

Oslo 12 October 2016

Commercialisation of CCS depends on international cooperation

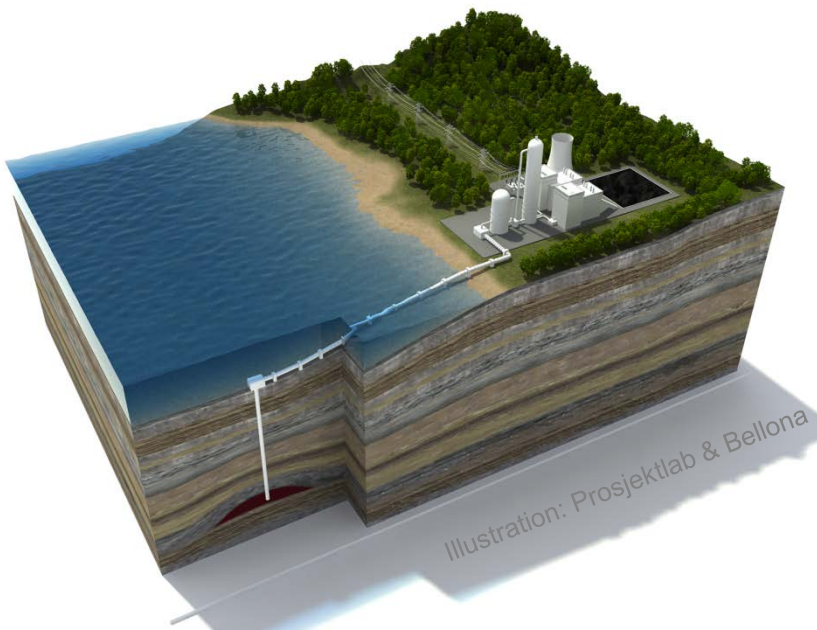
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The Research Council of Norway, email: ast@rcn.no

COP21 ambition: Limit global warming to 1.5 °C



CCS – An important tool to mitigate global warming



**Meeting the 2 °C target without CCS would
be **138 %** more expensive (Source: IPCC, 2014)**

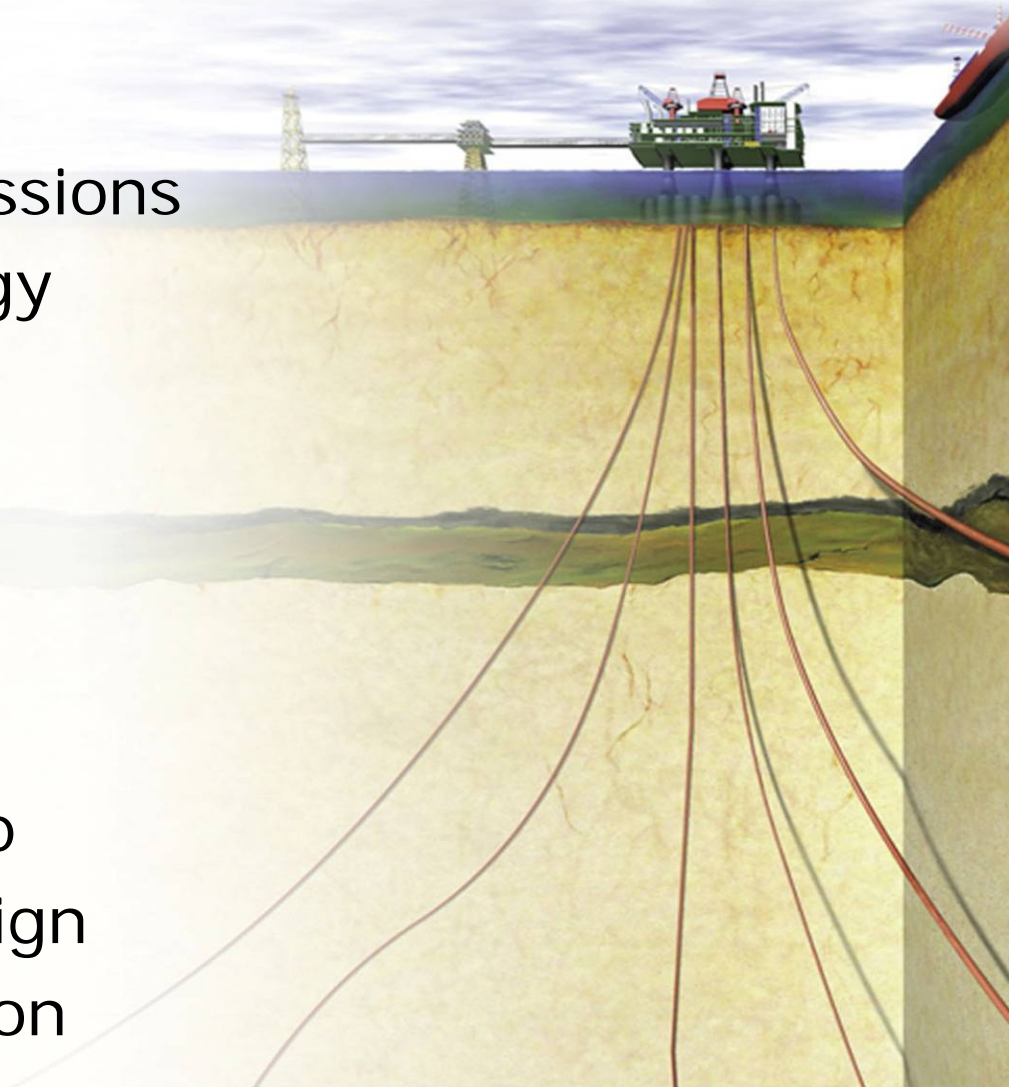
Deployment of CCS

How to get there

1. Reduce CCS cost
2. Put a price on CO₂ emissions
3. Improve CCS technology
4. Ensure public support

Key actions

1. Demonstration plants
2. R&D
3. Bold political leadership
4. Communication campaign
5. International cooperation



CCS in Norway

Ambition

- Full scale CCS by early 2020ies

Five candidates

- Capture:
 - Norcem; cement
 - Yara; ammonia
 - Klemetsrud; waste handling
- Transport by ship or pipeline
- Storage at Smeaheia in the North Sea

National Budget 2017 published last week:

- ~40 mill euro for conceptual studies

Norcem Cement Plant, 0.8 MtCO₂/yr



Yara Ammonia Plant, 0.56 MtCO₂/yr



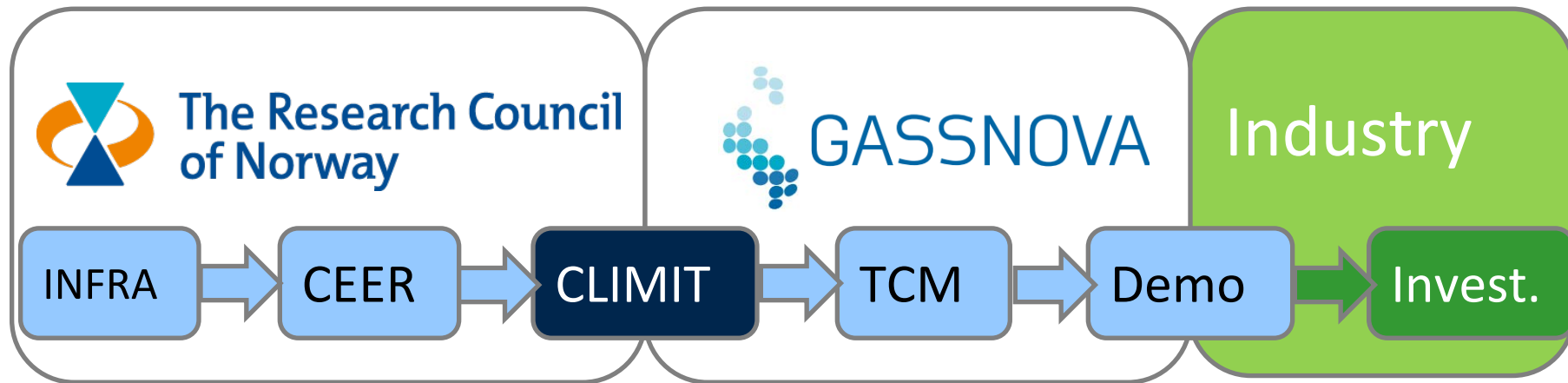
Klemetsrud Waste Handling, 0,4 MtCO₂/yr



CCS in Norway



Accelerated development of CCS technology



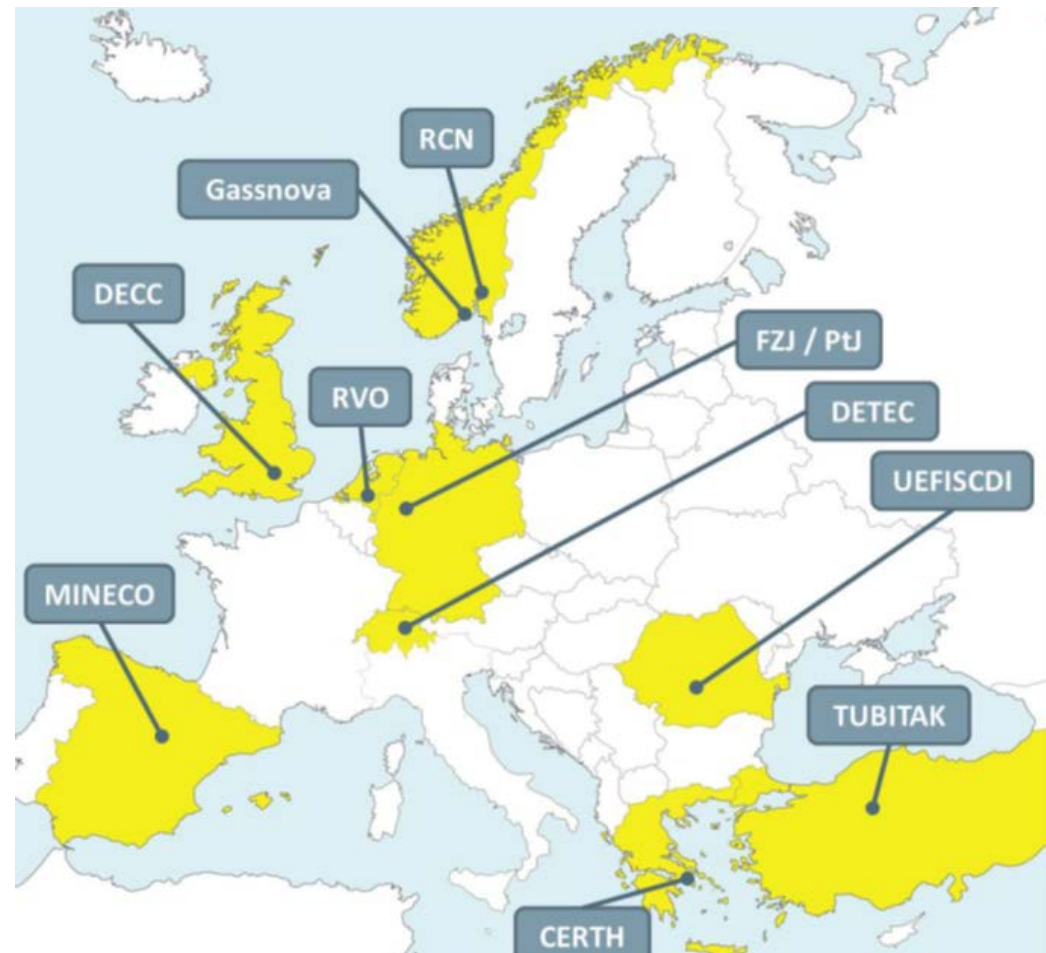
ACT – Accelerating CCS technologies

Ambition

- Accelerating deployment of CCS in Europe

ERA Net Cofund

- Nine countries
- Common call: € 41 M
- Support from EC
- 38 project proposals received
- ACT Projects starting summer 2017
- Ambition of new call in 2018



- European research infrastructure project
- Coordinator: NTNU
- Operate a world class pan-European distributed CCS research infrastructure
- Integrate and upgrade existing research facilities and supplement with new ones
- Enhance European science, technology development, innovation and education in the field of CCS



Carbon Sequestration Leadership Forum

www.cslforum.org



CSLF Overview



Norway Grants

- In the period 2009-14, the Norway Grants support 61 programmes in 13 countries in Europe.
- The Norway Grants are available to the 13 EU member countries that joined after 2004.
- Under the Norway Grants, Norway has set aside € 804 M for the current funding period.
- 4 high quality CCS projects in Czech Republic funded

