



Directorate-General  
for Energy

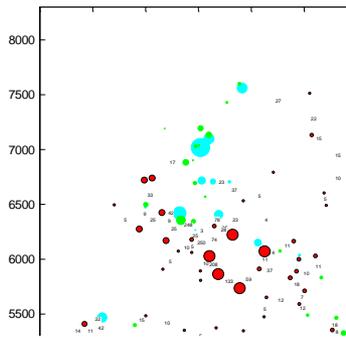
# Advancing CCS demonstration projects in Europe – the CCS Project Network

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16/11/2011

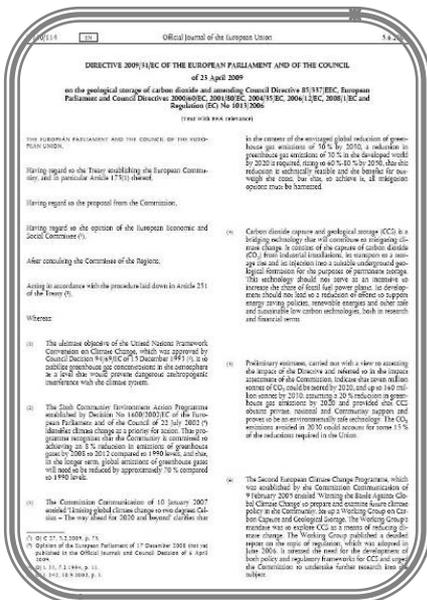
# ● CCS in Europe



- CCS is regarded as a key climate change technology in the EU
- Models show that the lowest cost pathways to decarbonising electricity by 2050 include CCS
- 2008: EU commitment to integrated CCS demonstration projects as a vital first step before commercialisation



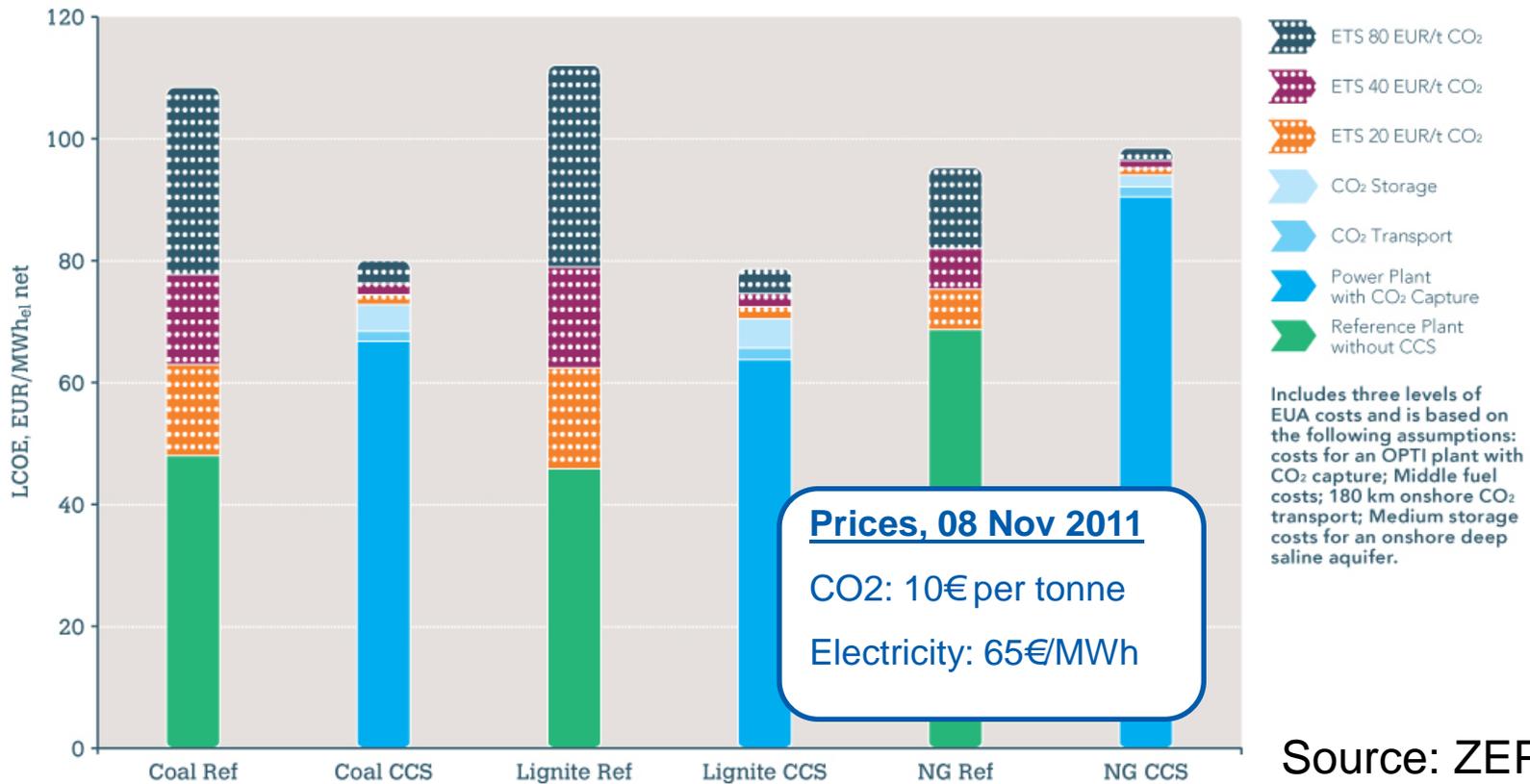
# Legislative framework in place



- Directive 2009/31/EC on the geological storage of carbon dioxide
  - » Transposition April 2009 → 25 June 2011
  - » Safe, permanent storage of CO<sub>2</sub>
  - » 3rd party access to infrastructure
  
- Directive 2003/87/EC Emissions Trading Scheme (ETS) revision 2009
  - » No surrender of allowances for CCS
  - » New Entrants Reserve of 300 million EUAs to fund demonstration projects
  
- Energy infrastructure regulation 2011 foresees support for building up European CO<sub>2</sub> transport networks

# Long term economic viability

Figure 1: The Levelised Cost of Electricity (LCOE) of integrated CCS projects (blue bars) compared to the reference plants without CCS (green bars)



Source: ZEP, 2011

# ● Getting the demos off the ground



- European Energy Programme for Recovery (EEPR)
  - » €1bn to 6 integrated projects
  - » Grants awarded in 2009
  - » Important progress made with storage site characterisation, FEED studies and pilot tests
- New Entrants Reserve (NER300)
  - » Could fund 8 CCS projects in 2 calls
  - » Mixed technologies, geologies, locations
  - » First awards in 2012 for CCS and RES



# ● EU funded projects



SELECTED PROJECTS  
CO<sub>2</sub> CAPTURE AND STORAGE



**Don Valley, UK**  
900 MW, pre-combustion;  
EOR/ aquifer

**Rotterdam, NL**  
250MW,  
post-combustion;  
offshore gas field

**Compostilla, ES**  
323MW, oxyfuel;  
onshore aquifer



**Porto Tolle, IT**  
250MW, post-combustion,  
offshore aquifer



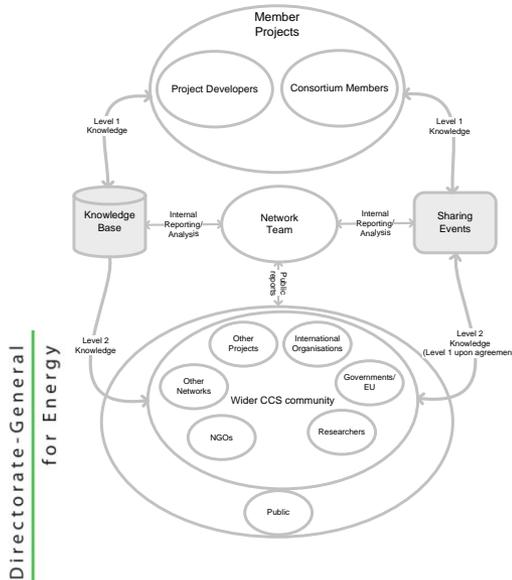
**Belchatow, PL**  
250MW,  
post-combustion,  
lignite; onshore aquifer

**Janschwalde, DE**  
300MW,  
post-combustion &  
oxyfuel, lignite;  
onshore aquifer

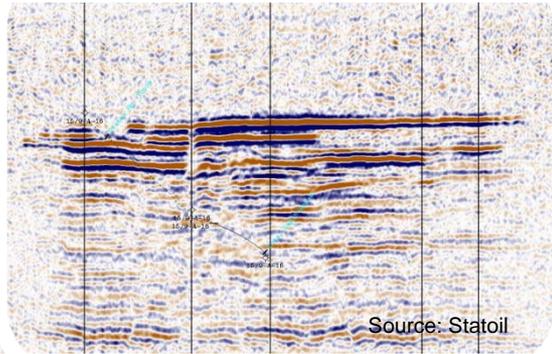
# Knowledge Sharing: CCS Project Network



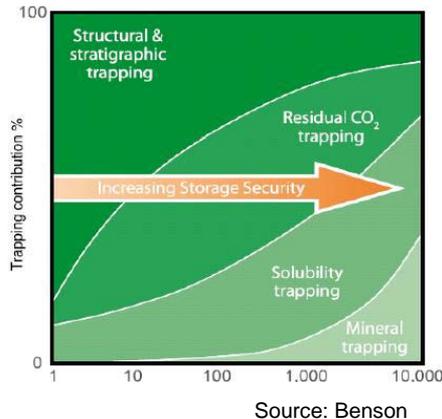
- Provides first movers with a means of coordination, exchange of information and experience and identification of best practices
- Consistent, collective and coordinated dissemination is more cost-efficient and have higher impact
- Global knowledge sharing between projects
- Meetings on public engagement, permitting, risk, storage site modelling and monitoring
- Coordinated progress reporting to stakeholders



# Sharing knowledge on storage



- Key questions considered by CCS Project Network
  - » How to design a risk driven MVA plan for a demonstration project?
  - » How to define quality requirements for modelling that will add confidence to the storage approach and will satisfy permitting requirements?
  - » How to create an integrated, iterative feedback learning approach to site characterisation, modelling and MVA



- Workshop with GCCSI on groundwater and CO<sub>2</sub> behaviour, Sept 2011
- UK workshops on Longannet and Kingsnorth FEED studies 4/5 Dec 2011

Thank you for your attention

