

CCS and other clean coal technologies -

Poland's prospective trademark?

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EU policy context

- EU Emissions Trading Scheme (and associated carbon price)
- European Industrial Initiative
 - Flagship Programme
- EU Climate and Energy Package (agreed Dec 08)
 - Funding mechanism for up to 12 projects
 - Directive on CO₂ storage (also includes capture readiness)
 - Full inclusion of CCS in Phase 3 of EU ETS

UK policy context

- UK committed to reduce GHG emissions by 80% by 2050
- CCS crosses boundaries
 - Energy and climate change
 - Domestic and international
- Energy and climate change brought together in one Ministry
- UK commitment to CCS builds on strengths:
 - Fossil fuel power generation
 - Offshore storage of CO₂

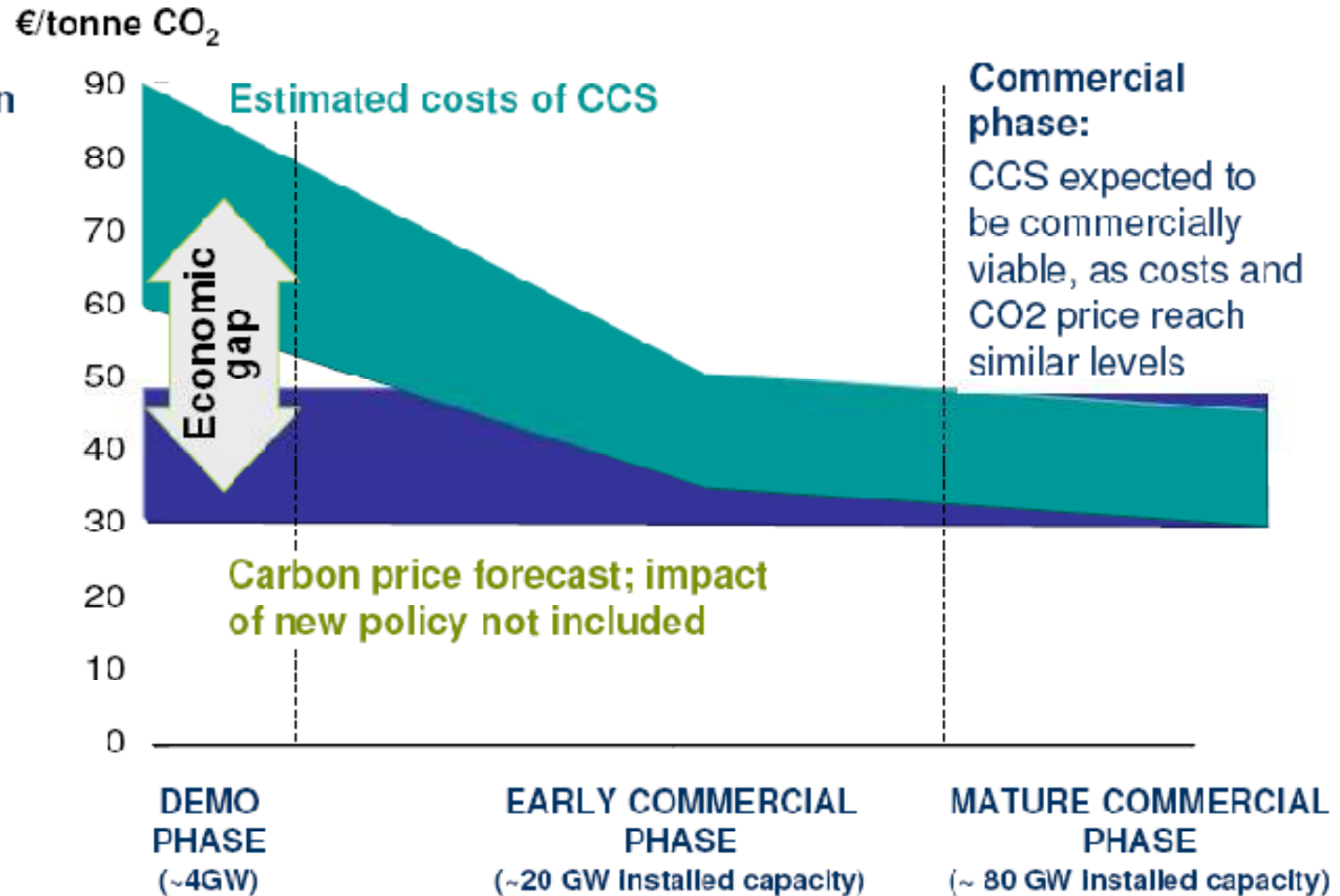
The Goal: commercially viable CCS by 2020

- When CCS is a commercial option for investors
- Needs
 - Technology to be proven and costs reduced – which requires demonstration
 - A way to incorporate the cost of CO₂ emissions (carbon price)
- Commercial viability needs both!



CCS costs will need to come down over time

Demonstration phase:
CCS not economically viable. Public contribution necessary for some portion



Commercial phase:
CCS expected to be commercially viable, as costs and CO₂ price reach similar levels

Framework for promoting CCS

- Framework has several strands which run in parallel –
 - Technology demonstration
 - Commercial scale
 - Components
 - Continued R&D
 - Regulatory Framework
 - CO₂ storage
 - Policies to move from demonstration to deployment

Technology demonstration

- Commercial-scale
 - EU ambition for up to 12 by 2015
 - G8 ambition for 10 launched by 2010
 - Only 4 countries with firm commitment
- Components/pilot scale
 - Capture, transport and storage all successfully demonstrated
 - Growing numbers of small scale pilots
- Continued R&D

Regulatory Framework for Storing CO₂

- Site selection and characterisation
- Ownership of storage site
- Monitoring
- Sanctions
- Decommissioning
- Long term liabilities
 - Transfer to state

Covered by UK Energy Act and EU Directive.

Capture Ready

- Unreasonable to demand new build power stations to be fitted with CCS before it is demonstrated, but reasonable to suggest that they are built to allow retrofit.
- 4 key elements required –
 - Clearly identified strategy by which a credible capture technology can be retrofitted
 - Space available both within and around the plant to permit capture technology to be fitted
 - Credible route for CO₂ to be removed and transported to storage site
 - Availability of suitable storage
- UK publishing implementation approach shortly

From demonstration to deployment

- Knowledge transfer from demonstrations
 - To facilitate further demonstrations
- Infrastructure development
 - For transport and storage
- Supply chain development
 - Skills
 - Industry capacity
- Bridging the funding gap

UK CCS Strategy to be published Summer 09

International CCS policy

- In order to achieve global climate stabilisation, need to promote low carbon technologies globally
- No single country can achieve global deployment of CCS – requires co-operation between Governments and industry
- International work integral part of UK approach to CCS
 - Financing demonstration projects, working towards commercial deployment
 - Capacity building
 - Multilateral/bilateral collaboration

Conclusions

- CCS has a critical role to play in tackling global climate change
- Widespread deployment requires 3 parallel strands
 - Technology demonstration
 - Robust regulatory framework
 - Coherent policies to move from demonstration to deployment
 - Knowledge transfer from first demonstrations
 - Infrastructure
 - Skills
 - Industry capacity
 - Bridging the funding gap