

# **ZEP 65<sup>th</sup> Advisory Council meeting**

## **16 December 2020, 10:00-13:15**

### **Agenda Item 1: Introduction and welcome**

#### ***1.a. Virtual meeting instructions***

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The ZEP AC65 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 (10:00-13:15 on Wednesday, 16 December). The Outlook invitation contains a link to Microsoft Teams to join the meeting. If you have not received it, please contact the ZEP Secretariat.
- The Chair will let the presenter for each agenda item finalise his/her presentation before giving the floor to other participants.
- If you have a question, use the chat function (if you have not used it before, you will find a button at the bottom of the screen and the chat function will open up in a window on the right-hand side of the screen).
- In order for the Chair to organise the speaking order, please use the following vocabulary when you have a question:
  - “Chair: question to NN”, if you have a written question for the Chair to highlight, or
  - “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. AC65 meeting agenda***

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The agenda for the 65<sup>th</sup> meeting of the Advisory Council is appended as pre-read 1.b.

#### ***1.c. AC64 meeting minutes***

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The minutes from the 64<sup>th</sup> meeting of the Advisory Council, which took place on 23 September 2020, are appended as pre-read 1.c.

### ***1.d. ACEC October meeting minutes***

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

### ***1.e. ACEC November draft meeting minutes***

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

### ***1.f. ZEP meeting dates 2021***

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The proposed ZEP meeting dates for 2021 are as follows:

#### **ZEP Advisory Council – meetings to take place at 10:00-13:00 CET**

- 17 March
- 16 June
- 22 September
- 15 December

#### **ZEP Advisory Council Executive Committee – meetings to take place at 9:00-11:00 CET**

- 12 January
- 16 February
- 13 April
- 18 May
- 13 July
- 17 August
- 19 October
- 16 November

### ***1.g. Results of the vote for new ZEP Advisory Council members***

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Fortum Oslo Värme has applied to become a member of ZEP. Below is a short description of the Company. A secret ballot vote by AC members will take place to elect Jannicke Bjerkås as the AC representative of Fortum Oslo Värme. The result of the vote will be announced at AC65.

ExxonMobil has applied to become a member of ZEP. Below is a short description of the company. A secret ballot vote by AC members will take place to elect Robin Clowes as the AC representative of ExxonMobil. The result of the vote will be announced at AC65.

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### **About Fortum Oslo Värme**

Fortum is a leading clean-energy company developing and offering solutions for their customers in electricity, heating, cooling, as well as solutions to improve resource efficiency. They also provide services for the power generation industry and solutions for consumers so that they can be smarter in their energy choices.

From August 2017, they produce the district heating in Oslo through the company Fortum Oslo Värme. They account for about 20% of the district heating need in Oslo, and in 2018, produced 1.7 TWh of district heating.

Fortum Oslo Värme's activities are an important tool for Oslo to reach its ambitious environmental- and climate goals. The company is an important part of the circular economy, while energy recovery of residual and commercial waste for electricity and district heating is reducing the city's emissions of greenhouse gases and local pollution.

For more information: Fortum Oslo Värme's [website](#).

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### **About ExxonMobil**

ExxonMobil Corporation, one of the largest publicly traded international oil and gas companies, uses technology and innovation to help meet the world's growing energy needs. They hold an industry-leading inventory of resources and are one of the world's largest integrated refiners, marketers of petroleum products and chemical manufacturers.

Over the last 135 years, ExxonMobil has evolved from a regional marketer of kerosene in the U.S. to one of the largest publicly traded international oil and gas companies in the world.

ExxonMobil has been helping to meet energy demand in Europe for over 135 years. They are one of Europe's largest suppliers of oil and gas, a major refiner of crude oil for fuels and lubricants, and one of Europe's leading petrochemical companies, employing over 14,500 people across 16 European countries.

For more information: ExxonMobil's [website](#).

# ZEP 65<sup>th</sup> Advisory Council meeting

## 16 December 2020, 10:00-13:15

### Meeting agenda

Item	Lead Presenter	Time
<b>1 Introduction and welcome</b>	Graeme Sweeney	10:00-10:10
<b>2 ZEP planning for 2021 – for approval</b> <ul style="list-style-type: none"> <li>Work programme, budget, and ZEP grant extension</li> </ul>	Per-Olof Granström	10:10-10:35
<b>3 Horizon Europe and CCUS SET-Plan – for information</b> <ul style="list-style-type: none"> <li>Horizon Europe 2021-2022 and partnerships</li> <li>SET-Plan – updated CCUS targets</li> </ul>	Vassilios Kougionas, DG RTD	10:35-10:50
<b>4 EU Taxonomy – for information and guidance</b>	Clara Solzbacher, DG FISMA	10:50-11:10
<b>5 Carbon Dioxide Removal – for information and approval</b> <ul style="list-style-type: none"> <li>Presentation/approval of TWG CDR report</li> </ul>	Fabien Ramos, DG CLIMA TWG Co-chair	11:10-11:30
<b>6 ZEP actions on low-carbon hydrogen – for information and approval</b> <ul style="list-style-type: none"> <li>Presentation/approval of TWG Hydrogen report</li> </ul>	Christian Weinberger, DG GROW TWG Co-chair	11:30-11:50
<b>7 Directive on the geological storage of CO<sub>2</sub> (CCS Directive) – for discussion and guidance</b>	Chris Gittins, TAQA	11:50-12:10
<i>5-minute break</i>		
<b>8 Global Status of CCS 2020 – presentation</b>	Guloren Turan, GCCSI	12:15-12:30
<b>9 Networks update</b>	Co-chairs / ZEP Secretariat  Katrien Prins, DG ENER	12:30-12:50
<b>10 External Relations Group update</b>	Co-chairs / ZEP Secretariat	12:50-13:10
<b>11 Closing remarks and next meeting</b>	Graeme Sweeney	13:10-13:15

## 1.c. AC64 meeting minutes

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### MINUTES

#### ZEP 64<sup>th</sup> ADVISORY COUNCIL MEETING

23 September 2020, 10:00-13:00 CET

Virtual meeting

#### 1. Introduction and welcome

Chair, **GS**, verifies quorum and welcomes participants. **GS** moves to adopt AC64 agenda – agenda is adopted.

**GS** thanks **Helen Bray** of Shell for her contribution to ZEP and the ERG and wishes her good luck in future endeavours.

**GS** congratulates the achievement of a key milestone in SET-Plan – delivery of integrated projects in Norway, ‘Longship’. He notes that a press release has been sent out from CCUS SET-Plan / IWG9. He notes the leading role that is played by the cement industry.

**GS** moves to approve draft meeting minutes from AC63 and ACEC July and August – all approved. **GS** notes that actions from these meetings will be addressed in agenda item 2.

#### 2. Secretariat update

**GS** gives the floor to **POG**, who thanks Norway and congratulates Europe and the climate, regarding the ‘Longship’ project.

On the finance update he notes that the income follows the forecast while the expenditure is lower than budgeted due to the pandemic. The forecasted equity position at the end of the year is approx. EUR 200,000, which means that the target, set in order to handle the upcoming gap between this and the next ZEP grant, has been reached. **POG** also mentions the CCSA-ZEP service agreement, referring to the report on provided services is under item 8.

From ZEP Secretariat, **POG** thanks Helen Bray for her contributions and wishes her the best of luck. He notes that an ERG co-chair position has opened, goes through the role of the ERG and indicates that a call for applications will be sent out to all AC members.

**POG** shortly refers to the actions from AC63: ZEP will continue to report on the development of the JRC Clean Energy Infrastructure project; Under NWT, ZEP will during the autumn set up a group to gather standardisation issues linked to the CO2 cross-border PCI projects; The input to DG CLIMA on the Innovation Fund has been submitted and discussed in several meetings with the Commission.

**GS** notes that the role of the ERG co-Chair is vital and encourages interested AC members to apply.

### 3. ZEP planning for 2021

**POG** presents the proposed plan for ZEP during 2021 in order to manage the probable gap between the end of current ZEP grant and the beginning of the next. He highlights the large amounts of policy initiatives impacting CCS and CCU over the coming years and goes through the basis for the plan, including the surplus of funds secured in ZEP and the ZEP grant and the need for an extension. **POG** also highlights the proposal to prepare the grounds for a future possible inclusion of a Projects Network in parallel with NWT and NWPE within the ZEP structure.

**POG** seeks the endorsement from the AC to continue the planning as presented, formally apply for an extension of the ZEP grant, to prepare a 2021 budget for AC65 and to prepare proposed amendments of the ZEP bylaws in order to have a possibility to introduce a Network for projects in ZEP structure.

**SC** asks how this refers to the existing CCUS Projects Network under DG ENER and how coordination is supposed to be done. **PH** asks how this network under ZEP would be different to existing CCUS project network?

**POG** notes that coordination and knowledge-sharing between projects but also including the work on technology and policy is crucial. He highlights the increasing interest for upcoming EU CCS and CCU projects, which now is even stronger with the Climate Law and post-pandemic recovery. **POG** highlights that a ToR will be brought forward in due time. **GS** adds that there is time for further discussion, aiming for the end of 2021. He also mentions that it is good contingency planning to enable this function to continue within a consolidated ETIP and IWG9, to be able to assist the Commission in the best possible way. How this will be done will rely on Commission. **PH** notes that by end of 2021, the CCUS Projects Network will come to the end of its contract. **LE** raises question on the extension and **POG** responds that this will be up to DG RTD.

**GS** asks the AC for approval of the plan, including the extension of the grant, preparation of the budget and proposed amendments of the ZEP bylaws to have the possibility introduce a Network for projects in ZEP structure. The motion is approved.

### 4. Climate law – EU recovery

**GS** gives the floor to **PH** for an update. **PH** discusses the Green Package, 55% emissions reduction target and revision of a number of legislative instruments. CCUS is mentioned in one context, namely industrial emission reductions, where the assessment of current policies indicates emission reductions of 25% by 2030 can be done. He highlights that CCUS will have to be proven and operational in a few places at least in the EU. It mentions in the same context also hydrogen. This defines our role, the role of ZEP, Horizon Europe and Innovation Fund – what will have to be done in CCUS during this decade. **GS** notes that vast number of programs for ZEP and its Networks to be working on and we need to also coordinate with how the Commission sees this, in order to be effective in huge amounts of change.

**SC** highlights that carbon accounting and certification will need to be strengthened as it will play a critical part going forward, and **GS** echoes her comments, recalling the outcomes of the European Sustainable Taxonomy.

**GS** moves to SET-Plan steering group topic and gives floor to **AC** to discuss what will happen to the CCUS input and impacts for conference in November. After a short background, **AC** notes the importance of adapting the SET-Plan to reflect the new political priorities such as the European Green Deal, recovery plan, and next generation EU, recovery and resiliency.

On the SET-Plan conference, **AC** says a stronger link between the work of the SET-Plan and IWGs and energy initiatives is at the core of this year's conference. Specifically, she thanks IWG9 and ZEP for the input submitted on the role of CCUS in the energy system integration. She informs that the programme design is ongoing, that the next SET-Plan steering group will take place on 21 October and that she will share more information with the IWGs in the coming weeks. The aim is to present at the SET-Plan conference the work of the IWGs related to the main climate and energy initiatives of the European Commission and to discuss how the SET-Plan can contribute to the European Green Deal.

## 5. Hydrogen Strategy and Clean Hydrogen Alliance

**GS** gives the floor to **FD** for introduction. **FD** adds that he is speaking on behalf of Tudor Constantinescu, who sends his apologies that he cannot not attend. **FD** gives an introduction to the EU Hydrogen Strategy. **GS** questions **FD** on the promotion of CO<sub>2</sub> threshold based clean hydrogen definitions, alongside LCAs. **FD** replies there are further works on certification and definition of this threshold. He also mentions that the focus for low-carbon hydrogen is for the short and medium term.

A session on questions and answers follows and **GS** notes that further questions are welcome in writing. **GS** finalises by highlighting the need to continue to press the roles and definitions described, such as the crucial need for new blue hydrogen capacity.

**GS** moves to Clean Hydrogen Alliance as a decision is required. He proposes that ETIP ZEP shall join the Hydrogen Alliance and asks for support from the AC. He notes that an application

has been submitted on advice from ACEC and is looking for endorsement for this application. **GS** acknowledges agreement of **AC**. He thanks Titas Anuskevicius from DG GROW, who is present and ready to answer possible questions.

## 6. Innovation Fund

**MV** gives an update on the first call of the Innovation Fund, that will close on 29 October. She says that DG CLIMA is starting to prepare evaluations and briefing material for evaluators and recalls the Clean-tech financing conference on 25 September, which aims to mobilise private and public co-investors in low-carbon technologies. In the meantime, DG CLIMA is also preparing a call for small-scale projects, which may be of interest for CCU, to be launched on 1 December.

Regarding the Taxonomy, **MV** mentions that capture is included in industry while transport and storage are separate activities, that there are discussions on retrofitting of pipelines for CO<sub>2</sub>, and that all activities on CO<sub>2</sub> transport are in one place. She concludes that it seems to be going well for CCS.

**GS** invites **LE** to comment on the first call of the Innovation Fund from a project perspective. **LE** notes the positive momentum around the Norwegian full-scale CCS project, and states that the Innovation Fund is an opportunity to show interest for CCS going forward. He looks forward to seeing the learning from the first call. **MV** confirms that adjustments will be made in the second call.

**GS** receives a question on Sustainable Finance Taxonomy Platform, refers to the pre-reads and that the first meeting of the Taxonomy Platform is foreseen in November. ZEP is taking forward work on CCU, biomass and waste-to-energy to the Taxonomy Platform. Short Q&A followed.

Following up with a question on the Innovation Fund, **JH** refers to the letter sent from the European Commission to the Norwegian ambassador regarding the positive answer to accept shipping of CO<sub>2</sub> in the Northern Lights project in the EU ETS. He asks if the EC is planning to announce clarification on the inclusion of CO<sub>2</sub> shipping into the EU ETS. **MV** answers that her colleagues responsible for monitoring and reporting, will make an announcement at the climate change committee, possibly in October, explaining to the member states that this is a possible approach. She clarifies that this would not change the legislation, but rather be an interpretation of the current rules. **JH** asks if it would be possible to get a written clarification prior to that meeting. **MV** responds that if any projects need such clarification, they must request this project by project. All projects are quite aware that this is possible. **GS** notes that it is clear, a procedural matter but shouldn't be difficult to get the same result. **JH** highlights that ZEP may want to send this information to the Government Group.

## 7. CCS/CCU pathway to 2050



**GS** moves to item 7 and gives the floor to **IB**, who presents the first draft findings from the study (the slides are appended for information). **LW** gives a short background on the study and holds a short Q&A session. On **WG's** question, **IB** explains that there has not been a full analyses regarding differences in model assumptions. **FN's** comment regarding higher cost in scenarios with less CCS/CCU deployment is noted and written comments to the presentation is welcomed.

**GS** thanks for the comments and indicates that the IWG9 will hold a Strategic Coordination Meeting on 1 October to discuss the draft findings of the study. The slides presented today will be circulated to the attendees for further comments.

## 8. Horizon Europe/partnerships

**GS** gives the floor to **VK** to give an update on the Horizon Europe and the partnerships and to also include the last Horizon 2020 Green Deal call. **VK** notes that preparations are ongoing for Horizon Europe and that on 28 September, the committee will discuss the Commission proposals and the partnerships. **VK** highlights that there are five proposed topics for CCUS, although he cannot provide details, but hopes that he can provide details later in the year. He mentions that the first calls for proposal in the first half of 2021.

**GS** notes the recently released Horizon 2020 Green Deal call and highlights that **VK** and **PH** will be contacted bilaterally on this call.

**GS** moves to CETP SRIA and gives the floor to **POG**. **POG** thanks the task force for their good input when preparing the CCUS input paper and refers to the pre-reads. document. To highlight the way forward, **POG** invites **MB** to speak about the meeting last Monday, as the process forward is up to the member states. **MB** notes that she has been appointed by the Norwegian ministry to be the contact person for the development of the CETP SRIA. She highlights that the meeting on Monday was well attended by member state representatives and that the work of compiling and restructuring the material into the final SRIA now has started. **GS** thanks the parties involved for good work and asks for continued good work.

## 9. Updates from Networks and ERG

**GS** gives the floor to **LE** for the NWPE update. **LE** provides update on the last meeting in June. The activity focused on consultations such as TEN-E, Hydrogen Roadmap, Energy System Integration and EU ETS MRR. A number of new consultations are coming up, an important one is carbon border adjustment will be discussed at the next NWPE meeting in October.

**GS** gives the floor to **FN** for NWT update. **FN** gives brief update on the network:

- Over the summer, several reports were completed and are available on the ZEP website
- Preparation has begun for the next NWT meeting on 5 November and the current work in NWT includes providing input on CETP SRIA from ZEP.
- The TWG CDR is also working to provide input on CCU, biomass with CCS and waste-to-energy with CCS to the EC and Taxonomy Platform. The final draft of the CDR report is expected for the AC65 meeting in December.
- NWT will also be setting up a group on standardisation issues later this year.
- The TWG Hydrogen is working on a report. **AH** adds that the group is considering topics such as pipelines, hydrogen projects, etc. and will present the draft report in November at the ACEC meeting. The final approval to be given at the AC65 meeting in December.

**GS** gives the floor to **JH** for the ERG update. **JH** gives a brief summary of ERG calls and notes some topics from engagement plan meetings with EC policymakers. After that, **MK** gives an update on the communication's work. **MK** summarises the key communications activities including the revised ZEP members newsletter, the setup of a Communications Information Group, update to the ZEP website and infographics prepared for the website and for communication purposes.

**GS** notes no further questions or comments.

## 10. Closing remarks and next meeting

**GS** reminds of the December meeting date – 16 December.

**LE** raises a point from agenda item 9 regarding the communications update, noting that ZEP communicates its support for net-zero by 2050 in responses to consultations and external communication. **GS** recalls that the AC has previously agreed with the statement and **POG** adds that this is in line with the action from the 2019 December AC meeting.

**GS** thanks all for participating and closes the meeting.

## List of participants

ZEP AC representatives		
1	Dr Graeme Sweeney	Chairman of ZEP
2	Isabelle Czernichowski	BRGM
3	Stuart Haszeldine	University of Edinburgh (SCCS)
4	Frederic Hauge	The Bellona Foundation ( <i>Proxy to Jonas Helseth</i> )

5	Liz Rogers	BP ( <i>Proxy to James Todd</i> )
6	Florence Delprat-Jannaud	IFP Energies Nouvelles
7	Chris Littlecott	E3G ( <i>Proxy to Joseph Dutton</i> )
8	Nils Røkke	SINTEF ( <i>Proxy to Marie Bysveen</i> )
9	Charles Soothill	Sulzer
10	Filip Neele	TNO Energy
11	Rob van der Meer	HeidelbergCement
12	Lamberto Eldering	Equinor
13	Ward Goldthorpe	Sustainable Decisions
14	Allard Castelein	Port of Rotterdam ( <i>Proxy to Stijn van Els</i> )
15	Stanislas van den Berg	Total
16	Stijn Santen	EBN
17	Syrie Crouch	Shell
<b>External speakers</b>		
18	Peter Horvath	European Commission
19	Alessia Clocchiatti	European Commission
20	Titas Anuskevicius	European Commission
21	Maria Velkova	European Commission
22	Vassilios Kougionas	European Commission
23	Fabio Domanico	European Commission
24	Dr Isabela Butnar	UCL Institute of Sustainable Resources
<b>Guests</b>		
25	Carl Demare	ArcelorMittal
26	Lina Strandvåg Nagell	Bellona
27	Ceri Vincent	BGS
28	Martin Towns	BP
29	Lee Beck	CATF
30	Anastasios Perimenis	CO2 Value Europe
31	Pietro Gimondo	CSM
32	Graham Bennett	DNVGL
33	Karl Smyth	Drax
34	Joseph Dutton	E3G
35	Jorge Martinez	Endesa
36	Daniele D'Angelo	Eni
37	Irma Paceviciute	Equinor
38	Brian Murphy	Ervia
39	Valentin Moens	ETN
40	Félix Mailleaux	ETUC
41	Jan Steinkohl	European Commission

42	Antonella Sorpranzetti	Exxon Mobil
43	Robin Clowes	Exxon Mobil
44	Paola Mazzucchelli	F. Circe
45	Ståle Aakenes	Gassnova
46	Eve Tamme	GCCSI
47	Angus Gillespie	GCCSI
48	Caterina de Matteis	IOGP
49	François-Régis Mouton	IOGP
50	Arthur Heberle	Mitsubishi Power Europe
51	Stig Svenningsen	Norwegian Ministry of Petroleum and Energy
52	Charlotte Elvsaa	Norwegian Ministry of Petroleum and Energy
53	Bram Sommer	Port of Rotterdam
54	Martijn van de Sande	RVO
55	Mehmet Onal	Shell
56	Christian Schwarck	Shell
57	Kristin Jordal	Sintef
58	Enrico Maggio	Sotacarbo
59	Chris Gittins	Taq Global
60	Jen Cronin	UCL Institute of Sustainable Resources
61	Fred Selhorst	Victrol
62	Chris Davies	
63	Vincent Basuyau	
64	Svante Söderholm	
65	Tom Mikunda	Netherlands
66	Paul Bonnetblanc	France
<b>ZEP Secretariat</b>		
	Giorgia Bozzini	ZEP Secretariat
	Per-Olof Granström	ZEP Secretariat
	Meghann Kissane	ZEP Secretariat
	Luke Warren	CCSA

## 1.d. ACEC October meeting minutes

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### 1. Introduction

**Chair, GS**, opens the meeting by declaring quorum and confirming proxies. **GS** welcomes participants and notes no changes to the agenda or minutes.

### 2. ZEP activities update

**POG** gives an update on planning for 2021, highlighting that with the preparations done, ZEP will be able to continue the strong impact through next year. He mentions that the next ZEP grant will possibly start in January 2022 and that discussions with the Commission regarding a 6-month extension of the ZEP grant is ongoing. **POG** mentions that the Commission in the Horizon Europe work programme is looking at either a joint call including both ZEP and IWG9, as originally proposed, or a call with all ETIPs together – leading to separate grants for the different technologies.

**LE** asks what it would mean to have both ZEP and IWG9 in the same grant and if one single actor could take this grant on. **POG** answers that there are many benefits to doing this from one single actor and that a joint grant could work well. Even if the focus is different, we have seen many parallel workstreams that could be streamlined. **GS** adds that maybe we will have ETIPs and IWGs separated and with no support for IWGs.

**LW** mentions that previously there has been a conversation between DGs RTD and ENER about the merits of overlaps between IWGs and ETIPs, they will probably look for consistent approach across different sectors. **GS** notes that we may return to this topic over the next months and that there are a number of things in play including the CETP.

**POG** updates on the upcoming 30 October IWG9 Plenary, where two crucial items will be presented: the modelling exercise and updating the IWG9 targets. He mentions that the draft study will be circulated ahead of the plenary, including a number of good takeaways. **LW** goes through the takeaways. **POG** mentions the need to update the IWG9 CCUS targets but that we do not have all needed information yet. The Market-ready projects list serves as the best available basis regarding projects and needed CCS volumes by 2030. An estimation built on this shows the need for up to 50 Mtpa of CO<sub>2</sub> by 2030. In the original plan from 2016, the SET-Plan had estimated 15 Mtpa. **POG** highlights that the targets must be both realistic and ambitious. He gives a brief overview of the targets and linked questions and mentions that these now are discussed within IWG9 ahead of endorsement at the Plenary.

**GS** notes that the ACEC can provide insight and endorsement.

**LE** notes that 50 Mtpa seems challenging from today's starting point but could be an undershoot given the climate ambition. He also wonders if ZEP should endorse the needed volumes. **JH** comments that realism in numbers is difficult and wonders if this scenario is robust enough. **GS** notes that ZEP has done this in the past with a high number that is now out of date. He also highlights that we have to extrapolate from where we are, and we should be ambitious. **RvdM** points out that we need to have ambition based on facts, also referring to information from IEA, EU Clean Planet for all, etc. **JH** notes using numbers from members. **NR** agrees with **RvdM** on the need for realistic volumes. He notes that 50 Mtpa sounds ambitious considering the time it takes to qualify a storage site.

**GS** summarises that the 50 Mtpa is an ambitious extension of current activity set, that we shall proceed on the basis outlined and also provide information that in due course it will need to be more ambitious. He notes no objections and highlights that we need to put together a paper quickly, if possible to send for review before the Plenary.

### 3. Hydrogen

**GS** notes the minutes from the meeting between ZEP and DG RTD, highlighting among other things the budget constraints, that the clean hydrogen partnership is all about renewable hydrogen while there is an opening for blue hydrogen in the industrial calls in Horizon Europe and Horizon 2020 Green Deal Calls. **GS** adds that ZEP has written to DG RTD, that they should clarify that these calls are open to CCUS in general and blue hydrogen in particular. He also notes that we should still be pushing for hydrogen within CETP/SRIA in general and for blue hydrogen to be included.

**GB** gives a short update on ZEP's activities on hydrogen. The Hydrogen Strategy was announced in July, prompting discussion in the ZEP community. It acknowledged the role of blue hydrogen but did not specify volumes, production targets or investment range. The Clean Hydrogen Alliance aims to prepare a pipeline of market-ready projects including blue and green hydrogen. ZEP has become a member of the Alliance. The first matchmaking event will be in November for projects to exchange on their specificities. A kick-off event at the end of November, EU Hydrogen Forum.

**NR** notes that CETP has a perspective on blue hydrogen and **MB** adds that she does not see a reason why blue hydrogen should not be included, but member states must sufficiently support it. **GS** notes that proper coordination between Norway, the Netherlands and the IWG9 and the point that the CETP should include blue hydrogen is important and endorsed by ACEC. **GS** notes that ZEP will follow-up with DG RTD and that further actions should be raised with **POG** and **MB**.

### 4. Should ZEP take on a report on carbon negative biomass?

Referring to the pre-reads, **RvdM** notes that geological stored Biomass emissions are not seen as CO<sub>2</sub> negative from a EU ETS standpoint. He asks the ACEC if ZEP should position itself in this discussion with clear message: Is ZEP able and willing to draft a paper on the balance between scientific, political, ethical questions on sustainability?

Referring to Biomass, **GS** mentions that ZEP has written to DG CLIMA on this and that ZEP has an outstanding task to present something on this to the Sustainable Finance Platform. He proposes to put the two items together and engage a broader group of stakeholders in the work. **GS** asks ACEC for comments.

**NR** notes that ZEP needs to take on board the nature crisis as a boundary for reaching climate targets, referring to BECCS and biomass in terms of land and nature use, services, and biodiversity. He also highlights the need to look more closely into seaweed for CDR purposes. **LE** highlights the complexity around Biomass and sustainability and refers this discussion to the upcoming EU ETS review. **JH** adds that incinerated waste with CCS, counting as negative emissions is premature. ZEP's focus should be on making sure the CO<sub>2</sub> is treated as CO<sub>2</sub> regardless of source and an incentive not to put CO<sub>2</sub> into the atmosphere.

**RvdM** summarises that ZEP should draft a paper on this topic. **GS** confirms that there is agreement for ZEP to prepare a paper on this and that **RvdM** will come back with material.

## 5. Updates from Networks and ERG

**LE** gives NWPE update, noting meeting on 15 October with very good attendance but less discussion and engagement in meeting. He mentions the presentations on CEF funding, Porthos update and methane emission legislation.

**LE** raises an item for discussion with the ACEC: an enquiry from TAQA regarding updating the CCS Directive. **LE** does not see this as beneficial right now for ongoing projects. TAQA claims current regulation is causing too many barriers for further development of CCS.

**GS** notes that the current ZEP position is not to support a review of the CCS Directive. He asks if we should take the view that we see no reason to revisit this or that Chris Gittins could present the case at the AC and ZEP prepares a piece to say why we are not recommending this and ask AC to decide? **LE** agrees on opportunity for member to make their case and seek a decision from the AC. **GS** asks and ACEC approves.

**AH** gives an NWT update, and notes report proposal from **RvdM** in item 4 and that it would be helpful to have an indication of the benefit of biomass. On TWGs, progress on the technical reports are very good. The CDR report aims to work out a deeper view on upstream and downstream emissions. He mentions the discussion on W-t-E and also



highlights the need for more industrial examples for carbon removals. **AH** says that the hydrogen report is on track to be finalised by the ACEC November meeting and to be approved at AC65. **GS** notes that the hydrogen report is awaited with great interest for setting targets in IWG9 and CETP conversation.

**GS** gives floor to **MK** for communications and outreach update. **MK** highlights upcoming ZEP communications and outreach initiatives for Q4 2021, including the kick-off meeting of the ZEP informal Communications Information Group, ZEP organising a session at the CCUS 2020 conference, the plan for ZEP webinars in 2021, and continuing with new infographics and ZEP bimonthly members newsletter.

**GS** mentions that ZEP has received four candidates for the nominations for ERG co-chairs, from Port of Rotterdam, Shell, EBN and Equinor. ZEP bylaws encourage diverse representatives from various constituencies and a minimum of two co-chairs. **GS** proposes that ZEP seeks to appoint two new co-chairs. We can wait until December for AC65, but ACEC can highlight the timeliness and would ask AC members to vote for candidates and take the two leading candidates into the ERG positions. ACEC approves.

## 6. Closing remarks and AOB

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

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### Participants – ACEC 21 October, 9:00-11:00 CET

Dr Graeme Sweeney	Chair
Rob van der Meer	HeidelbergCement
Jonas Helseth ( <i>Proxy from Frederic Hauge</i> )	Bellona
Lamberto Eldering	Equinor
Arthur Heberle	Mitsubishi Power Europe GmbH
Nils Røkke	SINTEF ( <i>attending 9:00-10:15</i> )
Marie Bysveen ( <i>Proxy from Nils Røkke</i> )	SINTEF ( <i>attending 10:00-11:00</i> )
Charles Soothill	Sulzer
Per-Olof Granström	ZEP
Giorgia Bozzini	ZEP
Meghann Kissane	ZEP
Luke Warren	CCSA



## *1.e. ACEC November draft meeting minutes*

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### **1. Introduction**

**Chair, GS**, opens the meeting by declaring quorum and confirming proxies. **GS** welcomes participants and notes no changes to the agenda or ACEC October minutes. Chair moves to proposed AC and ACEC meeting dates for 2021. Chair asks ACEC to confirm if dates/times suit them.

**Action:** Secretariat to send AC65 meeting invitation/save the date. ACEC members to indicate to the secretariat within a week if proposed dates do not suit them.

### **2. AC65 agenda**

**GS** notes that input/guidance is required here and gives the floor to **POG**, who discusses the agenda and the topics to be covered at AC65. **GS** opens the floor for comments. **LE** highlights that when inviting the EC, we should give them ample time to present and interact. **GS** highlights that with the proposed break and the possibility to decrease the time for the AOB and the network updates, we have good possibilities to give extra time for presentation and interaction.

### **3. ZEP planning for 2021**

**POG** informs that preparations of 2021 workplan and budget ahead of the December AC are going ahead according to plan. We are putting extra efforts into the formal request for the extension, highlighting the many entities that are depending on ZEP being present. He mentions that we may also come back to projects for specific letters of support. He also mentions that the Commission is planning for one joint call for proposals for all ETIPs, leading to separate grants, and a similar setup for IWGs.

**GS** mentions that ZEP-C also needs to approve the use of the contingency fund for 2021. He asks if a resolution supporting the extension from the AC65 would be of help. **POG** answers that he expects a clear result from the AC65 but that a resolution would help and **LW** adds that this may be needed before the AC65. **GS** mentions that he regards ZEP support to the SET-Plan and the IWG9 as critical. The ACEC supports that a resolution will be drawn up for the AC to endorse. **GS** says that if needed he will draft this resolution together with **RvdM**.

### **4. EU Taxonomy**

**GS** notes this item is for information but also endorsement. He mentions that there has been, from different sources, a set of incomplete yet substantive documents on the draft regulation. ZEP is asked to comment, and **GS** proposes to send the input via the TEG.

**POG** confirms that some drafts document for the two delegated acts on mitigation and adaptation have been received and briefly scanned. We are awaiting official drafts and a consultation, after which a decision is expected in December. The other four delegated acts is up for decision in December 2021. **POG** gives a short presentation pointing out four items from these documents for a ZEP response:

- ZEP gave input on **the screening criteria for CO<sub>2</sub> transport** in June based on the risk that even small amounts of CO<sub>2</sub> for use would deem the CO<sub>2</sub> infrastructure not sustainable. The new threshold is based on the CO<sub>2</sub> aimed for permanent storage.
- For **hydrogen manufacturing** the screening criteria is changed, taking into account all emissions including electricity in one threshold (2,256 tCO<sub>2</sub>/tH<sub>2</sub>). First, there is no mention of the threshold declining over time to incentivise towards net-zero. It is also not clear how the threshold has been defined.
- Regarding **grid-connected manufacturing of hydrogen** and aluminium, the previously proposed ZEP PPA addition will be even more needed.
- A higher threshold (262g/kWh) for electricity generation in the draft act on adaptation compared to the draft act on mitigation (100g/kWh), triggers the question regarding **the very intention of the taxonomy**. It is unclear how these two different thresholds would benefit the ultimate objective of the Taxonomy.

**GS** says that this is clear and opens the floor for questions.

**LE** asks if the threshold on hydrogen includes also upstream emissions from natural gas that may be used **POG** says, yes, the threshold is supposed to take everything into account in one single threshold. **LE** also asks if the 'do no harm' principle also takes into account that dedicating RES for green hydrogen towards one customer means energy is not going to the grid, harming the grid. **GS** adds that this point is made in ZEP's previous proposal. **FN** asks if transport modalities are still included in the Taxonomy. **GS** confirms they are. **CS** highlights issue regarding CO<sub>2</sub> transport screening criteria.

**GS** asks the ACEC to support the described comments to be sent to the TEG. ACEC supports the ZEP response.

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**RvdM** presents the draft ZEP input to the Taxonomy platform on CCU. If something is green it must deliver something positive for the climate, why there is a need for a proper description of what CCU is.

**GS** opens the floor for questions.

**CS** comments that CCU is an opportunity, is there an angle to use it to our advantage? **RvdM** replies we do not want to downplay CCU but are concerned about the whole discussion and double counting. The added value of conversion of CO<sub>2</sub> into products

needs to be clear. **GS** adds that it also proves difficult to get agreement amongst CCU community regarding the contribution to mitigation.

**LE** asks: the two cycles behind each other where industrial CO<sub>2</sub> is captured, absorbed in a bio product, and then the CO<sub>2</sub> used again – is this tried and tested, and does it still qualify as zero or negative? **RvdM** says this is not tested.

**GS** highlights that the mandate for ZEP and IWG9 is CCS and CCU. We need to make an appropriate contribution and this is our proposal. **GS** asks for objections to the basis outlined by **RvdM**. ACEC endorses the proposal.

## 5. ZEP actions on blue hydrogen

**POG** introduces the background and ZEP's work and gives short reference to the inclusion of hydrogen in the Horizon Europe partnerships. He highlights the ongoing Hydrogen for Europe study, where ZEP through **GS** is a member of the advisory board. **POG** refers to discussions with the responsible parties for the two scenario models used in the study, regarding the modelling. He highlights the importance of correct hypothesis and criteria in order for usable results.

**GB** gives short update on ZEP's application for Clean Hydrogen Alliance roundtable, decided at the ACEC and discussed with ERG. Many organisations are interested in hosting the roundtables, which are the working groups for the alliance. It may be an opportunity for ZEP to support work around blue hydrogen even if not selected for roundtable. **GB** notes that from 23 November, the European Hydrogen Week takes place for a 4-day event, including European Hydrogen Forum. **GB** gives a brief update on the TWG Hydrogen report, noting the TEN-E Regulation revision coming up soon and importance of CO<sub>2</sub> infrastructure.

**GS** opens the floor for questions, notes comment from **JH** that the wider NGO community now has moved on from opposing the Clean Hydrogen Alliance on basis of blue hydrogen. **GS** notes clear endorsement for direction ZEP has taken.

## 6. CCUS SET-Plan 2030 roadmap

**POG** indicates that this item is for support from ZEP to the IWG9 work on CCUS 2030 roadmap to be presented in mid-2021, asking for a ZEP working group for this to be set up. **POG** highlights that this decade being crucial for the development of CCUS in Europe and highlights that the roadmap will be based on the endorsed new CCUS SET-Plan targets for 2030. The roadmap aims to provide clear information to policymakers, companies and investors regarding the role of CCS/CCU and what is needed to reach the targets – policy frameworks, business models, R&I needs, etc.

**GS** notes the importance to support this and the ACEC endorses. **GS** asks under which leadership the group should convene. **POG** highlights the need to engage both ZEP networks and suggests leadership under NWPE. **GS** asks for endorsement and **LE** as co-chair endorses it. **AH** and **FN** agree to support with resources.

## 7. Updates from Networks and ERG

**FN** gives the NWT update:

- Latest meeting was held early November.
- TWGs CDR and Hydrogen are finalising reports – to be presented at AC65.
- Flexible power generation work, proposed ToR to be put forward at AC65.
- Continuing work with **RvdM** on climate-neutral materials. On the issue of biomass, there is interest from the network to continue within the framework of the CDR group. ToR will be proposed at AC65.

**AH** gives update on the CDR report. Important to have view on upstream and downstream emissions and identify what negative means in negative emissions. Focus on how to incentivise CDR technologies in the EU ETS. **GB** gives brief update from CDR meeting regarding work on the report. **AH** continues that hydrogen report is ready for next AC meeting.

**LE** gives update from NWPE:

- Important developments include work on consultations.
- Innovation Fund first call closed with a large amount of applications. A new call for smaller projects is next.
- Focus on TEN-E and CEF.
- Preparation is ongoing for CCS Directive discussion at AC65.

**JH** presents ERG update, highlighting the two new ERG Co-chairs, adds good balance to messaging and facilitating work of ERG and in ZEP. Floor given to **MK** for communications update, noting a successful kick-off meeting of the informal Communications Information Group, ZEP sessions at CCUS 2020 and the organisation process, and ZEP's application to host a stakeholder session at EU Industry Days.

**GS** asks for endorsement for the informal Communications Information Group to act as a means to widely communicate plans and activities. This is endorsed by the ACEC.

**GS** highlights that preparation has begun for the follow-up meeting with EVP Timmermans, discussed at latest ERG meeting, and adds that anyone with ideas for the meeting should get in contact with the ZEP Secretariat.

## 8. Closing remarks

**GS** thanks all for the meeting and notes the next meeting is AC65 and closes meeting.

## Participants

Dr Graeme Sweeney	Chair
Rob van der Meer	HeidelbergCement
Lamberto Eldering	Equinor
Nils Røkke ( <i>attending 9:00-10:00 gives proxy to RvdM</i> )	SINTEF
Jonas Helseth ( <i>Proxy from Frederic Hauge</i> )	Bellona
Charles Soothill	Sulzer
Filip Neele	TNO
Arthur Heberle	Mitsubishi Power Europe
Per-Olof Granström	ZEP
Giorgia Bozzini	ZEP
Meghann Kissane	ZEP
Luke Warren	CCSA
Chris Gent	CCSA

## Agenda item 2: ZEP planning for 2021 – for approval

### 2.a. ZEP grant extension

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The current ZEP grant comes to an end in April 2021 and the new ZEP grant is expected to start in January 2022 on the basis that the European Commission's (EC) call for proposals will be launched in Q1 2021. Based on decisions at AC64, ZEP has applied to the Commission for a grant extension and has received conditional agreement for extension of the current ZEP grant for six months, from April through October 2021. The formal grant amendment has also been submitted to the Commission and the expectation is that formal approval to the extension will be received imminently.

Thorough planning for 2021 is crucial in order for ZEP to secure enough funding, manage the risks, and at the same time continue its strong and impactful development – attracting members and good resources, while taking into account a gap between the current and a future grant agreement and the risks involved.

#### Funding to manage this gap

Following the approval to extend the ZEP project, funds can be made available from the current ZEP grant agreement. Based on current plans and forecasts, approximately €150,000 of surplus funds can be made available during the six-month grant extension, representing approximately half of the annual pro rata grant budget. These funds could cover the six months of activity during the extension, May through October. For the two last months of 2021, approximately €50,000 of extra funds will be needed.

Based on a decision at AC58, ZEP has taken action to build up financial reserves in ZEP-C for this reason. These funds amount to approximately €190,000 by December 2020. If ZEP-C approves the proposed use of the funds, they can be made available for ZEP activities to cover the extra funding needed.

Given that the proposed ZEP-C budget for 2021 (see below) can cover the extra funds needed for November and December 2021 of €50,000 without taking into account the built up reserves, this marks a very good starting point for ZEP to manage the gap including the risks. ZEP is thus well prepared to continue its strong and impactful work throughout 2021.

#### Preparing for the next ZEP grant

From what we know so far regarding the European Commission's Horizon Europe work programme, there will be one joint call for proposals for all ETIPs including ZEP. A call that will lead to separate grants for each technology with no competition between the different technologies/ETIPs.

Based on a decision at AC64, ZEP will also, during the beginning of 2021, prepare a proposal (including updated bylaws) to introduce a Network on Projects, in parallel with the Networks Technology and Policy & Economics. With the European Green Deal, higher climate ambitions and economic recovery plans, there is clear positive momentum for CCS and CCU and many projects are becoming market-ready, thus there is an increasing need for close cooperation and knowledge sharing with and between these projects.

## 2.b. Work programme

### Introduction

The ZEP work programme for 2021 is based on EU policy agenda, and it will be updated throughout the year.

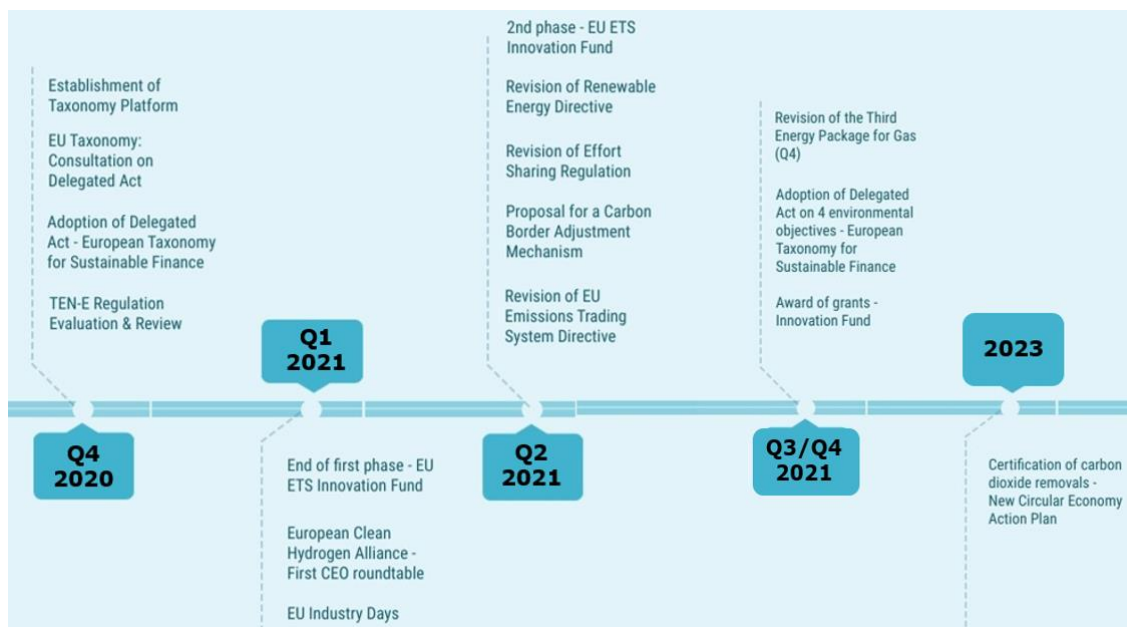


Figure: Current EU policy agenda with a focus on CCS and CCU

The new political direction established by the European Green Deal and the proposed EU climate law with the target of climate-neutrality by 2050 has dramatically changed the landscape for CCUS. The next few years will be crucial for the progression of CCS and CCU in Europe and ZEP can anticipate high levels of new activity in 2021 stemming from the many initiatives that the European Commission will undertake based on the European Green Deal.

On an overarching level, ZEP foresees these areas during 2021:

- Given the positive political momentum around CCUS and the new grant coming up, there is a need for strategic development – further strengthening ZEP's role for CCUS in the EU arena and serving as a basis to attract new members. There is also a need to further develop the engagement and dialogue with member



states and with other stakeholders, forming strong alliances to support the development of CCUS.

- ZEP will provide continued support and input to the CCUS SET-Plan (IWG9) Research and Innovation activities, necessary to reach Europe's ambitious 2030 climate goals. Also ensuring a high level of coordination with other European and global programmes.
- As more and more CCUS projects are becoming market-ready, ZEP intends to intensify its support for these projects and monitor their development.

And delivering on the day-to-day work

- *Network Policy & Economics (NWPE)*: The Network remains the main point of contact for ZEP responses to consultations. In 2021 the NWPE is expected to engage in areas such as the revision of the EU ETS, the Carbon Border Adjustment Mechanism, the European Clean Hydrogen Alliance – supporting ZEP's input to the roundtable on low-carbon hydrogen production, the new European Industrial strategy, and the connected Low-carbon Industrial Alliance. ZEP also participates as an adviser to the High-level Group on Energy Intensive Industry. Engagement around the European Taxonomy for Sustainable Finance and other funding opportunities, such as the Innovation Fund, is also expected.

A joint taskforce between the two networks and led by NWPE will be set up to support the work on a CCUS 2030 Roadmap, in coordination with the CCUS SET-Plan. The aim of this workstream is to prepare a comprehensive roadmap for CCS and CCU on what will be needed to reach the 2030 target with a view to the climate neutrality target by 2050.

- *Network Technology*: During 2021, NWT will undertake work on two new reports on carbon-neutral biomass and the role of CCS in clean and flexible power generation. Here ZEP will revitalise the joint taskforce with ETIP Bioenergy. The NWT is also expected to support the ZEP Secretariat with technical input on the policy areas highlighted above. Representatives of NWT will also join the taskforce to deliver a CCUS 2030 Roadmap, in coordination with the NWPE and the CCUS SET-Plan. Engagement around low-carbon hydrogen and CDR – following up from the reports finalised in December 2020 – is also expected.
- *External Relations Group*: For the areas of specific interest for ZEP – highlighted above, the ERG will guide the communications and outreach activities. Given the many ongoing EU policy initiatives and legislative processes, the initial focus of ZEP's 2021 communication will be on securing meetings with policymakers, giving the necessary input to EU policy initiatives at the right time. In parallel, the ERG will guide the execution – on behalf of the AC – of the communications and dissemination activities connected to the ZEP reports, hosting events and webinars, and communicating through social media and the newsletter. The newly established informal communications group will also be a crucial tool – a direct channel between



the members and the Secretariat – which is ready to support and coordinate ZEP's external messaging.

## 2.c. Follow-up on 2020 ZEP-C budget

[Attached](#) is the 3 December 2020 ZEP-Communications financial management report and below are comments referring to the financial development during 2020.

The income for 2020 amounts to €182,863. This is higher than the initial budget of €167,500, mainly due to increased sponsorship with EBN joining ZEP. Since AC64, invoices have been issued for Gassnova €15,000, BP €30,000 and Total €30,000.

The expenditure for 2020 amounts to €119,536, which is much lower than the budgeted €169,992. This lower expenditure is mainly focused on the Communications and Events budget and due to Covid-19. Virtual meetings have given the opportunity to strongly increase ZEP activities, while, at the same time, keeping costs low. The expenditure includes services provided by CCSA based on the service agreement and amounting to €38,000 for 2020 that has not yet been settled.

The AC58 agreed that ZEP-C should seek to enter 2021 with reserves of approximately €200,000 in order to provide ZEP-C with sufficient resources to sustain itself through a future funding gap between the end of the current ZEP grant and the beginning of the next. The surplus generated at the end of 2020 is approximately €190,000.

## 2.d. 2021 ZEP-C Budget

The AC is invited to adopt the 2021 ZEP-C budget.

The European Green Deal has dramatically increased the number of EU initiatives, packages and reviews of existing regulations and directives that are directly relevant to ZEP. Reaching out and engaging with the many policymakers and stakeholders that are involved is crucial for ZEP. The need for coordination and support from the ZEP Secretariat has increased dramatically due to the higher activity levels across the ZEP networks and the ERG.

### 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
<b>Total Expenditure</b>	<b>232,492</b>
<b>Income</b>	<b>232,500</b>
<b>Net profit / loss</b>	<b>0,008</b>

This budget is based on decisions at AC61 and AC64 and contains the following elements:

- Continuation of the core ZEP-C services, such as chair, accounts, legal support, etc. (the need for administrative support will be assessed during Q1 2021).

- Adapting to a new way of working, due to the consequences of the pandemic, where virtual meetings and events are preferred over physical ones and online communications, via social media, website, etc. are even more important. We plan for this situation to last at least until April 2021.
- Communications and events budget of €85,000, including the continuation of the service agreement between CCSA and ZEP-C (a monthly service fee of €4,750).
- Sponsorship from two new members, adding €50,000 to the income.
- Strategic work linked to the evolution of ZEP €12,500.
- With the current budget, the surplus ZEP-C funding can be kept intact.

## Agenda item 3: Horizon Europe and CCUS SET-Plan – *for information*

### 3.a. Horizon Europe work programme and partnerships

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#### Update

The Horizon Europe work programme has not yet been published. The programme and the first set of calls for 2021 and 2022 are expected to be released in Q1 2021, but this is to be confirmed due to a possible delay in the adoption of the EU long-term budget and a different prioritisation.

Vassilios Kougionas, DG RTD, will give an update at AC65 regarding the work programme and partnerships.

#### The Clean Energy Transition Partnership presented

The Clean Energy Transition Partnership (CETP) is a 7-year co-funded Research and Innovation partnership under the Horizon Europe to boost and accelerate energy transition across Europe. It reaches out to national and regional stakeholders, as well as industry, public organisations, research and citizens organisations to make Europe a frontrunner in energy innovation and implementation by becoming the first climate-neutral continent. The [CETP Strategic Research and Innovation Agenda](#) (SRIA), was presented at the SET-Plan Conference and should be kicked off in Q1 2021 once the EU long-term budget is approved. The SRIA is key to the implementation of the CETP and will serve as a guide for multilateral collaboration in Europe – and beyond.

In cooperation with the IWG9 and partners, ZEP has actively given input to the drafting of the SRIA. ZEP was specifically involved in the [paper on CCUS](#), which highlighted the main challenges for the 2020s and associated key areas for R&I activities to be funded in the next years.

#### R&I funding for low-carbon hydrogen

ZEP has sent a [letter](#) to DG RTD on the importance of low-carbon hydrogen for the EU's objective of climate neutrality by 2050. ZEP stresses the importance of continuing R&I activities for low-carbon hydrogen with CCS, while acknowledging that such R&I activities will not be included in the Clean Hydrogen Partnership, where the Commission only intends to make funding available for renewable hydrogen, consistent with the EU Hydrogen strategy. ZEP also noted and thanked the Commission for its intention to offer financial support for low-carbon hydrogen R&I under Horizon Europe's industrial calls and the Horizon 2020 Green Deal calls.

Actions have also been taken to introduce research and innovation activities and support for low-carbon hydrogen with CCS in the finalisation of the Clean Energy Transition Partnership SRIA.

### ***3.a. SET-Plan – 2030 roadmap and updated CCUS targets***

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#### 2030 CCUS roadmap

European climate-neutrality by 2050 and the strongly increased EU ambition for GHG emissions reduction by 2030, make the role of CCS even more critical for a cost-efficient transition, preserving jobs, stimulating economic growth, and diversifying supply chains into new industries and businesses. The next ten years will be crucial in order to support early deployment of CCS and CCU technologies, establish their foundation to become investible, and maturing the technologies at scale.

ZEP has presented a preliminary, yet well-founded indication that 50 MtCO<sub>2</sub>/yr needs to be abated by CCS in 2030; [view endorsed ZEP 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 has endorsed this volume and also updated the Implementation Plan targets.

Some important preconditions needed to support and drive this development – such as European CO<sub>2</sub> transport and storage infrastructure, an enabling policy framework, the right incentives and strong continued support for R&I – are easily highlighted. However, in order to be successful in convincing policymakers and communicating a clear message, this work has to be done thoroughly with in-depth strategies and action plans – a CCUS 2030 roadmap.

This roadmap for 2030 will be an important tool – supporting the narrative with a view to the climate neutrality target by 2050 – providing information that is as clear as possible to policymakers at EU and member state level, as well as projects, companies and the finance community, about the role of CCS and CCU for the transition and what will be needed to make this happen: Targets and strategies, policy frameworks, business models, R&D&I needs, enablers and barriers to tackle.

The IWG9 has taken on the task to produce such a roadmap document to be presented mid-2021. The ZEP November ACEC highlighted the importance for ZEP to be actively included in this work and endorsed the proposal to set up a NWPE TWG (with experts from both ZEP networks) for this work.

#### IWG9 Modelling exercise - reviewing of CCUS in future EU decarbonisation scenarios

The [report](#) by the UCL Energy Institute – a part of the CCUS SET-Plan work – has reviewed the role of CCS and CCU in Europe in decarbonisation scenarios consistent with the 1.5°C and 2°C global temperature targets. The scenarios provide insights on

the combinations of technologies that could be compatible with the climate targets under different conditions. They were produced by a range of global and Europe-scale models. These are some of the key messages that emerge from the work:

- Published scenarios indicate that CCS is essential for Europe to reach net-zero CO<sub>2</sub> emissions by 2050, which is consistent with the 1.5°C global target.
- This implies that Europe needs a large-scale CCS industry to meet future targets.
- In the 1.5°C scenarios, the median CO<sub>2</sub> captured by CCS is 230-430 MtCO<sub>2</sub>/yr in 2030, increasing to 930-1200 MtCO<sub>2</sub>/yr by 2050. There is a significant range across these scenarios, implying some key uncertainties.
- CCS enables CO<sub>2</sub> removal when combined with bioenergy, provided biomass is sourced sustainably. 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 – \$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. Some studies foresee a significant role while others do not consider it.
- Several further research priorities were identified.

#### Updated CCUS SET-Plan targets

The CCUS SET-Plan Plenary has endorsed the estimate that 50 Mtpa needs to be abated by CCS in 2030 and the updated Implementation Plan targets. The updated targets are now pending formal adoption by the European Commission.

Specific challenges for CCS and CCU development for the coming years to make this possible are:

- Getting the commercial framework right.
- Accelerating timely deployment at scale of CCS and CCU technologies.
- Driving costs down – through R&I, learning by doing and economies of scale.
- Enabling rapid scale-up to deliver on the climate goals.
- Enabling EU citizens to make informed choices regarding the benefits that CCS and CCU bring.

N.	Target	Proposal for update – timeline 2030
1	At least one commercial scale CCS project linked to an industrial CO <sub>2</sub> source, having completed a FEED study.	<b>Delivery of 15 commercial-scale CCS projects linked to industrial CO<sub>2</sub> sources. Further 10 projects having completed a FEED study and 5 having made an investment decision.</b>
2	Delivery of a whole chain CCS project operating in the power sector.	<b>Delivery of 10 commercial-scale CCS projects for clean, flexible power and heat generation (including waste-to-energy plants), complementary to increased renewable energy generation in the energy mix.</b>

3	SET-Plan countries having completed, if appropriate in regional cooperation with other MS, feasibility studies on applying CCS to a set of clusters of major industrial and other CO <sub>2</sub> sources by 2025-2030, if applicable involving cooperation across borders for transporting and storing CO <sub>2</sub> (at least 5 clusters in different regions of the EU).	<b>EU member states and external SET-Plan countries having completed national and regional CCS roadmaps for the development of dedicated CO<sub>2</sub> transport infrastructure (new, retrofitted, and repurposed), including clusters of CO<sub>2</sub> sources and shared, cross-border CO<sub>2</sub> infrastructure. The infrastructure being included in the European Ten-Year Network Development Plan (TYNDP).</b>
4	At least 1 active EU Project of Common Interest (PCI) for CO <sub>2</sub> transport infrastructure, for example related to storage in the North Sea.	<b>At least 10 additional EU Projects of Common Interest (PCI) for CO<sub>2</sub> transport infrastructure, with a focus on Central, Eastern, and Southern Europe. Experience from the first full-scale CCS project should be taken into account in the SET-Plan activities linked to targets 3 and 4.</b>
5	An up-to-date and detailed inventory of the most suitable and cost-effective geological storage capacity (based on agreed methodology), identified and accepted by various national authorities in Europe.	<b>No change</b>
6	At least 3 pilots on promising new capture technologies, and at least one to test the potential of sustainable Bio-CCS at TRL 6-7 study.	<b>At least 3 pilots of capture technologies at TRL 7-8 in different industrial applications, including one enabling low-emission hydrogen production. At least 6 pilots of capture technologies at TRL 5-6, of which at least 2 pilots to test climate positive solutions such as Bio-CCS and direct air capture (DAC).</b>
7	At least 3 new CO <sub>2</sub> storage pilots in preparation or operating in different settings.	<b>An interim target of at least 6 new CO<sub>2</sub> storage sites in preparation or operating in different settings (i.e. obtained or ready to submit an application for a storage permit). A target by 2030 of a further 9 sites to be appraised to the same level, in a range of geological settings, both onshore and offshore.</b>
8	At least 3 new pilots on promising new technologies for the production of fuels, value added chemicals and/or other products from captured CO <sub>2</sub> .	<b>By 2030, several demonstration installations producing CO<sub>2</sub>-based fuels, chemicals and materials at the scale of tens of kt/a and contributing to EU 2030 and 2050 climate and circularity objectives.</b>
9	Setup of 1 Important Project of Common European interest (IPCEI) for demonstration of different aspects of industrial CCU, possibly in the form of Industrial Symbiosis.	<b>By 2030, first large-scale commercial installations enabled by a supportive regulatory framework and risk-sharing financial measures at national and EU level including IPCEIs in the context of new industrial alliances mentioned in the New Industrial Strategy for Europe.</b>

10	By 2020, Member States having delivered as part of the Energy Union Governance their integrated national energy and climate plans for after 2020, and having identified the needs to modernise their energy system including, if applicable, the need to apply CCS to fossil fuel power plants and/or energy and carbon intensive industries in order to make their energy systems compatible with the 2050 long-term emission targets.	<b>All European countries having identified, if applicable, the need for CCS/CCU as part of their strategy (producing a national CCS roadmap) for their transition towards net-zero by 2050 (included in their National Energy and Climate Plans).</b>
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## Agenda item 4: EU Taxonomy – *for information and guidance*

### 4.a. Delegated act and consultation

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The Taxonomy Regulation will be implemented by six delegated acts, one for each environmental objective. The Regulation established that the delegated acts on climate change mitigation and climate change adaptation ought to be adopted by the European Commission by December 2020, following a one-month stakeholders' consultation. The Commission will consider the feedback received before finalising the adoption of the delegated act. Once the Commission has adopted the act, Parliament and Council will have time to review the acts. If no comments are raised from either institution, the delegated acts will apply from 1 January 2022.

In October, the European Commission appointed [50 members](#) and 9 special observers as members of the [Platform on Sustainable Finance](#). A full list can be found [here](#). As required by the [Taxonomy Regulation](#), the Platform on Sustainable Finance will advise the Commission on the development of robust and science-based technical screening criteria for the EU taxonomy, and policy development, amongst other things.

Next steps:

- Public consultation on delegated acts on climate change mitigation and climate change adaptation – open for feedback until 18 December.
- Adoption of the delegated acts by the European Commission – by December 2020.

### 4.b. ZEP input to the Platform

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ZEP is giving input to the Taxonomy Platform through the open [consultation](#) on the draft delegated acts on climate change mitigation and climate change adaptation. The current response is available [here](#).

The response will be updated before the final send-out and is therefore still open for comments to be sent to the ZEP Secretariat. In the response, all the matters listed above are discussed, and specifically:

1. Principles
  - a. The overarching principle of the Taxonomy is to produce a classification system for sustainable economic activities, which investors and businesses can use when investing in projects and economic activities



that have a substantial positive impact on the climate and the environment. This is in line with the EU's objective of climate neutrality by 2050.

- b. In the previous TEG report, thresholds for any economic activities would be declining over time and becoming more stringent with a view to 2050. In the draft delegated acts, there is no indication of declining thresholds.
- c. Technology neutrality and a science-based approach should guide the Taxonomy.

## 2. Hydrogen

- a. It is unclear how the current hydrogen threshold of 2.256 tCO<sub>2</sub>eq/t has been designed and it would make it more difficult to produce low-carbon hydrogen from reformed natural gas with CCS.
- b. There seems to be an error regarding low-carbon hydrogen from reformed natural gas with CCS in the EU Hydrogen Strategy.
- c. The current formulation indicated that no grid-connected hydrogen can be produced within Europe without Power Purchase Agreements (PPAs).

## 3. Electricity threshold

- a. All electricity input has a carbon footprint, which the Taxonomy must take into account.
- b. ZEP proposal for PPAs.

## 4. CO<sub>2</sub> transport

- a. All modalities should be included in the description of the activity.
- b. Clarification on permanent storage.

## 5. Further comment on electricity generation from bioenergy.

The draft response contains the full input for the delegated act on climate change mitigation and the delegated act on climate change adaptation, as well as two specific chapters on biomass and waste-to-energy.

### ZEP input on the three specific items

Over the previous months, ZEP has also prepared detailed input on three specific topics:

- [Input on CCU](#) – available at the hyperlink for information. CCU is currently represented in the Regulation but excluded from the Technical Expert Group report and from the draft delegated acts on climate change mitigation and adaptation. The input is based on the discussions with the TWG CCU and Sink Factor Methodology and it is already endorsed by the ACEC.

The underlying assumption for the input is that climate mitigation should be the main driver and that accurate monitoring and carbon accounting must be applied. This resulted in:

- A proposed definition of capture and utilisation of CO<sub>2</sub> (CCU) and utilisation of CO<sub>2</sub>,
- Proposed criteria for assessment, and
- The ZEP report “[A method to calculate the positive effects of CCS and CCU on climate change](#)”.

Regarding biomass and waste-to-energy, ZEP has prepared input based on the main findings of the report “Europe needs robust accounting for Carbon Dioxide Removal”, written by the TWG CDR.

For the two items, the issues that prevented their inclusion in the Taxonomy are summarised below:

- Biomass – currently not included in the Taxonomy since the lifecycle for biomass recovery (at least 70 years) is longer than the time left until 2050.
- Waste-to-Energy – currently not included in the Taxonomy since it is not clear what would have happened to waste if not used for Waste-to-Energy and to determine the difference in carbon footprint.

Through the help of the descriptions provided in the report, graphic illustrations, solid and transparent life-cycle analysis and thorough carbon accounting throughout the process and the technical screening criteria identified by the Taxonomy in the delegated acts (e.g. see section 4.8. *electricity generation from bioenergy* of the draft delegated act on climate change mitigation), ZEP proposes a way forward on how to deal with both matters. It is important to highlight that the response builds on the expertise represented in ZEP and in the TWG on CDR.

## Agenda item 5: Carbon Dioxide Removal – *for information and approval*

### ***5.a. Presentation and approval of TWG CDR report***

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The report continues the work of the previous report by analysing principles 3 (upstream, downstream emissions) and 4 (volumes of CO<sub>2</sub> removed) of the Ramirez-Tanzer definition. It provides a definition of carbon dioxide removal based on the four principles presented in the previous ZEP report on [“Europe needs a definition of carbon dioxide removals”](#), and defines a screening process to identify whether CCS and CCU projects may lead to CDR and outlines the factors that need to be considered when assessing a project’s potential for CDR.

Through a series of graphic illustrations, the report analyses and describes the processes that can lead to CDR. Building on the technical expertise represented in ZEP, the report focuses on CCS-enabled technological solutions, for which a thorough assessment and description of each principle is provided. The report acknowledges the potential for CDR of nature-based solutions, noting that these require active management and are more susceptible to reversals due to natural events caused by climate change.

The main messages of the report brought forward in the executive summary are:

- Reaching climate neutrality by 2050 will only be possible if mitigation efforts are supplemented with the active removal of CO<sub>2</sub> from the atmosphere.
- Once removed, CO<sub>2</sub> must be properly accounted for, kept away from the atmosphere and stored in a manner that is intended to be permanent.
- CCS is a safe, scientifically proven and cost-efficient technology which enables CDR through capture and geological storage of CO<sub>2</sub> from biogenic sources and direct air capture and storage. The development of a Europe-wide CO<sub>2</sub> transport and storage infrastructure is needed to deliver CDR at the scale that will be required for Europe to achieve climate neutrality.
- In a CCS and CCU context, BECCS and Waste-to-Energy with CCS will play an important role for the decarbonisation of energy-intensive industries and the management of residual waste in cities, providing a real and sustainable alternative when recycling and reuse has already taken place.

The report is attached to the AC65 meeting invitation as a separate paper.

### **5.b. Updates on the EU Climate Law, which refers to CDR**

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The European Commission's communication on the European Green Deal and proposed European Climate Law for climate neutrality by 2050 indicate that carbon dioxide removals will be needed to achieve the objective of net-zero GHG emissions by 2050, defined as the *'balance between anthropogenic economy-wide emissions and removals, through natural and technological solutions, of greenhouse gases domestically within the Union at the latest by 2050'*.

The discussions on a European Climate Law have now entered the trialogue phase between the European Commission, Council and Parliament. In October, the Environment ministers of the European Union agreed on a [partial general approach](#) and [stated](#) that the Union-wide 2050 climate-neutrality objective should be pursued by all member states collectively. The discussions on an updated 2030 greenhouse gas emission reduction target are still ongoing in the Council.

Meanwhile, the European Parliament has [adopted](#) its position on the European Climate Law. The work was led by the Committee on Environment, Public Health and Food Safety (ENVI) and its main [takeaways](#) are summarised hereafter:

- Both the EU and individual member states need to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases regulated by 2050, thus achieving net-zero greenhouse gas emissions by that date.
- After 2050, the Union and all Member States should continue to reduce emissions to ensure that removals of greenhouse gases exceed anthropogenic emissions.
- Therefore, the Union's 2030 climate target is raised to a reduction in emissions of 60% compared with 1990 levels, to be reached domestically.
- All Union policies and economic sectors should contribute to the climate-neutrality objective. The Commission should establish guidance for the sectors of the economy that could contribute most to achieve the climate-neutrality objective.

Under the framework of the [New Circular Economy Action Plan](#), the Commission has also announced a new workstream on 'certification for carbon dioxide removals' to be presented by 2023:

*"To incentivise the uptake of carbon removal and increased circularity of carbon, in full respect of the biodiversity objectives, the Commission will explore the development of a regulatory framework for certification of carbon removals based on robust and transparent carbon accounting to monitor and verify the authenticity of carbon removals".*

Next steps:

- European Council meeting: 10 December 2020
- Environment Council meeting: 17 December 2020

## Agenda item 6: ZEP actions on low-carbon hydrogen – *for information and approval*

### 6. Presentation and approval of TWG Hydrogen report

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This report – that argues for a technology neutral approach to hydrogen production – focusses in on hydrogen production technologies, costs, and timelines. It draws attention to the scalability of hydrogen production technologies, emissions reduction potential and the critical enabling role both CO<sub>2</sub> and hydrogen infrastructure will play.

These are the key messages from the report:

- Low-carbon hydrogen produced from reformed natural gas with CCS can play a key role in paving the way towards a clean hydrogen economy in Europe.
- Low-carbon hydrogen has the ability to be deployed rapidly and provide significant volumes of hydrogen over the next 10 years.
- Both CO<sub>2</sub> and hydrogen infrastructure development in Europe is critical to enable the most cost-effective decarbonisation solution for industries.
- Over time as electricity grids decarbonise and renewable capacity expands, renewable hydrogen will provide an increasing proportion of European hydrogen production, moving into a maturing market enabled by low-carbon hydrogen with CCS.
- Reliable volumes of hydrogen for use in industrial decarbonisation can be achieved by low-carbon hydrogen whilst capacity and storage options for renewable hydrogen technologies are developed.
- The upcoming revision of the TEN-E regulation is key legislation to support the development of CO<sub>2</sub> and hydrogen networks. By awarding PCI status to cross-border CO<sub>2</sub> and hydrogen projects, these projects will be able to seek funding under the Connecting Europe Facility (CEF).
- Many low-carbon hydrogen projects in Europe are in an advanced development stage and could be able to provide significant hydrogen volumes in the 2020s.

Harnessing the group's technical expertise in understanding regional and national energy decarbonisation scenarios, the report highlights how a technology neutral approach for hydrogen is vital, and as such, the critical role CCS and infrastructure investment will play in the energy transition.

Given the vast complexities of a hydrogen economy and sector integration, and the limited resources of the group, the report only includes minor comments on hydrogen storage. End-use applications of hydrogen, technical details on the transportation and metering of hydrogen, and regulatory issues are not covered in this report.

The report is attached to the AC65 meeting invitation as a separate paper.

## ***6.a. Going forward with the EU Hydrogen Strategy***

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### **European Parliament position**

On 19 November, the European Parliament's ITRE Committee released a draft report on "A hydrogen strategy for a climate-neutral Europe", which is the basis for the European Parliament's position on the strategy adopted in June by the European Commission. The work is led by the ITRE Committee (Jens Geier MEP, Germany, S&D). The main features of the report are:

- Clean hydrogen is seen as the only type of hydrogen that is sustainable in the long term. Low-carbon hydrogen can play a transitional role, as clean hydrogen is not yet sufficiently abundant and competitive.
- Low-carbon hydrogen should be concentrated on sectors for which the use of hydrogen is close to competitive or that currently cannot be decarbonised by other means.
- A single European classification system is needed. The Commission should also develop European standards and a European certification and labelling system based on an independent science-based review of the lifecycle emissions of hydrogen production.
- The TEN-E should include provisions for hydrogen infrastructure and the repurposing of existing gas infrastructure should be assessed.
- Sector roadmaps laying out the development of hydrogen demand and investment and research needs for the demand sectors shall be developed
- Carbon contracts for difference ('CCfD') should be taken into account.

The report also highlights the need for continued research, development, and innovation along the whole value chain of clean hydrogen. Funding opportunities such as Horizon Europe, the Connecting Europe Facility, InvestEU and the ETS Innovation Fund, the Clean Hydrogen Alliance, and Important Projects of Common European Interest (IPCEIs) can foster a clean hydrogen economy.

### **Council – preparing for discussion in December**

During the past two months, the Council has been preparing its position on hydrogen to enter the trialogues with the European Parliament. Notably, the EU ambassadors discussed what kind of support the EU should offer to renewable and low-carbon hydrogen, on the basis of a revised document circulated by the German presidency.

The revised text includes mentions of 'safe and sustainable hydrogen', leaving the expression rather flexible and open to include nuclear-based and natural gas-based

hydrogen with CCS. This was met with opposition from countries who only support renewable hydrogen from renewable energy sources.

It is worth noting that the European Commission stated publicly for the first time that low-carbon hydrogen would also include nuclear power – which was not mentioned in the European Commission's initial strategy. The draft conclusions of the meeting are available [here](#). The discussion will continue at the next European Council meeting (10-11 December) and Energy Council meeting (14 December).

Next steps:

- Discussions will be ongoing at the Parliament and Council to finalise the respective positions in Q1 2021 and enter trialogues after that.
- No timeline is yet available for a vote in the Plenary on the Hydrogen report.

## **6.b. European Clean Hydrogen Alliance**

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The [Clean Hydrogen Alliance](#) will pool resources to accelerate scaling up sustainable industrial hydrogen by bringing together all segments of the ecosystem (supply, demand and distribution) to get the scale for cost reductions and competitiveness. It will be [driven by industry](#) but it will also include all stakeholders in the hydrogen ecosystem (member states, regions, trade unions, NGOs, research, civil society).

ZEP's membership of the Alliance has been [fully confirmed](#). The first action was to apply to host the roundtable on low-carbon hydrogen production. The Commission is currently evaluating the applications received. The roundtables will be the thematic groups responsible for the operational work of the alliance. They will be in charge of building a pipeline of scale-up projects and the investment agenda in their area, while ensuring interdependence with the other roundtables. Further details can be found at [this link](#).

The Commission has communicated that the governance of the roundtables is still an open issue. The European Commission is considering having three co-chairs per roundtable (categories of stakeholders represented to be clarified) and setting a mixed system of proposal by the EC and election by the roundtables.

The latest list of members is available on [DG GROW's website](#).

Next steps:

- December 2020: First Sherpa meetings of the roundtables.
- Beginning 2021: First roundtable meetings with CEOs.
- 25-27 February 2021: Presentation of the draft pipeline of investment projects (until 2024) at the European Industry Days.



## Agenda item 7: Directive on the geological storage of CO<sub>2</sub> – *for discussion and guidance*

After an intervention at the NWPE meeting in October, the Network discussed the possibility to open up for a review of Directive 2009/31/EC on the geological storage of carbon dioxide (the CCS Directive). At the ACEC meeting in October, the ACEC highlighted that the current ZEP position is not to support a review of the Directive at this stage – clearly stated and described in the [“Draft ZEP opinion on the CCS Directive Evaluation Final Report”](#) from AC42 – but decided to give the AC a possibility to hear the arguments and guide ZEP’s further actions.

The principles behind the current position of ZEP – highlighted during the NWPE meeting – are still valid, and referring to the discussions at AC42, “it would not currently be appropriate, and could be counterproductive, to reopen the Directive for significant changes”.

**Chris Gittins from TAQA Consulting, who raised the matter in the NWPE meeting, has been invited to give a presentation at AC65. [View the presentation slides.](#)**

There are issues in the Directive where improvements are desired, however, opening up the Directive for a review might allow for amendments to the parts of the Directive which currently work and that should not be changed. It must be clearly highlighted that there is no possibility to pick and choose the changes to make. Ongoing plans for storage development can be jeopardised if the Directive is opened up for review. This is a clear risk for the deployment of CCS in Europe and could be directly counterproductive for the projects that aim to become operational in the next few years and under the current legislation. Increasing the uncertainty in the policy framework will risk discouraging potential project promoters and potential investors in CCS projects.

In order not to add unwanted risks and direct counterproductive measures, the best way to manage the areas where there are challenges within the Directive is to deal with the specific areas separately, without a review of the whole Directive. It is easier to address these issues in other planned initiatives and legislative reviews of existing legislation. One example here is the issue of allowing other modes of CO<sub>2</sub> transport than pipeline, that has been tackled in the European Taxonomy, the TEN-E regulation review and the upcoming EU ETS review.



## Agenda item 8: Global Status of CCS 2020 – *presentation*

Guloren Turan, General Manager Advocacy & Communications, Global CCS Institute, will present the '[Global Status of CCS 2020](#)' report.

## Agenda item 9: Network Work Programmes Update – *for information*

### 9.a. Networks Technology and Policy & Economics

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The NWT meeting took place on 5 November. The agenda focused on several items:

- Ongoing work on the European Taxonomy, biomass, and carbon-neutral materials.
- The two active TWGs on CDR and Hydrogen gave updates on the work done so far.
- The work on “*When captured CO<sub>2</sub> from biogenic sources can be seen as carbon neutral*”, based on the role of biogenic CO<sub>2</sub> and CDR in the upcoming revision of the EU ETS. The basis for this work and how it should be framed is being concretised with the authors of the CDR report, NWT co-chairs and other stakeholders.
- An update on the modelling work and the amounts of CCS that will be needed by 2030 – following up from the ACEC meetings in October and November and the SET-Plan IWG9 Plenary meetings – was provided.
- It was decided that standardisation matters arising from the development of cross-border CO<sub>2</sub> projects, as well as information regarding these issues in the ISO and CEN work, will be brought up at NWT meetings. The ZEP Secretariat will ensure coordination with the existing ZEP TWG CO<sub>2</sub> transport, PCIs, etc.
- It was proposed to produce a ZEP paper on CCS for clean flexible power generation: how CCS can enable energy system integration and enable and balance out the increasing amounts of renewable electricity. Several ZEP members and observers have indicated their interest in joining such a working group. A draft ToR has been prepared in cooperation with the NWT co-chairs and is included in this pre-read as item 9.e.

Besides the meeting, NWT has been focused on completing the reports on hydrogen and CDR and preparing for the presentation of reports at AC65.

The latest **NWPE** meeting took place on 15 October and featured both internal updates on ongoing workstreams and external presentations. After presenting the remaining activities for Q4 2021 – an important item will be the presentation of the revised TEN-E regulation in December – other items were discussed.

- ZEP continues to work on the outstanding actions on the Sustainable Taxonomy and aims to give input to the consultation and the Taxonomy platform on CCU, biomass, and waste-to-energy.

- Horizon Europe work programme is being developed. Takeaways from the meeting with DG RTD were referred to at the meeting and the secretariat highlighted the need to continue working on blue hydrogen. ZEP also presented a plan to work on blue hydrogen in the Clean Hydrogen Alliance, Strategy, Partnership, as well as the updates from TWG Hydrogen. Policy recommendations were also discussed with the entire group, with the aim to include them in the final report. This discussion is referred to under agenda item 5 in this send-out.
- ZEP introduced the revision of the EU ETS directive, foreseen for Q2 2021, and the upcoming consultation on the Carbon Border Adjustment Mechanism. After the meeting, a draft response was circulated for comments.
- ZEP hosted two external presentations on CCS-related announcements: a representative from Shell gave a presentation regarding the EU methane strategy and a representative of Port of Rotterdam spoke about the latest developments of the Porthos project, reflecting on the important, recent CEF announcement. The project is finalising contract negotiations with their partners and the investment decisions are expected to take place in 2021.
- Finally, the ZEP Secretariat provided an update from the UK on the ongoing discussions on business models for CCS in the power sector, industry and transport and storage. The update also highlighted different funding opportunities for UK projects, put in place by the UK government, and their timeline for execution.

### 9.b. EU ETS

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The Inception Impact Assessment on [EU ETS Directive](#) closed on 26 November. To ensure the EU has a neutral impact on climate change by 2050, the Commission proposed raising its 2030 target for greenhouse gas emission reductions to at least 55% of 1990 levels. The Commission will review all relevant EU policies against this target, including the emissions trading system (ETS), and propose extending the ETS to new sectors of the economy. It will also review the ETS 'market stability reserve' for handling unused emissions allowances after three years of its operation.

ZEP's response is [available on the website](#).

### 9.c. Innovation Fund

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The first call of the Innovation Fund for large-scale projects closed to applications on 29 October. This round saw 311 applications for innovative clean tech projects – requesting a total of EUR 21.7 billion – including 14 for carbon capture, use and storage. In addition, 204 projects were for energy-intensive industries with 56 of these in hydrogen. The applications propose projects to be implemented in all EU member states, Iceland and

Norway, and pledge to reduce CO<sub>2</sub> by approximately 1.2 billion tonnes during their operating period within the Innovation Fund.

The next steps:

- The admissibility and eligibility of all submissions is checked. Proposals that fulfil these conditions are to be evaluated against the award criteria by external evaluators.
- Evaluation results to be provided to applicants in Q1 2021. The top 70 projects are invited to submit a full application by 23 June 2021 for the second stage. (Rejected proposals that have potential to develop and improve maturity may be invited for project development assistance provided by European Investment Bank).
- Second stage evaluation results to be provided in Q4 2021.
- Grants to be awarded at the end of 2021.

The Innovation Fund [call for small-scale projects](#) – eligible for projects with a capital expenditure between €2.5 and 7.5 million – was launched on 1 December 2020, with a budget of €100 million for breakthrough technologies for renewable energy, energy-intensive industries, energy storage, and carbon capture, use and storage. The first call for small-scale projects is open until 10 March 2021.

#### ***9.d. Ongoing consultations***

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ZEP will engage NWPE around the following consultations:

- [Delegated acts](#) on climate change mitigation and adaptation – European Taxonomy for Sustainable Finance. Deadline 18 December 2020.
- State Aid [guidelines](#) for environmental protection and energy. Deadline 7 January 2021 Energy and Environment.
- EU ETS – [stakeholders' consultation](#). Deadline 5 February 2021.
- Review of the Renewable Energy Directive – [stakeholders' consultation](#). Deadline 9 February 2021.

#### ***9.e. Draft ToR - CCS for clean and flexible power generation***

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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 CO<sub>2</sub> 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 the energy systems, 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 being 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 CO<sub>2</sub> transport, carbon dioxide removal, and production of hydrogen – now there is a need for a more in-depth description of 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 has also given input on CCS in energy system integration to the SET-Plan steering group.

### **Objectives for the TWG**

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 this topic.

### **Key Questions**

- Who could ZEP cooperate with for this report?
- What power generation technologies are best suited for CCS and how to link with other sectors?
- What will be the role for Biomass and Waste-to-Energy?
- Where in Europe are the best opportunities for CCS in flexible power generation.
- What are the best examples outside of Europe to learn from?

## Agenda item 10: External Relations Group update – *for information*

### 10.a. 2021 communications and outreach plan

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#### Communications and outreach

For 2021, ZEP has outlined the following communication and outreach priorities:

- TEN-E regulation
- EU Taxonomy
- Hydrogen
- CDR
- EU ETS
- NECPs
- CETP
- EU Climate Law
- Carbon-neutral biomass
- CCUS in clean, flexible power generation
- ...

#### Engagement plan

ZEP's ongoing engagement plan throughout 2021 will mirror the main policy initiatives from the European Commission. Among the engagement priorities for the first months, ZEP will seek meetings with:

##### European Commission

- Ditte Juul-Jorgensen, Director General, DG ENER
- Joachim Balke, Networks & Regional Initiatives, DG ENER B1
- Paula Abreu Marques, Renewables and CCS policy, DG ENER C1
- Martin Spolc, Mario Nava, DG FISMA

Follow-up meetings with DG CLIMA (directorates B and C) on the EU ETS, Innovation Fund, and carbon dioxide removals will be sought in Q1 2021. Engagement with DG GROW is foreseen around the upcoming new industrial strategy, the European Clean Hydrogen Alliance and the upcoming Alliance for low-carbon industry.

##### European Parliament

- Pascal Canfin, Chair, ENVI Committee
- Christian Busoi, Chair, ITRE Committee

- Jens Geier, (DE, S&D), MEP leading on European Parliament's Hydrogen report, ITRE
- Maria Spyraiki, (HE, EPP), ITRE, on CCS and blue hydrogen
- Maria da Graça Carvalho (PT, EPP), ITRE, on CCS and blue hydrogen
- Esther de Lange (NL, EPP), ENVI, on CCS and blue hydrogen
- Mohamed Chahim (NL, S&D), ENVI, on CCS and blue hydrogen
- Ville Niinisto (FI, Greens), ITRE, on CCS and blue hydrogen

#### Extra

- Secretariat to the Platform on Sustainable Taxonomy
- Members of the European Taxonomy Platform

Follow-up meeting with EVP Timmermans: ZEP has begun preparations for the meeting, which is set to take place in January/February 2021. A follow-up meeting between ZEP and EVP Timmermans was highlighted at the conclusion of the July meeting, where ZEP brought together a coalition representing the full CCS value chain. The focus of this meeting was discussed at the latest ERG meeting in November and the following points were noted:

- Follow up on the list of European CCS and CCU market-ready projects: update on the status, timeline, latest developments.
- Emphasis on the broad support for CCS, including representatives from all the ZEP constituencies. This was also highlighted in a remark by EVP Timmermans.
- There is a need to discuss funding opportunities for CCS and CCU, such as the Innovation Fund, Connecting Europe Facility ...

#### **Informal Communications Group**

Following a successful kick-off meeting and good participation from ZEP members, the ERG gave an action to maximise the impact of this informal group and what the group can be used for. The second meeting of the informal Communications Group will be held in the beginning of January 2021.

In 2021, ZEP plans to hold these meetings every 6 weeks and coordinated with the ERG meetings to ensure that communication topics and actions for ZEP identified in the meeting can be discussed and guided by the ERG. The aim is also to increase the information-sharing between meetings.

#### **ZEP bimonthly members newsletter**

The ZEP members newsletter has become a bimonthly publication, due to the importance of sharing information about CCS and CCU and policy developments more frequently. As issues around CCS, CCU and low-carbon hydrogen are increasing, the newsletter will move towards becoming a weekly update.



## Media & Twitter

ZEP will continue to increase presence on Twitter, highlighting ZEP's activities, CCS and CCU news, and developments in relevant EU policy topics, etc. coordinated with the Informal Communications Group to share topical news and policy developments

## ZEP Webinars

To bring further impact to TWG reports on Hydrogen and Carbon Dioxide Removals, ZEP plans to host webinars in early 2021. These presentation-style webinars will be an important addition and coincide with the launch of TWG reports. They will provide a platform to elaborate on findings and highlight ZEP's position on related policy topics. The webinars will be recorded and can be made available on the ZEP website and shared in the newsletter.

ZEP also plans to host webinars on key policy topics, including CO<sub>2</sub> transport and storage infrastructure, energy system integration and EU ETS throughout 2021. Depending on how the Covid-19 situation develops, ZEP will look into planning an event/conference to be held in person in Q3/Q4.

All the activities will also be coordinated with the informal Communications Group.

## ZEP 2021 Communications Timeline

Timeline	Topics and ZEP action
Q1	<p><b>Portuguese Presidency of EU – priorities</b></p> <ul style="list-style-type: none"> <li>- Multiannual Financial Framework 2021-2027</li> <li>- Achieving a climate-neutral EU by 2050</li> <li>- ...</li> </ul> <p><b>ZEP webinars</b></p> <ul style="list-style-type: none"> <li>- CDR (featuring TWG report)</li> <li>- Hydrogen (featuring TWG report)</li> <li>- Communicate through Twitter, newsletter, Informal Communications Group</li> <li>- Live-tweet the webinars, key messages</li> </ul> <p><b>Meeting with EVP Timmermans</b></p> <ul style="list-style-type: none"> <li>- Policy asks</li> <li>- Press release</li> <li>- Communicate through Twitter, newsletter</li> </ul> <p><b>ZEP website</b></p> <ul style="list-style-type: none"> <li>- Updating CCS/CCU projects map</li> </ul>

	<b>EU Industry Days (22-26 February)</b>
Q2	<p><b>ZEP webinars</b></p> <ul style="list-style-type: none"> <li>- CO<sub>2</sub> transport and storage infrastructure</li> <li>- Energy system integration</li> <li>- Communicate through Twitter, newsletter, Informal Communications Group</li> <li>- Live-tweet the webinars, key messages</li> </ul> <p><b>Carbon Pricing Conference (2-3 June) <a href="#">[link]</a></b></p> <ul style="list-style-type: none"> <li>- ZEP Chair speaking at event</li> <li>- Communicate through Twitter, newsletter</li> </ul> <p><b>Carbon Capture Technology Conference &amp; Expo (9-10 June) <a href="#">[link]</a></b></p> <p><b>Trondheim CCS conference (21-23 June) <a href="#">[link]</a></b></p> <p><b>Fit for 55 Package</b> – EU Commission presents draft legislation to increase 2030 target <a href="#">[link]</a></p> <p><b>Sustainable finance legislation</b> – presented by EU Commission</p> <p><b>Carbon Border Adjustment Mechanism</b> – EU Commission proposal</p> <p><b>Revision of EU Emissions Trading System Directive (EU ETS)</b></p>
Q3	<p><b>Slovenian Presidency of EU – priorities</b></p> <ul style="list-style-type: none"> <li>- Multiannual Financial Framework 2021-2027</li> <li>- Achieving a climate-neutral EU by 2050</li> <li>- ...</li> </ul> <p><b>ZEP conference (TBD)</b></p>
Q4	<p><b>17<sup>th</sup> Carbon Dioxide Utilisation Summit (27-28 October) <a href="#">[link]</a></b></p> <p><b>COP26 (1-12 November) <a href="#">[link]</a></b></p>

## 10.b. New ERG Co-chairs

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Two new Co-chairs have been appointed to the ERG following a secret-ballot vote by AC members. We are pleased to welcome Lucie Boost of Equinor and Mark Driessen of Port of Rotterdam to the ERG, joining current Co-chair Jonas Helseth of Bellona. The new Co-chairs were invited to the most recent meeting of the ERG on 13 November.

The next ERG meeting will take place on 18 December.

## 10.c. ZEP meeting with DG CLIMA

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**On 2 December, ZEP and DG CLIMA held a meeting to discuss EU ETS.**

*Meeting participants: From DG CLIMA: Beatriz Yordi – Director European & International Carbon Markets; Polona Gregorin, Joao Serrano Gomes and Karoliina Anttonen, ETS Policy Development and Auctioning, European & International Carbon Markets; Guillaume Coron, Seconded Official Monitoring, reporting, verification, accreditation for EU ETS, Governance and Effort Sharing. Per-Olof Granström and Giorgia Bozzini from ZEP.*

The aim of the meeting was to follow up on the ZEP [letter](#) – where the inclusion in the ETS of CO<sub>2</sub> transport by shipping and other modalities as well as the importance of incentivising carbon dioxide removals is highlighted – and to engage with the Commission ETS team in the ongoing consultation and the upcoming ETS review.

ZEP thanks DG CLIMA for the meeting and raises the two points from the letter.

- Regarding the inclusion of shipping and other transport modalities, DG CLIMA responds that the member states have been informed through the technical working groups and task forces. Referring to workload, DG CLIMA highlights that no further official communication is foreseen. ZEP encourages a clear public announcement to give everyone the same information.
- Regarding incentives for negative emissions there is a general understanding of this need. DG CLIMA shares an update on the work on certificates for carbon dioxide removals, where a proposal is expected for 2023.

DG CLIMA gives an update of the upcoming revision of the EU ETS Directive, looking into how CO<sub>2</sub> transport modalities can be taken into account. Carbon dioxide removals are also being discussed, although they will most likely be kept outside of the EU ETS. They welcome ZEP's report on CDR.

DG CLIMA also asks about ZEP's remarks on the Innovation Fund first call, as they are currently preparing the second. ZEP highlights the value of the Innovation Fund and describes the challenges in the first call – mentioning the risks along the CCS value

chain, concerns regarding the grid-electricity input and the lack of alignment with the Taxonomy and other EU initiatives – referring to the ZEP input submitted in July.

Finally, on the upcoming EU ETS consultation, ZEP highlights its main feedback to the EU ETS roadmap and DG CLIMA invites ZEP to give further input.

#### **10.d. ZEP participation in events and conferences**

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##### **ZEP hosts a session focusing on NECPs at CCUS 2020**

On 3 December, ZEP hosted a two-hour session at CCUS 2020 – *Counting down to 2030: The role of CCS and CCU in National Energy and Climate Plans*. The session was coordinated with the ZEP Government Group, following a meeting at 9:00 that same day. The session focused on EU member states' plans for CCS and CCU, specifically National Energy and Climate Plans (NECPs), outlining their individual strategies to reach the EU's shared 2030 energy and climate targets.

The session was moderated by ZEP and began with a presentation from Peter Horvath, DG ENER European Commission, to provide a background. Following this, Rob van der Meer, ZEP Vice-Chair and Director EU Public Affairs HeidelbergCement, set the scene with an update on CCS and CCU developments in Europe and highlighted projects.

Speakers from Norway, Ireland, Spain, and The Netherlands followed, discussing the approaches of their respective countries and the role of CCS and CCU in their strategies and as part of the EU recovery plan.

- Bjørn Haugstad, Director-General at Norwegian Ministry of Petroleum and Energy spoke about the long history of CCS in Norway and the recent developments, including the Longship project.
- Brian Murphy, European Affairs Manager at Ervia gave an overview of the NECP in Ireland and the central role of CCS and hydrogen to ensure that gas in Ireland become net-zero carbon. Also notes the connection to the Northern Lights project and acknowledges the role of the Commission in funding and supporting CCUS developments.
- Luis Diaz, President of the Spanish CO<sub>2</sub> Technology Platform (PTECO2) presented the past and current situation for CCS and CCU in Spain, highlighting that since 2006, Spain has been taking initiative in CCUS developments and that it is now back on their R&I agenda.
- Tom Mikunda, Senior Policy Advisor CCS at the Dutch Ministry of Economic Affairs and Climate Policy focuses on current and future CCS policy in The Netherlands, such as the SDE++ mechanism, future policy challenges. Also discusses the Porthos CCS project.

In the discussion between the speakers that followed, many interesting points were raised, including:

- It must be economically feasible to invest in CCUS technology.
- The need to de-risk investments in storage and linked liabilities.
- The importance of social acceptance for CCUS technologies and decarbonised products.
- Stable regulation and long-term predictability.
- A level playing field is crucial.
- A functional carbon price that can be a real driver.
- Collaboration is key.
- Member states need to support their industries to make this happen.

### **Past ZEP speaking opportunities**

- On 18 November, ZEP Vice Chair Lamberto Eldering spoke at ERTC 2020. Topics included how CCS and CCU can contribute to the EU's objective of climate neutrality and the role of CO<sub>2</sub> infrastructure in a low-carbon industrial cluster.
- ZEP Chair Graeme Sweeney spoke at the workshop *Defining real and credible carbon removals*, organised by Bellona and Carbon Watch Project within the scope of the NEGEM Horizon 2020 project, on 18 November. He spoke about CDR and the permanent storage of CO<sub>2</sub>.

### **Upcoming ZEP speaking opportunities**

- ZEP Chair Graeme Sweeney is confirmed to speak at the [Carbon Pricing Conference](#), originally set to take place during 7-11 December. The event has been moved to 2-3 June 2021.

### **ZEP application to host stakeholder session at EU Industry Days 2021**

ZEP submitted an application to host one of 15 stakeholder sessions at the EU Industry Days, taking place on 22-26 February 2021. The session would focus on the thematic area 'Making Europe's industry climate-neutral by 2050'. We are awaiting confirmation on whether or not the application has been successful.

## Agenda item 11: Closing remarks