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Newsletter - May 2020

A word from the Coordinator

Dear reader,

This first newsletter comes to you in the midst of two unprecedented challenges – Europe's transition to a climate-neutral economy and, at the same time, its post-pandemic economic recovery.

Europe now has a great opportunity to rebuild with net-zero GHG emissions by 2050 as a guiding principle. Now more than ever coordination and cooperation between the EU, national governments, the industry and ongoing projects, and the academic research community to accelerate the development from research to market is essential. This is where the SET-plan activities on Carbon Capture Utilisation and Storage (CCUS) comes in. By improving new technologies and bringing down costs through coordinated research efforts across Europe, the SET-plan is key for the development of low-carbon technologies in a fast and cost-competitive way.

CCUS technologies have the possibility to play an important role: unlocking cost-efficient decarbonisation, preserving jobs, industrial activity and economic growth. Building on our valuable know-how and experience, we also have the opportunity to create a centre of excellence and for Europe to become a global leader in cost-efficient decarbonisation technologies.

It is crucial for us to harness the resources of the community and facilitate real knowledge sharing, to create value and showcase solutions to EU-level and national policy-makers, to remove regulatory barriers and to support accelerated progress to reach the SET-plan targets.

In this newsletter you can read about our activities during this first year. We can see the great opportunities and going forward, we are now focusing on:

- Aligning our goals and activities with the European Green Deal.
- Modelling different pathways to achieve net-zero by 2050 and the impact of CCS and CCU.
- Creating an inclusive roadmap on CCS and CCU for 2030 and beyond, highlighting what needs to be done, when and by whom, to give Europe the best possible start.

We will come back to you with further information and updates on the progress. If you are interested and not yet engaged in our work, you are warmly welcome to make contact and visit the [CCUS Set-Plan website](#).

[Per-Olof Granström](#)

The CCUS SET-Plan and the IMPACTS9 project

Europe is taking a leading role in the fight against climate change and aims at an economy with net-zero greenhouse gas (GHG) emissions by 2050. The adoption of low-carbon technologies at industrial scale is essential to achieve this goal. This is exactly what the European Strategic Energy Plan (SET-Plan) aims at realizing by bringing together the European Commission, national authorities as well as industrial, societal and research stakeholders in a coordinated effort towards climate neutral energy systems.

Among other priorities within the SET-Plan, **Carbon Capture, Utilisation and Storage (CCUS)** is recognised as an essential solution towards this goal (Priority No 9). An [Implementation Plan](#) laying down specific targets for CCUS deployment by 2020 and associated R&I priorities for 2020 and 2030 has been developed and the Implementation Working Group (IWG9) has been mandated to follow-up the progress.

To assist IWG9 with this work, the H2020 project IMPACTS9 has secured funding for three years starting May 2019. IMPACTS9 is therefore the operational arm of IWG9 and organises a series of activities to reach the targets of the CCUS SET-Plan and accelerate deployment of CCUS technologies. IMPACTS9 combines the expertise of four partners that have complementary expertise in the CCUS area (CCSA, SINTEF, BGS and CO₂ Value Europe). You can find more details on the CCUS SET-Plan and IMPACTS9 at the dedicated website of the projects under www.ccus-setplan.eu.

Below you will be acquainted with some key activities organised and some key development of the CCUS industry since the beginning of the project.

Key activities

Events organisation

ZEP Conference: How European CO₂ Transport and Storage infrastructure can enable an innovative industrial transition

On 28 January 2020, the Zero Emissions Platform organised a [conference](#) on “[How European CO₂ Transport and Storage infrastructure can enable an innovative industrial transition](#)” at the European Parliament. The conference was hosted by *Tom Berendsen MEP (EPP, NL)* and *Jens Geier MEP (S&D, DE)*. A link to the full programme can be found [here](#).

The event started off with a panel discussion, preceded by an interview between *Dr. Graeme Sweeney*, Chairman of ZEP, and *Hans van Steen*, DG ENER. The main takeaways from the interview are

- The discussion around [CCS has clearly permeated the political economy](#). It is now clear that CCS will be essential for Europe to reach net-zero GHG emissions by 2050, and that Member states play a key role in the large-scale deployment of the technology;
- Revisions of European regulations like TEN-E is necessary to ensure that CCUS projects in Europe are encouraged, financed and supported at all levels.
- It is important not to lose track of the holistic approach when describing the value of a CCS project.

The panel discussion touched upon several points:

- MEP host *Tom Berendsen* confirmed that CCS technologies have gained a strong political momentum;
- Benjamin Denis (IndustriALL) called for [a social agenda](#) which would ensure “*opportunities to incentivise industrial regions to better identify industrial decarbonisation pathway and strategy*”;
- [Mark Driessen \(Port of Rotterdam/Porthos\)](#) and [Per Sandberg \(Equinor\)](#) analysed their respective CCS projects, and noted the need to ease the access to funding opportunities at national and European levels. *Henry Smyth (Ervia)* highlighted the benefits unlocked by a CO₂ transport and storage infrastructure;
- *Rob van der Meer (HeidelbergCement)* highlighted that engaging with the European institutions is key to keep CCS high on the political agenda;



- This was echoed by *Haitze Siemers (DG ENER)*, who provided an overview on funding opportunities to support a CO₂ transport and storage infrastructure and reiterated that investments in energy and climate are costly, but future-oriented, therefore essential;
- MEP host *Jens Geier* recalled the importance of an inclusive industrial transition for European regions;

Nine European CCUS projects showcased their work during the second part of the event, highlighting good practices, challenges, cost and regulatory barriers, upcoming developments and ongoing work. The following projects gave a presentation: Northern Lights (Equinor), PORTHOS (Port of Rotterdam), ERVIA, ATHOS (Gasunie), LEILAC (CALIX), Acorn Sapling CCS Project (Pale Blue Dot), CCU – Power-to-methane (ENGIE), CCU – Power to liquid hydrocarbons (Sunfire), “Finding CO₂ to capture and store in Europe”(Endrava), “CCS in the Danube Region” (GeoEcoMar).

CCUS 2019: Capturing the clean growth opportunities.



On 11 November 2019, the Carbon Capture and Storage Association (CCSA) hosted the CCUS 2019 [Conference](#) “Capturing the clean growth opportunities”. The conference brought together nearly 200 people from the CCUS sector, including industry providers, potential customers, policymakers, investors and researchers. The conference highlighted that CCUS is essential to ensure that the energy transition will benefit every part of the economy, going further into power as well as industry and – through the production of clean hydrogen – the heating and transport sectors.

The development of Carbon Capture Usage and Storage (CCUS) is a priority infrastructure challenge for the UK and a central pillar of the Government’s industrial strategy, clean growth and low carbon policies. The Climate Change Committee has identified the vital role that CCUS needs to play in the journey to decarbonization. *Chris Stark*, the Committee’s Chief Executive, reinforced this at the conference, saying “*Let’s bury the idea that CCUS is a fantasy... CCUS is absolutely essential to meet the net zero target.*” Keynote speaker, *Liv Hovem*, CEO of Oil and Gas for DNV GL, said that “*we need more low carbon technologies to meet the Paris Agreement and this requires strong policies.*”

The rollout of CCUS requires the rapid development of a huge new industry whilst its global potential provides with opportunities for international leadership and creating new markets for services and the supply chain. Conference speakers reflected on the importance of central support for innovation and the creation of strong deployment links between innovators and markets. The EU can take the lead on a new green industrial revolution and demonstrate to the world its commitment to delivering net zero. As Theo Mitchell, Senior Advisor to the Bellona Foundation, noted: “*In the context of climate change, every month and every choice matters.*”

CCU Funding Conference: Innovation Fund and H2020 opportunities



On 19 September 2019, CO₂ Value Europe has organised a sector-specific [conference](#) on funding opportunities for CCU projects at low and high TRL. In the morning session, the focus was given on the Innovation Fund, with DG CLIMA, the European Investment Bank and the Joint Research Center explaining the principles behind the Innovation Fund, its scope, expectations, selection process and timeline to launch the first call. An open discussion with the participants followed on the development of the methodologies for the selection criteria of the first call and the Commission responded to the questions and concerns raised by the CCU community.

Twelve projects were presented to give to the Commission a first overview of the diversity of potential projects from the CCU sector, recognizing that an additional number of project

owners probably decided not to reveal their project concept at this point. The presenters gave brief

information on the status of their project, the TRL of their technologies, the estimated CAPEX and OPEX, and the scale of inputs and outputs. The product spectrum included fuels for transport (e.g. methanol, jet-fuel), chemical products (e.g. urea, wax) and construction materials at a scale of several thousand tons of product per year. Locations mentioned for building the future installations included Belgium, Germany, Iceland, the Netherlands and Norway.

The afternoon session was dedicated to lower TRL funding opportunities within H2020. Coordinators ave presented their project ideas for the last calls of H2020 relevant for CCU with the aim to attract collaborations for consortium building. The Conference was concluded with a presentation by DG RTD on the place of CCU in the follow-up Framework Programme for research and Innovation, Horizon Europe.

Webinars

Capture Series

From November 2019 through May 2020, SINTEF has organised a series of four webinars under the title "Defining gaps and R&I priorities enabling CO₂ capture in Europe", covering a range of highly relevant topics for CO₂ capture. Key stakeholders – including industry, technology providers, R&D, funding agencies and national authorities – are invited to present their activities, to share their perspective and to join in on the discussion taking place in the webinars. The objective is to identify industry needs and R&I priorities for enabling CO₂ capture.

- [Webinar #1: Industry and end-users' perspective on CO2 capture in Europe](#)
- [Webinar #2: R&I needs for CO₂ capture for H2 production and transport](#)
- [Webinar #3: R&I needs for CO₂ capture in industry](#)
- [Webinar #4: The potential of industry clusters to advance CO2 capture](#)

IPCEI on CCU

On 24 January 2020, CO₂ Value Europe organised a [webinar](#) on Important Projects of Common European Interest (IPCEI), a very interesting support instrument for large scale transnational projects, where Member States receive permission from the European Commission to support industrial actors at levels that would otherwise not be allowed by State Aid regulations.

The Commission has identified a series of Strategic Value Chains (SVC) of systemic importance and with a clear contribution to EU's growth, jobs and competitiveness. These SVC are the basis for the development of IPCEIs and some IPCEIs are already in progress (e.g. in the SVC of Microelectronics, Batteries). Among the different SVC, two could very well include CCU projects: Hydrogen Technologies and Low CO₂ emissions industries.

Three speakers gave a different perspective of the IPCEI instrument and its applicability to CCU projects:

- *Mr. Charles Plaigin*, Responsible for the IPCEI programme in the Ministry of Economy, Employment and Research in the Walloon Region, presenting the perspective of a Member State.
- *Mr. Marc Isabelle*, Director of European Economics, presenting the perspective of a consultancy group specialized in IPCEI dossiers.
- *Mr. Fabrice Stassin*, Director Government Affairs Electromobility in Umicore, presenting the perspective of a company involved in an IPCEI on Batteries.

Key collaborations

CCUS Projects Network

The EC has appointed two separate consortia to run activities that support European efforts to advance CCS and CCU: the [CCUS Projects Network](#) (PN) and the SET-plan IWG on CCS and CCU (IWG9). Coordination and collaboration between their programmes are crucial and there has been an agreement between them to share the responsibilities in the following way:

- PN will have a greater focus on supporting the sharing of knowledge between large-scale projects
- The IWG9 will focus more on the outreach and interacting with key EU and national policy makers to support the greater action and coordination required to deliver CCUS.
- Workshops are coordinated between the programs when this is deemed to add value and the two programs are inviting each other to meetings and workshops.

Knowledge exchange is taking place:

- Joint [workshop](#) on 16 October 2019 (Den Haag, NL), introducing the two projects and focusing on knowledge exchange among large CCUS projects, in particular policy, capture and storage.
- PN invited to give presentation at the SET-plan CCUS Plenary on 17 October 2019.
- PN invited to give presentation at ZEP Advisory Council 5 December 2019.
- The CCUS Projects Network seminar on 23 Jan 2020, with joint seminar on barriers for large-scale projects.

PHOENIX Initiative

The [Phoenix initiative](#) is an international platform by three Member States (Germany, the Netherlands and France) and CEFIC aiming at identifying, analysing and helping to overcome challenges of CCU deployment at national scale. Representatives of the PHOENIX initiative are also members of the CCUS SET-Plan IWG9 subgroup on "Utilisation" and their input is crucial for understanding the national context.

EERA – Joint Programme on CCS

The [EERA - Joint Programme on CCS](#) is coordinating both national and European R&I programmes to maximise synergies, facilitate knowledge sharing and deliver economies of scale to accelerate the development of CCS. It is coordinated by IMPACTS9 partner SINTEF and collaborates closely with the CCUS SET-Plan to define the R&D challenges to advance CCUS.

Global CO₂ Initiative

The [GCO2I](#) has a long-standing collaboration with CO2VE especially in the area of guidelines for Techno-Economic assessment and Life Cycle Assessment of CCU technologies. This collaboration is pursued also under the CCUS SET-Plan as LCA is recognized as the most appropriate methodology to determine the climate change mitigation potential of emerging technologies like CCCU.

Strategy CCUS

[STRATEGY CCUS](#) is a H2020 funded three-year project aiming to support the development of CCUS solutions for low-carbon energy and industry in 8 regions in Southern and Eastern Europe. Strategy CCUS will produce for each region local development plans and business models tailored to industry's needs. CO2 Value Europe is in the Advisory Board of Strategy CCUS and will ensure knowledge exchange towards a broader adoption of CCUS technologies across Europe.

Other SET-Plan Actions

IWG9 is open for collaboration with further SET-Plan Actions that are relevant for the deployment of CCS and CCU technologies. This collaboration will allow to tackle common challenges within the SET-Plan in a coordinated way. First contacts for knowledge exchange and collaboration have been initiated with:

- [PV Impact](#), a H2020 funded project supporting the execution of the SET-Plan Implementation Plan for Photovoltaics
- SET-Plan Action 6 on Energy Efficiency for Industry; IWG9 was invited to present IMPACTS9 during the Plenary Meeting of Action 6 on 26 March 2020.

Policy update

European Green Deal

The European Green Deal is the lighthouse initiative of the European Commission and a roadmap to achieving the ambitious goals of a climate neutral economy by 2050. CCS and CCU are clearly mentioned in the European Green Deal Communication as necessary means to achieve Europe's climate

goals. A series of legislative packages will be newly introduced or revised within the coming months to align with the revised climate goals. Many of them are relevant for CCS and CCU development and will be monitored closely by the partner of the CCUS SET-plan, for example:

- the Emissions Trading Scheme Directive,
- the renewed Sustainable Finance Strategy (EU Taxonomy),
- the Strategy for Smart Sector Integration,
- the Energy Taxation Directive,
- the Renewable Energy Directive,
- the introduction of the Climate Law,
- the Circular Economy Action Plan,
- the new Industrial Strategy,
- the review of the Trans European Network Regulations
- the strategy for Sustainable Fuels in Aviation and Maritime sectors

CCUS SET-Plan representation

The CCUS SET-Plan consortium was invited to speak in the following conferences, where we had the opportunity to introduce the project and raise awareness on the CCUS SET-Plan targets and R&I priorities (see also the section on strategic collaborations for further activities of representation)

- [Power2Gas Conference](#), 22-24 Oct 2019, Marseille, France (CO2VE speaker)
- [NCCS Consortium Days](#), 22-23 Oct 2019, Trondheim, Norway (SINTEF speaker)
- [European Summit of industrial Biotechnology](#), 18-19 Nov 2019, Graz, Austria (CO2VE speaker)
- [IC-CCU19](#), First national conference on CCU, 5-6 Dec 2019, Bari, Italy (CO2VE speaker)
- [GCCSI](#), Delivering on Net-Zero: Supporting Industrial Decarbonisation with CCS, 18 Feb 2020, Brussels, Belgium (CCSA speaker)

News (selection)

- February 2020 - The [European CO₂ Storage Database](#) by the Joint Research Centre is available online
- October 2019 - [Transboundary export of CO₂](#) can now be provisionally allowed
- September 2019 - New [IEAGHG report](#) - Putting CO₂ to use: Creating value from emissions
- September 2019 – CCN (with CO₂ Value's contribution) released a public [Index](#) of companies capturing, using and removing CO₂

Save the dates

- [EU Sustainable Energy Week](#), 23-25 June 2020, Brussels, Belgium
- [2nd Carbon Dioxide Conversion Catalysis Conference](#), 23-26 July, Lisbon, Portugal
- [ACI's 17th Carbon Dioxide Utilisation Summit](#), 21-22 October, Brussels, Belgium
- [Carbon Capture Technology Conference & Expo](#), 19-20 November, Frankfurt, Germany

The team



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 842214

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