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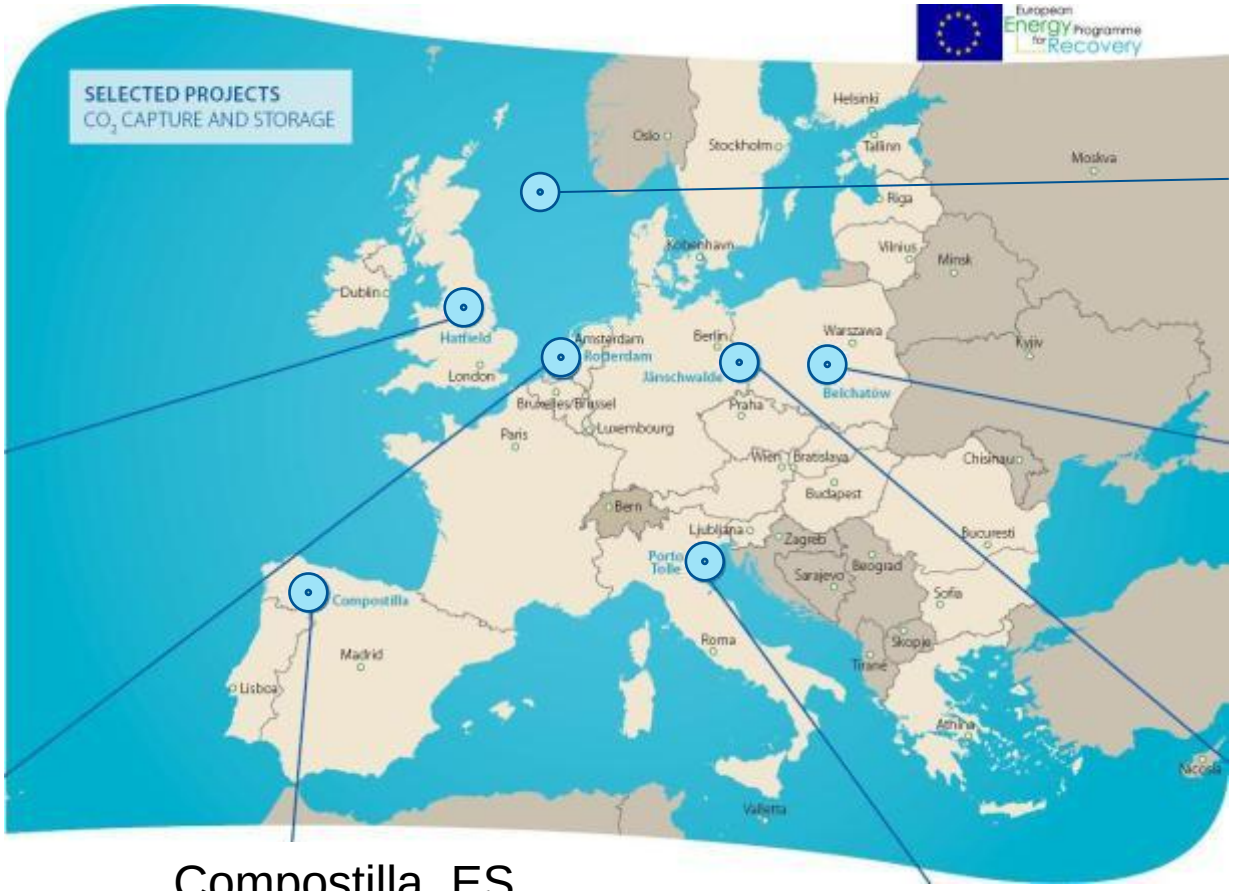
The European CCS Demonstration Project Network

Focus on what these projects have learnt about CCS regulation and how these lessons might be applied to other projects.

Daniel Rennie - Network Secretariat

The Network



Don Valley, UK
Power sector 650 MW, pre-combustion
5 Mtpa CO_2

ROAD, NL
Power sector 250MW, post-combustion
1.1 Mtpa CO_2

Compostilla, ES
Power sector 330MW, oxyfuel
1.6 Mtpa CO_2

Porto Tolle, IT
Power sector 250MW, post-combustion
1 Mtpa CO_2

Sleipner, NO
Gas processing
0.9Mtpa CO_2

Bełchatów, PL
Power sector 260MW, post-combustion
1.8Mtpa CO_2

Jänschwalde, DE
Power sector 300MW, post-combustion & oxyfuel
1.7Mtpa CO_2

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General learnings

- CCS project permitted is a long, complicated and difficult process.
- Many of the relevant regulations are new to both the regulators and projects, and are open to considerable degrees of interpretation.
- A supportive and pragmatic approach to key issues - by both the project and competent authority - is important for success.

Specific learnings

- Delayed, partial or unclear regulations – for any element of the CCS chain – cause projects to be cancelled.
- **Capture** permitting is relatively well understood, and has proceeded as planned for most of the projects – though in a number of cases have caused substantial project delays.
- **Transport** is important, and often not appropriately addressed. Again, without adequate regulations, projects are delayed or cancelled.
- **Storage**, under the so-called CCS Directive, is of central importance. The transposition has been one of the major points of discussion. The method (in some cases a straight transposition, in others an integration into existing legislation), and delays have all variously impacts on the early mover projects.

Some key issues raised by the Network regarding the Directive

- **Transfer of responsibility** – details such as
  - what 'evidence' is acceptable,
  - who will assess the evidence,
  - and what happens if the competent authority 'unfairly' doesn't accept responsibility.

- **Liability and financial security** – requirements, such as
  - what constitutes proof of being 'valid and effective' at time of injection,
  - what are the obligations,
  - what are acceptable calculation methods,
  - what instruments are acceptable and viable,
  - the impact of third party access requirements.

So how, and what, lessons can be applied to other projects?

- Many of the elements of uncertainty can be overcome through dialogue.
- For project planning and risk management - don't underestimate the time and complexity of CCS permitting.
- **Discussing** and understanding these key issues, and their implications, with regulators directly is the most important step.
- **Knowledge sharing** with other projects is hugely beneficial for all involved. Understanding other's successes, issues, and approaches aids all concerned.