



Dutch CCS landscape

2015-09-09

UKCCSRC, Strathclyde Biannual

Issues

- Energy Vision
- CCS Vision
- Other relevant developments

Energy vision

- The Netherlands Reaffirm 2 Degree Climate Target
- This requires the deployment of a combination of options
- These options include CCS (both industry and power)
- CCS required post 2030, but probably before this date
- CO2 use of limited relevance to climate policy

CCS vision

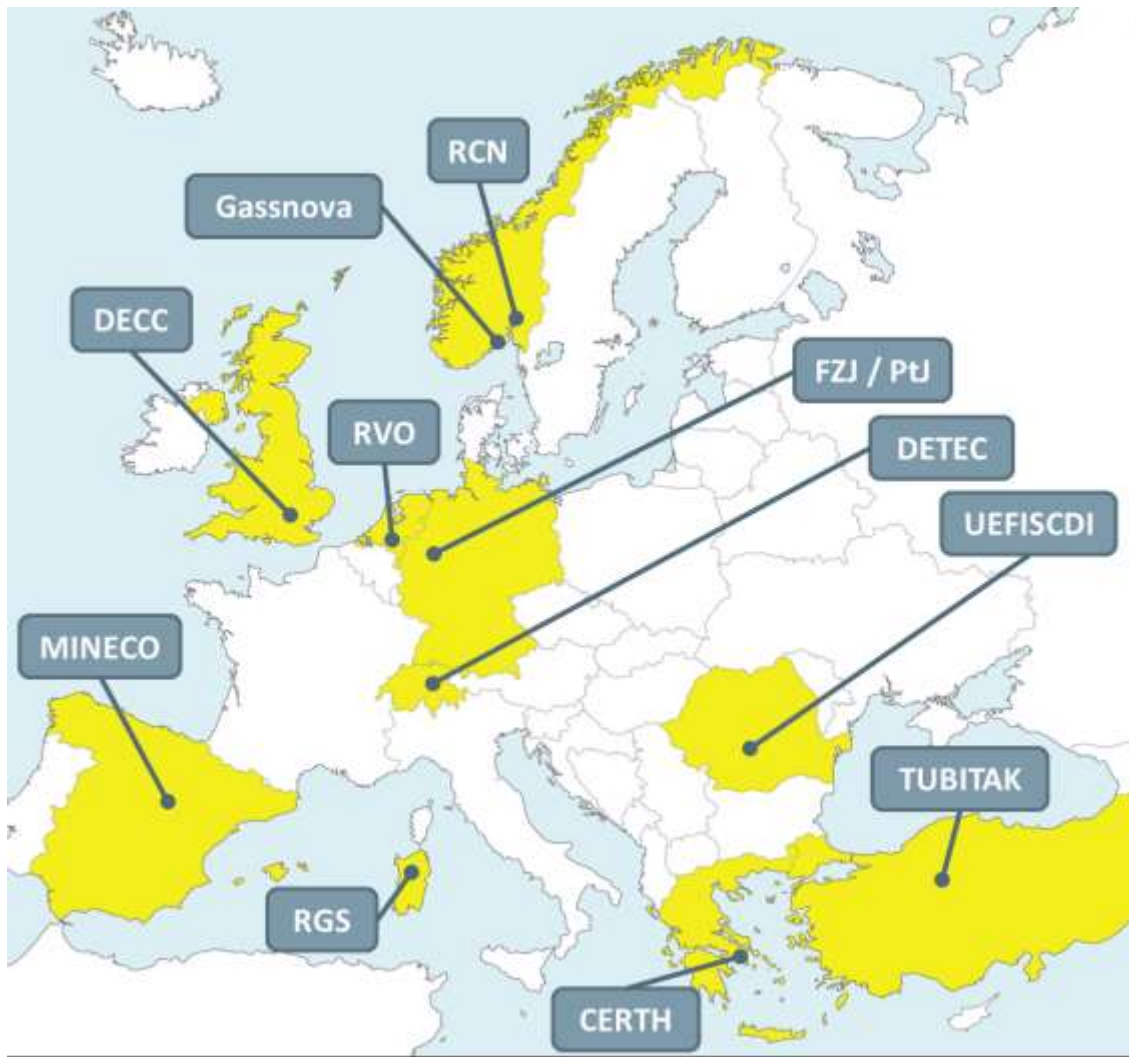
- Be prepared, no premature steps
- Support EC climate policy
- Support R&D (4 M€ /year)
- Address long term Transport and Storage
- Support full size demo

R&D Support

- CCUS Research Line under Topsector Energy
- ERANET-CCS under H2020 (“ACT”)
- ERANET-DEMO (“ROAD”) under H2020
- Support for regular H2020 calls

ERANET-CCS (ACT)

- Funding from National Governments and H2020
- Private co-funding required
- The Netherlands participate in 1st and 2nd call
- Total Dutch budget 6 M€
- Scope: Capture, Transport, Storage, Full Chain, EOR

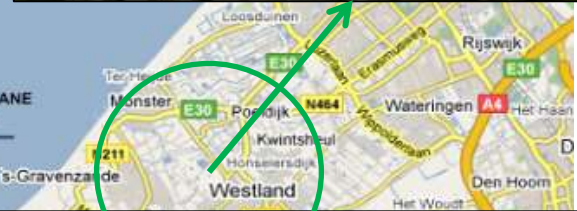


Transport and Storage plan

- Ensure the availability of storage locations
- Facilitate the development of transport infrastructure
- Address safety issues
- To be completed in 2016

Support of full scale demo (ROAD)

- Improve Business Case
- Involve new member states
- Address operational costs
- Positive FID expected early 2016



Other relevant developments

- Increasing use of Coal
- The “Urgenda Climate Case”
- Induced seismicity

**Use of coal in powersector shows
30% increase in 2015**

**Total CO2 emissions (1st Q 2015)
increased by 4.2 %**

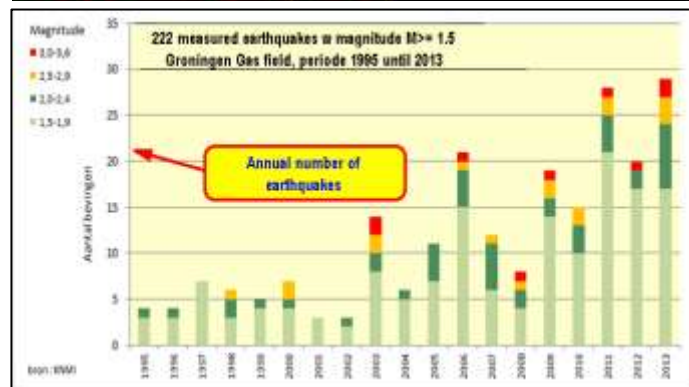
Three new plants ready for use

The “Urgenda Climate Case”

- Dutch NGO Urgenda and nine hundred co-plaintiffs went to court to force the Dutch government to adopt more stringent climate policies.
- District court of The Hague has granted the plaintiffs’ claims, and the government is now required to take more effective climate action to reduce the Netherlands’ considerable share in global emissions
- Although the government will appeal, they have agreed to adopt the requested (more challenging) climate goals

Will induced seismicity related to gas production set the scene for all sub-surface related activities in the Netherlands (including CCS)?

- Thought to exceed magnitude 5
- Damage estimated at ~€ 5 billion
- Production cut of 25% suggested
- New licensing suspended
- Role of responsible authorities questioned
- Strong opposition against fossil



KNMI

... sun wind and biomass are indispensable but differ in potential, cost and societal support;

- the role of solar energy is highly uncertain,*
- the infrastructural constraints on wind are severe and*
- sustainable bio-mass is scarce and can be used only in combination with coal.*

There is no public support for nuclear.

It may be worthwhile to consider natural gas and CCS in the Energy mix ...

September 2015. H. Kamp Minister of Economic Affairs

8th Dutch CCS Symposium

- October 16th 2015
- Location: SS-Rotterdam
- Programme
 - National CCUS conference
 - CCS Market
 - Social Programme (including Dinner, Reception)
 - Excursions to engine room and bridge



<http://www.co2-cato.org/news-events/events/8th-dutch-ccs-symposium/programme>