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News

Issues and Foresight

Climate, environment and circular economy | CO2 capture, utilization and storage

Florence Delprat-Jannaud, CO_2 coordinator at IFPEN and Chairwoman of the Club CO_2, is the guest of this first episode on CCUS and ecological transition. Spend 5 minutes with us to learn all about CCUS technologies, their role in carbon neutrality and the main challenges facing the sector.

TAKEAWAYS FROM THIS PODCAST

CCUS: definition

Carbon Capture, Utilization and Storage (CCUS).
CCUS means capturing the CO_2 emitted by industrial facilities and transporting it in order to:

- **Store it underground** to isolate it from the atmosphere in the long term
- **Use it as a resource** to make products, biofuels for example

CCUS: an essential element in ecological transition

All the scenarios for the transition towards carbon neutrality call for this technology **in addition to other decarbonization solutions**. The IPCC report points out to the need for immediate reduction of greenhouse gas emissions. It calls for **the acceleration of CO_2 capture and storage**, whether to reduce industrial emissions or to remove CO_2 from the atmosphere.

> Without CO_2 capture and storage, limiting global warming to no more than 1.5° seems out of reach (Florence Delprat-Jannaud)

A brief recap

The IEA report highlights four contributions that CCUS makes towards ecological transition:
- reducing the emissions of existing facilities
- reducing those emitted by sectors of heavy industry (cement, steel and chemical production) which are difficult to decarbonize
- enabling the implementation of the hydrogen sector (via the production of "blue" hydrogen) in many regions
- extracting CO_2 from the atmosphere.

Key figures on CCUS

- **35-40 million tonnes of CO_2** are currently captured and stored each year. To meet decarbonization targets, **50 or even 100 times** more will have to be captured and stored by 2035.
- For more than 20 years now, Equinor has been injecting **1 million tonnes of CO_2** per year underground off Norway.
- **Some thirty large-scale facilities** are in operation around the world to decarbonize electricity production (coal-fired power stations, gas-fired power stations) and industry (steel, cement and chemical plants).
- According to the IEA, CCUS could account **for 10-15% of efforts** to achieve carbon neutrality

> Given the urgency of the climate situation, we must be able to deploy the whole range of available decarbonization solutions, wherever and as soon as they are needed(Florence Delprat-Jannaud)

The big challenges that CCUS still has to meet

The cost

Implementing decarbonization solutions is **cheaper than doing nothing**. Mitigating climate change and mitigating the damage caused by climate disasters has at a cost to society. The IPCC has stressed the need to **limit global warming right now**. IFPEN is also working on more energy-efficient, less costly technologies.

Infrastructure

The **operational industrial storage and transport units** required for the development of the sector are currently lacking. IFPEN is working on the entire chain as well as implementation scenarios for the sector on a national and international scale (France and Europe).

A quiz to remember



Our expertise > CO_2 capture, utilization and storage

YOU MAY ALSO BE INTERESTED IN

CCUS and ecological transition | The podcast #4 - CO2 capture
CCUS and ecological transition | The podcast #3 - CO2 transport and storage
CCUS and ecological transition | The podcast #2 - Rolling out CCUS
IFPEN co-organises the GHGT-16 conference on CO2 capture, storage and utilization
CCUS and ecological transition | The podcast #5 - CO2 utilization
CCUS and ecological transition | The podcast #1 - Definition and challenges
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