



# The ugly duckling – CCS and CCU in Denmark

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# 2011



FOLKETINGSTIDENDE B

FOLKETINGET



Til lovforslag nr. L 141

Folketinget 2010-11

Betænkning afgivet af Det Energpoltiske Udvalg den 12. maj 2011

## Betænkning

over

Forslag til lov om ændring af lov om anvendelse af Danmarks undergrund  
(Implementering af CCS-direktivet, efterforskning og indvinding af geotermisk energi, påbud om tredjepartsadgang til anlæg til indvinding, behandling og transport af olie og gas m.v.)

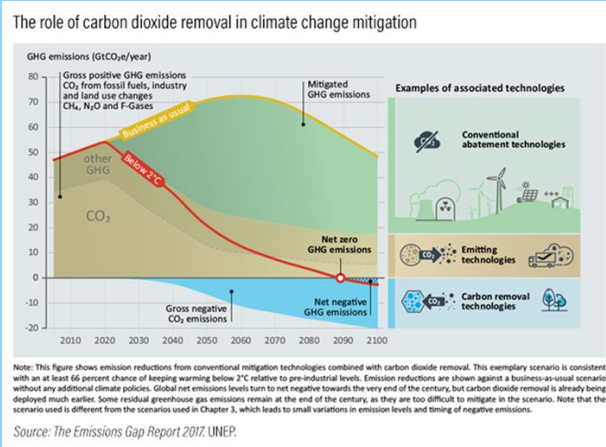
[af klima- og energiministeren (Lykke Friis)]

# International CCS drivers 2011-2019

2015

2017

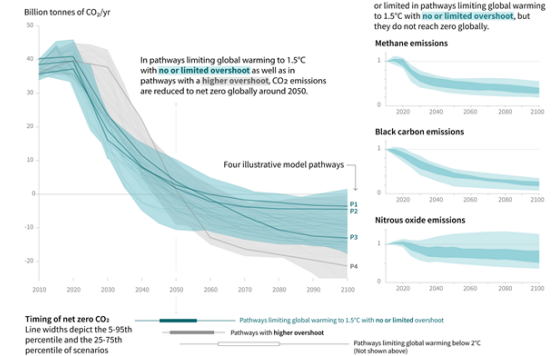
2018



### Global emissions pathway characteristics

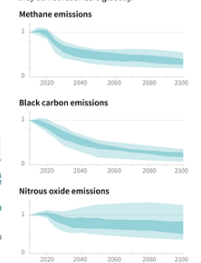
General characteristics of the evolution of anthropogenic net emissions of CO<sub>2</sub>, and total emissions of methane, black carbon, and nitrous oxide in model pathways that limit global warming to 1.5°C with no or limited overshoot. Net emissions are defined as anthropogenic emissions reduced by anthropogenic removals. Reductions in net emissions can be achieved through different portfolios of mitigation measures illustrated in Figure SPM.3b.

### Global total net CO<sub>2</sub> emissions



### Non-CO<sub>2</sub> emissions relative to 2010

Emissions of non-CO<sub>2</sub> forcers are also reduced or limited in pathways limiting global warming to 1.5°C with no or limited overshoot, but they do not reach zero globally.



Source: IPCC Special Report on Global Warming of 1.5°C

# Denmark 2019: Danish Climate Act

- **70% reductions by 2030**
- **Climate neutrality by 2050**
- **Climate program to report progress every year**
- **Minister to follow up if not on track**
- **Climate Council strengthened**



# Danish Climate Agreement for Energy and Industry 2020

- The world's first energy islands and more renewable energy
- Investment in green technologies of tomorrow – carbon capture and Power-to-X
- Green transition of industry
- Efficient use of energy and renovations
- Green heating for Danes
- Green transport



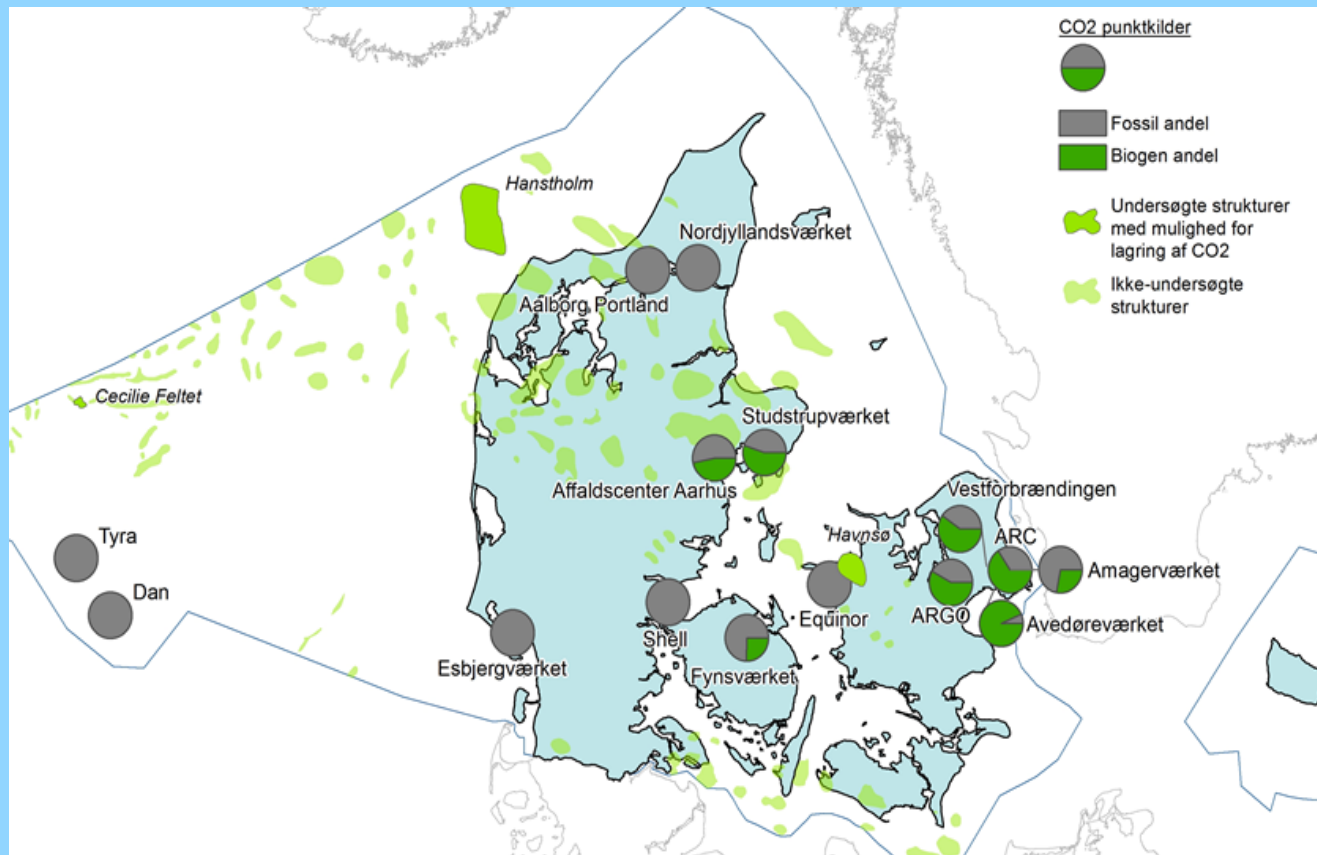
# Denmark 2020: Climate Action Plan for Energy and Industry, Implications for CCS

- **Political agreement to allow CO<sub>2</sub> storage in Denmark**
- **Political agreement to allow cross-border transport of CO<sub>2</sub> for storage at sea (London protocol amendment)**
- **Political agreement for 16 billion DKK allocation for GHG emission reductions through CCS (over 20 years)**
  - **Gradual phase in from 2024**
  - **Anticipated reductions in 2025 0.4 mio. tons CO<sub>2</sub>**
  - **Anticipated reductions in 2030 0.9 mio. tons CO<sub>2</sub>**
- **DK strategy for CCUS and PtX to be established**

# Sources for CO<sub>2</sub> capture (>50.000 ton/år)

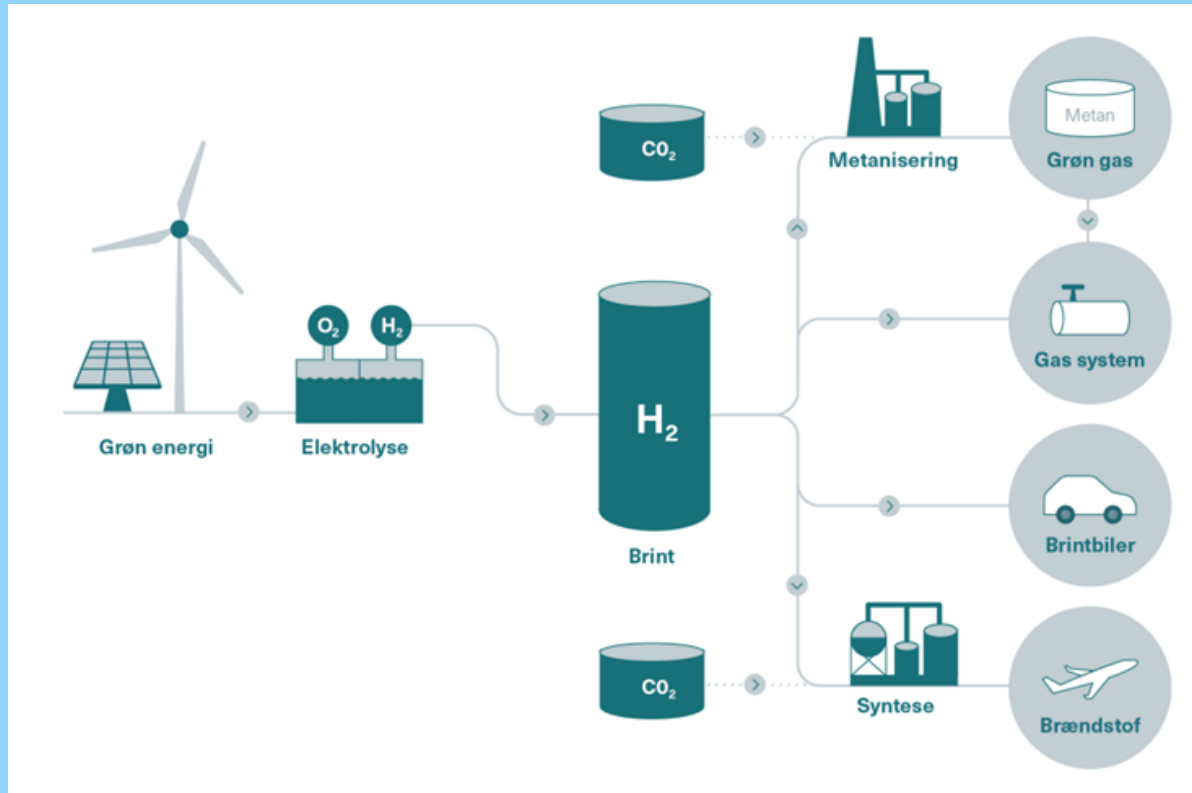
Sector Emission in mio. ton CO <sub>2</sub> /Y	Emissions 2018	Of which biogenic	Estimated potential 2030-2040
Industry	4,1	0,3	1-2
CHP and H- plants	13,7	6,8	2-5
Waste/energy	3,6	2,2	1-2
Biogas	0	0	1
Total			5-10

# Point sources and potential storage structures





# A bit about Power to X



# Thank you!

