCU in line with the Madrid Forum for Gas and Florence Forum for Electricity. The first CCUS Forum session was organised in October 2021 and the next is expected in October or November 2022. The EC has engaged three working groups to prepare for this session:

- WG CO₂ infrastructure – co-chairs: ZEP, Bellona and IOGP (next meetings: 12 September, 3 October)
- WG CCUS Vision Paper – co-chairs: Florence School of Regulation, CATF, and Danish Ministry of Climate, Energy and Utilities (5 September)
- WG CCUS Industrial Partnership – co-chairs: ZEP, Cembureau, and the European Lime Association (first coordination meeting with co-chairs week of 5 September)

The Forum work and ZEP input to the WGs will continue to be discussed with the TWG Policy & Funding.

There will be an oral update at the meeting by Chris Bolesta of DG ENER and the CCUS Forum working-group co-chairs.

WG on CO₂ infrastructure

For the WG on CO₂ infrastructure, the objective is to provide clear recommendations to the EC on how to develop and deploy European CO₂ transport and storage infrastructure. The aim is to present a shorter issue paper at this year's CCUS session and to deliver a more comprehensive report in Q1 next year. The first meeting was held on 20 July ([link to slides](#)). After introductory presentations, the WG members highlighted what they would like to see included in the work, where extra attention to landlocked countries, standards, learning from good practices, and the importance of building capacity and knowledge among authorities, was mentioned.

The WG on CO₂ infrastructure will also coordinate with/give input to the two newly started EC studies on CO₂ infrastructure – on technical optimisation of cross-border CO₂ transport by the JRC, and on the regulatory framework by the Energy Transition Expertise Centre (EnTEC). The review of the guidance documents of the CO₂ storage Directive that will start in December this year will also be of interest.

Zoi Kapetaki from the JRC will give a short update on the studies at the meeting.

The draft issue paper of the WG on CO₂ infrastructure will be presented at the 72nd Advisory Council for guidance and the final issue paper will be presented for endorsement at the ACEC in October.

WG Vision

The WG vision convened on 25 July for their first meeting ([link to slides](#)). Following introductory presentations on the objectives and scope of the vision paper, members of the

WG highlighted the importance of regulatory certainty as an enabler of deployment; the need for business models, to support a break from the dependency on state aid; as well as the need to develop a European framework for CO₂ transport.

The second meeting of the WG took place on 5 September. The co-chairs provided a summary of the contributions received from members and went through the structure and content of the draft paper. Members held a discussing around the definitions and the scope of the paper (namely, about the inclusion of CCU). Members also discussed the need to include a national perspective, with DG CLIMA agreeing that the paper should define actions and responsibilities, including the role and work of Member States. DG CLIMA also reiterated the need to increase storage capacity. The participants finally questioned the EC about what can be expected as an outcome from the paper, with the EC clarifying that the recommendations will be used as a basis to prepare the CCUS vision paper. While the official format is still being discussed by the EC, its publication is set for next year.

An agreement has been made between the co-chairs of the two WGs that the WG vision paper will not work on CO₂ transport and storage but include in their work input given by the WG CO₂ infrastructure.

WG Industrial partnership

The first call with the co-chairs for the WG on Industrial partnership is expected in the week of 12 September.

Agenda Item 8: Horizon Europe work programme – *for information and guidance*

8.a. Horizon Europe work programme for 2023-2024

Details about this topic are provided in item 4, “Updates from Networks”

Vassilios Kougionas from DG RTD will provide an update.

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Agenda Item 9: Carbon Dioxide Removal – *for information and guidance*

9.a. Updates from the European Commission

The European Commission adopted the Communication on Restoring Sustainable Carbon Cycles ([link to Communication](#)) in December 2021, which includes measures to scale up carbon removal solutions (*refer to item 4 – Updates from Networks*). In the Communication, the EC announced an EU regulatory framework for the certification of carbon removals which is expected in the form of a proposal for a regulation in Q4 2022.

This legislative proposal is considered an essential steppingstone towards the goal of fully integrating carbon removals into EU climate policy and achieving net zero CO₂ emissions by 2050. ZEP has provided input to DG CLIMA regarding the certification framework through the [call for evidence](#) and [the public consultation](#).

There will be an oral update at the meeting by Fabien Ramos of DG CLIMA.

9.b. Updates on Mission Innovation CDR

The Carbon Dioxide Removal Mission organised a workshop on 21 June to identify priorities and actions for direct air capture, BECCS, and enhanced mineralisation.

The Carbon Dioxide Removal Mission will release an Innovation Roadmap and Action Plan during the 7th Mission Innovation (MI-7) which is taking place from 21 to 23 September in Pittsburgh ([link to the communication](#)). The Action Plan will outline the activities and initiatives that the Mission will undertake to support research in CDR technologies in the coming months and years. The Mission will also announce the first flagship project at the MI-7.

There will be an oral update at the meeting by Mark Ackiewicz, from the US Department of Energy.

Agenda Item 10: ZEP and IWG9 actions

10.a. Decisions and actions for the two platforms

The meetings of the ZEP AC and the IWG9 Plenary are coordinated on the same day with one combined agenda, pre-reads, and send-outs. This to increase knowledge sharing and ensure support to and enhanced coordination of the stakeholders.

The AC/AC members will decide on matters that are specific to ZEP, while the IWG9 Plenary will decide on matters that are specific to the SET-Plan Implementation Plan.

The aim of this item is for the co-chairs of the IWG9 and the chair of ZEP to clearly highlight the decisions and actions of each of the platforms.

Agenda Item 11: Next meeting dates

11.a. Next meeting dates – for information

ZEP Advisory Council and IWG9 Plenary (Wednesdays)

14 December 2022

ZEP Advisory Council Executive Committee (Tuesdays)

18 October 2022

22 November 2022

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