

PYROCO₂



Demonstrating sustainable value creation from industrial CO₂ by its thermophilic microbial conversion into acetone

PYROCO₂ NEWSLETTER - UNDERSTANDING THE CCU MARKET: INSIGHTS FROM THE PYROCO₂ STAKEHOLDER SURVEY



HOW READY IS THE MARKET FOR CCU TECHNOLOGIES? WHAT ARE STRUCTURAL BARRIERS THAT SLOW DOWN THE DEPLOYMENT?

To answer these questions, [PNO Innovation](#), leader of exploitation, dissemination and communication activities in PYROCO₂, launched a dedicated Market Survey on Carbon Capture and Utilisation.

More than **40 stakeholders** from across Europe shared their views. The objective?

To gather first-hand insights from industry experts, researchers, and stakeholders on:

- Market trends in CCU and CCUS
- Technological and economic barriers
- Policy needs and regulatory gaps
- Future deployment perspectives

WHO CONTRIBUTED AT THE SURVEY?

The survey gathered insights from **companies** (both SMEs and large enterprises), **researchers and innovation actors** as well as **stakeholders active across the CCUS value chain**.

Participants came primarily from Italy, Norway and Germany, with additional input from Spain, Belgium, Romania, the Netherlands, France and others. This diverse group ensures that the findings reflect real industrial and research perspectives.

WHAT ARE THE MAIN BARRIERS TO LARGE-SCALE CCU DEPLOYMENT?

According to stakeholders **cost obstacles** are the most significant barrier.

Technical challenges follow closely.

The message is clear: while CCU technologies are advancing, **economic feasibility and technical maturity remain key bottlenecks** for industrial-scale implementation.

WHAT ARE THE MAIN DRIVERS FOR CCU ADOPTION?

Despite the barriers, stakeholders identified strong positive drivers, such as **supportive policies and regulatory frameworks**, combined with the **urgent need to mitigate emissions** from hard-to-abate industries

There is broad recognition that CCU will be essential to decarbonise sectors such as chemicals and refining, among others.

HOW IS THE CURRENT POLICY LANDSCAPE PERCEIVED?

Interestingly, respondents expressed a **generally neutral view** of current CCU policies. However, they clearly highlighted urgent needs:

- Increased **public funding and grants** to incentivise CCUS projects
- Development of **CCUS hubs across Europe**
- Clear carbon strategies and long-term regulatory stability

Notably, around **40% of respondents consider the current carbon price too low** to effectively stimulate large-scale CCU deployment.

WHERE ARE THE TECHNOLOGICAL BOTTLENECKS?

When asked which steps of the CCUS value chain are most critical:

- **CO₂ utilisation** was ranked as most challenging (36.6%)
- Followed by **CO₂ capture** (29.3%)
- Transport and storage were perceived as less critical

Among promising technologies for accelerating CCUS deployment, stakeholders identified:

- Integrated systems combining capture and conversion in a single reactor (30.8%)
- New catalysts and materials enabling energy- and resource-efficient conversion (27.9%)

These findings strongly resonate with the core technological focus of the PYROCO₂ project.



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