




CCS: ready to go by 2020?

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European Technology Platform for Zero Emission Fossil Fuel Power Plants



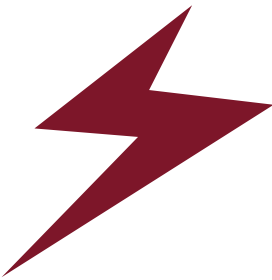
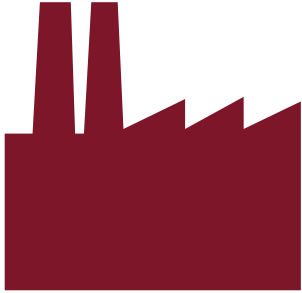
Why do we need CCS?

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Applying CCS




Not just power generation... but heavy industry too!

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A Key Solution for the EU



▶ IEA forecast for 2030 Emissions = 4.2 Gt CO₂/year
 ▶ IEA alt. policy scenario incl. CCS = 2.8 Gt CO₂/year

Solution:

Greater energy efficiency

+

Growth in renewables

+

Other

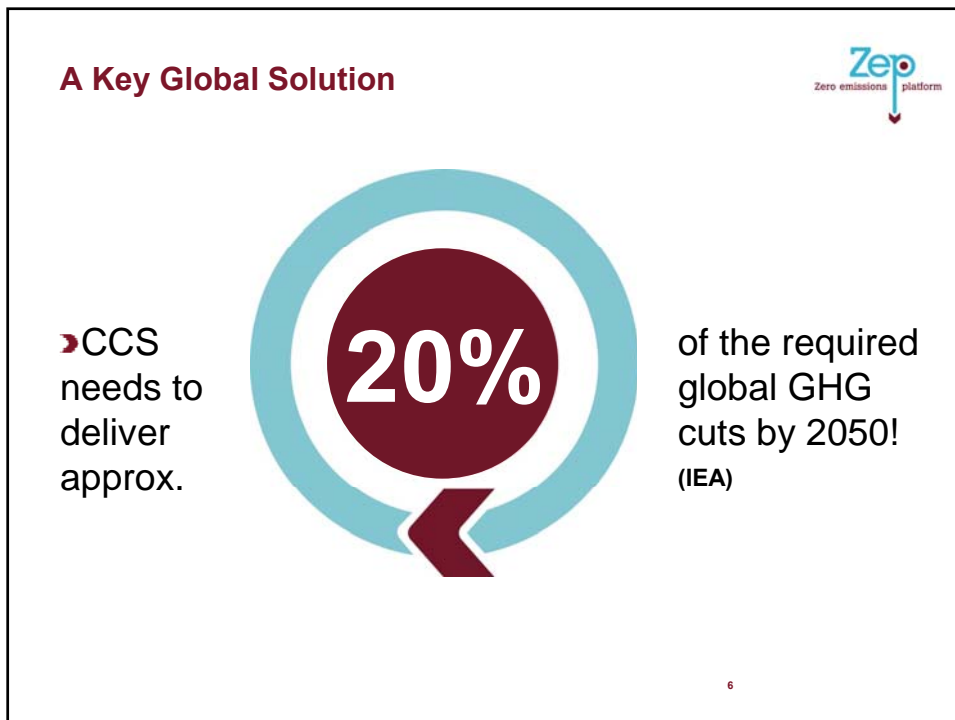
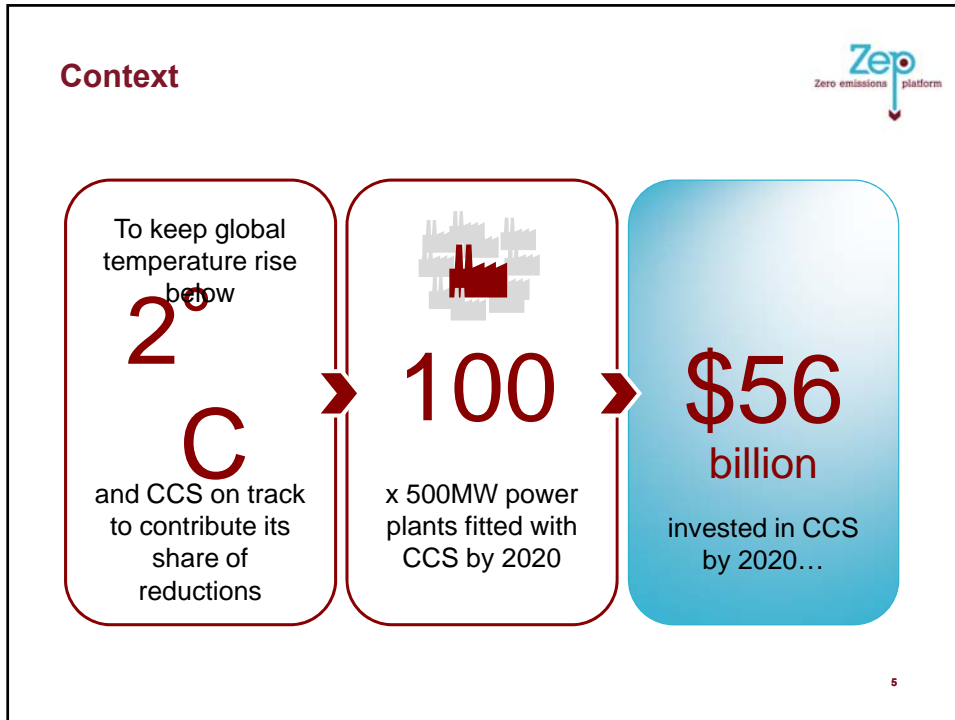
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CCS

(0.4 Gt CO₂/year)

CCS =
 crucial contribution already before
 widespread deployment

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EU leadership on CCS

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EU leadership on CCS



2007

EU calls for CCS
demo programme
by 2015



2009

EU CCS
directive



EU CCS
funding

€

in place!

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ZEP as advisor on entire range of activities



2007 ZEP Vision for EU CCS demo programme



2008: ZEP proposal for CCS demo programme



2009: ZEP recommendations on NER funding



2009: ZEP CCS knowledge sharing proposal



2010: ZEP Long-Term R&D report



➤ **2008: EU agrees to co-fund programme**

2009: EU passes legislation on CO₂ geological storage

➤ **CCS Project Network launch**

2010: CCS European Industrial Initiative + CCS Roadmap (within SET plan)

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A succesful CCS demonstration programme

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Why?



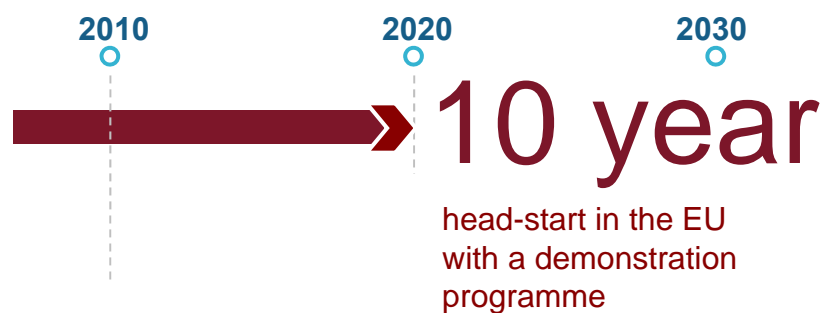
Objective: Enable commercial availability of CCS (2020)



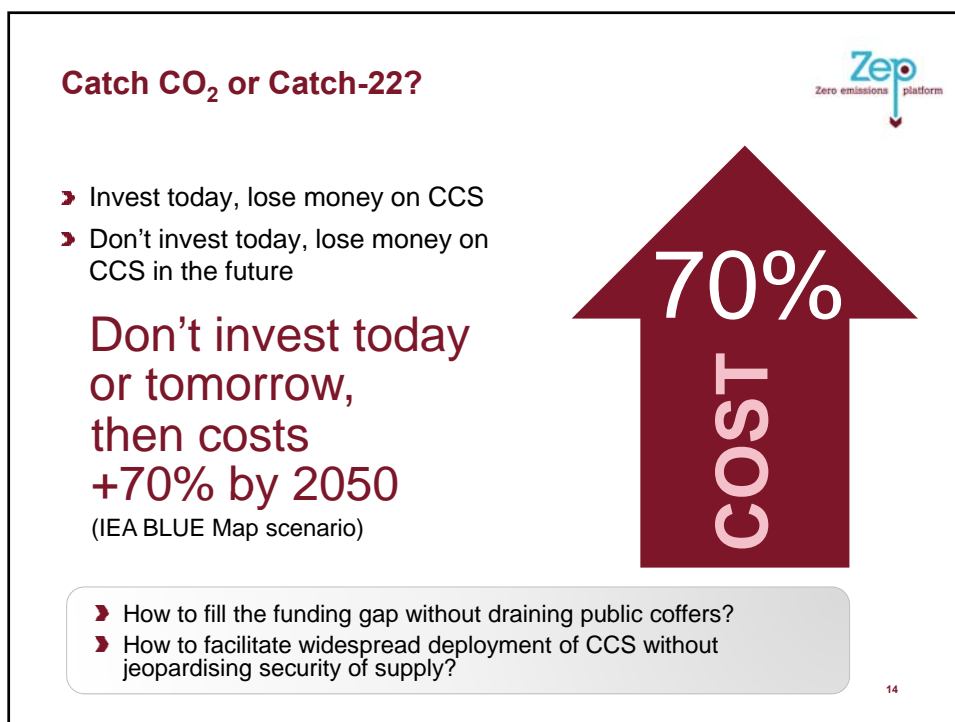
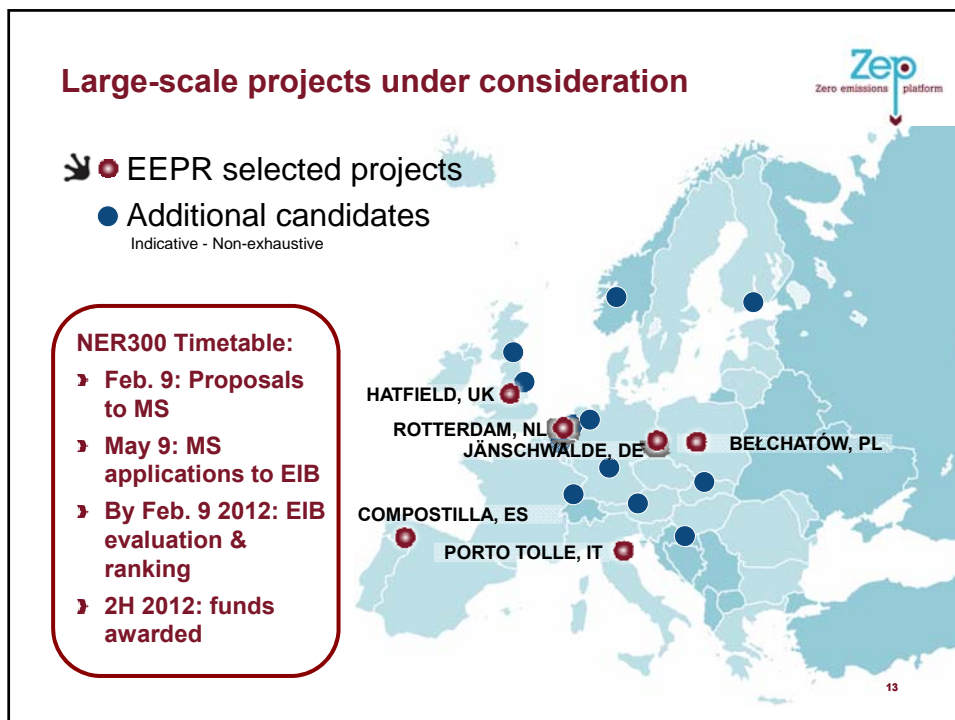
Brings forward a deployable technology
at an affordable cost!

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Giving CCS a 10 year head-start in the EU




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The challenges




Establish national regulatory frameworks



- Strong regulatory framework and **manageable** risk exposure
- Free flow of CO2 to best storage sites + MRV regs.


Close the funding gap




- Additional MS support essential & in place by end-2011
- NER300 2nd tranche focus on ensuring optimal portfolio

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The challenges




Prioritise CCS R&D




- Project learnings improved by complimentary R&D (FP7 priorities)

Maximise knowledge sharing



- Ambitious level of knowledge sharing between projects
- EU & international

Build public support



- Engage in transparent, open dialogue...early!
- All stakeholders to collaborate and adapt
- CCS benefits and safety are priorities

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EU 2050 Energy Roadmap



2009 European Council

80-95% reduction in greenhouse gas emissions by 2050, in the context of reductions by developed countries as a group

CCS = 
GREEN GROWTH RACE

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Accelerating widespread CCS deployment



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Action required on a range of issues



- **CCS & carbon intensive industrial sectors**
 - Industrial applications, development of trans-sector clusters
- **Towards carbon-negative**
 - Biomass co-firing
- **Long-term infrastructure plan**
 - Comprehensive characterisation of CO2 storage sites!
- **Secure environment for investment**
 - Consideration of non-ETS incentive schemes
- **CCS in international financing mechanisms**

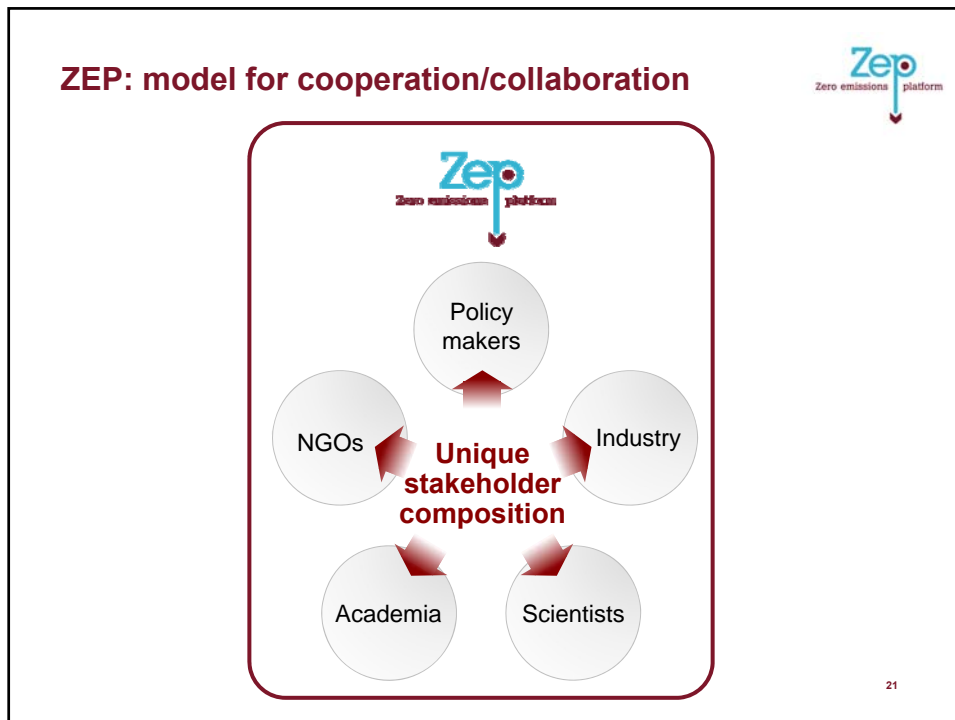
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Action required on a range of issues



- **Accelerate R&D into 2nd & 3rd gen. technology**
 - To begin immediately to ensure widespread deployment
 - National & EU coordination
- **Realise full potential of CCS**
 - Hydrogen production
 - Geothermal
- **Maximise international cooperation**
- **Overarching 2050 energy scenario**
 - Realistic and costed >> towards a decarbonised power sector
- **Building public support**

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Conclusions

**EU first out of the gate.
But first across the line...?**

- › EU CCS legislation implemented nationally
- › Additional funding
- › Political and public support
- › International cooperation and collaboration critical to widespread deployment

There is no second chance and time is running out...

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