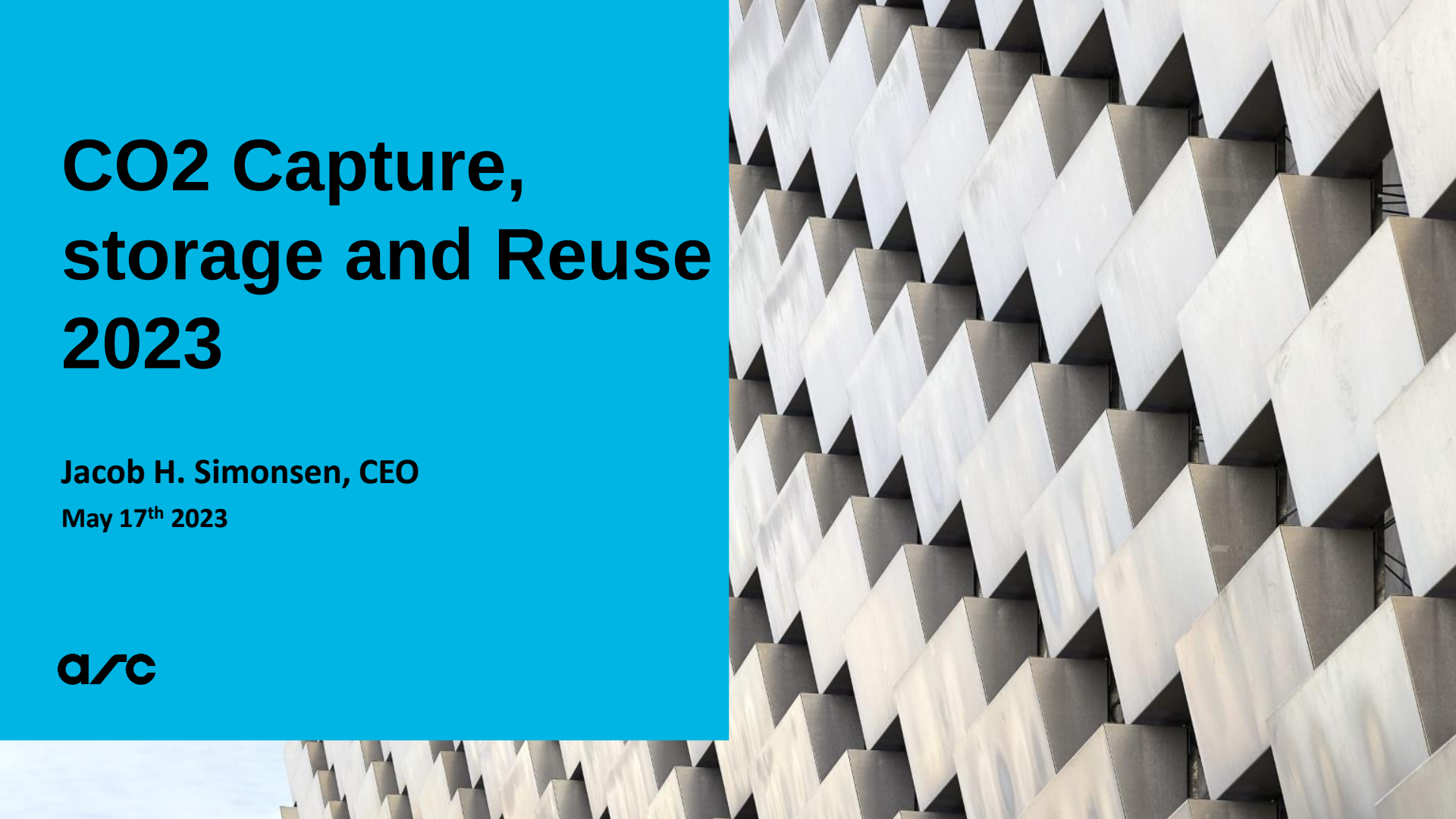
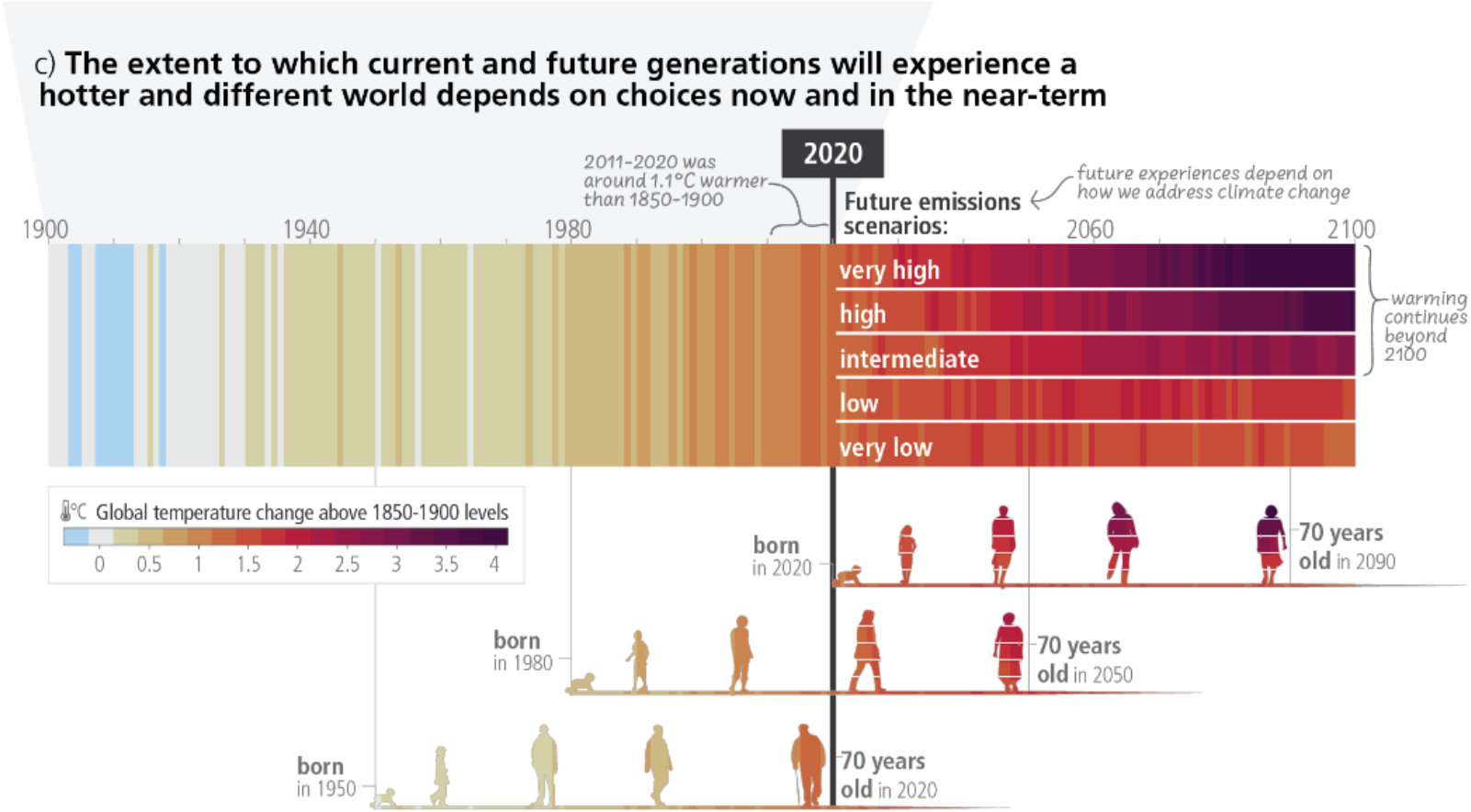
CO2 Capture, storage and Reuse 2023

Jacob H. Simonsen, CEO

May 17th 2023

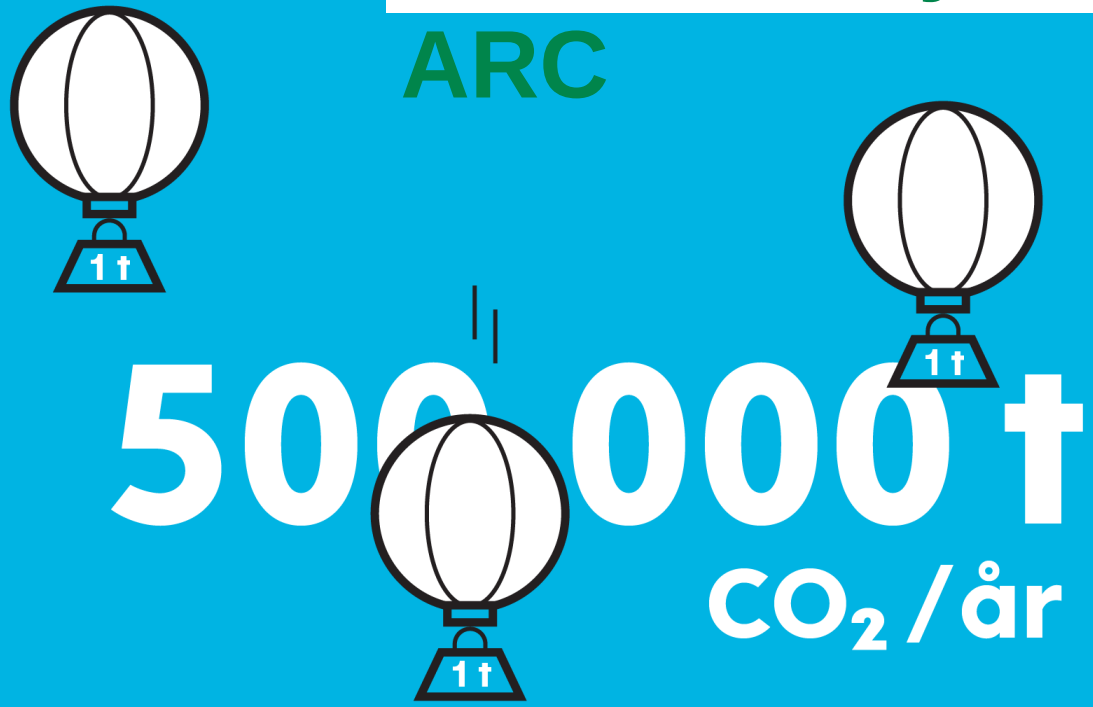


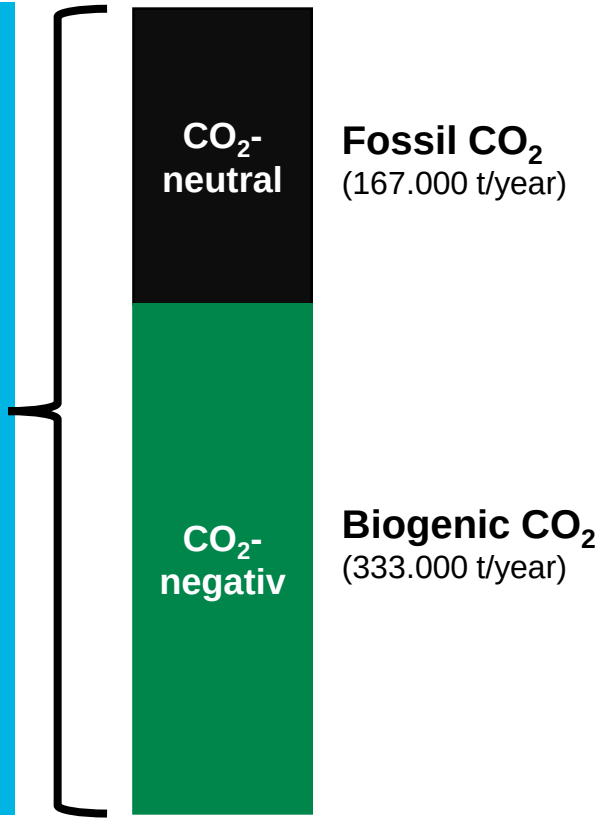

Carbon Capture
Licence to operate



Source: IPCC AR6 SYR

Potential by CO_2-capture at ARC





Pilot unit

- Stop n’ go
- Test several solvents
- Energy optimization
- Catch and release

Demonstration

- Build for stable operation
- Simulation of DH integration
- CO_2 dried, cooled and liquified. Ready for utilization

Full scale

Summer 2021
20 kg/h

Autumn 2023
160 kg/h

Soon..
500.000 ton/year

Own money plus funding from EUDP

Funding to be found..

ARC/Pentair/DTU/Rambøll

ARC/CMP/??

Vi fanger

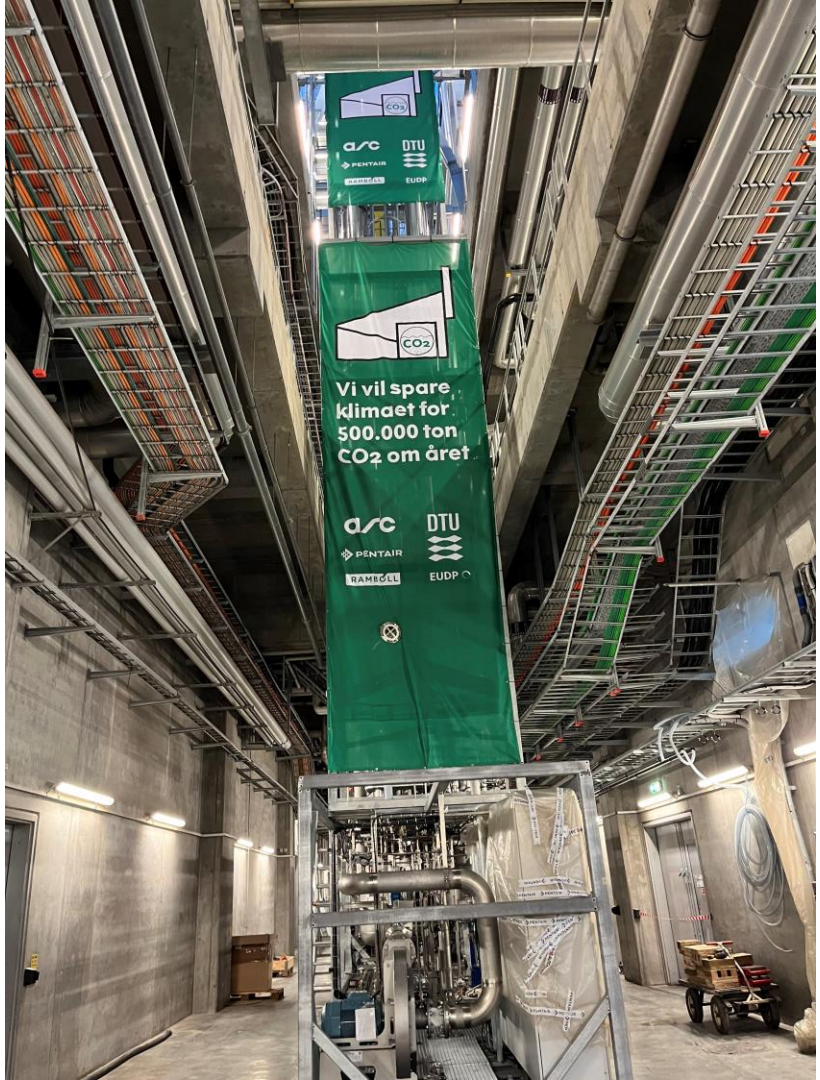
CO_2

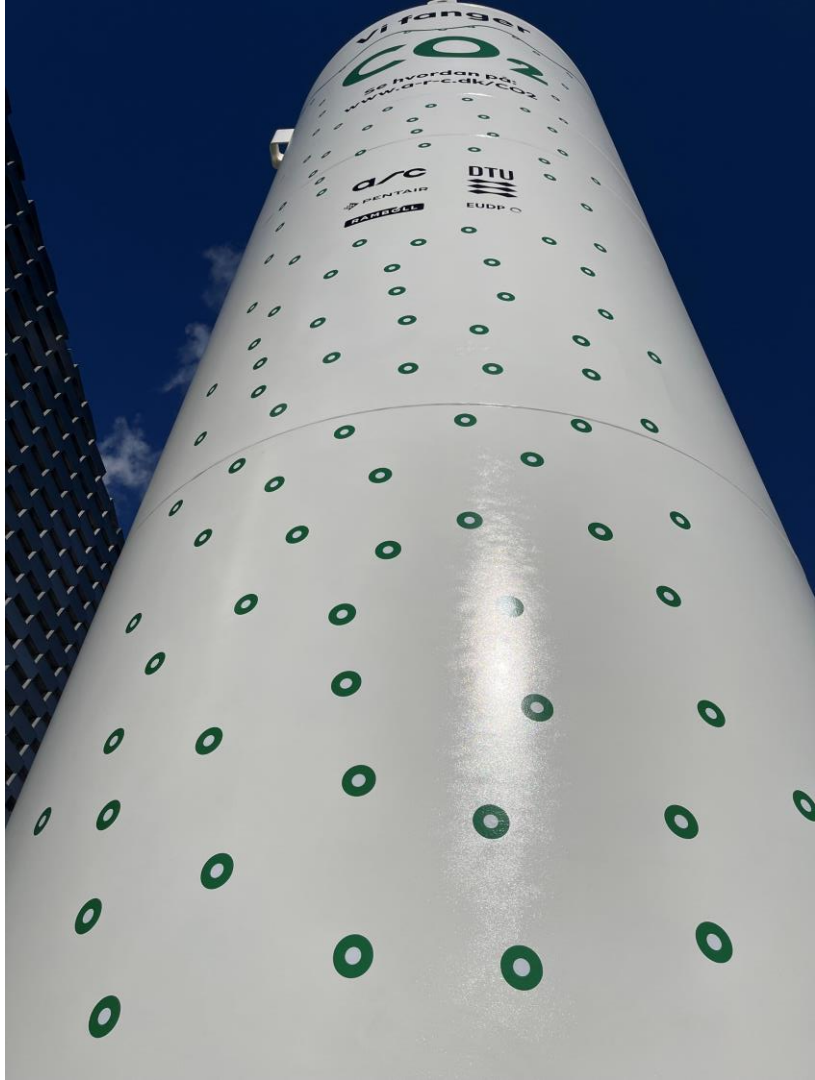
asc

DTU

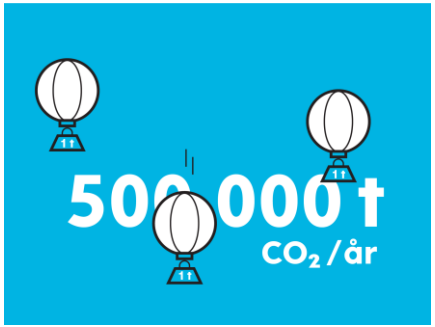
PENTAIR

RAMBØLL


Vi vil spare klimaet for 500.000 ton CO2 om året
asc
DTU
PENTAIR
RAMBØLL
EUDP


Vi fanger
CO2
asc
DTU
PENTAIR
RAMBØLL
EUDP

A possible business case



Fossil CO_2
(167.000 t/year)

- ETS (quotas/saving)
- CO_2 tax

Biogenic CO_2
(333.000 t/year)

- Negative CO_2 tax
- Sale of carbon credits
- Other financing (Municipalities)
- CCUS funding (state)

The way forward

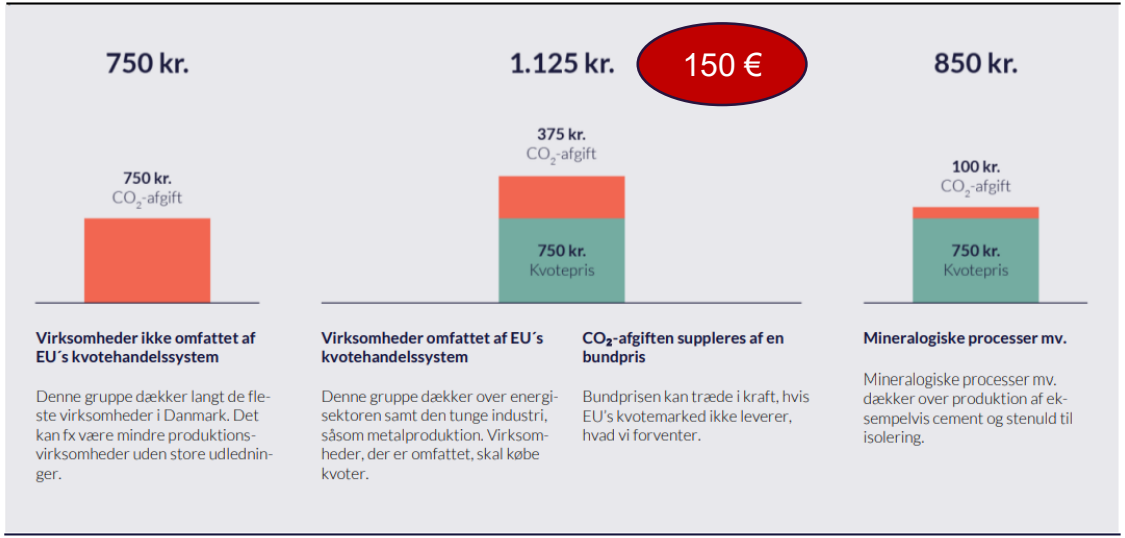
1. Govermental support to establish infrastructure (pipelines & storage)
2. Negative CO_2 tax on the biogenic emissions
3. Modular approach – the first captured molecules are fossil
4. Support from municipal owners – cheapest CO_2 reductions available

Grøn skattereform

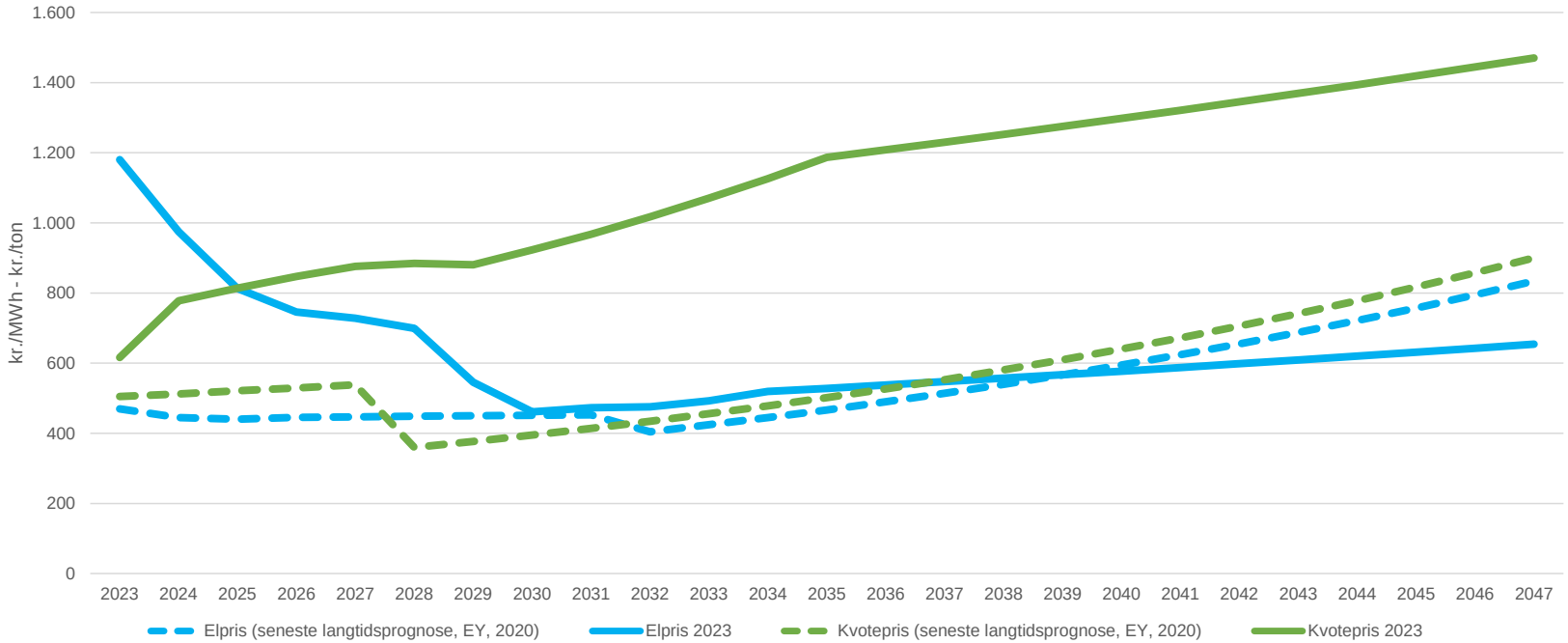
Et stærkere og grønnere Danmark i 2030

Regeringen

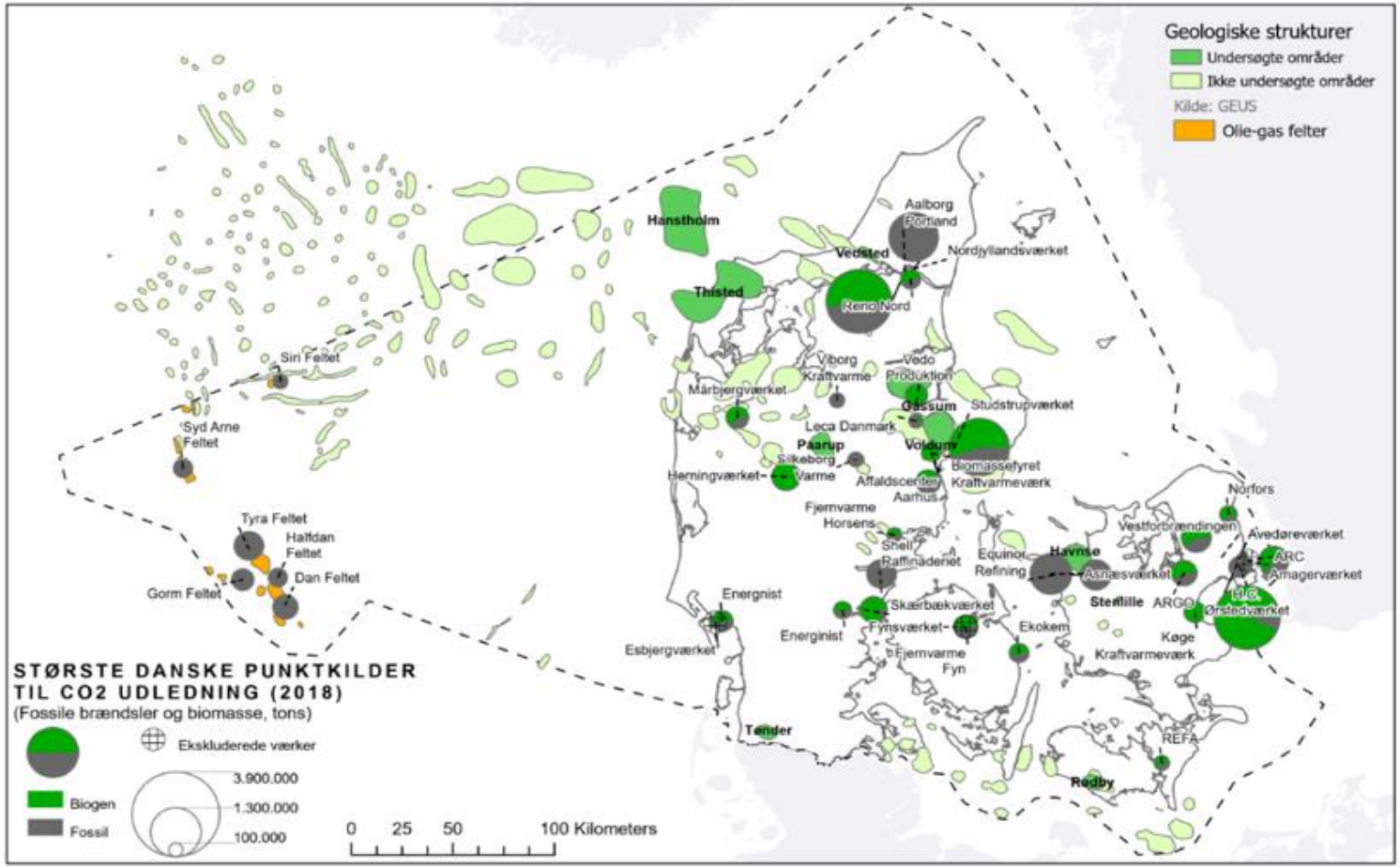
Figur 2. Pris på udledning af CO_2 med en høj og ambitiøs CO_2-afgift suppleret med en bundpris (kr. pr. ton)



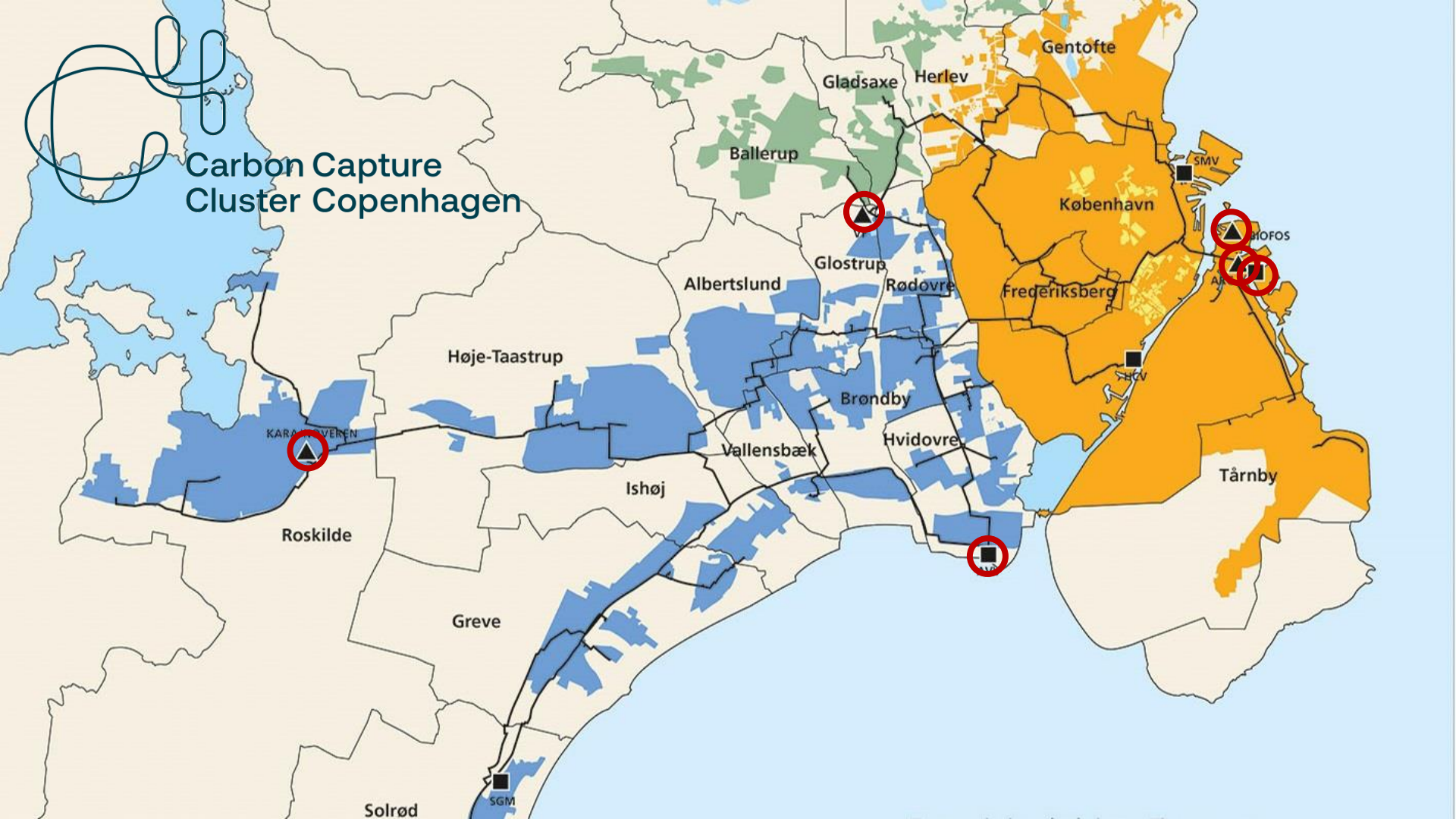
Price projections on electricity an ETS



Oversigtskort over punktkilder og potentielle lagringsstrukturer

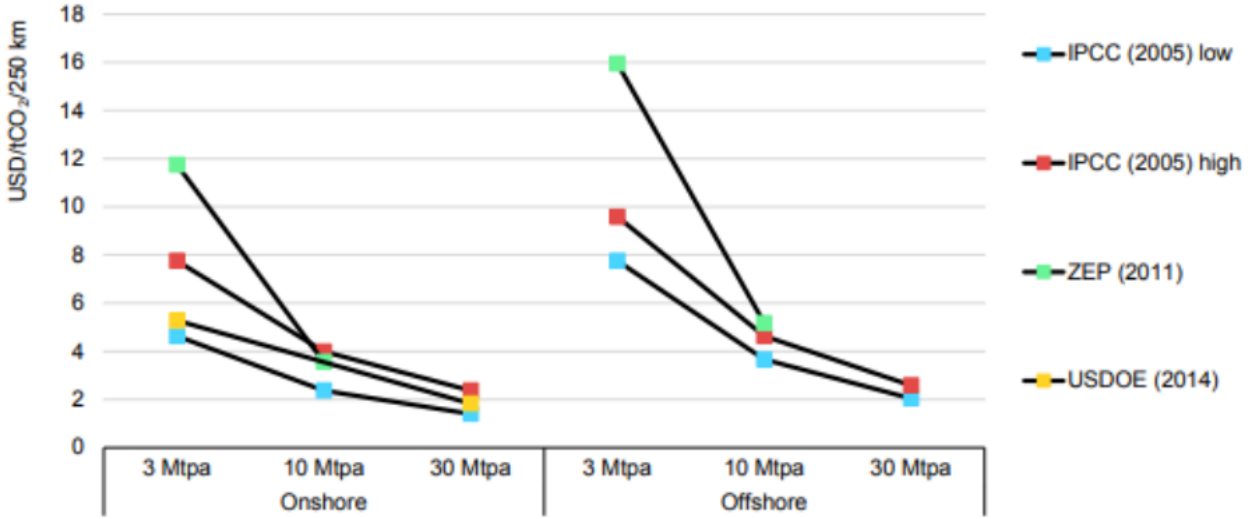


Onshore storage is cheapest – but still uncertain


Carbon Capture
Cluster Copenhagen
Gentofte
Gladsaxe
Herlev
Ballerup
SMV
København
Glostrup
Albertslund
Rødovre
Frederiksberg
Høje-Taastrup
Brøndby
Hvidovre
Vallensbæk
Ishøj
Tårnby
Roskilde
Greve
SGM
Solrød


Havnsø
Stenlille
C4

IEA estimate of cost – CO_2 transport via pipeline



Note: ZEP = Zero Emissions Platform; USDOE = United States Department of Energy.

Source: Based on Rubin, E. S., Davison, J. E. and Herzog, H. J (2015), The cost of CO_2 capture and storage.

Thank you

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