



# EC support to CCS RTD

## 9th Coal Dialogue

**Jeroen SCHUPPERS**  
DG Research & Innovation

- ✓ **CCS is at a crossroads**
- ✓ **It is not a silver bullet, but it is a much needed transition technology**
- ✓ **Energy Roadmap 2050: CCS has to be applied from 2030 onwards in order to reach our decarbonisation targets**
- ✓ **CCS is one of the priority technologies under the SET plan**



## The technology pillar of EU's Energy & Climate Policy

- **Steering Group** – European Commission and Member States
- Openness and transparency in the decision-making process supported by the SET-Plan Information System **SETIS** - <http://setis.ec.europa.eu>
- Innovation creation - the **European Energy Research Alliance (EERA)**
- Innovation development and demonstration - the **European Industrial Initiatives (EIIs)**
- European Energy Education and Training Initiative



## EERA

- **The CCS Joint Programme was launched in Nov. 2010**
- **40 members from 14 MS, 270 py/year, two sub-programmes: CO2 Capture and CO2 Storage**

## European Industrial Initiative (EII) on CCS

- **Launched in June 2010**
- **EC, MS and industry committed to support:**
  - **The Technology Roadmap 2010-2020**
  - **The Implementation Plan 2010-2012**
  - **A new Implementation Plan (2013-2015) is under preparation**



## European Industrial Initiative on CCS

**A 10-year programme (launched July 2010) of private/public actions in a dual-track approach:**

### **Demonstration of CCS at full-scale...**

- through a set of power plants (~250 MW) with different capture, transport and storage options
- with a relevant geographical spread
- to prepare the way for fully commercial implementation

### **A comprehensive R&D programme to**

- develop more efficient and cost-competitive capture technologies
- extend the application of CCS to other carbon intensive industries



## Financing CCS demonstration

- **European Energy Programme for Recovery (EEPR)**
- **300 million allowances from the New Entrants Reserve of the Emission Trading Scheme (NER300) for CCS and innovative RES**
- **Fully operational ETS should provide MS with additional revenues to be re-invested in low carbon technologies - from 2013 onwards**



## European Energy Programme for Recovery

- **Origin: the global €200 billion Economic Recovery Plan presented by the Commission in 2008**
- **Endorsed by the European Council; Commission was invited to present a list of concrete energy projects**
- **€4bn for pre-selected energy infrastructure projects**
  - **Gas and electricity interconnections**
  - **Offshore wind**
  - **CCS demonstration**
- **€1.05 bn for CCS demonstration projects, up to 7 projects, max 1 project per MS, max €180 million per project**



## EEPR funded projects

- 1. ROAD, Netherlands**  
*Post Combustion, offshore storage depleted HC field*
- 2. Jaenschwalde, Germany**  
*Oxyfuel, onshore storage, saline aquifer*
- 3. Compostilla, Spain**  
*Oxyfuel, onshore storage, saline aquifer*
- 4. Porto Tolle, Italy**  
*Post Combustion, offshore storage, saline aquifer*
- 5. Belchatow, Poland**  
*Post Combustion, onshore storage, saline aquifer*
- 6. Don Valley, UK**  
*IGCC, offshore storage depleted HC field*





## CCS Demonstration Projects Network

### CCS Project Network main goals:

- ✓ Accelerate the deployment of CCS on an industrial scale
- ✓ Benefit from knowledge sharing, joint communication activities and a European identity

### CCS Project Network main tasks:

- ✓ Co-ordination of EU CCS demonstration projects
- ✓ Communicate concrete results from the projects
- ✓ Actions to build public confidence
- ✓ Promote international cooperation



## FP7 support to CCS R&D

**About 200M€ spent on CCS and Clean Coal, in the field of:**

- **CCS technology development: capture, storage and transport**
- **Clean Coal technology development: gas turbines for IGCC plants, efficiency increase, feasibility study for CCS demo plant**
- **Non-technological research: in support of regulatory activities, public awareness , trans-national cooperation**
- **Other greenhouse emissions**



## Horizon 2020 will be simpler

### For example:

#### 1. One project – one funding rate

- Maximum of 100% of the total eligible costs, indirect eligible costs: a flat rate of 25% of direct eligible costs
- Simplifies budgeting, time reporting, validation procedures

#### 2. Less prescriptive Calls

#### 3. New forms of funding aimed at innovation

- E.g. public procurement of R&D services; inducement prizes; output-based grants (lump sums)

#### 4. Fewer, better targeted controls and audits



## CCS in Horizon 2020

### A challenge-based approach

- **Viability of safe geological storage has to be demonstrated**
- **Application of CO<sub>2</sub> capture technologies to other industries, including Bio-CCS, can open-up new opportunities**
- **Cost of capture needs to come down**
- **CO<sub>2</sub> may also be a source rather than just a waste**



## Therefore, we need to:

- **Optimise the first generation capture technologies and develop and scale-up the next generation capture processes**
- **Adapt and apply CO<sub>2</sub> capture technologies to other industries, including Bio-CCS routes, for demonstration in pilot projects**
- **Establish storage pilots across Europe to promote confidence in CO<sub>2</sub> storage and optimise the operation of storage sites**
- **Find innovative solutions for the re-use of CO<sub>2</sub> to reduce the carbon footprint of industrial processes**

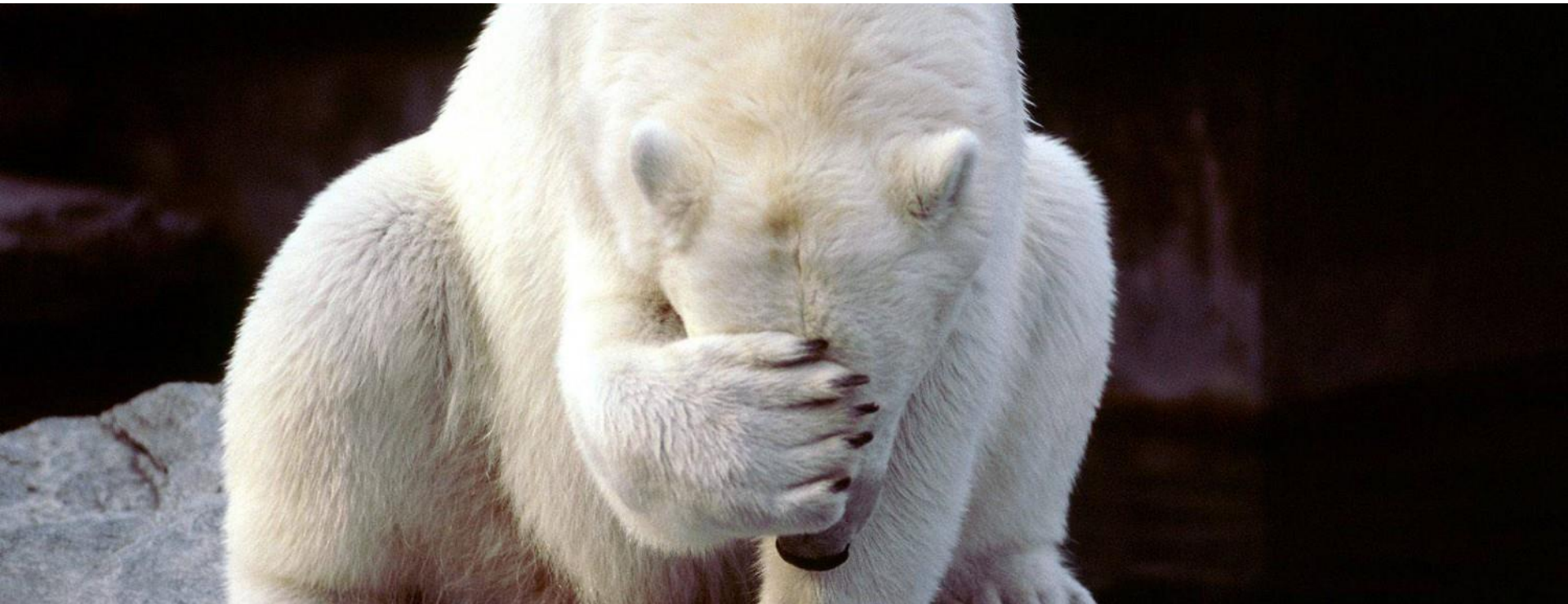
## Pending issues...

- **Total budget of the Energy Challenge**
- **Highly topical issues such as shale gas and conventional power plants could be included**
- **Programme Committee needs to be established to formalise the discussions with the Member states on the Work Programme**

## Concluding remarks

- **Horizon 2020 will continue to support CCS as part of the SET plan**
- **Stronger involvement of Member States is crucial to get the pilots that we need**
- **Further stakeholder interaction is needed in order to extend CCS to other carbon-intensive industries (e.g. through SPIRE)**
- **Knowledge sharing has to be continued and further promoted, also at international level**
- **Creating public awareness and acceptance of CCS requires targeted communication**
- **The door to 2° is closing**

***May 2013: CO2 hits 400ppm***







# Thank you for your attention

**Find out more:**

[www.ec.europa.eu/research/horizon2020](http://www.ec.europa.eu/research/horizon2020)

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