

ZEP 66th Advisory Council meeting

17 March 2021, 10:00-13:00

Agenda Item 1: Introduction and welcome

1.a. Virtual meeting instructions

The ZEP AC66 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, 17 March). 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
 - “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. AC66 meeting agenda

The agenda for the 66th meeting of the Advisory Council is appended as pre-read 1.b.

1.c. AC65 meeting minutes

The minutes from the 65th meeting of the Advisory Council, which took place on 16 December 2020, are appended as pre-read 1.c.

1.d. ACEC January meeting minutes

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

1.e. ACEC February draft meeting minutes

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

1.f. New ZEP AC member

ZEP welcomes new member [Clean Air Task Force](#) (CATF), joining ZEP in the NGO constituency. Based in the United States, CATF is now establishing itself in Brussels. Lee Beck, CCUS Policy Innovation Director, joins the AC as their representative.

Launched in 1996, CATF's strategy was to enact federal policy to force older coal plants to meet the same emission rates as new plants. To implement this strategy, they co-founded and led a legal, technical, and strategic campaign to achieve reductions in smog, soot, air toxics, and carbon dioxide from U.S. power plants through a multi-pronged strategy, pressing for regulatory and legislative changes.

Clean Air Task Force's goal is to achieve zero-emissions energy, waste, agricultural, and forest management systems by 2050.

ZEP 66th Advisory Council meeting

17 March 2021, 10:00-13:00

Meeting agenda

Item	Lead Presenter	Time
1 Introduction and welcome	Graeme Sweeney	10:00-10:10
2 Secretariat update – for information	Per-Olof Granström	10:10-10:25
3 Updates from Networks – for information <ul style="list-style-type: none"> Policy & Economics and Technology 	Co-chairs	10:25-10:45
4 Updates from ERG – for information <ul style="list-style-type: none"> Follow-up on communications and outreach 	Co-chairs, ZEP Secretariat	10:45-11:05
5 TEN-E Regulation revision – for information and guidance <ul style="list-style-type: none"> The Netherlands' perspective and CO₂ storage – presentation Updates and follow up on ZEP activities Update on EC call for PCI applications 	Tom Mikunda, Ministry of Economics and Climate, The Netherlands ZEP Secretariat	11:05-11:30
6 Low-carbon hydrogen – for information <ul style="list-style-type: none"> Clean Hydrogen Alliance – presentation ZEP activities and views 	Walburga Hemetsberger, SolarPower Europe	11:30-12:00
7 EU Taxonomy – for information <ul style="list-style-type: none"> Update on progress and open questions 	ZEP Chair/Secretariat	12:00-12:20
8 EU funding programmes update – for information and discussion <ul style="list-style-type: none"> Horizon Europe and partnerships CCUS SET-Plan update Ahead of the second Innovation Fund call 	Vassilios Kougionas, DG RTD Maria Velkova, DG CLIMA	12:20-12:50
9 Closing remarks and next meeting	Graeme Sweeney	12:50-13:00

1.c. AC65 meeting minutes

DRAFT MINUTES
ZEP 65th ADVISORY COUNCIL MEETING
16 December 2020, 10:00-13:15 CET
Virtual meeting

1. Introduction and welcome

Chair, **GS**, verifies quorum, opens the meeting and thanks all participants for their attendance and time.

GS moves to adopt AC65 meeting agenda – the agenda is adopted. Chair moves to approve draft meeting minutes from AC64 and ACEC meetings from October and November – all minutes are approved.

GS moves to proposed ZEP meeting dates for 2021 and notes there had been a small number of requests for changes, but majority could attend. The meeting dates are adopted and the ZEP Secretariat will confirm these dates with Save-the-date calendar invitations.

GS moves to results of AC65 vote, noting that elected representatives may participate in this meeting as AC members. **GS** congratulates Jannicke Bjerkås, elected for Fortum Oslo Värme. **GS** announces that Robin Clowes for ExxonMobil is elected.

GS thanks **Frederic Hauge**, Bellona, who steps down as AC member and for his contribution to ZEP as Vice-Chair. **GS** notes that **JH** is elected as AC member and has been appointed Vice-Chair of the NGO constituency. **GS** thanks **Liz Rogers**, bp for her contribution and will call her to say thanks. Shirley Oliveira has been elected to AC.

2. ZEP planning for 2021

GS notes this item is for the approval of ZEP's work programme – the basis of ZEP's activities in 2021, and a recommendation regarding the budgetary consequences – for approval by ZEP-C Directors. **POG** takes opportunity to thank all for their support and dedicated work during the year – especially thanking co-chairs and participants in working groups and Networks, **GB** and **MK**. **POG** highlights that ZEP has received a positive response for a 6-month grant extension. With the extension, funds will be available from the current grant agreement to cover May through October. The extra funds of approximately €50,000 needed for November and December – after the extension, have been included in the 2021 ZEP-C budget. This means that the €190,000

of financial reserves, built up in ZEP-C to prepare for the gap, can be kept intact. ZEP is prepared for strong, impactful work next year and a financial buffer going forward.

Giving an overview of the work programme for 2021, **POG** highlights that this will be based on the EU policy agenda. He highlights the further strengthening of ZEP's role, continuing support to the CCUS SET-Plan and intensifying support to market-ready projects. POG gives an overview of the topics on which ZEP intends to work further in 2021, referring to the pre-reads, welcomes the two new ERG co-chairs, and highlights a strong focus on external communication and outreach. He highlights the new Informal Communications Group and invites ZEP members to participate, as this group provides a platform to coordinate activities and exchange information.

POG presents the budget, mentions that income for 2020 increased with EBN joining ZEP while the expenditure for 2020 is lower than expected due to Covid-19. This results in increased surplus of approx. €190,000 in December 2020. For the 2021 budget he highlights continuation of core ZEP-C services and assessment of the need for administrative support, communication activities including continuation of the service agreement with CCSA, increased sponsorship – welcoming Fortum Oslo Värme and ExxonMobil, and funds for strategic work, forecasting that the surplus ZEP-C funding will be kept intact.

GS reminds all that we are seeking approval for the work programme. For the budget, we seek recommendations that the budget should be recommended to ZEP-C Directors for adoption. AC approves both.

3. Horizon Europe and CCUS SET-Plan

GS gives the floor to **VK** for an update on Horizon Europe. Preparations are continuing and CCUS will play considerable role for transition of industries but also power sector towards climate neutrality. Particularly for industries where alternatives do not exist. **VK** highlights the importance of low-carbon hydrogen with CCS, in addition to renewable hydrogen. He mentions that calls for proposals for CO₂ capture, for Integration of CCUS in hubs and clusters and for ETIPs including ZEP will be published in 2021 and that the Industry call will be published in 2022.

LE asks if there will be calls for hydrogen with CCS in Horizon Europe and if there will be calls for CO₂ storage in the second work programme of Horizon Europe. **VK** replies that there will be opportunities for low-carbon hydrogen with CCS in the industrial call and that a call on CO₂ transport and storage will be part of the second programme, 2023/24.

GS asks how CCUS is included in the CETP and **VK** responds that the proposals are included, that the CETP was endorsed at the SET-Plan conference but that the budget is unknown and still to be agreed.

GS notes the updated CCS and CCU targets under CCUS SET-Plan. **POG** gives a short update on the CCUS SET-Plan targets, referring to pre-reads and informs that, after receiving the endorsement of the CCUS SET-Plan plenary, the final updated targets have been presented to the European Commission for their approval. The CCUS SET-Plan awaits the Commission's response.

POG also recalls the outcomes of the CCUS SET-Plan study by UCL that includes European and global model scenarios aiming for 1.5°C and 2°C. This work fed into the updated targets and he concludes mentioning the upcoming CCUS 2030 roadmap work and highlighting the importance of a favourable policy framework to support the deployment and development of CCS and CCU in Europe.

4. EU Taxonomy

GS gives the floor to Clara Solzbacher, DG FISMA, for an update on the Taxonomy delegated acts. Firstly, she mentions that the Strategy on Sustainable Finance has been postponed to Q1 2021. After a recap on the timeline for the Taxonomy consultation and a brief update on the delegated acts, **CS** highlights that the work on finalising the delegated acts is ongoing and that the list of eligible economic activities will be updated over the years. Changes and adjustments will be made over time – the objective of the Taxonomy is not to be prescriptive but to give a reliable indication of sustainable economic activities. She informs that the timeline for adoption of the delegated acts has changed and is likely to delay, due to the high volume of feedback received by the Commission.

GS opens the floor for questions. **LE** asks how the different mitigation thresholds in different delegated acts should be interpreted? **CS**: There will be thresholds in all the delegated acts – one to highlight if an activity makes a substantial contribution and is therefore a golden standard in one specific sector; the others, 'Do no significant harm' are the safeguards to ensure the coherence across environmental objectives. While the level of ambition for DNSH generally corresponds to those in other EU legislations, there are cases where they can and have to go beyond existing law. Where other legislation refers to the DNSH criteria in particular, including for funding opportunities, the taxonomy criteria are usually offered as one possible alternative among others.

AP asks why CCU is excluded and why the capture of CO₂ anthropogenic emissions (CO₂ capture) is excluded? **CS**: DAC and CO₂ capture were mentioned in TEG report. However, DAC is not commercially available at large-scale and is now listed as R&D activity; CO₂ capture is not a self-standing activity but associated with specific industrial sectors and is included directly in the respective activities. CCU not included for lack of evidence for now, although some applications of CCU for manufacturing of low-carbon products might be interesting. She invites AP to make this clear in the feedback to the consultation.

LN asks why there is no indication of declining thresholds? **CS**: A direct emissions threshold based on average EU emission data has been chosen as the preferred methodology. The Commission believes that the thresholds should indeed be tightened in the future, as also outlined in the Taxonomy Regulation, and will amend the delegated acts periodically. However, fixing trajectories with potentially marginal differences too much in advance might also affect usability and risks to miss out on making the right adjustments later based on new technologies and policies, which is why the current approach removes the declining threshold for now.

GS concludes the discussion stating that all technologies should be subject to an LCA and that the Taxonomy must remain technology neutral and science-based and pursue the objective of net-zero by 2050. ZEP will respond to the consultation.

5. Carbon Dioxide Removals

GS gives floor to Fabien Ramos, DG CLIMA, regarding Carbon Removals. He informs that DG CLIMA has started to work on a regulatory framework for CDR, incentivising investments from private stakeholders. The timeline for finalisation is 2023. The certifications will start with mature solutions today and will need to integrate solutions that come in the next years and the aim is to create a system that can be used across Europe. He also stresses that the priority today is to achieve emissions' reduction. Next year, there will be a stakeholders' consultation and DG CLIMA will begin to work on impact assessment.

SC recognises the requirement for quality but is concerned with the timeline, as 2023 seems very slow potentially. She emphasised that industry should already start to work in this direction, as this could help with driving cost down and move quickly on the learning curve element

GS moves to presentation of ZEP report on CDR and gives floor to TWG co-chair Kristin Jordal. **KJ** informs that the report is a follow up from the previous report and that it builds on ZEP expertise.

She presents the key messages of the report and proposed a definition of CDR to be adopted by ZEP and based on previous work by Ramirez-Tanzer. She later presents the illustrations provided in the report, which highlight how the definition proposed in the report would be verified in the most common technological processes of CDR. Nature-based solutions are recognised in the report, but not explored further due to a lack of expertise. She finally notes that some examples of potential CDR projects in Europe are provided, noting the need for a case-to-case evaluation.

GS opens floor for questions and welcomes approval of report. No questions, the report is approved and will be disseminated with **ERG** guidance.

6. ZEP actions on low-carbon hydrogen

RdK gives a presentation on the Hydrogen TWG report which focuses on the crucial role of low-carbon hydrogen in meeting Europe's climate ambitions. The presentation highlights some of the key objectives and conclusions on the report with a focus on the scalability of hydrogen production in the 2020s, its costs, climate impact and the critical enabling role CO₂ infrastructure will play to enable an EU hydrogen economy to establish. **RdK** concludes with some of the policy recommendations of the group which can enable both hydrogen and CCUS to deploy rapidly in the 2020s.

CW from DG GROW gives an oral update on the Clean Hydrogen Alliance: there is an ambitious timescale to produce 1 million ton of renewable hydrogen by 2024 and the alliance is focusing on industry-based companies active in the sector to make progress. The alliance will consist of the European Hydrogen Forum, 6 roundtables and a high-level coordination group. The roundtables will focus on establishment of a project pipeline and investment agenda. The roundtable chairs will be known at the next Forum.

LE asks clarifications regarding the benefit of being on the members' list. **CW** replies that there are no direct financial benefits but networking opportunities. **LE** asks about the **CW's** view on low-carbon hydrogen and its role in this path towards the ultimate goal of large volumes of renewable hydrogen? **CW** says the EC sees a role for blue hydrogen until green becomes available in large quantities. The key elements will be amounts and costs for CCS.

To conclude, **GS** recalls that EVP Timmermans was presented with a wide range of projects including low-carbon hydrogen projects. The list – and the report – will be shared with members of the Alliance.

GS asks for comments and approval on Hydrogen report. **NR** seeks clarification regarding figure 8. It is concluded that a short addition will be made to the report to describe the issues regarding the marginal emissions factor from grid-connected electricity, while the issue can be discussed more in depth at a later stage.

GS asks to adopt the report with this addition. The report is approved with this addition and can be published.

7. Directive on geological storage of CO₂ (CCS Directive)

LE gives background on this agenda item, which was raised at a past ACEC meeting and NWPE meeting. **CG** is invited to address the AC to state his arguments. **CG** presents arguments referring to slides for reopening the Directive.

GS opens the floor for comments. The following discussion highlights different perspectives in the ZEP membership. Comments are made regarding the potential risks and benefits of reopening the directive and **MV**, DG CLIMA confirms that a full reopening would lead to an unpredictable outcome, putting at risk current storage permit applications.

GS proposes to follow this up in a working group within NWT. While ZEP will not suggest a review of the directive, this group would look into the different items in the Directive that causes concern and propose suggestions to the guidance document. Interested to participate can contact the Secretariat or **FN**.

8. Global Status of CCS 2020

Guloren Turan presents highlights and key findings from the Global Status of CCS 2020 report, which is available for download on the website. She reflects on the different progress around the world on CCS.

SC echoes the remarks and invites all to take a critical look at the key learnings to take away in a European perspective.

9. Networks update

GS notes that little time is left to discuss the updates from the Networks. He highlights that the draft ToR for the work on CCS for clean flexible power generation, included in the pre-read, will form basis for a working group and asks for approval of this. The ToR is approved.

GS mentions regarding TEN-E, the secretariat will contact DG ENER to organise a meeting focusing on ZEP's concerns such as transport modalities and storage. Some members express the interest in joining the meeting. Members are welcome to contact the secretariat with their comments on this.

10. External Relations Group Update

GS invites the new ERG co-chairs and **LB** and **MD** introduce themselves and look forward to working with ZEP. In a short update, **JH** refers to preparation of the upcoming meeting with EVP Timmermans and for ZEP members to consider how they can contribute to this. **GS** agrees.

11. Closing remarks and next meeting

GS thanks all for their contributions through 2020 and for those who will work with us in 2021. Wishes all a safe holiday season. Closes the meeting.

List of participants

ZEP AC representatives		
1	Dr Graeme Sweeney	Chairman of ZEP
2	Frederic Hauge (Proxy to Jonas Helseth)	Bellona
3	Liz Rogers (Proxy to James Todd)	bp
4	Isabelle Czernichowski	BRGM
5	Chris Littlecott	E3G
6	Stijn Santen	EBN
7	Lamberto Eldering	Equinor
8	Constantin Sava	GeoEcoMar
9	Rob van der Meer	HeidelbergCement
10	Florence Delprat-Jannaud	IFPEN
11	Filip Neele	TNO
12	Stuart Haszeldine	SCCS
13	Syrie Crouch	Shell
14	Nils Røkke	SINTEF
15	Charles Soothill	Sulzer
16	Ward Goldthorpe	Sustainable Decisions
External speakers		
17	Vassilios Kougionas	European Commission
18	Fabien Ramos	European Commission
19	Clara Solzbacher	European Commission
20	Christian Weinberger	European Commission
21	Katrien Prins	European Commission
22	Guloren Turan	GCCSI
23	Chris Gittins	TAQA
Guests		
24	Eric De Coninck	ArcelorMittal
25	Lina Stranvåg Nagell	Bellona
26	Shirley Oliveira	bp
27	Jean-Xavier Morin	CO2 H2
28	Johanna Lehne	E3G
29	Daniele D'Angelo	Eni SpA
30	Lucie Boost	Equinor
31	Brian Murphy	Ervia
32	Félix Mailleux	ETUC
33	Maria Velkova	European Commission
34	Peter Horvath	European Commission

35	Robin Clowes	ExxonMobil
36	Antonella Sopranzetti	ExxonMobil
37	Jannicke Bjerkås	Fortum Oslo Värme
38	Ståle Aakenes	Gassnova
39	Angus Gillespie	GCCSI
40	Eve Tamme	GCCSI
41	Anghel Sorin	GeoEcoMar
42	Paula Coussy	IFPEN
43	Arthur Heberle	Mitsubishi Power Europe
44	Tom Mikunda	The Netherlands, Ministry of Economic Affairs and Climate Policy
45	Bram Sommer	Port of Rotterdam
46	Stijn van Els	Port of Rotterdam
47	Martijn van de Sande	Rvo
48	Mehmet Onal	Shell
49	Christian Schwarck	Shell
50	Marie Bysveen	SINTEF
51	Kristin Jordal	SINTEF
52	Carl van der Horst	Tata Steel
53	Robert de Kler	TNO
ZEP Secretariat		
54	Per-Olof Granström	ZEP Secretariat
55	Giorgia Bozzini	ZEP Secretariat
56	Meghann Kissane	ZEP Secretariat
57	Luke Warren	CCSA
58	Chris Gent	CCSA

1.d. ACEC January draft meeting minutes

ZEP ACEC January 12 January 2021, 9:00-10:30 CET Draft meeting minutes

1. Introduction

Chair, GS, opens the meeting by declaring quorum. **GS** welcomes participants and notes virtual meeting etiquette. **GS** notes the meeting will run for 1.5 hours and asks for further items for the agenda – notes no changes, agenda approved. Asks for comments to AC65 draft minutes – no comments and minutes are approved.

GS welcomes **JH** as a new Vice-Chair of NGO constituency. **GS** informs that **JH** has asked to step down from the position of co-chair for the NWPE.

Action: The Secretariat will ask the AC members for possible NWPE co-chair candidates and based on these candidates set up a vote for the AC members.

JH proposes Lina Strandvåg Nagell as candidate for the co-chair role. **GS** also asks the ACEC if it would be OK to let **LSN** fill in for **JH** until a new co-chair has been approved. The ACEC supports.

2. Follow up from AC65 and focus areas for AC66

POG introduces the draft agenda for the upcoming AC meeting in March – highlighting that the basis is the main, timely policy issues and the Network/ERG updates at the beginning of the meeting – asking the ACEC for input and additions. It is proposed to add an item on hydrogen/DG GROW/IPCEIs. **GS** concludes that there will be a possibility to clarify further at the February ACEC.

3. Important EU policy matters

GS notes that many matters around how Brexit will impact ZEP are not yet clarified. **POG** gives short introductions to the topics, referring to the pre-reads, to be followed by an ACEC discussion:

POG highlights the disappointment that CO₂ storage and other CO₂ transport modalities such as shipping are not taken into account in the EC proposal for a revised TEN-E Regulation. Referring to the EC impact assessment and discussions, some of the reasons for exclusion are that the role of mobile asset transport is questioned as a part of the TEN-E Regulation, there has been criticism from politicians and NGOs regarding

CO₂ infrastructure, there was limited support from other stakeholders, and that there are other available, better fitted financing instruments – e.g. Innovation Fund. He specifically highlights the need to develop support for CCS from other stakeholders. The EC has opened an extraordinary consultation for extra feedback ahead of the trilogue negotiations, an added opportunity for ZEP to respond – based on previous input, the letter to the Commissioner for Energy and comments to the EC impact assessment. A reply should be given as soon as possible. ZEP's real action is now on the European Parliament, the Council and MS.

On the second item, the question to the Innovation Fund Expert Group regarding an amendment to the Regulation – enabling a choice between a one- and a two-stage procedure for the next large-scale Innovation Fund call – **POG** mentions that the consultation is open until Friday and that the question at hand has been circulated to representatives within NWPE. He highlights that YES would be a natural reply, however, there is a need to look into whether the proposed amendment may add risks for more complex projects like CCS. He also mentions that this is a good opportunity to highlight ZEP's previous input regarding the second IF call.

On the third item, Brexit implications on ZEP work, **POG** highlights that this item is for information exchange and what is really of interest for you and ZEP members. He mentions what the UK's new role as third country will mean, highlighting the inclusion in Horizon Europe but with further negotiations to become associated, no inclusion in other EU funding programmes but that an infrastructure project between EU and UK can become a PCI and thus benefit from the CEF. He mentions the interest to link the EU ETS with the upcoming "UK ETS" and that the UK now is excluded from the day-ahead and intra-day markets, ENTSO-E and ENTSO-G as well as ACER. However, the renewed EU-UK offshore cooperation and the many interconnections planned will most certainly lead to closer energy collaboration.

GS moves to the **TEN-E** item and opens the floor. **LE** is disappointed with TEN-E outcome and especially the arguments that have been used to reach this conclusion. On CCS, ships are not infrastructure, but at same time have introduced funding for electrolyzers specifically. He highlights that this shows once again that we are coming with structured arguments based on logic and stepwise thinking, while policies are tinted with politics. There is a need for a push from member states like the Netherlands, Belgium or even Ireland, however, Norway is not a good candidate, as they have not signed up for TEN-E.

LW comments and asks how ZEP can work with other groups with an aligned interest to get multiple clear input. **POG** adds that the plan is to strengthen and use the NWPE TWG on TEN-E. Regarding limited support from other stakeholders, it is very important to look for and coordinate with other stakeholders, but also, to send this message clearly to ZEP members and the CCUS community, so we do the homework ourselves. The non-paper from the four countries that clearly highlights shipping is a good basis and to focus on combined with input from MS. **GS** agrees and also mentions key representation from ERG.

Action: To engage the NWPE and working group. LE agrees that this is an action on the NWPE, also engaging the PCIs and countries exporting CO₂.

GS moves to the Innovation Fund consultation and opens the floor. **LE** mentions that he was positive at first, as some projects could be easier to get money, but where does this DG CLIMA request come from? Two-stage will work for many projects where they can prepare for this trajectory and get support. He mentions that projects with short turnaround that can very quickly make investment decisions could benefit from the second option, those on the renewable side. Some mature CCS pipeline projects may benefit from one-stage process but is this realistic. **GS** concludes that this is a timeliness issue but that he prefers Vice-Chairs to approve. Vice-Chairs all agree.

Action: Follow up with ZEP members with projects/project developers, create a response and circulate for approval and comments to Vice-Chairs for turnaround at end of the week.

GS moves to the Brexit item and opens the floor. **LE** comments that CCS is an integral part of UK's climate strategy and EU is missing out on decarbonisation as UK is outside. Should this be part of our communication and value of CCS to EU? **GS** adds that it may be more interesting to look at where EU and UK are side by side. **LW** mentions that ETS was preferred mechanism ahead of carbon tax in the UK, a likely design may be announced ahead of COP26. He adds that the UK can benefit from wider economic opportunities from CCS. **POG** adds that the EC has taken over the lead on Mission Innovation with Patrick Child as new Chair – this is another way to bring forward these items and cooperate. ZEP will write a letter to congratulate and ask how we can help.

GS mentions one question – if projects which may be led by anyone can have UK projects as participants – and concludes that we need to drive as much cooperation as possible and utilise channels as best we can. Going forward we should engage in conversations with UK-based project developers and members about their experience to understand how we may best overall progress CCS/CCU in Europe.

Action: Brexit is to be a standing item at coming meetings – the best intelligence will be a result of practical experience of people involved in projects.

4. Updates from Networks

LE gives a short NWPE update, noting that the latest meeting was held in October and that in the short term, TEN-E, EU ETS and review of RED are important. TEN-E and ETS are linked, looking at shipping transport. He highlights that at the latest NWPE meeting, there was a discussion on the possible review of the 'CCS Directive'. Landed on the position that we had at earlier AC and now action to look into this. **GS** comments that some work in RED will impact on Taxonomy, particularly on the final formulation on how electricity is accounted for. **LE** agrees and thinks the discussion on CCU and synthetic fuels will be important going forward.

FN gives the NWT update, mentioning the previous meeting in November and since then, the publication of two reports. He mentions the two WGs being set up now – clean

flexible power generation, where co-chairs are being looked for, and the TWG on Directive on geological storage of CO₂, where the focus is on explaining to stakeholders how projects that either use saline aquifers or depleted fields can answer requirements set out in the directive. The value of this group's report lies in showing how in both cases, the requirements in the directive can be met. **FN** mentions that the search for co-chairs is ongoing and he expresses interest to be involved in the work himself, perhaps as co-chair. On biomass, he highlights that there is interest in the network to continue this work and how to proceed is being discussed. Standardisation is a topic that is not actively worked on yet but looking into what is happening in standardisation to report at NWT meetings.

GS agrees that work on "how to make the directive on CO₂ storage work" and what can be done to improved practical operation is the right focus.

5. Updates from ERG

GS notes, for new co-chairs, that the purpose of the ACEC is to guide the work programme between AC meetings. With the ACEC, Vice-Chairs are the decision makers, with updates from Networks and ERG. **JH** gives ERG update, mentioning welcoming new co-chairs, discussing activities such as communication for upcoming months, particularly meeting with EVP Timmermans and a brief update on first the meeting of Informal Communications Group. **MK** gives communications and outreach update – communication on new reports, ZEP event at EU Industry Week, and feedback from latest Informal Communications Group meeting. **GB** gives update on engagement plan and that ZEP is seeking to organise meetings with several contacts on TEN-E and hydrogen work. ZEP understands preparations for CCUS Forum organised by DG ENER have begun and seeking a meeting on how ZEP can be of help with organisation and the format. **NR** mentions the new DG RTD Clean Planet Director, Rosalinde von der Vlies.

Action: Set up meeting with Rosalinde von der Vlies.

6. Closing remarks and AOB

GS opens floor for questions. **NR** gives short update regarding the new Norwegian Climate plan dealing with non ETS sector, relevant for offshore activities. A clear price signal in this plan: the carbon tax will increase to approximately EUR 200 per tonne by 2030. This gives a clear signal about how this will be regulated and how much. **NR** will share paper on the climate plan.

GS thanks participants for their time and reminds of meeting dates for upcoming ACEC and AC, which will be virtual.

Participants – ACEC 12 January, 9:00-10:30 CET

Dr Graeme Sweeney	Chair
Rob van der Meer	HeidelbergCement
Jonas Helseth	Bellona
Lamberto Eldering	Equinor
Nils Røkke	SINTEF
Charles Soothill	Sulzer
Lucie Boost	Equinor
Luke Warren	CCSA
Marie Bysveen	SINTEF
Per-Olof Granström	ZEP
Giorgia Bozzini	ZEP
Meghann Kissane	ZEP

1.e. ACEC February draft meeting minutes

ACEC February meeting

16 February 2021

9:00-11:00 CET

1. Introduction and welcome

GS opens the meeting and welcomes **Lina Strandvåg Nagell** and **Christian Schwarck** as new co-chairs of NWPE.

Noting additional agenda item 6.b., sent out following Sherpa meeting of Clean Hydrogen Alliance, **GS** ask if any further items to be added to the agenda – no further items. Asks for ACEC approval of agenda – approved. Asks for approval of ACEC January draft meeting minutes – approved.

2. ZEP development

GS notes this item is for guidance and input.

POG highlights the AC66 meeting and key agenda items. He then moves to the topic of 'New ZEP' 2022, drawing up the plan for a series of ACEC strategy seminars focusing on developing ZEP: support to stakeholders – value proposition for new members – increasing impact.

POG asks for input and comments from the ACEC on both items, starting with AC66.

NR notes it is a full agenda, although AC65 also did and it was a good meeting. He would also like to hear the European Green Deal calls from DG RTD. **RvdM** comments that no issues should be deleted as they are all important.

On the ZEP development 2022, **RvdM** highlights the following issues: (i) Preparing ZEP for the next 10 years. (ii) A strategic discussion on external CCUS development, shaping the priorities for ZEP. (iii) How to put this into the perspective of decarbonisation of industry and society perspective? **NR** agrees with the proposed areas and mentions additionally the cooperation with EU/Brussels stakeholders. He also highlights the importance of intrinsic nature of land use, considering nature and risk of ecocide, and the possibilities and consequences of CCS in this context. **LE** agrees with previous interventions and highlights the need to have new and active members. **CS** says tech/digital companies are showing more interest in CCS and highlights this as a possibility for ZEP. He also mentions the area of

interoperability between storage in Europe as an area of priority for ZEP. **JH** comments the importance of ZEP continues high quality work bringing people to ZEP as a reference point.

GS acknowledges the focus on a stronger industrial base and stronger voice in decarbonisation of industry. He notes ZEP's approach in general to carbon accounting and the question of whether or not offsets should be allowed, highlighting that these issues need to be tackled in the seminars. **POG** thanks for good input, a good basis for the strategic discussions.

Action: ZEP Secretariat to set up and prepare the seminars.

3. Short Networks update

LE gives short NWPE update, announcing the two new NWPE Co-chairs and notes that TEN-E has been a theme most worked on. The latest meeting in January was good and covered a number of consultations and feedback to the EC. TWG Policy & Funding was very active a couple of years back but quiet since then, all the work has since been taken over by the Secretariat. Now, we would like more structured membership expertise for input and feedback.

GS proposes the ACEC endorses the ToR. ACEC approves.

FN notes three WGs ongoing or about to start, will be discussed at next NWT meeting on 3 March. The WG on carbon-neutrality/biomass held a meeting last week and aim to have a report ready for approval at the June AC meeting. The WG on the 'CCS Directive' has two co-chairs – Stuart Haszeldine and Filip Neele – and a group of interested participants. A table of contents for the report will be presented at the June AC meeting. For both groups, the aim is to deliver brief reports along with good executive summaries, which will help to bring across the message from the technical side of these reports. The third WG on flexible power generation has found a Co-chair (Robert de Kler) and work is about to start. **POG** highlights that **AH** and EBN, Fortum Oslo Varme and IEAGHG have expressed interest in taking part in this group and welcomes suggestions for further participants.

JH asks if there is overlap between TWG Biomass and work done by NWPE? **RvdM** notes that in the group's first discussion, there was a split on negative emissions' inclusion in EU ETS and that the NWPE will be involved. **GS** suggested that some of these issues ought to be in the seminars for discussion. **NR** asks if the Taxonomy will be guiding the work in WG power generation and if there will be a focus on coal. **POG** notes that link to Taxonomy is not in the ToR but will be brought up by the group.

4. Communications & outreach

LB gives ERG update on upcoming events for March focusing on the PCI status and application process and CDR, as well as CCS factsheet and information toolkit, which will be very useful for members. The toolkit will be used as a go to place for information to share

when CCS is criticised or misrepresented in media. Also developing an engagement plan on public acceptance and a stakeholder mapping – all linked to the CCS Facts Toolkit.

MK gives the communications update, noting items that were discussed at the recent Communications Group meeting as well as upcoming events. **GB** updates on engagement plan. Regarding the CCUS Forum, ZEP offered assistance to the Commission, but have not heard back. It will be a 3-hour meeting looking at CCUS value chain in Europe.

5. Actions on blue hydrogen

GS highlights that a written submission from the platform is necessary. **POG** notes that the Clean Hydrogen Alliance this is a fast-moving activity and echoes GS's comment that written input from ZEP will be crucial as well as coordinating with other stakeholders. There will be a new Sherpa meeting next week and a CEO meeting on 2 March. **POG** refers to the circulated draft input – highlighting the necessity of a climate-neutral approach, focus on volume and correctly calculated carbon footprint for all technologies – and stresses the importance to send input as soon as possible. **NR** reiterates this is fast-moving process and we need to provide input soon and be stubborn on technology and double accounting. **LSN** adds to keep in mind the competitive issue which was raised. An exchange of views on confidentiality rules, eligibility criteria and electricity input follows. **NR** agrees and adds that the data in the Taxonomy on carbon footprint and methodology on LCA is important to get included. The level of policies is not totally understood – we need to be alert and fact-based.

GS notes that all those things are consistent with ZEP established policy. We should proceed to make the intervention as advised by those who participated and it needs to be this week. ACEC approves that **GS** can decide on behalf of ACEC on the proposed input.

6. Revised TEN-E Regulation

POG notes ZEP consultation response and good narrative. He refers to meeting with J. Balke and K. Prins in DG ENER, highlighting that CO₂ infrastructure is still included in EC's proposal despite criticism and low support, that electrolyzers are included for infrastructure studies and not for funding work, and the importance of CO₂ projects applying for PCI status. He highlights ZEP's actions for recognition of CO₂ storage and transport modalities with the main focus on the EP, Council and MSs, and invites **GB** and **MK** to give updates on the engagement plan and the coordinated campaign. **GB** gives update on engagement plan, where ZEP will engage with European member states and highlights that this matter will also be brought up at the next ZEP Government Group meeting. For EP, we have contacted rapporteurs. **MK** gives update on TEN-E campaign planning and communications.

The ACEC discusses the need to keep engaging with all institutions ahead of the negotiations which will take place this year. **LE** highlights that the Commission encouraged European CCUS projects to apply for PCI status.

JH notes need to highlight that that developing CO2 storage is a European project. **LB** agrees but highlights that if the EC is asking for projects, they need to provide the right support mechanisms and framework.

GS notes clear support for the TEN-E campaign and proposes to keep AC and ACEC up-to-date with how the campaign develops.

7. Update on EU Taxonomy

GS updates on Taxonomy and 'do no significant harm' criteria. The secretariat will follow up on the delegated acts.

8. AOB and closing remarks

GS reminds all of upcoming ZEP events and AC/ACEC meetings. Thanks all for participation and closes the meeting.

List of participants

Graeme Sweeney	ZEP Chair
Lucie Boost	Equinor
Arthur Heberle	Mitsubishi Power Europe
Jonas Helseth	Bellona
Mark Driessen	Port of Rotterdam
Lamberto Eldering	Equinor
Nils Røkke	SINTEF
Marie Bysveen	SINTEF
Charles Soothill	Sulzer Equipment
Filip Neele	TNO
Lina Strandvåg Nagell	Bellona
Christian Schwarck	Shell
Olivia Powis	CCSA
Per-Olof Granström	ZEP
Giorgia Bozzini	ZEP
Meghann Kissane	ZEP

Agenda item 2: Secretariat update – *for information*

2.a. Finance update

Appended to this paper as pre-read 2.a. is the ZEP finance update.

2.b. Follow-up on actions from AC and ACEC

AC65 December 2020

- [ZEP response to consultation on EU Taxonomy's delegated acts](#) has been submitted.
- The ZEP reports on '[The crucial role of low-carbon hydrogen production to achieve Europe's climate ambition: A technical assessment](#)' and '[Europe needs robust accounting for Carbon Dioxide Removal](#)' have been published, broadly shared and communicated, and webinars have been organised for both reports.
- A ZEP TWG on Directive on geological storage of CO₂ (CCS Directive) has been created, co-chairs and participants have been engaged and the work is now starting (*more information under 3. Networks update*).

ACEC January 2021

- The AC members have nominated and elected two new co-chairs for the Network Policy and Economics (NWPE): Lina Strandvåg Nagell from Bellona Europa and Christian Schwarck from Shell.
- ZEP is strongly engaging in the revision of the TEN-E regulation (*more information under 6. TEN-E Regulation review*) about the campaign and engagements towards the EP, Council, and MS). The revitalised Policy & Funding temporary working group will manage the discussions arising on policy and regulatory matters.
- ZEP responded to the [Innovation Fund consultation – An amendment of the delegated regulation regarding inclusion of a one-stage process for the second call](#) after discussions in the ACEC and approval by the ZEP Vice-Chairs (*more information under 3. Networks update*).
- ZEP will revisit the issue of how Brexit will impact the overall development of CCS and CCU in Europe at future meetings, based on information from projects, as project developers will have the best practical experience.

- ZEP has engaged with DG RTD for a meeting with the new Clean Planet Director, Rosalinde von der Vlies, seeking a meeting in the near future.

ACEC February 2021

- In order to prepare for the new grant 2022, ZEP will organise strategic seminars with the ACEC focusing on the support to stakeholders, value proposition for new members, and increasing impact (*more information below*).
- The Policy & Funding temporary working group under NWPE is revitalised with new terms of reference and a group of policy experts to provide more structure and be more focused within membership expertise (*more information under 4. Networks update*).
- After discussions in the ACEC, ZEP has submitted input to the European Clean Hydrogen Alliance (ECHA) (*more information under 8. Low-carbon hydrogen*).

2.c. Developing ZEP

ZEP is well prepared for 2021, with a clear workplan, solid budget (including money set aside for strategic development) and the ZEP-C financial reserves of €190,000 left intact, approved 6-month grant extension, etc. A call for proposals regarding a new ZEP grant is expected in April 2021 with the new ZEP grant expected to start in January 2022. With the introduction of the ZEP Brussels office and the increase in staff, ZEP's activities and visibility have increased strongly. A ZEP informal Communications Group has successfully been introduced, for active communication and coordination in the EU/Brussels. Recently, the existing TWG on Policy and Funding has also been revitalised, with the aim to provide timely support on the many initiatives connected to the European Green Deal. Finally, at AC64, the introduction of a third ZEP Network focused on Projects was also endorsed.

With the European Green Deal and the new ambitious European targets for decarbonisation, the development and deployment of CCS and CCU in Europe are now going from plans and ideas to reality.

In this context, ZEP ACEC will gather to discuss how ZEP can be further developed, with a focus on support to stakeholders, value proposition for new members, and increasing impact. There will be a series of strategic seminars during 2021 and the first will be organised on 24 March.

Agenda item 2.a: Finance Update

2020 ZEP-C Budget follow-up

- The income for 2020 amounts to €182,500. The expenditure for 2020 amounts to €115,150 (may change, books not closed).
- The income was higher than budgeted due to increased sponsorship, while the expenditure was much lower than the budgeted mainly due to the Communications and Events budget and Covid-19. Virtual meetings have given the opportunity to strongly increase ZEP activities, while, at the same time, keeping costs low.
- ZEP-C started 2020 with a remaining budget from 2019 of €125,787. The starting point for 2021 (remaining budget from 2020) is approximately €186,871.
- The ACEC agreed that the 2020 audit for ZEP-C should be undertaken by Vandelanotte. Once the accounts have been finalised the audit will be completed.

Attached to this note is the 29 February ZEP-Communications financial management report.

2021 ZEP-C Budget

In December 2020 the AC65 recommended that the 2021 ZEP-C budget will be brought to the ZEP-C Directors for adoption. This budget is based on the following elements:

- Continuation of core ZEP-C services, such as Chair, accounts, legal support, etc.
- Communications and events budget €85,000, including continued service agreement between CCSA and ZEP-C.
- Funding for November and December, after the grant agreement and extension have ended €50,000.
- Strategic work linked to the evolution of ZEP €12,500.
- With the current budget, the surplus ZEP-C funding can be kept intact.

ZEP-C 2021 Budget

Activity	Budget (€)
Administration / Auditing	8,000
Website maintenance	1,000
Legal advice	4,000
Chair	67,992
Contingency	4,000
Communications/events	85,000
Strategic work	12,500
Funding for November-December 2021	50,000
Total Expenditure	232,492
Income	232,500
Net profit / loss	0,008

Budget management: Expenditure against 2021 budget

Activity	Contractor	Budget 2020	Comments	To date Spent	Comments	To Date Committed	Comments
Administration / Auditing	Adams accountants / Vandelanotte	€ 8 000		€ 413			
Website maintenance		€ 1 000		€ 0			
Legal advice	Lawsquare	€ 4 000		€ 0			
Chair	Ardnacraggan Energy Services	€ 67 992		€ 11 332			
Contingency		€ 4 000		€ 481			
Public affairs		€ 85 000		€ 0			
Funding for 2021 + Strategic work		€ 62 500		€ 0			
Total		€ 232 492		€ 12 226		€ 0	

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

Spent + Committed € 12 226
 Remaining total budget € 220 266

Forecast

€ 186 871	Starting point 2021 (= Left over budget 2020)
2021 Total Spend	Comments Relative to budget
€ 8 000	
€ 1 000	
€ 4 000	
€ 67 992	
€ 4 000	
€ 85 000	
€ 62 500	
€ 232 492	Total budget spent 2021

Cash management of ZEP Communications VZW / ASBL

Category	Source	Issued invoices	Comments	Pending invoices	Comments	Received payments	Comments
2021 contributions	O&G			€ 120 000	BP, Shell, Equinor, Total	€ 36 300	ExxonMobil
	OEM						
	Others (confirmed)			€ 82 500	Heidelberg, Gassnova, Port of Rotterdam, EBN, Fortum Oslo Varne		
	Others (Potential)						

€ 156 300	
€ 0	
€ 82 500	

General	VAT return	€ 1 682	VAT declar 2021/02	€ 87	Invoices 2021 to be rec.	€ 2 309	REIMBURS 20 Q 2
Total outstanding / pending ZEP-C		€ 1 682		€ 202 587			

€ 238 800	Total forecasted income 2021
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Cash situation (of 5 March 2021)

Current account (KBC - Business compact rekening)		€ 240 078
Savings account (KBC - Spaarrekening)		€ 101
Actual cash at bank and in hand		€ 240 179

193 179,27	Forecasted Left over budget 2021
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Expenditure situation

Source	Outstanding invoices	Comments	Pending invoices	Comments
Short term creditors	€ 11 495		€ 500	VDL + CA
Outstanding invoices in spent to date, to be paid	€ 11 495		€ 500	

Cash boundaries

Minimum virtual financial position (all creditors paid, no more income) € 228 184
 Maximum virtual financial position (all creditors paid, all income realised) € 432 453

Agenda item 3: Updates from Networks – *for information*

3.a. Network Policy & Economics

Two new Co-Chairs have been appointed in ZEP Network Policy & Economics: Lina Strandvåg Nagell (Bellona Europa) and Christian Schwarck (Shell) join current Co-Chair Lamberto Eldering (Equinor).

The NWPE met in January to discuss:

- The revision and ZEP actions on the TEN-E regulation
- The revision and consultation response to the EU ETS consultation
- The new working group on CCS Directive
- The EU ETS Innovation Fund and ZEP's response to the Commission's request to give input regarding the one-stage/two-stage process.

Regarding the TEN-E regulation, ZEP received input from DG ENER and later met with a delegation from DG ENER to exchange views and bring forward ZEP's points. The notes of the meeting are available under agenda item 6.b. *TEN-E regulation*. ZEP also replied to the [extra consultation](#) on the TEN-E Regulation proposal, with the aim to give further feedback. The full [response](#) is available at the hyperlink.

On the EU ETS revision, several members shared their views and gave comments to the text circulated in the pre-reads. ZEP gathered the input to [respond](#) to the European Commission's consultation, highlighting:

- All modalities of CO₂ transport
- CCU – where CO₂ is stored in a manner intended to be permanent
- Incentives for CDR
- Acknowledgment of capture of CO₂ from biogenic sources.

On the REDII, ZEP submitted a response to the questionnaire on the [REDII stakeholders' consultation](#). The objective of this consultation is to seek stakeholder views on how the Renewable Energy Directive should be revised and aligned to the objectives of the European Green Deal. The Commission will make a proposal for a revision of Directive 2018/2001/EU on the promotion of the use of renewable energy (RED II) in Q2 2021. In the response, ZEP highlighted:

- The role of low-carbon hydrogen – with links to previous ZEP input on the alignment with the European Taxonomy and the PPAs.
- The role of CCS for Europe's decarbonisation – power, industry, CDR, hydrogen.

- The strategic importance of developing CO₂ infrastructure to ensure the large-scale decarbonisation of European industrial and power generation sectors.

TWG Policy & Funding: the ACEC endorsed [updated Terms of Reference](#) in February. The TWG Policy & Funding was created in 2018 but has been inactive since the beginning of 2019. With the high and increasing activity level regarding legal EU processes with an impact on CCS and CCU, there is a need for an active working group where the members are willing to:

- feed in policy input to the secretariat ahead of key policy initiatives in order for ZEP to coordinate and prepare its position, and
- deliver timely comments to ZEP's consultations responses and policy papers on policy, regulatory, legal, and funding matters.

The aim is to have a group with member representatives that are devoted to regulatory affairs. In order to have a small and efficient group where every participant feels comfortable sharing important position papers, there should be only one representative per ZEP AC member organisation in the group. In line with the ZEP bylaws, one representative from interested observers would also need to be accepted.

The group met in March to kick-off the work and give input to ZEP's response to the [Inception Impact Assessment \(IIA\)](#) on 'Hydrogen and gas market decarbonisation package'.

Further updates on the European Clean Hydrogen Alliance, Innovation Fund, EU Taxonomy and TEN-E will be given under the respective agenda items.

3.b. ZEP's response to the consultation on the EU ETS Directive

The European Commission announced plans to revise the EU ETS Directive by June 2021. Following an earlier inception impact assessment, a stakeholders' consultation was open for feedback until 5 February. At the Network Policy & Economics meeting in January 2021, ZEP sought guidance regarding the key items to raise for the response.

In ZEP's [response](#) to the earlier inception impact assessment on the EU ETS, ZEP raised the matters of:

- CO₂ transport modalities.
- The inclusion of some forms of CCU where CO₂ is stored in a manner intended to be permanent.
- There should be acknowledgment that the capture and subsequent permanent storage of biogenic CO₂ can lead to carbon dioxide removals.

ZEP has since [responded](#) to the EU ETS Directive consultation highlighting that the revision of the EU ETS will need to be aligned with climate neutrality by 2050 and deliver on the increased 2030 ambitions.

The consultation was presented as a questionnaire, highlighting the Carbon Border Adjustment Mechanism (CBAM), the scope of the EU ETS, the possible expansion to cover maritime, road and transport emissions, market stability reserves, revenues and low-carbon support mechanisms, including the Innovation Fund.

ZEP's response addressed incentivising Carbon Dioxide Removals and noted that the large-scale deployment of cross-border, European CO₂ transport and storage infrastructure will enable clean, competitive energy and industrial sectors, early large-scale clean hydrogen and, not least, the delivery of significant volumes of carbon emission removals.

3.c. Network Technology

NWT met in March to discuss ongoing workstreams and give an update on the progress on the reports. Currently, the following workstreams are active under NWT. An update for each Working Group will be provided hereafter:

- TWG Biomass
- TWG CCS Directive
- TWG Clean Power Generation

Further items on the agenda focused on the ongoing CCUS SET-Plan work to draft a 'CCUS roadmap for 2030', a report on the work of the ISO TC265, where ZEP has applied for liaison status, and the standardisation work for European CO₂ PCIs. In coordination with the CCSA Technical Working Group, an update on ongoing workstreams and plans for 2021 was also given at the meeting.

TWG Carbon-neutral Biomass

The work to deliver a report on carbon-neutral biomass has kicked off and participants in the working group have discussed how carbon-neutral biomass should be recognised and how storing it permanently, creating negative emissions, should be incentivised. The work of this group will have an impact on the work that ZEP will undertake regarding the EU ETS, REDII, and the certification for carbon dioxide removals (CDR).

This was discussed at the October ACEC and these are the updated draft Terms of Reference:

Background

ZEP published two reports on '[Europe needs a definition of Carbon Dioxide Removal](#)' and '[Europe needs robust accounting for Carbon Dioxide Removal](#)', providing definitions and a set of screening criteria to identify CDR processes and identified the main technologies to deliver CDR at scale. ZEP has also published a report on '[A method to calculate the positive effects of CCS and CCU on climate change](#)' and [input](#) to the European Taxonomy on Sustainable Finance

Platform on criteria for Bio-CCS and Waste-to-Energy. The development of CO₂ infrastructure will also be crucial to determine the uptake and scale of the volumes that will be stored and kept away from the atmosphere.

Objective

The objective is to describe and analyse what – and when – emissions are to be seen as carbon-neutral and how this could/should be taken into account when reviewing the EU ETS (and ESR), as well as the development of Certification of carbon dioxide removals, and what this will mean regarding incentives and impact on investments in CCS and CCU technology.

The aim for the working group is to produce a scientific paper that is aimed for policymakers (technical report + five-page executive summary).

Questions

- What emissions from biomass, biofuels, waste, etc. are to be seen as carbon-neutral? / When are emissions from biomass, biofuels, waste, etc. carbon-neutral? There will be a clear link to the Renewable Energy Directive and the European Taxonomy for Sustainable Finance.
- If these carbon-neutral emissions are stored geologically or used for production of minerals, plastics, fuels, etc., under what circumstances/in which cases will this result in Carbon Dioxide Removal/negative emissions?
- How should these CDRs be acknowledged? How should investing in these technologies be incentivised? How should this be related to / considered in the EU ETS Directive (and the ESR / non-EU ETS sector) and the upcoming Certification of CDRs?

The group is chaired by Rob van der Meer (HeidelbergCement) and it counts on representatives from the ZEP membership and beyond (TNO, Bellona, Sintef, EBN, Fortum, Stockholm Exergi, CO2VE, ArcelorMittal, Suez, Mitsubishi). The broad industrial basis will be key in delivering real-life examples and case studies for the report.

Next steps:

- End March: first draft report for ACEC endorsement
- April: ACEC endorsement
- June: Full report presented at AC for approval.

TWG on Directive on geological storage of CO₂

A working group within NWT, but including representatives from both ZEP Networks, is being created to follow up on the action taken at AC65 to address some specific issues in the Directive that may hamper applications for storage permits in saline aquifers. The group will not suggest a review of the Directive but will look into the various items in the

Directive, which cause concern, and propose suggestions to the linked Guidance Documents.

The work is described as follows:

Objective

The aim is to discuss how the Directive applies to:

1. Fields at original pressure (saline aquifers, pressure supported oil and gas bearing structures).
2. Fields at depleted pressure (mainly gas fields, the dominant situation in the Netherlands and UKSNS).

Both types of stores are under consideration for CO₂ storage today. Their different character leads to a different risk signature, which results in differences in injection/storage system design, monitoring and operation. The report will suggest how the Directive's requirements could be answered and the Guidance Documents improved to aid the application for storage permits, the drafting of the permits themselves, and the eventual design and operation of the two distinct types of stores.

Impact

The value of the report will be in clarifying for member state governments – as well as for future storage permit applicants and site developers and operators – how to deal with depleted pressure gas fields under the Directive. Seemingly written with the assumption of storage in saline formations, the Directive appears to put up unnecessary barriers to the use of depleted pressure gas fields. The report will highlight such apparent barriers and suggest how to permit, monitor, operate, close and hand back stores that reuse depleted pressure gas fields.

The report will not suggest changing the Directive but will propose amendments to the Guidance Documents. No changes were made to the Guidance Documents following the full consultation/review process in 2015 as required under the Directive. There was, and is, a disconnect between a consultation/review process and action/redrafting, which is surely not the intention of DG CLIMA/ENER. The current ZEP standpoint remains that the Directive should not yet be amended, as that would start a process with an unknown outcome, and an extended period of uncertainty for projects that are trying to get off the ground.

Working group

The working group will be a mix of industry and R&D representatives. Operators will be invited to join, either to actively participate or to review, as well as the consortia/companies who are currently developing their projects.

Co-chairs

The group will be chaired by Filip Neele (TNO) and Stuart Haszeldine (SCCS).

Next steps:

- Presentation of the report for approval at the June AC meeting.

TWG CCS for clean power generation

The European Commission has released its Communication on the EU Strategy for Energy System Integration, outlining how a climate-neutral energy system should be developed and what steps Europe needs to take to deliver on this promise. CCS will play a key role in this system integration – enabling industrial decarbonisation, carbon dioxide removals (removing CO₂ from the atmosphere), early large amounts of low-carbon hydrogen, and not least, enabling and balancing out the strongly increasing amounts of renewable electricity.

Electrification will become increasingly important for energy systems, as any pathway to climate neutrality by 2050 in Europe will require a deep electrification of our economy, with renewable energy sources as the primary source of power generation. However, the strongly increasing amounts of variable renewable energy sources are challenging from many perspectives for transmission and distribution grid capacity and stability and system balancing and dispatching. This is happening at the same time as current sources to balance and stabilise the system are becoming more and more limited.

The general assumption seems to be that power generation with CCS is only aimed for base load. ZEP has presented reports on cross-border CO₂ transport, carbon dioxide removal, and production of hydrogen – now there is a need to also describe more in depth how CCS enables clean and flexible power generation. The CCUS SET-Plan has updated its targets for 2030 and identified CCS for clean flexible power generation as crucial and also given input on CCS in the energy system integration to the SET-Plan steering group.

Objective

To describe the challenge for the energy system of the increasing use of variable renewable energy sources and the key role CCS will play in this perspective, with a special focus on CCS for flexible power generation, describing:

- The need for flexible power with CCS and how it could vary over the next decades towards 2050.
- An overview of options for peak shaving: possibilities, limitations, demand, cost, etc.
- The most interesting combinations of power and heat generation and CCS technologies for different applications, resulting in cost-effective decarbonisation.
- The role of low-carbon hydrogen for flexible energy production, transport, and storage (power-to-X-to-power) – and how to link with industrial hubs using the same infrastructure.

- How to further strengthen these possibilities: technology developments, scalability, cost, further needs for R&I, etc.
- What can be done within the current framework/what would be needed on EU and national levels to enable this regarding regulatory framework, etc.
- Provide examples from case studies from different applications: industry, power, cities, etc.
- Reviewing the existing literature on this topic.

Two co-chairs have been appointed for the working group – Rob de Kler (TNO) and Arthur Heberle (Mitsubishi). Preparations to set up the first meeting have started, and the scope of the report has also been discussed at the recent Network Technology meeting in March. The aim is to give a presentation at the June AC meeting, providing an update on the report.

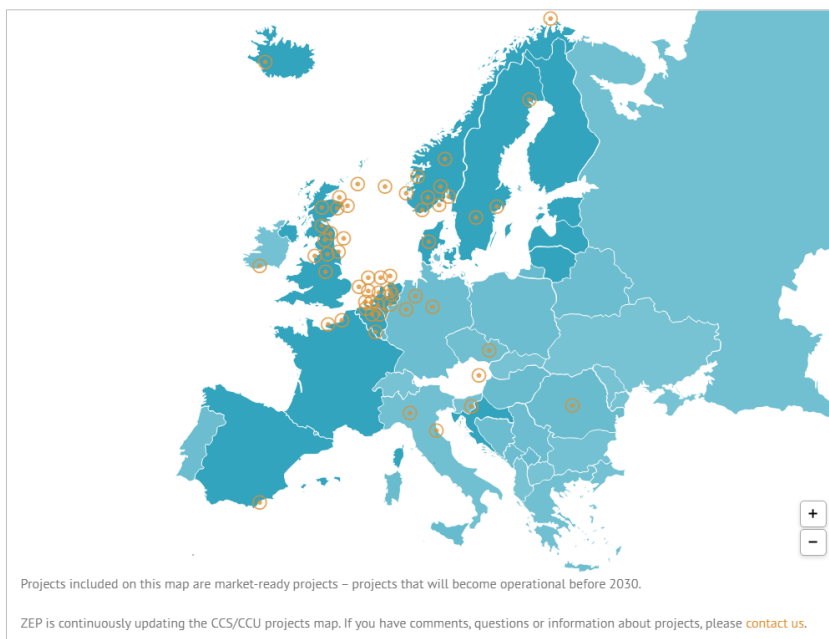
Agenda item 4: Updates from External Relations Group – *for information*

4.a. Follow-up on communications and outreach

ZEP CCS/CCU projects map

The CCS/CCU projects map on ZEP's website has been updated and features a variety of market-ready projects – that will become operational before 2030. [View the map](#). This work is coordinated with ZEP's Communications Group (*Please refer to pre-read 4.b. Communications Group*)

The map is updated on a continuous basis. If you have comments, questions, or to share information about projects, please contact the ZEP Secretariat.



ZEP reports – communications, infographics, webinars

Following approval at AC65, two TWG reports have been published and communicated through ZEP communications channels and at webinars coordinated with the reports. Infographics summarising the focus, key findings, and policy recommendations of the report have also been prepared and shared through ZEP channels.

- *The crucial role of low-carbon hydrogen production to achieve Europe's climate ambition: A technical assessment* – [view report](#) / [view infographic](#)
- *Europe needs robust accounting for Carbon Dioxide Removal* – [view report](#) / [view infographic](#)

Overview of recent ZEP events

‘The crucial role of low-carbon hydrogen production to achieve Europe’s climate ambition: How CCS can enable early and cost-efficient clean hydrogen at scale’

Held on 17 February, this webinar was coordinated with recent ZEP [report](#) ‘The crucial role of low-carbon hydrogen production to achieve Europe’s climate ambition’.

- Nils Røkke, EVP Sustainability at SINTEF and ZEP Vice-Chair, gave a background on low-carbon hydrogen and CCS, the role of hydrogen towards net-zero by 2050, as well as the current policy landscape in the EU.
- Robert de Kler, Senior Research Scientist at TNO and Co-Chair of ZEP’s Hydrogen Working Group, presented the recent ZEP report: the objectives, costs and scale-up of hydrogen production, infrastructure, and key policy recommendations.
- Ana Šerdoner, Industry Policy Manager at Bellona Europa, discussed how hydrogen can provide the most emission reductions from the perspective of production of low-carbon hydrogen and its most climatically advantageous use in industry.
- Dan Sadler, UK Low Carbon Strategy Director at Equinor, brought the UK decarbonisation perspective and discussed Equinor’s projects on both blue and green hydrogen and highlighted the Humber region and the H2H Saltend project.
- Sebastian Scholz, Program Manager Hydrogen Transformation at thyssenkrupp Steel Europe, described the paths towards becoming a climate-friendly steel producer and discussed the developments on blue hydrogen in Germany.

A discussion followed focusing on the role that low-carbon hydrogen can play in Europe’s plan to become climate-neutral by 2050 and what is needed to make this a reality. The following points were raised:

- By fulfilling early hydrogen demand, low-carbon hydrogen will give more time to plan and build the infrastructure required to scale up renewable hydrogen.
- Development of shared CO₂ infrastructure networks between hydrogen producing industrial regions underpins the future of an effective European hydrogen economy. Repurposing existing natural gas infrastructure will be a key factor.
- Without low-carbon hydrogen, 2030 hydrogen ambitions will not be met.

‘Key CCUS projects delivering industrial decarbonisation: How Carbon Capture, Utilisation and Storage will contribute to making European industry climate-neutral by 2050’

On 24 February, as part of EU Industry Week 2021, ZEP held an online event with a focus on key CCS and CCU projects in the industrial transition towards net-zero.

- Lucie Boost, EU Affairs Manager at Equinor, set the scene with a background on CCS and CCU projects in Europe and highlighted policy recommendations that are needed to further support CCS development.
- Jonas Helseth, Director of Bellona Europa and ZEP Vice-Chair, followed up with the NGO perspective on industrial decarbonisation and the climate aspect.
- Carl van der Horst, Director European Affairs at Tata Steel, presented and discussed the path to CO₂-neutral steel production and highlighted the role that CCS, CCU and hydrogen can play.
- Jannicke Bjerkås, Director CCS at Fortum Oslo Varme, focused on Waste-to-energy with CCS in cities, highlighting the project in Oslo that can offer the possibility to achieve negative CO₂ emissions.
- Rob van der Meer, Director EU Public Affairs at HeidelbergCement and ZEP Vice-Chair, presented the perspective of CCS projects for cement production and mentioned several projects, such as LEILAC-1, LEILAC-2 and Norcem.

Key points highlighted in the discussion:

- CCS is needed to make the transition towards climate-neutrality by 2050 just and cost-efficient, preserving jobs and economic growth. This decade is crucial to make CCUS technologies investible/bankable.
- Shared CO₂ transport and storage infrastructure is a not-to-be-missed opportunity for Europe, enabling CO₂ emitters across Europe to connect to permanent geological storage – the EU institutions have a key role to make this a reality.
- It will be crucial to bridge the funding gap – to help industry take the cost-efficient route towards climate-neutrality.
- Active support from legislators at both EU and local levels is key – the people and projects are there, and current projects will provide examples for future deployments.
- Industry and policymakers need to work together.

‘Europe needs robust accounting for Carbon Dioxide Removal’

At an expert webinar on 10 March, coordinated with the recent ZEP [report](#) *‘Europe needs robust accounting for Carbon Dioxide Removal’* the focus was on the principles and the practices and technologies that fulfil the requirements to be considered effective for successful Carbon Dioxide Removal.

- Kristin Jordal, Senior Research Scientist at SINTEF, introduced the four principles for CDR. CDR involves taking CO₂ out of the atmosphere, where it contributes to climate change, and putting it in a location where it will not affect the climate for an extended period of time.
- Mark Preston Aragonès, Policy Advisor at Bellona Europa, presented the recent ZEP report, highlighting the need to account for all GHG emissions associated

with a CDR process and that an assessment must look at all carbon flows to and from the atmosphere.

- Fabian Levihn, Head of R&D at Stockholm Exergi, discussed the potential for Bioenergy with CCS (BECCS) in Sweden.
- Jannicke Bjerkås, Director CCS at Fortum Oslo Varme, spoke about the Waste-to-Energy with CCS project in Oslo, which can help to achieve negative emissions.
- Rob van der Meer, Director EU Public Affairs at HeidelbergCement, showcased the Norcem CCS chain project, comprised of capture, transport and storage of CO₂.

Some conclusions and reflections from the webinar:

- We have an ambitious target for 2030 and climate-neutrality by 2050 – CCS and Carbon Dioxide Removal are needed as a part of the solution.
- We have the technical possibilities – now is the time to get policies and incentives right, to make the technologies investible, to scale up and mature the technologies, and to initiate markets for low-carbon products.
- There is a need to incentivise the capture of biogenic CO₂.
- CDR is an addition to mitigation (not a replacement for it).
- Europe needs clear and robust criteria and a coherent framework for CDR combined with accurate accounting.
- Developing cross-border CO₂ transport and storage infrastructure is crucial to allow CO₂ emitters across Europe to connect to permanent geological storage.

Upcoming ZEP events

'Cross-border, European CO₂ transport and storage infrastructure: A real enabler for European decarbonisation'

23 March, 15:00-17:00 CET – [Register for the webinar](#)

In December 2020, the European Commission presented the revised TEN-E Regulation. At present, the revised regulation does not take into account CO₂ storage and CO₂ transport modalities other than pipeline. However, the large-scale deployment of cross-border, European CO₂ transport and storage infrastructure is key for the EU to reach its 2050 target and is crucial to connect CO₂ emitters to permanent geological storage of captured CO₂.

ZEP is co-organising a webinar with Bellona Europa and Clean Air Task Force to emphasise the importance of cross-border European CO₂ transport and storage infrastructure. The webinar will address:

- The importance of CO₂ infrastructure to connect CO₂ emitters across Europe to permanent geological storage of captured CO₂
- The role of CO₂ storage inter-operability

- Projects of Common Interest

4.b. Communications Group

The **Communications Group** held meetings on 7 January and 4 February. Actions and developments from the discussions include:

- **ZEP CCS/CCU projects map:** ZEP proposed a collaborative approach to compiling data on projects and updating the [projects map](#) on ZEP's website. An Excel file has been created containing data on market-ready CCS/CCU projects in Europe. This file has been shared with the Communications Group to provide input on an ongoing basis. The shared file is the basis for the ZEP map, which will be updated regularly with new information. Both the Excel file and the map can serve as a point of reference for the CCS/CCU community.
- **TEN-E campaign:** The TEN-E regulation is of crucial importance for current and future development of CCS projects in Europe. In coordination with the Communications Group, ZEP has developed a time-limited campaign focusing on key elements of the TEN-E regulation, with the aim to effectively communicate shared messages and reach key policymakers. On 23 March, a [webinar](#) co-organised with Bellona Europa and Clean Air Task Force will take place, focusing on cross-border CO₂ transport and storage infrastructure and the TEN-E regulation.
- **CCS Facts and Information Toolkit:** ZEP will develop a toolkit for the CCS/CCU community to avail of at times when CCS and CCU technologies are criticised in the media. It will serve as a point of reference to determine how we react to criticism, and will include facts and explanations, infographics, and questions & answers material. The Communications Group are also invited to provide input from their perspective.
- **COP26:** ZEP has applied to host a side event as part of COP26. The event would focus on the European perspective of CCS and CCU, with an emphasis on CCS technologies from the perspectives of mitigating climate change, the importance of developing CO₂ transport and storage infrastructure, European industrial decarbonisation, kick-starting a clean hydrogen economy, and carbon dioxide removal, as well as a focus on what is needed to support development and scale-up of CCS in this decade.

The next Communications Group meeting will take place on 25 March.

Agenda item 5: TEN-E Regulation revision – *for information and guidance*

5.a. Updates on negotiations and follow up on ZEP activities

Background

On 15 December, the European Commission [proposed](#) revised rules for cross-border energy infrastructure (repealing EU regulation No 347/2013) in line with the European Green Deal.

The two central ZEP proposals regarding CO₂ transport are not taken into account in the proposal: the introduction of CO₂ storage as well as shipping and other modalities for CO₂ transport other than pipeline. The Commission has indicated some reasons for not including these in the impact assessment, where it says that it is not clear how the inclusion of transport with mobile assets in the TEN-E Regulation would help the implementation of such projects, and that there are no regulatory or administrative barriers in relation to cross-border networks that could be addressed by the provisions in the TEN-E Regulation (comment: referring to movable assets not being seen as networks or interconnections). It is also highlighted that other EU and national financing instruments – such as the Innovation Fund – are available to support CO₂ infrastructure for geological storage and shipping.

ZEP sent a [letter](#) to Commissioner for Energy, Kadri Simson (and issued a [press release](#)) highlighting that for many upcoming and soon-to-be operational CCS projects in Europe, it is essential that an enabling and supportive policy framework is put in place. Failing to recognise all modalities of CO₂ transport in the revision other than pipeline – such as ships, trucks, train, barges, as well as the exclusion of CO₂ storage, an essential component of CCS projects and the real enabler for mitigation – leaves many open questions and risks for any stakeholders looking at investing in CCS.

New extraordinary consultation

ZEP has responded to an extra [consultation on the proposal “Commission adoption for feedback”](#) with the following [document](#) and emphasised:

- Carbon dioxide networks must remain a priority area.
- All CO₂ transport modalities other than pipeline must be recognised.
- CO₂ storage is an essential component of CCS projects and a real enabler for mitigation and must be included in the revised regulation.

- Developing CO₂ transport and storage infrastructure is crucial to kick-start a clean hydrogen economy for the EU, where early large-scale volumes of low-carbon hydrogen are produced and delivered for industrial and residential use.

ZEP's actions will now be on the Council and European Parliament, where views are being established ahead of the upcoming trilogues.

Campaign

As the TEN-E regulation is of crucial importance for the current and future development of CCS projects in Europe, ZEP is running a time-limited campaign focusing on key elements of the TEN-E regulation, developed in coordination with ZEP's Communications Group, in order to effectively communicate our shared messages and reach key policymakers. The aim is to reach and engage with key policymakers in the European Parliament, Council (and the Portuguese presidency), and CCS-leading member states – including, but not limited to, the Netherlands, Belgium, Sweden, Denmark, Hungary, Slovakia, Germany.

The Communications Group will be actively engaged in and support this work. Following an initial discussion at the meeting on 4 February, subsequent meetings will be held to further develop and fine-tune the campaign and action plan: clarifying the messages to be communicated and who should be the sender to the different key stakeholders.

The campaign is underway and its main aim is to effectively communicate to and engage with key policymakers ahead of and during the negotiations on the revised regulation. The Council and Parliament (ITRE, ENVI) will prepare their positions and enter negotiations in the coming months. The Parliament's work is led by the ITRE Committee and all shadow rapporteurs have been included in our outreach plan. The timeline for adoption of the Parliament report is July 2021, with a first discussion in March and a second in April. The possibility to provide amendments and give feedback on the report will be linked to these two discussions.

Following initial discussions with the Communications Group and subsequently with the ERG, ZEP has defined the campaign further:

What, When, How, From whom, and To whom?

- Communication: Outreach material including proposed amendments, coordination of activities with ZEP members and other important stakeholders, engaging through Brussels media, and effectively using social media and all other channels, such as ZEP's newsletter.
- Events: Webinar on 23 March focusing on Cross-border, European CO₂ transport and storage infrastructure (*further details below*)
- Engagement plan: ZEP has been in contact with the Rapporteur, as well as shadow rapporteurs, to exchange view on the revised TEN-E Regulation. ZEP will continue to seek meetings with MEPs.

- Further discussion at upcoming ZEP meetings:
 - Government Group meeting, 25 March
 - Communications Group meeting, 25 March
 - External Relations Group meeting, 26 March

Webinar – Cross-border, European CO₂ transport and storage infrastructure: A real enabler for European decarbonisation

23 March, 15:00-17:00 CET [[link](#)]

ZEP is co-organising a webinar with Bellona Europa and Clean Air Task Force focusing on the importance of CO₂ transport and storage infrastructure. The webinar will address:

- **The importance of CO₂ transport and storage infrastructure**, which connects CO₂ emitters across Europe to permanent geological storage of captured CO₂, can enable clean, competitive energy and industrial sectors, early large-scale clean hydrogen, and deliver significant volumes of carbon emission reductions and removals.
- **The role of CO₂ storage inter-operability**: The EU should aim for storage networks that provide technical back-up to each other. Key issues around this topic are standardisation; how to identify synergies between projects and how these synergies can be explored through the PCI process. In particular, how can CO₂ shipping enable cross-border flexibility and a systems approach, linking the different projects.
- **European CO₂ Projects of Common Interest**: Key, cross-border infrastructure projects linking the energy systems of EU countries and aiming to support the EU in achieving its energy policy and climate objectives.

5.b. ZEP meeting with DG ENER

Participants: Joachim Balke, Katrien Prins and Henriette Nesheim, DG ENER, Lamberto Elderling, Per-Olof Granström, and Giorgia Bozzini ZEP.

ZEP thanks for the possibility to meet, gives short introduction to the platform, and highlights the concerns expressed in previous meetings and documents regarding the exclusion of modalities of CO₂ transport other than pipeline and the absence of CO₂ storage in the category on CO₂ infrastructure.

ENER informs about the following:

- Describes the reasoning behind the decision to keep the provisions on CO₂ infrastructure unchanged: DG ENER ensured that CO₂ could remain one of the categories listed in the regulation, reminding that they had to face some opposition from other stakeholders.

- Reminds that the TEN-E scope is to focus on European infrastructure, thus creating cross-border EU infrastructure or direct systemic links. If CO₂ PCIs can identify legal or regulatory barriers or policy matters linked to cross-border deployment, those should be raised and tackled by the TEN-E.
- The main scope of the TEN-E is not to allocate funding – although the connection with the CEF-Energy instrument exists, the pot is even more limited than last round and there may be other, better suited funding opportunities for CO₂ storage and transport infrastructure. The intention of the Commission was not to extend the list of technologies that could tap into CEF funding.
- Regarding movable assets – whether they form part of the transport infrastructure and what this would mean – the TEN-E has a wide scope and that there is no direct legal barriers to include ‘movable assets’ in TEN-E. More work is needed to understand all the implications of CO₂ transport by ship, and the TEN-E foresees the possibility to carry out studies for CO₂ storage and treats electrolyzers in the same way. There is no funding for work intended for electrolyzers, only studies, reiterating that the TEN-E is not a funding mechanism but a way to tackle legal and regulatory bottlenecks.

Regarding European CO₂ PCIs and blue hydrogen, both ZEP and ENER highlight the good progress for both the Longship and the PORTHOS projects. Regarding low-carbon hydrogen, ZEP stresses that the progress goes hand in hand with the delivery of an integrated energy system, where CCS helps supporting the needs for clean power generation and refers to the upcoming ZEP work stream on CCS for clean, flexible power generation. Existing gas infrastructure will be repurposed for both low-carbon hydrogen and CO₂ transport.

ENER highlights the importance of projects applying for PCI status.

5.c. Update on EU Commission call for applications for candidate CO₂ transport projects (8 March)

The European Commission opened up [a call for proposals until 8 March 2021 for CO₂ transport projects for the 5th EU PCI list](#). The 5th PCI list will be adopted by the Commission by the end of 2021 under the existing TEN-E regulation, while the 6th list is expected to be based on the new revised TEN-E regulation.

Agenda item 6: Low-carbon hydrogen – *for information*

6.a. Hydrogen Alliance and partnership

The work within the Clean Hydrogen Alliance (ECHA) started in February with [the roundtables](#) workstreams. ZEP is a member of the ECHA's roundtable on low-carbon and renewable hydrogen production. View the [list of members](#) of the roundtable on hydrogen production. The roundtable on renewable and low-carbon hydrogen production is chaired by representatives from EDF, ENEL and Ørsted, and facilitated by SolarPower Europe.

The main deliverable is a project pipeline and call for proposals in May 2021. Steps along the way include the concept of 'project archetypes', to be delivered by March 2021 – a 'business case' for EU hydrogen production that will answer key questions regarding eligibility criteria – sustainability, size, timeline for delivery, partner(s) involved, location, investment needs and obstacles or hurdles. Based on the eligibility criteria, a list of market-ready EU hydrogen projects – open to all technologies and ready to be implemented by 2030 – the ECHA project pipeline will be prepared, followed by a call for proposals.

ZEP's role is to highlight the need and value of low-carbon hydrogen. ZEP can help shape the project archetypes, provide input on the eligibility criteria for low-carbon/renewable hydrogen production, submit the list of market-ready low-carbon hydrogen projects, and highlight funding gaps and other obstacles for low-carbon hydrogen production. After discussion in the ACEC, [ZEP submitted a first set of comments](#) on the ECHA project archetypes, eligibility criteria and data that were circulated.

The first CEO meeting took place in the beginning of March. ZEP was represented by its chair Graeme Sweeney, who stressed the following points:

- The basis must be a science-based and technology-neutral approach.
- There is a need for a consistent EU-wide hydrogen terminology and classification, based on life-cycle GHG emissions savings. The eligibility criteria and thresholds to be used in the Clean Hydrogen Alliance work must be harmonised with other EU policies and regulations. It is important not to duplicate – the best recent work on eligibility criteria is the European Taxonomy's TEG report.
- If lifecycle analysis is to be done correctly, carbon accounting becomes key – the carbon footprint of all technologies must be accounted for correctly.
- Early large volumes of hydrogen are necessary to kick-start use in industrial applications.

- It is critical that funding and linked legislation cover all necessary technologies to resolve existing bottlenecks, including CO₂ value chain and storage, as well as hydrogen infrastructure.
- Hybrid solutions – combining methane/CCS with renewables/electrolysers – will take us to the best overall outcome.

Next steps:

- Sherpa meetings, discussion and preparing draft eligibility criteria – March/April 2021.
- Second CEO meeting – April/May 2021.
- EU Hydrogen Forum: presenting the pipeline of market-ready European hydrogen projects – May 2021.

Walburga Hemetsberger, CEO of SolarPower Europe and the facilitator of the ECHA production roundtable, will give a presentation at the AC meeting.

6.b. Short update on European Hydrogen strategy

The European Parliament's ITRE Committee will vote on 18 March to adopt the own-initiative report on 'A European Strategy for Hydrogen'. Several amendments on low-carbon hydrogen produced with CCS have been proposed, and are available for consultation here ([part 1](#), [part 2](#)).

The next step will be the adoption in the plenary, where the vote is scheduled on 26 April.

In December 2020, European ambassadors adopted a set of [conclusions](#) on 'Towards a hydrogen market for Europe'. Notably, the EU ambassadors discussed what kind of support the EU should offer to renewable and low-carbon hydrogen. The conclusions mention the role of 'safe and sustainable hydrogen', leaving the expression rather flexible and open to include nuclear-based and natural gas-based hydrogen with CCS, although recognising the primary role of hydrogen produced from renewable electricity for the EU's decarbonisation.

While adopting high-level conclusions, the Council asks the Commission to further elaborate and operationalise the EU Hydrogen Strategy. The conclusions are available [here](#).

Next steps:

- Discussions will be ongoing at the Parliament and Council to finalise the respective positions in Q2 2021 and enter dialogues after that.

Agenda item 7: EU Taxonomy – *for information*

7.a. Update (delay)

Following the submission of stakeholders' feedback in December, the European Commission is currently assessing the responses before publishing the final delegated acts. While there have been few updates from the Commission's side, some member states have announced a potential veto over the delegated acts if the provisions are not 'relaxed' to allow for less stringent thresholds for transitional activities. The European Parliament also has 'veto power' should the delegated acts not be satisfactory.

It is understood that one of the main discussion points is the threshold applied for mitigation and adaptation activities – 270gCO₂e/kWh. Previously, ZEP indicated that:

The principle underpinning the Regulation on a European Taxonomy for Sustainable Activities is clear – any economic activity making 'a significant contribution' to at least one of the six environmental objectives while doing 'no significant harm' to the others can qualify and be labelled as sustainable. After examining the draft delegated acts on climate change mitigation and adaptation, questions regarding this fundamental assumption remain.

*Different 'mitigation thresholds' for the same economic activity are used in the delegated acts. For example, in the case of '4.7 Electricity generation from gaseous and liquid fuels', the delegated act on climate change mitigation states that, to qualify under the Taxonomy, "life-cycle GHG emissions from the generation of electricity using gaseous and liquid fuels are **lower than 100gCO₂e/kWh**". On the other hand, the delegated act on climate change adaptation proposed a different threshold: "The life-cycle GHG emissions of the activity are **lower than 270gCO₂e/kWh**".*

It is unclear how this would benefit the ultimate objective of the Taxonomy. The two different thresholds risk to undermine the core principles of the Taxonomy when the same economic activity can be evaluated against substantially different thresholds and obtain the same outcome – being defined as sustainable economic activities. There is a risk that some economic activities might choose to apply to the Taxonomy through a more relaxed threshold and qualify, without delivering any climate benefits nor supporting the EU's pathway towards climate neutrality by 2050. This risks to send the wrong signal to the stakeholders that are planning on investing in low-carbon technologies and supporting the decarbonisation – with the danger that 'business as usual' activities continue and that a fragmented policy framework hinders long-term investments in low-carbon technologies such as CCS.

The Commission plans on releasing an updated version of the delegated acts on climate change mitigation and adaptation in April/May 2021. Several stakeholders have engaged on the topic and highlighted:

- Regarding the threshold for electricity production: The governments of Austria, Denmark, Ireland, Luxembourg and Spain [confirm](#) their support for the initial threshold of 100gCO₂e/kWh. Referring to a leaked draft delegated act on climate change mitigation, Euractiv [suggests](#) that the direct GHG emissions for gas-fired power generation should be max. 244gCO₂e/kWh to qualify as “*transitional activities*”;
- The governments of Poland, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Slovakia, Slovenia and Sweden sent a [letter](#) to Commissioner McGuinness to ensure the Delegated Act is in line with the revised Renewable Energy Directive which established a clearly defined set of criteria for sustainability of bioenergy;
- [Reactions](#) from the European Parliament’s ENVI Committee on the delay and design of the delegated acts.

Next steps:

- Publication of delegated acts for climate change mitigation and climate change adaptation: April-May 2021
- European Parliament and Council of the EU will be asked to approve the delegated acts – without possibility of making amendments: Q2 2021.

Agenda item 8: EU funding programmes update – for information

8.a. Horizon Europe and partnerships

The Horizon Europe work programme has not yet been published. The programme and the first set of calls for 2021 and 2022 are expected from the Commission in April 2021.

Vassilios Kougionas, DG RTD, will provide an update at AC66 regarding the Horizon Europe work programme and partnerships.

8.b. Ahead of the second Innovation Fund call for large-scale projects

Call for small-scale projects

On 1 December 2020, the Innovation Fund [call](#) for small-scale projects was launched. The call is open for applications until 10 March 2021. The call targets projects with a capital expenditure between €2.5 and 7.5 million and will provide grant funding of €100 million for innovative clean technologies that will contribute to Europe's green recovery. The call is open for projects in eligible sectors – renewable energy, energy-intensive industries, including products substituting carbon-intensive ones, energy storage and carbon capture and storage – from all member states, Iceland, and Norway.

Follow-up on the first call for large-scale projects

The EU Commission published deep dive [analysis](#) of the applications received for the first large-scale call of the Innovation Fund in October 2020. The 311 applications received for the first call promise to cut approximately 1.2 billion tonnes of CO₂. Of the 311 applications:

- 14 for carbon capture, use and storage
- 204 for energy-intensive industries, out of which 56 in hydrogen
- 58 for renewable energy
- 35 for energy storage

The European Commission has provided [further analysis](#) on the applications received so far and provided an overview of the main technological pathways employed in the projects.

Innovation Fund Consultation on amendment of delegated regulation

ZEP [responded](#) to the Innovation Fund consultation on an amendment of the delegated regulation to enable a choice between a one-stage or two-stage application procedure for the next large-scale call. ZEP's input included a positive reply with reservations and some questions, and further comments ahead of the second large-scale call.

ZEP noted that it would like to see an impact assessment analysing how the proposed amendment would affect the application/selection process. The positive reply is conditional on the following terms:

- That introducing a one-stage process will not create a disadvantage for more complex projects applying in accordance with the two-stage process for being rewarded funding.
- That projects applying for the one-stage process will not be eligible for Project Development Assistance.

Furthermore, in the response, ahead of the second call, ZEP took the opportunity to reiterate its proposed changes referring to the current state of design of the Innovation Fund. View ZEP's previous [input](#).

8.c. Brexit impact on ZEP/SET-Plan work

Following the conclusions of the Brexit negotiations and the final agreement between the EU and the United Kingdom, a new relationship between the two counterparts has been established. From a European perspective, the UK is seen as a third country. The UK's participation in the Horizon Europe programme will continue, but further negotiations are ongoing regarding the UK's financial support and role. The UK is not part of other EU funding programmes, apart from already agreed solutions. Regarding European Projects of Common Interest, benefitting from Connecting Europe Facility funding, infrastructure projects between EU and UK (third country) can apply for PCI status.

The UK is working to set up an Emission Trading Scheme similar system to the EU ETS. There is an intention to see how these systems could be linked and associated. Nevertheless, the UK is excluded from the day-ahead and intra-day electricity markets, the ENTSO-E and ENTSO-G as well as the ACER. However, the renewed EU-UK offshore cooperation and the many interconnections planned and Wind energy cooperation crossing the North Sea will most certainly lead to closer energy collaboration.

ZEP will revisit the issue of how Brexit will impact the overall development of CCS and CCU in Europe at future meetings, based on information from projects, as project developers will have the best practical experience.

8.d. CCUS SET-Plan update

Following the Plenary at the end of October 2020 and the endorsement of the [updated CCUS SET-Plan Implementation Plan targets](#), this was communicated with the SET-Plan Secretariat (European Commission). We are still awaiting formal endorsement.

The SET-Plan Secretariat will soon release snapshots of the IWGs work with a focus on what was included in the annual reporting. This will be published on the new SETIS website.

In December 2020, the following reports have been finalised and are available on the SET-Plan IWG9 website:

The CCUS SET-Plan study by UCL – [Review of Carbon Capture Utilisation and Carbon Capture and Storage in future EU decarbonisation scenarios](#). Among the conclusions:

- CCS is essential for Europe to reach net zero CO₂ emissions by 2050.
- Europe needs a large-scale CCS industry to meet future targets.
- In the 1.5°C scenarios, the median CO₂ captured by CCS is 230-430 MtCO₂/yr in 2030, increasing to 930-1200 MtCO₂/yr by 2050 – there is a significant range across these scenarios, implying some key uncertainties.
- Bioenergy with CCS (BECCS) plays a key role in the modelled scenarios for Europe.
- Models indicate significant annual investments are needed in CCS in Europe until 2050, amounting to \$14 billion (median) in scenarios consistent with 1.5°C.
- This review does not give a clear consensus if and how CCU can play a role in European decarbonisation.

The report '[Key enablers and hurdles impacting CCS and CCU deployment](#)'. Key messages brought forward in the executive summary are the following:

- The European Green Deal was a gamechanger. It will be crucial to ensure that the Green Deal supports further development of CCS and CCU projects in Europe, overcoming current barriers, securing more announcements such as the Longship project and funding awarded through the Connecting Europe Facility for Energy (CEF) programme to European CCS and CCU projects (Porthos, Athos, Antwerp CO₂, Acorn Sapling, Ervia).
- This report identifies and discusses four categories of enablers and hurdles: technical, policy and regulatory, funding and business models and social acceptance, drawing from the expertise of the first commercial CCS and CCU projects that are currently being developed in Europe.

- To support these recent positive developments and encourage more, R&I activities should be continued to address technical challenges along the value-chain, reduce the costs of the technologies and improve efficiency.
- Social acceptance challenges remain and will require the action of a wide group of societal stakeholders to be addressed.
- To summarise, testing and deploying these technologies at scale during the 2020s will be crucial to Europe's success in achieving net-zero by 2050.

CCUS roadmap 2030

To achieve Europe's target of reaching climate-neutrality by 2050, and the increased ambition for a 55% GHG emissions reduction by 2030, the role of CCS becomes even more crucial for a cost-efficient transition, preserving jobs, boosting economic growth, and diversifying supply chains into new industries and businesses. The next decade will be key to support early deployment of CCS and CCU technologies, to establish their foundations to become investible, and to mature the technologies at scale.

At the end of 2020, ZEP presented a preliminary, yet well-founded indication that 50 MtCO₂/yr needs to be abated by CCS in 2030; [view ZEP's endorsed paper](#). This indication, based on companies' current plans, may be seen as very ambitious but will most certainly be an underestimation of what will actually be needed. The CCUS SET-Plan Plenary endorsed this volume and updated the Implementation Plan targets.

To successfully communicate a clear message and convince policymakers, the work must be completed thoroughly with in-depth strategies and action plans. The CCUS roadmap 2030 will be an important tool to support the narrative with a view to the climate neutrality target by 2050 and provide clear information to both EU and member state policymakers, as well as projects, companies and the finance community, about the role of CCS and CCU for the transition. The roadmap will also consider what will be needed to make this happen, including: Targets and strategies, policy frameworks, business models, R&D&I needs, enablers and barriers to tackle.

The outline was discussed with the Strategic Coordination Group (SCG). The work is ongoing, with the aim to present a report outline at the next Plenary meeting in April.

Agenda item 9: Closing remarks and next meeting

9.a. Next ZEP meeting dates

24 March 2021 – First ACEC strategic seminar

13 April 2021 – ACEC April meeting

18 May 2021 – ACEC May meeting

16 June 2021 – AC67 meeting