ZEP Advisory Council 59

Wednesday 05th June 2019

Agenda Item 1: Introduction and welcome

1.a. AC59 Agenda

Appended to this paper is the agenda for the 59th meeting of the Advisory Council.

1.b. AC58 Draft Minutes

Appended to this paper are the draft minutes for the 58th meeting of the Advisory Council, which took place on Thursday 7th March 2019.

The Advisory Council are invited to approve the minutes of the last meeting.

1.c. ACEC April Meeting Minutes

Appended to this paper are the minutes for the April meeting of the ACEC.

1.d. ACEC May Draft Meeting Minutes

Appended to this paper are the draft minutes for the May meeting of the ACEC.

1.e. Chair's update

Appended to this paper is a summary of the Chair's external meetings since the AC58 in March, and an update on SET-plan IWG9 CCS and CCU activities.

ZEP 59th Advisory Council meeting

Wednesday 5th June 2019

10:30-17:00

Albert Borschette Congress Center (CCAB)
Rue Froissart 36, 1040 Etterbeek, Belgium
Room 2.B.

Item		Lead Presenter	Time
1	Introduction and welcome	Graeme Sweeney	10:30 – 11:00
2	Secretariat Update	Luke Warren	11:00 – 11:10
3	ZEP-C AGM	Graeme Sweeney	11:10 – 11:30
4	Presentation and discussion on guidelines on LCA4CCU (CO2 Value Europe)	Damien Dallemagne	11:30 – 12:00
5	Commission updates: • DG CLIMA • DG RTD • DG ENER • DG GROW	 Maria Velkova Vassilios Kougionas Peter Horvath Jean-Louis Sangare (tbc)	12:00 – 12:30
	Lunch		*12:30 – 13:00*
6	Overview of European Parliament, Council & other relevant activities	Marine d'Elloy	13:00 – 13:15
7	Presentation: Norwegian Government's views on London Protocol process and progress	Sofie Fogstad Vold	13:15 – 13:45
8	Presentation and discussion on European CCUS Demonstration Projects Network	Philippa Parmiter	13:45 – 14:30
9	Presentation on Hydrogen Roll Out for Europe (ELEGANCY)	Svend T Munkejord	14:30 – 15.15
10	Update and discussion on EU Taxonomy for Sustainable Finance	Sean Kidney & Graeme Sweeney	15.15 – 16.00
11	Review of Network Work Programmes Network Policy and Economics update: • TWG Policy and Funding • TWG PCIs	 Lamberto Eldering, Kim Bye Bruun & Jonas Helseth	16:00 – 16:20

	Network Technology update: • TWG Collaboration across the CCS chain • TWG CCU and Sink Factor Methodology	Filip Neele & Arthur Heberle	
12	External Relations Group update	Jonas Helseth, Helen Bray	16:20 – 16:45
13	AOB and closing remarks	Graeme Sweeney	16:45 – 17:00

ZEP Advisory Council 58 – 07th March 2019

Draft Minutes

Attendance

Advisory Council members

Graeme Sweeney	ZEP Chairman
Isabelle Czernichowski (alternate)	BRGM
Jonas Helseth (alternate)	Bellona
Kim Bye Bruun	Shell
Lamberto Eldering	Equinor
Nils Røkke	SINTEF
Rob van der Meer	HeidelbergCement
Stuart Haszeldine	University of Edinburgh / SCCS
Ward Goldthorpe	Sustainable Decisions

Observers and other attendees

Amélie Carron	Air Liquide
Charlotte Elvsaas	Ministry of Petroleum and Energy, Government of Norway
Christian Schwarck	IOGP
Claudia Vivalda	Vivalda Scientific
Egil Kåre Meisingset	Ministry of Petroleum and Energy, Government of Norway
Eve Tamme	GCCSI
Eric de Coninck	ArcelorMittal
Filip Neele	TNO
Florence Delprat-Jannaud	IFP Energies Nouvelles
Henrik Solgaard Andersen	Equinor
John Oakey	Cranfield University
Keith Whiriskey	Bellona
Martijn Van de Sande	Netherlands Enterprise Agency
Nora Hansen	IOGP
Samuela Vercelli	Sapienza University of Rome, CERI
Samy Porteron	Ramboll
Ståle Aakenes	Gassnova
Theo Mitchell	Enerfair Engagement / Bellona
Valentin Moëns	European Turbine Network
Virgilijus Petuska	UAB Minijos Nafta

ZEP Secretariat

Chris Gent	ZEP Secretariat
Luke Warren	ZEP Secretariat
Marine d'Elloy	ZEP Secretariat

Commission

Maria Velkova	DG CLIMA
Peter Horvath	DG ENER
Vassilios Kougionas	DG RTD

Item 1: Introduction

GS welcomed AC members and observers. The agenda for the meeting was adopted and the minutes from AC57 were approved subject to a minor alteration suggested by LE.

There were no matters arising from the January and February ACEC minutes.

Chair's update

GS noted that currently, and over the last 6 weeks resources have been stretched due to inundation of work, especially the sustainable taxonomy work.

GS attended the 4th EU-NOR conference on the 5th of February. The European Commissioner was very positive about CCUS which is not quite reflected in the LTS.

GS Set-Plan IWG9 has completed its restructuring and engaged with the coordinated service action which supports the overall process. Work has been proposed to optimise the coordination of the various CCUS outboards i.e. IWG9, ZEP and others. The next Plenary in will be 26th March, which clashes with Sustainable Finance Taxonomy meeting. GS stressed the Set-Plan work has the scope to be effective in the overall delivery due to its direct interaction with the Member States.

EU Sustainable Finance for Green Taxonomy update (see Slides):

GS has been selected as an expert for second phase of taxonomy work. The goal of this work is to define criteria to enable the categorisation of processes which can inform a 'sustainable project' to investors. It is much better to be considered qualified as sustainable now, rather than retro-arguing inclusion. CCU may not have the same set of qualifications as CCS and will need to be approached in a different way. The work will continue through to the end of Q2 2019, with the 26th March 2019 Plenary meeting of the Expert Groups a key date to discuss progress.

If CCUS technologies do not define themselves in each work stream, then going forward CCUS may not be defined as a sustainable investment, it could make CCUS potentially illegible for EU funding and initiatives.
There is a separate cross-cutting group to assess if activities do or don't do harm, we are not represented in this group; however we will try to influence its process.

GS sits on the chemicals, natural gas, nuclear group and the Bio-energy sub-groups. Meanwhile in the manufacturing hydrogen group, Equinor submitted a draft document ahead of the 6th March deadline. There are very tight deadlines ahead of the Plenary on the 26th March, input will need to be quick and responsive. The ACEC have made a comment on the paper, this will form a basis of input to other sub-groups.

GS has asked for a placeholder in the hydrogen group to enable the future amendments of criteria, especially around life-cycle emission analysis, and the consideration of pilot activities. An approach to deal with projects relying on other sectors of the chain is needed, for example a capture plant relies on a storage site to be online, how is this defined? How imminent does the second phase (storage) have to be before an activity decision is made? The definition for hydrogen production is around the direct production, however the far uses of hydrogen across many sectors such as heat and steel will lead to different criteria for different uses – this is a large scope of work which must be stressed to be done in due course.

GS wrote to argue a case for cross-cutting group for CCUS, however was denied. ZEP will prepare a paper which is applicable for several NACE codes and submit it to relevant groups with minor

relevant tweaks. A draft will be completed tomorrow (8th March) ahead of review (Monday 11th March) for submission to energy group by 14th of March – this is a very short deadline.

LW Mentioned that a Temporary Working Group (TWG) has been formed which contains around 4-5 members, he welcome additional input from both networks for future work into June and beyond following this piece of work.

JH Thanked the Chairman for his significant time commitments tracking and inputting to this important piece of work.
RvdM Confirmed that Heidelberg cement are active in the cement group and can provide input with ZEP recommendations. RvdM also expressed concerns that the speed and short deadlines of the work is inefficient for such an important piece of work.

GS stressed that looking forward it is important to recommend a mechanism for an improvement process after the first initial submissions.

SH asked if the metrics are on site or life cycle emissions? GS confirmed that this is up to the work streams to propose what is appropriate, for example this is a current issue for discussion in the Chemicals industry subgroup, whether a life-cycle or ETS definition is more suitable.

LE asked a clarification questions. Which financial institutes will be bound by the outcome of this work, EIB, Member States banks? GS confirmed that financing and funding streams will be operated by the EU itself. There is an intention to persuade private market actors to behave alongside the EIB and EU investment banks. GS reiterated that if you are not qualified on this list, it may be more difficult to secure financing.

WG – There is scope for a lot of uncertainty if there aren't additional processes following on from this work to deal with the 'How' rather than the 'What'. There needs to be a consideration for financing at the early stages of this piece of taxonomy work. Conversely GS said in his opinion this mechanism encourages the flow of capital rather than discourages or re-directs capital flow.

NR asked if there has been any mention or discussion on carbon negative actions and stressed its importance. GS confirmed that this will be included in the CCS paper as no one else is covering it.

ET stressed how important this is for CCUS to be included in this taxonomy and asked how can the time between now and the Plenary be used most efficiently across different groups, and how can we be sure the ZEP input will have impact in each work-stream? GS stated that the CCUS paper has been requested by leader of Energy and manufacture of Gas groups; within which Equinor, Imperial College London and the EC sit. We will look into membership of each manufacturing group to see if our network has an entry into these groups, or will need to outreach to groups to propose ZEPs opinion. The group leaders will be encouraged to back the cross-cutting call for CCUS.

Item 2: Secretariat update

Actions from AC 57

LW provided an update on actions from the last AC meeting.

All actions from previous meetings have been completed, including the Survey Results, Forward Work Plan, and work on capture rates. TWG cross collaboration report has been peer-reviewed, and by the end of March a draft report should be prepared ready for sign off by the AC in June.

2019 ZEP-C budget

ZEP-C started 2018 with a net equity position of -€36,650 and returned to a budget surplus of €46,854 by year end. The 2018 audit for ZEP-C was undertaken by Vandelanotte and the auditors are satisfied. At the ZEP-C AGM the audit report will be approved ahead of the AC meeting on the 5th June 2019.

ACEC agreed two additional budgets:

- To build a total target reserve of c.€200,000 by running an annual surplus of €50,000 in 2019 and 2020.
- To allocate €45,000 to increased communication activity for example; outreach and engagement with the impending New European Parliament; or funds for coordinated communication activities with other initiatives.

LE observed a software error in the budget spreadsheet presented in the pre-reads concerning Equinor's 2018 contribution. LW confirmed it was a software error.

GS Confirmed the negative equity has been eliminated, thanks to the efforts of LW and the CCSA. With the grant secured for 3 years, forward planning can now include out-reach comfortably. The AC approved the ACEC proposals for budgets.

Future AC/ACEC dates

LW outlined the future meeting dates (in the pre-reads) the ACEC have received invites for all AC and ACEC events. The AC will receive invites for all events shortly.

The 59th Advisory Council meeting will be on Wednesday 5th June.

Item 3: Madrid Forum Analysis on the Potential of CCS and CCU

CS Presented the IOGP lead work for the Madrid Forum on analysis of CCS and CCU and the European gas networks (see Slides). More specifically CS asked how can the current rules in gas markets and tools in regulation of gas networks be transferred to the promotion of CO2 transportation infrastructure. This is viewed as a whole value chain sector and what barriers can tackle these.

There is ongoing discussion as to how gas regulators from Member States (eg Ofgem, or DA) to enable to transmission offshore as well as onshore.

The report draft will be prepared by the 10th of April ahead of the 2nd Workshop on the 16th of April, there is an open invite to members of ZEP.

LW mentioned that historically, gas is seen as a transition fuel and highlighted the opportunity to paint a picture around decarbonised gas as a future fuel, noting its potential to run in parallel with the High Level Energy Intensive Industry Groups as a constructive part of a low carbon economy.

CS said that there is concern from the commission on stranded gas assets due to a decreased demand of natural gas. Placement of SMRs has a greater implication on the transport network topography which is being discussed currently, especially by TSOs and DSOs such as ENTSOG.

GS suggested that there needs to be two reports; a technical report, and a hard hitting CCUS narrative to gain traction and impact. This route through DG GROW is an opportunity to revitalise CCUS in the Commission.

FN Suggested that wording of the report should be more positive and the CCUS community should learn from offshore wind and solar to not concentrate of the risk and costs of the project and paint a picture around the benefits first. After the first of a kind CCS projects have been completed many 'barriers' will be solved, including government handover for liability and monitoring.

CS reaffirmed that the barriers currently identified are very modest and that there will be work to be done on incentives, e.g. transport of CO_2 from inland Europe and how national regulators can operate offshore. In the main focus of the report, capture and storage barriers are minimal, the transport and liability of transport is the key issue.

CS asked for ZEP to speak and present the positive impactful narrative at the workshop on the 16th April.

Item 4: Update from the Norwegian Ministry for Petroleum and Energy on CCS-related Developments

EM Gave an update on the Northern Lights project, confirming with minor amendments in 2018 the project is still on-track (see Slides).

In cooperation with the IMO secretariat an interim solution has been drafted which should enable the London Protocol barrier.

The government must believe this project is the 'first of many rather than the last of few' before funding is fully accepted. Further to this there is a strong need for interest from industry and suppliers the 'pull' is needed to support the Norwegians governments 'push' to realise the project

EdC asked if CAPEX and OPEX are fully covered by the government. EM confirmed Government are in negotiation with industry; for capture, industry must commit to carbon costs and take risk, however the scope is limited and the government realise this. For storage and transport, another economic issue arises; economics of scale will need to be considered. The State will take onboard a big part of the storage and transport risk of the project, industry will support with an upfront cost, however the government will put in place a mechanism for companies to make a profit from incentives in the project.

GS said the ZEP platform could arrange for a series of connections with the network. For example, ZEP can arrange linkages with DG Grow, Madrid Forum and High Level Energy Intensive Industries Group to discuss the demand from industry for the Northern Lights Projects and Norwegian Government.

Item 5: Commission Updates

DG CLIMA *MV*:

Innovation Fund Update: Last week the Commission adopted the innovation fund's Delegated Act. The two month scrutiny period started last week, this could be delayed by 2 months but it isn't expected. DG CLIMA are currently undertaking work on the governance of the Innovation Fund. There is an aim to publish the fist call by the end of 2020. The essential elements of the calls will be discussed in the Expert Group represented by GS and TM. MV said the Expert Group will be maintained and most likely on a permanent basis, to advice the Commission on future calls.

A number of sectoral workshops will be organised to pull and present potential projects for the first call, and discuss essential elements, especially the selection criteria, cost calculations, monitoring report verification etc. These will be initiated in the Q4 2019 and Q1 2020 and will be presented to the expert group. The Commission said the CCS community is well organised, and welcomes the idea of a CCS joint workshop. The next Expert Group meeting will take place on 28th March.

DG RTD *VK*

VK said that the 4th EU-NOR conference emphasised the important role of CCUS in the future of a decarbonised Europe, including low carbon hydrogen.

SET-PLAN: the 26th March meeting coincides with the Missions Innovation Challenge 8 Hydrogen Workshop on the 26-27th March in Antwerp. This workshop will mainly be focused on renewable hydrogen. GS highlighted this as a pathway to get a profile for blue hydrogen.

Mission Innovation Challenge 3 on CCUS has its next workshop in Norway on the 19-20th June back-to-back with the TCCS (Trondheim CCS) Conference.

DG ENER *PH*

DG ENER are hosting a meeting next week (w/c 11th March) to understand coordination of the knowledge sharing networks with other EU-funded and CCS-related CSAs.

WG asked if is there a process to learn from previous attempts at establishing a knowledge sharing network. PH Confirmed that there is an open mind to learning from previous attempts, the meeting with ZEP and the SET-Plan members are the first steps to found the framework for the network. This is a little slower than expected, but the details and considerations will give time for an effective network.

LE urged a consultation to previous members of the network to understand to positives and negatives of the structure. For example one major positive were the information sharing workshops.

WG Observed that one issue from previous networks was the lack of sufficient outreach to the broader community. PH Confirmed that this has been considered with the creation of separate work packages for external communication as well as internal communication.

The 4th EU-NO energy conference took place on the 5th February, where a high level CCS conference with the European Commission and Norwegian Government was agreed for the 5th September. This was also discussed at the ZEP Government Group meeting on the 21st of February.

Connecting Europe Facility (CEF) and Projects of Common Interest (PCIs): The results of the PCIs call in January selected 2 CO_2 transport projects; the PORTHOS and CO_2Sapling project for further funding for FEED Studies for EUR 6.5m and EUR 2.8m respectively. The fourth PCI call for applications closed on 2nd March; there are 4 proposals for CO_2 cross-border transport infrastructure which are being reviewed.

Item 6: Overview of European Parliament, Council & other relevant activities

CG gave an overview on European Parliament and Council activity and developments since December 2018 (see slides).

GS asked for a cross-reference to check nations in Set-Plan IWG9 have correspondingly represented CCUS in their NECPs. Sweden and Italy appear to not have mentioned CCUS in the NECP.

Item 7: Presentation on Leeds H21 and latest developments

HSA presented an overview of the H21 North of England report, released in November 2018. This report up-scales the Leeds H21 13 times across the North of England from Hull to Liverpool and north to Newcastle-upon-Tyne.

SH highlighted the low cost of borrowing due to the regulated asset base and asked how do you convince the managers of these RAB's that you can deliver on these targets? HSA replied by stating that a large company (such as an oil and gas company) can invest in such a business.

SH: Are there concerns that socialising the cost across customers in the rest of the nation, which do not benefit from this project, could be viewed negatively? HSA Reassured that the process of socialising cost i.e. for expensive nuclear goes on currently. GS Reminded the group that there is a story here to present H21 and hydrogen as a lower *total* cost, especially compared to electrification scenario.

GS mentioned that the argument of abatement is not the complete story. The narrative needs to be an overarching economy increase during decarbonisation, the apparent cost of abatement is a distraction to the GDP rise potential.

LW asked if the report considered negative emissions from the power sector, namely with BECCS and bio-gas. HSA – the study has considered negative emissions from bio-gas and looked at the concepts for a blue-green hydrogen scenario, including a hydrogen gasification of biogas.

GS asked how can ZEP and its members help to make progress more likely? HSA Suggested a helpful way forward would shift the narrative to value creation and positivity, as is found in wind and solar industries, rather than concentrating on risk and cost.

Item 8: Presentation on findings from the Ramboll Study on CCU Technologies

SP presented the findings from the Ramboll joint study of CCU technologies which was commissioned by DG CLIMA (see slides). A significant sector of the report concentrated on current barriers and potential reformation of the ETS to fully account for CCU technologies and processes not as a direct emission technology. SP noted that recent changes in the Renewable Energy regulation encourages CCU for fuels with CO2 as a feedstock.

SH voiced concerns that this system is using fossil fuels to make more carbon products is not addressing a longer term storage on geological timescales which is what is required. KW asked that the definition of negative emissions should be carefully considered reiterating that the wording around negative emissions and CO2 removal is very important.

JH asked if other regions globally are considering policy support for the production of synthetic fuels, and subsequently, are the technology advantages mentioned in the slides internal to the EU or globally modelled ? SP confirmed that the study focussed on the EU and CCU as a first mover in the field.

GS related this work to the sustainability taxonomy work, and highlighted that the timescales for CCU as storage are still undefined and the monitoring of true life cycle emissions from exported

CCU products is still very hard. SP confirmed that the difficulty is still there, for example use of calcium carbonate (from CCU) has a life cycle of years (for use as a whitener in paper) or potentially thousands of years (for use in building materials). The report should be available within one month.

Item 9: ZEP 2019-2020 Forward Work Programme

MD talked through the Forward Work Programme for the Networks and External Relations Group in response to the stakeholder survey in 2018 (see slides). The draft work plans were included in the pre-reads, this is a flexible document to guide the delivery over the forthcoming year.

MD highlighted 3 overlapping themes across the 3 working groups:

- Strategy for long-term EU greenhouse gas emissions reduction (Long-term strategy)
- National Energy and Climate Plans (NECPs)
- EU Taxonomy on Sustainable Finance.

MD invites members to provide written feedback for suggestions, comments and additions to proposed activities within the next two weeks.

Item 10: Networks Update

Item 10a Network Policy and Economics Update

LE focussed on the recent postponed 20th February NWPE meeting, subsequently resulting in a small group of around 10 attendees. However, engaging discussions were had with the European Commission representatives. DG CLIMA were happy with CCUS in the long-term strategy, the network however raised concerns on the role of CCS in the strategy as a residual emissions reducer and not central to the plans.

Bill Spence was present at the meeting and gave a presentation on Learning's from the Shell Peterhead project; the Commission were very welcome of this, especially on messages around the community, governments and stakeholders engagement.

LE suggested that the network should seek to coordinate with DG CLIMA to host a workshop on release of the Innovation Fund Delegated Act.

GS asked if the network could think how it could improve reacting quickly to scenarios, i.e. the taxonomy work.

Item 10b Network Technologies Update

FN gave an update on the Network Technologies activity, firstly mentioning the TWG looking at the Ramboll CCU study can now restart very shortly following the presentation by SP at the AC (Agenda Item 8).

The other TWG looking at *Collaboration across the CCS Chain* has been active in both its work-streams:

Work-stream 1:
The report is on quantitative Storage Risk. The review has been completed, CG will be compiling and addressing the comments whilst collaborating with Halvard Høydalsvik to produce a final draft. Once completed, this final draft will be distributed to the AC ahead of discussion at the June AC.

Work-stream 2:

The work-stream will hold a second joint ERA-NET ACT & ZEP workshop on 14th March in Brussels; this will look at wider CCUS chain risk, risk sharing and business models.

Both work-streams should be finalised towards Q2/Q3 2019.

GS Reiterated that the sustainable taxonomy TWG covers both networks and called for members to consider additional support in the TWG. Lots of work will be needed; all work will need to be circulated for review.

Item 11: External Relations Group Update

TM gave an update via telephone on the activities of the External Relations Group, with reference to the extensive pre-reads.

Weber Shandwick services were confirmed in December 2018 and have been assisting the ERG significantly over the last 3 months.

LW gave an overview of the High Level Group for Energy Intensive Industries, highlighting in last 18-24months the group has done well to coordinate a provide a clear vision to the commission about their transition to a low-carbon economy, which CCUS provides a major input. This process has an very high and diverse commission attendance across many departments. There are a number of cross-cutting issues which are being worked on, including clean energy, CCUS and low carbon hydrogen. The meetings at the 27/28th March, LW suggests ZEP should be represented and warned that some attendees are opposed to CCUS.

TM gave an update on the progression of the long-term strategy. Since the last AC, the European Commission long-term strategy paper has been discussed which will feed into a council position to be confirmed in Sibiu in May (9th). Motions of resolution have had separate positions established by ITRE and ENVI. Inputs by the ERG to the ENVI amendments have been successful, especially the compromise amendment 27. Now, it is up for the presidents to decide on how to proceed on the resolutions from ITRE and ENVI. ERG is following this process this closely.

ZEP wrote a letter of support on the 18th January 2019 for the University of Strhyclyde who are appliying for funding to investigate 'The Role of CCS in industry clusters in delivering vlue to the political economy'.

The EU Sustainable Energy Week is running from 17th-21st June 2019. ZEP along with the IOGP and Energy Technologies Europe have proposed a CCUS session titled CCUS – Achieving deep decarbonisation, enabling negative emissions'. The application was sent on the 11th February, with additional support from SINTEF and IFP Energies Nouvelles.
ZEP will be joint hosting the 2nd ERA-Net ACT and ZEP joint workshop on CCS Risk and Liability Sharing on the 14th March 2019 in Brussels. Interim conclusions from the NWT TWG 'Collaboration across the CCS Chain' work-stream 2 work will be discussed.

Actions

Item	Action	Owner	Deadline
1	ZEP to distribute slides on the Sustainable Finance Green Taxonomy to the group	Secretariat	
1	ZEP to prepare a CCUS draft template for input into the Sustainable Taxonomy Expert Group meetings	Secretariat + TWG	March 14th

Item	Action	Owner	Deadline
3	ZEP to present policy recommendations at Madrid Forum Workshop on 16th April	NWPE, ERG	
6	ZEP to identify SET-Plan Member States who have a minimal or no mention of CCUS in their draft NECPs	Secretariat + ERG	
9	ZEP to update a working version of the 2019/2020 Forward Work Plan before the next ACEC meeting	Secretariat	April 16th
10	ZEP to complete and distribute TWG Collaboration across the CCS chain WS1 report ahead of discussion at the next AC	Secretariat	
10	ZEP to contact DG CLIMA for a joint workshop on the Long-term Strategy	Secretariat + NWPE	

Advisory Council Executive Committee

Minutes: Conference call – 16th April 2019

Draft Minutes

Attendance

Graeme Sweeney	ZEP Chairman
Kim Bye Brunn	Shell (proxy Lamberto Eldering)
Rob van der Meer	HeidelbergCement
Theo Mitchell	Bellona (proxy Frederic Hauge)
Helen Bray	Shell
Filip Neele	TNO
Arthur Heberle	Mitsubishi
Luke Warren	ZEP Secretariat

1. Introduction and general update (open session)

Introduction & actions from last meeting

GS updated the ACEC on work progress.

The AC meeting minutes were reviewed and no comments were received. The actions were reviewed and have either been completed or are being progressed.

In response to the discussions around the Innovation Fund process it was noted that there is a need to consider alignment between the Innovation Fund and the SET-Plan. It was noted that there has been good progress in enabling alignment between the SET-Plan and ACT.

2. Network and Temporary Working Group updates (open session)

a. Network Technology

FN updated the ACEC on work progress within Network Technology. The next meeting will be held in Brussels on the 4th June and will consider how to progress the new work item activities identified. In particular there is interest in progressing the discussions on capture rates which has been added to the agenda. It has also been proposed that there may be a need to undertake further work on CO2 transport.

TWG Collaboration across the CCS chain
WS1's (storage-related risks) draft report has been reviewed by the IEA GHG, Bellona and Secretariat. This has generated a significant number of comments that are being addressed. The intention is for these to be addressed by mid-May with the report then being sent for final approval by both member companies and the AC.

TWG CCU and Sink Factor Methodology

Following the release of the Ramboll study the TWG will meet to discuss ZEP's response. AH wants to consider the issue of Power-to-X as this topic is also relevant to this activity set. It was noted that the issue of LCA remains challenging. The Sustainable Taxonomy group has decided not to progress CCU until LCA issue resolved.

It was agreed that ZEP should seek to develop a short position on this by the June AC meeting and this can then be provided as input to the EC.

b. Network Policy and Economics

ZEP is identifying ongoing CCS and CCU projects and placing these into a Gantt chart. The intention is to use this as input to EC as they progress the design of the Innovation Fund. The EC is undertaking active project promotion and outreach activity to ensure success of the Innovation Fund. Many organisations are seeking to host events that can support the EC in this process. It was agreed that ZEP would follow a two-track approach;

- Track one – Develop a response to the EC consultation questions on the Innovation Fund.
- Track two – ZEP has offered to host a workshop, EC replied to say that interested and expect that they will accept. Will likely be a DG Clima / ZEP co-badge in either June or September.

It was also noted that DG RTD are keen to encourage alignment of funding between Horizon Europe and Innovation Fund. It was agreed to hold a call with the SET-Plan Co-chairs to see their appetite to support the coordination role. This approach would be well aligned with the European Court of Auditors report and recommendations.

Sustainable Taxonomy

GS provided an update. The energy work is focussed on delivering emissions thresholds that are consistent with net-zero by 2050. The current approach has proposed the exclusion of new Nuclear and "solid carbon". ACEC agreed that ZEP will not input to the new nuclear discussion. Not clear what is meant by "solid carbon".

On CCS, it has been argued that this should be considered an economic activity in its own right that delivers emission reductions in other economic areas, enabling them to be considered a sustainable investment. For power applications it has looked at both pre and post combustion. The way that this is structured means that unabated gas plant would be excluded as a sustainable investment in the post-combustion application. EOR is proposed to be excluded as a sustainable investment activity. The O&G constituency has to consider further the proposed template and will revert with its view shortly.

ZEP should not engage in the debate on sustainability of biomass as it does not have a position and will find it challenging to influence the position. It was agreed that ZEP should argue that CCS is applied to sustainable biomass.

c. ERG

Updates were provided on recent engagement activities which reached out to Dutch stakeholders. There was interest in understanding the ZEP perspective, however given some of the national debates on climate policy there is not yet a clear external position that they can take.

It was noted that the EU sustainable energy week event has merged the ZEP, CO2 Value Europe and GCCSI applications and presents an important opportunity to bring together the CCS and CCU communities. The event will be held on the 20th June and the draft agenda was reviewed.

The tender for the new ZEP website has been issued and a number of bids recived which are being reviewed. It was also noted that there is a need to consider how to engage with the new institutions later in the year and the need for new communications material to help onboard new EP, EC, etc.

3. AC59 agenda

LW presented the draft AC59 agenda and sought feedback on suggested external presentations. It was agreed that the SCCS should be invited to present the EU Project Network and that Sean Kidney should be invited to present on the Sustainable Taxonomy.

4. Finance update

LW informed the ACEC that the audit for ZEP-C has been successfully completed and the auditor's report has been released. The ZEP-C AGM will therefore be held at the June AC meeting.

The Financial management report was reviewed. This has been updated to include the revised budget which includes allocation of €45,000 for additional Public Affairs activities. In addition, the budget forecasts a surplus in order to build ZEP-C reserves to cover future funding gap periods.

The ACEC was also informed that The Crown Estate is not in a position to support ZEP-C in 2019. This has resulted in the forecast income dropping to €167,500. The ACEC proposed that the amended budget forecast is presented to the AC59 for approval, noting that the forecast surplus is expected to drop slightly by the year end but that this could be increase in the event that there is less expenditure on Public Affairs than forecast.

5. AOB

N/A

Actions

Actions		Owner
2.a.	Secretariat to circulate RAMBOLL presentation and Sustainable Taxonomy paper to inform the development of the ZEP response.	Secretariat
2.b.	Hold call with Co-Chairs of SET-plan to discuss opportunities to help coordinate Innovation Fund discussions.	GS & Secretariat
2.b.	The O&G constituency has to consider further the proposed template and will revert with its view shortly.	KBB
2.b.	NWPE to develop Gantt chart of projects in the EU	Secretariat
3.	It was agreed to invite SCCS and Sean Kidney to present to the AC59.	GS & LW

Advisory Council Executive Committee

Draft Minutes: Conference call – 15th May 2019

Draft Minutes

Attendance

Graeme Sweeney	ZEP Chairman
Kim Bye Brunn	Shell (proxy Lamberto Eldering)
Rob van der Meer	HeidelbergCement
Jonas Helseth	Bellona (proxy Frederic Hauge)
Marie Bysveen	SINTEF (proxy Nils Røkke
Charles Soothil	ZEP Vice-Chair
Helen Bray	Shell
Arthur Heberle	Mitsubishi
Luke Warren	ZEP Secretariat
Marine d'Elloy	ZEP Secretariat
Chris Gent	ZEP Secretariat

1. Introduction and general update (open session)

Introduction & actions from last meeting

GS updated the ACEC on work progress.

The AC meeting minutes were reviewed and approved, subject to amending the wording in the chairs update.

The actions were reviewed and have either been completed or are being progressed.

The ACEC April meeting minutes were reviewed and approved, subject to the following amendments:

- Agenda item NWT update: amend the wording on LCA.
- Agenda item NWPE update: include the action of realising a Gantt chart of projects in the EU.

The actions from the April ACEC call were reviewed and have either been completed or are being progressed.

2. Network and Temporary Working Group updates (open session)

a. Network Technology

AH updated the ACEC on work progress within Network Technology. The next meeting will be held in Brussels on the 4th June and will consider how to progress the new work item activities identified. In particular there is interest in progressing the discussions on capture rates which has been added to the agenda. LW highlighted the importance of this discussion given the issues around residual

emissions arising from the National Infrastructure Commission report in the UK and the capture rate assumptions in the latest CCC report. It has also been proposed that there may be a need to undertake further work on CO2 transport.

TWG Collaboration across the CCS chain
WS1's (storage-related risks) draft report has been reviewed by the IEA GHG, Bellona and Secretariat. This has generated a significant number of comments that are being addressed. The intention is for these to be addressed by mid-May with the report then being sent for final approval by AC and subsequently member companies.

WS2 (collaboration across the chain) held a workshop in March. The group will reconvene shortly and start drafting a report.

TWG CCU and Sink Factor Methodology
Following the release of the Ramboll study, the TWG will meet on 29th May to discuss ZEP's response. The TWG intends to develop a short position on this by the June AC meeting and this can then be provided as input to the European Commission.

b. Network Policy and Economics

JH updated the ACEC on work progress within NWPE. There was a conversation on the Madrid Forum process. ZEP has provided comments on the draft report. It was agreed that it would be important to continue ZEP's engagement in this process.

ZEP is identifying ongoing CCS and CCU projects and placing these into a Gantt chart. The intention is to use this as input to EC as they progress the design of the Innovation Fund. The EC is undertaking active project promotion and outreach activity to ensure success of the Innovation Fund. Many organisations are seeking to host events that can support the EC in this process.

ZEP will help the European Commission to host its workshop on CCS. The European Commission is keen to hold this workshop at the same time than the EU-Norway CCS conference. There are concerns that all industrial participants will not attend the conference. ZEP Secretariat will get in touch with DG CLIMA to arrange a meeting with Christian Holzleitner and discuss the best date for the workshop.

c. Sustainable Taxonomy

GS provided an update on the EU Taxonomy for Sustainable Finance. GS noted that the energy work is focussed on delivering emissions thresholds that are consistent with net-zero by 2050. Activities are defined around declining emission thresholds and the approach take is technology neutral.

GS said the definition of what is sustainable is driven by two main outcomes: emissions reductions and do no significant harm (DNSH). The work done by the Energy Group will be subject to review by the DNSH group (in which ZEP is not involved). In particular, the DNSH will review nuclear and ZEP's understanding is that it is likely to be excluded from the Taxonomy.

With respect to the production of electricity, GS said that sustainable is defined as a declining threshold over time (100gCO_2/kWh then 0gCO_2/kWh by 2050). Therefore projects would need to demonstrate that they were under the threshold over their lifetime.

The ACEC agreed that the list on the top slide should not be exhaustive and anything that meets the general description/threshold should qualify even if it is not expressly listed on the top slide. This matter will be raised with the Energy group.

Regarding the activity on Transmission and Distribution of Electricity, the Expert Group requested for the same threshold as power generation to be applied. The Commission's position is that all investments in the electricity grid are compliant. It was agreed that ZEP will monitor this debate.

Regarding Activity 4, Carbon Capture and Storage, GS said that ZEP asked to include the summary slide (as well as the production of electricity summary slide). GS said that activity 4 makes shows that CCS applies to all other economic activities, i.e. industrial emissions from manufacturing, manufacturing of hydrogen.

CS asked to improve the wording around Direct Air Capture.

GS noted that the case studies and transportation limit on leakage rate were done by Equinor, which have been very helpful and active in the process.

The ACEC noted that Activity 5 (Upgrade of Gas Transmission and Distribution Networks) appeared to be excluding CO2. It was agreed that ZEP will make a comment on this to change the wording and include CO2 – consistent with Activity 4.

There was a discussion on the inclusion of BECCS. GS said that Activity 7 (Manufacture of Biogas for Electricity Generation) covers the use of biomaterials for the production of electricity. This is an economic activity and therefore CCS applies to it. It was agreed that this should be explained more clearly in the slides.

GS noted that conversations forests are still ongoing (especially about what is deemed sustainable).

GS said the Technical Expert Group will meet on 20th and 21st May to scrutinise the slides and finalise this round of activities. Once the Expert Group has made its recommendations to the Commission (delivery ~ June), there should be a 12 week public consultation due out either at the beginning of the summer or in the autumn. GS said that another phase of the work will take place in 2020, building on this "TEG 2" phase.

Regarding the political process, GS said that the European Parliament took a view on the Taxonomy. It took the view to exclude nuclear and solid carbon (which has not been defined yet, i.e. does it include solid biomass?). In addition, the EP intends to avoid carbon lock-in but did not say how that would be achieved / how to evaluate how carbon lock-in occurs.

It is expected that the Council will not reach an agreement under the Romanian Presidency and therefore this file should be handed over to the Finish Presidency. If this is the case, there might need to be a new position from the EP. It was agreed that ZEP will be meeting with the Finnish Presidency.

d. <u>ERG</u>

HB updated the ACEC on the External Relations Group.

HB said the EU Sustainable Energy week event has merged the ZEP, CO2 Value Europe and GCCSI applications and presents an important opportunity to bring together the CCS and CCU communities. The event will be held on the 20th June. HB encouraged ACEC member to register and share the invitation with their networks.

There was a conversation about attendance at the event. It was agreed that ZEP should consider engaging its members with specific expertise on CO2 storage safety and reliability such as Stuart Haszeldine from SCCS.

The tender for the new ZEP website has been issued and a number of bids recived which are being reviewed. It was also noted that there is a need to consider how to engage with the new institutions later in the year and the need for new communications material to help onboard new EP, EC, etc.

HB and LW emphasised the importance of the High-Level Group on Energy-Intensive Industries, which frames CCS, CCU and blue hydrogen in a positive way. An Industrial Master Plan will be submitted to the European Commission by the end of the year. To deliver this plan, 3 subgroups were established. The work is mainly led by individual sector associations. The ACEC agreed that the Master Plan is likely to have a strong impact on the work of the new Commission.

GS said ZEP will be meeting with DG GROW in the next month and raising the following points: 1) the cross-cutting opportunities that CCS, CCU and H2 present; 2) the importance of the HLG on EEIs for ZEP; and 3) DG GROW's engagement with ZEP.

3. AC59 agenda

LW presented the draft AC59 agenda. LW confirmed that the SCCS will attend and present the EU Project Network. Sean Kidney has also been invited to present on the Sustainable Taxonomy. GS will follow-up on the invitation.

4. Finance update

LW informed the ACEC that the audit for ZEP-C has been successfully completed and the auditor's report has been released. The ZEP-C AGM will be held at the June AC meeting.

Since the April ACEC the invoices from both BP and Shell have been settled. The income shows that The Crown Estate support of €12,500 will not be made and forecast income for 2019 is now €167,500.

The budget includes allocation of €45,000 for "Public affairs" which will be used for increased communication activity in 2019 if required. ZEP-C will also operate seek to operate with a budget surplus to develop sufficient reserves to sustain itself through a future funding gap. Given the reduction in income from the loss of the Crown Estate the forecast surplus is less than anticipated although it is noted that there may still be underspend from Public Affairs which could mean that the surplus returns to the previously forecast level. This revision will be presented to the next AC for approval.

5. AOB

N/A

Actions

Actions		Owner
2.b.	Secretariat to organise call with European Commission to set date for Innovation Fund workshop	Sec
2.c.	GS to share feedback from ACEC on EU Taxonomy for Sustainable Finance with Energy Group	GS
2.d.	Secretariat to contact Stuart Haszeldine regarding ZEP EU Sustainable Energy Week event	Sec
2.d.	GS to follow-up with Sean Kidney regarding AC59 invitation	GS

ZEP Advisory Council 59

05th June 2019

Agenda Item 1.e: Chair's update

External engagement

Since the last AC58 meeting, the ZEP Chair and Secretariat have taken part in the following meetings with external stakeholders and processes:

18th March 2019

- **Rosalie Azzi**, personal advisor to Dutch MP **Dilan Yeşilgöz-Zegerius**, member of the leading government coalition part (VVD).
- **Sophie van Eck**, Energy Attaché, and **Bastiaan Hassing**, Climate Attaché, Permanent Representation of the Netherlands.

26th March and 2nd April

- **Nicoline Bos**, Advisor to MEP **Jan Huitema** (ALDE, NL).
- **Lisa Laumen**, Advisor to MEP **Esther de Lange** (EPP, NL).

A meeting note summarising these meetings can be found as pre-read 1.e.i.

SET-Plan IWG9 CCS and CCU activities

The SET-Plan IWG9 CCS and CCU activities are, from the 1st May 2019, supported by a H2020 consortium ("Impacts9") of CCSA (Coordinator), BGS, CO2 Value Europe and Sintef. This will enable materially greater support to be provided to support deliver of the SET-Plan's CCS and CCU targets. As Graeme Sweeney is Chair of ZEP and Co-Chair of the IWG9, and CCSA is providing secretariat support to both ZEP and the SET-Plan then this will enable good coordination and alignment between the ZEP activities and the SET-Plan.

The IWG9 held a plenary meeting in The Hague (26th March) just ahead of the grant entering into force. The meeting agenda is attached as pre-read 1.e.ii.

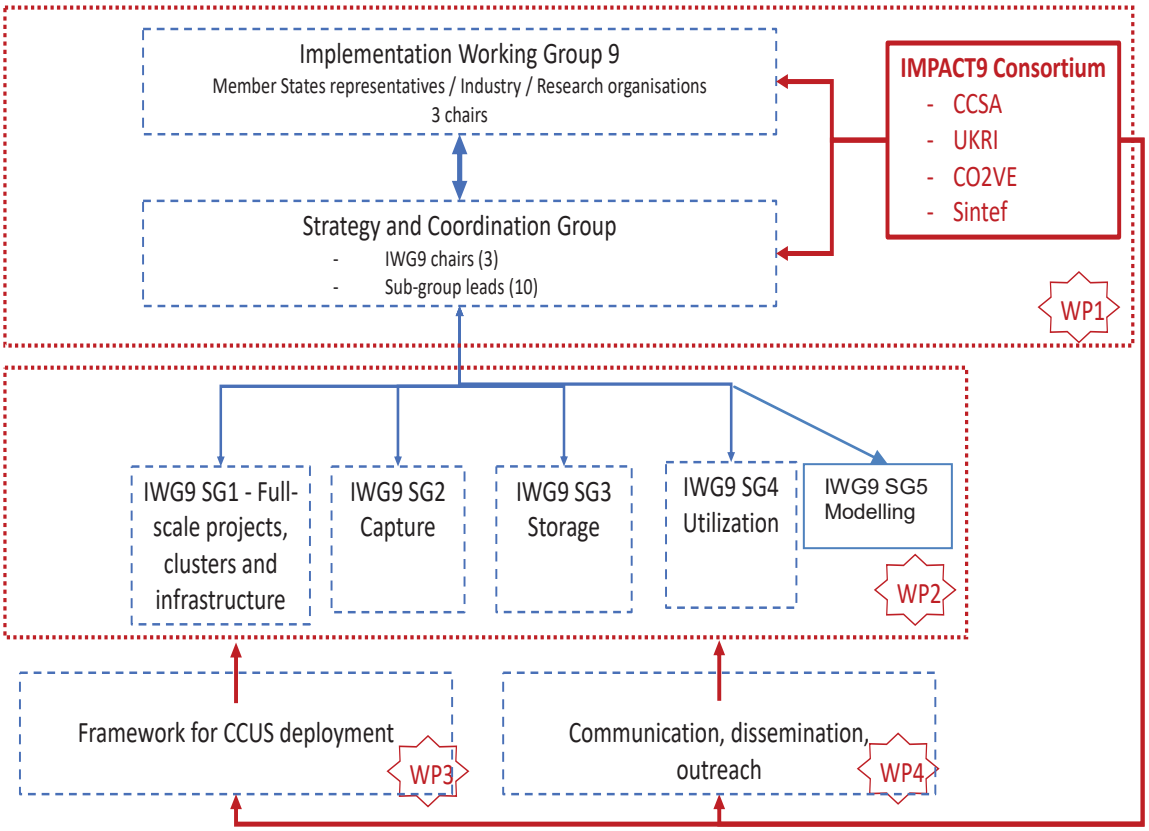
The meeting aimed at ensuring the successful transition from the IWG9 structure supported by the ZEP Secretariat to the IWG9 structure supported by the IMPACTS 9 consortium (Schematic shown below). The Coordinated Support Action will enable the IWG9 to have significant resources dedicated to support the work packages, including communication, dissemination and outreach.

The meeting also discussed potential for collaboration across EU-funded CCS-related activities (i.e. CCUS Projects Network, CSA on Strategic Planning for CCUS, ETIP, etc.). A key action from the meeting is to develop a working document setting out areas for possible collaboration and

forward activities. The IWG9 also agreed to stay close to developments related the ACT, the Innovation Fund and IPCEIs.

Another key priority discussed as the meeting is encouraging greater Member State participation in the IWG9. The IWG9 intends to organise a workshop – led by the Norwegian and Netherlands Co-Chairs – engaging with a wider set of Member States that have demonstrated interest in CCS and CCU through the National Climate and Energy Plans, presenting key IWG9 activities and encouraging greater participation.

The next plenary meeting will take place on 17th October in The Hague.



IWG9 structure supported by the CSA (IMPACTS 9)

Summary of external engagement

A number of meetings and calls took place in March/April with Dutch stakeholders.

The notes below summarise the discussions and key actions arising.

18th March

Introduction

- Christiaan Gevers Deynoot held a call with **Rosalie Azzi**, personal advisor to Dutch MP **Dilan Yeşilgöz-Zegerius**, member of the leading government coalition part (VVD).
- Dr Graeme Sweeney and Christiaan Gevers Deynoot held a call with **Sophie van Eck**, Energy Attaché, and **Bastiaan Hassing**, Climate Attaché, Permanent Representation of the Netherlands.

Key outcomes

- CCS is not a key feature in the Dutch climate debate, even though it is politically contentious. MPs and government stakeholders have limited awareness of the variety of CCS applications, the regional ramifications, and the critical role for NL in driving CCS in Europe.
- There are potentially opportunities for ZEP to help expand awareness in its technical advisory capacity. This could be realised through continued engagement with the Dutch Perm Rep and via relevant MPs, especially after the local elections taking place on 20 March.
- Coordinating between MS which aim for some form of CCS technology is limited at the political level. Connectivity between the technical and political levels should be improved. NL is not ready yet to convene other MS until its internal alignment around CCS is secured.

Key follow-up actions

- WS to share refs to CCS, CCU, BECCS and hydrogen in draft NECPs with MP assistant and Perm Rep (done).
- WS to share overview of efforts around sustainable Taxonomy with Perm Rep (done).
- WS to share feedback on Innovation Fund delegated act with Perm Rep (done).
- ERG to consider possible opportunity of a technical briefing to MPs.
- WS to follow up with MP assistant on possibility of a technical briefing.
- WS to share ZEP's narrative for the HLG EnII with Perm Rep when ready.

Detailed recap

Rosalie Azzi (RA), personal advisor to Dutch MP **Dilan Yeşilgöz-Zegerius**, member of the leading government coalition part (VVD).

- RA noted that CCS barely plays a role in the Dutch climate debate. No consideration of its regional ramifications. Bio-CCS does not feature at all in the debates.
- She agreed that the growing role of the Greens as constructive opposition party after the government loses its majority in the senate (expected outcome) could affect support for CCS.
- RA indicated that the debate focuses on the response to the conclusions from the two assessment agencies on the financials of the climate accord. Government response by end-April, including on the level of subsidies and application period for CCS.
- The Government stated, after the publication of the climate accord assessments, that CCS should be limited to ensure it does not displace efforts around clean technologies.
- RA would inform whether ZEP could seek to give a technical briefing to MPs in the parliamentary commission for economic, energy and climate affairs. This is done on a regular basis, with one the latest ones being a briefing by the IPCC.

Sophie van Eck (SE), Energy Attaché, and **Bastiaan Hassing** (BH), Climate Attaché, Permanent Representation of the Netherlands.

- SE asked about the status of the SET Plan Action 9 Implementation Plan and whether any joint funding or activities have been set up. GS drew attention to the importance of CCS to be included in the Taxonomy.
- BH referred to the debate on the long-term strategy, noting that this is still a very broad debate with MS picking and choosing topics to address. CCS/CCU are one of the technologies mentioned depending on what MS deem politically feasible. He noted that the debate between MS is therefore not about whether the technology is or is not a good option, but rather the political economy.
- BH stated that for NL it is now matter of finding whether there are any EU level hindrances and bottlenecks. That is basically the discussion with The Hague. SE wondered whether there was any resistance to include CCS in the Taxonomy. SE agreed with ZEP's views on Innovation Fund and the need to remedy negative NER300 experiences. NL wants to engage with the relevant stakeholders to ensure that the eligibility criteria are good.
- SE further stated that NL has consistently communicated about the importance of CCS and is closely coordinating with its experts in Innovation Fund expert group and others to ensure consistency of messaging. She agreed that other MS who see CCS as an opportunity should also be incentivised to communicate consistently about CCS at both expert and political level.

- In response to a suggestion to bring pro-CCS MS together, BH noted that as a first step they will need to coordinate within NL before they can reach out to other MS. He stressed that the issue remains political sensitive. He has no hesitation to approach colleagues to highlight importance CCS, adding that the key is now to ensure that CCS remains part of the technology mix.
- GS stressed that the approach of 'CCS where there are no other options' is problematic, as CCS needs to be discussed within every specific contexts and sectors. ZEP's point is that the options should lead to net-zero by 2050, which requires a plan to 2050 for each sector. BH agreed that there is a disconnect between what was agreed two years ago in Paris and what the discussions focus on now.
- GS further noted that that if neither NL nor NO are successful in realising a substantial CCS project then no country in Europe will. SE agreed to speak to colleagues in The Hague to assess whether it would be helpful if ZEP delivers technical input in the debate. She added that NL is involved in different industry working groups e.g. HLG EnII and is keen to focus the narrative around that. She could share ZEP's input with officials responsible in NL.

26th March and 2nd April

Introduction

- Christiaan Gevers Deynoot held a meeting with **Nicoline Bos**, Advisor to MEP **Jan Huitema** (ALDE, NL), a leading MEP from the Dutch liberals whom ZEP has previously engaged with. He has been an active substitute in the ENVI Committee, having amongst others supported ZEP's positions in the context of the discussions on the long-term strategy resolution.
- Christiaan Gevers Deynoot held a meeting with **Lisa Laumen**, Advisor to MEP **Esther de Lange** (EPP, NL), delegation leader of the Dutch Christian Democrats and Vice-Chair of the EPP Group. As a substitute in ITRE, she has pushed ZEP's agenda around key junctures, including but not confined to the long-term strategy resolution. ZEP has engaged with her previous assistant.

Key outcomes:

- Both MEPs are running and will most likely be re-elected. Depending on the government's final plan for CCS, as well as the final allocations of EP committees post-elections, they are prime candidates for 'ambassadorial roles'. They would raise the issue with their MEPs and both assistants asked ZEP to contact them by early June to this end.
- The terminology and sequencing of CCS, CCU, BECCS and clean hydrogen technologies is still a mystery for most MEPs. They acknowledged that the wording in the EP resolution

may be somewhat ambiguous, but stressed that it was in the end a minor paragraph in a long text and the lack of knowledge among MEPs about the tech did not help either.

- Both assistants supported the idea of a projects exhibition in the EP with national flags and other markers that enable MEPs to connect with their constituency. Both showed interest in having their MEP potentially host it, depending on the situation post-elections.
- In terms of election work, the assistants made the following recommendations, reiterating some of ZEP's past suggestions:
    - Be transparent and include a pros and cons paper of CCS, CCU, BECCS and clean hydrogen technologies in any on-boarding pack for new MEPs.
    - Consider establishing an informal parliamentary intergroup around CCS, CCU, BECCS and hydrogen technologies. The two MEPs may be interested.
    - Consider having MEPs sign a pledge around long-term climate action that has a CCS component in there. Potentially with allies.
    - Try to organise technical briefings in the ITRE or ENVI Committees when the new legislature commences in the second half of 2019.

Key follow-up actions:

- WS to prepare concept and start development for post-elections MEP on-boarding pack.
- ALL to consider the value of an informal EP intergroup and the practical requirements.
- ALL to consider the value of developing a pledge for MEPs to sign.
- ALL to consider the value of a 'projects exhibition' as ZEP's 2019 General Assembly.
- WS to assess feasibility of setting up technical briefings in EP post-elections.

ZEP AC59 05.06.2019
Agenda item 1.e.ii.
SET-Plan IWG plenary meeting agenda 26.03.2019

SET-Plan Action 9 CCS and CCU

Meeting Agenda

Tuesday 26th March 2019, 10:00 – 16:00

Ministry of Economic Affairs and Climate, 73, 2594 AC Den Haag, Netherlands

Item number	Time	Length	Title
	09:45	*15mins*	**Arrival / coffee & tea**
1	**10:00**	*10mins*	**Introduction and meeting goals** – Chairs
2	**10:10**	*20mins*	**Chairs and Commission update**
3	**10:30**	*30mins*	**IMPACTS9 bid presentation** – Luke Warren
4	**11:00**	*30mins*	**CCUS Knowledge Sharing Network** – Hans Bolscher & Peter Horvath • Presentation of the CCUS KSN • Discussion on collaboration with other Commission funded CCUS-related initiatives
5	**11:30**	*15mins*	**ACT: Accelerating CCS Technologies Update on recent developments** – Annette Weiß
6	**11:45**	*1h30*	**Subgroup updates (work plan, membership, etc.) –** Subgroup co-leads • Subgroup 1 (full-scale projects, clusters and infrastructure): Lamberto Eldering & Brian Murphy • Subgroup 2 (capture): Marie Bysveen • Subgroup 3 (storage): Jonathan Pearce & Ton Wildenborg • Subgroup 4 (utilisation): Damien Dallemagne & Paul Bonnetblanc • Subgroup 5 (modeling): Luke Warren
	13:15	*30mins*	*Lunch*
7	**13:45**	*45mins*	**Presentation on framework for deployment of CCUS** – WP3
8	**14.30**	*45mins*	**Presentation on SET-Plan communication and dissemination activities** – WP4
9	**15:15**	*15mins*	**Update and discussion on SET-Plan KPIs**
10	**15:30**	*20mins*	**Forward work programme** • Agreed actions & next steps
	15:50	*10mins*	**AOB**