



# CCS EU PROJECT NETWORK

## CO<sub>2</sub> Transport and Storage

“Natural Gas Knowhow Centre in Mediaș”, Thursday, 9<sup>th</sup> June 2011

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# OBJECTIVES

- ❖ Facilitate the identification of good practices, lessons learned and Recommendations with respect to large-scale CCS demonstration and enabling knowledge sharing amongst projects
- ❖ Providing a common EU identity to Network members
- ❖ Leveraging experience gained from projects and the evidence generated by them, in order to build public confidence about the feasibility and safety of CCS
- ❖ Promoting CCS, EU leadership and cooperation potential to third parties/countries

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# Steering Committee

- Each member project has a seat
- Chaired by the European Commission services
- Guides the activities of the Network
- Oversees preparation and publication of information
- Meet annually to review the previous year's activities and reports and agree on:
  - Annual knowledge-sharing themes and agenda based on proposals by Advisory Forum and Network Team
  - The agenda and minutes of Steering Committee meetings
  - Adjustments to Network internal procedures



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# Advisory Forum

- Consultative role in the annual agenda setting process of the Network
- Regularly informed of Network/project progress
- Membership:
  - National authorities
  - Researchers
  - ZEP
  - International organisations

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# Application process

- Process should be as simple and transparent as possible
- Applications may be submitted at any time
  - Information submitted to the Network Team
  - Network Team notifies applicant of receipt
  - Network Team checks that criteria are fulfilled
  - The EC services take the final decision to invite project to join the Network
  - The project coordinator, on behalf of the project owner(s)/consortium, and the EC services sign an agreement that they will both respect the principles of the Network as laid out in the criteria document



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# Eligibility

- Projects should have concrete plans to demonstrate the full CCS value chain:
  - By end of 2015
  - On a minimum power plant capacity of 250 MWe, or equivalent industrial output
  - At 85% capture rate of the treated flue gas stream
  - Territorially within the EEA
- Membership makes no distinction between EU-funded and non-EU funded projects



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# Application Form

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1.	<b>Project location</b>	
2.	<b>Statements of commitment according to the Qualification Criteria</b>	Statement of commitment – Network Goals (Knowledge Sharing, CCS Public Awareness, Cooperation with partners outside EU)
		Statement of acceptance (Network Organization and Procedures)
3.	<b>Project Management</b>	Work Breakdown Structure and schedule
		Decision gates and schedule milestones
		Financial commitment, overall financial plan
		Permitting management plan
4.	<b>Feasibility Study</b>	Project risk management plan
		Cost estimate
		Energy consumption
		CO <sub>2</sub> capture
		Transport strategy
5.	<b>Technical eligibility criteria Values</b>	Storage strategy
		Capacity of plant (MWe)
		CO <sub>2</sub> stored per year (tCO <sub>2</sub> )
		Capture rate (%)





# Knowledge sharing (1)

- Value of knowledge sharing:
  - » Reciprocal exchange of best practice and lessons learned, to accelerate CCS development
  - » Enable evaluation of effectiveness of CCS concepts
  - » Collect information on Environment, Health and Safety - to be communicated objectively to public
- Intellectual property shall be respected
- Categories of knowledge:
  - » Technical set-up and performance
  - » Cost levels
  - » Project Management
  - » Environmental impact
  - » Health and Safety



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# Knowledge sharing (2)

- Members are asked to state commitment to knowledge sharing as described by the Knowledge Sharing Protocol
- Knowledge sharing is not only about data, but also about the stories and experiences that contextualise those data
  - The knowledge exchanged can take a variety of knowledge formats, e.g.
    - Technical data
    - Good practices
    - Lessons learned
    - Check lists, how-to lists
    - Case studies
    - Project management plans



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# Status

- ❖ The announcing meeting on 2<sup>nd</sup>÷3<sup>rd</sup> of December, 2009
- ❖ Network has been open for applications since May 2010
- ❖ The Network is open to any project that meets the Qualification Criteria and agrees Knowledge sharing Protocol
- ❖ Steering Committee became operational in August 2010
- ❖ Advisory Forum has the first meeting on 17<sup>th</sup> of September 2010 and the second on 16<sup>th</sup> of June 2011
- ❖ 3 meetings on 2010 in Bilthoven, Brussels, Hamburg and as results 3 reports on public engagement, risk management and permitting available for public in May 2011
- ❖ Sharing events on 2011 in Pau, Rotterdam, Compostilla and Belchatow



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# EU CCS Project Network (EENR)



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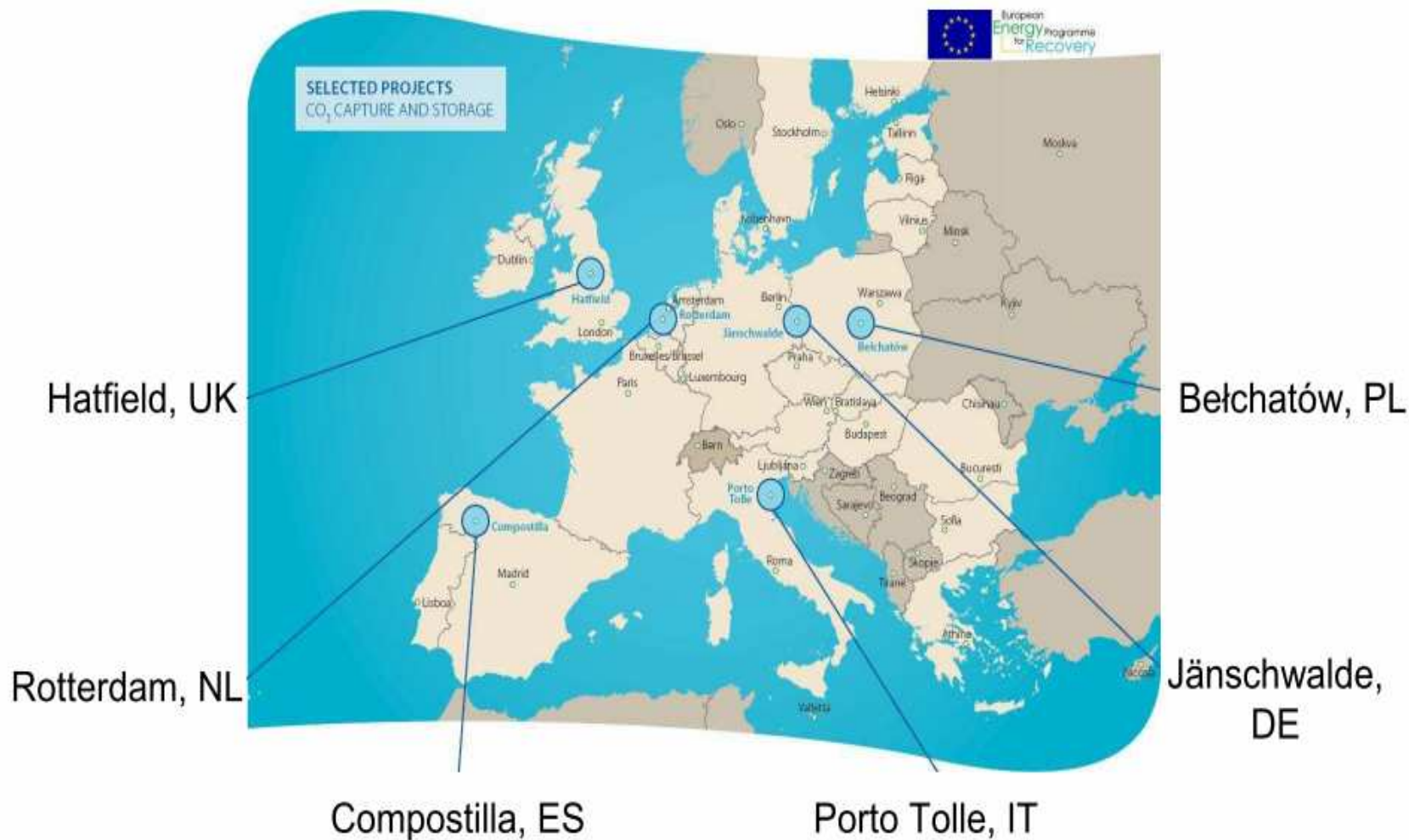
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# EEPR

European  
Energy Programme  
for Recovery



❖ €1bn for large-scale CCS demo projects  
Max. €180m per project for incremental CCS investment costs

❖ in 6 projects have signed grant agreements in 2009/2010



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# Bełchatów, Poland



**Project developer:**

PGE Mining and Conventional Power J.S.C.

**Support from:** Alstom, Dow Chemical Co., Gazoprojekt, Polish Geological Institute, Schlumberger for appraisal phase and subcontractors

**Power plant:** new 860 MW/260 MW

**Fossil Fuel:** local lignite

**CO<sub>2</sub> stored:** 1.8 Million t/year

**Capture:** Post-Combustion - AAP

**Transport:** on- shore pipeline, 60 ÷ 140 km

**Storage:** on-shore deep saline aquifer



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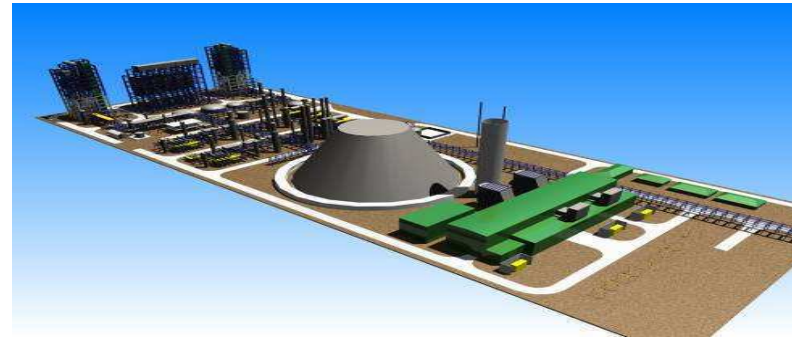
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# Hatfield, UK



**Project developer:** 2 Co Energy (Powerfuel Power)

**Renamed:** Don Valley Power Project (DVPP)

**Power plant:** new 900 MW / IGCC

**Fossil Fuel:** coal

**CO<sub>2</sub> stored:** 5.0 Million t/year

**Capture:** Pre-combustion

**Transport:** off-shore pipeline, 175 km

**Storage:** off-shore deep saline aquifer and EOR



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Project Support



# Compostilla, Spain

The Compostilla Project  
**OXYCFB300**

**Project developer:** Endesa

**Support from:** Foster Wheeler, CIUDEN

**Power plant:** new 323 MW / (CFB)

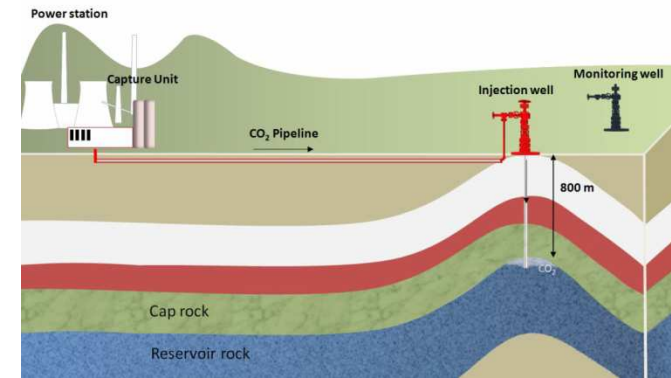
**Fossil Fuel:** coal

**CO<sub>2</sub> stored:** 2.0 Million t/year

**Capture:** Oxy-combustion

**Transport:** on-shore pipeline, 140 km

**Storage:** on-shore deep saline aquifer



# Jänschwalde, Germany

**Project developer:** Vattenfall

**Support from:** Foster Wheeler, CIUDEN

**Power plant:** 250 MW (existing FB) / 50 MW

**Fossil Fuel:** coal

**CO<sub>2</sub> stored:** 1.7 Million t/year

**Capture:** Oxy-combustion

Post -combustion

**Transport:** on-shore pipeline, 50-300 km

**Storage:** on-shore deep saline aquifer  
and depleted natural gas field



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# Porto Tolle, Italy

**Project developer:** ENEL

**Power plant:** new 660 MW  
(USC) / 264 MW

**Fossil Fuel:** coal and biomass

**CO<sub>2</sub> stored:** 1.0 Million t/year

**Capture:** Post-combustion - amine

**Transport:** off-shore pipeline, 100 km

**Storage:** off-shore deep saline aquifer



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# Rotterdam, Netherland



**Project developer:** Maasvlakte CCS Project C. V.

**Support from:** E.ON Benelux, GDF SUEZ

**Power plant:** new 1070 MW / 250 MW

**Fossil Fuel:** coal and biomass

**CO<sub>2</sub> stored:** 1.1 Million t/year

**Capture:** Post-combustion

**Transport:** on-shore pipeline, 5 km  
off-shore, 20 km

**Storage:** off-shore depleted gas field



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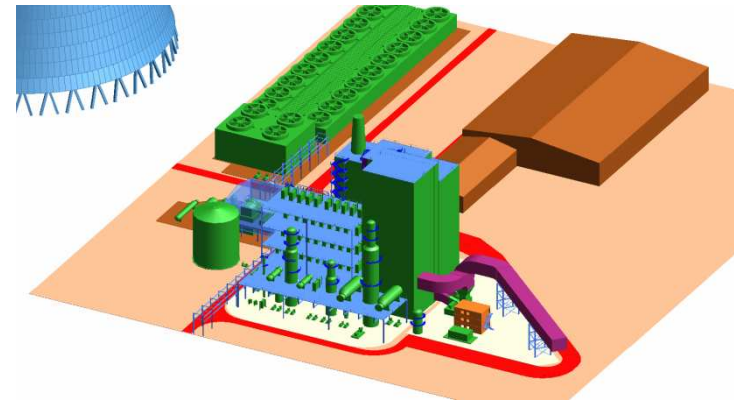
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# GETICA CCS, Romania



**Project developer:** PC Getica CCS

**Support from:** ISPE, Alstom, Schlumberger, GeoEcoMar, Intetech, Eninvest, Oxand

**Power plant:** existing 330 MW / 250 MW

**Fossil Fuel:** local lignite

**CO<sub>2</sub> stored:** 1.6 Million t/year

**Capture:** Post-combustion - CAP

**Transport:** on-shore pipeline, 50 km

**Storage:** on-shore deep saline aquifer



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# WE STAND FOR THE DEVELOPMENT OF CCS PROJECTS IN ROMANIA



**Thank you for attention!**

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