



Netherlands Enterprise Agency



The role of CCS in The Netherlands

Recent Developments

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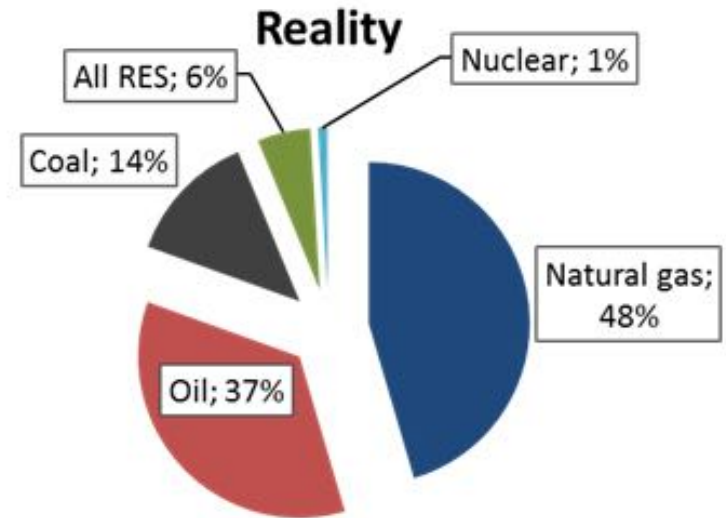
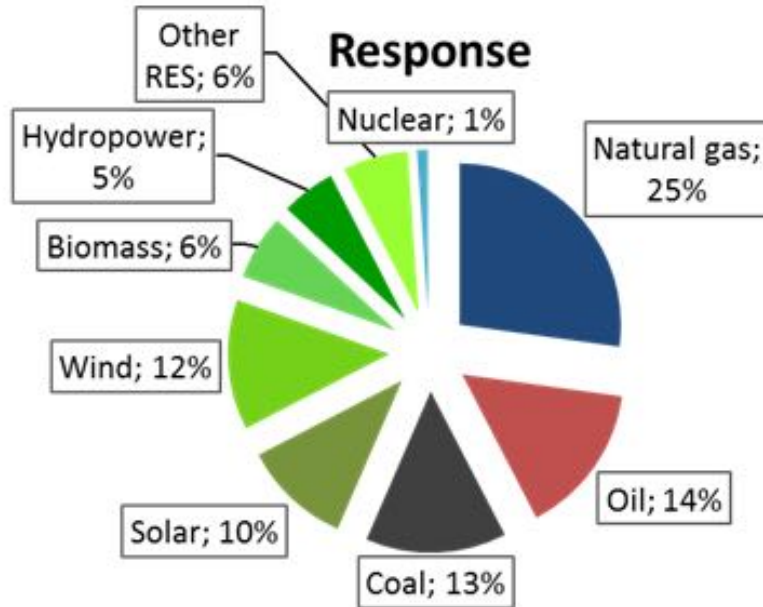


Voorzichtigheid is de moeder
van de porceleinkast

...caution is the mother of the china cupboard...



Energy in NL - What does the public think?¹



- 18% of Dutch population: Energy in top-5 of relevant issues
- 68%: climate change is a major problem
- However: large overestimation of contribution of renewable energy (39%.. - reality is 6%)

¹Motivaction, research on public support for more sustainable energy, Jan 2016,
<https://www.rijksoverheid.nl/documenten/publicaties/2016/01/20/energie-in-nederland-verduurzamen>



URGENDA & phase-out coal fired power



HOME VISIE THEMA'S BOUWEN



- 24 June 2015, URGENDA won against the Dutch state -> 25% in 2020
- 26 November 2015, Motion for phase-out of coal fired power plants accepted in parliament



Energy goals and interests

- COP 21, Paris:
 - 195 countries agreed to limit global temperature rise to well below 2°C.
- The Energy Union – Europe:
 - Making energy more secure, affordable and sustainable
- Groningen natural gas:
 - Production restriction to minimise earthquakes
- Smaller Dutch gas fields (onshore and offshore)
 - Getting at end of productive life in next decade(s)
 - Security of supply increasingly important



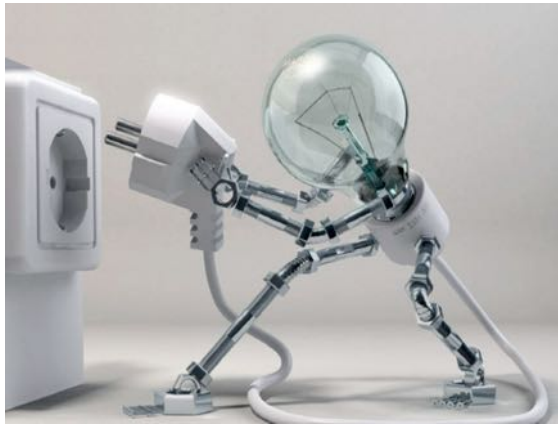
Energy report 2023 - 2050



- January 2016: long-term vision on Energy
 - Towards a low-carbon energy economy that is safe, reliable and affordable
1. Focus on reducing CO2
 2. Innovation and economic opportunities
 3. Energy as part of spatial planning



Energy report – 4 functions of energy

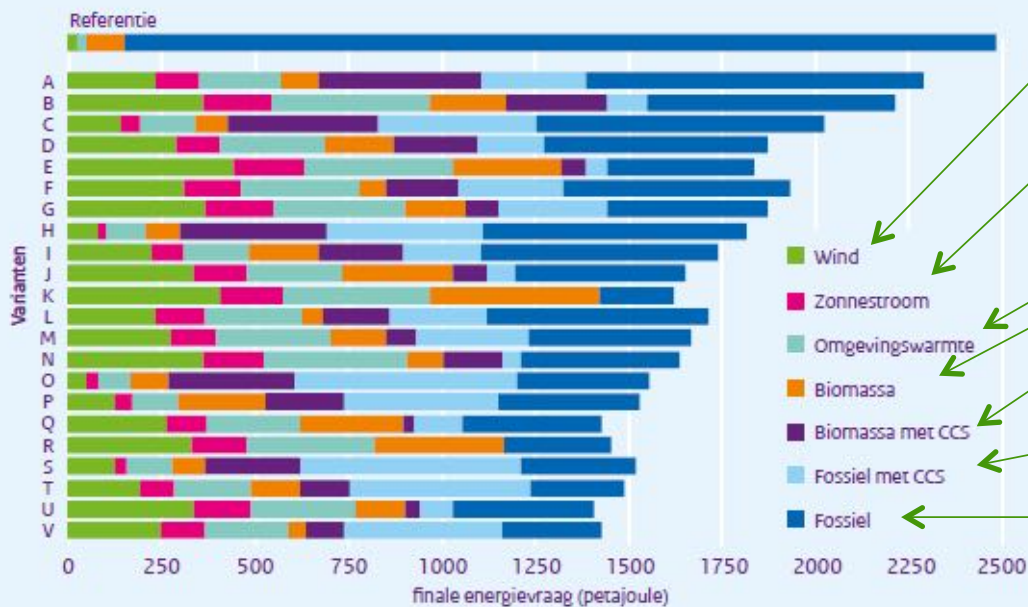




Predicting 2050 is impossible

However, CCS is a robust element

Figuur 5.2 Scenario's voor de Nederlandse energievraag in 2050*



* PBL, 2014, Recente ontwikkelingen in het energie- en klimaatbeleid. Balans van de Leefomgeving 2014 - deel drie.

Wind

Solar

Ambient heat

Biomass

Biomass with CCS

Fossil with CCS

Fossil



Follow up: the Energy Dialogue

- From vision to actions: April – June 2016 dialogue with society
- Focus on 2023-2030-2050
- Deliverable end 2016: Energy Policy Agenda including societal actors
- Attention for: safety, affordability, reliability and economic opportunity





Short term - URGENDA – coal fired power

- Interdepartmental Policy Research (IBO) cost efficiency of CO₂ reduction measures¹
 - Adequate CO₂ pricing important mechanism for emission reduction
 - Closing down NL coal fired power will lead to imports – CO₂ emissions on European scale might benefit only little
 - Potentially: closing of two 1990's coal fired power plants – but impacts biomass cofiring as well
 - ROAD is mentioned as a cost-effective additional measure
 - Decisions on measures proposed in IBO in autumn
- Appeal URGENDA
 - Focus on national action is contrary to nature of the problem.

¹ <https://www.rijksoverheid.nl/onderwerpen/klimaatverandering/documenten/kamerstukken/2016/04/09/kabinetsreactie-interdepartementaal-beleidsonderzoek-kostenefficiëntie-co2-reductiemaatregelen>



In the meantime ...

- ROAD still standing.
- CATO still standing. National and European research projects ongoing
- CO₂ capturing at Waste Incinerator of AVR planned (see www.co2-cato.org)
- CO₂ capture pilot at Waste Incinerator of Twence <http://co2sbc.eu/>
- OCAP and WarmCO₂ delivering about 500 kton/year CO₂ -> greenhouses





In the meantime ...

- Participation in European collaborations, ACT, ECCSEL, North Sea Basin Task Force, ZEP...
- ... and international: CSLF
- Update of national transport & storage plan expected 2017





Conclusions / Outlook



- Energy report puts CCS into the right perspective
- Focus on reduction of CO₂ is the right thing
- Autumn 2016 will see the announcement of the policies
- A step in the direction of commercial CCS in the Netherlands