

European CCS Demonstration Project Network

Jelena Simjanovic, Zoe Kapetaki, Francesco Corona



<http://ccsnetwork.eu/>

EU CCS Project Network

Overview

European large scale demonstration projects and the Crown Estate (associate member)

When?

The European Commission established the Network in 2009 originally consisting of six EEPR* funded projects (Belchatow (PL), Compostilla (ES), Don Valley (UK), Janschwalde (GE), ROAD (NL), Porto Tolle (IT)). Sleipner (NO) joined in 2012 and Peterhead (UK) in 2015

EU CCS Project Network

Members



Why?

To accelerate the deployment of safe, large-scale and commercially viable CCS projects

How?

By sharing technical and project development information via facilitated knowledge-sharing activities

Quick facts

| Member | Country | Industry | Capture Type | Transport Type | Storage Type |
|---|----------------|--|---|---|------------------------------|
| Compostilla Oxy 300 | Spain | Power (anthracite and coke) | Oxy-combustion capture | Pipeline (onshore to offshore) | Dedicated storage |
| Don Valley | United Kingdom | Power generation (coal) | Sargas Integrated Pressurised Capture Technology (IPCT) | Pipeline (onshore to offshore) | Dedicated geological storage |
| ROAD | Netherlands | Power generation (bituminous coal and biomass) | Post-combustion capture | Pipeline (onshore to offshore) | Dedicated geological storage |
| Sleipner CO₂ Injection | Norway | Natural Gas Processing | Absorption with chemical solvent (Amine) | No transport required (i.e. direct injection) | Dedicated Geological Storage |

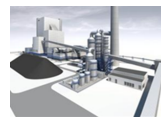
Highlights



[Compostilla Oxy CFB 300](#)



[Don Valley](#)



[ROAD](#)



[Sleipner CO₂ Injection](#)

- Test conducted on the CFB boiler for oxy operation yielded positive preliminary results
- Preliminary **characterisation of subsurface structures well advanced**
- Economic and risk assessment finalised in 2013
- **Public outreach and education programme built on successful Knowledge Sharing and best practices**
- FID in October 2013, resulted in the cancellation of the project proceeding to full scale

- Offshore EOR/storage feasibility study completed
- National Grid's saline formation is currently the intended CO₂ storage site
- Successful intrusive appraisal drilling programme of the saline aquifer storage site (known as '5/42') completed, with the work receiving the **award for innovation at the prestigious Gas Industry Awards 2014**
- Initial public consultation for onshore section of pipeline is complete and a preferred onshore route has been announced
- Already consented development for a 900 MW gross power will be used

- Detailed engineering of the capture unit completed
- Pipeline route engineered and 'flow assurance study completed
- 'Tie-ins' with power plant installed
- Permitting procedures finalised
- **Significant knowledge acquired during permitting process, shared effectively**
- Capture and Storage permits are definitive and irrevocable
- **Valuable findings on water use improvement and CO₂ use**

- Projects counts **nearly 20 years of operation**
- **Significant lessons acquired**
- Approximately **15Mt of CO₂ captured to date**
- Gudrun field operations started in 2014 and have been successful
- The injection is entailing as expected under 800,000 tonnes CO₂ per year
- Repeated seismic monitoring in Sleipner allowed for **significant improvements in understanding CO₂ flow dynamics**.
- Reservoir simulation benchmark provides improved basis for predicting the future plume distribution and estimation of CO₂ storage capacity

Conclusion

- Knowledge Sharing works on a number of levels and is very relevant to projects for exchanging technical expertise on specific issues and strengthening the case for CCS
- The projects are the most advanced in the EU CCS sector, able to provide technical inputs
- Valuable interactions with all stakeholders have been achieved
- The Network can directly address EU CCS policy from its real life experiences
- The Network can provide factual input and support on the policy making processes.

*European Energy Program for Recovery

