

MEETING MINUTES

ZEP 73rd ADVISORY COUNCIL AND IWG9 PLENARY

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

In-person meeting in Brussels (and online)

1. Introduction and welcome

Chair (WC and JR are sharing the role of chair), open the meeting and note the coordinated work of ZEP the IWG9 as defined by the new grant.

All pay tribute to the former ZEP chairman, Dr Graeme Sweeney, who passed away this year.

POG welcomes new members of the ZEP Advisory Council (AC) – new ZEP member Mitsubishi Heavy Industries (MHI) represented by Dr Michalis Agraniotis and new AC members for TotalEnergies, Pauline Bourguignon. Michalis Agraniotis gives a short introduction to MHI's CCS-related activities.

The AC thanks Lucie Boost for her engagement as ZEP ERG co-chair.

2. ZEP and IWG9 2023

POG notes that he is asking the AC for approval of 1) the ZEP chairperson election process, 2) the proposed updated ZEP bylaws, 3) the ZEP budget for 2023, and for AC and IWG9 Plenary approval of the work programme for 2023. He presents the process, criteria and description of role and responsibilities for the election of a new ZEP chairperson. The call for candidates that was sent to the AC members in November closes on 2 January and an AC members-only meeting will be organised in Brussels (and on-line) on 18 January for election of the new chairperson. He notes the commitment is for three years with an expected 20% workload, and highlights the criteria, that include upholding the ZEP values and navigating the platform across the many areas from research to the political economy and commercialisation of CCS and CCU.

POG presents, referring to the pre-reads, the updated bylaws that include a general update of the texts based on the previous version from 2016, the governance structure, rotation of members, addition of new groups, etc.

POG gives an overview of the proposed ZEP/IWG9 work programme for 2023, noting that the draft programme, that was presented at the AC/Plenary in September, has since been discussed and developed in the Networks, the ERG, and the government group. Given the decreased EU grant budget and the increased interest and funding from ZEP members, ZEP will also develop a ZEP own work programme. The process for developing this own work programme is outlined, which will be submitted for approval at the AC/plenary in March 2023.

POG provides an update of the finances in ZEP-C, noting increased end-of-year reserves of approx. €350k. The proposed budget for 2023 shows income on €310k and includes two items that will be brought up for approval at AC74 in March: possible funding for the new chairperson and budget for the ZEP own work programme.

From the discussions, the following is noted:

- For the chairperson application it is noted that Why the candidate wants to be the chairperson and How she/he would like to develop ZEP will be key.
- Referring to the bylaws, SP asks how to ensure continuity of the work while allowing for the rotation of members in the ACEC. POG notes that based on the bylaws, continuity and rotation of AC members will be brought up at the AC September meetings each year.
- Referring to the budget the following is noted: The budget for the new EU grant, that started in July this year, is halved – €1million – compared to the two separate previous ZEP and IWG9 grants. Decreased budgets and increased coordination between ETIPs and IWGs have been applied to all SET-plan sector. The accounts refer to ZEP Communications ASBL (Belgian non-profit organisation), where all ZEP members are invited to be a member.

The ZEP AC are invited to approve the ZEP chair election process, the proposed updated ZEP bylaws, and the ZEP budget for 2023. All approved.

The ZEP AC and the IWG9 Plenary approves the ZEP/IWG9 work programme for 2023. Approved.

3. Updates from governments

Tomas Velghe (TV) provides an update on CCUS in the Flemish region, presenting the Flanders' Climate and Energy Agency (VEKA) which was established in January 2021. He highlights that Flanders comprises several port areas and stand among the most energy intensive regions in Europe, with very strong concentration of industrial installations – important clustered CO₂ point sources. It is thus a key area in the EU with respect to CCUS. Currently the Flemish CCUS policies focus on facilitating ideas and spatial planning in regions and ports, as well as cooperating with neighbouring countries – e.g., Denmark, Norway, and the Netherlands. Recently an MoU was concluded with Denmark for cooperation and transport of CO₂. Recent efforts focus on transport by ship and pipeline, with draft Flemish legislation being prepared for the latter in order to ensure that all pipeline projects have a legal framework.

After the presentation, a discussion follows with several questions:

- JH thanks for the update and asks for further information on collaboration across the whole of Belgium area to develop an infrastructure backbone. TV replies that most projects are in the Flemish region but the legislation under development aims to ensure that the Belgian approach is well coordinated.
- LB notes that Fluxys has received a lot of interest on CCUS in Belgium recently. This would mean a possibility to have the same operator in both Wallonia and Flanders. She asks how this is perceived. TV responses that this could be an outcome of the legislation and adds that all operators will have a chance to apply to be the network operator, including Fluxys.
- WB highlights the strong momentum for projects in Belgium, with many in Wallonia. However, these regions are far from ports, so infrastructure backbone is key. He asks who is the Walloon counterparty to VEKA. TV replies that he will share the contact after this meeting.
- SC asks how the bilateral agreements signed by Flanders link to the EC analysis paper. TV replies that currently an MoU between two member states seems enough for all relevant institutions.

Sophie Wenger (SW) presents the status regarding CCUS in Switzerland, indicating that a roadmap that establishes a clear position for Switzerland was recently published (an English version is available). The country aims to get the best possible framework for CCS and CDR to be a frontrunner. It considers this sector as an important opportunity for business and R&I institutions. Both reductions and removals will be necessary to solve the challenge of achieving net zero CO₂ emissions.

SW also points at the importance of international cooperation, considering the possibility to account for foreign CDRs in the Swiss emission reduction targets. Therefore, a mix of policy measures will form the legal basis for these developments, including supporting CCS projects nationally and abroad, a Swiss ETS linked to the EU ETS, financial incentives and more across several relevant sectors (waste, aviation, and others). She highlights the role of governments to give legal guidance, and the industry to make investments, give science-based insights and critical reflections, and support for ambitious policies.

4. Updates from the Networks

a. Network Policy & Economics

LE provides an update of the latest activities in NWPE, inviting everyone to attend these meetings in person during the next year. LE presents ZEP's response to the Climate Bonds Initiative (CBI) consultation, ZEP's note regarding political interference in the ETS, as well as the important questions that has been highlighted concerning the London protocol.

AF presents the policy agenda for the coming months, noting especially the EC studies on CO₂ infrastructure, finalising the Fit for 55 package, continued work on the CCUS Forum, a public consultation on the EC proposal for a CDR certification mechanism, etc.

CAB presents the draft ToR for the ZEP/CCSA work on CO₂ transport by ship. This work aims to investigate the scope and trade routes for CO₂ transport by ship, standards work being done by ISO, IMO, and SIGTTO and what further interoperability issues to consider, and to describe and provide recommendations regarding barriers to commercialisation.

BdB asks about the ZEP response to the CBI consultation linked to the Taxonomy thresholds. POG notes that the CBI response is based on the ZEP position that highlights that the threshold for hydrogen should start at a higher level and then decrease, aiming for net zero by 2050.

The AC are invited to approve the ZEP note on political interference in the EU ETS (already endorsed by the ACEC), ZEP's response to the CBI consultation (already endorsed by the ACEC), and the draft ToR for the ZEP/CCSA work on CO₂ transport by ship. All approved.

b. Network Technology

FN provides an update on NWT, noting the networks latest activities, such as ZEP's input to the work of the EC/JRC study on CO₂ infrastructure that will be finalised in May 2023. FN presents ZEP's response to the European Critical Raw Materials Act consultation, where ZEP has focused on calling

on the EC to give due consideration to CCUS supply chains in the identification of strategic raw materials and ensure a level playing field. FN also presents the draft ToR to extend the ZEP work on CDR that has been discussed with the network.

AH presents the draft ToR on supply chain risks and gives the context for the new TWG created to push forward the work. The elements in the draft ToR have been discussed in recent NWT meetings. A first meeting is expected in January/February 2023.

The AC are invited to approve the draft ZEP response to the call for evidence on the European Critical Raw Materials Act (already endorsed by the ACEC), the draft ToR extension for TWG CDR, and the draft ToR TWG supply chain risks. All approved.

5. Updates from External Relations Group

LB outlines the latest activities of the ERG, noting recent critical reports to CCS. She notes the effort for a joint letter to the EC on the CCUS Forum and calling for a strategy. In this regard it was impossible to gather all co-chairs to agree on a final text. LB also notes the newly available opening in the ERG for a co-chair focused on R&I, as well as an additional opening following her own departure of the ERG. LB notes the yearly performance of the ZEP newsletter which has increased and flags the recent article (29 November) published by ZEP on Euractiv, calling for strong European leadership for carbon removals.

MS outlines planned communications activities for Q1 2023, noting a Communication group workshop on 13 January on updating the ZEP Facts & Information toolkit. MS highlights communications material being prepared, project case studies, and preparations for a ZEP conference in 2023. He notes that the strong momentum for CCS in 2023, as described in the policy agenda, will be coordinated with communications, policymaker engagement and event activities – touching on the areas of CO₂ transport and storage, CDR, the EU ETS, the incoming ZEP chairperson, R&I, and skills insofar as 2023 is the EC Year of Skills.

6. SET-Plan review

VK presents the new 2023/24 work programme for Horizon Europe, with CCUS strongly included in the new calls. It includes demonstration projects for transport and storage, calls on CCU, as well as for DACCS and BECCS. Regarding the SET Plan revision, VK notes that the latest meeting took place today with the aim to investigate key issues with a formal communication to be adopted by the end of March 2023. The work will therefore be finalised mid-January, and include an improved governance structure, issues of hydrogen, NECPs, as well as cross-cutting issues such as digitalisation. Finally, VK highlights the recent CETP joint call, with further details to be provided in the next item of the agenda.

A discussion follows on VK's presentation, with questions. POG asks what can be expected regarding the next Horizon Europe work programme, and if there are items in preparation connected to CCS/CCU. VK replies that preparations have started, and the first step is to identify current gaps. Help and input from ZEP is welcome and appreciated in this area. NR asks if there are metrics from the CETP call, e.g., number of applications received from CCUS projects. VK does not have this information but there will be further details in the next presentation (outlined below).

7. Updates from ACT/CETP

RR gives an update, noting that ACT gathers 16 international partners, and that in its three first calls, 33 projects with a total funding of around €110 million has been supported. The CETP call for 2022 gathers 60 funding agencies from 30 countries (many of the funders participating in ACT also participate in the CETP) – including €70 million from the EC amounting to €140 million in total. The call received 107 pre-proposals asking for €195 million. There were 15 pre-proposals for CCS and CCU technologies in the 2022, as well as 14 in hydrogen. RR asked for feedback in order to improve and further precise the future calls.

A discussion follows, including the following. NR asks if there will be a simplification of the current complexity of application process. RR replies that this is being discussed. One approach could be to reduce the number of call modules and be more precise on call topics. MB adds feedback from the EERA community, noting that the call was released suddenly without clear communication. RR adds that this goes back to funding agencies and how proactive they are. VH proposes ways to lighten the burden on projects, including reconsidering the TRL requirements.

8. CCUS Forum

YMO from DG ENER provides an update from the CCUS Forum, including outcomes and next steps. She notes the call for co-chairs for the new WG on public awareness, that will be launched ahead of the next year's Forum. There will also be a public consultation on the EC CCUS Communication, starting around March 2023. Input from ZEP is welcome. HB asks why the announced EC Communication is planned only for Q4 2023, so long after the CCUS forum. This may lead to the EU losing momentum from an international company's (such as Carbon Engineering) perspective. YMO replies that the timeline is following internal regulation and requirements for publishing a communication – an admittedly long process.

POG notes the strong support for CCUS Forum work on an EU strategy for CCS and CCU and a new regulatory framework for CO₂ transport infrastructure and highlighted the need for concrete action by the EC in 2023. He also highlighted the ZEP views from discussions in the Networks and the ACEC on an Industrial Partnership: The importance to first define a clear objective for such partnership, to not create overlaps with existing cooperations, that the focus should be on funding/de-risking of projects, that such partnership should be open to all interested stakeholders, and that it is beneficial to base it on ZEP/that ZEP should host the Partnership's secretariate.

WB gives a short update from the work of WG Industrial Partnership, pointing to the outcome of the WG's survey: The need for more advocacy, to identify and address the main barriers for hubs and projects, to enhance the link between demand, supply, and funding, as well as the need to have an open format for this partnership. In this regard a paper is being prepared which will likely include key proposals for what the partnership could look like. This paper will then be discussed at the WG's next, expected in early 2023.

A discussion follows, with SC noting that there are only so many platforms in which stakeholders can participate and that it is crucial to avoid duplication. SC thus suggests that ZEP should be the secretariat for this new partnership.

CD presents the new “industry-led coalition” for which he is expecting funding from the European Climate Foundation, and where declarations of support – particularly from hard-to-abate sectors – are needed by January. CD notes that this coalition is focused on capture of CO₂ and focused on industrial companies.

A discussion follows, including CS asking what specific cooperation is requested from ZEP and if there is a concrete proposal for how to move ahead together. CD does not have a concrete idea, but points what he sees as difficulties for ZEP, the close relationship with the EC and ZEP’s membership. He insists that this coalition will be a special and time limited commercial advocacy body.

9. Updates on CO₂ infrastructure

FN provides a short presentation on CO₂ infrastructure study that Trinomics and TNO is performing for the EC. The study aims to provide the EC with advice about potential gaps in regulations to support and develop transport and storage of CO₂. The first part has been finalised and there will be a consultation round. The study is supposed to be finalised in March 2023. Input from ZEP members and stakeholders is welcome.

KP from DG ENER gives an update on the next round of Projects of Common Interest (PCI), noting the deadline to apply for the 6th list is on 15 December. There has been significant interest and questions from across the CCUS industry. KP adds that the Connecting Europe Facility (CEF) round concluded last week with two CCUS PCI projects awarded for studies and the Antwerp@C project awarded a grant for construction works.

Zoe Kapetaki from the JRC gives an update on their ongoing study on CO₂ infrastructure, to update the 10 years old study. There are three deliverables under the current project: First, an updated methodology paper is progressing well with good input received from ZEP – most of it has been included in new methodology. Second, a study of optimal routs and networks that is expected in May 2023. Finally, preliminary results are expected next year for cost estimations – the intention being to estimate CO₂ transport and storage network costs.

A discussion follows on the presentation with questions from the audience:

- MW asks if input to these workstreams consider different geographies in Europe. ZK replies that the work on CO₂ sources so far uses publicly available scenarios from the EC (PRIMES) and CO₂Stop project.
- SW asks if the scope of the work cover EEA or the EU. ZK replies that the previous study (10-year-old) covered the EEA and so will the new one. For Norway, available storage capacity will be included but not CO₂ sources.

10. Certificates for removals

FR, DG CLIMA, provides a comprehensive presentation on the latest proposal by the EC on a certification mechanism for carbon removals. He notes that the proposed certification mechanism aims to maximise harmonisation with other initiatives in the Green Deal. The aim is to better define quality criteria for carbon removals, tailored to each activity, as well as the removal process itself. FR notes that an expert group (selected candidates will be announced in early January at the latest)

will hold its first meeting as soon as possible next year. Current priorities that have been highlighted include BECCS and DACS, and there will be additional support from the JRC. Finally, the proposed certification mechanism aims to support the evaluation process of the Innovation Fund.

A discussion follows on the proposed initiative and the presentation:

- LE asks for further information regarding interchangeability with EU ETS allowances, and whether there will be a different certificate for different degrees of permanence. FR replies that currently there are varying options for how to include CDR in EU ETS. The currently favoured mechanism is an expiry date (this will be discussed with expert group).
- EP notes that the definition of removals can be problematic without a clear distinction between reductions and removals. FR replies that this issue needs to accommodate both technology- and nature-based solutions, and notes that the biggest potential to increase the LULUCF (nature-based) sink is to stop emissions from peatlands – in the long-term, it turns into a carbon removal. This is reflected in the text.
- JH and HB asks about the possibility of storing CO₂ outside the EU and if Norway is included in the scope. FR replies that Norway is included, as the basis is the CO₂ storage Directive.
- SW asks if the CO₂ storage Directive applies to both atmospheric and biogenic CO₂. FR replies that a DAC plant, for example, is not considered to be an EU ETS installation, so the CO₂ storage Directive does not apply. In the case of a mixed stream of both fossil and biogenic emissions, it has to determine what is and is not covered under the CO₂ storage Directive.

11. Closing remarks and next meeting

Chair thanks all for participating in the discussions and all who agreed to present today. Thanks all for a productive meeting and highlights the proposed AC/Plenary meeting dates for 2023:

- ZEP AC74 and IWG9 Plenary – 22 March 2023
- Other ZEP AC/IWG9 Plenary dates for 2023: 14 June, 13 September, 6 December

Attendants		
1	Joëlle Rekkers	Dutch Ministry and IWG9 Co-chair
2	William Christensen	Norwegian Ministry and IWG9 Co-chair
3	Vicente Cortes-Galeano	AICIA/University of Sevilla
4	Jonas Helseth	Bellona
5	Shirley Oliveira	BP
6	Jannicke Gerner Bjerkås	Celsio
7	Chris Littlecott	E3G
8	Stijn Santen	EBN
9	Salvatore Giametti	Eni

10	Lamberto Eldering	Equinor
11	Robin Clowes	ExxonMobil
12	Constantin Sava	GeoEcoMar
13	Winston Beck	Heidelberg Materials
14	Florence Delprat-Jannaud	IFPEN
15	Liv Rathe	Norsk
16	Aslak Hellestø	Northern Lights
17	Stuart Haszeldine	Scotland CCS
18	Syrie Crouch	Shell
19	Nils Røkke	SINTEF
20	Charles Soothill	Sulzer
21	Filip Neele	TNO
22	Emmanuel Kakaras	University of Athens
23	Yanika Meyer-Oldenbourg	European Commission
24	Vassilios Kougiouas	European Commission
25	Fabien Ramos	European Commission
26	Katrien Prins	European Commission
27	Zoi Kapetaki	Joint Research Centre
28	Tomas Velghe	Flemish government
29	Sophie Wenger	Swiss government
30	Anders Melhus	Alter Infra
31	Adrien Berthier	Aluminium Dunkerque
32	Michał Wendołowski	Bellona
33	Luke Warren	BP
34	Eadbhard Pernot	CATF
35	Kasia Frotier De La Messeliere	Drax
36	Domien Vangenechten	E3G
37	Ryan Bain	E3G
38	Jasper Heikens	Ecolog
39	Kostis Andreou	Ecolog
40	Sebastian Busch	energy4climate

41	Lucie Boost	Equinor
42	Luisa de Castro Gonzalez	Equinor
43	Nicolò Cairo	ETN Global
44	Bert de Backker	ExxonMobil
45	Marine Valdois	ExxonMobil
46	Yelda Guven	ExxonMobil
47	Ståle Aakenes	Gassnova
48	Axel Scheuer	IOGP
49	Caterina de Matteis	IOGP
50	Maria João Duarte	Mitsubishi Heavy Industries
51	Michalis Agraniotis	Mitsubishi Heavy Industries
52	Marleen Ramakers	Port of Antwerp-Bruges
53	Nico de Meester	Porthos
54	Sytze Ferwerda	Porthos
55	Christopher Davies	Rudd Pedersen
56	Christian Schwarck	Shell
57	Marie Bysveen	SINTEF
58	Hanne Rolén	Aker Carbon Capture
59	Nicolai Mykleby-Skaara	Aker Carbon Capture
60	Bram Sommer	Aramis
61	Eric De Coninck	Arcelor Mittal
62	Juergen Gusterhuber	Austrian government (Finance Ministry)
63	Frederik Pieters	BASF
64	Lina Nagell	Bellona
65	Wolfgang Haider	Borealis Group
66	Jim Todd	BP
67	Helen Bray	Carbon Engineering
68	Toby Lockwood	CATF
69	Markus Sebastian Hole	Celsio
70	Jan Kjärstad	Chalmers
71	Eve Tamme	Climate Principles

72	Claire Pasquiou	CO ₂ Value Europe
73	Vít Hladík	Czech government (Geological Survey)
74	David Lund Hansen	Danish government (Energy Agency)
75	Jasmin Sharzad	Danish government (Energy Agency)
76	Mads Kjær	Danish government (Energy Agency)
77	Theis Gjedsted	Danish government (Energy Agency)
78	Tom Mikunda	Dutch government (Economy & Climate Ministry)
79	Domien Vangenechten	E3G
80	Roberto Ferrario	Eni
81	Julia Mühleiß	EON
82	Caroline Bouilly Eriksson	EON Sweden
83	Luisa de Castro	Equinor
84	Nicolò Cairo	ETN Global
85	Sophie Wilmet	European Chemical Industry Council
86	Drazen Tumara	European Commission
87	Eirik Lonning	European Commission
88	Vendula Jirouskova	European Commission
89	Rodolphe Nicolle	European Lime Association
90	Carol Paquier	French government (Environment Ministry)
91	Fabienne Janin	French regional government (Auvergne Rhone-Alpes)
92	Stale Aakenes	Gassnova
93	Ruth Gebremedhin	GCCSI
94	Sebastian Fischer	German government (Economy & Climate Ministry)
95	Christian Heller	German government (Environment Agency)
96	Reinier van Noort	IFE
97	Sara Budinis	International Energy Agency
98	Alberto Pettinau	Sotacarbo
99	Tomisław Kozubik	KGHM
100	Greg Archer	Lanza Tech
101	Felix Jung	Liquid Wind

102	Arthur Heberle	Mitsubishi Heavy Industries
103	Mickey Kato	Mitsubishi Heavy Industries
104	Dave Warne	<i>n/a</i>
105	Anna Dubowik	Negative Emissions Platform
106	Thomas Vanhauwaert	Neptune Energy
107	Ane Gjengedal	Norwegian government (Energy Ministry)
108	Egil Meisingset	Norwegian government (Energy Ministry)
109	Sina Blix Prestmo	NTNU
110	Przemyslaw Grojs	Orlen
111	Dorus Bakker	Port of Rotterdam
112	Ragnhild Rønneberg	RCN
113	Arash Hedayat	Repsol
114	Fedora Quattrocchi	Rome Institute of Geophysics
115	Kristin Jordal	SINTEF
116	Jonathan Vouillamoz	Swiss government (Energy Agency)
117	Sophie Wenger	Swiss government (Environment Ministry)
118	Veronica Lupu	Swiss government (Environment Ministry)
119	Veronika Elgart	Swiss government (Environment Ministry)
120	Luis F. Piedra-Garza	Thyssenkrupp
121	Cyril Vock	TotalEnergies
122	Gulten Özçayan	Turkish government (Energy Ministry)
123	İrem Işık Çetin	Turkish Government (Environment Ministry)
124	Ufuk Kayahan	Turkish government (Research Agency)
125	Alex Blades	UK government (BEIS)
126	Ceri Vincent	UK government (Geological survey)
127	Frederik Selhorst	Victrol
128	Per-Olof Granström	ZEP Secretariat
129	Charles-Albert Bareth	ZEP Secretariat
130	Murillo Salvador	ZEP Secretariat
131	Ana Faria	ZEP Secretariat