CCS is key to achieving our climate goals in time

CO_2GeoNet and Glówny Instytut Górnictwa event: CCUS locally and at European level

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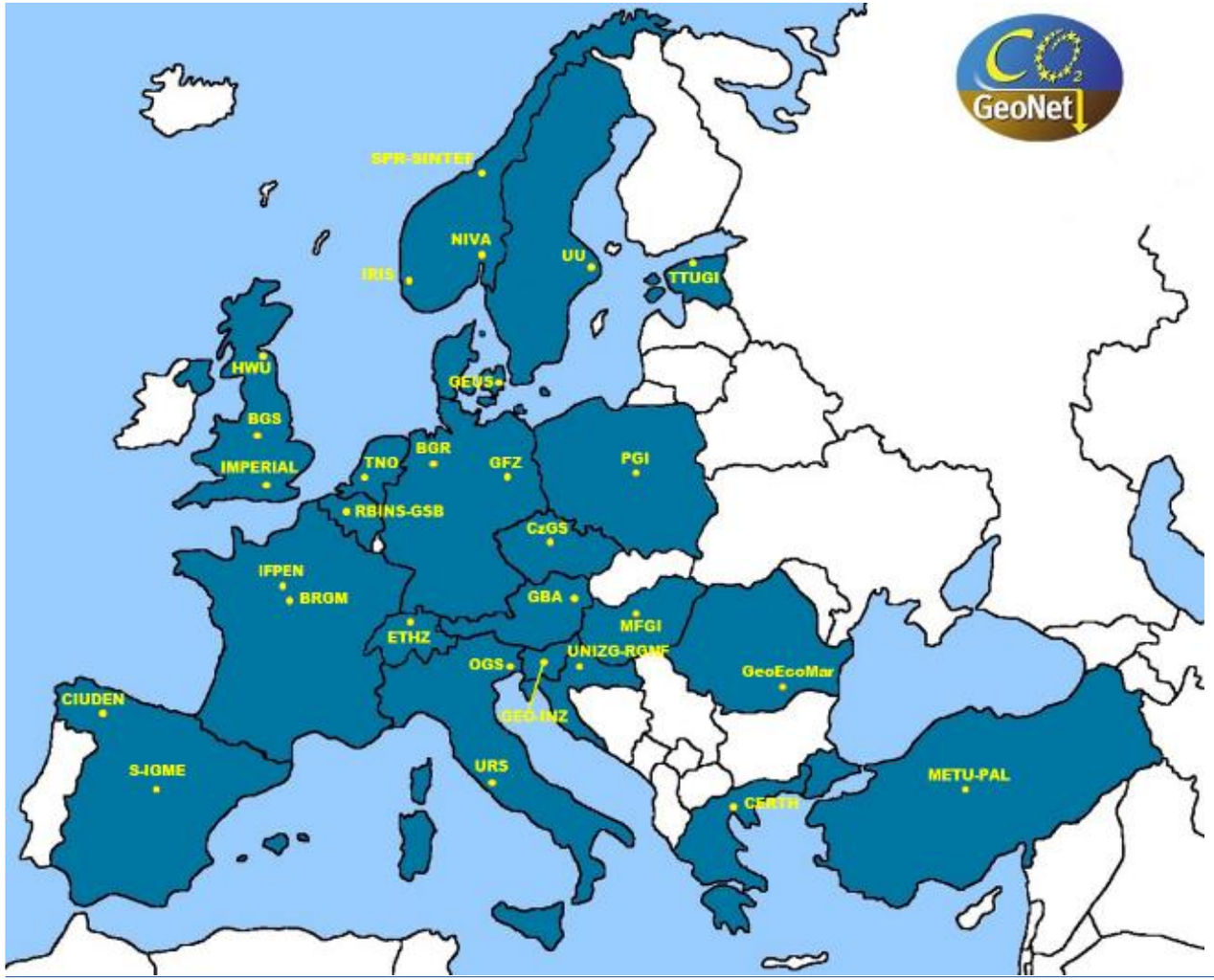
Katowice, 10 Dec 2018

The European Network of Excellence on the Geological Storage of CO_2

My presentation

- CO_2GeoNet
- Principle of CCS
- CCS is key to achieving our climate goals in time.
- Conclusion

CO_2GeoNet celebrates its 10th anniversary as a legal entity in 2018!



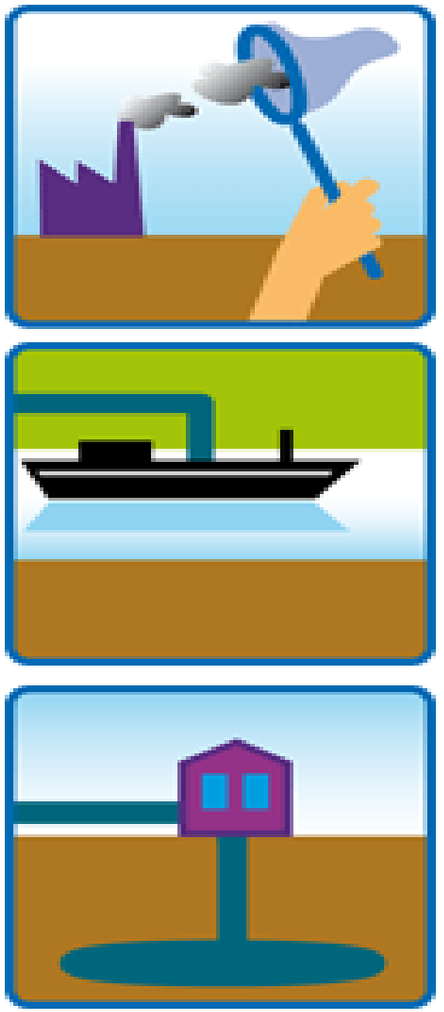
- ✓ **Independent scientific voice on CO_2 storage in Europe**
- ✓ Created as a EU **FP6 Network of Excellence** in 2004
- ✓ Became an **Association** under French law in 2008
- ✓ **29** research institutes from **21** countries

Carbon dioxide Capture and Storage (CCS)

Process consisting of the separation of CO_2 from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere

Option in the portfolio of mitigation actions for stabilization of atmospheric greenhouse gas concentrations

IPCC Special Report on Carbon Dioxide Capture and Storage, 2005



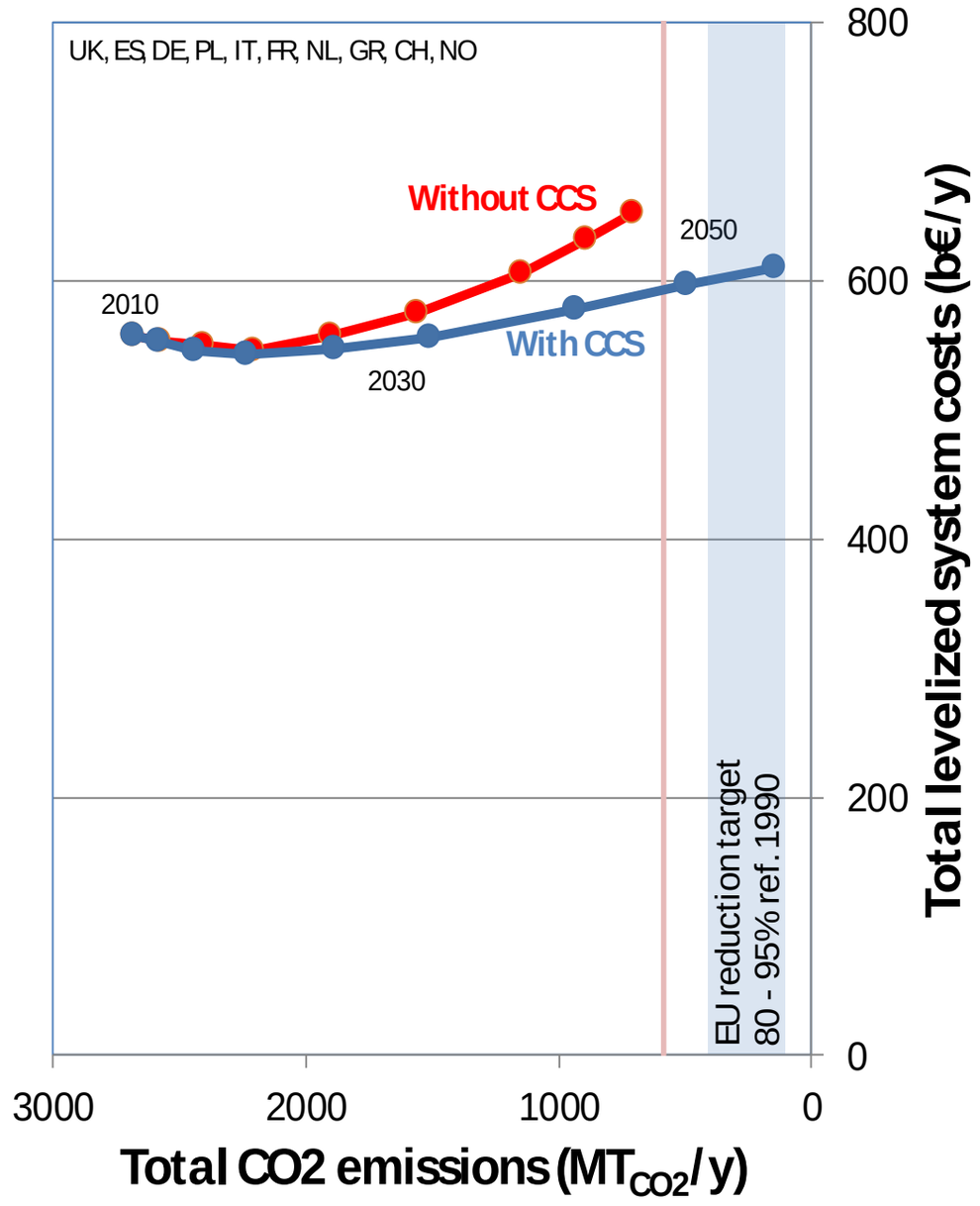
Need for CCS (IPCC Assessment report no 5)

- CCS important for reducing emissions from fossil fuels and also for combining with bioenergy to remove CO_2 from the atmosphere

- **Excluding CCS** from the mix will **increase** mitigation **costs by 138%**.

- CCS is necessary in many of the 2 degrees scenario models.

Cost for emissions reduction in 10 countries



- 95% emission reduction 1.5 ºC can only be achieved with CCS.
- Without CCS, emissions 3-4 times higher in 2050
- Savings 1 Trillion Euro till 2050 for EU
- The more you want to reduce emissions the stronger the business case for CCS
- Early investment in CO_2 hubs and clusters has strong business case

Courtesy ETIP ZEP

Are we on track ?

Global Status of CCS
November 2016

38 large-scale CCS projects – combined CO_2 capture capacity of approximately 70 Mtpa:

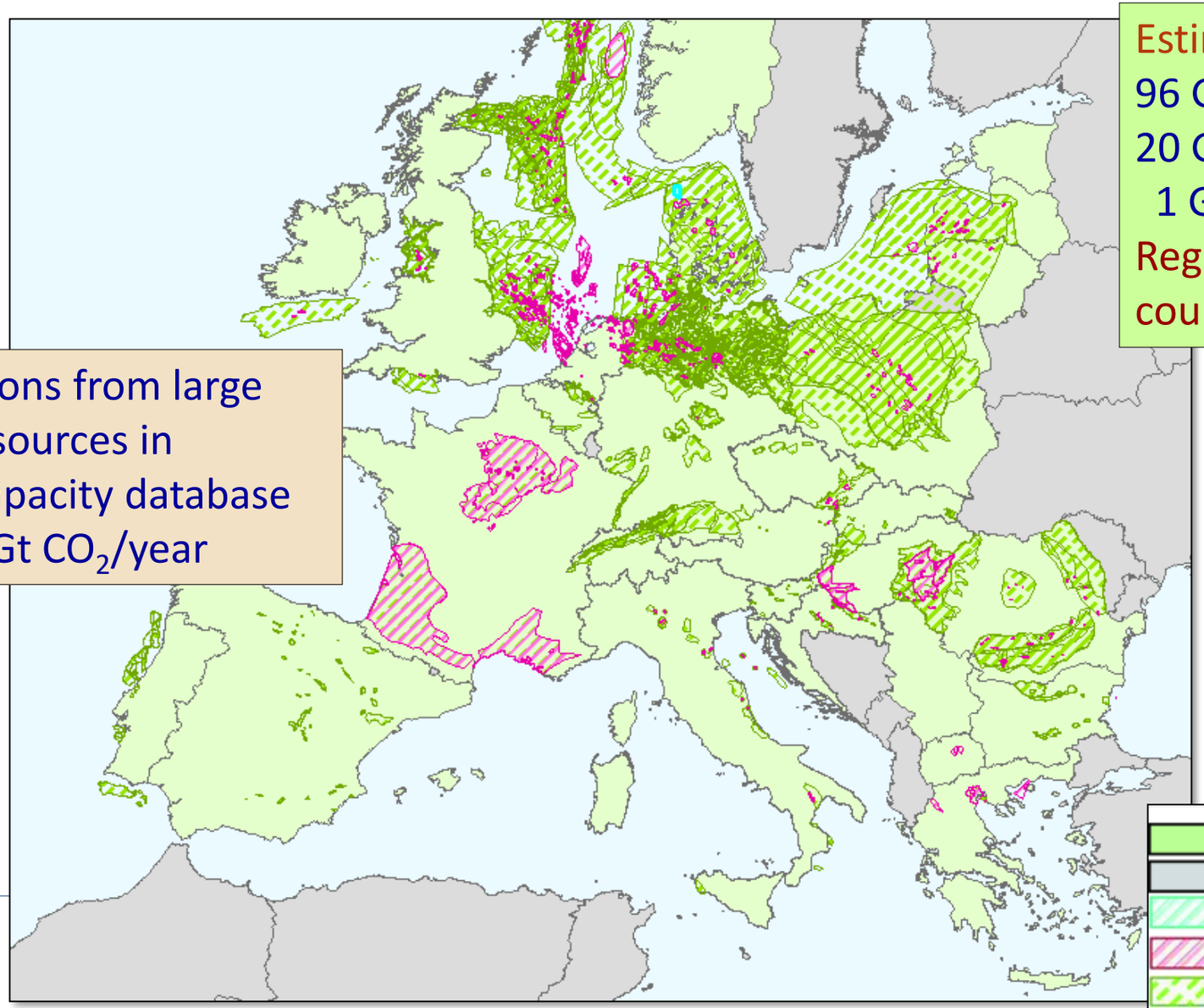
- 21 projects in operation or construction (**40.3 Mtpa**)
- 6 projects in advanced planning (8.4 Mtpa)
- 11 projects in earlier stages of planning (21.1 Mtpa)

40 Mtpa

~4,000 Mtpa of CO_2 captured and stored by 2040
(IEA 2DS Scenario)*

*Source: IEA, *2016 Energy Technology Perspectives 2016: Towards Sustainable Urban Energy Systems*. Paris. OECD/IEA.

EU storage capacity – data from CO_2 stop project (2012 – 13)



Estimated 117 Gt
96 Gt in deep saline aquifers
20 Gt in hydrocarbon fields
1 Gt in unmineable coal beds
Regional scale capacity – 20 countries

Emissions from large point sources in GeoCapacity database is 1.9 Gt CO_2/year

This storage capacity corresponds to more than 62 years of storage of emissions from all large point sources in database

CO_2GeoNet Summary

- **We need CCS to meet climate targets** (see IPCC 1.5 degrees report, IEA ETP 2017, The EU long-term strategy for GHG emissions and many others!)
- **Policy makers need data on potential** for capture, transport and storage assets to enable informed decision making.
- **CO_2 geological storage potential in Europe is large** – we can store several decades worth of emissions (at least!)
- '**Anchor' projects (pilot and demonstration) in Europe are needed** to develop a CCS infrastructure network (based on storage hubs and capture clusters).

Thank you!

SAFE THE DATE
6-9 MAY 2019

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