

CCS Communication

*Supporting Early Demonstration of
Sustainable Power Generation from
Fossil Fuels*

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● Content

- EU Policy Context: Energy and Climate Change
- Deploying CCS in Europe
 - » Legislative Framework
 - » Long Term Economic Viability
- Financing CCS demonstration projects

● Background

- **The use of fossil fuels in power generation leads to approximately 40% of all CO2 emissions in the EU**
- **Fossil fuels will remain important part of the EU and global energy mix but solutions addressing carbon footprint needed**
- **CO2 Capture and Storage – obvious choice
Technology present – but not scale**
- **With large scale demonstration CCS economically viable in 10-15 years + learning curve cutting costs in half**

● Policy goal

- Policy goal = CCS commercially feasible by 2020:
 - » CCS in retrofits and newly build thereafter
 - » capture-readiness in the meantime
- Delay of demonstration by 7 years would mean extra 90 Gt of CO₂ emitted globally by 2050

● EU actions so far

- **2007 Spring European Council**
 - » target of 20% cut in greenhouse gas emission by 2020
 - » enabling low-CO₂ power generation from fossil fuels by 2020
 - » up to 12 CCS demonstration plants in operation by 2015
- **November 2007: Strategic Energy Technology Plan**
 - » R&D efforts to focus on low carbon technologies
 - » CCS one of strategic technologies: large-scale demos next priority
- **23 January 2008: Commission adopts a set of proposals including the CCS Communication and the CCS Directive**

● Costs and benefits of CCS

- **Costs:**
 - R&D (€1bn) and demonstration (€10-20bn) to reduce costs
 - further investment to roll out CCS on a wide-scale
 - capital and operating costs up to 70% higher
- **Benefits:**
 - 20-28% of the achievable global CO₂ emission reductions by 2050 (IEA)
 - solution for both power generation and energy intensive industries
 - for managing future CO₂ emissions of dynamically developing coal users (e.g. China)
 - keeping coal in the energy mix

● Obstacles / EC Proposals

- **Legislative hurdles**
 - **CCS Directive**: comprehensive regulatory framework designed to
 - ensure public confidence in CCS installations
 - provide legal certainty to operators
- **Non-legislative hurdles**
 - Long term economic viability
 - Industrial Scale CCS Demonstration Projects (all main technology routes (Pre-, Post-, Oxyfuel-Combustion))
 - General and Industry Awareness
 - Public Acceptance

● CCS-Directive - II

- **Enabling Framework**
 - » Member States determine whether and where CCS will happen
 - » Companies decide whether to use CCS on the basis of conditions in the carbon market
- **Objectives and Principles**
 - » Legislative Framework for managing environmental risks
 - » Overcame existing legal barriers
 - » Use existing frameworks where possible
- **Focus on Storage**
 - » Capture regulated under IPPC Directive
 - » Transport regulated as for natural gas transport (by Environmental Impact Assessment and at Member State level)
- **New element is CO₂ storage, main focus of proposals in directive**

● CCS Directive - II

- **Content**
 - » Site Selection
 - » Authorisation for Storage
 - » Monitoring plan to confirm expected CO₂ behaviour
 - » Liability measures in case sites do leak
 - » Transfer of Responsibility to the state
 - » Access for third parties
- **CCS-not mandatory, but member states need to**
 - » assure, that enough space is available on site to retrofit plant with capturing and compression facilities
 - » verify, if storage capacities and transport facilities are available and retrofitting is technological feasible
 - **CAPTURE READINESS**

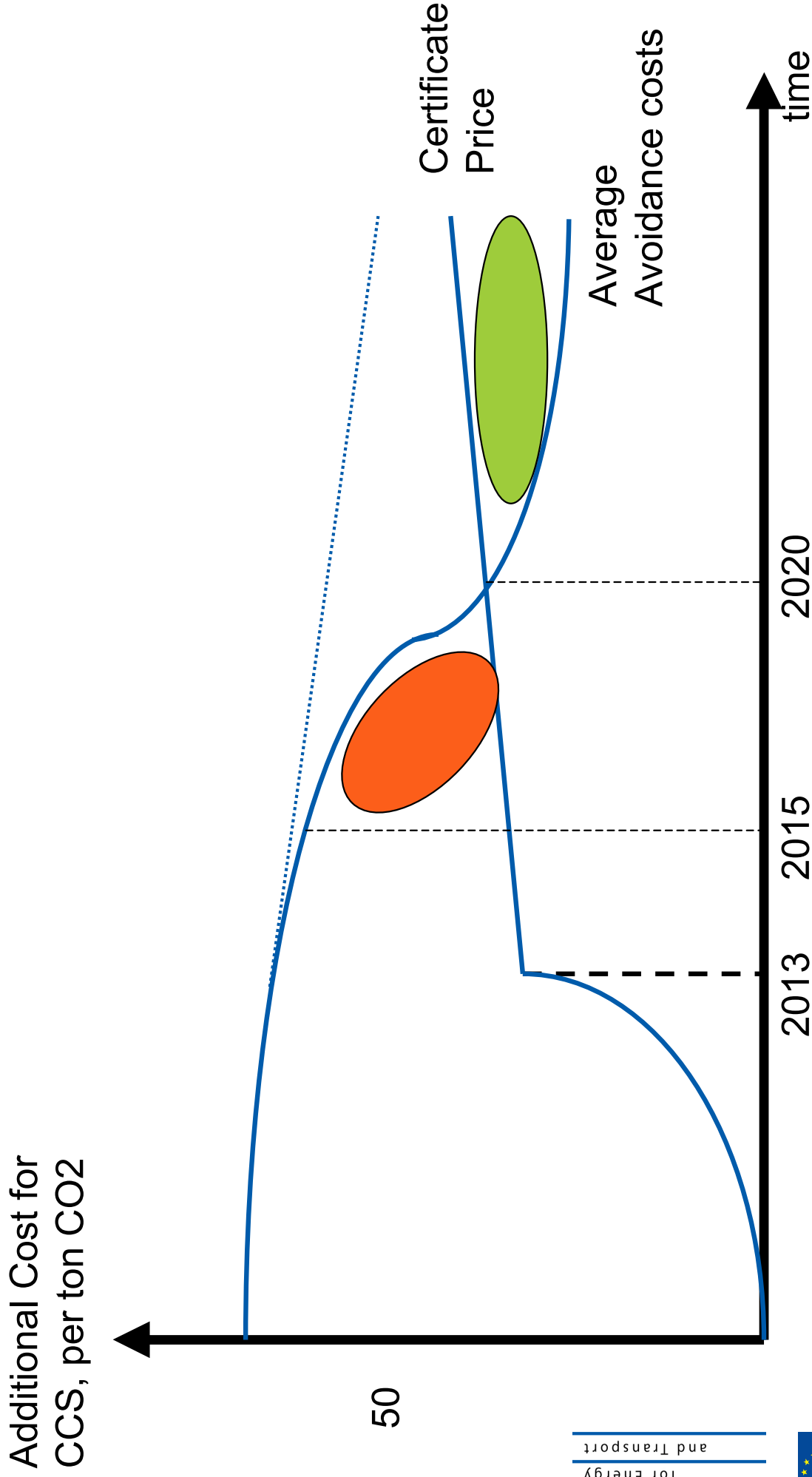
● Obstacles / EC Proposals

- Legislative Hurdles
 - CCS Directive
- Non legislative Hurdles
 - Long term economic viability
 - Emission Trading System (ETS)
 - Industrial Scale CCS Demonstration Projects (all main technology routes (Pre-, Post-, Oxyfuel-Combustion))
 - General and Industry Awareness
 - Public Acceptance

● EU Emission Trading System

- **ETS Phase III proposal**
 - » from 2013 full auctioning of CO₂ certificates for the power sector
- **CCS under the ETS:**
 - » CO₂ captured, transported and safely stored considered as not emitted
 - » no allocation to capture, transport and storage
 - » ETS allowances must be surrendered for any leakage
 - » monitoring and reporting guidelines under preparation
- **ETS auctioning revenues**
 - » major potential source of funding for CCS demonstration projects
 - » EC suggestion: 20% earmarking to low-CO₂ technologies

● Economic viability of CCS under ETS



● Obstacles / EC Proposals

- **Legislative Hurdles**
 - **CCS Directive**
- **Non legislative Hurdles**
 - Long term economic viability
 - **Emission Trading System (ETS)**
 - Industrial Scale CCS Demonstration Projects (all main technology routes (Pre-, Post-, Oxyfuel-Combustion))
 - General and Industry Awareness
 - Public Acceptance
 - **CCS Communication**

● Key aspects of the CCS Communication

- Next milestone: demonstration in power generation
- Outlines initiatives to stimulate early large-scale CCS demonstration in power generation
 - EU structure to support CCS demonstration projects
 - catalyzing the finance for CCS
 - industry commitment
 - Member States' involvement
 - EU-level financing
 - preparing infrastructure needed for wide-scale deployment

- **EU structure to stimulate the demonstration of CCS power plants**
- **SET-Plan: proposes European Industry Initiatives (EII) in technologies needed for a decarbonised baseload**
- **Commission action:**
 - **proposes launching EII on CCS**
 - **will launch a support action under FP7 to establish « project network »**

● **EU structure to stimulate the demonstration of CCS power plants II.**

- **Added value of an EU structure:**
 - joint platform for first movers
 - coordination of demonstration projects
 - exchange of information and experience
 - identification of best practices
 - visibility and marketable identity (European logo)
 - assistance with public acceptance
 - international cooperation

● EU structure to stimulate demonstration of CCS power plants

● Timeframe

- Call for tender to be published: June 2008
- Deadline for submission: Early fall 2008
- Project network start: 01/01/2009

● Closing the gap in CCS financing

- » **Industrial commitments**
 - ETP-ZEP: commitment to spend ca. € 11.5 bn
 - still needed: clear, early and decisive commitments by individual players to concrete large-scale demonstration
- » **Member States' involvement**
 - MS-level crucial given budgetary reality and size of challenge
 - Commission guidelines facilitate state aid to CCS
 - ETS revenues + structural policies hinted as suitable
- » **EU-level financing**
 - FP7 + EU structural funds
 - EU financial institutions for specialized cases
 - Communication on financing low-carbon technologies

● **Early start to infrastructure for wide-scale deployment**

- **New infrastructure**
 - » storage of CO₂
 - » transport of CO₂
 - » linking of emission and storage sites
 - study will be prepared in 2008/2009

- **European dimension in these networks**
 - » revision of TEN-E guidelines to include CO₂ infrastructure

● Conclusion

- **CCS: priority of strategic importance**
- **to prove CCS economically viable by 2020 we need demonstration asap**
- **common efforts of the EU institutions, MS and industry essential (legislation and financing)**



Directorate-General
for Energy
and Transport

Thank you for your attention



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