

IWG9 Plenary and ZEP 73rd Advisory Council

14 December 2022, 10:30-17:00 CET

Agenda Item 1: Introduction and welcome

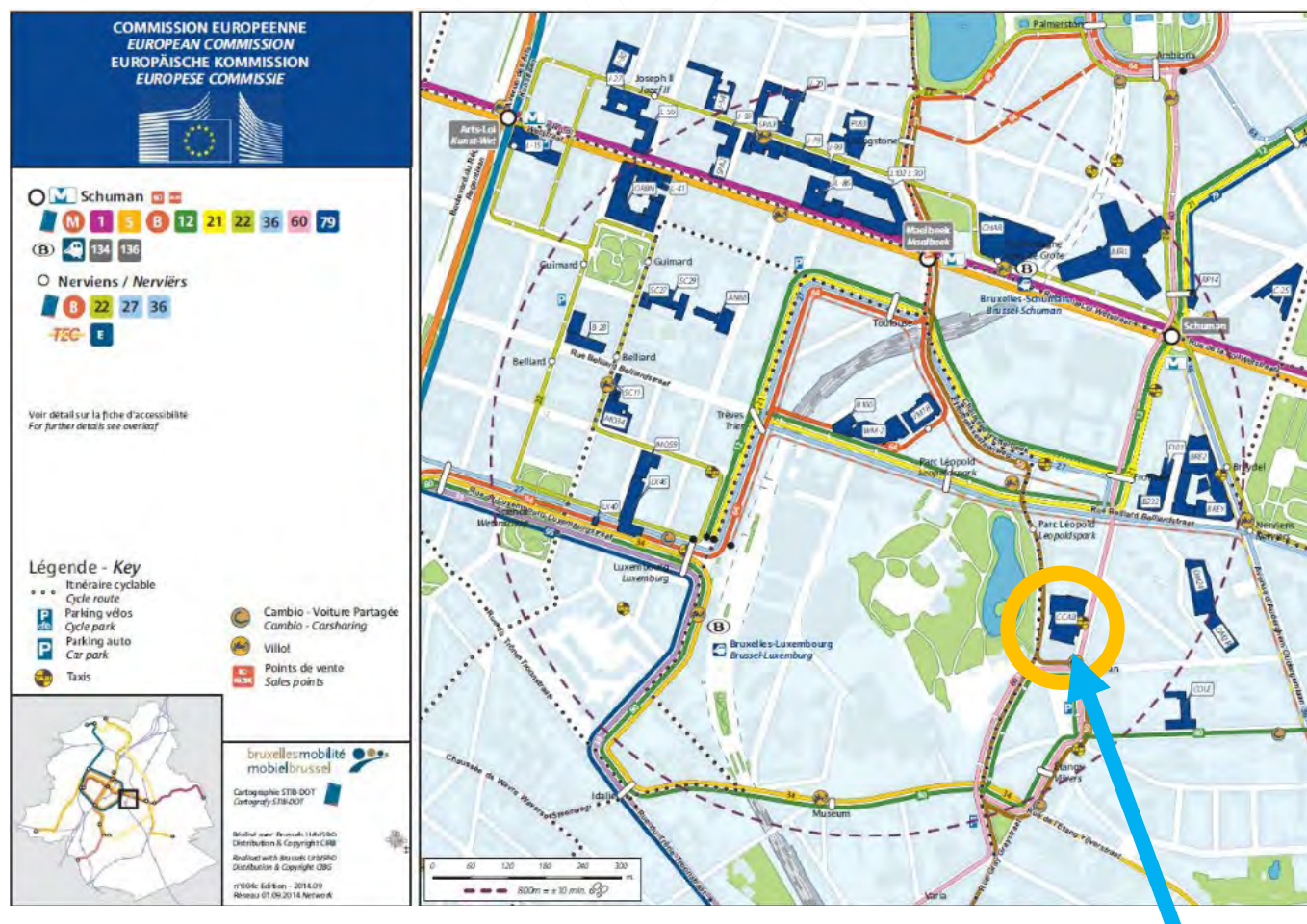
1.a. Meeting instructions

The IWG9 Plenary and ZEP AC73 meeting will be a physical meeting. It will be held in Room 3A, Centre Albert Borschette, European Commission, 36 rue Froissart, Brussels.

In order to enter the building, attendants will require an identification document. Those who have notified their in-person attendance to the ZEP Secretariat will receive a QR code ahead of the meeting to facilitate entrance. The sign posts in the lobby will also indicate the location of the meeting, in room 3A.

Virtual participation will be facilitated for those who need it, with Webex. 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 IWG9 Plenary and 73rd meeting of the Advisory Council is appended as pre-read 1.b.

1.c. IWG9 Plenary and ZEP AC72 draft meeting minutes

The draft meeting minutes from the previous IWG9 Plenary and 72nd meeting of the ZEP Advisory Council, which took place on 14 September 2022, are appended as pre-read 1.c.

1.d. ZEP ACEC October meeting minutes

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

1.e. ZEP ACEC November meeting minutes

The ZEP ACEC November meeting minutes are appended as pre-read 1.e.

IWG9 Plenary and ZEP 73rd Advisory Council

14 December 2022, 10:30-17:00 CET

Draft meeting agenda

Item	Lead Presenter	Time
1 Welcome and introduction – for information <ul style="list-style-type: none"> Tribute to Dr Graeme Sweeney New members 	ZEP vice-chairs/IWG9 chairs	10:30-10:40
2 ZEP and IWG9 2023 – for information, guidance, and approval <ul style="list-style-type: none"> New ZEP chairperson – election process ZEP bylaw update Work programmes and budget 	Per-Olof Granström	10:40-11:10
3 Updates from governments – for information <ul style="list-style-type: none"> Expectations for the Swedish presidency CCUS in the Flemish region Danish CCS strategy 	Swedish attaché (tbc) Tomas Velghe, Flemish Energy and Climate Agency Jasmin Sharzad, Danish Ministry of Climate, Energy and Utilities (tbc)	11:10-12:00

LUNCH BREAK

4 Updates from the Networks – for information, guidance, and approval	Network co-chairs, ZEP Secretariat	13:00-13:30
5 Updates from the ERG – for information and guidance	ERG co-chairs, ZEP Secretariat	13:30-13:45
6 SET-Plan review – for information and guidance <ul style="list-style-type: none"> Revised SET-Plan and consequences Horizon Europe Work programme and partnerships 	IWG9 chairs Vassilios Kougionas, DG RTD	13:45-14:15
7 Updates from ACT/CETP – for information	Ragnhild Rønneberg, ACT	14:15-14:30

COFFEE BREAK

8 CCUS Forum – for information and guidance <ul style="list-style-type: none"> Conclusions and way forward Working groups and way forward Industrial partnership and coalitions 	Chris Bolesta, DG ENER CCUS Forum co-chairs Chris Davies	14:45-15:30
9 Updates on CO2 infrastructure – for information and guidance <ul style="list-style-type: none"> EC studies on CO2 infrastructure Projects of Common Interest 	Zoi Kapetaki, JRC Filip Neele, TNO Katrien Prins, DG ENER	15:30-16:15
10 Certificates for Removals – for information and guidance <ul style="list-style-type: none"> Presentation of the EC proposal Way forward and the CDR expert group 	Fabien Ramos, DG CLIMA Network co-chairs and others	16:15-16:45
11 ZEP and IWG9 actions / Closing remarks and next meeting	ZEP vice-chairs/IWG9 chairs	16:45-17:00

DRAFT MEETING MINUTES

ZEP 72nd ADVISORY COUNCIL AND IWG9 PLENARY

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

In-person meeting in Brussels (and online)

1. Introduction and welcome

Chair, WC, opens the meeting. Remarks that this meeting is a unique occasion, being the first combined ZEP AC and IWG9 Plenary and also the first physical meeting after the pandemic. Shares Graeme Sweeney's apologies not to be able to join.

Chair asks if there are further items for the meeting agenda – the agenda is adopted. Chair asks AC members for approval of minutes from AC71 in June and ACEC July. All approved.

Chair provides introductory presentation on the latest CCUS developments in Norway. Notes that Longship project deployment is well underway with a financial investment decision sealed. He notes that a second well is being developed for storage, and that several promising projects were announced at the latest ONS conference, demonstrating the strong momentum for CCS deployment in Norway.

POG also welcomes attendants and introduces the ZEP Secretariat: Ana, Charles-Albert, and Murillo, who are invited to say a few words.

2. The new grant and set-up for ZEP and IWG9

POG provides a short update regarding the new grant and notes the European Commission (EC) steer in the call for grant proposals: only one project per sector, decreased budgets for all sectors, and focus on coordination. He notes that the grant is combined ZEP and IWG9 and in line with the two platforms' [2021 guidance document for grant applicants](#), focusing on preserving the strengths and coordinate all activities of the platforms to increase impact, efficiency, and benefits for stakeholders. He describes the aim to keep ZEP and IWG9 as separate entities but to coordinate the two platforms' activities in one combined governance structure.

POG highlights the basis for the new combined IWG9 and ZEP work programme. He notes that after AC/Plenary guidance during today's meeting, the outline programme will be discussed with the Networks, ERG and Government Group, and finally presented for endorsement at the ZEP AC/IWG9 Plenary in December.

POG also gives an update of the ZEP-C financial status, noting higher income, lower expenditure, and increased financial reserves at the end of 2022.

Questions and discussion follow, where the chair reiterates that the platforms will not be merged into one, and POG highlights that this first meeting will contribute to bringing clarity on how the setup will work in practice. *The governance structure is endorsed.*

3. State of play CCUS Implementation Plan/IWG9

Chair introduces the item and the IWG9, highlighting the 10 R&I targets for 2030 and that an update to reflect the strong ambition will be needed to achieve climate neutrality. Chair points at the very useful Roadmap to 2030 report and advises attendants to consult the report which is available on the CCUS SET-Plan website.

LE, MB, JP, AP, and POG describe the state of play of the IWG9 R&I activities, highlighting large-scale CCS projects, CO₂ transport infrastructure, capture, storage, utilisation, and the modelling exercise conducted over the past three years. It is concluded that this work made a significant contribution to the development of European CCUS and is set to continue in the new grant.

VK confirms the positive results of the work. He notes that the SET-Plan revamp aims to improve it and make it more politically visible and mentions that the European Commission (EC) has completed a thorough overview to determine what can be improved. VK highlights the upcoming SET-Plan conference on 9-10 November and an expected communication in Q1 2023 supported by both DGs RTD and ENER.

NR welcomes the expected increase in ambition. He also notes that many other reports also call for up to gigatonne-scale yearly CCS driven reductions by 2050, and that this strong scaling-up will be an important task ahead.

Chair agrees and adds that the SET-Plan needs to follow these strong developments.

4. Updates from the Networks

a. Network Policy & Economics

LSN provides an update, highlighting the outline for the new work programme and the priorities for the coming year: the revision of NECPs, the CCUS Forum, CDR and voluntary carbon markets, and the revision of the Monitoring and Reporting Regulation. LSN adds that the TWG P&F has recommended a proposed draft response to the ICVCM consultation. The draft Article 6 compliance guidance notes by the CCS+ Initiative are expected for early 2023 and the Network will monitor these developments. Finally, LSN highlights the Inflation Reduction Act that was been approved in the US, and the possible lessons from that model will be important to follow. LSN presents the draft response to two consultations that have already been endorsed by the ACEC/ZEP chair:

- 'Development of trans-European transport (TEN-T) network in light of war in Ukraine – amended proposal for guidelines'
- 'Energy – updating EU legislation to make the EU independent from Russian fossil fuels (REPowerEU)'

Chair invites the AC to approve the two draft responses. *The responses are approved.*

AF presents the draft ZEP ICVCM consultation response that is being prepared jointly with the CCSA. The aim is clear guidelines for voluntary carbon markets, and the draft response includes items such as a full life-cycle analysis and alignment, clear differentiation between reductions and removals. The AC is welcome to send comments to the draft by 21 September COB. FN gives input to the draft consultation regarding the post-closure period and its links to the CO₂ storage Directive.

Chair invites the AC to endorse the draft consultation response and to delegate to the ZEP chair the final endorsement, considering further input. Endorsed.

AF gives a short update to the CCS+ Initiative work, noting the work on Article 6 compliance. CAB gives a short overview of the comprehensive EU policy agenda and highlights the most critical items. LSN presents the CCUS Forum work as ZEP co-chairs the WG on CO₂ infrastructure and actively engages with WG vision.

LR also underscores the importance of DACCS for Hydro's decarbonisation strategies.

POG gives a short background to the expert group on carbon removals that the EC will start and the call for experts. He proposes that ZEP applies to join this group represented by Kristin Jordal from SINTEF, who has been actively involved in the ZEP CDR work. He invites KJ, who highlights her work and background.

Chair invites the AC to approve that ZEP applies to the working group and that Kristin Jordal will be the representative. Approved.

b. Network Technology

FN gives an update linked to the outline work programme, highlighting the good work following the report titled 'Experience in developing CO₂ storage under the Directive on the geological storage of carbon dioxide', noting that this work was timely considering the update of the associated Guidance documents and the TWG that produced the report will follow these developments. Further developments are also expected for the TWG CO₂ transport by ship. FN notes the recent work on CDR which aims to support the European Commission's engagement with Mission Innovation. Regarding IWG9, FN notes the importance of this work and that suggestions are welcome for further activities touching upon R&I.

AH gives a short presentation of the main messages in the ZEP report titled 'CCS in a biodiversity and land-use perspective', which has been endorsed by the ACEC in July and is up for approval by the AC.

A discussion ensues, with LR highlighting the current obstacles in national regulations and reiterating the threat posed by climate change. AH agrees and also points at differences in terms of biomass potential between different countries. He points to Scandinavia as a particularly promising region with strong forestry regulations.

Chair invites the AC to approve the report. Approved.

5. Updates from External Relations Group

MS highlights recent communications activities in ZEP and upcoming work coordinated with the Communications group. ERG co-chair JH follows with an update on the recent meeting with DG CLIMA, where the critical need to keep supporting CCS through the Innovation Fund and other activities were highlighted.

6. PCI, Innovation Fund, and projects

DK provides updates from DG CLIMA and the EC, highlighting approved projects under the Innovation Fund and noting the strong presence of CCS and CCU. He mentions that storage projects are much needed, and more applications for storage projects are welcome for future calls. DK describes the specific REPowerEU window with a dedicated budget envelope and highlights that CCS and CCU projects are included. Finally, DK highlights a new pilot-sized window to support technological development of non-commercial projects, and CCS projects are welcome to apply. The next call will be launched in November 2022 with a deadline set to March 2023.

DK gives an update on cross-border CO₂ transport and storage within the EEA, highlighting that the EC considers access to storage sites a commercial matter – where the EC would like to see fair and transparent prices and unbundling between transport and storage services. He notes that the EC views post closure liability as settled in CO₂ storage permits. DK confirms that in the EU and the EEA, the CO₂ storage and ETS directives provide a comprehensive legal framework for exporting/importing CO₂ for storage.

DK updates on the CO₂ storage directive's guidance documents, noting that consultants have been selected under the tender, and that the consultants have received ZEP's 'Experience in developing CO₂ storage' report. The timeline for the review: Q1 2023 will focus on the scope, while Q2-3 will focus on a public workshop. The EC is expected to adopt the revised guidance documents end-2023. EC will organise capacity building workshops for competent authorities and potential storage site operators in Q1-2 2024. The consultant is expected to provide a final report with recommendations outside of the scope of the revised guidance documents in mid-2024.

A discussion follows where the following is mentioned: On questions from SC regarding transport of CO₂ including the UK and Norway, DK responds that the focus area is the EU and the EU ETS area. DK notes that informing IMO will be enough, based on a question from LE on what will be needed regarding the London protocol. DK also notes that there will be no need for Member States to ratify this new interpretation of the CO₂ storage directive regarding bilateral agreements. On a question from TL on what level of innovativeness will be needed for storage projects to qualify for the Innovation Fund, DK notes that applications will be reviewed thoroughly without preconceptions.

7. CCUS Forum

CB from DG ENER provides an update on the CCUS Forum, highlighting that work is well underway for the WGs CO₂ Infrastructure and Vision with over 100 attendants in each of the WGs. He points at the current division with regards to CCS and CCU, and stresses that the work needs to encompass all technologies. CB also highlights the upcoming study on a regulatory framework for CO₂ infrastructure, which is being conducted by TNO, Trinomics, and Fraunhofer.

AFD gives a presentation on the Antwerp@C project, describing the project, aiming to reduce CO₂ emissions in the port area by 2Mtpa by 2025 and by 9Mtpa by 2030. AFD also highlights plans by Fluxys to reconfigure its natural gas network for the transport of CO₂, among other gases.

A discussion follows with JH and AFD highlighting the federal government's support in Belgium for CO₂ infrastructure through EU recovery funds. FN points out the need for CO₂ storage to accommodate the strong volume of capture that is coming up from such projects.

ZK follows to present the timeline for the JRC's ongoing work on matching CO₂ sources with appropriate sinks. ZK acknowledges the ZEP work on transport modalities of CO₂, as well as the ongoing work by the consultant consortium highlighted by CB – these will be accounted for to align approaches and achieve realistic results, also with regards to costs. ZK notes that further ZEP input is welcome to reach these accurate numbers.

8. Horizon Europe work programme

VK gives an update on the Horizon Europe work programme for 2023-24, which is expected in November. He notes that CCS will be included through calls on T&S, CDR, and CCU, and adds that a grant agreement has started on the Clean Energy Transition Partnership (CETP). The input to Mission Innovation CDR is also ongoing ahead of the Ministerial Conference in late September and ZEP has provided strong support.

A discussion follows with FN asking for clarifications regarding the evaluation process of the Horizon Europe grant applications, and NR asks for further information on cooperation with low-income countries. VK highlights the ongoing EU cooperation with Africa and the growing importance of CETP-related cooperation.

9. Carbon Dioxide Removal

FR provides an update on DG CLIMA's work with carbon removals, in particular covering the Sustainable Carbon Cycles communication. He reminds attendants that a report is planned for end of November. A regulatory framework is being developed by the EC, including governance mechanisms for certification, monitoring and verification of removals. The work of the expert group will start at the end of the year.

MA from the US Department of Energy follows with a presentation describing Mission Innovation CDR and the ongoing work. He highlights the critical challenges, such as the need for further data to support life-cycle analyses, and the need to coordinate efforts among Mission members. The Global Clean Energy Action Forum in late September will be a milestone for Mission Innovation and in this occasion several sprint projects will be announced.

10. ZEP and IWG9 actions

Chair and POG recap the actions taken during this first combined meeting:

- The ZEP AC and IWG9 Plenary endorsed the governance structure, and were asked to provide input to the outline ZEP/IWG9 work programme.
- The ZEP AC approved:
 - the consultation response on the TEN-T, and the feedback on the REPowerEU,
 - the ZEP report on CCS in a biodiversity and land use perspective,
 - Kristin Jordal from as the ZEP's applicant for the CDR Expert Group.
- The ZEP AC endorsed the draft ICVCM consultation response and to delegate the final endorsement to the ZEP chair.

JR notes that the combined meeting has proven to add value and welcomes the presence of several stakeholders in the room.

11. Closing remarks and next meeting

Chair thanks all participating, encourages all attendants to continue the discussion and invites more virtual attendants to join physically in the future. As the calendar stands, the next combined AC73 and IWG9 Plenary meeting will be organised on 14 December as physical meeting in Brussels.

Attendants

ZEP AC members		
1	Vicente Cortés	AICIA/University of Sevilla
2	Jonas Helseth	Bellona
3	Shirley Oliveira	BP
4	Isabelle Czernichowski	BRGM
5	Jannicke Bjerkas	Celsio
6	Chris Littlecott (<i>proxy to Jonas Helseth</i>)	E3G
7	Stijn Santen	EBN
8	Salvatore Giammetti	ENI
9	Lamberto Eldering	Equinor
10	Robin Clowes	ExxonMobil
11	Florence Delprat-Jannaud (tentative)	IFPEN
12	Liv Rathe	Norsk Hydro
13	Kim Bye Bruun	Northern Lights
14	Dorus Bakker	Port of Rotterdam
15	Stuart Haszeldine	SCCS
16	Syrie Crouch	Shell
17	Nils Røkke	SINTEF
18	Charles Soothill	Sulzer
19	Ward Goldthorpe	Sustainable Decisions
20	Filip Neele	TNO
21	Emmanuel Karakas	University of Athens

External speakers		
22	Chris Bolesta	European Commission
23	Vassilios Kougionas	European Commission
24	Daniel Kitscha	European Commission
25	Fabien Ramos	European Commission
26	Zoi Kapetaki	Joint Research Centre
27	Anne-Frédérique Demaerel	Port of Antwerp
28	William Christensen	Norwegian Ministry and IWG9 Co-chair
29	Joëlle Rekers	Dutch Ministry and IWG9 Co-chair
30	Marie Bysveen	SINTEF
31	Anastasios Perimenis	CO2 Value Europe
32	Jonathan Pearce	BGS
33	Mark Ackiewicz	US Department of Energy
Physical attendants		
34	Fernando Sanchez Naranjo	Alienor
35	Adrien Berthier	Aluminium Dunkerque
36	Michal Wendolowski	Bellona
37	Luke Warren	BP
38	Eadbhard Pernot	CATF
39	Paola Mazzucchelli	Circe
40	Sebastian Busch	energy4climate
41	Julia Mühleiß	EON
42	Nicolò Cairo	ETN Global
43	Adrian Nicolae	European Commission
44	Isabelle Chaput	European Lime Industry Association
45	Bert de Backker	ExxonMobil
46	Marine Valdois	ExxonMobil
47	Yelda Guven	ExxonMobil
48	Stale Aakenes	Gassnova
49	Melle Sijbrandij	Innovation Quarter

50	Caterina de Matteis	IOGP
51	Greg Archer	LanzaTech
52	Sara Vinklatova	Leitat
53	Virgilijus Petuska	Minoil
54	Thomas Vanhauwaert	Neptune Energy
55	Christian Schwarck	Shell
56	Kristin Jordal	SINTEF
57	Jens Dedeyne	Uni Gent
58	Laszlo Mohai	Veolia
59	Mohammed Nazeer Khan	Vito
Virtual attendants		
60	Angel Gavieiro	AG Strategy
61	Anton Manakhov	Aramco
62	Eric De Coninck	Arcelor Mittal
63	Raphael Wasserbaur	Austrian Environment Agency
64	Lina Nagell	Bellona
65	Michał Wendołowski	Bellona
66	James Todd	BP
67	Michael Evans	Cambridge Carbon Capture
68	Helen Bray	Carbon Engineering
69	Karim Rahmani	Carbon Impact
70	Toby Lockwood	CATF
71	Dave Warne	CCS Instruments
72	Olivia Powis	CCSA
73	Ross Kennedy	CCSA
74	Ruth Herbert	CCSA
75	Andreas Cappelen	Celsio
76	Jan Kjärstad	Chalmers
77	Eve Tamme	Climate Principles

78	Ceri Vincent	CO2GeoNet-BGS
79	Jean-Xavier Morin	CO2-H2
80	Vit Hladik	Czechia Geological Survey
81	Dennis Krämer	Dechema
82	Arjan van Ginkel	Endress
83	Giovanni Vergine	Eni
84	Keith Hester	Eni
85	Roberto Ferrario	Eni
86	Valeria Di Francesco	Eni
87	Till von Versen	EON
88	Ulrich Almeida	Equans
89	Camille Fleuriault	Eramet
90	Sophie Wilmet	European Chemical Industry Council
91	Eirik Lonning	European Commission
92	Carol Paquier	French Ministry for Environment and Sustainable Development
93	Darshak Mehta	GCCSI
94	Anghel Sorin	GeoEcoMar
95	Torsten Brandenburg	German Federal Ministry of Economics and Technology
96	Reinier van Noort	IFE
97	Caterina De Matteis	IOGP Europe
98	Yoshihiro Sawada	Japan CCS
99	Tomisław Kozubik	KGHM
100	Bruno Langlois	Khimod
101	Alexis Perrier	Lhoist
102	Caroline Båth	Liquid Wind
103	Mariana Lyra	LUT
104	Christopher Fernandes	Mitsubishi Heavy Industries
105	Arthur Heberle	Mitsubishi Power Europe
106	Arnoldo Perez	n/a
107	Jan Christopher Brandt	n/a

108	Marta Dołęga-Łasisz	n/a
109	Veronica Lupu	n/a
110	Jean-Louis Roux Dit Buisson	NeoCarbons SA
111	David Barratt-Due	Norwegian Ministry of Petroleum and Energy
112	Sina Prestmo	NTNU
113	Scot Bryson	Orbitan
114	Martyna Żatkiewicz	Orlen
115	Przemysław Grojs	Orlen
116	Eric Ingels	Pall Corporation
117	Dominika Niewierska	PKN Orlen
118	Florian Schabus	Planet A
119	Ragnhild Rønneberg	RCN
120	Arash Hedayat	Repsol
121	Joni Jupesta	Research Institute of Innovative Technology for the Earth
122	Chris Davies	Rud Pedersen
123	Martijn van de Sande	RVO
124	Philippe Lavagna	SBM Offshore
125	Miguel Angel Hernando	Tecnicas Reunidas
126	Luis F. Piedra-Garza	Thyssenkrupp
127	Nina Kolbe	Thyssenkrupp
128	Cyril Vock	TotalEnergies
129	Liliana Guevara	Trinomics
130	Wim de Jong	Twence
131	Christian Heller	UBA
132	Sebastian Schmid	Umwelttechnik Baden-Württemberg
133	Jarand Gauteplass	University of Berge
134	Xuan Ponchon	Véolia
135	Cecile Boyer	Vicat
136	Yosra Briki	Vicat
137	Frederik Selhorst	Victrol



138	Ludo Diels	Vito
139	Chris Phillips	Wood Plc
140	Hooman Haghighi	Wood Plc
ZEP Secretariat		
141	Per-Olof Granström	ZEP Secretariat
142	Charles-Albert Bareth	ZEP Secretariat
143	Murillo Salvador	ZEP Secretariat
144	Ana Faria	ZEP Secretariat

ACEC October meeting

18 October 2022

9:00-10:30 CEST

Draft meeting minutes

1. Introduction and welcome

Chair/POG welcomes all and confirms quorum.

Attendants pay their respects to Dr Graeme Sweeney.

Chair asks for approval of the ACEC October meeting agenda – agenda is approved. Asks for endorsement of draft meeting minutes from the 72nd Advisory Council meeting, held in September - minutes are endorsed.

2. New grant and way forward

Chair outlines the proposed formal process for the election of a new ZEP chair. The process and a proposal for updated ZEP bylaws will be presented for approval at the AC meeting in December, with the aim to present a new chair at the AC meeting in March next year. He also highlights regarding governance, that regular meetings will be held with the vice-chairs until the new chair is onboard.

Referring to the new grant and the coordinated ZEP and IWG9 setup – combined AC/Plenary meetings, using one governance structure for all work from both platforms, and one combined work programme – Chair highlights that this was tested at the AC/Plenary in September. He asks the ACEC for feedback on this, on the outline work programme, and the presented draft agenda for the December AC/Plenary.

A discussion follows regarding if an extra AC member meeting in the beginning of next year for candidates to present themselves could be held as an in-person meeting.

The ACEC endorses the way forward regarding the chair election process. The ACEC will discuss this further at the November meeting, ahead of the presentation for approval at AC73 in December.

3. Updates from Networks

a. NWPE

LSN updates on NWPE activities, highlighting latest items covered by TWG P&F, including: CCUS Forum, certification on CDR – with good discussions within TWG CDR, the Fit for 55 package, incoming update of CO2 storage directive guidelines, MRR, and more. The next meeting of the NWPE will be organised on 16 November.

AF presents the proposed ZEP response to the CBI consultation on criteria for a labelling scheme for bonds and loans for hydrogen projects and highlights the recent EC analysis paper on the London Protocol – for which ZEP has published a short briefing that is available on the website.

CAB presents the identified areas of interest for the continued ZEP/CCSA work on TWG CO₂ transport by ship, such as scope and trade routes, update on interoperability, and barriers for commercialisation. A ToR is being prepared and will be presented for approval at the AC in December. LB asks if this will include mapping of ports and options for CO₂ transport by ship. Chair notes that the mapping will be based on JRC's ongoing CO₂ transport optimisation work, where ZEP is giving input. CAB also gives an update on REPowerEU and the EP momentum to auction EU ETS allowances to bring down energy prices.

A discussion follows where concerns are raised regarding political interference and the bankability of the ETS, and that this will decrease incentives for CO₂ abatement. It is highlighted that ZEP should react towards the EP regarding the political interference.

ACEC endorses the response to CBI, where ZEP supports the initiative and also recommends that the EU Taxonomy low-carbon hydrogen criteria should include the decreasing carbon intensity threshold.

b. NWT

AH gives an update from the latest meeting of the NWT that was held on 13 October, noting that the work programme was discussed, covering items such as supply chains, energy resources, R&I activities, CO₂ specifications, increased scope on CDR, and public perception. ToRs are being prepared to be presented for comments at ACEC in November and for approval at the AC/Plenary in December.

AH gives a short background to the EC call for evidence on the 'European Critical Raw Materials Act', notes the deadline on 25 November with legislative and non-legislative initiatives expected in Q1 2023, and highlights this opportunity to investigate supply chain risks for CCS and CCU. LE and JH note that this is a chance to stress the importance of CCS among other technologies.

Chair proposes that ZEP responds to the critical raw materials consultation, with focus on a more general description of CCS and CCU and the supply chain risks rather than the consultation questions. The ACEC endorses.

4. CCUS Forum

Chair updates on the latest developments within the CCUS Forum working groups ahead of the plenary session on the 27-28 October. Both issue papers have progressed well and are aligned with ZEP positions. While the Vision paper will be finalised at the plenary, the WG CO₂ Infrastructure will continue and present a full report in March 2023. For the third WG, on industrial partnership, the work has not really started. Stakeholders have very different views regarding what kind of partnership they would like to see/that is needed.

A discussion follows regarding the WG on partnership. WB notes that while some stakeholders support such work of advocacy, others prefer other approaches and the need to clearly define the objectives of such a partnership. CSO outlines what has changed in the CCS and CCU landscape over the past years and how it affects the question at hand.

Chair notes the need to clearly define the objective of such partnership to be able to have a view of whether it is needed, and that ZEP would be a natural basis. He invites the ACEC to send any further input to the secretariat.

5. Updates from External Relations Group

MS updates from the latest meetings of the Communication Group, noting the work on an article on CDR, the latest newsletter, updates of the ZEP projects map, and the possibility of a webinar showcasing the EC analysis paper on the London protocol. He also mentions that the ZEP communications toolkit will be expanded to include further items and combined with the similar document by the CCSA.

JH notes that the recent CCS critical report by the Observatory Corporate Europe will be discussed at the ERG meeting later this week.

6. Closing remarks

Chair thanks participants. Reminds that AC/Plenary will take place on 14 December as an in-person meeting in Brussels. The next ACEC meeting is planned for 22 November. Closes the meeting.

List of participants

Jonas Helseth	Bellona
Lina Strandvåg Nagell	Bellona
Charles Soothill	Sulzer
Lucie Boost	Equinor
Lamberto Eldering	Equinor
Winston Beck	Heidelberg Materials
Arthur Heberle	Mitsubishi Power Europe
Nils Røkke	SINTEF
Christian Schwarck	Shell

Ana Faria	ZEP Secretariat
Charles-Albert Bareth	ZEP Secretariat
Murillo Salvador	ZEP Secretariat
Per-Olof Granström	ZEP Secretariat

ACEC November meeting

22 November 2022

9:00-11:00 CET

Draft meeting minutes

1. Introduction and welcome

POG/chair welcomes all and confirms quorum.

Chair asks for approval of the ACEC November meeting agenda – agenda is approved. Asks for endorsement of draft meeting minutes from the ACEC October meeting – minutes are endorsed.

Announces that this is the last ACEC meeting of LB as Co-chair of the ERG, who is leaving Equinor by the end of the year. The ACEC thanks LB for her work as Co-chair for the ERG.

2. ZEP development

Chair outlines the proposed process, selection criteria and role description for the election of a new ZEP chair. A discussion on each item follows, after which the ACEC agrees. The Call for candidates, including the process criteria and responsibilities, will be communicated to AC members-only in end-November and sent to AC73 for approval together with the draft bylaw amendments. 2 January will be the deadline for applications, and an AC members-only meeting will be held in Brussels/on-line on 18 January with candidates for election and appointment of the new ZEP chairperson.

Chair highlights the revision of the ZEP bylaws. The items in the current bylaw text from 2016 that need updating and the proposals are highlighted, including a general update, the name of the platform, governance structure, rotation of members, the addition of new groups, etc. A discussion follows. The final draft updated bylaws will be shared and discussed with the vice-chairs ahead of circulating in pre-reads for AC73.

Chair presents an updated version of the draft AC73/Plenary agenda, for final comments and input. It is proposed to invite Chris Davies to AC73 to present the new capture coalition, and to include this intervention as a part of the CCUS Forum item. ACEC endorses.

Finally, the proposed ACEC meeting dates for next year are endorsed and Teams invitations will be shared with the ACEC.

3. Updates from Networks

a. NWPE

CS outlines latest NWPE activities, highlighting the proposed updates to the ZEP work programme, the EC London Protocol analysis paper – where ZEP is gathering questions and comments to discuss with EC, and the CCUS Forum – where the NWPE highlighted the important role ZEP should play in a possible industrial partnership. The ongoing EC regulatory study on CO₂ transport and storage infrastructure is presented by Trinomics and TNO – who are conducting the study. The report will be finalised in February next year and ZEP will be invited to give input/comment along the way.

As a part of the draft ZEP work programme for next year, CAB presents, referring to the pre-reads, the outline for the upcoming ZEP/CCSA work on CO₂ transport by ship. The final draft Terms of Reference will be submitted for approval at the AC73, and the work should start in December.

Finally, AF presents the draft ZEP note on political interference in the EU ETS market, that urges the EU institutions to avoid such short-term measures that undermines the trust in the EU ETS and decreases the incentive to decarbonise. The ACEC is endorses.

b. NWT

FN outlines the latest NWT activities, starting with the EC/JRC technical study on CO₂ cross-border transport infrastructure, and that ZEP is providing input to the study. The work is planned to be published in May 2023. FN also highlights the ongoing consultation on the European Critical Raw Materials act, and the draft ZEP consultation response. The response in particular calls for a level playing field with regards to critical raw materials and is attached to the meeting pre-reads. JH requests using CCS and CCU instead of CCUS.

Chair asks for ACEC endorsement of the response – endorsed.

AF presents, referring to the pre-reads, the proposed objectives to the TWG CDR and the TWG Supply Chain risks, where ToRs will be submitted for approval by the AC73.

The floor is opened for further comments and questions, and LE mentions that the NWPE will have a clear responsibility for some of the upcoming work on the CO₂ Storage Directive Guidance documents. Chair notes that this should be further clarified in the draft work programme.

4. Updates from External Relations Group

LB provides an update on the ERG, followed by MS on the Communications group activities. MS notes that the Communication Group's work on an article on CDR – previously highlighted in the ACEC – is almost finalised and that a final draft will be shared with the ACEC this week for endorsement ahead of publication. MS also notes the Communications group's work on updating the communications toolkit. Drafts for ZEP communication material, including among other things a ZEP roll-up, will be discussed at the Communication group and ERG meetings on 6 December.

Chair notes the need to elect a new co-chair for the ERG replacing Lucie, and also asks the ACEC to endorse the inclusion of a new co-chair representing R&I, based on the new combined grant. The ACEC endorses.

5. CCUS Forum

Chair provides updates on the CCUS Forum, noting the Forum conclusions, strong support for both the CO2 infrastructure and vision paper WG outcomes, and that a new Forum WG will be created to help writing the upcoming EC Communication on CCUS. He goes through the upcoming work of the Forum WG on CO2 infrastructure that will be finalised end-February next year, noting the active coordination with the studies by the JRC on cross-border CO2 infrastructure and the TNO/Trinomics study on regulatory issues for the infrastructure.

Chair notes the Forum WG on industrial partnership, where WB has an important role representing ZEP as one of the co-chairs. WB notes that the WG will deliver a proposal in mid-December. He notes the importance to highlight ZEP's role e.g. regarding a partnership secretariat, that everything is already in place, and he highlights that the ZEP government group is a huge advantage to highlight.

A discussion follows where the ZEP's important role in a possible partnership, different models of alliances and the need to clearly define the scope is highlighted. JH adds that it is crucial to highlight ZEP's evidence-based approach as an advantage.

Chair also notes that different stakeholders have tried to agree on a common letter to the EC, highlighting the importance of an EC CCUS Communication next year. However, for several reasons this has not been successful. It does not seem easy, but ZEP will try to gather stakeholder – contacting the co-chairs of the Forum WGs – in a short to the point letter. If not successful, ZEP should send its own letter to the EC. LB notes that it will be important to gather as broad a support for this letter, across the value chain. A discussion follows. ACEC agrees with the proposed way forward.

6. Closing remarks

Chair thanks participants. Reminds that AC/Plenary will take place on 14 December as an in-person meeting in Brussels. Closes the meeting.

List of participants

Jonas Helseth	Bellona
Charles Soothill	Sulzer
Lamberto Eldering	Equinor
Winston Beck	Heidelberg Materials

Nils Røkke	SINTEF
Christian Schwarck	Shell
Filip Neele	TNO
Lucie Boost	Equinor
Ana Faria	ZEP Secretariat
Charles-Albert Bareth	ZEP Secretariat
Murillo Salvador	ZEP Secretariat
Per-Olof Granström	ZEP Secretariat

Agenda Item 2: ZEP and IWG9 2023

2.a. ZEP Chair election process – for approval

The following process, criteria, and description of role & responsibilities for the electing of a new ZEP chairperson have been discussed and endorsed by the ACEC and **is brought to the AC for approval:**

Process

- Call for candidates and description of process, criteria and role & responsibility communicated to ZEP Advisory Council members on 28 November, and presented for approval at AC73/Plenary on 14 December
- Deadline for applications January 2023
- Shortlisted candidates will be contacted 11 January 2023
- AC members-only meeting in Brussels and on-line (18 January, 12:00-14:00) for vote/election and appointment of the new ZEP chairperson.

Criteria

The chairperson:

- is the image of ZEP and thus must be aligned with and uphold ZEP values
- has a well-developed network in CCS/CCU and ability to build and maintain relations
- strives to strengthen the reach and impact of ZEP, with a special focus on industry
- can communicate effectively and tactfully, balancing different perspectives, inspiring trust
- can navigate the platform across the many areas from research to the political economy and commercialisation of CCS and CCU

Role and responsibilities

- A three-year commitment
- Chairing and participating in ZEP Advisory Council and meeting of the Advisory Council Executive Committee, including discussions and preparations
- Availability to represent ZEP in meetings with EU policymakers, in correspondence, in media and events
- Expected workload is typically 20% on a yearly basis

Applications by 2 January 2023 to per-olof.granstrom@zeroemissionsplatform.eu.

2.b. Update of ZEP bylaws – for approval

Proposed updated ZEP bylaws are appended, including a list of the additions and amendments proposed.

The AC are invited to approve the draft updated ZEP bylaws.

2.c. ZEP and IWG9 work programme for 2023 – for approval

ZEP and IWG9 work programme

The outline for a joint ZEP/IWG9 work programme, with both common areas and areas that are specific for ZEP and IWG9 respectively, was presented for guidance at the ZEP AC and IWG9 Plenary in September. It has since been discussed within the Networks, Government group and the ERG and Communication group, resulting in some adjustments. Terms of References (ToR) for the workstreams/working groups will, as usual, be drafted for approval. For the immediately upcoming workstreams, draft ToRs have been prepared, discussed within the Networks, and *are presented for approval under item 4, Network updates*, in today's agenda (*the proposed work programme is appended*).

The ZEP AC and the IWG9 Plenary are invited to approve the work programme for 2023.

ZEP own work programme

Given that the EU grant funding is decreased, and the only grant is covering both ZEP and the IWG9, the ZEP AC has previously approved to introduce a 'ZEP own work programme', to be funded separately by ZEP (ZEP-C) members. The aim is to build on and further strengthen the ZEP and IWG9 work programme. With support from the ACEC, Networks and the ERG, a draft ZEP own programme (ZEP and IWG9 work programme) will be prepared for approval at AC74 in March 2023.

2.d. Finance update per 30 November 2022 and outlook to the end of the year

Appended is the ZEP-Communications financial management report of 30 November 2022.

- Income for 2022 is expected to be €290,000, including new member joining in June 2022.
- Expenditure is, due to the pandemic much 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 have been introduced since September 2022.
- There have been long gaps between the previous grants – the ZEP grant ending in October 2021 and the IWG9 grants ending in April 2022 – and the new combined grant, starting in July 2022. The AC had anticipated this risk and built up financial reserves in ZEP-C to manage possible gaps in grant funding 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-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 by the end of 2021 to approximately €350,000 by the end of 2022.

2.e. ZEP-C budget for 2023

The AC are invited to endorse a part of the 2023 ZEP-C budget. Due to uncertainty regarding if ZEP-C funding will be needed for the incoming ZEP chairperson and the funding for the 'ZEP own work programme', these two budget items will be brought to the AC74 in March for endorsement.

The budget includes the following items:

- Continuation of the core ZEP-C services, such as accounts, legal support, contingency, etc.
- *The same amount as for previous years have been included for services by a chairperson. If there will be a need for funding and if so, what amount, will be brought to the AC74 in March.*
- Continuation of the communications and events budget of €85,000, including the services from CCSA.
- Strategic work, development of ZEP.
- *Funding of the 'ZEP own work programme' (for AC74 in March).*

ZEP-C 2023 Budget

Activity	Budget (€)
Administration / Auditing	8,000
Website maintenance	1,000
Legal advice	4,000
Chair (depending on chairperson election)	67,992
Contingency	4,000
Communications/events	85,000
Strategic work	12,500
Funding ZEP own work programme (to be defined)	x
Total Expenditure	182,497
Income	310,000
Net profit / loss	

The AC are invited to endorse a part of the ZEP-C budget for 2023 (the endorsed budget will then be brought to the ZEP-C Board of Directors for approval). The parts of the budgets regarding possible funding for the incoming ZEP chairperson and the 'ZEP own work programme' will be brought to the AC74 for endorsement.

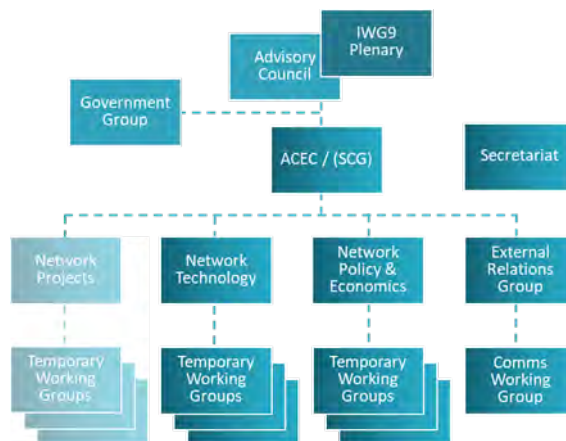
Draft ZEP and IWG9 work programme for 2023

The draft joint ZEP and IWG9 work programme, with both common areas and areas that are specific for ZEP and IWG9 respectively, was presented for guidance at the ZEP AC and IWG9 Plenary in September. It has since been discussed with the Networks, Government group, the External Relations Group (ERG) and the Communication Group, resulting in some adjustments. Terms of References (ToR) for the workstreams highlighted in the work programme will, as usual, be drafted for approval. For the immediately upcoming workstreams, draft ToRs have been prepared and discussed with Networks, and are presented for approval under item 4, Network updates, in today's agenda.

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

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.

Delivering on the day-to-day work

Network Policy & Economics (NWPE)

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

- The CCUS Forum and the ongoing and planned working groups: For the consultation on the 2023 EC Communication, CO₂ infrastructure, Industrial partnership, and Public awareness. Providing support to the Forum work, with the special aim of enabling an EU strategy for CCS and CCU and the proposed regulatory framework for CO₂ transport infrastructure, will be of key importance to maintain the positive momentum and drive implementation.
- The two EC studies – the technical study on CO₂ transport infrastructure and the study on regulatory issues on CO₂ transport and storage infrastructure. The upcoming revision of the National Energy and Climate Plans (NECP).
- Provide insights on EU and national support instruments for CCUS R&I and deployment and how they interact (in cooperation with the Network Technology (NWT)).
- The policy instruments under the 'Fit for 55 package', with a focus on the EU ETS, the Carbon Border Adjustment Mechanism, the Innovation Fund, and the Renewable Energy Directive.
- The upcoming work on a revision of the Monitoring and Reporting Regulation.
- Follow and contribute to the revision of the CO₂ Storage Directive Guidance Documents ([link](#)). The NWT will focus on technical aspects and the NWPE will support on regulatory and funding aspects.
- CO₂ transport by ship (*see draft ToR under agenda item 4*), follow-up from the first WG on CO₂ transport by ship. The aim is to investigate the scope and trade routes for CO₂ ship transport, follow up on interoperability and the work done by ISO, IMO, and SIGTTO, address existing barriers to commercialisation, and identify possible work needed for a Europe-wide CO₂ storage market.

Network Technology (NWT)

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

- Carbon Dioxide Removals (CDR) – The TWG CDR will continue to follow and give input to the ongoing international work of Mission Innovation on CDR. Moreover, it will follow up on the Communication on Sustainable Carbon Cycles – notably, the recently adopted EC proposal on a certification framework for carbon removals, incentive schemes, the development of voluntary carbon markets, accounting, standards and methodologies, including compliance with article 6 of the Paris Agreement. The TWG will be the central focus for ZEP's work on CDR and will be supported by the NWPE (*see ToR for extended work under agenda item 4*).

- Recommendations on CCUS R&I priorities for the Horizon Europe work programme.
- Progress review and recommendations on the key IWG9 R&I activities. The plan is to have six reports updating R&I activities over the coming three years, starting with a report focused on CO₂ transport infrastructure and PCIs (2023). For 2024 and 2025 there will be reports on Capture, Storage, Utilisation, Commercial-scale CCS and Linking EU and national strategies and plans on CCS and CCU. These reports will follow up and be based on the eight R&I activities reports prepared by the IWG9.
- Analysis of the implications that the energy crisis – specifically the reduced access to energy – will have on the different CCS and CCU technologies (and thus the transition towards net-zero).
- Analysis of the risks involved in the CCUS supply chain – including materials, technology, and expertise (see *draft ToR under agenda item 4*).
- Follow and provide input on the EC/JRC technical study on optimal CO₂ networks.
- Provide guidance and input to the CCUS Forum Working Group on CO₂ infrastructure, regarding CO₂ specifications in the context of an integrated European CO₂ transport and storage network. The aim is to build a common understanding on CO₂ specifications along the value chain. The focus will be on the need for standards and the framework under which such these could be developed. How this work will be set up and undertaken will be discussed with the Network Technology co-chairs.
- Follow and contribute to the revision of the CO₂ Storage Directive Guidance Documents ([link](#)). The NWT will focus on technical aspects and the NWPE will support on regulatory and funding aspects.
- The NWT will support the TWG on CO₂ transport by ship regarding objective 1 and 2 of the appended (see *draft ToR under agenda item 4*).

New Network Projects (depending on other EU grants)

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

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

External Relations Group (ERG)

For the areas of specific interest for ZEP – highlighted above – the ERG will guide communications and outreach activities. Given the many ongoing EU policy initiatives

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

Government Group

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



Draft for AC73 approval:

Zero Emissions Platform Bylaws

December 2022

DRAFT

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1 Introduction

1.1 Status of the document

This document is the agreed description of the organisational structure and workings of the Zero Emissions Platform (ZEP). ZEP is the technical adviser to the EU on the deployment of Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) – a European Technology and Innovation Platform (ETIP) under the European Commission's Strategic Energy Technologies Plan (SET-Plan).

The document replaces ZEP bylaws of September 2016.

1.2 Reviews and modifications of ZEP bylaws

This document uses as a basis the ZEP bylaws of September 2016. The following additions and amendments have been applied:

- General update of the text
- Inclusion of the ZEP objectives (section 2.1)
- Updated ZEP organisation, text and graph (section 2.2)
- Clarification regarding members' sponsorship (section 3.2.1)
- Inclusion of gender balance (section 3.2.2)
- Clarification regarding renewal of Advisory Council members (section 3.2.2)
- Clarification that also persons outside of the Advisory Council can be elected chairperson or vice-chairperson (section 3.2.3 and 4.1)
- Clarification regarding the role of the secretariat (section 3.2.5)
- Clarification that Advisory Council votes and decisions require participation of 50% or more of the Advisory Council members (section 3.2.6)
- Change in the frequency (on a three-year basis) of the revision of the Advisory Council terms of reference and rules of procedure (section 3.2.11)
- Update of ZEP deliverables (section 3.3.2)
- Section 3.3.3, 'Scope of activities of the Advisory Council', has been deleted, since the scope is well described in the rest of the bylaws (section 3.3.3)
- References to trade associations have been deleted (new section 3.3.3, previously 3.3.4)
- Clarification of the responsibilities for the secretariat and inclusion of the role of Secretary General (new section 3.3.6, previously 3.3.7)
- Clarification regarding renewal of Advisory Council Executive Committee members (section 4.1)
- Networks description has been simplified (section 5)

- For the External Relations Group, the preferred number of co-chairs has been increased to three. (Section 7)
- Section 8 on Permanent Observers and references to it has been deleted
- Permanent working groups (PWG) and the Communications Response Team (CRT) have been deleted.

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2 Organisational structure

2.1 ZEP Objectives

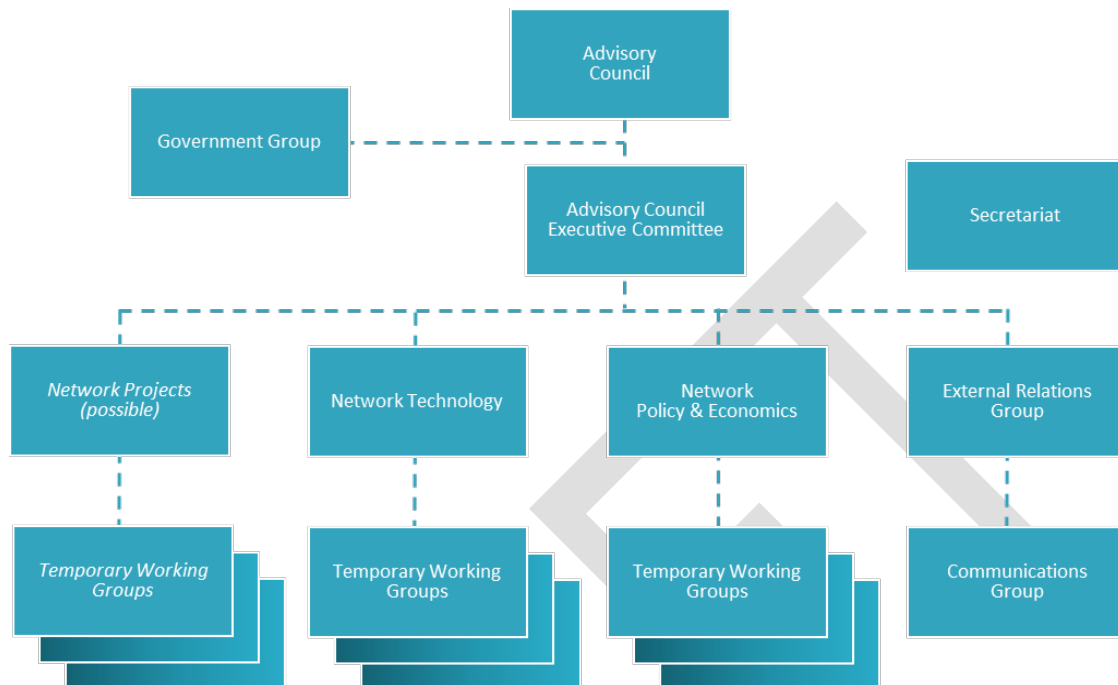
The objectives of ZEP (approved by AC61) are:

- To determine and create in the political economy the conditions necessary to reach net-zero GHG emissions in Europe by 2050 with a focus on energy and industrial sectors
- To demonstrate that the implementation of CCS and CCU technologies at scale now is essential to achieve this goal
- To accelerate the deployment of large-scale CO₂ transport and storage networks, which enable clean, competitive energy and industrial sectors, including early large-scale clean hydrogen and carbon dioxide removal (negative emissions).

2.2 Organisation structure

The structure of ZEP is depicted in the following graph and detailed in subsequent chapters:

- The Advisory Council (AC) is the body of ZEP members. It is responsible for all decisions.
- The Advisory Council Executive Committee (ACEC) represents the AC and takes decisions when the AC is not in a position to do so.
- The Government Group consists of representatives from European governments.
- Networks are the bodies from which ZEP will form temporary working groups (TWG) for delivering specific tasks (e.g. technical reports and position papers), based on Terms of References approved by the AC.
- The External Relations Group (ERG) and the Communications Group (CG) guides ZEP's regular external relations and communications.
- The ZEP secretariat manages the ZEP operations.



3 Advisory Council

3.1 Role and tasks

The mission of the AC is to develop and consolidate a joint vision and to facilitate efficient operation of ZEP, ensuring its strategic relevance within a European and global context. ZEP's core purpose is to advise the European Union Institutions on all issues concerning CCS and CCU.

The role of the AC is to:

- Set overall scope, strategic goals, performance targets and deliverables
- Steer ZEP's operations
- Seek to advise on public private partnerships and initiatives
- Act as a focal point for developing a policy interface between platform operations and policymaking bodies.

3.2 Rules of procedure

3.2.1 Mandate and obligations of members of the AC

AC members agree to commit sufficient time to actively participate in the AC work and to attend all AC meetings. In carrying out their work, AC members shall respect its Terms of Reference (see paragraph 3.3).

AC members shall undertake to act in ZEP's interests and declare to the chairperson any potential conflict of interest that may arise on any matter under discussion.

All ZEP members apart from Academia/Research organisations, Environmental Non-Governmental Organisations, and trade unions will sponsor the ZEP secretariat and additional activities through the ZEP Communications ASBL (Belgian non-profit organisation) for services and amounts agreed by the AC.

- The proposal for the budget and sponsoring amounts shall be decided at the latest in December of the preceding year.
- ZEP shall seek co-sponsoring from the European Commission to keep sponsoring requests from industry as low as possible.

3.2.2 Selection and rotation of members

The Advisory Council shall appoint its members. Selection criteria will be defined by the AC, based on an offer of commitment, demonstrated experience relevant to ZEP's objectives, representativeness, and a track record of high-level management and strategy development. There should be an adequate balance between stakeholders, nationalities, and gender.

As a guiding principle, AC membership should be renewed every three years.

3.2.3 Appointment of chairperson and vice chairpersons

The AC members will select a chairperson and five vice-chairpersons, according to the decision-making rules described below. The chairperson and vice-chairpersons together constitute the ACEC.

3.2.4 Changes in membership during a mandate

Any new AC member shall be appointed based on the transparent selection criteria mentioned under section 3.2.2.

AC members may terminate their membership at any time, by informing the chairperson in writing. Wherever possible, sufficient notice should be given to allow a suitable replacement to be found.

If members of the AC demonstrate a lack of commitment, such as persistent failure to attend plenary meetings, they may be asked to resign their membership. The AC will decide whether to appoint replacements for such members.

When the profile of an AC member, regarding the aspects as described in paragraph 3.3.5 (membership profile) of these bylaws, changes significantly, that member is obliged to notify the chairperson.

3.2.5 Organisation of meetings

AC meetings are organised four times per year and the calendar will be published sufficiently in advance.

The secretariat is responsible for the organisation and facilitation of all ZEP meetings, including proposing draft agendas, circulating documentation in a timely fashion, preparation of meeting minutes, and follow-up on actions.

3.2.6 Representation and quorum

Members of the AC are appointed to serve in a personal capacity, not representing their specific organisation.

The personal commitment of members is paramount and their substitution in meetings is strongly discouraged. Exceptionally, and only with the prior consent of the chairperson, substitutes or 'proxies' may be allowed to participate, vote, and contribute to the discussions on behalf of the member they are substituting. Substitutes must be at senior management level.

AC members may seek prior consent to be accompanied to a particular meeting by a technical expert, where justified.

Votes and decisions require participation of 50% or more of the AC members.

3.2.7 Admission of third parties

The AC may invite other participants to its meetings, as appropriate, e.g. in cases where specialist expertise is required to deal with specific issues. Such invitees shall not enjoy membership rights and may be requested to withdraw from the meeting or parts of it.

3.2.8 Decision making

The chairperson shall make every reasonable effort to facilitate consensus amongst AC members.

Votes and decisions require participation of 50% or more of the AC members.

If the AC remains divided on an issue, the chairperson may exceptionally request members to vote. Decisions will be subject to a simple majority vote, with the chairperson holding the casting vote. The outcome of the vote shall be recorded in the minutes of the meeting.

If necessary, the AC decision may be obtained by a written procedure via email.

- The voting is only valid if the meeting is quorate (participation of 50% or more of the AC members).
- If a member does not reply to the request of casting an email vote, it cannot be assumed that this person is either in favour or against. It can only mean that this member does not participate.
- The conditions must be clearly stated in the email which invites voting, including that if the conditions are not met then a decision has not been reached.
- If responses to the request for an email vote significantly deviate from what was asked, they shall not be taken into consideration.

3.2.9 Establishment of working groups

In carrying out its mandate, in accordance with the Terms of Reference, the AC shall establish Temporary Working Groups (TWG), as it deems necessary.

The AC shall decide on the mandate and chairperson (s) for the TWGs. The composition of the TWGs will be established under the responsibility of its chairperson (s), who will report to the Network and seek advice where appropriate.

3.2.10 Transparency

The AC shall have a high regard for the transparency of its activities and the need both for inclusivity and to inform all relevant stakeholders of ZEP's operations.

In principle, all adopted documents that do not have a confidential nature, including meeting agendas and minutes, relating to the work of the AC, shall be made publicly available on the website.

The AC shall make every effort to consult all relevant stakeholders on documents under preparation that have a general interest.

3.2.11 Amendment to the rules of procedure and terms of reference

The terms of reference and rules of procedure of the AC shall be reviewed, and if necessary amended on a three year basis.

3.3 Terms of reference

3.3.1 Guiding principles and values

The AC will seek to ensure that EU policy objectives, principles and values are fully reflected in target setting and implementation of ZEP operations.

The AC will ensure that the results of its activities will be widely disseminated to maximise transparency and encourage inclusion.

3.3.2 Deliverables

The main deliverables that ZEP will work towards are:

- Strategic agenda for research and innovation
- Strategy for deployment
- Advise on technology, policy and legislation, economics and funding
- Initiatives towards investment and business development
- Strategy for international co-operation

- Action plan on safety, codes and standards
- Action plan for education and training and promoting public awareness.

3.3.3 Composition, balance, and inclusiveness

The AC will be composed of an appropriate number of members, as deemed necessary to carry out its mission, drawn from a range of relevant stakeholders including, but not exclusively, representatives of the following:

- Fossil fuel producers
- Technology providers and energy-intensive industries
- Equipment manufacturers
- Academia and Research organisations
- Environmental Non-Governmental Organisations and trade unions.

The range of stakeholders will reflect the need for efficiency and transparency. Stakeholders should reach consensus to facilitate a balanced composition of the AC regarding nationalities, gender, and industrial sectors.

The European Commission (EC) will support the development of ZEP and participate in ZEP's meetings and events as an observer.

3.3.4 Membership profile

Members should be at a management level in their organisation, which should have significant involvement in ZEP's activities. They should also have access to authoritative experts of international standing involved in a wide range of activities relevant to ZEP.

Members should not have a primary affiliation with industrial trade organisations, national industry associations or similar organisations that aim to represent industries.

Members should be able to make an active contribution to the AC and be able to influence stakeholders on the planning of work programmes, foster partnerships and leverage resources. They will need to demonstrate a high degree of commitment to ZEP and be able to devote sufficient time to its activities.

They will participate in a personal capacity, not representing their specific organisation.

3.3.5 Method of working

The AC will maintain a joint vision and direction for ZEP. Reports, position papers, opinions, and recommendations will be communicated to the Member States, the European Institutions, and other relevant stakeholders. These documents will also be made available on the ZEP website.

3.3.6 ZEP operations and staff

A ZEP Secretary General leads the secretariat, which is responsible for managing ZEP operations and *inter alia*:

- Implementation of ZEP's strategy and work programme as decided by the AC and ACEC
- Organising and supporting the work of the ZEP AC, ACEC, Government Group, Networks, ERG, and TWGs, etc.
- Organising and supporting ZEP's work on external relations, communications, and information dissemination.

4 Advisory Council Executive Committee

4.1 Composition and membership

The members of the AC will select a chairperson and five vice-chairpersons. Together with the chairperson the vice-chairpersons constitute the ACEC. The vice-chairpersons each represent constituent member groups of ZEP:

- Fossil fuel producers
- Technology providers and energy-intensive industries
- Equipment manufacturers
- Academia and Research organisations
- Environmental Non-Governmental Organisations and trade unions.

The chairperson of the AC is also the chairperson of the ACEC. The chairperson will be elected by a majority vote of all AC members. The vice chairpersons will be elected by a majority vote of the members of their respective constituent group. Members of ACEC will serve for a renewable three-year period.

4.2 Mandate

The ACEC is in general responsible for initiating and steering processes within ZEP on behalf of the AC, when the AC is not in the position to do so. This is based on the following delegated limited decision-making power by the AC:

- The ACEC will act on behalf of the AC on urgent issues
- The ACEC will not take action or decisions that, by judgement of the ACEC, are contentious, unless urgency makes it impossible to await a meeting by the AC
- The ACEC is accountable to the AC for all its actions and decisions.

ACEC members shall register as members of ZEP communications ASBL in order to safeguard the interests of the AC members of ZEP.

4.3 Rules of procedure:

Meetings of the ACEC will be planned as needed to progress ZEP's operations. Records of these meetings will be circulated at the following AC meeting for its information and approval.

Decisions of the ACEC require participation of at least 2/3 of the ACEC members and shall preferably be taken on a consensus basis. If this is not possible the decisions will be the subject of a qualified majority vote and require the minimum support of 2/3 of the ACEC members (decisions made by the ACEC using voting, will be reviewed by the successive AC meeting and can be undone by a 2/3 majority vote by the AC members). The outcome of the vote shall be recorded in the minutes of the meeting.

ACEC members shall make every reasonable effort to participate in ACEC decision making processes.

5 ZEP Networks

Networks:

- Are a group of individuals who are interested, willing and able to work collaboratively on the work programme decided by the AC. Membership should have balanced representation from ZEPs constituency groups and is open to all stakeholders interested in the development and deployment of CCS and CCU in Europe.
- Will form TWGs for delivering specific work. Representatives from non-ZEP AC member companies can participate in TWGs. A good balance between ZEP constituency groups should be ensured in TWGs.
- Have a minimum of two co-chairpersons. The co-chairpersons participate in the regular ACEC meetings.
- Meet at least three times per year.
- Provide assurance (are responsible for the quality) of the work generated by TWGs.

6 Temporary Working Groups

Persons who would like to become member of a TWG are invited to contact the ZEP secretariat. Membership in the TWGs is decided by the secretariat in cooperation with the TWG co-chairpersons. A membership list of all working groups is made public on the website.

Chairmanship of the working groups:

- All working groups should preferably have two co-chairpersons.
- The co-chairpersons of the working groups are approved by the AC.
- Should a co-chairperson demonstrate a lack of commitment, such as persistent failure to attend working group meetings, the AC will have the possibility to appoint a replacement co-chairperson.

7 External Relations Group and Communications Group

ZEP will have an External Relations Group (ERG) and a Communications Group (CG) that oversees and provide input to external relations and communications activities.

- ERG will preferably have three co-chairpersons, preferably from different constituencies.
- ERG has the mandate to guide the activities as agreed by the AC.
- ERG will report to the ACEC.

8 Government Group

The ZEP Government Group (GG) operates independently from the AC.

The GG appoints its own members and meets regularly, at its own discretion. It maintains a record of its meetings. Meetings can only be attended by invitation. The GG is supported by the ZEP secretariat.

All members of the GG will be invited to attend AC meetings.

Agenda Item 3: Updates from governments

3.a. CCS and CCU in Sweden and expectations for the Swedish presidency

Sweden will hold the Presidency of the Council from 1 January to 30 June 2023.

The political direction of the Swedish Presidency is expressed under five general headings (link to the [press release](#)):

- Providing security for EU citizens and strengthening the EU's role in the world
- Stopping organised crime
- Speeding up the climate transition
- Strengthening the EU's competitiveness for the jobs of the future
- Safeguarding the EU's fundamental values

A concrete work programme, based on the general political direction outlined above, will be presented in December.

Sweden aims to achieve net-zero GHG emissions by 2045 and negative emissions thereafter. To achieve this, Sweden will rely on the deployment of carbon capture and storage (CCS) solutions as well as on negative emissions, namely bioenergy with carbon capture and storage (BECCS). Sweden's ambitions for CCUS are laid down in the Government's official report 'The road to a carbon neutral future' (link to the [report](#), available in Swedish). According to the report, the goal is to capture and store 2 Mt of biogenic CO₂ per year by 2030.

To support deployment, Sweden is designing a support system for BECCS which will take the form of a reverse auction. The scheme will cover costs for the capture, transport and storage of CO₂, covering a period of 15 years. The first reverse auction will be launched in 2023. In addition, the Green Industry Leap funding programme will support BECCS projects as well as CCS projects in the industry sector. As of 2022, the programme has a financial envelope of 909 million SEK (approximately €84 million).

The Swedish Energy Agency, which acts as the National Centre for CCS in Sweden, will draft a proposal for a bilateral agreement – under the London Protocol requirements – with Norway. The possibility of entering into a bilateral agreement with other countries – such as the United Kingdom and the Netherlands – is also being investigated. Swedish facilities cannot use captured CO₂ for the purposes of enhanced oil and/or natural gas recovery, which will be reflected in the bilateral agreements.

Projects

Sweden is home to a range of CCS and CCU projects currently under development, including in the industry and power sectors and CO₂ transport and storage. Some examples are highlighted below. At the Port of Gothenburg, the largest port in Scandinavia, the CinfraCap project is looking into the logistics chain required to transport the CO₂ that is captured from different industrial facilities in western Sweden. The project will look at liquefaction and intermediate storage facilities as well as CO₂ shipping for storage. Stockholm Exergi is planning

a BECCS project which will capture CO₂ from a biofuel-fired CHP plant in Värtan, aiming to reach negative emissions.

There will be a presentation by a Swedish government representative (invited, tbc)

3.b. CCS and CCU in Flanders, Belgium

Flanders is home to various energy-intensive industries, including the largest chemical and energy cluster in Europe, and is centrally located in the industrial cluster of Northwest Europe, a region praised for its CCUS potential. In addition, Flanders hosts a number of key ports, including the second-largest port in Europe, and benefits from relatively easy access to CO₂ storage sites in the North Sea. These conditions mean that the region is well placed to both capture and transport CO₂.

The geological storage and the transport of CO₂ fall under the regional competence of the Flemish Region, and the role of CCS and CCU has been laid down in various policy documents, including the Flemish climate strategy 2050, the Flemish energy and climate plan 2021-2030, and the Flemish hydrogen strategy. In addition, Flanders has specific funding schemes for CCUS, supporting R&I (Moonshot innovation programme) and the development of a CO₂ infrastructure backbone (Flemish Climate Fund). The Flemish Resilience Plan also allows the co-financing of large-scale projects selected under the EU Innovation Fund. Together, these will make €35 million available for CCUS projects over the next 20 years.

The Flemish Government has published a Concept Note on CCUS ([link](#)) in November 2021, where it expresses its vision and strategy for the roll-out of CCUS in Flanders. The vision is centred around seven actions, such as the development of suitable infrastructure, the development of the regulatory framework for the transport of CO₂ and the establishment of strategic partnerships with countries leading on CCUS. International cooperation on CCUS is particularly relevant, given that Flanders does not have suitable geological formations for CO₂ storage. Recently, Belgium and Denmark, in collaboration with Flanders, signed an agreement to cooperate on the cross-border transport of CO₂.

Projects

A number of projects are being developed in Flanders, including capture, utilisation and transport infrastructure.

The Port of Antwerp, the North Sea Port, and the Port of Rotterdam, have set up the CO₂TransPorts project, which integrates the 4th list of projects of common interest. After a first phase, where the CO₂ transport and storage infrastructure at the Port of Rotterdam will be developed, a cross border CO₂ pipeline will link the three ports. This will enable up to 10 MtCO₂/year to be transported to storage sites in the North Sea.

At the Port of Antwerp, the Antwerp@C project aims to support industries to halve their emissions by 2030 by supporting CCS and CCU applications through the development of a common, open access CO₂ transport infrastructure. CO₂ would be captured from chemical and energy installations and subsequently exported for offshore storage or be made available for reutilisation (in a CCU demonstration area), either via pipeline or ship. The project would

also establish one of the first multimodal open access CO₂ export facilities. As a part of the Northern Lights Project, the export of CO₂ for storage in Norway will also be investigated.

The first phase of the project is underway, with the selection of Kairos@C for a grant under the Innovation Fund. The project is an initiative by chemical companies in the Port of Antwerp to develop the infrastructure to capture, liquify, ship and store CO₂ in empty gas fields.

Tomas Velghe, from the Flemish Energy and Climate Agency, will give a presentation at the meeting.

3.c. CCS and CCU in Denmark

The Danish Parliament has concluded a series of political agreements which guide Denmark's CCUS developments. The policy framework is focused on the development and deployment of storage sites, enabling cross border CO₂ transport, and in establishing mechanisms to encourage CO₂ capture.

The overall strategy for CCS in Denmark is outlined in its Roadmap for the Capture, Transportation and Storage of CO₂ ([link](#)). Among others, the roadmap expresses the ambition to roll out CCS on market terms in the long run, to establish Denmark as a European storage hub and to develop the transport infrastructure.

To support these ambitions, Denmark has accepted the 2009 amendment to Article 6 of the London Protocol in early 2022, and signed the world's first bilateral arrangement with Belgium, covering the transport of CO₂ with the purpose of permanent geological storage. Denmark has also concluded MoUs on cooperation on CCUS with the Netherlands and Belgium.

Storage potential (offshore, near-shore and onshore) is being investigated by the Geological Survey of Denmark and Greenland (GEUS). In August 2022, Denmark opened its first tender for CO₂ storage permits, covering the exploration and storage of CO₂ in a delimited area in the Danish part of the North Sea, and has recently awarded its first CO₂ storage permit to project Greensand (link to [press release](#)). A new licensing round is expected in 2024.

To support storage development and de-risk projects, in 2022, it was agreed that the State would co-own storage permits and that storage pilots in the North Sea would benefit from speedier and less extensive approval process.

Work is also underway regarding the capture and transport components of the value chain. The Danish Energy Agency has identified six clusters with considerable emissions – these are located around major cities, all of which with port facilities. The relevant stakeholders in these clusters will present their recommendations, by 2 January 2023, on possible transport infrastructure and ownership models.

Regarding financing, Denmark allocates approximately 38.7 billion DKK (EUR 5.2 billion) to CCUS, which is expected to deliver 3.3 MtCO₂ reductions from 2030.

Projects

Two off-shore storage projects are currently under development in depleted oil and gas fields – project Greensand with an estimated storage capacity of 0.5-1.5 MtCO₂ /year in 2025 and 4-8 MtCO₂ /year in 2030, and project Bifrost, with an estimated long-term storage capacity of

16 MtCO₂/year. In addition, the onshore demonstration project (Stenlille) has an estimated storage capacity of 2.5 MtCO₂.

Jasmin Sharzad, from the Danish Ministry of Climate, Energy and Utilities, will give a presentation at the meeting (tbc).

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

4.a. Network Policy and Economics

The latest Network Policy & Economics (NWPE) meeting took place on 16 November 2022 as a physical meeting in Brussels, with possible virtual attendance. *The next Network Policy & Economics meetings are planned for 9 February, 25 May, and 18 October 2023.*

The Temporary Working Group (TWG) Policy & Funding held its latest meeting on 3 November 2022. *The next meeting of the TWG will take place virtually on 15 December 2022.*

Consultations and calls for feedback – *for information and approval*

Open consultations:

- European Commission (EC) consultation: ‘Certification of carbon removals – EU rules’ ([link](#)) – closing date is not to be defined. The EC has launched this public consultation following the adoption of the proposed regulation establishing a framework for the certification of carbon removals (see *below*).

Upcoming consultations:

- EC consultation: ‘EU emissions trading system (ETS) – revised rules (e.g. competitive bidding under the Innovation Fund)’ ([link to the consultation](#)) – expected in Q2/Q3 2023. ZEP continues to actively follow these items, including Contracts for Difference, ahead of a response to the consultation on the Draft Terms and Conditions.

ZEP has responded, endorsed by the ACEC, to the consultation on the Climate Bonds Initiative (CBI) public consultation: Hydrogen Production Criteria ([link to the consultation](#)), extending its support to the initiative and recommending that a decreasing carbon intensity threshold should also be included in the low-carbon hydrogen criteria in the EU Taxonomy for Sustainable Activities (*the ZEP response is appended*).

The AC is invited to approve the ZEP response to the CBI consultation, that has previously been endorsed by the ACEC (this is the ZEP procedure when urgent, for the ACEC to endorse to make the deadline and then to bring to the AC for approval).

Draft Terms of References for workstreams in the work programme

As part of the ZEP/IWG9 work programme for 2023 (see agenda item 2), draft Terms of References (ToR) have been developed for some of the workstreams and linked TWGs. The ToRs have been prepared, shared and discussed with proposed co-chairs and at Network meetings, and now brought to the AC/Plenary for approval.

TWG on CO₂ transport by ship (coordinated with the CCSA)

Following discussions with ZEP members, it is proposed to set up a ZEP/CCSA working group on CO₂ transport by ship. The objectives of the working group are to:

- Investigate the scope and trade routes for CO₂ transport by ship and their evolution over time, based on a European sources-to-stores map.
- Follow-up on interoperability and the work that is being done by ISO, IMO, and SIGTTO, and identify potential elements that are not yet addressed by these three organisations.
- Describe existing barriers to commercialisation and provide recommendations to address these barriers.
- Identify possible work needed to prepare for a Europe-wide CO₂ storage market.

The geographical scope of the work will be Europe (the EEA and the UK). The work is planned to start in December 2022. The working group will be equipped with experts on CO₂ transport by ship, representatives of port authorities, experts on CO₂ standards, representatives of shipping companies, industrial emitters, and NGOs.

The scope of the work was discussed with a wide range of specialists of CO₂ transport by ship and there was a large consensus regarding the added-value of the work. The work will be coordinated with the Joint Research Centre (JRC) ahead of the update of the study on 'The evolution of the extent and the investment requirements of a trans-European CO₂ transport network'.

The AC is invited to approve the draft ToR.

National energy and climate plans – draft guidance to Member States

Member States submitted their first versions of their national energy and climate plans (NECP) end-2019. Next year they will submit a draft version of their revised NECPs by June 2023 and their final versions by June 2024.

The European Commission (EC) has included CCS and CCU technologies in its draft [NECP guidance](#). The draft guidance states that “*Member States are **encouraged** to include in their updated NECPs the efforts planned to enable their industries to **capture and store** their inherent process emissions **permanently in geological storage sites**, in accordance with Directive 2009/31/EC*”. The EC intends to adopt the guidance before 31 December 2022.

ZEP reaction to EU ETS market interference – for approval

In May 2022 the EC put forward a proposal to include REPowerEU chapters in the recovery and resilience plans (link to the [proposal](#)). The proposal would, among other things, increase the recovery and resilience facility (RRF) financial envelope by €20 billion through a short-term intervention in the EU ETS. The Council and the European Parliament (EP) have agreed on their respective positions on the file (link to the Council's [General Approach](#) and the EP's [adopted position](#)), proposing changes to the mechanism that would raise the €20 billion for the RRF. While the EP proposes the early auctioning of EU ETS allowances, the Council's position would entail a combined approach, resorting to early auctioning as well as to funds earmarked for the Innovation Fund.

Following the input gathered from the ACEC and ERG, a draft ZEP note has been prepared ([link](#)). The draft note urges the EU Institutions to avoid interfering with price signals and long-term incentives to decarbonisation.

The AC is invited to approve the draft note, that has previously been endorsed by the ACEC.

Revision of the EU ETS – for information

Interinstitutional negotiations ('trilogues') on the proposal to amend the EU ETS are ongoing. The fifth and latest round of negotiations took place on 29 November 2022, which concluded with an agreement on the gradual inclusion of maritime emissions in the EU ETS – starting in 2024 and with full inclusion in 2026. Among others, the agreement that was reached extends the scope of GHG covered (by including methane and nitrous oxide emissions, besides CO₂) and allocates the funds raised by the auctioning of 20 million allowances to shipping projects via the Innovation Fund (link to the European Parliament's [press release](#)).

According to a [written statement](#) from MEP Peter Liese (EPP – DE), European Parliament (EP)'s rapporteur on the file, during the previous (fourth) negotiation round, the Council and the EP agreed on a possible future inclusion of CCU and carbon removals in the EU ETS, pending a feasibility assessment from the European Commission. However, no progress was achieved on the coordination between the phase out of free allocation and phase in of the Carbon Border Adjustment Mechanism (CBAM). Moreover, no agreement was reached regarding the EP's proposal to include waste incineration in the EU ETS in 2026, with the Council favouring voluntary opt-ins.

The next round of negotiations will take place on 16 and 17 December 2022, where the EU institutions negotiators are expected to reach an agreement on outstanding issues and thereby finalise a provisional agreement on the proposal.

EC analysis paper on the London Protocol – for information

The EC published on 30 September 2022 an analysis paper (link to the [paper](#) and ZEP's [briefing](#)), reviewing the EU legal framework – namely, the EU ETS directive and the CO₂ storage directive – in light of the requirements of the London Protocol.

The described solution is expected to simplify the development of EU/EEA CCUS projects. Under the paper, the EU legal framework and the EEA treaty would act as an 'IMO bilateral agreement' suppressing the need to engage in bilateral agreements.

This is a positive development that can stimulate the cross-border CO₂ transport, however, several questions have been raised regarding the paper in discussions with the Network Policy and Economics, e.g.:

- The legal standing of the analysis paper – will the IMO need to sanction the solution?
- Treatment of EU countries that are not members of the London Protocol?
- Implications for London Protocol agreements with non-EEA countries (e.g. the UK)?

The EC is expected to discuss the analysis paper with Member States at the next CO₂ Storage Directive Information Exchange Group meeting on 14 December 2022, at the same time as the AC/Plenary meeting. ZEP is trying to coordinate in order to have an update from this meeting at the AC/Plenary.

Dutch Council of State interim ruling on the Porthos project – for information

The Dutch Council of State, the Netherlands' highest court, ruled on 2 November 2022 on Porthos' use of a construction exemption that allows nitrogen emissions from the construction phase to be excluded from assessment at the permitting level. The case was brought to court by the environmental NGO Coöperatie Mobilisation for the Environment (MOB), which argues that the construction exemption violates the European Habitat Directive and puts Natura 2000 sites at risk.

While the ruling means that Porthos will not be able to use the construction exemption, the Council of State also said it needed more time to decide whether the project should be halted. In practice, the court granted MOB six weeks to respond to Porthos' ecological assessment (including the effect of nitrogen deposition), which was submitted late in the judicial proceedings.

Following that response, the hearing will continue and a final verdict will be issued. Progress on the case is expected following the week of 14 December 2022.

According to a statement issued by Porthos ([link](#)), the ecological assessment shows that *“minor and one-off nitrogen deposition during the construction of Porthos will not have a significant impact on Natura 2000 sites”*.

The court case delays the Porthos project as well as other projects that have not yet been granted the exemption.

Draft delegated act for the production of renewable transport fuels – for information

The EC is expected to publish a draft delegated act on 15 December 2022 on requirements for the production of renewable transport fuels. Following that publication, a four-week public consultation should be launched. The draft act would detail additionality requirements for the production of hydrogen from renewable electricity, i.e the requirement that additional renewable electricity is produced for additional renewable hydrogen production. A leak published on 2 December 2022 mentions a quarterly temporal correlation between renewable electricity supply and hydrogen production.

Revision of the TEN-T regulation – for information

The EC put forward a proposal for a revision of the TEN-T regulation in December 2021. The revision aims to make transport greener, more seamless and efficient, increase the resilience of the TEN-T to climate change, and improve the efficiency of the TEN-T governance tools. ZEP responded to the call for evidence ‘Development of trans-European transport (TEN-T) network in light of war in Ukraine – amended proposal for guidelines’ (link to [call](#) and [ZEP response](#)) highlighting that *“the TEN-T revision represents an opportune moment to introduce 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”*. The EP's Transport and Tourism (TRAN) Committee vote is expected in January 2023. The EP vote on the revision is expected in February 2023.

4.b. Network Technology

The latest Network Technology meeting took place on 13 October 2022 as a physical meeting in Brussels, with possible virtual attendance. *The next Network Technology meetings are planned for 16 February, 4 May and 4 October 2023.*

The TWG CDR Mission held its latest meeting on 12 October 2022. *The next TWG CDR meeting will be held on 13 December 2022.*

Consultations and calls for feedback – for approval

Upcoming: EC call for evidence: ‘EU Horizon Europe programme – interim evaluation’ (link to the [call for evidence](#)) – expected before the end of 2022.

ZEP has responded, endorsed by the ACEC, to the EC call for evidence: ‘European Critical Raw Materials Act’ (link to the [call for evidence](#)). The response is calling on the EC to give due consideration to CCUS supply chains in the identification of strategic raw materials (*the ZEP response is appended*).

The AC is invited to approve the ZEP response, that has previously been endorsed by the ACEC.

Draft Terms of References for workstreams in the work programme

As part of the ZEP/IWG9 work programme for 2023 (see agenda item 2), draft Terms of References (ToR) have been developed for some of the workstreams and linked TWGs. The ToRs have been prepared, shared and discussed with proposed co-chairs and at Network meetings, and now brought to the AC/Plenary for approval.

TWG on carbon dioxide removals

Following discussions with Network Technology, Network Policy and Economics, and TWG Mission CDR, it is proposed to widen the scope of the current TWG Mission CDR to cover carbon dioxide removals overall. The following objectives are proposed:

- Support the European Commission / DG RTD in its work related the CDR Mission.
- Follow and provide input to the CDR Mission, ensuring that its programme and activities are aligned with key messages from ZEP and IWG9 reports and recommendations.
- To provide updates to the ZEP Advisory Council, ACEC, and Networks on the Mission’s activities.
- Follow the EC’s upcoming proposal on certificates for carbon removals and provide input as appropriate.
- Develop further the ZEP position on CDR.
- Follow and support ZEP’s participation in the expert group on carbon removals.
- Follow the developments on carbon accounting methodologies, voluntary markets and Article 6 of the Paris agreement and the needed regulatory frameworks.

The draft ToR is appended for approval by the AC.

TWG supply chain risks

Following discussions with Network co-chairs and at the latest Network meeting, it is proposed to set up a new workstream to investigate CCUS supply chains, with the view of identifying potential risks and opportunities. Among others, the group will look into the availability of raw materials, semi-finished products, end-products, as well as expertise. This work will ultimately support the assessment of the realisation potential of different technologies and propose recommendations to improve the resilience of CCUS supply chain in Europe.

The draft ToR is appended for approval by the AC.

TWG CO2 storage

ZEP set up a dedicated TWG to provide guidance regarding CO2 storage based on existing experience. This TWG worked on the ZEP report '[Experience in developing CO2 storage under the Directive on the geological storage of carbon dioxide](#)' in 2022 that aims to:

- facilitate the work of operators and public authorities working on the deployment of storage projects
- improve the Guidance Documents supporting the directive on the geological storage of CO2
- provide stakeholders involved in CO2 storage projects with the best possible advice
- give suggestions are given to competent authorities or project developers to speed up and facilitate the development of future storage project

The aim of this new working group is to follow up on this report and contribute to the EC review of the Guidance Documents of the CO2 storage directive. This work would be based on the results of this ZEP report. This contribution will include clear guidance to the winner of the tender regarding required changes to the Guidance Documents.

The draft ToR is appended for approval by the AC.

Joint Research Centre study on CO2 transport networks – for information

The JRC will update its study on 'The evolution of the extent and the investment requirements of a trans-European CO2 transport network' by May 2023. This work will include a mapping of CO2 sources and sinks. During the latest Network Technology meeting, the JRC presented the overarching methodology that will underpin the study. Following the presentation, the JRC invited the group to send comments and provide input regarding the study's methodological assumptions. Input was sent out in early November 2022. The Network Technology will continue to engage with the JRC throughout the development of the study and ensure that ZEP provides input. The study is expected to be published in May 2023.

The JRC is also preparing a new study called 'EU regulation for the development of the market for CO2 transport and storage' (see agenda item 9).

ZEP response to the Climate Bonds Initiative Public Consultation

The Zero Emissions Platform (ZEP) has previously highlighted that both renewable and low-carbon hydrogen, from reformation of methane with CCS, have important roles to play in a clean hydrogen economy. A transparent and conducive framework to support projects that are aligned with global climate objectives is key to provide investor confidence and support deployment. In this context, ZEP supports the Climate Bonds Initiative's proposal to expand its labelling scheme to hydrogen projects.

In addition, ZEP would like to highlight the climate benefits of setting up declining carbon intensity thresholds. In this respect, ZEP urges the European Commission to adopt a decreasing threshold for hydrogen in the sustainability criteria of the EU Taxonomy for Sustainable Activities.

About the Zero Emissions Platform

The Zero Emissions Platform (ZEP) is a European Technology and Innovation Platform (ETIP) under the 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).

ZEP supports the European Union's commitment to reach climate neutrality by 2050, defined as net-zero greenhouse gas (GHG) emissions by 2050. To this end, CCS technologies represent readily available and cost-efficient pathways for the decarbonisation of industrial and energy sectors in the European Union. Some applications of CCU – where CO₂ is stored in a manner intended to be permanent – can also contribute to this goal.

Draft Terms of Reference – CO₂ transport by ship

Transport of CO₂ by ship is a vital part of the CO₂ infrastructure that will enable emitters across Europe to connect to safe and permanent storage. It contributes strongly to equitable access for all countries and allows emitters to store their CO₂ when they cannot rely on other transport options (pipeline, rail, truck). CCS projects, including cross-border CO₂ infrastructure projects of common interest and domestic projects, have identified the need for both inland and maritime shipping solutions. Transporting CO₂ by ship will be crucial for large-scale CCS deployment in Europe. Transport of CO₂ by ship is recognised both at the EU level – in the EU taxonomy for sustainable activities and the EU ETS directive – and at the national level – e.g. in the Dutch SDE++ subsidy scheme and the UK CCUS programme.

ZEP and the CCSA published the report '[Guidance for CO₂ transport by ship](#)' in 2022. However, there is scope for a more detailed understanding of the future expected size of CO₂ transport by ship, possible gaps not addressed by standard organisations (ISO, IMO, SIGTTO...) in terms of interoperability, and existing barriers to the commercialisation of CO₂ transport by ship.

The European Commission's Joint Research Centre is currently updating its study 'The evolution of a trans-European CO₂ transport network' that will map CO₂ sources and stores. ZEP will send input for this workstream. Building a European sources-to-stores map will provide a first indication of the future routes and volumes required for CO₂ transport by ship. However, specific work is needed to describe the precise scope of CO₂ transport by ship in the future European CO₂ transport market, including the number of vessels, key ports, and annual volumes. Routes and volumes are likely to evolve over time; the work should aim to describe this evolution as well as the difference between the potential and expected size of the future market. This would provide companies, regulators, and decision-makers with greater certainty and facilitate the emergence of this market.

Interoperability is key for transport by ship as it ensures that liquid CO₂ carriers can board and discharge at any port or storage site. Given that the flexibility is a key added value of this mean of transport and that unexpected events would require adaptation, interoperability must be ensured. Standards on CO₂ specifications are therefore needed. As many CCS projects will become operational in the mid-2020s, many new ships for CO₂ transportation will be needed within five years, making these standards urgent. The existing work done by standard organisations should be described to allow for the identification of possible gaps. This includes the future ISO standard 'Transportation of CO₂ by ship' (ISO/AWI 27929) registered in the Technical Committee work programme. The IMO's Maritime Safety Committee is understood to be working on the review of the International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), to include more detail on CO₂ transport by ship. Finally, SIGTTO's General Purposes Committee is expected to be reviewing its guidelines to accommodate the transport of liquid CO₂¹.

The size of the future European market for CO₂ transport by ship remains unclear at the moment. A description would provide certainty to investors and regulators that need to prepare resources in advance. This description will require an investigation into existing barriers to

¹ [Guidance for CO₂ transport by ship - Zero Emissions Platform](#).

commercialisation in Europe. Such barriers include, for instance, the impossibility claim allowances in the EU ETS when storing in the UK, the legal uncertainty regarding cross-border CO₂ transport under the London Protocol, the cost of transporting CO₂ by ship, the need for adequate T&S business models, and the need for bilateral agreements between the UK and EU Member States. Recommendations to overcome these barriers would facilitate the creation of this future market. Finally, a European market for CO₂ transport by ship will require a European market for CO₂ storage to enable it. The work should identify what is still needed to allow companies to access storage anywhere in Europe.

Following the effective cooperation between ZEP and the CCSA on the report '[Guidance for CO₂ transport by ship](#)', it is proposed that a joint ZEP-CCSA working group is established and coordinated by ZEP in order to bring the work forward effectively and efficiently.

Objectives

This work aims to:

- Investigate the scope and trade routes for CO₂ transport by ship and their evolution over time, based on a European sources-to-stores map.
- Follow-up on interoperability and the work that is being done by ISO, IMO, and SIGTTO, and identify potential elements that are not yet addressed by these three organisations.
- Describe existing barriers to commercialisation and provide recommendations to address these barriers.
- Identify possible work needed to prepare for a Europe-wide CO₂ storage market.

The geographical scope of the work is Europe (the EEA and the UK). The work will be coordinated with the CCSA (joint Working Group).

Timing

This work is starting early December 2022.

Experts

The working group will be equipped with experts on CO₂ transport by ship.

Draft Terms of Reference – CO₂ storage

The European Commission (EC) plans to revise the four Guidance Documents of the CO₂ storage directive. The EC opened a call for tender in June 2022 stating that *“the four guidance documents [...] were developed more than 10 years ago. They are to be considered outdated due to the market related and technological changes. Given the growing market interest in the CCUS technologies, partially driven by the launch of the Innovation Fund and the Fit for 55 package, around 30 new CCUS projects are to be implemented in the Union by 2030. There is an urgent need to update the Guidance documents to facilitate the realisation of such projects”*. ZEP published the report [‘Experience in developing CO₂ storage under the Directive on the geological storage of carbon dioxide’](#) in 2022 to:

- facilitate the work of operators and public authorities working on the deployment of storage projects
- improve the Guidance Documents supporting the directive on the geological storage of CO₂
- provide stakeholders involved in CO₂ storage projects with the best possible advice
- give suggestions are given to competent authorities or project developers to speed up and facilitate the development of future storage project

The aim of this working group is to follow up on and contribute to the EC review of the guidance documents. This work would be based on the results of the ZEP report mentioned above.

The work of the Temporary Working Group will fall under the remit of the Network Technology and the Network Policy & Economics as the Guidance Documents include

Objectives

This work aims to:

- Provide clear guidance to the winner of the tender regarding required changes to the Guidance Documents of the CO₂ storage directive

Timing

This work will start as soon as the winner of the call for tender has been announced.

ZEP Response – EC call for evidence on a European Critical Raw Materials Act

The Zero Emissions Platform (ZEP) welcomes the upcoming initiative aimed at safeguarding the supply of critical raw materials through a package on Critical Raw Materials.

According to [modelling](#) results from the European Commission (EC), meeting the EU's climate neutrality objective will require capturing between 300 and 550 MtCO₂ per year by 2050. Projects in preparation in the EU are, however, expected to deliver only about 50 Mt CO₂ per year by 2030. This means that it is necessary, not only to realise the currently planned projects, but also to scale up deployment – Europe will need at least 6 times more CO₂ to be stored per year by 2050.

At the same time, the deployment of other technologies that are crucial for the decarbonisation of the European economy will continue to grow and this is expected to ramp up demand for various raw materials. In addition, as noted by the EC in its recent [foresight study](#) and as exposed by the Covid-19 pandemic and the Russian invasion of Ukraine, 'EU industry is largely dependent on imports for many raw materials and in some cases is highly exposed to vulnerabilities along the supply chain'.

As several technologies and production sectors compete for the same materials, it is crucial to identify potential bottlenecks, not only considering 'critical raw materials' but also those raw materials that are of strategic importance to the EU's green transition.

Bottlenecks and supply chain dependences and vulnerabilities may well pose a risk for the future deployment of Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) technologies in the EU, which are essential the decarbonisation of hard-to-abate sectors (e.g., cement, steel) and to deliver carbon removals.

In this context, the European Critical Raw Materials Act comes at a crucial time in the EU's roadmap to net zero. Besides supporting a smooth, unimpeded, green transition, it can also signal priority areas and increase political support. With this in mind, when designing the package, the EC should:

- In the identification of strategic critical raw materials, give due consideration to the supply chains of the European Strategic Energy Technology Plan (SET Plan) actions and implementation working groups. This is crucial to enable the sustainable development and timely deployment of low-carbon technologies.
- Ensure a level playing field across the EU and between EU and international suppliers. Making sure that non-EU suppliers correspond to the high level social and environmental standards set by the EU will be essential to support EU supply chains and preserving competitiveness. In this context, the proposed Carbon Border Adjustment Mechanism will be of importance.
- Consider how to best support the crucial development of markets for net-zero products, where the real climate impact is reflected in prices.

Finally, ZEP would like to bring to the attention of the EC that it is engaging a working group which will investigate the supply chain of CCS and CCU technologies, with the view of identifying potential risks and opportunities. This work will be developed throughout 2023 and will ultimately support the assessment of the realisation potential of different technologies and provide recommendations to improve the resilience of the CCS and CCU supply chains in Europe. The findings of this workstream could provide valuable input to the EC's work on raw materials and provide insights to the EC regarding



broader CCS and CCU supply chain needs, including raw materials, semi-finished products and end products, as well as expertise. Key findings will be communicated to the EC and relevant stakeholders as the work progresses.

About the Zero Emissions Platform

The Zero Emissions Platform (ZEP) is a European Technology and Innovation Platform (ETIP) under the 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).

ZEP supports the European Union's commitment to reach climate neutrality by 2050, defined as net-zero greenhouse gas (GHG) emissions by 2050. To this end, CCS technologies represent readily available and cost-efficient pathways for the decarbonisation of industrial and energy sectors in the European Union. Some applications of CCU – where CO₂ is stored in a manner intended to be permanent – can also contribute to this goal.

Draft Terms of Reference – TWG Carbon Dioxide Removals

Background

Carbon Dioxide Removals (CDR) are indispensable to the EU's climate objective and the achievement of negative emissions after 2050.

Indeed, according to [modelling](#) results from the European Commission (EC), the achievement of the EU climate-neutrality objective will require the industrial carbon capture of 200-350 MtCO₂ through direct air capture and bioenergy with CCS.

Following the Communication on Sustainable Carbon Cycles, the EC tabled a proposal on an EU regulatory framework for the certification of carbon removals, which is now expected to be published on 30 November.

To support this workstream, the EC is launching an [expert group on carbon removals](#). In particular, the group will assist the EC in the preparation of policy initiatives and legislative proposals in the field of carbon removals, including the key issues related to certification, such as quantification, monitoring and reporting, additionality, and durability.

The selected experts will start working in December 2022 and will meet at least twice a year.

The AC72 approved the application of Kristin Jordal to the expert group, on behalf of ZEP.

The announcement of the selected experts is expected in November.

The EU has also been cooperating with international partners in the field of CDR, notably under the remit of Mission Innovation (MI), a global initiative joining 23 countries and the European Union, aimed at accelerating public and private investment in research, development, and demonstration in clean energy.

The work of MI is developed through 7 missions, including Carbon Dioxide Removal. The goal of the CDR mission is to enable CDR technologies to achieve a net reduction of 100 MtCO₂ per year globally by 2030.

The CDR Mission is co-led by the United States, Saudi Arabia, and Canada, and focuses on three technical areas – Direct Air Capture with Storage, Biomass with Carbon Removal and Storage, and Enhanced Mineralisation.

The EC/DG for Research and Innovation (RTD) is participating in the CDR Mission as a supporting member. Norway is participating as core member of the mission, represented by Gassnova.

ZEP has, through its TWG Mission CDR, actively given input to the CDR Mission, including to the recently published [Innovation Roadmap](#) and Launchpad.

Moreover, ZEP has published two reports on CDR – '[Europe needs a definition of carbon dioxide removal](#)' (2020) and '[Europe needs robust carbon accounting for carbon dioxide removal](#)' (2021) – and developed its positions on the topic:

- Carbon removals should be seen as a needed to supplement to CO₂ reductions, where the latter remain the priority.
- Supporting CDR projects requires first establishing a clear and exhaustive definition of CDR. ZEP has adopted a definition of CDR, based on four principles.
- Robust standards regarding permanence, carbon accounting as well as Monitoring, Reporting and Verification must be put in place.
- These rules must apply equally to all types of carbon removal solutions and provide the basis for framing a 'gold standard' for the trade of carbon removals – whether in regulated or in voluntary carbon markets.
- Delivering CDR at a scale compatible with climate objectives requires the development of CO₂ transport and storage infrastructure.

Objectives

The existing TWG CDR Mission established an ongoing process through which ZEP could provide input to the CDR Mission. Namely, the focus of the TWG has been to:

- Support the European Commission / DG RTD on its work related the CDR Mission.
- Follow and provide input to the CDR Mission, ensuring that its programme and activities are aligned with key messages from ZEP and IWG9 reports and recommendations.
- To provide updates to the ZEP Advisory Council, ACEC, and Networks on the Mission's activities.

In order to streamline ZEP's work related to CDR, it is proposed that the scope of the working group is extended to also focus on the following objectives:

- Follow the EC's upcoming proposal on certificates for carbon removals and provide input as appropriate.
- Develop further the ZEP position on CDR.
- Follow and support ZEP's participation in the expert group on carbon removals.
- Follow the developments on carbon accounting methodologies, voluntary markets and Article 6 of the Paris agreement and the needed regulatory frameworks.

The NW Policy & Economics will be regularly updated on the progress of the report and will provide inputs and comments.

Timeline

The TWG will start working under the extended scope in December 2022, with a kick-off meeting on 13 December. The table below presents the proposed timeline, with milestones and key dates related to the EU policy timeline:

Presentation of the Terms of Reference for endorsement at the ZEP ACEC (M1)	22 November 2022
EC proposal on the certification of carbon removals	30 November 2022
Kick-off meeting under new extended scope (M2)	13 December 2022
Presentation of the Terms of Reference for approval at the 73 rd ZEP AC (M3)	14 December 2022
Kick-off meeting of the EC expert group on CDR	December 2022
Report on CDR, article 6 and the needed regulatory framework (M4)	H2 2023

Working group participants

The working group is co-chaired by Filip Neele (TNO) and Nils Røkke (Sintef). The group includes participants directly involved in Mission Innovation's CDR Mission, namely Gassnova and the EC's DG RTD.

The work under the extended scope will be supported by the existing participants and will be open to other experts on carbon dioxide removals from NGOs, industry, research organisations, etc.

Key questions

As the political recognition of the importance of CDR increases, along with support and deployment, key questions can be expected to be relevant to ZEP's CDR-related work, including:

- Should CDR certificates be traded in the EU ETS? If so, under what conditions?
- How should CDR certificates be allowed to be used? Options include: freely, offsetting any primary emissions in the EU, or restricted (e.g., based on geography, sector or ETS installation).
- Are there learnings to be taken from the voluntary carbon markets where CDR certificates are traded?
- Are there regulatory and fundings gaps or opportunities that need to be addressed, e.g., through new EU policy and/or funding mechanisms?
- How should CDR be best incentivised? Is there a need to develop the business case / increase public support?
- Are current carbon accounting methodologies appropriate for CDR projects?

Draft Terms of Reference – TWG supply chain

Background

European Commission (EC) [modelling](#) shows that the EU will need to capture between 300 and 550 MtCO₂ per year by 2050 to meet its climate neutrality objective. By 2030, 30 projects in preparation in the EU are expected to deliver about 50 Mt CO₂ per year. This means that it is necessary to realise the current projects in the pipeline as well as to scale up deployment – Europe will need at least 6 times more CO₂ to be stored per year by 2050.

At the same time, the deployment of other technologies crucial for decarbonisation of the global economy will continue to grow and this is expected to ramp up demand for various raw materials. As several technologies and production sectors compete for the same materials, it is crucial to identify potential bottlenecks.

In addition, as noted by the EC in its recent [foresight study](#) and as exposed by the Covid-19 pandemic and the Russian invasion of Ukraine, ‘EU industry is largely dependent on imports for many raw materials and in some cases is highly exposed to vulnerabilities along the supply chain’.

To address these challenges, the EC has put together a [list of critical raw materials](#) for the EU, which is revised and updated every three years. Moreover, in October 2022, the EC launched a [call for evidence](#) on a proposal for a regulation on Critical Raw Materials.

Bottlenecks and supply chain dependences and vulnerabilities may well pose a risk for the future deployment of CCS and CCU in the EU. This provides the reasoning behind the setup of a TWG dedicated to the investigation of CCUS supply chain risks within ZEP.

Objectives

The overarching aim is to gain a better understanding of the supply chain of the different CCS and CCU technologies, with the view of identifying potential risks and opportunities. Among others, the group will look to answer the following questions: are there enough personnel resources available (including skills, training and expertise) within a defined time frame? Will the construction and operation permits be available in time? Will components, materials and other non-personnel resources (e.g., cranes) be available?

This work will ultimately support the assessment of the realisation potential of different technologies and propose recommendations to improve the resilience of the CCUS supply chain in Europe.

To realise this objective, the work of the TWG can be broken down into the following activities:

- Investigate the supply chain of CCS and CCU technologies, identifying the needs for raw materials, products, expertise, and technologies.

- Identify the potential raw materials, products, expertise, and technologies that can create vulnerabilities for the European CCUS supply chain, including is a scenario of future competing demand.
- Propose recommendations to address potential bottlenecks and adapt to these consequences, supporting the resilience of the CCUS sectors.
- Provide input to the EC's proposed package on Critical Raw Materials.
- To provide updates to the ZEP Advisory Council, ACEC, and Networks on the TWG's activities and findings.

Timeline

The TWG will start working in January 2023, with a kick-off meeting in early January which will refine the outputs of the group. The table below presents the proposed timeline, with milestones and key dates related to the EU timeline:

Presentation of the Terms of Reference for endorsement at the ZEP ACEC (M1)	22 November 2022
European Critical Raw Materials Act – close of call for evidence	25 November 2022
Presentation of the Terms of Reference for approval at the 73 rd ZEP AC (M2)	14 December 2022
Kick-off meeting (M3)	January 2023
EC proposal on package 'European Critical Raw Materials Act'	Q1 2023

Working group participants

The working group will consist of experts and representatives from the various segments of the CCUS value chain, namely capture, transport, and storage. The European Commission will be invited to observe the work.

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

5.a. Overview of ZEP communications activities and events

Recent activities

Communications group and External Relations Group

At the ZEP Communications group and ERG meetings on 20 October, attendants discussed the recent and upcoming communications and outreach activities, among other things the draft ZEP article on CDR to be published ahead of the EC Communication on CDR. There was also a presentation by IFPEN on the regional events in France organised jointly by Club CO₂ and ECCSEL ERIC.

The next meetings will be organised on 8 and 9 December, where the following are on the agendas: Recent activities, with a presentation by ZEP Member Celsio, messages to policymakers, and planned activities for Q1 2023 – for group members' input, including:

- Events timeline and planning
- Publishing plans for CCS and CCU project case studies
- Update of the communications toolkit
- New ZEP communication material for visibility at in-person events

Article about CDR on Euractiv

The ZEP Communications group have been involved in preparing an article on CDR, in the context of the European Commission's (EC) proposal for a regulation establishing a voluntary certification framework for high-quality carbon removals in the EU (published on 30 November, see item 10 on the agenda). The final text was published in Euractiv on 29 November (link to the article [English](#), [German](#)). The aim was to publish a timely article on CDR, in light of the strong interest we now see for these technologies.

CCUS Forum

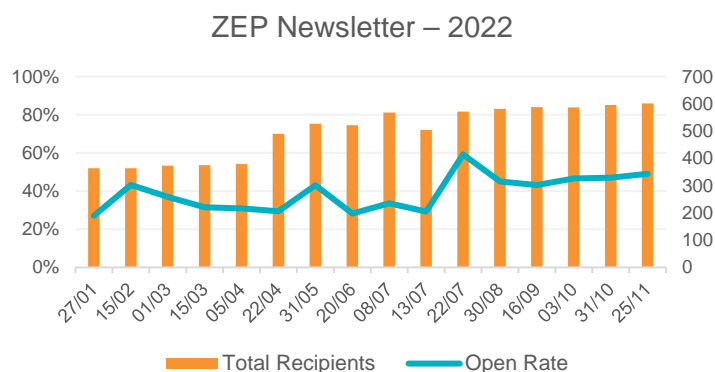
After the conclusion of the CCUS Forum, the ZEP prepared a letter (call to action) to the European Commission senior leadership. The letter calls on the EC to publish a CCUS Communication next year, building on the results of the CCUS Forum working groups (further information on this is provided in the agenda item 8). This letter will be crucial to include CCS and CCU in the EC work programme for 2023.

The ERG has overseen the preparation of the letter, with the aim to gather as much support as possible from the stakeholders, with a focus on the CCUS Forum WG Co-chairs. The ERG will discuss the letter again during its meeting on 9 December, with a view to send it to the EC president.

ZEP Newsletters

The newsletters have strongly grown this year, with greatly increased numbers of readers opening emails and clicks compared to the previous year.

A graphic below illustrates the newsletter performance.



Upcoming activities

ZEP case studies for projects

It is proposed for ZEP to create 1-pager case studies for European CCS and CCU projects. This will be discussed at the 8/9 December Communications group and ERG meetings. The case studies are proposed to take the form of ZEP infographics, similarly to what is created for reports ([example](#)).

The graphics are not supposed to include positions or political elements but feature purely descriptive/marketing information, such as:

- *Leading image & secondary image*
- *Project Title & Location*
- *Company/companies Logo*
- *Summary Text of project (100 words)*
- *2/3 specific information: room for more information about specifics of the project, or space for secondary image*
- *Key facts of the project: jobs, capture rates, investment etc. (5 maximum)*
- *Project Timeline*
- *Website address*

The case studies are proposed to be published every 6 weeks, with Northern Lights being the first project to be showcased. The work will be closely coordinated with the Communications group.

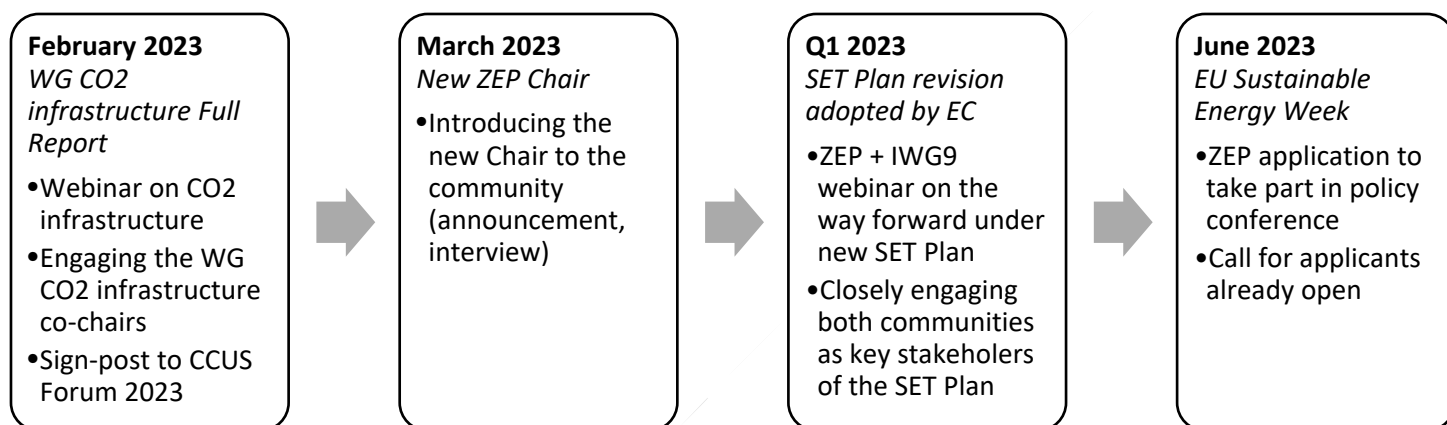
ZEP communications material

After two years of no physical meetings due to the pandemic, ZEP and others have started to return to physical meetings from this autumn. With physical meetings there is a need to also prepare communication material in a different way than during the pandemic. The Communications group and the ERG are giving input to proposed communication material:

- ZEP roll-ups – highlighting CCS and CCU.
- Business cards with QR code – linking to a specific page on the ZEP website that would be content driven and an easy way to explore ZEP’s work. This card would be available to all for events, meetings, and other occasions.
- Reports and other material – Reports and other material will be printed on a case-by-case basis. The communications group will give input on which reports are most relevant to be printed.

Planning events and other activities for the new year

The new year is approaching, and ZEP activities for the first months of 2023 will be discussed with the communications group and ERG, also with the aim of coordinating external activities on CCS and CCU.



EU Sustainable Energy Week 2023 (EUSEW)

It is now possible to apply (deadline 1 February 2023) to host a session at the EUSEW 2023 Policy Conference, that will take place in Brussels and online on 20-22 June ([link](#)). The EUSEW’s overarching theme in 2023 is: “Accelerating the clean energy transition – towards lower bills and greater skills”.

As an EU-funded organisation, ZEP is well positioned to host a session. The EU requires at least three organisations to apply jointly to host a session. A proposal will be drafted together with the communications group and the ERG.

Agenda Item 6: SET Plan review – for information and guidance

6.a. Revised SET-Plan and consequences

The SET-Plan is being revamped, and the European Commission plans to adopt its position on Q1 2023. ZEP has provided active input, including as co-chair of the IWG9.

There will be an oral update at the meeting.

6.b. Draft Horizon Europe work programme 2023-2024

The European Commission published a draft version of the 2023-2024 Horizon Europe work programme (link to the [draft](#) and ZEP [briefing](#)), outlining upcoming funding opportunities under the EU's flagship programme for Research and Innovation (R&I) activities.

Funding available for CCS and CCU R&I projects is expected to be around €82 million, which will be spread across up to 13 projects. The biggest funding amount will cover CO₂ transport and storage infrastructure demonstration projects (€40 million), followed by CCU and CDR (amounting to €15 million each).

There will be a presentation by Vassilios Kougionas (DG RTD) at the meeting.

Agenda Item 7: Updates from ACT/CETP – *for information and guidance*

7.a. Updates from ACT/CETP

ACT (Accelerating CCS Technologies) is an international initiative (link to the [initiative](#)) to establish CCS and CCU as instruments to combat global warming. The initiative gathers 16 partners (from Europe as well as from Alberta, India, and the US) to fund research and innovation projects that can lead to safe and cost-effective CCUS technology.

The ACT consortium has successfully carried out four calls since 2016. The application for the last call (ACT4) will be concluded in a few days.

In the three first calls, ACT supported 33 projects spanning over a wide range of CCUS topics, and with a total funding of around €110 million. The projects have addressed a number of the research targets set out by the CCUS SET Plan (IWG9) and the Mission Innovation research priorities. Many of these projects accelerate the deployment of the CCS and CCU technologies and provided relevant results to large-scale projects such as Longship and Porthos.

Many of the funders in ACT also participate in the Clean Energy Transition Partnership (CETP) – established in November 2021. The CETP enables more than 50 national and regional RTDI programme owners and managers from more than 30 countries to align their priorities for reaching climate neutrality by 2050. The CETP welcomes knowledge sharing and input for its next call (September 2023), especially regarding how to optimise objectives for the transition.

ACT4 received 107 proposals asking for €195 million in funding – the available fund is around €140 million. The pre-proposals will be subject for external evaluation, completed early in January, and thereafter the second stage of full proposals starts, also involving external experts.

A draft overview of the distribution of the ACT4 pre-proposals to the various topics and the geographical spread will be presented at the AC73.

Ragnhild Rønneberg, ACT Coordinator, will give an update at the meeting.

Agenda Item 8: CCUS Forum – *for information and guidance*

8.a. Update on CCUS Forum

The CCUS Forum 2022 plenary meeting was held in Oslo on 27-28 November. The event gathered 300 in-person participants and more than 1000 on-line attendants.

The event featured a keynote speech by Kadri Simson, Energy Commissioner. In her speech ([link](#)) the Commissioner pointed at the need to capture, use and store 300 to 640 megatons of CO₂ yearly by 2050. Commissioner Simson also said that without CCS and CCU it will be practically impossible to limit the global warming to 1.5 degrees Celsius. Other officials described how CO₂ storage is seen as a bottleneck, stating that 4.6 megatonnes of CO₂ of storage capacity is missing to accommodate outstanding captured volumes from projects supported in the innovation Fund.

The main recommendations from the papers on CCUS vision and European CO₂ infrastructure, prepared by the Forum working groups (WG), were presented. There was strong support for the presented work, and the papers were declared endorsed – pending the final meeting of the two working groups. The issue papers are now being finalised. A new CCUS Forum WG, focused on helping the EC with the upcoming Communication on CCUS, is planned to start shortly.

The conclusions from the Forum have been published ([link](#)).

There will be an oral presentation by Chris Bolesta from DG ENER

Continued work on CO₂ Infrastructure

The WG on CO₂ infrastructure has been asked to continue its work. This is the preliminary workplan:

- Final report by end-February 2023, with the issue paper as the basis.
- Three meetings plus handover are in the plans: 1) Regulatory (January), 2) Technical (January), 3) Funding/business models (beginning February), 4) Official handover meeting.
- Coordination with:
 - JRC study on optimal CO₂ transport network in Europe
 - TNO/Trinomics study on regulatory options and business models for CO₂ transport and storage
 - CO₂ storage directive guidance documents review
- An expert group on CO₂ specifications
- Coordination with WG on the EC CCUS Communication, that is to be established.

CCUS Forum WG on Industrial Partnership

The work in the WG on Industrial Partnership has not yet converged and the EC has indicated that the work is to be finalised in December this year.

Based on discussions in the NWPE and ACEC, this outlines a ZEP view:

General: It is crucial to define the partnership's objective before concluding that it is needed. We should not create overlaps with cooperations that already exists.

The objective: The partnership should focus on funding/de-risking projects. The CCUS Forum itself (yearly meetings and with working groups preparing these meetings, ref. the Florence/electricity forum and the Madrid/gas forum) is focused on the area of policy and regulation.

Participation: Transparent and open to all that would like to engage.

Level: Possibly coordinated at EU level, but the real focus area is on specific regions.

Organisation: It would be beneficial for the development and deployment of CCS and CCU in Europe to base this on ZEP's experience – including managing the secretariat for a possible partnership.

There will be oral presentations by CCUS Forum co-chairs and Chris Davies.

Agenda Item 9: CO2 infrastructure – for information and guidance

9.a. EC study on regulatory issues related to CO2 infrastructure

The European Commission's (EC) study on regulatory issues regarding CO2 infrastructure is conducted by TNO and Trinomics and is focusing on investigating regulatory options and potential business models for the development of CO2 transport and storage. The study has started and will include an analysis of the current situation, taking into account the regulatory and market components, and present policy recommendations. Stakeholder consultation activities will take place in December 2022 and January 2023. A draft report is expected end-January and the study is expected to be finalised at the end of February 2023.

The work of the study was presented at the NWPE meeting on 16 November. ZEP will be consulted along the way and the study will be coordinated with the CCUS Forum Working Group on CO2 infrastructure.

There will be an update at the meeting by Filip Neele from TNO

9.b. EC study on cross-border CO2 transport

The EC's Joint Research Centre (JRC) will update its study on 'The evolution of the extent and the investment requirements of a trans-European CO2 transport network' by May 2023, following these steps:

- Identification and clustering of CO2 sources and sinks
- Assumptions about the evolution of captured CO2 emissions and storage capacities
- Routing of potential pipelines
- Selection of the optimal network and evolution over time

ZEP is and will through the Network Technology continue to engage with the JRC throughout the development of the study and ensure that ZEP provides input. The study is expected to be published in May 2023.

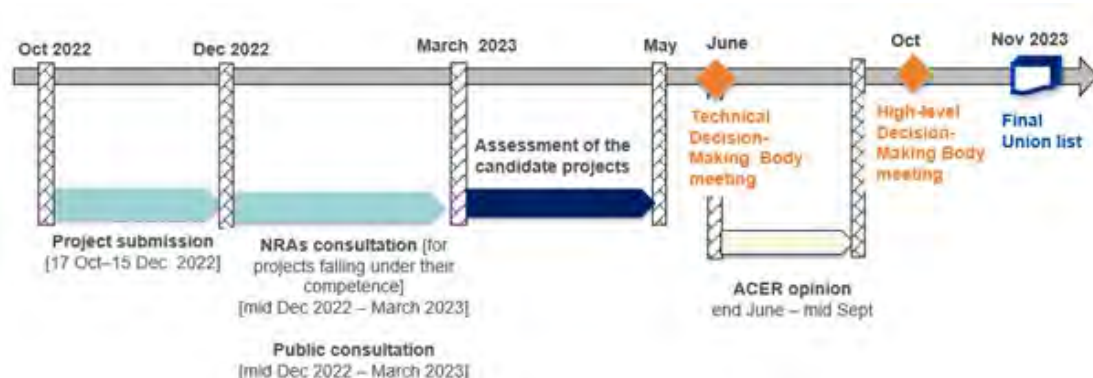
Zoi Kapetaki from the JRC will give an update at the meeting.

9.c. First Union list of PCIs/PMIs under the revised TEN-E

The EC launched a [call for applications](#) for energy infrastructure projects (deadline 15 December 2022), covering Projects of Common Interest (PCIs) – i.e., involving at least two EU Member States – and Projects of Mutual Interest (PMIs) – i.e., involving at least one EU Member States and one third country with high level of convergence with EU policy.

Following the revision of the Trans-European Network for Energy (TEN-E) Regulation, new and updated infrastructure categories are included for cross-border CO2 network projects, including dedicated pipelines (other than upstream) for permanent geological storage, fixed facilities for liquefaction, and surface and injection facilities.

Selected projects will form the First Union List of PCIs/PMIs under the revised TEN-E and will benefit from a range of advantages, including accelerated permitting, enabling regulatory conditions, and be eligible to apply to Connecting Europe Facility (CEF) funding. Project applications run via the [online submission platform](#) and follow the process described below:



Katrien Prins from DG ENER will give an update at the meeting.

9.d. Innovation Fund

The EC launched the 3rd large-scale call of the Innovation Fund on 3 November 2022 ([link to press release](#) and [ZEP briefing](#)). The new call makes €3 billion available in grants for innovative low-carbon technologies, doubling the size of the previous large-scale call. The funding will be distributed across four project categories:

- General decarbonisation (€1 billion), including CCUS
- Innovative electrification in industry and hydrogen (€1 billion)
- Clean tech manufacturing (€0.7 billion)
- Mid-sized pilots (€0.3 billion), including CCUS

The call will close on 16 March 2023 and grants will be awarded in Q4 2023.

The EC organised the ‘Innovation Fund Info Days’ on 29 and 30 November 2022, where it presented lessons learned from the latest large-scale call and the key features of the 3rd large-scale call. The event details are available [here](#).

There will be a presentation by DG CLIMA at the meeting (tbc)

9.e. CO₂ Storage Directive Guidance Documents

The four [Guidance Documents](#), published in 2010, aim to support operators and Competent Authorities with the implementation of the CO₂ Storage Directive.

The EC, assisted by a consultant, will work on an update of the Guidance Documents, with the aim of addressing technical and market developments and ambiguities as well as to reflect practical experience. The work is expected to start in December 2022 ([link to the tender specifications](#)).

The revision process will involve all relevant stakeholders, including competent authorities and potential operators, and include moments dedicated to stakeholder feedback, namely, a public stakeholder workshop in June 2023.

The revised Guidance Documents are expected to be adopted by the EC in the end of 2023. In 2024, there will be a series of capacity building workshops for competent authorities and potential operators.

Agenda Item 10: Certificates for removals – *for information and guidance*

10.a. *Certifications for removals*

The European Commission (EC) adopted, on 30 November, a proposal for a Regulation establishing a voluntary certification framework for high-quality carbon removals in the EU (link to the [proposal](#) and ZEP's [briefing](#)).

The proposal lays down definitions and the scope of the initiative, quality criteria for carbon removal activities, guidelines for verification and certification, as well as procedure for the recognition of certification schemes.

Certification methodologies and more detailed rules will be set out in implementing acts and delegated acts. The EC will be supported by an expert group on carbon removals, which will first meet in Q1 2023.

The discussion surrounding the details of the proposal will be taken up by ZEP's TWG CDR with the view of developing a draft common ZEP position on the file and providing feedback to the EC.

Fabien Ramos, from DG CLIMA, will give an update on the proposal at the meeting.

DRAFT

Agenda Item 11: ZEP and IWG9 actions, next meeting dates

11.a. 2023 meeting dates – for endorsement

ZEP Advisory Council and IWG9 Plenary (Wednesdays)

- 22 March 2023
- 14 June
- 13 September
- 6 December

The AC members and IWG9 co-chairs are invited to endorse the proposed dates

11.b. Other 2023 meeting dates – for information

ZEP Advisory Council Executive Committee (Tuesdays)

- 18 January 2023
- 21 February
- 18 April
- 16 May
- 11 July
- 10 October
- 7 November

Network Technology

- 16 February 2023
- 4 May
- 4 October

Network Policy & Economics

- 9 February 2023
- 25 May
- 18 October