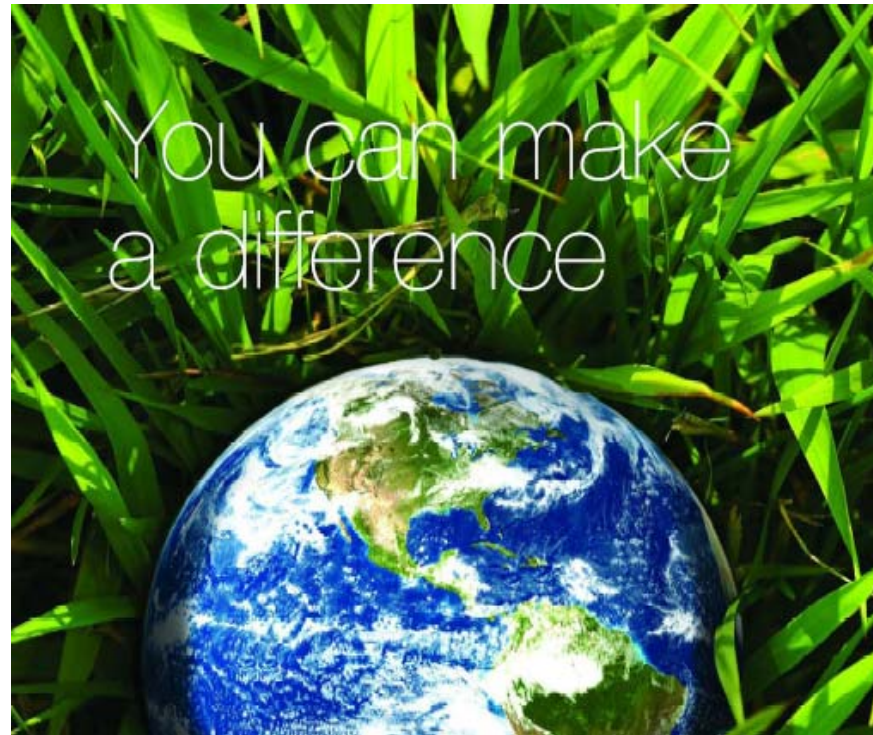


ECCO

European value chain for CO₂



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ECCO - Overall objective



The main objective of ECCO is to facilitate **robust strategic decision making** regarding early and future implementation of CO₂ value chains **in the face of uncertainty**.

ECCO should **provide recommendations** enabling cost-effective use of CO₂ being produced from zero-emission power plants and other industries in Europe **by exploring the opportunities and challenges** of CO₂ for EOR/EGR in the context of the value chain.



What are the questions?

Is there enough CO₂ available for EOR?

How will investment models affect CCS economics?

What modification will be needed at the platform?

Will it be commercially interesting to implement CCS for EOR?

How the price of gas affects the economics?

How the price of oil affects the economics?

Will CCS be accepted by public?

Will the wellhead be overheated?

How will offshore CO₂ processing affect CCS?

Will CO₂ leakage occur?

How to ensure continuous supply of CO₂?

How the price of CO₂ quota affects the economics?

Which parts of the chain are technologically critical?

How the price of electricity affects the economics?

Which parts of the chain are most costly?

Will hydrates form?

How will CO₂ quality affect the equipment/operations along the chain?

Is there need for governmental engagement?

How can we address these questions?

Political and regulatory

- political focus on CO₂ handling
- international agreements
- legal framework
- public accept
- CO₂ quota market mechanisms
- other incentives
- Governmental engagement
 - investments
 - risks
 - infrastructure

Market economy

- price profiles:
 - oil
 - gas
 - electricity
 - steel
- CO₂ quota
- other projects/ investments

Business economy

- investments models
- discount rates
- cash flow
- NPV analysis
- owner ships
- risk

Technology

- availability
- price
- efficiency

Infrastructure/logistics

- CCS chain design
- Matching sources and sinks in capacity and time
- Optimizing the infrastructure
- Ownership

How can we address these questions?

“Soft” qualitative data

Scenarios analysis

Political decisions
Public acceptance
Technology development
Energy demand
Economic growth

**“semi” data
qualitative/
quantitative**

**Case
studies**

Translate
Scenario
storylines
into
quantitative
parameters
for the tool

“Hard” quantitative data

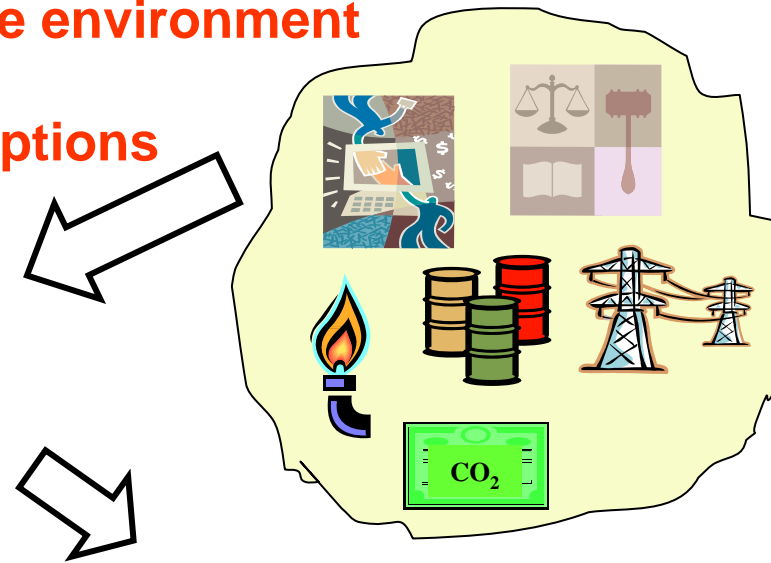
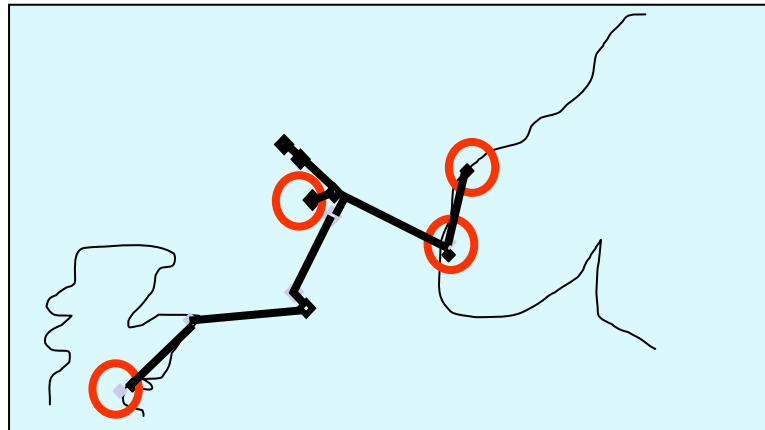
Simulation with the tool

Evaluation of NPV
Cash flows
for a particular CO₂ chain
characterized by
specific infrastructure design
and
values of parameters

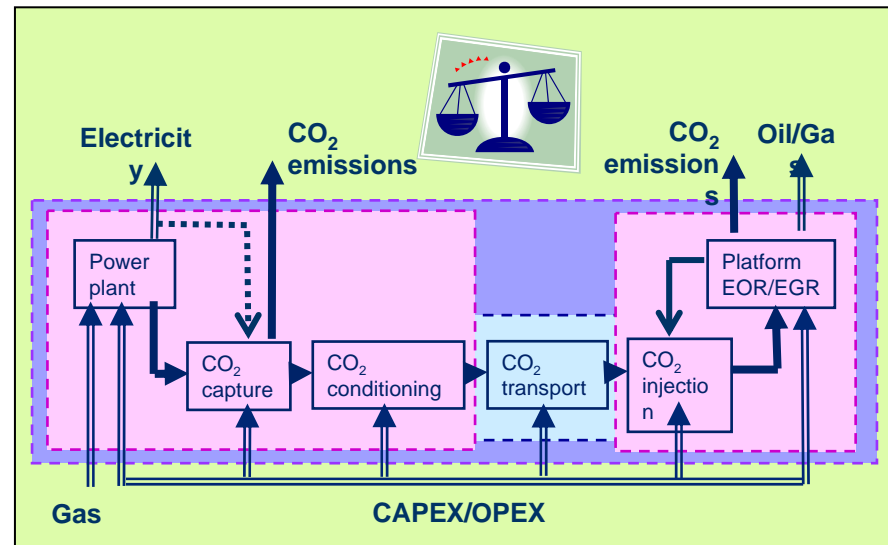
ECCO Strategy

1. Scenario – storylines defining the environment

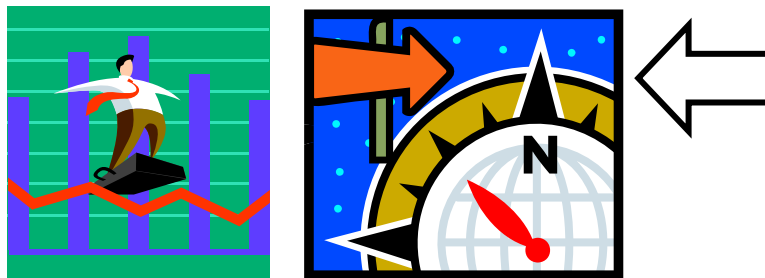
2. Case study – defining chain options



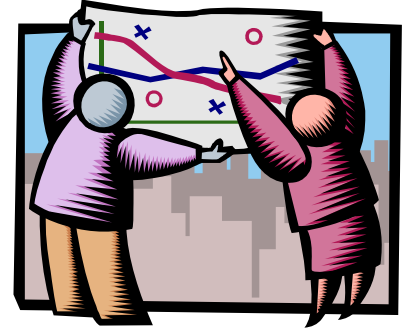
3. Economic analysis – profit vs. costs



4. Case study – evaluating options & recommendations



Main results



- ECCO is focused towards the complete CO₂ value chain, and will generate results and cause progress beyond state of the art within the following topics
 - **Methodology for CO₂ value chain assessment** by means of establishing scenarios as input for formulation of CCS cases, which are further analysed with the tool
 - **CO₂ value chain assessment tool** that enables transparent and robust analysis of CO₂ value chains. The tool will be designed to allow for flexible, demand-driven tailoring
 - **Reservoir technology for EOR and EGR** increasing the ability to predict EOR and EGR profiles and potentials for CO₂ injection into European oil and gas reservoirs
 - Strategies and recommendations for deployment of CO₂ value chain: Main report: “**ECCO Strategies for CO₂ value chain deployment**”. The report comprises ECCO’s joint strategies and recommendations regarding deployment of the CO₂ infrastructure in the near and mid-term future, liability issues and cross-border regulations, Emission Trading Schemes (ETS), financing schemes, and regime of incentives, and organization of the supply chain

Thank you for your attention!



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