

ZEP 69th Advisory Council meeting 15 December 2021, 10:00-13:00

Agenda Item 1: Introduction and welcome

1.a. Virtual meeting instructions

The ZEP AC69 will be a virtual meeting, held on Microsoft Teams.

Below are some instructions in order for the meeting to run smoothly:

- Before the meeting, you will receive an Outlook invitation for the meeting (10:00-13:00 on Wednesday, 15 December). The Outlook invitation contains a link to Microsoft Teams to join the meeting. If you have not received it, please contact the ZEP Secretariat.
- The Chair will let the presenter for each agenda item finalise his/her presentation before giving the floor to other participants.
- If you have a question, use the chat function (if you have not used it before, you will find a button at the bottom of the screen and the chat function will open up in a window on the right-hand side of the screen).
- In order for the Chair to organise the speaking order, please use the following vocabulary when you have a question:
 - "Chair: question to NN", if you have a written question for the Chair to highlight, or
 - o "Chair: oral question" if you want the Chair to give you the floor for an oral question or comment.
- When you are not speaking, we would suggest that you mute your microphone for sound optimisation.

1.b. AC69 meeting agenda

The agenda for the 69th meeting of the Advisory Council is appended as pre-read 1.b.

1.c. AC68 draft meeting minutes

The draft meeting minutes from the 68th meeting of the Advisory Council, which took place on 22 September 2021, are appended as pre-read 1.c.



1.d. ACEC October meeting minutes

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

1.e. ACEC November draft meeting minutes

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

1.f. Proposed meeting dates for 2022

Outlined below for AC endorsement are proposed ZEP meeting dates for 2022. The AC and ACEC meeting dates were previously presented at the ACEC November meeting. Following endorsement, placeholder calendar invitations will be sent for the 2022 meetings.

Advisory Council (Wednesdays)

AC70 - 23 March 2022

AC71 - 15 June 2022

AC72 – 14 September 2022

AC73 - 14 December 2022

Advisory Council Executive Committee (Tuesdays)

18 January 2022

15 February 2022

19 April 2022

17 May 2022

12 July 2022

16 August 2022

18 October 2022

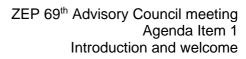
15 November 2022

External Relations Group & Communications Group meetings (Fridays)

DEGENERAL DESCRIPTION OF THE PROPERTY OF THE P

14 January

25 February





- 8 April
- 20 May
- 1 July
- 26 August
- 23 September
- 4 November
- 16 December



ZEP 69th Advisory Council meeting 15 December 2021, 10:00-13:00 CET

Meeting agenda

lte	m	Lead Presenter	Time
1	Introduction and welcome	Graeme Sweeney	10:00-10:10
2	ZEP 2022 – for information and endorsement		10:10-10:30
	 Work programmes and budget 	Per-Olof Granström	
3	 Updates from Networks – for information, guidance and approval Updates from TWGs ZEP report on CO₂ shipping for approval Cross-border storage liability 	Co-chairs TWG Co-chair Ian Phillips	10:30-11:05
4	Updates from External Relations Group – for information and guidance Overview of ZEP communications activities and events COP26 follow up and reflections	Co-chairs, ZEP Secretariat	11:05-11:20
5	 TEN-E Regulation – for information Update from negotiations 	Willem van Laatum, Assistant to MEP Berendsen	11:20-11:40
	• 5 th PCI list	Chris Bolesta, DG ENER	
6	Hydrogen – for information		11:40-12:20
	 Hydrogen and gas decarbonisation package 	Chris Bolesta, DG ENER	
	 Taxonomy complementary delegated act 	DG FISMA (TBC)	
	ECHA project collection and awarded projects	Henning Ehrenstein, DG GROW	
7	Horizon Europe work programme – for information		12:20-12:35
	 Work programme 2023-2024, CETP, Mission Innovation 	Vassilios Kougionas, DG RTD	
8	Carbon Dioxide Removal – for information and guidance		12:35-12:55
	 Presentation of "Long-term vision for sustainable carbon cycles" 	Fabien Ramos, DG CLIMA	
9	Closing remarks and next meeting	Graeme Sweeney	12:55-13:00



1.c. AC68 draft meeting minutes

DRAFT MEETING MINUTES ZEP 68th ADVISORY COUNCIL MEETING

22 September 2021, 10:00-13:00 CET

Virtual meeting

1. Introduction and welcome

Chair, **GS**, opens the meeting, declares quorum, and reminds all of the meeting instructions.

Chair announces that following a vote by AC members, two new ZEP AC members have been appointed: Winston Beck, HeidelbergCement, and Ludovic Voet, ETUC. Invites the new representatives to say a few words. Chair confirms that Winston Beck is also the ZEP Vice-Chair for the Industrial constituency.

Chair asks for approval of the meeting agenda – agenda is adopted. AC67 draft meeting minutes are adopted. ACEC July meeting minutes and ACEC August draft meeting minutes are adopted.

2. ZEP development and planning

POG notes that the end of the current ZEP grant is approaching and there will be a gap before the next grant begins. **POG** provides an update on the ZEP-C budget as well as the next ZEP grant and work programmes, and the work programme during the funding gap, to be funded by ZEP-C members. This funding gap work programme is presented for AC recommendation today and then for approval by ZEP-C board of directors.

ZEP-C 2021 budget was approved by AGM in June 2021. The finances show increased income and lower expenditure than budgeted during January through August. The ZEP-C financial reserves are expected to increase to €270,000 by the end of 2021.

The new combined ETIP ZEP/IWG9 grant is expected to start in May next year. The budget announced in the call for proposals has been decreased to approximately half of the current two grants for the three-year programme. Considering the decreased funding and at the same time the increased funding to ZEP-C due to growing membership, ZEP will have its own work programme – also decided at AC67. A description of the work programme will be presented at AC69 or AC70. ZEP has also highlighted the need to fund further resources or employ permanent staff to coordinate and drive the work programmes forward. **POG** presents the ZEP funding gap work programme and notes strengthening ZEP's role, support for the CCUS SET-Plan and 'market-ready' CCUS projects, as well as outlines the more detailed programme that is based on the EU policy agenda. **POG** also highlights the aim to include the Communications Group and the formal ZEP structure and coordinate this more direct with the ERG.

POG thanks all for contributions to ZEP as we reach the end of the grant, and thanks the ZEP Secretariat Giorgia Bozzini and Meghann Kissane. Chair notes that formal recommendation for the work programme will be sought as this is needed prior to approval by ZEP-C board of

DEGENERAL DE LA CARLO CA



directors. Chair also thanks the secretariat and AC members for the work put in over the ZEP grant. **AT** echoes the support and thanks on behalf of Shell.

The AC formally recommends the funding gap work programme.

3. Updates from Networks

Chair notes several items for AC approval:

- consultations on revised Climate, Energy & Environmental Aid Guidelines (CEEAG),
- the call for feedback on draft report on Social Taxonomy by the Platform on Sustainable Finance, and
- Stakeholder Questionnaire, where ZEP gave input.

Chair notes the IWG9 work on the CCUS Roadmap 2030: if there are any questions, the ZEP Secretariat can respond.

LSN provides update from NWPE, highlighting the upcoming vote in ITRE Committee on TEN-E regulation, Fit for 55, and Carbon Dioxide Removals. The CDR working group has contributed to DG CLIMA consultation on CDR certification. The hydrogen and gas package and upcoming complementary delegated acts for the Taxonomy in Q4. **CSc** adds discussions on ZEP's support for CCS+ and how we can best support the process.

Before the NWT update, Chair notes significant work on drafting ZEP academic paper on hydrogen in response to the Cornell paper. Notes that the first presentation will be presented shortly, to be sent to AC members following the meeting for one week for any responses, and for Chair to approve the paper.

FN notes the ongoing working groups. The CO2 transport by ship group began in the summer, with the aim to support development of CO2 shipping and what parts could be of interest for standards. Input from the first meeting is now being processed into a report, aimed for next spring. Notes that work is continuing in working groups on carbon-neutral biomass, CCS Directive, and CCS for flexible clean power generation. **NR** highlights the upcoming work on 'Biodiversity and land use, the role of CCS and BECCS'.

FN presents the ZEP draft academic paper on hydrogen. Gives a background on 'How green is blue hydrogen' paper published earlier this year, which presents assumptions and conclusions that are not relevant for Europe. The ZEP paper will look at low-carbon hydrogen from a European perspective.

Chair opens the floor for general questions on Networks update and on the draft paper. **MV** poses a question regarding capture rate and fugitive emissions. **RdK** responds. Chair adds that sustainable Taxonomy led us to have a discussion on lifecycle and natural gas. We need to improve our capacity to know what the emissions associated with particular sources of gas are, otherwise, they cannot comply with the delegated act. We need to understand what the provenance is. **AT** comments that it is positive to see debate on this topic and keen to know how quickly we can respond and if any support needed from our side. Chair echoes this point that ZEP has moved as quickly as possible – AC members will have one week to provide comments and a delegated authority to Chair to approve and publish the paper. ERG will also coordinate communications around the paper. **JH** notes this is a problem not of technology but of colourcoding and appreciates the inclusion of the reference to the Taxonomy.

DEGESTATION OF THE PROPERTY OF



Chair asks the AC members to respond within coming week and delegate the authority to Chair to review inputs and allow publication for use by you and the ERG. We will return to formal approval in AC69. No objections.

Chair asks for AC approval of the three aforementioned consultations responses – approved. Chair asks for any questions on CCUS Roadmap – notes no matters arising.

4. Updates from External Relations Group

LB provides update from the ERG and feedback on activities. Highlights action plan for ZEP articles on TEN-E, for this week, and low-carbon hydrogen, aimed for October. Confirms that ERG will take action for communication around the ZEP paper on hydrogen. The CCUS Forum on 11 October will see ZEP moderate a session, and ERG has discussed how ZEP can contribute and give input to DG ENER on the Forum and a CCUS strategy for Europe. Notes a recent article regarding a CO2 pipeline incident in Mississippi which was discussed in ZEP working groups and ERG. Limited information available, but the article will be standing item at upcoming ERG meetings and to be prepared to have a position ready if needed. COP26 and ZEP's planned activities.

MK provides an update on ZEP's planned communications and events activities, including ZEP Conference, ZEP session at CCUS 2021 conference, the COP26 EU Pavilion side event application, and ZEP articles on TEN-E regulation and low-carbon hydrogen. The ZEP CCS/CCU Facts & Information Toolkit was also presented for AC approval and to be made available as a resource on the ZEP website following approval.

LE asks question on CCUS vs CCS and CCU separated terms. Important to highlight the difference. Chair notes a general wish for good coordination at COP26 on CCUS between organisations.

Chair asks for approval and the AC approve the Toolkit – to be published on ZEP website and updated on an ongoing basis.

5. EU policy development and certificates for reductions and removals

MV provides update on the Innovation Fund. CINEA the implementing agency is busy with evaluating the 66 proposals received for second stage of the large scale call. Quite a lot of the proposals have a CCUS component. In July, concluded the small-scale evaluation and CINEA is negotiating the grants before signature. 32 projects selected from many different sectors and three of the projects have a CCUS element. Currently planning the next call for proposals, with the aim to publish on 26 October. Moving to one stage calls with volume of €1.5 bn. Second call for small-scale projects follows in March 2022.

AN updates on the Fit for 55 package and EU ETS Directive proposal. Notes several technical changes in the proposal. On transport, currently the directive explicitly mentions pipelines transport. Now, this will encompass transport by any means. Part of GHG emissions from transport activity may be covered under new section of Directive. Regarding CCU, the change provides a general solution to all CCU applications that do not allow CO2 emissions to atmosphere. Added reference to renewable fuels.

FR provides short update on EC work on carbon removal certificates. On 9 September, published a roadmap – open until 7 October for feedback – for communication at end of year. This gives a

DEGEORATOR OF THE PROPERTY OF



presentation of what we aim to do in terms of carbon removals in coming years, addressing carbon removal from ecosystems, carbon farming, and carbon removals from industries. To be published on 14 December. Certification of carbon removals included as 2022 EC initiatives.

Chair opens the floor for comments and questions. **JH** asks about EU ETS Directive and CCU, notes that the wording 'normal use' is open for interpretation. **POG** asks question on Fit for 55 package regarding description on contracts for difference in the frame of the Innovation Fund – further clarification? **MV** responds that the Innovation Fund will get more allowances. With this, they intend to develop carbon contracts for difference, however, this is a proposal which still needs to be adopted. **AT** notes that there remains reference to solid fossil fuels power generation, biogenic an important source of CO2. What is the thinking on biogenic CO2? **AN** regarding biomass provision – not sure if biogenic CO2 is otherwise addressed in the ETS. Reporting will take place throughout the project.

Chair thanks all presenter for the updates and notes for the AC that previously ZEP made contributions to these programmes and are pleased to see transport modalities and definition on CCU. Asks AC for approval of draft outline in pre-reads and allow ERG and ACEC to respond on this basis – approved.

Chair notes that ZEP is a member of the CCS+ Initiative Advisory Group and gives the floor to **MKr**, who provides update on the CCS+ Initiative, the objectives, the work plan, as well as the membership.

6. TEN-E regulation

WvL provides update on TEN-E regulation and latest developments as ITRE Committee vote is scheduled for 27 September, referring to the published amendments.

Chair adds that we are really engaged on this matter and are always available for consultation if this can be of help.

7. CCUS development

Chair notes EU-Norway Energy Conference on 1 October. **CB** provides update on CCUS Forum. Taking place online on 11 October. There will be five, 30-minute sessions and will be opened by Commissioner Simson. Five sessions focus on (i) gaining political momentum (ministers of leading CCUS countries), (ii) if we can decarbonise without CCS, (iii) CCS role in decarbonising industry (ZEP moderating), (iv) CCUS hubs, and (v) how to learn from past and move forward with CCUS. Keynote by EVP Timmermans will conclude the Forum. **CB** notes this aims to be an annual event. **LB** asks if registration will be open to everyone? **CB** notes that registration will be open to everyone but may have a limit on capacity. Hope for an update next week. Chair notes that ZEP supports ambition to have an ongoing activity and work associated with the Forum and delighted to assist. **CB** adds that we have very good experience with Dublin Forum, consumer energy forum, where stakeholders help with co-organising working groups. Hopes to set up something similar for CCUS Forum.

VK provides update on Horizon Europe. Working for the next calls for 2023/24 and discussing new proposals. **VK** took part, together with **CB**, in a workshop with Saudi Arabia on CCUS and blue hydrogen. Chair highlights the current ETIP grant comes to an end in October and have put in place robust plans for ZEP to continue to operate until next grant in May 2022. Thanks him for the support, the call, and sees the need for convergence around various programme and agree

DEGENERAL DE LA CARLO CA



a cooperative approach to the work programme with IWG9. **CV** asks about upcoming calls and technology readiness levels. **VK** responds. **MB** notes continued dialogue between EERA and ZEP and DG RTD.

8. Closing remarks and next meeting

Chair opens the floor for AOB. Reminds all of upcoming meeting dates. Reminds all that the ZEP Conference takes place this afternoon and invites all to attend. Thanks all for contributions, discussions and support. Closes the meeting.

List of participants

AC	members	
1	Vicente Cortes-Galeano	AICIA/University of Sevilla
2	Jonas Helseth	Bellona
3	Shirley Oliveira	bp
4	Isabelle Czernichowski	BRGM
5	Stijn Santen	EBN
6	Salvatore Giammetti	Eni
7	Lamberto Eldering	Equinor
8	Jannicke Gerner Bjerkas	Fortum Oslo Varme
9	Winston Beck	HeidelbergCement
10	Florence Delprat-Jannaud	IFPEN
11	Kim Bye Bruun	Northern Lights JV
12	Stuart Haszeldine	SCCS
13	Syrie Crouch (<i>Proxy to Alistair Tucker</i>)	Shell
14	Nils Røkke	SINTEF
15	Charles Soothill	Sulzer
16	Filip Neele	TNO
Ext	ernal speakers	
17	Matthias Krey	CCS+ Initiative
18	Chris Bolesta	European Commission

DEGEORAL OF STATE OF



19	Adrian Nicolae	European Commission
20	Vassilios Kougionas	European Commission
21	Fabien Ramos	European Commission
22	Maria Velkova	European Commission
23	Willem van Laatum	Parliamentary Assistant to MEP Berendsen
Gue	ests	
24	Léa Chauvin	Air Liquide
25	Hanne Rolén	Aker Carbon Capture
26	Adrien Berthier	Alvance Group
27	Eric de Coninck	ArcelorMittal
28	Lina Strandvåg Nagell	Bellona
29	Mark Preston Aragonès	Bellona
30	Ceri Vincent	CO2 Geo Net
31	Esme Brandon	bp
32	Helen Bray	Carbon Engineering
33	Georgina Katzaros	CCSA
34	Ross Kennedy	CCSA
35	Eadbhard Pernot	Clean Air Task Force
36	Alessia Virone	Clean Air Task Force
37	Eve Tamme	Climate Principles
38	Anastasios Perimenis	CO2 Value Europe
39	Tom Mikunda	Dutch Government
40	Domien Vangenechten	E3G
41	Roberto Ferrario	Eni
42	Lucie Boost	Equinor
43	Maria Moragues Canovas	CINEA
44	Markus Hole Sebastian	Fortum Oslo Varme
45	Paul Bonnetblanc	French Government



46	Ståle Aakenes	Gassnova
47	Caterina de Matteis	IOGP
48	Stig Svenningsen	Norwegian Ministry of Petroleum & Energy
49	Cedric de Meeûs	Lafarge Holcim
50	Raphael De Loenen	Port of Antwerp
51	Marleen Ramakers	Port of Antwerp
52	Mark Driessen	Port of Rotterdam
53	Bram Sommer	Port of Rotterdam
54	Chris Davies	Rud Pedersen
55	Christian Schwarck	Shell
56	Marie Bysveen	SINTEF
57	Kristin Jordal	SINTEF
58	Luca Riboldi	SINTEF
59	Svante Söderholm	Swedish Energy Agency
60	Tim Peeters	Tata Steel
61	Chris Gittins	TAQA
62	Robert de Kler	TNO
63	Ludger Radermacher	Wintershall Dea
64	Sabine Schatzmann	Wintershall Dea
ZEF	P Secretariat	
65	Per-Olof Granström	ZEP Secretariat
66	Giorgia Bozzini	ZEP Secretariat
67	Meghann Kissane	ZEP Secretariat
68	Dr Graeme Sweeney	Chairman of ZEP



1.d. ACEC October meeting minutes

ACEC October meeting 19 October 2021 9:00-11:00 CET

Draft meeting minutes

1. Introduction

Chair, **GS**, welcomes all and asks for additional items for the agenda – agenda is adopted. Chair asks all to approve use of draft AC68 meeting minutes until approval at AC69 by AC members – draft meeting minutes are approved.

2. ZEP development - funding gap and next grant

POG provides an overview of actions for the period ahead of next grant starting, the ZEP grant ending in October and the IWG9 grant in April 2022, the work programme being endorsed by the AC, the need for regular progress and finance reports, and the joint IWG9/ZEP guidance document for the next grant. The funding gap work programme will now be shared with the ZEP-C BoD for approval. Next year, the funding gap work programme will be followed by two parallel work programmes – the IWG9/ZEP grant programme and the ZEP own work programme.

Chair notes that when the AC meets, a summary of the AC's review of the work is needed to be shared with ZEP-C Board as guidance, and that ZEP-C Board meetings will be needed during the six months.

3. AC69 draft meeting agenda

Chair invites ACEC to provide comments on the AC69 agenda. Notes the option of a three-hour virtual meeting or a physical meeting. **LE** notes a possibility for a hybrid meeting. Chair adds that we should review the possibility/facilities for hybrid meeting at beginning of next year. **CSc** raises that the topic of cross-border CO₂ storage liability should be added to the agenda. Chair notes that following a discussion later in this meeting, a decision will be taken whether to add the item to the AC69 agenda or not.

Action: Explore hybrid meeting facilities for first meeting next year.

DEGENERAL DE LA CARLO CA

4. Updates from Networks

LSN notes the next NWPE meeting takes place on 22 October and further updates will be available after discussions. She notes the ongoing work on the Fit for 55 package and the upcoming process. On TEN-E Regulation, the mandate for trilogues has been approved and has moved to the next step. For the upcoming NWPE meeting, highlights the consultation on



sustainable carbon cycles, and presentations by the CCS+ Initiative and GCCSI Global Status of CCS report.

LE notes the carbon border adjustment mechanism – does ZEP have a position and does it need a position? **POG** notes TWG Policy & Funding and highlights that further detailing the current position – "free allowances to be phased out and CBAM will be needed for the EU ETS" – will be complicated for ZEP. Discussion follows. Chair summarises that we can refer to the TWG Policy & Funding if new ZEP positions are needed and that NWPE should start looking at how the CBAM will work together with the EU ETS. **LSN** agrees.

FN provides an update on current working groups. TWG on directive on geological storage of CO₂ is preparing a report with the possibility for a presentation at AC69. TWG CO₂ shipping is preparing a draft report which has been sent to the group to finalise headings in the report, to be presented at AC69. TWGs clean flexible power generation and carbon-neutral biomass are continuing their work. Report on biomass to be finalised, while report on flexible power generation and CCS is getting started. **FN** highlights the ZEP response to the Stanford paper on blue hydrogen. The ZEP peer-reviewable paper on low-carbon hydrogen has been published on the ZEP website.

POG provides an update on the proposed ZEP work on CCS and biodiversity, and the draft ToR. He highlights the strong need for technical experts and that it would be great to connect with experts from the TEG of the sustainable Taxonomy. Chair asks ACEC Vice-Chairs for approval of the Biodiversity ToR – approved.

Chair highlights the topic of cross-border liability raised earlier. **POG** provides background information on the topic where governments are asking questions on their liability for CO_2 emitted in other member states, and he highlights that this may be a showstopper for the European approach, cross-border CO_2 infrastructure. He mentions that this issue has been discussed with the TWG on geological storage of CO_2 but that the TWG is reluctant to include this topic in its report. **CSc** adds that this is an issue that the industry has underestimated in the past years. It is not only a policy issue but could also be seen as political. Chair adds that it is also a commercial issue, after which a discussion follows.

Chair proposes to set up a group and indicates that he will be contributing to the work. **WB** notes it would be worth contacting the Commission if they have tackled this issue while reviewing guidance documents. Chair agrees to contact the Commission.

Action: Set up a group on cross-border CO₂ storage liability. Update to be provided at AC69.

5. Updates from External Relations Group

Chair reminds that AC68 agreed to include the ZEP informal Communications Group in the official ZEP structure. **MK** gives an overview of the upcoming events for October/November, highlighting ZEP's representation at external events. **MK** notes ZEP plans to publish an article on low-carbon hydrogen, which will reference the recent ZEP paper on low-carbon hydrogen. Chair notes the ZEP paper was presented at a conference session that Chair participated in on low-carbon hydrogen, and that the paper can be published on the conference website.

POG provides an update on the CCUS Forum. Both Commissioners' speeches were positive on CCS and CCU but did not promise anything. All panels were positive, and the importance of an annual Forum work programme and an EU strategy on CCS and CCU was highlighted by several.

DEGEORATOR OF THE PROPERTY OF



This was the kick-start for the Forum, but it is still not clear what the Forum will be. Feedback from DG ENER is that ZEP's input and letter to Catharina Sikow-Magny were much appreciated but that further push is needed, possibly letters to Commissioners. **POG** suggests preparing letter and coordinating with stakeholders, to communicate importance of work programme and EU strategy for CCS and CCU. **JH** agrees with the summary, and ZEP follow-up should pick up on comments of Chairman of the ITRE Committee. **WB** agrees with the summary and adds that also policy actions need to be highlighted. Chair notes that apart from DG ENER, also DGs GROW, CLIMA and RTD are of importance.

Action: Prepare letter to Commissioners on CCUS Forum and the need for an EU strategy.

6. TEN-E Regulation

GB provides an update on the TEN-E Regulation and developments since the AC68 meeting. Clear indication of all modalities of CO₂ transport, a clear focus on industrial clusters, which was also an outcome from the political negotiations in ITRE Committee. The outcomes on storage and modalities were in line with policy asks that ZEP brought forward. **GB** raises question to ACEC: how confident are we that capture and sustainability criteria will stay after negotiations and what does this mean for upcoming and planned projects? **POG** adds that, as we understand, there was already an agreement to include storage but in order to get support also for modalities, a sustainability criteria was included. Short discussion follows on the sustainability criteria. Chair highlights the need to continue to argue for standards that can be implemented.

7. CCS+ Initiative

Chair provides an update on ZEP's participation in the Initiative's Advisory Group. There have been discussions around a range of important matters that ought to be settled in Initiative's Guidance and Principles document. Reductions and removals, CCS and CDR are defined in this document, but we believe not in a way that is satisfactory for future work. ZEP has given substantial input, but we have not yet seen an updated version. **POG** reminds that the Guidance and Principles document must be approved first, since it is the basis for all methodologies, and that ZEP still is looking for experts to join the work.

JH notes that ZEP's participation must be based on a fact-based and scientific approach. Suggests that ZEP engages with other members of the Initiative and hear their views.

Chair highlights ZEP's proposed way forward, to have the Guidance and Principles document approved before we can engage in giving input to the different methodologies. He asks the vice-chairs to express their agreement and the vice-chairs support the approach.

8. SET Plan update

POG reports on the progress of the CCUS Roadmap 2030, currently being finalised. The aim is to receive the Plenary's endorsement on 28 October. He also highlights the SET-Plan IWG workshop with a focus on the updated Implementation Plan targets, where ZEP Chair will be presenting.

Chair notes good cooperation among the co-chairs of IWG9 and good cooperation between IWG9 and ZEP.

DEGENERAL DE LA CARLO CA



9. Closing remarks

No further items are noted. Chair thanks all, notes the next meeting dates, and closes the meeting.

List of participants

Graeme Sweeney	ZEP Chairman
Jonas Helseth	Bellona
Lina Strandvåg Nagell	Bellona
Lamberto Eldering	Equinor
Lucie Boost	Equinor
Winston Beck	HeidelbergCement
Christian Schwarck	Shell
Nils Røkke (Proxy to Graeme Sweeney)	SINTEF
Filip Neele	TNO
Per-Olof Granström	ZEP Secretariat
Giorgia Bozzini	ZEP Secretariat
Meghann Kissane	ZEP Secretariat



1.e. ACEC November draft meeting minutes

ACEC November meeting 16 November 2021 9:00-11:00 CET

Draft meeting minutes

1. Introduction and welcome

Chair, **GS**, welcomes all and confirms quorum, noting proxies for Vice-Chairs. Reminds all of meeting instructions.

Chair notes that agenda item 3 will be addressed in items 4 and 5. Asks for any other items that need to be included in the agenda – agenda is approved.

Chair asks for approval of draft meeting minutes from ACEC October meeting – minutes are approved and notes they will be formally approved by AC in December.

Chair notes the proposed AC and ACEC meeting dates for 2022, with the same format – no objections and Secretariat will share these meeting dates with AC.

2. ZEP development

POG updates on the work programme and funding from 1 November to the end of April next year when the next IWG9 and ZEP grant is expected to begin. It has been approved by ZEP-C Board of Directors (BoD). The ZEP-C BoD will meet on a monthly basis and an extra General Assembly will be held in early December. The interviews with members on the value proposition and the own ZEP work programme from May next year have been moved forward to January-February.

POG informs about the items for approval at the AC69 and highlights that given the limited information due to a new grant starting and a ZEP own work programme will be added, the work programme and budget for endorsement by the AC69 will be focused on January through April 2022. The updated budget and the two work programmes will then be brought up for endorsement at AC70 in March. AC69 meeting agenda is presented to ACEC for endorsement and **POG** notes that an item on cross-border storage liability has been added.

3. Updates from Networks

LSN notes the latest Network Policy & Economics (NWPE) meeting was held on 22 October and one of the items discussed was TEN-E regulation. The 5th PCI list is expected this week. Discussed the need to clarify wording on projects of mutual interest and if they will have same criteria as PCIs. Cross-border



liability for CO2 storage was also discussed. On the CCUS Forum, DG ENER was in attendance at the NWPE meeting and requested input on work programme for 2022.

CSc provides update on a taskforce on cross-border CO2 liability that will be set up to discuss how to solve policy issues. Look at how other industries have addressed these topics. On Fit for 55 Package, the NWPE discussed ETS proposals, carbon accounting coherence, gas decarbonisation package and how CO2 should be recognised as a gas to be transported. **LSN** also notes upcoming deadlines for consultation responses, such as on CBAM.

Chair notes that the TEN-E conversation will continue, AC will need to agree on cross-border liability taskforce.

LSN begins the EU Taxonomy update, noting that a leaked draft has been circulating which suggests changing screening criteria for natural gas. To make a substantial contribution and be sustainable, 100g remains but transitional activity remaining. Introduced a sunset clause for new gas until 2030, for gas power plants and CHP. **POG** highlights that we need to prepare views on the upcoming proposal but also agree on how to communicate, given the political view of focus for CCS on industry rather than energy. He emphases the important role for the NGO ZEP members in the communication. **MB** adds that also the research constituency will be a good sender here.

Discussion follows. Chair highlights the importance of preparing a position.

FN begins the Network Technology (NWT) update highlighting the next meeting will be on 26 November. Ongoing working groups: CO2 Shipping group reports is on track to be presented at AC69 for approval. The Directive for geological storage of CO2 working group is progressing with the work, aiming for AC70 to present a report for approval. The Clean flexible power generation working group co-chairs are discussing how to go forward on this topic. The Biomass working group report is under review and the group could be the starting point for work on CCS and biodiversity.

MB asks if there are major aspects of the biomass work that should be a starting point for biodiversity work. **AH** refers to the ToR endorsed by the ACEC (for approval by the AC) and welcomes suggestions for the discussion and to join the group. Short discussion follows.

AH adds that on Clean flexible power generation, the discussion will continue this week and additional working group members are welcome to join, with the possibility to arrange a meeting in the next few weeks. Chair notes that clear updates on what is published today should be provided to co-chairs of clean flexible power generation and someone should attend the next meeting.

POG updates from yesterday's CEO meeting of the Clean Hydrogen Alliance where ZEP gave input to the discussion on the Fit for 55 package/Hydrogen and gas decarbonisation package – highlighting the importance of low-carbon hydrogen and a technology-neutral approach, the ZEP paper "Facts on low-carbon hydrogen – A European perspective", coherence with the EU Taxonomy, coordinated planning and development of hydrogen and CO2 infrastructure, the importance of recognising CO2 infrastructure in the hydrogen and gas package in December. We are expecting a communication on the extensive projects pipeline at the Hydrogen Forum, end-November. A short discussion followed.



Chair notes the CCS+ Initiative has been slow to incorporate updates that ZEP has provided. ZEP's position is unchanged from previous conversations, awaiting to see if guiding principles are satisfactory. If not, we need to come back to the ACEC to decide on ZEP's future role in the initiative.

4. Updates from External Relations Group

MK provides an update on ZEP's communications activities and events over November and planning for December. This includes an overview of ZEP's participation in events at COP26 and ZEP articles – an article on low-carbon hydrogen to be published in November and an article on CCS in the EU for the Oxford Energy Forum. Regarding planning for Q1 2022, **MK** highlighted communication plans for the upcoming ZEP reports, on track to be presented at AC69, and the upcoming EU policy initiatives that ZEP is following.

Chair highlights important outcomes from COP26, particularly on methane and Article 6 of the Paris Agreement.

5. CCUS Forum, ZEP actions

POG asks for ACEC endorsement for the proposed ZEP input to DG ENER on an EU CCS and CCU strategy. Notes that the proposal has been discussed and prepared in cooperation with the TWG Policy & Funding and the ERG and he highlights the need for a Forum with an annual work programme, which would be the basis for a strategy. Notes that a meeting is planned on 2 December with DG ENER.

CSc adds that this strategy should support intergovernmental agreements in the EU on CCS. Some work to do to consider how the UK fits into this strategy and what are the liability arrangements.

Chair confirms that document is approved and thanks all who were involved in drafting it. It will serve as a basis for the conversations with the Commission going forward.

6. SET-Plan update

GB updates that the CCUS Roadmap to 2030 has been launched and communicated over the past days. It has been disseminated within the CCUS community, with stakeholders, the European institutions. The roadmap will be presented at the upcoming SET-Plan conference at the end of November in Slovenia. Chair also notes that the SET-Plan co-chairs have prepared a video to be presented at the SET-Plan conference.

FN updates on the Horizon Europe work programme, and the input to DG RTD by ZEP in cooperation with EERA. Will work with the Secretariat to provide input by the end of this week. Chair emphasises that the work presented will be submitted on 19 November. If there are matters of significance, please submit them as soon as possible.



7. Closing remarks

Chair opens the floor for any AOB arising from the discussions. **WB** follows-up on the revision of the TEN-E regulation, noting there will be a technical meeting between parliament negotiators and a last trilogue in November, possibly December. **CSc** adds that projects of mutual interest (PMI) issue is important to follow.

Chair thanks all for participating in the meeting and for time and effort in contributing to the work. Reminds that AC69 takes place on 15 December. Closes the meeting.

List of participants

Dr Graeme Sweeney	ZEP Chair
Jonas Helseth	Bellona
Lina Strandvåg Nagell	Bellona
Lucie Boost (Proxy from Lamberto Eldering)	Equinor
Winston Beck	HeidelbergCement
Arthur Heberle	Mitsubishi Power Europe
Mark Driessen	Port of Rotterdam
Christian Schwarck	Shell
Marie Bysveen (Proxy from Nils Røkke)	SINTEF
Charles Soothill	Sulzer
Filip Neele	TNO
Ruth Herbert	CCSA
Per-Olof Granström	ZEP Secretariat
Giorgia Bozzini	ZEP Secretariat
Meghann Kissane	ZEP Secretariat



Agenda item 2: ZEP 2022 – for information and endorsement

2.a. Finance update per 30 November 2021 and outlook to the end of the year

Appended is the ZEP-Communications financial management report of 30 November 2021.

- Income: The income for 2021 is €282,500. This is an increase of €50,000 compared to the 2021 ZEP-C budget, that was endorsed by AC67 and approved by the ZEP-C Annual General Assembly in June 2021, due to three new members having joined ZEP.
- Expenditure: For January through November 2021, the expenditure is lower than budgeted due to COVID-19 and in line with previous reports.
- The ZEP European Commission grant ended on 31 October 2021 and the next grant is expected to start in May 2022. The ZEP AC has built up financial reserves in ZEP-C to manage a possible gap in grant funding and €50,000 was for this reason allocated to November and December in the ZEP-C 2021 budget. Expenditure for November and December will be lower than budgeted, in line with information outlined above.
- ZEP-C financial reserves amounted to approximately €190,000 at the end of 2020 and are expected to increase due to increased membership and COVID-19 to approximately €280,000 by the end of 2021.

2.b. ZEP work programmes for 2022

ZEP's current work programme (appended) – that started on 1 November 2021 and expected to end on 30 April 2022 – is fully funded by the ZEP-C members. This programme was endorsed by the AC68 in September and approved by the ZEP-C Board of Directors (BoD) in October 2021.

Based on discussions with co-chairs for the different TWGs and Network Technology, changes are made to the timelines for the ongoing reports (*highlighted in the appended work programme and referred to in item 3. Updates from Networks*):

• The reports on the 'Directive for geological storage of CO2' will be presented to the AC in March 2022.

DEGEORATOR OF THE PROPERTY OF

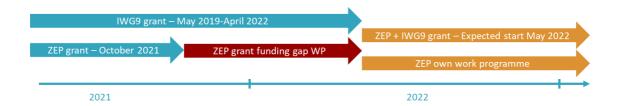


• The new work on 'Biodiversity and the impact of CCS' (that will take into account the work done by TWG Biomass), and the report on 'CCS in clean and flexible power generation' are planned to be presented to the AC in June 2022.

During the period between the grants, the CCSA is providing the secretariat services, and since this programme is fully funded by the ZEP-C members, there will be extended reporting administered by the ZEP ERG to the AC and the ZEP-C BoD during this work programme. The ZEP-C BoD will have an increased number of meetings in order to safeguard that the members' funding is used in the best way possible.

ZEP-C held an Extraordinary General Assembly on 9 December 2021, appointing Winston Beck, ZEP AC member for HeidelbergCement, as a Director for ZEP-C – joining Jonas Helseth, Lamberto Eldering, and Nils Røkke – and informing the members about the cooperation with CCSA on provision of services during the period between grants.

The new combined ZEP/IWG9 European Commission grant is expected to start in May 2022. ZEP and the IWG9 have prepared <u>guidance for potential applicants to the grant</u>. Given the decreased budget for the upcoming grant, the strong momentum for CCS and CCU in Europe and the increased ZEP membership and funding, the AC67 approved for ZEP to introduce a parallel work programme. This work programme will be in addition to, and to support, the grant work programme and will be fully funded by the ZEP-C members.



These two work programmes will be dependent on the successful grant winner and brought up for approval at AC70 in March 2022, together with the full ZEP-C budget for 2022.

The AC is invited to endorse the work programme that is ongoing until 30 April 2022, with the amendments to the timelines for the reports as described above.

2.c. ZEP-C budget for the first four months of 2022

ZOZOZOZOZOZOZOZOZOZOZO

For January through April, €100,000 is allocated for the funding of the provision of services. It is proposed that the rest of the budget is a continuation of the 2021 budget, thus allocating one-third of the amounts for the first four months, containing the following elements:



- Continuation of the core ZEP-C services, such as chair, accounts, legal support, etc.
- Consequences of the pandemic, planning for a stepwise introduction of physical meetings.
- Continuation of communications and events.
- Strategic work linked to the development of ZEP.
- Expected increased membership and funding during 2022 (€50,000)

ZEP-C Budget January-April 2022

Activity	Budget (€)
Administration / Auditing	2,667
Website maintenance	333
Legal advice	1,333
Chair	22,664
Contingency	1,333
Communications/events	9,333
Strategic work	4,167
Funding January-April 2021	100,000
Total Expenditure	141,831
Income (1/3 of yearly)	110,883
Net profit / loss	30,997

The ZEP-C financial reserves would, based on this budget, be approximately €250,000 at the end of March 2022.

The AC is invited to endorse the ZEP-C budget for January-April 2022, while the full ZEP-C budget for 2022 will be brought to the AC70 for endorsement in March.

ZEP work programme 1 November 2021 – 30 April 2022

On an overarching level, ZEP foresees these focus areas:

- Given the continued positive political momentum around CCUS and the new grant coming up, there is a need for strategic development further strengthening ZEP's role for CCUS in the EU arena and serving as a basis to attract new members. There is also a need to further develop the engagement and dialogue with member states and with other stakeholders, forming strong alliances to support the development of CCUS. The ZEP ACEC will also continue the series of strategic seminars during the period between grants.
- The new CCUS Forum that will start in October 2021 has the possibility to be very important for the development of CCUS in Europe. ZEP will be engaged in this work and would like to see a concrete annual CCUS workplan with this Forum being the start of an EU strategy for CCS and CCU.
- ZEP will continue providing 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. This will be coordinated in full when the new common grant starts, expected in May 2022. Further preparatory work, based on the described basis for the cooperation and the IWG9/ZEP guidance document, will be needed ahead of the new grant starting.

XOZOZOZOZOZOZOZOZOZOZOZOZOZOZ



 As more and more CCS/U projects are becoming market-ready, ZEP intends to intensify its support for these projects and monitor their development.

The work programme is a living document based on the EU (and member state) policy agenda. Delivering on the day-to-day work:

- Network Policy & Economics (NWPE): The Network remains the main point of contact for ZEP responses to consultations. TWG Policy & Funding has been reactivated to support the secretariat and the Network in preparing consultation responses and other input to the European Commission. Focus areas for the NWPE will be:
 - The 'Fit for 55 package' revision of the 13 policy instruments with a focus on the EU ETS, REDII, Innovation Fund, and the Carbon Border Adjustment Mechanism.
 - The ongoing revision of the TEN-E regulation, the PCIs and CEF funding.
 - The many ongoing hydrogen workstreams: European Clean Hydrogen Alliance, Hydrogen IPCEIs, the Hydrogen and Gas market decarbonisation package, and the complementary delegated act – implementing the EU Taxonomy.
 - The newly started EC work on CDR, aiming for a regulatory framework for CDR certification, and other linked workstreams e.g. the CCS+ Initiative.
- Network Technology (NWT): will continue its very active work programme, engaging experts from members and observers. Two TWGs will deliver reports for approval at AC70 in March:
 - TWG CO₂ transport by ship, the first step of the work: European guidelines ensuring consistency between upcoming and planned EU projects, ports and shipping operators, and a map and scale of the European challenge highlighting connections between industrial hubs and clusters, ports, and potential inland and continental routes.
 - TWG Directive for geological storage of CO₂ bringing forward recommendations for the guidance documents that are linked to the Directive, as well as guidance for European Governments that are new to CO₂ storage. (Amended timeline)

In June 2022, two more TWGs are planning reports for AC approval:

DEGEORATOR DE LO COMPONIO DE LA COMPONIO DEL COMPONIO DEL COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DE LA COMPONIO DE LA COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONIO DEL COMPONIO DE LA COMPONI

- TWG Biodiversity (including the Biomass work) CCS in a Biodiversity and Land Use Perspective. (New timeline)
- TWG CCS in clean and flexible power generation, describing the challenge to the energy system of the increasing use of variable renewable energy sources and the key role CCS will play in this perspective. (Amended timeline)



NWT will also be engaged on low-carbon hydrogen and CDR – following up from the reports finalised in December 2020 – and in delivering the CCUS 2030 Roadmap, in coordination with the CCUS SET-Plan.

- The External Relations Group (ERG): For the areas of specific interest for ZEP highlighted above the ERG will guide communications and outreach activities. Given the many ongoing EU policy initiatives and legislative processes, the initial focus of ZEP's communications for the end of 2021 and the beginning of 2022 will be on securing meetings with policymakers and giving necessary input to EU policy initiatives at the right time. 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. ZEP will hold a co-organised event in the EU pavilion at COP26. Active presence of CCUS is crucial.
- 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.

DEGENERAL DE LA CARLA CA

Forecast

Budget management: Expenditure against 2021 budget	€ 186 871	Starting point 2021 (= Left over budget 2020)

Activity	Contractor	Budget 2021	Comments	To date Spent	Comments	To Date Committed	Comments
Administration / Auditing	Adams accountants / Vandelanotte	€ 8 000		€ 3 000			
Website maintenance	Karakas	€1000		€ 0			
Legal advice	Lawsquare	€ 4 000		€ 0			
Chair	Ardnacraggan Energy Services	€ 67 992		€ 62 326			
Contingency		€ 4 000		€1308			
Communications and events		€ 85 000		€ 57 000			
Funding for 2021 + Strategic work		€ 62 500		€ 36 073			
Total		€ 232 492		€ 159 707		€ 0	

r	
2021	Comments
Total Spend	Relative to budget
€8000	
€1000	
€ 4 000	
€ 67 992	
€ 4 000	
€ 65 000	
€ 40 000	
€ 189 992	Total budget spent 2021

Spent: Actually paid or contractually due for delivered work
Committed: Based on signed contracts, yet to be approved invoices or founded estimates

Spent + Committed Remaining total budget € 159 707 € 72 785

Cash management of ZEP Communications VZW / ASBL

Category	Source	Issued invoices	Comments	Pending invoices	Comments	Received payments	Comments
	O&G			€ 60 000	TotalEnergies, Equinor,		BP, Shell, Equinor, ENI, ExxonMobil
2021 contributions	OEM						
	Others (confirmed)			€ 40 000	Heidelberg, Fortum Oslo Varme	€ 62 500	HC, Gassnova, Port of Rotterdam, EBN, Northern Lights
	Others (Potential)						

€ 186 300
€ 0
€ 102 500

General	VAT return	€ 4 343	VAT declar 2021/11	€ 14 934	Invoices 2021 to be rec.	€ 6 300	VAT on sales invoices
Total outstanding / pending ZEP-C		€ 4 343		€ 114 934			

£ 200 000	Total forecasted income 2021			
€ 288 800	2021			

Cash situation (of 8 June 2021)

Current account (KBC - Business compact rekening)	€ 288 441
Savings account (KBC - Spaarrekening)	€ 101
Actual each at bank and in hand	£ 288 542

285 679 Forecasted Left over budget 2021

Expenditure situation

Source	Outstanding invoices	Comments	Pending invoices	Comments
Short term creditors	€ 0		€ 7 779	VDL + CA + Ardna
Outstanding invoices in spent to date, to be paid	€ 0		€7779	

Cash boundaries

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

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

€ 280 764

€ 400 041



Agenda item 3: Updates from Networks – for information and approval

3.a. Network Policy and Economics

The Network Policy and Economics (NWPE) had a meeting in October. The group discussed:

- Latest developments regarding the TEN-E regulation.
- Fit for 55 The focus will be on the developments in the EU ETS Directive (and Innovation Fund). ZEP will also focus on the upcoming gas and hydrogen package.
- Follow-up from the CCUS Forum Following a presentation by DG ENER, the TWG Policy & Funding has been tasked with giving comments on a draft input paper to be shared with DG ENER.
- Ongoing consultations.

A draft of the 5th PCI list has been adopted by the European Commission on 19 November and will be debated over the next two months before a final decision by the Parliament and Council (further information in agenda item 6. TEN-E Regulation).

Update on work of TWG Policy & Funding

The TWG Policy & Funding was established to support the work of NWPE on policy and funding matters. At recent meetings, the group discussed:

- <u>TEN-E regulation</u>: The group discussed a follow-up to the recent actions taken on the TEN-E regulation. Coordination among the membership will be ensured; ZEP also prepared comments to the ITRE report to be shared with relevant MEPs upon the release of the EU Taxonomy delegated act.
- <u>EU Taxonomy</u>: The group is monitoring the developments around the publication of the EU Taxonomy's complementary delegated act on nuclear and natural gas. ZEP will prepare comments to be shared after the publication of the DA.
- Upcoming <u>hydrogen and gas market package</u>: The group exchanged views about the upcoming package. It concluded that it is important for ZEP to reiterate the message about CO₂ infrastructure, as the package is an important enabler for cross-border CO₂ transport, thus including CO₂ in the upcoming package in the context of CCS.
- Follow-up on the <u>CCUS Forum</u>: The group discussed the input that was sent to DG ENER as a follow-up to the Forum.

DEGENERAL DE LA CARLO CA



• <u>Cross-border liability</u>: A presentation was given at the November TWG P&F meeting, and a taskforce has been set up to support this work.

Update on the Innovation Fund

The results of the first call for large-scale projects of the Innovation Fund have been made public, and information on the seven successful projects is available at this <u>link</u>. A detailed description of the projects can be found at this <u>link</u>.

In October, the Commission launched the second call for large-scale projects, which will be a one-stage process. The deadline to submit an application is 3 March 2022. The evaluation will take place in Q3 2022 and grants will be awarded in Q4 2022.

3.b. Network Technology

ZEP Network Technology (NWT) held a meeting on 26 November. The agenda focused on developments in the working groups (TWGs), ZEP's input to the Horizon Europe work programme for 2023-2024, ZEP's input to the CCS+ Initiative, ISO TC 265, and other pressing issues for the Network.

Updates from the TWGs

<u>TWG Directive on geological storage of CO_2 aims to be ready with a report for approval in March 2022</u>. The writing process has slowed down due to the limited size of the working group, as well as other commitments of the participants. An oral update will be provided at the AC69 meeting.

<u>TWG Biomass/Biodiversity</u> – The report from TWG Biomass has been completed with the contribution of all participants in July, and it is awaiting the final addition from the TWG Chair. The report is written in a descriptive way to present different forms of biomass, and the missing chapters should focus on the value of sustainable biomass and the dilemma connected to its use. Following a call with NWT co-chairs, it was decided that, since ZEP will start a new working group on Biodiversity, the work done by the TWG Biomass would be used as a basis for this new working group. Two co-chairs will be appointed. An oral update will be provided at the AC69 meeting.

The ToR for the TWG CCS in Biodiversity and Land-use perspective, previously endorsed by the ACEC, is appended for approval by the AC.

<u>TWG CCS for power generation</u>: The importance of the work is further strengthened by the probable inclusion of natural gas in the Taxonomy delegated act. The co-chairs of the working group are discussing how this work should be brought forward.

3.c. Consultation responses

The responses are approved for AC approval.



Since the last AC meeting, the following responses were submitted:

- ZEP response to the <u>Roadmap</u> on Restoring sustainable carbon cycles <u>link</u>
- ZEP response to adopted act: EU ETS Directive <u>link</u>
- ZEP response to transition pathways for energy-intensive industries <u>link</u>

3.d. ZEP report on CO₂ shipping – for presentation

A short presentation of TWG CO₂ shipping's draft report will be given at the AC meeting.

This draft report is sent out as a separate document to the AC for possible comments. The intention is to finalise the report with a final round of comments from the working group in January 2022 and present it for approval at the AC70 meeting.

The work will continue in 2022 with a similar set-up – a working group with a broad membership led by two co-chairs. Ad-hoc NWT meetings/seminars to disseminate the findings of the report will be planned, following the AC's approval.

3.e. Cross-border CO₂ storage liability

Cross-border CCS projects will involve storage of CO₂ that has been captured and transported from multiple EU member states (MS). For many countries where CO₂ storage capacity is not possible or not yet developed, captured CO₂ will be transported and stored in open-access storage facilities, located in other member states. Based on discussions with relevant regulators and other stakeholders, there is a potential issue to be overcome in this context, concerning the liability treatment for CO₂ that has arrived from non-domestic jurisdictions, e.g. cross-border from another country/other countries.

Under the <u>Directive for the geological storage of CO₂</u>, liability and oversight of the storage facility can be handed over to the national governments after at least 20 years of post-closure monitoring (*Articles 17 and 18 – the member state or its competent authority can agree to an earlier take-over*). By default, this would mean that the member state will be taking on liability for CO₂ that has been transported cross-border from a third country. ZEP members noted that there is a need to work on how this risk should be mitigated, also taking into account the provisions of the Directive.

Following discussions with the ACEC and NWPE, a taskforce – gathering experts from both Network Policy & Economics and Network Technology – will be established to work on this topic. A first meeting has been held in a smaller group, discussing the issue and how to set up the work going forward.

This item was also discussed at the ZEP Government Group meeting on 9 December. At the meeting, different perspectives were highlighted:

• It was clarified that the Directive on geological storage of CO₂ sets the policy framework for the geological storage of CO₂ and clear provisions for the access



to transport networks and to storage sites for the purposes of CO₂ storage. Such provisions define that "transparent and non-discriminatory manner determined by the Member State".

• It was also indicated that further reassurance – in the form of a dedicated liability fund or insurance contract – should be given to member states in order to mitigate the potential risk involved in taking over the liability.

A presentation describing the item will be given at the AC meeting, and also the proposed actions for the taskforce, including:

- To continue the work on this topic, considering the challenges outlined above.
- To follow up with national regulators and the European Commission and invite them to further discuss this matter.
- Based on the challenges, to frame the discussion and the best ways forward to
 effectively overcome the potential barriers for cross-border CO₂ transport as the
 basis for the European approach for CCUS projects.
- To report on progress to the ACEC and follow-up at the AC70 meeting in March 2022.

3.e. Update on CCS+ initiative

Referring to the presentation given at the September AC68 meeting, the work on the CCS+ initiative – where ZEP is a member of the Advisory Group – has continued.

The timeline of the work has been pushed forward and a public consultation on the documents produced so far will take place in February 2022. As asked by ZEP, there will be a possibility for the members of the Advisory Group to scrutinise the documents sent for consultation before they are publicly shared.

DEGIGEOROE DE LO INCOMENDO DE LA COMPONICIONA DE LA



CCS+ Initiative

3. Work plan

WGs & Modules developed under Package 1a
WG 2: Capture modules
Module 2.1: Capture from air (i.e. DAC)
Module 2.2: Capture from combustion (i.e. post-combustion, e.g. power plants, cement plants, WtE)
Module 2.3: Capture from CO2-rich gases (e.g. H2 production by steam reforming, ethanol, waste(water) treatment)
Module 2.4: Capture from oil and gas production (e.g. native CO2/acid gas, LNG production)
Module 2.5: Capture from biogenic sources (to be used in combination with modules above)
WG 3: Transport modules
Module 3.1: Transport via pipeline
Module 3.2: Transport via ships
WG 4: Storage modules
Module 4.1: Storage in aquifers
Module 4.2: Storage in depleted oil and gas fields

CCS+

12

www.ccsplus.org | info@ccsplus.org

The Guidance and Principles document has been updated and a new version has been shared with the Advisory Group for review and comments. This document has been shared with the ACEC (Since these are internal documents, the CCS+ Initiative has been clear about keeping the documents in a small and restricted group). For ZEP, compliance; clear definitions of CCS, CCU, reductions and removals, etc.; a rigorous and coherent, high-quality/-integrity methodological framework and a clear pathway towards Article 6 compliance is crucial.

There will be an oral update at the meeting.

DEGEORAL OF STATE OF



Draft Terms of Reference – CCS in a Biodiversity and Land Use Perspective

Background

Biodiversity and Land Use (BLU) has received more attention lately. The increased momentum has been gained in particular by the UN Biodiversity Panel's latest report (IPBES 2019), the joint workshop report between IPBES and IPCC in 2021, and in preparations for COP26. In short, we are experiencing extinction rates that are much higher than the so-called background extinction rate¹ and 'near neutral land' (defined as small human impact) is projected to be 10% by 2050 if no further action is taken. Where does this place CCS in the picture?

CCS can have both positive and negative impacts.

- Uncontrolled use of BECCS could end up spoiling natural carbon storage in forests and/or establish monocultures of short rotation crops/trees.
- CCS itself hinders global warming. This is positive as the climate crisis and the BLU crisis are inextricably connected. CCS is also a quite compact technology demanding comparatively less area than other climate technologies. The role of CCS, in controlling the CO₂ concentration, also slows the acidification of oceans, something that geoengineering in most instances cannot do.
- Taking utilisation (CCUS) into account as well, the context becomes wider, especially if large amounts of materials have to be excavated, transported, and distributed. On the other hand, this technology can help by replacing other production methods, which can have a positive impact.

Objective

The objective is to outline the effects of CCS and CCU on BLU – to give order of magnitude, qualitative and, where possible, quantitative indicators. Understanding how sustainability will be measured at an overall scale will be important. A global perspective is also needed as we are likely to see global initiatives to be heralded in the short term in the quest for a liveable planet in the future.

Group

The taskforce/working group should include experts with a technical background as well as a nature research background. Links should be established with existing structures within the EU, such as the bioenergy platform, and the taxonomy Technical Expert Group (as this is one of the six major aspects of the EU Taxonomy) [add a sentence about the project SCOPE?].

DEGEORATOR OF THE PROPERTY OF

¹ 10% of species are lost every million years; 30% every 10 million years; and 65% every 100 million years – *ref. to be added*



Agenda item 4: Updates from External Relations Group – *for information and guidance*

4.a. Overview of ZEP communications activities and events

Formalising ZEP Communications Group and new meeting structure

The ZEP Informal Communications Group was formed in autumn 2020 and has been very successful in gathering ZEP members to exchange information and in the coordination of communications and outreach activities. At the AC68 meeting, the proposal to include the Communications Group in ZEP's formal structure was approved.

It was also suggested to further coordinate the Communications Group meeting with the External Relations Group meetings. At the latest on 3 December, the meetings were organised back-to-back in a two-hour timeslot. The first hour was allocated to the Communications Group meeting – to introduce the background to communications plans, raise important topics and opportunities for coordination – and the second hour was allocated to the ERG to discuss topics further and guide ZEP's planning and activities.

ZEP communications activities and events October-December 2021

ZEP events and participation in external events

ZEP Conference 2021 – The conference took place on 22 September, coordinated with the AC68 meeting and as a 'grant farewell' for ZEP 2018-2021. The programme saw discussions reflect on CCS and CCU developments over the past three years, as well as highlight the main challenges going forward. ZEP was pleased to welcome a number of expert speakers from the CCS and CCU community and representatives from the Commission and EU member state governments to participate in the discussions. The conference summary and recording are available on the ZEP website here.

<u>CCUS Forum</u> – The high-level CCUS Forum, organised by DG ENER, took place online on 11 October. ZEP attended and moderated a session focusing on decarbonising industry. As the event concluded, it was announced that this was the kick-start event for the CCUS Forum.

<u>CCUS 2021: Leading on net zero and clean growth</u> – On 14 October, ZEP organised a session at the CCUS 2021 Conference hosted by the CCSA. The session discussed the influence of EU policy frameworks and reiterated the role that CCS and CCU technologies will play in delivering climate change mitigation and safeguarding European industrial competitiveness. Joining the panel were representatives from the Dutch Government, Danish Government, EU Commission, Northern Lights JV, and ZEP Vice-Chair (Bellona Europa) moderated the discussion.

DEGEORATOR OF THE PROPERTY OF



Scottish Hydrogen and Fuel Cell Association 2021 Conference – On 14 October, the ZEP Chairman participated in a session at the Scottish Hydrogen and Fuel Cell Association 2021 Conference. In the session "5GW of Low Carbon H₂ Production by 2030", the ZEP Chairman discussed low-carbon hydrogen and sustainable investment perspectives and highlighted the ZEP paper "Facts on low-carbon hydrogen - A European perspective".

<u>Carbon Capture Technology Expo</u> – ZEP spoke at the Carbon Capture Technology Expo, which took place in Bremen, Germany on 20-21 October. The conference was dedicated to discussing the role of carbon capture in decarbonising heavy industry and how the combination of CCS and hydrogen will play a key role in the transition to creating a CO₂-neutral energy supply.

<u>EU Sustainable Energy Week 2021</u> – On 26 October, ZEP co-hosted an EU Sustainable Energy Day event with Fortum Oslo Värme, Bellona, and the City of Oslo as part of EU Sustainable Energy Week (EUSEW) 2021. The high-level panel discussion was moderated by the ZEP Chairman and featured policymakers and representatives from industry and civil society, including the Norwegian Government, the City of Oslo, Fortum Oslo Varme, HeidelbergCement, Bellona Europa. Watch the recording of the event <a href="https://example.com/here-nergy-member-

Articles and media

ZEP article on CO₂ transport and storage infrastructure and TEN-E regulation – A ZEP article "Why CO₂ transport and storage infrastructure is vital to reach climate neutrality" was published in EURACTIV on 24 September. The op-ed highlights that the large-scale deployment of cross-border, European CO₂ transport and storage infrastructure is crucial for the EU to reach its 2050 target and to ensure the successful deployment of CO₂ infrastructure, all modes of CO₂ transport – pipeline, ship, barge, truck, train – and CO₂ storage should be included in the revised TEN-E regulation.

<u>ZEP article on low-carbon hydrogen</u> – ZEP has prepared an article on low-carbon hydrogen, incorporating a response on blue hydrogen following the recent research paper by Howarth and Jacobson. The ZEP academic paper "Facts on low-carbon hydrogen – A European perspective" is referenced in the article and is available here. The article "Can Europe achieve its climate ambitions without low-carbon hydrogen?" is available on the ZEP website here.

<u>ZEP interview with CNN</u> – A journalist with CNN working on a story about CCS contacted ZEP for an interview with the ZEP Chairman on the current state of play and the future of CCS. The article was published on 20 October (<u>link</u>).

ZEP communications activities and events – planning for Q1 2022

DEGIGEOROE DE LO INCOMENDO DE LA COMPONICIONA DE LA

Oxford Energy Forum – ZEP has contributed an article entitled "CCS in the EU: Prospects, challenges, and EU policy measures needed" to an upcoming issue of the



Oxford Energy Forum (OEF), a quarterly journal published by the Oxford Institute for Energy Studies (OIES). The issue is to be published in January 2022.

<u>EU Industry Days 2022</u> – The <u>EU Industry Days</u> take place on 8-11 February 2022. ZEP has applied to organise a local event as part of the EU Industry Weeks. ZEP's application outlines an event under the thematic area 'the green and digital transition', focusing on:

- CCS and CCU technologies in the industrial transition towards net-zero GHG emissions
- Importance of CO₂ transport and storage infrastructure
- Market-ready projects
- Steering investments towards green technologies e.g. Innovation Fund, EU Taxonomy

4.b. COP26 follow up and reflections

ZEP participation at COP26

"Policy, business, and social challenges for carbon dioxide removals and carbon capture & storage"

On 1 November, ZEP co-organised an EU side event at COP26. The focus of the event was on CCS and CDR, both critical on the path to climate neutrality. Expert speakers from research and industry contributed to the discussion, which explored potential for CCS and CDR in various sectors and discussed the social aspects, policies and business cases needed to scale up these technologies while managing risks. The ZEP Chairman spoke at the event. A summary and recording of the event are available on the ZEP website here.

"International Ripple Effects of the EU Sustainable Finance Taxonomy"

DEGENERAL STORES

On 3 November, the ZEP Chairman participated in an event organised by Bellona Europa at COP26. The event focused on sustainable finance and the EU Sustainable Finance Taxonomy, including what international ramifications and ripple effects can the EU classification system for sustainable economic activities have.

Reflections from COP26

Following COP26 in November, ZEP discussed reflections and outcomes from COP26 at the ACEC November meeting while considering the impact of the outcomes on the development and deployment of CCS and CCU, based on the following:

 Net zero targets: India declares target of net zero emissions by 2070 and to meet 50% of its energy needs by renewable means by 2030. Around 90% of the world economy is covered by a net zero target.



- Coal: More than 40 countries not including the US, China, Australia, India are committing to shift away from coal: agreement to end all investment in new coal power generation domestically and internationally and to phase out coal power in the 2030s for major economies, and the 2040s for poorer nations.
- Methane: Global partnership to cut greenhouse gas emissions from methane by 30% of 2020 levels by 2030. More than 100 countries have signed up to the initiative.
- Deforestation: Global pledge to finance the protection, restoration, and sustainable management of forests: to halt and reverse forest loss and land degradation by 2030 and contribute US\$12 billion for forest-related climate finance between 2021-2025.
- Article 6: An agreement was met on the fundamentals of Article 6 on carbon markets, including the centralised system open to the public and private sectors and the bilateral system allowing countries to trade credits, as well as carbon credits from the Kyoto Protocol system transferred to the Paris Agreement.

DEGENERAL DESCRIPTION OF THE PROPERTY OF THE P



Agenda item 5: TEN-E Regulation – for information

5.a. Update from negotiations

There will be a presentation at the AC meeting.

Negotiations among the European Parliament, Council and Commission have been ongoing. Parliament and Council have expressed the same view regarding the inclusion of CO₂ storage in the TEN-E regulation, while their view differs on the need for CO₂ transport operated by modalities other than pipeline. At the Parliament's request, a sustainability criteria for CO₂ infrastructure was also introduced.

The detailed position of the institutions and a thorough timeline can be found below.

Following the approval of the <u>ITRE report</u> on at the end of September, the negotiations on the TEN-E regulation began. In the European Parliament's report, the following points are relevant for the category of CO₂ infrastructure:

- Inclusion of CO₂ storage in the description of the infrastructure category
- Inclusion of all modalities for CO₂ transport ships, barges, trucks, train
- The focus is clearly on industrial CCS clusters
- Introduction of a new sustainability criteria, stating that the "the minimum capture rate at industrial installations shall be fixed according to best available technology per industry category to be established by the Commission, and shall be greater than the range of 70 -90 %".

The document circulated by the Slovenian presidency, describing the provisional agreement, can be found at this <u>link</u>:

- Regarding CO₂ transport the focus remains on pipeline transport. Other modalities for CO₂ transport do not seem to be taken into account.
- Regarding CO₂ storage in the document, storage infrastructure is included, which is in line with ZEP's recommendations.
- The sustainability criteria for capture at industrial installations is still present, but the language is broader.

Timeline:

 The Slovenian Presidency is expected to provide an update on the state of play of trilogue negotiations to the Working Party on Energy – 13 December 2021

DEGENERAL DE LA CARLO CA

Trilogue – 14 December 2021



ZEP communicated broadly about the TEN-E regulation. Further information is included in agenda item *4. Updates from External Relations Group.*

5.b. 5th PCI list

There will be a presentation at the AC69 meeting by DG ENER, European Commission.

The 5th PCI list was adopted by the European Commission in November and presented to the European Parliament and the Council. For CO₂ infrastructure projects, the list includes CO2TransPort (Rotterdam, Antwerp, North Sea Port), Northern Lights, Athos, Aramis, Dartagnan (France, Dunkirk) and the EU Polish Interconnector.

The European Parliament and the Council then have two months to examine the measure. This period can be extended by two months.

5.c. Meeting with DG ENER – an EU strategy for CCS and CCU

ZEP met with Catharina Sikow-Magny, Director, ENER.C – Green Transition And Energy, System Integration, and Chris Bolesta, on 2 December.

As a background, ZEP sent a <u>proposal for an EU Strategy for CCS and CCU</u> and a letter following the CCUS Forum.

ZEP kicked off the meeting, highlighting:

- The importance of developing the CCUS Forum into a formal work programme with working groups 'CO₂ transport and storage infrastructure', 'Making CCS and CCU investable', and 'Industrial decarbonisation, carbon dioxide removals and hydrogen'.
- The comments on the draft CCUS Forum conclusions and the support that ZEP can offer to DG ENER with the set-up of the CCUS Forum work programme.
- The importance of an EU Strategy for CCS and CCU, outlining targes, objectives, resources and enabling policies with a view to 2030 and to climate neutrality by 2050.
- The progress made on CO₂ infrastructure, as well as the progress of the revision of the TEN-E regulation.

DG ENER noted the positive momentum for CCS/CCU and highlighted the need for operational conclusions coming out of the work programme of the CCUS Forum. DG ENER believes that an approach to the development of CO₂ infrastructure (including shipping) is needed, but the TEN-E regulation may not be the right place for it. It was highlighted that the TEN-E is already overbooked and there will not be enough funding under the CEF-E to fund further categories. It was also highlighted that a vision for the CCS/CCU sector is needed to put in place an enabling policy framework for the development of these technologies and infrastructure.



DG ENER invited ZEP to continue liaising with them and to reconvene to check up on the progress made on the workplan in a few months.



Agenda item 6: Hydrogen – for information

6.a. Hydrogen and gas decarbonisation package

A presentation by DG ENER will be given at the AC69 meeting.

ZEP has given input to the consultation on the Hydrogen and gas decarbonisation package in Q2 2021, highlighting the following key points:

- Recognition of CO₂ in the context of CCS
- Gas infrastructure companies should be enabled to transport CO₂
- National Regulatory Authorities should be enabled to oversee the activity
- · Open access infrastructure

The Commission is expected to publish the proposal on 14 December 2021.

6.b. Taxonomy complementary delegated act

There will be a presentation at the AC69 meeting.

Following the adoption of the measure by the Commission on 4 June 2021, the <u>Delegated Regulation</u> was sent to the European Parliament and the Council for examination. Since no objections were noted, the Delegated Regulation, dated 9 December 2021, is now published in the EU Official Journal.

ZEP is expecting the publication of the European Taxonomy's complementary delegated act on nuclear power and natural gas in December 2021.

Based on the final wording of the delegated act, ZEP will prepare comments to be shared with European policymakers.

Next step:

 Publication of the Complementary Delegated act by the European Commission, December 2021.

6.c. Update on the European Clean Hydrogen Alliance

There will be a presentation at the AC69 meeting by DG GROW, European Commission, on the European Clean Hydrogen Alliance project collection and awarded projects.

The European Clean Hydrogen Alliance's work has continued.

All the deliverables of the roundtable have been completed. The last CEO meeting of the Roundtable on production took place on 15 November. The topic of the meeting was



the interaction between the Fit for 55 Package and the upcoming Hydrogen and Gas Decarbonisation Package and their role in shaping the regulatory framework for hydrogen as well as better understanding the role of the revised Guidelines for State aid for Climate, Energy and Environmental Protection (CEEAG) to support hydrogen market deployment in Europe.

DG ENER and DG COMP gave keynote addresses, and ZEP participated in the CEO meeting and highlighted the following:

- Low-carbon hydrogen with CCS can bring early large volumes to kick-start the clean hydrogen economy.
- A science-based and technology-neutral approach based on lifecycle GHG emission savings – is crucial.
- We have a good basis in the EU Taxonomy regulation and Delegated Act clear sustainability criteria and thresholds. It is important that other EU legislations are coherent with this.
- ZEP has published an academic <u>paper</u> "Facts on low-carbon hydrogen A European perspective", describing the value of low-carbon hydrogen and the importance of the EU regulation.
- Commissioner Simson has stated that hydrogen should only be labelled green if
 it respects the "additionality principle". This makes the Commission's proposed
 Fit for 55/REDII target of 50% renewable hydrogen in the industrial sector by
 2030 difficult to reach. This target can best be delivered by planning and
 developing new hydrogen infrastructure and CO₂ infrastructure in parallel.
- In the Commission's 'Hydrogen and gas decarbonisation package' in December, we would like to see this parallel deployment of hydrogen and CO₂ infrastructure, recognition of CO₂ infrastructure in the Ten-Year Network Development Plan, and clear targets also for low-carbon hydrogen.

The following remarks from DG ENER and DG COMP were circulated by the facilitators as conclusions of the CEO meeting:

Mechthild Wörsdörfer, Deputy Director-General at DG ENER emphasized that unabated natural gas is foreseen to play a less important role as a feedstock while renewable hydrogen and low carbon hydrogen will be the focus of the upcoming package, focusing on certification and their integration in the gas grids She mentioned that blending risks fragmenting the internal market in case Member States would adopt different blending rules. She invited the members of the roundtable to defend the revamped Renewable Energy Directive (REDIII) sub targets for renewable hydrogen use in industry and transport, especially at Member State level. She also confirmed that the Council should adopt its position on the Renewable Energy Directive III by summer 2022. Finally, she noted that low carbon hydrogen combined with CCS and hydrogen produced from nuclear power also contribute to the EU climate mitigation objective.

DEGENERAL STORES



Olivier Guersent, Director-General at DG COMP informed the roundtable that the Commission will adopt the Guidelines for State aid for Climate, Energy and Environmental Protection (CEEAG) before the end of the year to provide public authorities with the right framework to carry out and facilitate investments efficiently and with minimum distortions of competition. He mentioned that the CEEAG will feature a broadened scope to enable support for the deployment of all technologies that can deliver on the Green Deal, including renewable and low-carbon hydrogen. When assessing whether hydrogen qualifies as renewable or low-carbon, the Commission will ensure compliance with sectoral legislation, and in particular the Renewable Energy Directive. Member States will also be allowed, under the CEEAG, to support the installation of CCUS components to reduce the emissions linked with the fossil-based production of hydrogen.

During the European Hydrogen Forum in November, the Commission presented the <u>project pipeline</u> coming out of the European Clean Hydrogen Alliance – a list of over 750 projects from all parts of the value chain, including hydrogen production, transmission and distribution and application in industry, transport, energy systems and buildings. The projects are located across Europe, with many set to enter into operation by the end of 2025. No funding is connected to the project pipeline.

DEGENERAL DE LA CARLA CA



Agenda item 7: Horizon Europe work programme – for information

7.a. Presentation on Horizon Europe work programme 2023-2024

There will be a presentation at the AC69 meeting by Vassilios Kougionas, DG RTD, European Commission, on the Horizon Europe work programme for 2023-2024, Clean Energy Transition Partnership (CETP), and Mission Innovation.

DEGEORATOR OF THE PROPERTY OF



Agenda item 8: Carbon Dioxide Removal – for information and guidance

8.a. Presentation of the European Commission communication on Carbon Dioxide Removals (CDR)

There will be a presentation of the European Commission's communication by Fabien Ramos, DG CLIMA, at the AC meeting.

The European Commission is expected to present a communication on 'Restoring Sustainable Carbon Cycles' on 14 December 2021.

In the text accompanying the <u>roadmap</u>, the Commission looks at both nature-based and technological solutions to deliver carbon dioxide removals. The initiative will propose an action plan to promote carbon farming and develop a regulatory framework for the certification of carbon removals.

ZEP made a contribution to the consultation on the roadmap – refer to agenda item 3. Updates from Networks.

DEGENERAL DESCRIPTION OF THE PROPERTY OF THE P



Agenda item 9: Closing remarks

9.a. AOB