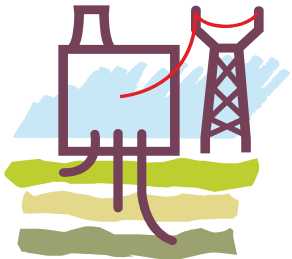


EU Demonstration Programme for CO₂ Capture and Storage (CCS)

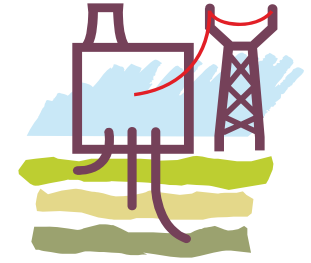
ZEP's Proposal



Joan McNaughton - ZEP & SVP, Alstom

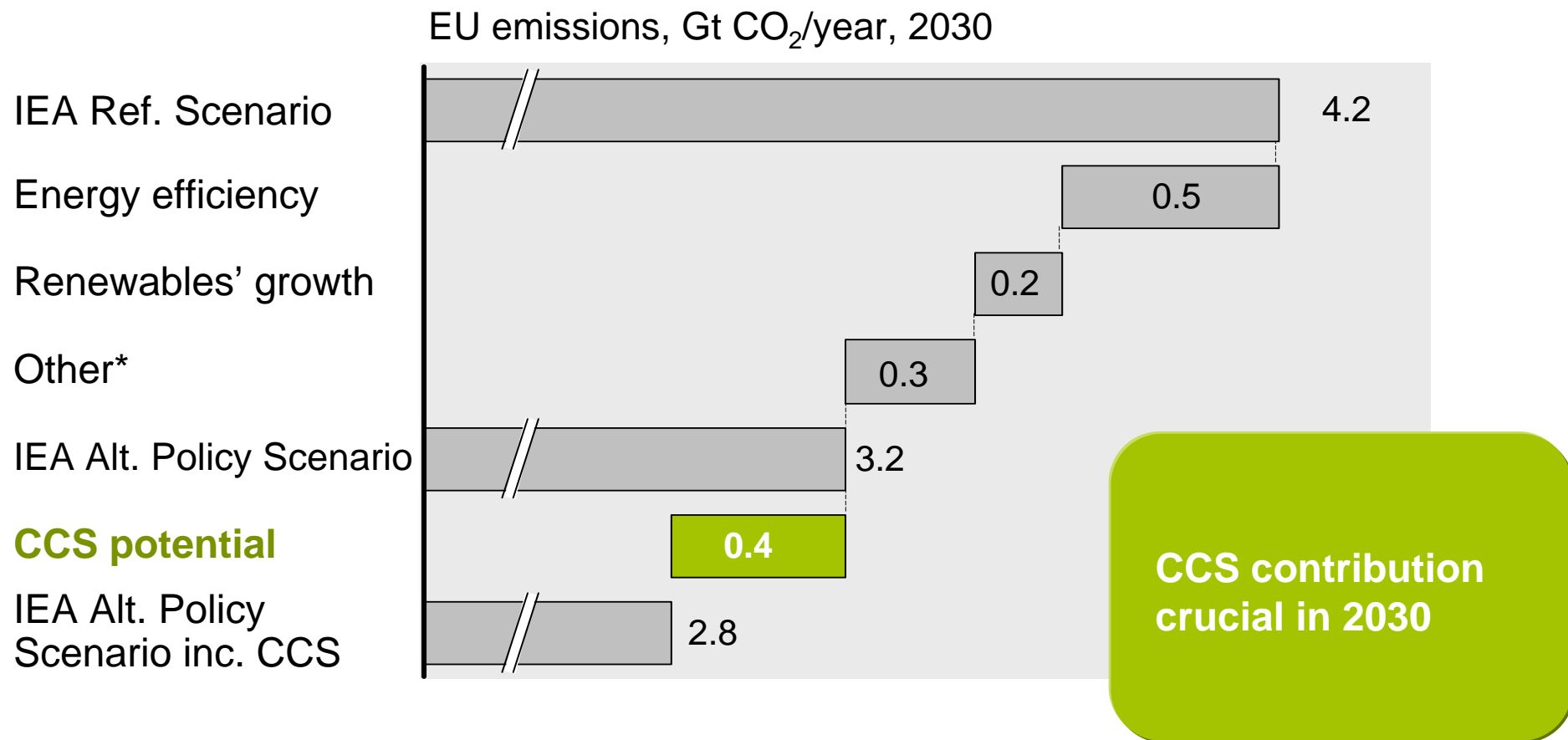
June 23, 2009

AGENDA

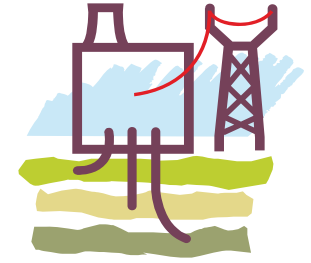


- 1. Climate Change and the Need for CCS**
- 2. What is ZEP?**
- 3. ZEP's Proposal for an EU Demonstration Programme**
- 4. Funding**
- 5. Process**
- 6. Conclusions**

CCS is a Key Solution to Reaching Emission Reductions Targets



What is ZEP?



European Technology Platform (ETP) for
Zero Emission Fossil Fuel Power Plants (ZEP)

ETP Role:

define a strategic agenda for the development and deployment of technologies involving major economic or societal challenges.

- **Founded 2005**
- **European utilities, petroleum and coal companies, equipment suppliers, scientists, geologists and environmental NGOs.**
- **200 people in 19 different countries**
- **38 different companies/organizations on ZEP's board**

ZEP's Objectives

From **strategy** and **vision** to **deployment** and **implementation** of CCS in cooperation with the European Commission

- **Influence CCS demonstration programme**
- **Advise on CCS technology and its applications**
- **R&D programme for 2nd and 3rd generation technologies**
- **Prepare for post demo projects**
- **Public communication/education on CCS**
- **Prepare internationally for COP15**

Focus and Benefits of an EU CCS Demonstration Programme

Objective:

Enable
commercial
availability of
CCS by 2020

1

Validate technology



2

Bring down costs

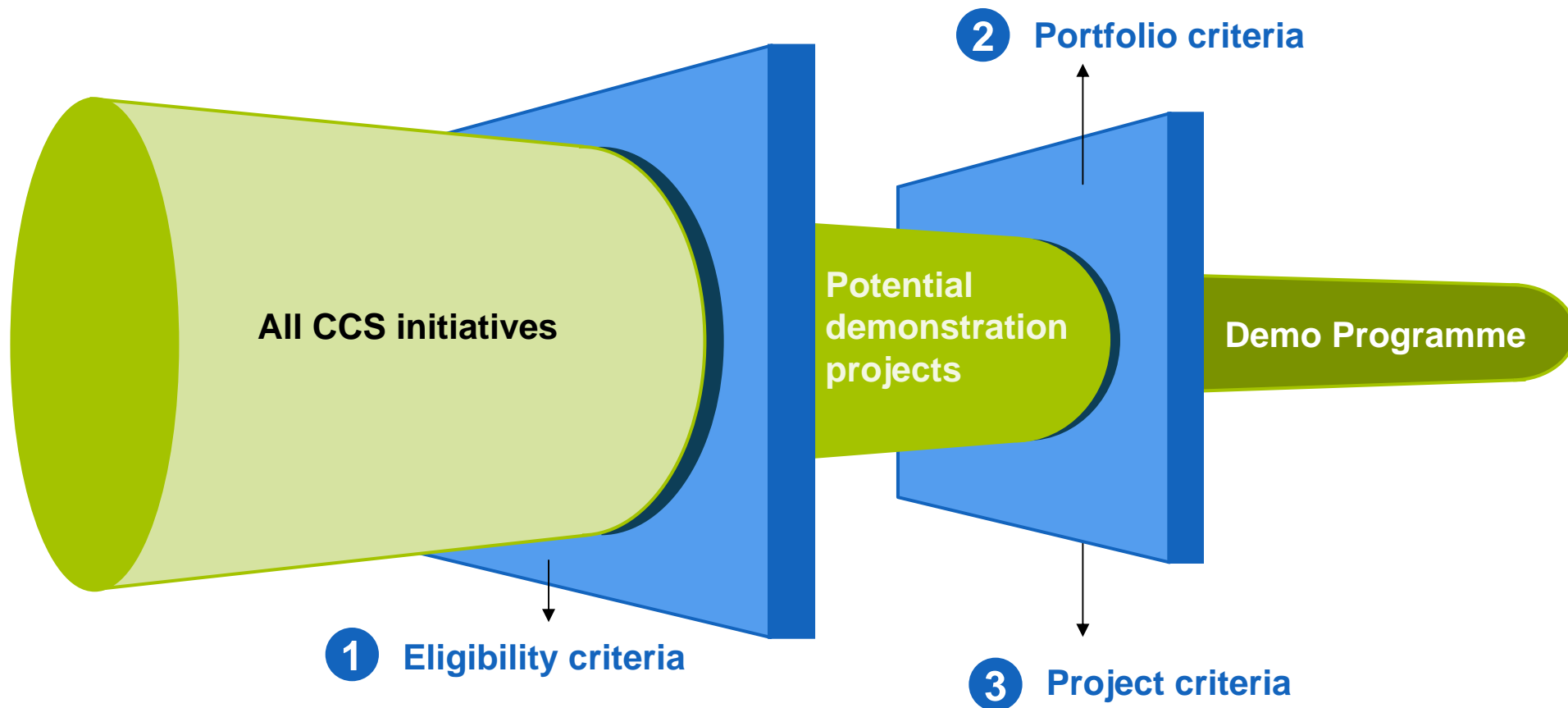


3

Contribute to public
awareness of CCS



Selecting the Optimal Projects for an EU Demonstration Programme

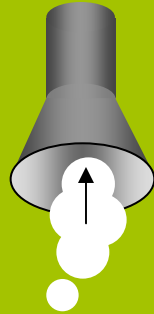


Programme to test various...

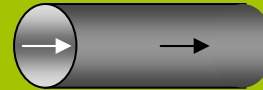
EMISSION
Sources



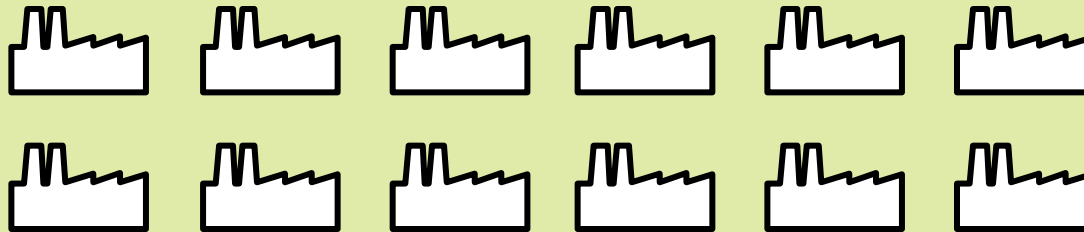
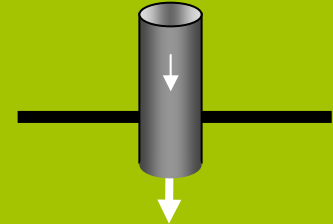
CAPTURE
Technologies



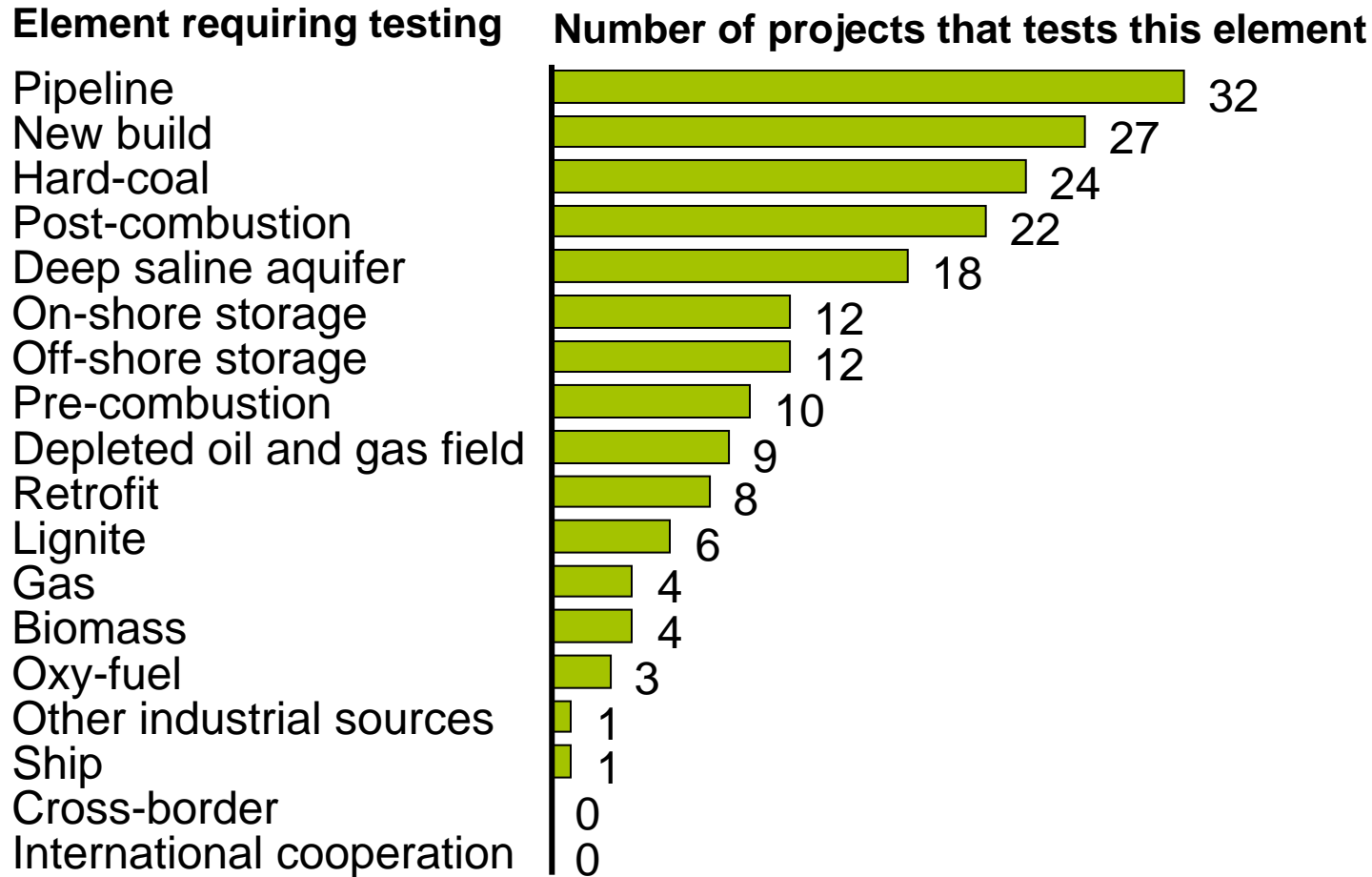
TRANSPORT
Modes



STORAGE
Settings

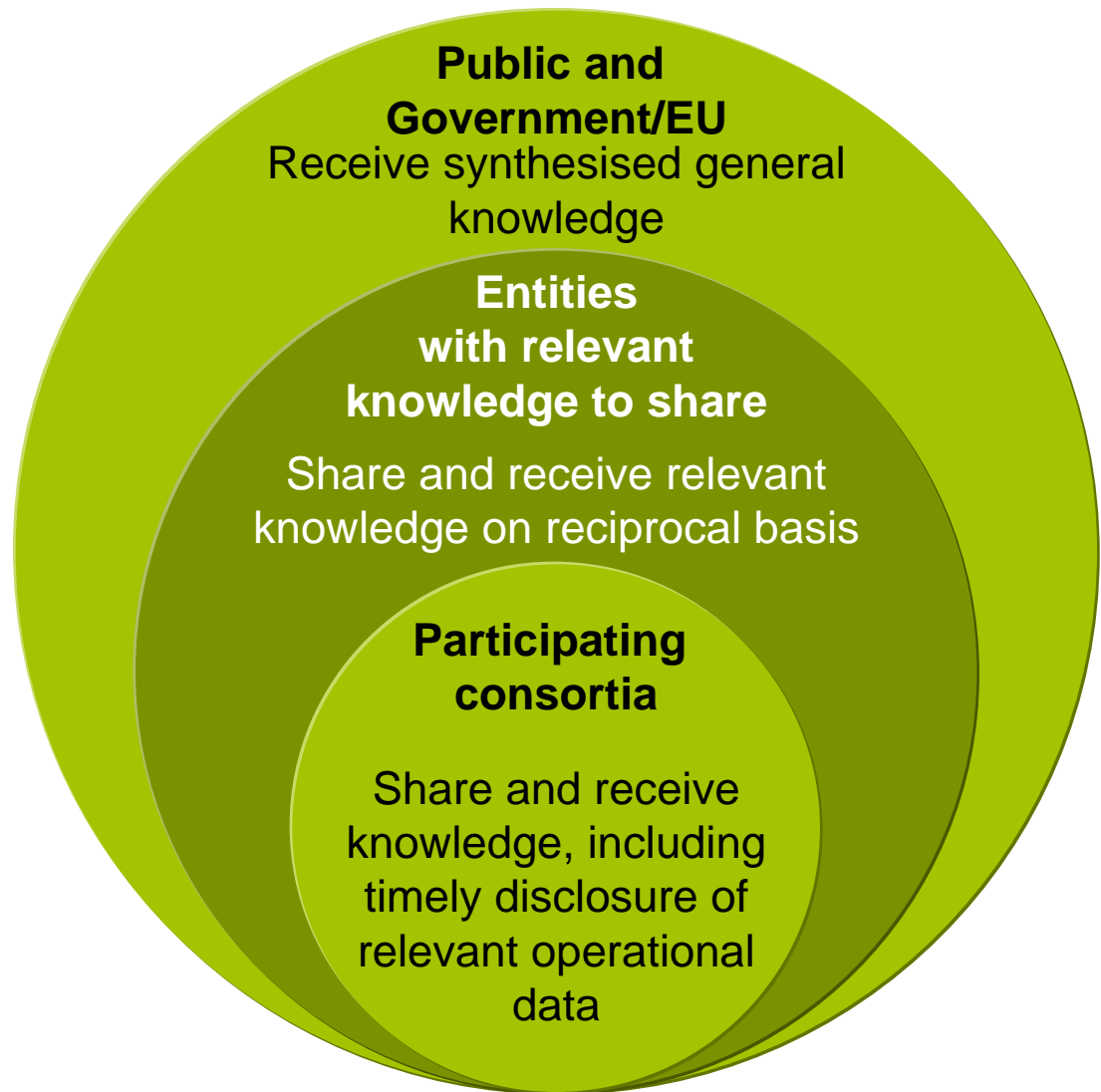


34 EU Candidate Projects Awaiting Decision on Funding, Legislation

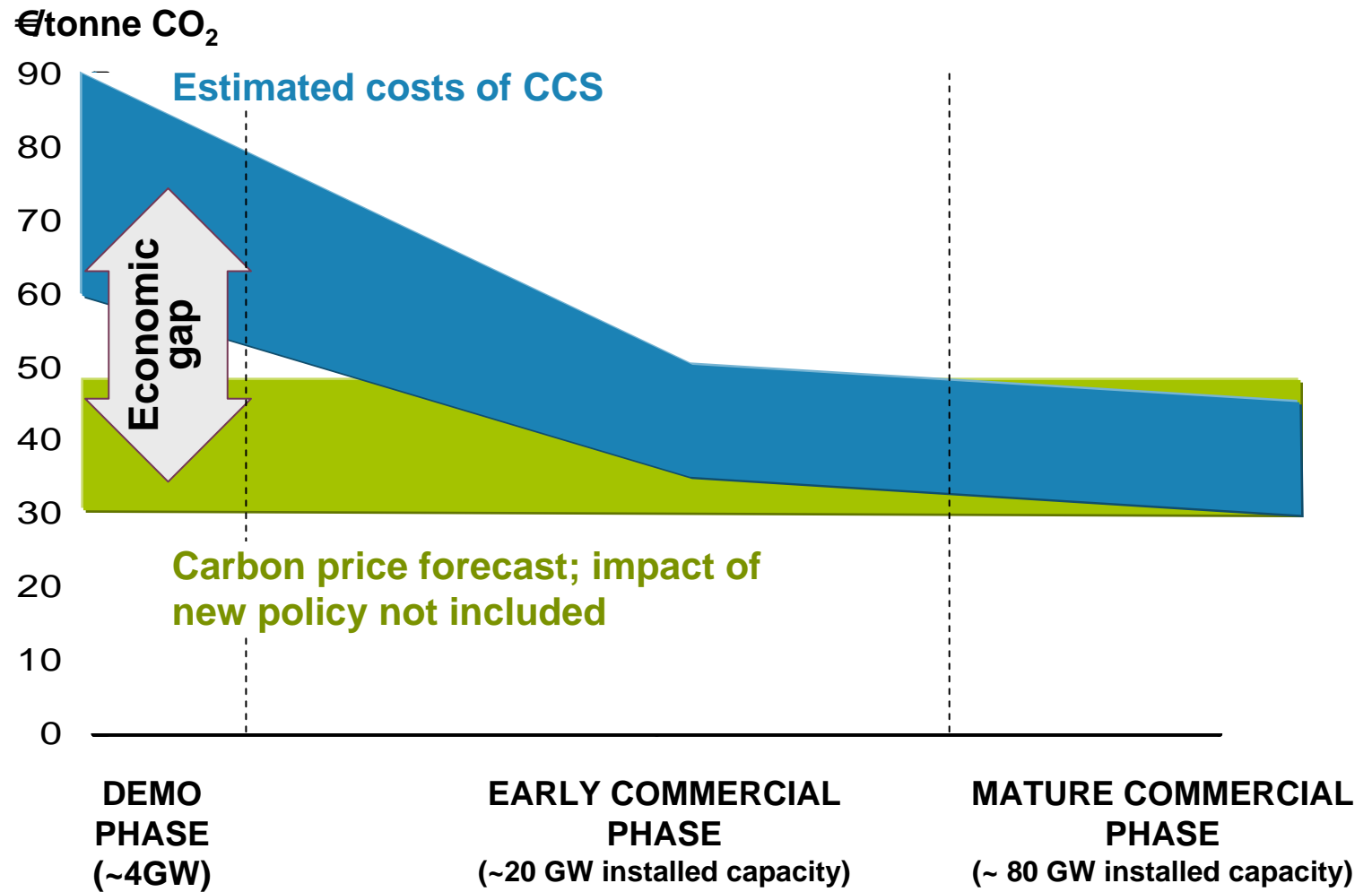


Maximising Global Knowledge Development and Sharing on CCS

Necessary and sufficient knowledge
needs to be developed and shared to achieve global implementation of CCS

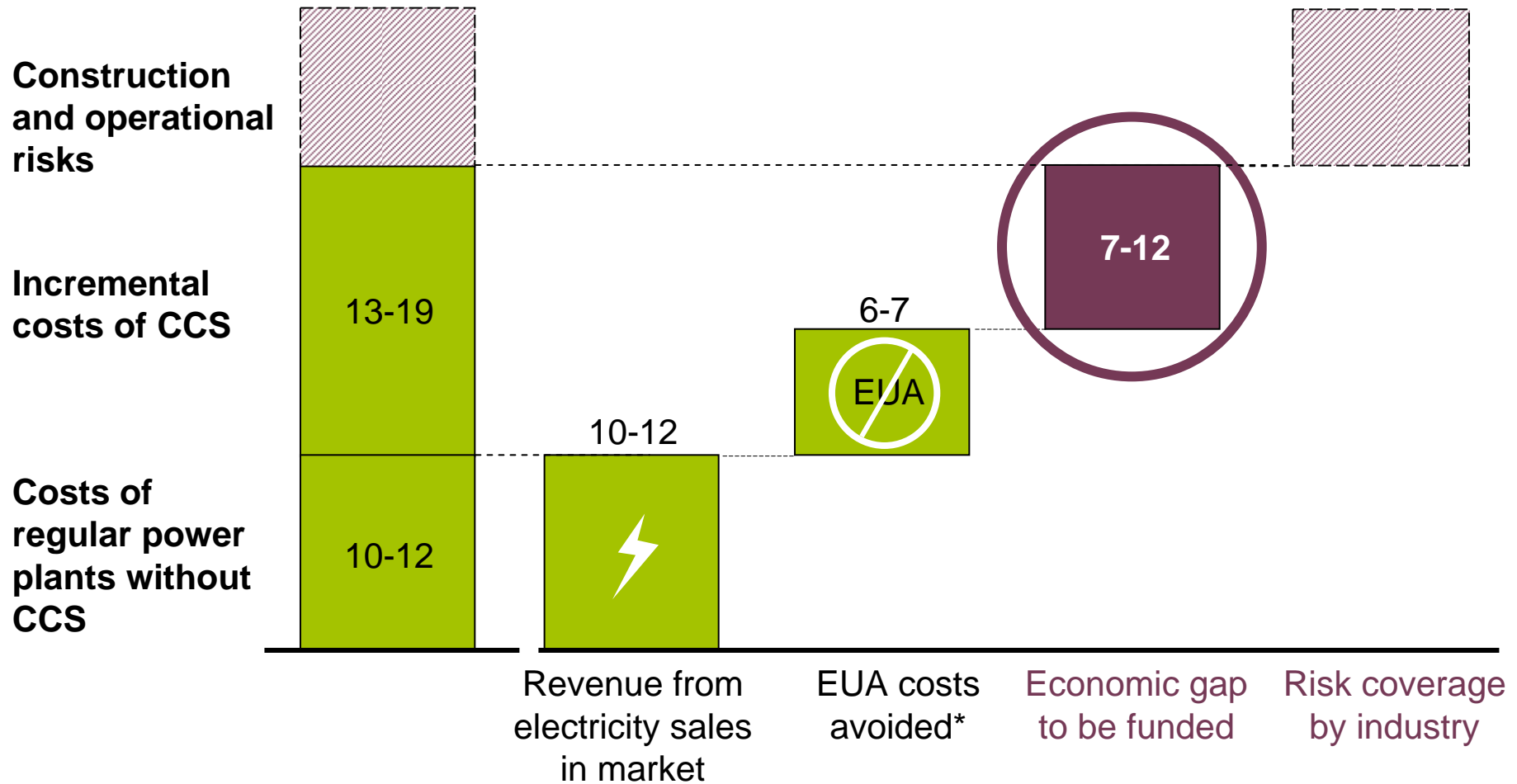


Demonstration Phase Requires Funding to Fill the Economic Gap



10-12 Demonstration Projects = €7 Billion - €12 Billion in Funding

Present value over lifetime, € billion




* ETS Emission Unit Allowances (EUAs), assumed to be at €35/tonne CO₂

Funding

European Economic Recovery Plan:


- €1.05 bln. for 7 CCS projects
- ZEP and DNV involved

New Entrants Reserve (NER):

- 300 m allowances from NER
 - Total depends on allowance price
 - €20 = €6bn (approx \$8bn)
 - Criteria:
 - Programme design 2009
 - Competition + selection 2010
 - Decisions 2011
 - Operational 2015
- 

Funding - ZEP's Position

ZEP delivered its proposal for eligibility, portfolio and project criteria. Additional rules should ensure a common baseline.

- Funding should be for incremental costs only.
 - Technologies not demonstrated at large scale anywhere.
 - Not covered by support scheme or incentivising regulation in the EU.
 - Additional funds allowed from other EU sources.
 - Plan to operate by 2015.
 - Funding conditional on performance; agreed knowledge sharing requirements
 - Good stakeholder management process to secure public acceptance.
- 

EU Network CCS Demonstration Projects

The EU Network shall ensure knowledge sharing between CCS projects in Europe and beyond, organise information exchange and help gain public acceptance.

- Project Network secretariat, supports the European Commission in:
- Defining project criteria.
- Project monitoring, identification of best practice and information exchange.
- Public acceptance by assessing the local experience of CCS projects.
- International cooperation and experience exchange (ZEP, Global CCS Institute, IEA GHG, US regional partnerships, ...)

EC, Project Network and ZEP will cooperate closely.

Conclusion

CCS key in combating climate change:
single biggest abatement lever

EU CCS Demonstration Programme
for commercial viability by 2020

EU funding for CCS Demonstration Programme

Conclusion

Delivery demo programme = huge challenge

Requires:

- Decision on resource allocation
- Running of project selection process
- Disbursement of funds
- Agreed framework for knowledge sharing