

Summaries of presentations

David Nevicato, Total (CCUS Research Programme)

Total took a major step forward in 2020 in its response to the climate challenge by setting a new ambition to get to net zero emissions for its global business by 2050, together with society. In this way, Total will contribute to the Paris Agreement's carbon neutrality objective for the second half of the century.

Cutting GHG emissions generated by the Total's operations is the first step toward carbon neutrality. Total is aiming to reduce its direct emissions by 2050, by improving energy efficiency, eliminating routine flaring, electrifying its processes and continuing efforts to reduce methane emissions from oil and gas production. The energy mix will need to change to meet the goals set out in the Paris Agreement.

Total isn't just curbing its emissions, adapting its energy mix and helping shape customer demand. It is also investing in natural carbon sinks and developing carbon capture and storage (CCUS) solutions with a view toward a carbon-neutral future. And it is focusing intensively on R&D and more specially on CCUS, to meet the challenges posed by the energy transition and carbon neutrality. CO₂ capture on industrial and energy production plants remains the most expensive step in the CCUS chain and significantly lowering the cost of these facilities requires the development of new technologies and new materials.

Prof Christopher Rayner, University of Leeds

C-Capture is a spin out from the University of Leeds. It has developed fundamentally new chemistry for separating CO₂ from other gases – a vital part of the Carbon Capture and Storage (CCS) process. The technology significantly reduces energy requirements for the separation process, allows the use of inexpensive materials of construction, and has a substantially reduced environmental profile compared to current methods. Separation of CO₂ from other gases is a key part of a low carbon economy, and examples will be discussed ranging from biomethane production by biogas upgrading, hydrogen production, and Europe's first Bioenergy with Carbon Capture and Storage (BECCS) demonstration project with Drax Power at Selby.

Paul R Winstanley, Thorntec Limited

Paul will talk about the pros and cons of capture technologies along with a review of the options for CO₂ utilisation:

- What are the current CO₂ capture options, highlighting their strengths and weaknesses
- The current landscape of CO₂ utilisation.
- Roadmaps for CO₂ reduction, utilisation, storage, and management of stores.

Poster presentations

To be announced.

The 3 best poster presentations from the poster competition will be invited to present their posters orally.