17th CO2GeoNet Open Forum

20-23 May 2024

Key messages

Progress in CCS needs to be nurtured by strong social engagement

- Focus on social wellbeing and using the subsurface for social benefit. We need a skilled workforce to deliver CCS so we need stronger messages on how careers in sustainable use of the subsurface can help deliver a net zero future.
- The Societal Readiness Level of CCS should be considered. National discussions are needed first to define the legitimacy of a new industry (e.g. CCS), then consider how to implement CCS nationally. Following national conversations, legitimacy of an individual project and then quality of implementation of that project should be addressed.
- Developing a shared understanding of perspectives and terminology is needed at the start of discussions to ensure a common perception whilst moving forward.
- Public acceptance is particularly crucial now as the CCS industry is just starting to grow. The first projects need to succeed; because CCS is not yet well known or applied on industrial scale everywhere, an issue at one CCS project could potentially damage the emerging CCS industry.
- National debates are now considering if it is desirable to store CO_2 from other countries depending on social values, this is an important consideration for future business models.
- Perceptions of failure may well vary between the CCS industry and the public (e.g. if 90% of the CO_2 from a plant is stored, is this considered a success?).

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Effective communication on CO2 storage and monitoring storage sites need to go hand in hand to provide assurance to the host community

- We need to be proactive on community engagement and monitoring. We can monitor sites in ways that improve confidence.
- Perfection is not possible. There will be mistakes since not everything is known. How issues are managed is key. When issues arise, they must be dealt with effectively. Issues should be addressed not avoided.
- Multiple barriers should demonstrably be in place so that safety is ensured (analogy: we try to drive cars safely, but we still have airbags and seatbelts).
- Communication is key since what operators may view as a minor divergence in operations with many established mitigations may not be viewed as such by stakeholders outside the industry.
- Discussion is vital to establish what is needed to make a CCS project acceptable to a local host community.

Knowledge sharing and flexibility remain key to advancing CCS projects

- Political, regulatory & financial certainty remain crucial to moving projects forward.
- The EU Net Zero Industry act aims to advance CCS by establishing a regulatory framework to help transition to a net zero future.
- To move CCS forward rapidly, lessons learnt and solutions need to be shared; lessons from existing projects on financial instruments, regulatory solutions, and technical aspects can provide confidence and help streamline processes for future projects.
- Projects need to have the flexibility to adapt to new knowledge and technologies.
- Operators and regulators must find satisfactory solutions together because we need CCS to tackle the global climate challenge. There are many emitters but few commitments.

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We need to effectively apply technical, regulatory and financial tools to optimise the use of storage resources and maximise efficiency of operations

- CCS is moving towards multi-hub development; this brings new challenges.
- Flexibility in contract terms is needed to make it possible for both small and large emitters to connect to large transport and storage networks.
- Smart solutions and smart partnerships are needed. To realise the CCS value chain, multiple large & technical projects must mature & take financial decisions together, which requires coordination & risk management across the full value chain. This relies on building partnerships, founded on cooperation and openness, that can endure for years.
- Subsurface interaction between CCS projects will become increasingly common and regulatory and management strategies are needed to optimise use of storage resources.
- Monitoring needs to be risk-based, site-specific and adaptable over time to achieve containment, conformance, confidence. Modelling storage sites will help trigger the right monitoring at the right time. Balancing the value of information against cost and implications of each technology enables smart monitoring solutions. There are many simple measurements recorded that are standard in established subsurface industry - we should not overcomplicate requirements.
- Applying multiple methodologies before perturbation widens the options available for future monitoring. A baseline dataset is needed that reflects the status before injection (for depleted fields this is not pre-production).