



Group of Chief Scientific Advisors

**Novel Carbon Capture and Utilisation Technologies
Stakeholder Meeting Report**

Scientific Advice Mechanism

20 February 2018, Brussels

Novel Carbon Capture and Utilisation Technologies (CCU)

Stakeholder Meeting hosted by the High Level Group (HLG) of Scientific Advisors of the European Commission's Scientific Advice Mechanism (SAM)

28 February 2018, Brussels

Context

Carbon Capture and Utilisation (CCU) technologies capture carbon for use in the manufacture of added value products such as fuels, chemicals or building materials. These technologies are currently subject to policy debates as they may offer potential for decarbonisation, industrial innovation and competitiveness of energy-intensive industries. The use of CCU may contribute to a number of European Union policy goals, including:

- climate change mitigation objectives;
- the circular economy;
- industrial innovation and competitiveness;
- energy security;
- deployment of renewable energy;

On 28 March 2017 Commissioner Miguel Arias Cañete (Commissioner for Climate Action & Energy) sent a letter to Carlos Moedas, (Commissioner for Research, Science and Innovation), requesting the SAM High-Level Group (HLG) to provide a scientific opinion on the challenges and opportunities of novel carbon capture and utilisation technologies. In particular:

- Under what circumstances CCU for production of fuels, chemicals and materials can deliver climate benefits and what are their total climate mitigation potential in the mid- and long-run?

- How can the climate mitigation potential of CO₂ incorporated in products such as fuels, chemicals and materials be accounted for considering that the CO₂ will remain bound for different periods of time and then may be released in the atmosphere?

Meeting attendees

The purpose of the stakeholder meeting was to inform interested parties such as industrial organisations, NGOs and civil society on the Opinion's recommendations, and receive their feedback, in particular on their feasibility.

Participants from Industry, Academia and Civil society organisations included:

Transport & Environment, Fuels Europe; CO₂ Value Europe; ThyssenKrupp; GasNaturally; Change Partnership; Ramboll Foundation; European Climate Foundation; Zero Emission Platform; BELLONA; European Chemical Industry Council.

Professors Rolf-Dieter Heuer and Elvira Fortunato represented the HLG (Chair and Member, respectively) and were supported by staff from the Directorate General for Research and Innovation ((DG RTD) Johannes Klumpers, Maria da Graça Carvalho, Dulce Boavida, Jacques Verraes, Maurizio Salvi). The SAPEA CCU Expert Group was represented by Professors Robert Schloegl, Chair, and Marco Mazzotti, deputy Chair. Other European Commission staff observing the event were, from the DG RTD Advanced Manufacturing Systems and Biotechnologies Unit: Carmine Marzano, and Jürgen Tiedje; and from the Climate Action and Earth Observation Unit: Andrea Tilche. From the Directorates General for Climate Action, and Environment, were Nadia Vedrova and Jesús Alquezar Sabadie respectively.

Meeting summary:

The participants were briefed by Professor Fortunato, Professor Marco Mazzotti and Dr Johannes Klumpers. Professor Fortunato described the draft HLG Scientific Opinion, Professor Mazotti the SAPEA Evidence Review Report and Dr Klumpers the background to the Scientific Advice Mechanism.

Stakeholders were then invited to discuss these items. Issues raised related in particular to:

- The cyclical approach to CCU in the short and medium terms transition to a low carbon future (energy and industry);
- CCU in the context of societal services;
- CCU and the European Union energy systems;
- CCU and CO₂ unavoidable emissions (industrial sectors);
- CCU climate mitigation potentials;
- Storage of CO₂ (fuels, chemicals, materials, mineralisation, carbonisation etc.);
- CCU technologies;
- Research and market implications of CCU.