

ZEP Advisory Council 51

5th July 2017

Agenda Item 1: Introduction

1.a. AC51 Agenda

Appended to this paper is the agenda for the 51st meeting of the Advisory Council.

1.b. AC50 Draft Minutes

Appended to this paper are the draft minutes for the 50th meeting of the Advisory Council, which took place on 22nd March 2017.

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 an update for SET-plan TWG9 CCS and CCU activities and summaries of the Chair's external meetings since the AC50 in March.

ZEP Advisory Council 51

Draft Meeting Agenda: 5th July

Room AB-3A, Centre Albert Borschette
36 Rue Froissart
1040 – Bruxelles

10:30 – 17:00 CET

Item	Lead Presenter	Time
1 Introduction and welcome: <ul style="list-style-type: none"> • Adoption of Agenda • Approval of AC50 minutes and review of actions • Chair's update 	Graeme Sweeney	10:30 – 10:50
2 Secretariat Update	Luke Warren	10:50 – 11:00
3 Finance for Innovation: Towards the ETS Innovation Fund	Roman Doubrava, DG Clima	11:00 – 11:45
4 Commission updates: <ul style="list-style-type: none"> • DG RTD • DG ENER • DG GROW 	Vassilios Kougionas Michael Schuetz TBC	11:45 – 12:15
5 Overview of European Parliament, Council & other relevant activities	Nikki Brain	12:15 – 12:30
Lunch		12:30 – 13:15
6 Oil and Gas Climate Initiative	Gardiner Hill	13:15 – 14:00
7 EU Funds for Industrial CCS Clusters	Emrah Durusut Element Energy	14:00 – 14:45
8 2017 ACEC Away Day – initial conclusions	Graeme Sweeney/Luke Warren	14:45 – 15:15
9 Network Policy and Economics update	Lamberto Eldering / Angus Gillespie / Jonas Helseth	15:15 – 15:45
10 Network Technology update	Luke Warren	15:45 – 16:15
11 External Relations Group (ERG) update	Mark Downes / Jonas Helseth	16:15 – 16:50
12 Any other business & closing remarks		16:50 – 17:00

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5th July 2017

Agenda Item 1.b: Draft Minutes: 50th meeting of the ZEP Advisory Council – 14th December 2016

Attendance

Advisory Council members

Lamberto Eldering (alternate)
Angus Gillespie
Ward Goldthorpe
Jonas Helseth (alternate)
Gardiner Hill
Emmanouil Kakaras
Rob van der Meer
Philippa Parmiter (alternate)
Nils Røkke
Charles Soothill
Graeme Sweeney
Ton Wildenborg (alternate)

Statoil
Shell
Sustainable Decisions
Bellona
BP
Mitsubishi Hitachi Power Systems Europe
HeidelbergCement
Scottish CCS
Sintef
ZEP Vice Chairman
ZEP Chairman
TNO

Observers and other attendees

Ruta Baltausė
Sonia Baron
Thomas Berly
Anne Margrete Blaker
Didier Bonijoly
Gerdi Breembroek
Marie Bysveen
Niels Peter Christensen
Patrick Clerens
Dominique Copin
Eric De Coninck
Mark Downes
Charlotte Elvsaas
Arthur Heberle
Giorgi Komakhidze
Vassilios Kougionas
Caterina de Matteis
Jean-Xavier Morin
Filip Neele
Andy Read
Constantin Sava
Stig Svenningsen
Silvia Vaghi
Peter Zweigel

European Commission
EU Turbines
IEA
Gassnova
BRGM
Netherlands Enterprise Agency
Sintef
Gassnova
EPPSA
Total
Arcelor Mittal
Shell
The Norwegian Ministry of Petroleum and Energy
Mitsubishi Hitachi Power Systems Europe
EPPSA
European Commission
IOGP
CO₂ - H₂
TNO
ROAD
National Institute of Marine Geology and Geoecology, Romania
The Norwegian Ministry of Petroleum and Energy
GCCSI
Statoil

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ZEP Secretariat

Harriet Howe

Theo Mitchell

Luke Warren

CCSA

CCSA

CCSA

Item 1: Introduction

The AC adopted the agenda for the meeting and approved the minutes of AC49.

The Chair introduced the meeting and provided an update on his external engagement activities.

Item 2: Secretariat update

Luke Warren (LW) provided an update on the ZEP Secretariat, in addition to welcoming Angus Gillespie as a new Advisory Council member. At the meeting there were two further nominations - Constantin Sava (National Institute of Marine Geology and Geoecology, Romania) and Allard Castelein (Port of Rotterdam) – with both appointed to the Advisory Council, following a ballot taken during the break.

LW then gave the ZEP-C finance update, including an update on the ZEP website handover to a new and cheaper provider following discussions by the ACEC.

LW informed the meeting that the Secretariat now intends to release the 2018 financial plan in June this year, rather than in September. This will also be influenced by the 2017 priorities determined at the ACEC away day. LW also provided an update on the situation regarding membership, informing the meeting that EPPSA members will be unable to support ZEP in 2017.

Gerdi Breembroek (GB) provided an update of the activities of the ZEP Government Group, which met on 2nd March. At the last meeting it was agreed that GB would continue to have the role of Permanent Observer to the AC. Also discussed was the ongoing role of the Government Group, including potentially merging with the SET-Plan TWG9 into a single permanent group.

Item 3: Presentation on EC perspectives on CCU

Ruta Baltause (RB) presented slides providing an overview of the Commission's current perspectives on CCU, particularly regarding low-carbon transport fuels. From January 2021 suppliers will be required by Member States to provide a minimum share of energy from advanced biofuels, with the commission currently looking into incentives and producing a market on the demand-side. This will include the Fuel Supplier Obligation, which will ensure that the necessary investments are made. Work is being undertaken on the calculation of emissions from fossil fuels, with a bonus given where fossil fuel CO₂ is replaced in the energy and transport sector.

One of the main points raised following the presentation focused on the definition of waste processing gas and exhaust gas, referred to in the proposals. RB responded that the focus was currently on classical examples, for example from steel production, where the waste gas could be used instead of being emitted. In response to this answer it was noted that these gases are not

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normally released, but are burnt to produce electricity and that replacing this electricity for some countries could have a negative impact on CO₂ mitigation. RB responded to this comment that only renewable forms of electricity would be incentivised, with the 2 objectives post-2020 being the diversification of fuels, and incentives for capturing CO₂ which would otherwise be emitted.

It was suggested that further clarification and refinement of the LCA would be needed, to which RB responded that now would be the right time to engage on this issue as the data is required in March, with discussions regarding CCU to also be taken into account.

Item 4: Commission updates

LW passed on apologies for Michael Schuetz and Maria Velkova, from DG ENER and DG CLIMA, respectively, who were no longer able to attend the meeting to provide an update.

Vassilios Kougionas (VK) gave an update on DG RTD activities relevant to CCS, aside from the SET-Plan TWG9, covered in a later agenda item. He noted the letter received from Graeme Sweeney and Marie Bysveen, regarding ZEP and EERA feedback to the draft Horizon 2020 Work Programme proposals, stating that current concerns over the lack of inclusion of storage and continuation of ETIP funding for ZEP in the current iteration would be considered.

VK informed the meeting of the next Mission Innovation CCS Workshop, which will be held in Houston in September, and focusing on 3 topics; capture, storage, and reuse. A draft roadmap is currently being prepared, which will be presented at the ministerial in China, taking place in June.

Item 5: Guest presentation: CO₂GeoNet

The AC received a presentation by Ton Wildenborg (TW) on the current activities of CO₂GeoNet, which currently has 26 members in 19 Member States. This includes the H2020 ENOS project (Enabling CO₂ Storage Onshore) and engagement with ZEP through contributions to TWG and the SET-Plan TWG9 CCUS.

TW informed the meeting that CO₂ are now investigating taking a more formal role in ZEP, either through the AC or ACEC, with GS noting the important contribution CO₂GeoNet have already made to TWGs and the SET-Plan process.

Item 6: SET-Plan TWG9 CCUS update

Harriet Howe (HH) provided an update on the work of the SET-Plan TWG9 CCUS. The ZEP Secretariat is currently assisting in producing a near-final draft of the Implementation Plan, which outlines 'Research and Innovation Activities', which can achieve one or more of the 10 targets outlined under the SET-Plan Declaration of Intent. The next meeting of the TWG9 will take place on the 25th March, at which the latest draft of the Implementation Plan will be discussed, ahead of its planned submission in early-May.



It was raised that the AC should consider how the Implementation Plan could continue to be driven following its submission in early-May. GS noted that the AC should identify an ongoing role for ZEP in this process with a TWG working on implementation as well as the planning. This should aim to work with the Government Group to increase leverage.

Following on from this point it was highlighted that the post-2020 trajectory would also be important, and that the Implementation Plan could benefit from the inclusion of the ongoing actions which would be required to meet 2030 targets.

It was noted that a number of ZEP reports, including the Market Economics 5 work and the key recommendations from the Fast Track Transport and Storage report, had already been shared with the TWG9 and input into the Implementation Plan. GS noted that a finalised version of the Fast Track Transport and Storage report would be shared with the TWG9 once approved by the AC.

Gardiner Hill raised potential collaboration between the TWG9 and OGCI, which is currently finalising a storage methodology. This is expected to be released by the end of the 2017 and aims to ensure global consistency, which could provide useful input for R&I Activity 4 of the Implementation Plan regarding the establishment of a European Storage Atlas.

Item 7: 2017 Work Priorities

LW presented plans for an ACEC away day, including Network co-chairs, the ERG, and possibly also members of the Government Group to examine the 2017 work priorities for ZEP. This would provide feedback on the current work programme, which could then be updated for late 2017/18, with the aim to have these recommendations approved at either the AC52 in September, or the AC53 in December, depending on the timing of the away day.

It was asked whether ZEP plans to consider a longer term horizon, with a greater focus on engagement beyond Europe, for example for the US and China. It was agreed that this issue would be discussed with Member States and key stakeholders once a consensus had been gained at the ACEC away day.

There was discussion of possible topics which could be included in a forward work programme, including the business case/policy aspects of clean hydrogen, building on the recent NWT Clean Hydrogen report. It was agreed that the NWT co-chairs would give this further consideration and discuss with Jonas Helseth, co-chair of the NWPE.

Further topics which were raised for consideration were CCS and air quality, which FN informed the meeting had remained on the list of NWT priorities for some time, BECCS and negative emissions technologies, and cooperation with renewable to seek to build a bridge between the two communities. Angus Gillespie noted that a key consideration for all output should be to underline urgency and repeat the message that the window to develop CCS is closing.

LW agreed to organise a teleconference with the ACEC, Network co-chairs and the Government Group to discuss the organisation and agenda for the upcoming away day. The AC agreed that in the meantime ZEP would continue with its current work programme until the next AC51 meeting in June.

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Item 8: Network Policy and Economics update

Lamberto Eldering (LE) provided a brief update on the Network Policy and Economics and its subsidiary working groups, including the TWG Projects of Common Interest (PCI), which was established to support the application process for PCI status for project in the current European Commission call. LE updated the group on the last PCI meeting, which took place on 15th February in Brussels, at which the European Commission discussed changes to the template for applications. The call for PCI applications is open until mid-April, after which point successful projects will be announced and eligible for support through the Connecting Europe Facility. It was agreed by the AC that as the TWG was now at the end of the initial TOR would close its work programme.

Charles Soothill (CS) updated the meeting on activities around the TWG Market Economics 5 report: CCS and Europe's Contribution to the Paris Agreement; Modelling Least-Cost CO₂ Reduction Pathways, due to be released the next day in conjunction with the ZEP General Assembly. The report was approved at the AC49 meeting in December, since which the executive summary of the report was updated, following recommendations from the meeting and the ERG. CS agreed to share the updated 2 page executive summary of the report with the AC.

Early in the meeting Rob van der Meer provided a brief update on the progress of the TWG CCU Policy, due to next meet the following week on the 27th March in London. The TWG are currently drafting a short report on CCU and energy-intensive industries, with the intention of completing a final report in mid-2017 for submission to the AC51 meeting in June for approval.

GS noted that there were now 4 key processes which need to be delivered in order for ZEP to drive progress on CCS. These are an Implementation Plan which is ambitious, but which could feasibly be executed, a successful PCI application process, for the IEA/IPCC to become part of the process, and expansion of the commercial partners involved in ZEP's work.

Andy Read (AR) provided an update on the progress of the ROAD project. He noted that there was currently more political support for CCS in the Netherlands, demonstrating that political lobbying had been successful. FID had been planned for mid-2017, to allow for operations to commence in 2020, based on a Government decision on coal phase-out before the election and a grant from the EU, which had been achieved. However, he noted that it was now a matter for the new Government to decide, and as state-aid clearance is required - a process which takes around 9 months- it was now unlikely that FID would be achieved in 2017. AR also noted that the uncertainty over the issue of coal phase-out in the Netherlands was removing the business case for the CCS companies involved and that despite political support for the project still being strong, the forward process would be difficult.

Item 9: Network Technology update

Filip Neele (FN) provided a brief update on progress within Network Technology (NWT) and its subsidiary working groups. At the AC49 meeting in December 2 NWT reports were approved; Future CCS Technologies, which was published in January, and Commercial Scale Feasibility of

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Clean Hydrogen, for which a plan for publication and dissemination is currently being developed by the ERG.

FN also provided an update on activities around the Horizon 2020 Energy Work Programme, including the joint ZEP/EERA input, submitted in January, and proposals included as part of the current draft, following on from earlier discussions. It was noted that ZEP would continue to work with EERA to provide input to the Commission regarding this issue.

Ward Goldthorpe (WG) presented the Fast Track Transport and Storage report. An earlier version of the report had been submitted for discussion to the previous AC meeting, in addition to the NWT meeting in November, and NWPE meetings in November and February. Following feedback from these meetings the report was finalised and presented for the AC's approval. During a discussion of the report's recommendations it was suggested that some of the language around access to data, decommissioning, and transfer of data be characterised differently in order to avoid negatively affecting business today. It was agreed that the TWG co-chairs would liaise further on this issue with Gardiner Hill and make these amendments. The AC approved the report for publication following completion of these amendments.

Item 10: External Relations Group update

Mark Downes (MD) provided a brief update on the activities of the External Relations Group, including the arraignments and agenda for the Parliamentary Hearing on CCS taking place the following day.

MD informed the meeting that publication of the Clean Hydrogen report was planned for April and timed to coincide with the Electricity Market Reform debate. As previously discussed the Market Economics report would be released the following day, and that a dissemination plan for the Fast Track Transport and Storage report would be devised by the ERG once the discussed amendments had been completed.

Item 11: Any Other Business (AOB)

The Chair noted that there was no other business and the meeting was closed.

Actions

Action		Owner	Deadline
2	Graeme Sweeney and ZEP Secretariat to liaise with Government Group to identify an ongoing role for the TWG9 in the SET-Plan process following submission of the Implementation Plan.	GS/GB/LW	April
6	Finalised Fast Track Transport and Storage report to be shared with the SET-Plan TWG9	HH	25 th April
7	LW to organise a teleconference with the ACEC, Network co-chairs and the Government Group to discuss the organisation and agenda for an ACEC away day.	LW	ASAP
8a	Circulate updated 2 page executive summary of the TWG Market Economics report to the AC	TM	ASAP
9a	Ward Goldthorpe to liaise with Gardiner Hill over amendments to the Fast Track Transport and Storage report.	WG/GH/HH	ASAP
10	Final version of the Fast Track Transport and Storage report to be shared with Weber Shandwick and ERG once amendments have been completed.	HH	ASAP

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Agenda Item 1.c: ACEC April teleconference minutes – 25th April 2017

Attendance

Mark Downes	Shell
Lamberto Eldering	Statoil
Angus Gillespie*	Shell
Jonas Helseth **	Bellona
Filip Neele	TNO
Nils Rokke	Sintef
Charles Soothill	
Graeme Sweeney	Ardnacraggan Energy Services Ltd. (Chair)
Rob van der Meer	HeidelbergCement
Luke Warren	ZEP Secretariat

* Angus Gillespie acted as Gardiner Hill's (BP) proxy.

** Jonas Helseth acted as Frederic Hague's proxy

Item 1: Introduction and general update (open session)

The Agenda for the meeting was adopted with the addition of three items arising from the recent ERG call:

1. Governance under Energy Union: A one-pager is required for the European Parliament discussions on this issue. The ACEC agreed to develop a one-pager within the week. As this will be based on previous ZEP positions then it was agreed that the Chair can sign off.
2. CCU and its inclusion in RED: RvdM has developed a one-pager and introduced the key themes. The paper needs to be adopted ahead of the next AC to keep timely. On balance the ACEC felt that the paper is likely to need to go to the AC for comment if it moves beyond previous positions. The ACEC agreed that TWG CCU would develop a one-pager for ACEC, which might then be referred to the AC.
3. EPS: It was noted that the legislative timetable means that we have longer on the EPS paper but that it would be good to get emerging views by the middle of May to stay timely.

Minutes and actions from the March AC50 meeting were reviewed and adopted unanimously.

Item 2: Network and Temporary Working Group updates (open session)

Network Technology

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FN updated the ACEC on the NWT, which is in somewhat of a holding mode on new work items pending the ACEC Away Day and agreement on the forward activities for ZEP.

The Fast Track T&S

Report is in the process of being finalised and is being updated with the feedback received from GH at the AC50.

H2020 work programme

An updated was provided on the forward H2020 work programme and its alignment with the Joint ZEP/EERA input on H2020. The latest draft of the H2020 work programme has been substantially changed and there is now good alignment with the ZEP/EERA input and the latest draft of the TWG9 Implementation Plan. It was noted that this input had had a positive impact on the latest draft of the H2020 work programme.

Clean Hydrogen

The ERG has proposed that a workshop be held to promote the Hydrogen Report. There is increasing interest in the topic and it is important that ZEP continues to input to the debate to ensure that the potential of clean CCS hydrogen is recognised and supported. It was also noted ENTSO-E is very interested in hydrogen and has requested a meeting with ZEP. It was agreed that LW and Claude Heller would meet with Laurent Schmitt, Chief Executive of ENTSO-E. To ensure that ZEP can provide appropriate input to the workshop and other outreach activities it was agreed that the TWG H2 should remain an active group.

Mission Innovation (MI)

FN attended a teleconference as a representative of the EC. This focussed on preparing for a workshop in September that will define the future MI work programme. Concern was expressed that MI is only looking at low TRLs (1-3). It was agreed to hold a teleconference to discuss and see how we can influence the process. This could warrant a establishing a TWG on MI.

Network Policy and Economics

Projects of Common Interest

Gateway held its final stakeholder meeting on the 24th April and presented their PCI application which is working with the Port of Rotterdam to link ROAD with UK projects. In addition, Statoil and another two PCI projects were submitted. Having four PCIs submitted is good news for the CCS community and sends an important signal to the EC. It was agreed that the TWG will stand down after developing a summary report. The secretariat will continue to look to the Commission for any guidance and support that ZEP can provide to this process.

Innovation Fund and Unspent NER300 funds

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CCS stakeholder engagement on the innovation fund workshops has been peripheral and not optimal for CCS. In particular, there is concern that cross-sector CCS issues, notably transport and storage infrastructure, have not been addressed satisfactorily in the course of the workshops. GS is seeking to engage with leadership in the Commission to ensure that we can provide some input on infrastructure issues, etc. Holding a separate workshop is probably unlikely at this stage but there may be opportunities for bilateral ZEP – Commission engagement.

Norwegian FEED studies

Recent press release from Gassnova noted that three industrial sites have received funding to further mature projects. Gassco has also issued a tender to complete work on the transport option. Bids are expected soon on the storage.

Smart Funding Pathway

Element Energy is midway through its work on this project, which focuses on industrial CCS, but it was noted that the work is being funded externally and is not within ZEP. The ACEC agreed that it would be good for ZEP to follow this closely and engage in the workshops when invited to do so. JH feels that the work could give some helpful messages on CCS and the role of EU funds. LW also noted that the work so far appeared to do a good job of mapping funding instruments and gaps across the project development cycle. LE also noted that these gaps came up in PCI discussions. LW will attend an upcoming workshop on the 19th and report back to the group on the conclusions.

External Relations Group (ERG)

2017 General Assembly

A summary note was circulated with the pre-reads. Feedback from the event was positive, with good stakeholder participation and media / social media interest. It was agreed that the collaboration with the Norwegian Ministry and IEA was a positive.

New ZEP Narrative

A revised draft narrative was contained in the pre-reads and the ACEC agreed that this should be submitted for approval to the July AC meeting. The new narrative attempts to make the CCS story resonate better and focuses on jobs, industry, etc. whilst retaining the context of the Paris Agreement. It was agreed to circulate the narrative for comment to the ACEC. Following this, the paper will be finalised and circulated to the AC for approval.

Clean Hydrogen

LW noted that the report had been formally launched on 25th April to coincide with the European Parliament debate on electricity market reform proposals. To help promote the report and position ZEP as a key stakeholder in debates around hydrogen, the ERG is also looking to host a 1.5 to 2 hour workshop, likely in June / July. The Hydrogen Council, the Hydrogen/Fuel Cell Joint Undertaking and European Commission need to be engaged to ensure that CCS H2 is recognised.

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It was suggested that the workshop should also consider the role of hydrogen in decarbonising transport to help engage a new group of stakeholders in the CCS debate.

It was noted that there is an EERA Net co-fund proposal for €15 mn which will be looking at different hydrogen value chains. In this context, reference was made to a new £25 mn contract for hydrogen bus procurement being set up by the UK Department for Business, Energy and Industrial Strategy. NR expressed interest in the ENTSOE work and would like to stay engaged. Eurelectric are heavily pushing electrification route so also need get acceptance of the H2 story.

Item 3: SET Plan TWG9 CCS/CCU update (open session)

The call was updated on the TWG9 CCS/CCU Implementation Plan (IP). Since the last AC the biggest change is the inclusion of a 2030 focus with a corresponding set of actions. The 2030 focus arises from a set of Key Performance Indicators included in the original Declaration of Intent that hadn't yet been referenced in the IP.

The key challenge now is to ensure that SET Plan countries are willing to support the IP activities. There is good alignment with H2020 work but there is less clarity about the availability of other EU funding instruments to support delivery of the activities. It was noted that there also needs to be a process to follow up on the IP and ensure progress of the actions to 2020 and beyond. There was a question on whether hydrogen has an appropriate standing in the IP.

Item 4: AC51 Agenda and away day

There was a discussion on external speakers for the AC51;

- AG suggested that OGCI might present on its work programme,
- It was agreed that a presentation on the Smart Funding Pathway work by Elemen Energy would be helpful,
- An appropriate speaker from the EC should be invited to present on the conclusions of the Innovation Fund workshops,
- It was agreed to check with Vassilios on whether there is value in having a presentation on Taiwanese activity,
- NR also noted that ECCSEL starts on 12th June and the Norwegian CCS centre is focussing on full-scale projects.

The dates proposed for the ACEC Away Day to date have not worked for a majority of the ACEC and co-Chairs. It was suggested that a final attempt should be made for a meeting on the 4th July before the AC. Alternatively we may need to hold teleconference ahead of the July AC.

Item 5: Secretariat update (closed session)

The ACEC noted the expected changes to the AC which will occur at the July AC meeting.

An update was provided on the income of the association. There is confirmation of support from the Port of Rotterdam and Total. It was also agreed to follow up with Niels-Peter Christensen

regarding Gassnova 2017 support and Emmanouil Kakaras (Mitsubishi Hitachi Power Systems) ahead of the July AC.

The Auditors Report was reviewed and there were no comments. It was agreed that this would be put forward to the ZEP-C AGM for approval. This will be held in May.

Item 6: AOB (closed session)

There was no other business and the meeting was closed.

Actions

Action		Owner	Status
1	One-pagers to be drafted on Governance and CCU and circulated. These need to be produced quickly.	TM	Completed 28 April
2	One-pager to be drafted on EPS. This is less pressing.	TM	On-going work being led by Stale Aakenes (Gassnova)
3	LW and Claude Heller would meet with Laurent Schmitt, Chief Executive of ENTSO-E	LW	
4	Organise teleconference to discuss and see how we can influence the MI process.	HH	
5	The PCI TWG will stand down after developing a summary report	TM/LE	
6	LW attend Element Energy Smart Funding Pathway for Industrial CCS workshop on the 19 th and report back to the ACEC and NWPE on the conclusions.	LW	
7	Draft narrative to be circulated to the ACEC for comment and finalisation ahead of AC51.	JS	
8	Clean hydrogen workshop to be progressed with input from TWG clean hydrogen	Sec	
9	Invite external speakers to the AC51	LW	Completed 5 th May
10	Circulate revised DoodlePoll to for 4 th July an ACEC away day	LW	Completed. Date agreed, 4 th July
11	Follow up with Emmanouil Kakaras and Niels Peter Christensen regarding support.	LW/GS	
12	Organise ZEP-C AGM	LW	

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Agenda Item 1.d: ACEC May Teleconference draft minutes – 30th May 2017

Attendance

Mark Downes	Shell
Lamberto Eldering	Statoil
Angus Gillespie	Shell
Jonas Helseth *	Bellona
Filip Neele	TNO
Graeme Sweeney	Ardnacraggan Energy Services Ltd. (Chair)
Rob van der Meer	HeidelbergCement
Gardiner Hill	BP
Luke Warren	ZEP Secretariat

* Jonas Helseth acted as Frederic Hague's proxy

Item 1: Introduction and general update (open session)

The Agenda for the meeting was adopted with the addition of one item under any other business which relates to Nils Rokke's new role as EERA Ex-Committee Chair.

Item 2: Network and Temporary Working Group updates (open session)

Network Technology

FN gave an update on the planning for the Mission Innovation workshop that will be held in September in Houston. The planning is now starting to take shape and the workshop will focus on four themes: Capture; transport; utilisation and cross-cutting.

There is an opportunity to try and influence the work programme and agreed that ZEP will hold a call to discuss potential ZEP input. FN is seeking a suitable date for a call to provide input on Mission Innovate. At the moment it is not clear if there is a formal link with the Breakthrough Energy Coalition. There is still an ongoing concern the MI is focussed on lower TRLs as not clear that this will really drive projects forward.

FN provided updates on how the other NWT reports are being disseminated. Future CCS Technologies has been used to inform the ZEP-EERA input to H2020 work programme while Fast Track T&S will be disseminated alongside the release of the TWG9 Implementation Plan which is expected in September.

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The clean hydrogen work will be presented at the 9th Trondheim CCS conference by Claude Heller. There is also a proposal to hold a hydrogen workshop in Brussels and this will be covered under the ERG update below.

Network Policy and Economics

Projects of Common Interest

It was noted that there was a mistake in the Pre-reads and not all of the PCIs submitted are linked to Rotterdam. Good development that four PCI projects submitted, they are;

- Gateway – NL and UK, supported by Port of Rotterdam
- Statoil – linking UK and Netherlands emitters with a Norwegian store.
- Teesside – is a partner in Statoil application but also submitted a separate PCI with Teesside as a CO2 import / export hub.
- Pale Blu Dot – submitted the Acorn project looking at options around St Fergus. Has received funding under ERA-ACT.

The EC also has a consultation on the TEN-E regulations, Lamberto Eldering and the secretariat have drafted a response. This has been circulated to TWG PCI, with comments due by end of this week.

The next step is a public consultation on the four projects and a question if ZEP should respond. This has just been released along with details of the four projects. It was agreed to send this to SET-Plan TWG 9 ahead of its meeting on Thursday. Need to create the link between the PCIs to and the TWG9 and Fast track report. The ERG will also encourage some tweets on the PCIs to raise the profile of the projects. It was also agreed that all should encourage the PCI proponents to put more information into the public domain.

Innovation Fund

The Innovation Fund workshop was held yesterday in Brussels and led to a good dialogue with the EC on innovation fund. In particular it was important to highlight to the EC that the biggest challenge is not technology innovation but around the innovation needed in the value chains to support CCS. The workshop also had good feedback from industrial sectors on the importance of CCS. It is expected that the Commission will provide a workshop summary by Wednesday and will seek feedback on this by end of the week. It would be helpful to get this feedback before Thursday's TWG9 meeting and ahead of external engagement activities next week.

On the 1st round of unspent NER300 funds this will be distributed via Innov Fin and so will likely be disbursed via loan guarantees and not grants. However apparently the Commission is investigating whether the instrument could be used to support early stage studies.

Smart Funding Pathway

The workshop in Brussels on the 19th May the study looks useful and does a good job of mapping funding instruments and gaps across the project development cycle. However, it would benefit from a round of external comments as there is an opportunity to integrate some ZEP messaging

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into the report, including on the need to separate transport and storage from capture and the need for recommendations on the design of future funding criteria. There is a discussion with the funders to see if they have the resource to allow external review.

EPS

Stale Aakenes, Gassnova, has led the TWG EPS which developed the short position paper included in the pre-reads. The draft paper welcomes the inclusion of the EPS in the capacity market regulations, however it notes that the EPS level proposed will drive CCS alone and will likely only promote coal to gas switching. To have a stronger impact on CCS a lower level is likely needed although event his may ensure that future investments are compatible with Paris agreement. The ACEC agreed that the paper should reference the importance of complementary instruments and policies that are needed alongside an EPS if we are to have a credible pathway to deploy CCS. It was agreed that the tone should be redrafted to change the tone and highlight these additional messages. This can then be resent to ACEC for comment and (subject to the paper not being controversial) it will be finalises and circulated to EC.

CCU

The full length paper is progressing well and RvdM and JH are meeting on Friday 2nd June to address the outstanding issues. The intention is to have the final paper ready by the end of June and for sign off at the AC51.

External Relations Group (ERG)

Upcoming engagement

A good round of meetings has been lined up for the 6th and 7th June for GS with Commission officials MEPs and engagement with ExxonMobil who have been interested in ZEP's work. Will be using CCU, Governance papers and potentially EPS in these meetings. There is also a need for wider engagement on ETS revision – potential to lose Ian Duncan, MEP at the Westminster election and will need new interlocutors on the file.

Draft ZEP Narrative

Welcome the comments received these will be reflected in the final draft. It was noted that the narrative is an internal document which sets out the ZEP storyline which is then adapted for individual stakeholders. A question has arisen on CCS costs data and if these should be included. It was agreed to include data however we should also note that for some sectors there are no other options. The narrative will be forwarded for final approval at July AC meeting.

Clean Hydrogen

The report has been formally launched and are now looking to host a workshop to support dissemination, likely in June / July. The Hydrogen Council, Joint Undertaking on Hydrogen and EC need to be engaged to ensure that CCS H2 is recognised. The secretariat held a call with the EC to discuss. The EC noted that this looked like an important initiative although one where there may

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be sensitivities as much of the focus in various groups has been on hydrogen produced from renewable electricity. CCS derived hydrogen may be controversial for some. This will be discussed at the next meeting of the ERG on Friday 2nd June.

Item 3: SET Plan TWG9 CCS/CCU update (open session)

The call was updated on the TWG9 CCS/CCU Implementation Plan (IP). The report is expected to be adopted on the 1st June at the next TWG9 meeting. Following this the report will be presented to the next meeting of the SET-Plan Steering Group (14th June) and then sent for formal adoption at the September meeting. The EC is keen to use the time through to September to get MS endorsement for the conclusions.

It was noted that the TWG9 has suggested the establishment of a Working Group 9 which enables the Implementation Plan to stay as a live document against which progress is reviewed and new recommendations made to help support delivery of the targets. This could be an effective mechanism to engage more deeply with MSs.

Item 4: ACEC Away Day planning (closed session)

The proposed themes to be covered at the Away Day were reviewed. They are wide ranging and the day will need to be well structured to enable these all to be effectively covered. However, it was felt that all of these issues do need to be addressed at the Away Day. An important theme will be ensuring that there is good connectivity between different groups working on CCS so that the CCS community is joined up. We also need to review how we bring in other industries to ZEP.

It was agreed that GS and LW would hold a call to further develop the proposal and others would also be invited to join if they are free. The meeting will be a full day meeting in Brussels and we also need a venue for the meeting. Any suggestions should be forward to LW.

Item 5: AC51 Agenda (closed session)

The AC51 Agenda was reviewed and it was agreed that it should be adopted. This includes a new session which will review wider Bxl activities of relevance to ZEP.

Item 6: Finance update (closed session)

There has not been significant movement on finances since the last meeting of the ACEC. Once Total and the Port of Rotterdam issue Purchase Order numbers then their invoices can be issued. There is a need for an additional €36,000 of invoices to be issued in order to balance the accounts. Meetings have been arranged or are being arranged with ExxonMobil, MHPS and Gassnova to discuss support. It was also agreed to discuss invoicing for 2018 at the ACEC Away Day. Early invoicing might be necessary to help with cash flow.

Item 7: AOB (closed session)

There was one item of AOB. Nils Rokke has been elevated to Chair of the EERA Executive Committee and this raises a question on whether this generates any conflicts of interest given that the EERA ExCom focuses on fifteen technologies families including CCS. A question was raised on whether there could be funding conflicts and while none are envisaged the ACEC should be aware of potential and be ready to address if it does arise. GS agreed to speak to NR and develop a proposal that will be used to notify the AC at its next meeting.

Actions

Action	Owner	Status
1	ZEP will hold a call to discuss potential input to Mission Innovation.	FN/HH Completed 6 th June
2	TWG PCI to consider whether to respond to PCI consultation.	LE/NB
3	TWG PCI to complete its response to TEN_E consultation	LE/NB Completed 14 th June
4	EPS one-pager to be re-drafted and forwarded to ACEC for approval.	LE/NB Completed 15 th June
5	ERG to update Narrative and forward to the AC51 for adoption	MD/JS
6	Call to be held to continue with ACEC Away Day planning	GS/LW
7	Any suggestions for ACEC Away Day venues to be forwarded to LW	ALL
8	Include discussion on 2018 invoicing at the ACEC Away Day	LW
9	GS to liaise with NR on ZEP response to possible conflicts of interest.	GS

ZEP Advisory Council 51

5th July 2017

Agenda Item 1.e: Chair's update

SET-Plan TWG9 CCS and CCU update

Following discussions at the AC50 meeting in December the Implementation Plan was updated to incorporate the recommendations made, including:

- That an ongoing 'Working Group 9 CCS and CCU' to be established, which would meet annually in order to monitor progress, identify potential risks, and take appropriate actions. The Commission have stated their support for this proposal, with the ZEP Government Group assessing what their role in this process could be.
- Expanding each of the 8 Research and Innovation Activities to include a trajectory to 2030, based on the '2030 Key Performance Indicators' set out in the Declaration of Intent.

The last meeting of the TWG9 was held on the 1st June in The Hague. Ahead of the meeting an updated version of the Implementation Plan, incorporating the ZEP recommendations listed above, was circulated to members of the TWG9 for a final round of input. At the meeting final amendments were made to the document, which was then endorsed by the TWG9.

On the 14th June an overview of the Implementation Plan and its recommended activities was presented to the SET-Plan Steering Committee in Brussels. Slides from this meeting are appended to this paper (as per pre-read 1.e.i). It has been suggested by the Commission that the period between June and September should be used to seek wider Member State endorsement of the Implementation Plan, with final submission planned for the next Steering Committee meeting on the 27th September in Brussels.

External meetings

The ZEP Chair and Secretariat have recently participated in a number of meetings with external stakeholders and processes. Appended to this paper are summaries of the following meetings:

- Silvia Bartolini, Member of the Cabinet of Commissioner Miguel Arias Canete, DG ENER/CLIMA
- Dominique Ristori, Director-General, and Agnija Rasa, Assistant to the Director-General, DG ENER, European Commission
- MEP Peter Kouroumbashev (S&D, BU), new MEP and shadow Rapporteur on the Accelerating Clean Energy Innovation Report

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- Marie Alter, Assistant to MEP Gesine Meissner (ALDE, UK), shadow Rapporteur on the Accelerating Clean Energy Innovation Report
- MEP Claude Turmes (Greens/EFA, LU), Rapporteur on Energy Governance
- Tomasz Rusek, Assistant to Jerzy Buzek (EPP, PL), Chairman of the ITRE Committee & Rapporteur on Accelerating Clean Innovation
- Jose Cotta, Head of Unit G2 'Advanced Energy Production, Jeroen Schuppers, Deputy Head of Unit G2, Vassilios Kougionas, Policy Officer, Katarzyna Drabicka, Policy Officer, DG RTD
- Ioan Poge, Permanent Representation of Romania to the EU
- Silvia Bartolini, Member of the Cabinet of Commissioner Miguel Arias Canete, DG ENER/CLIMA
- Meeting with Jos Delbeke, Director General, Roman Doubrava, Deputy Head of Unit C3 'Land Use and Finance for Innovation', DG CLIMA
- Nikolaas Baeckelmans, Exxon Mobil



Ministerie van Economische Zaken



Implementation Plan of TWG 9 on CCUS

*Presentation by:
Tor Ivar Eikaas, The
Research Council of Norway*

*On behalf of:
Joëlle Rekers (NL),
William Christensen (NO)
and Graeme Sweeney*

22 juni 2017



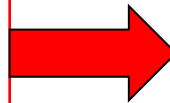
Process

- TWG members (30+)
 - 11 SET-Plan countries: the Czech Republic, France, Germany, Hungary, Italy, Norway, the Netherlands, Turkey, Spain, Sweden and the UK
 - Industrial stakeholders, and research institutions.
- 3 co-chairs (Norway, Netherlands, Industry)
- 4 meetings (Nov.-June)
- Draft Implementation Plan presented in June
- SET-Plan SG in September



Targets

1. 1 commercial scale, whole chain CCS project in power sector
2. 1 completed FEED study for commercial scale industrial CCS project
3. Completed feasibility studies for regional clusters (cross-boundary)
4. 1 active PCI
5. Up-to-date CO2 storage atlas
6. >3 pilot capture projects + 1 bio-CCS capture
7. >3 new CO2 storage pilots
8. >3 new pilots CCUS (fuels, value added chemicals or other products)
9. 1 IPCEI for demonstration of CCU
10. CCUS included in the national energy and climate plans



Activities

1. ROAD project (target 1)
2. Delivery of regional CCS and CCU clusters, including feasibility for a European hydrogen infrastructure (target 2, 3, 10)
3. EU Projects of Common Interests for CO2 infrastructure (target 4)
4. Establish a European Storage Atlas (target 5)
5. Advancing European Storage Activities (target 7)
6. Developing next-generation CO2 capture technologies (target 6)
7. CCU actions (target 8, 9)
8. Understanding and communication the role of CCS and CCU in meeting European and national energy and climate change goals (target 10)



Flagships

- ROAD
- Establish a CCS hub/cluster (including projects in the Netherlands, UK and Norway)
- Fos-Berre/Marseille CCU cluster*
- Progress Project of Common Interest (PCI's)
- Establish a European CO2 Storage Atlas
- Storage Appraisal

* *Pending sufficient information can be provided*



Challenges and Risks

- Setting ambitious target which can be reached
- Active participation of all stakeholders
- Alternative projects
- Sufficient financial support for identified actions
 - H2020
 - ERA-NET Cofund ACT
 - MS/AC funding
- Monitoring progress & sustainability of action
 - ETIP Secretariat (monitoring) – end of 2017
 - Standing Working Group



Next steps

- Include feedback from today's meeting
- Finalize IP
- Seek approval by individual MS/AC
- Approval by SET-Plan Steering Committee (Sept. 2017)
- Identify monitoring party
- Establish Standing Working Group (SWG) on Action 9 CCUS
- Meet on a yearly basis with the SWG to:
 - Monitor progress
 - Identify potential risks
 - Take appropriate actions



Questions & Discussion

- What additional actions or steps to be taken are needed prior to approval of the IP at the September meeting?
- Does the Steering Committee approve the proposal of establishing a Standing Working Group to monitor progress?
- How would the Steering Committee like to be kept informed over the next years on progress?



Ministerie van Economische Zaken

SET GOAL.
MAKE PLAN.
GET TO WORK.
STICK TO IT.
REACH GOAL.

Thank you!