

DENMARK: GREEN TRANSITION WITH GREEN GAS GRIDS

Torben Brabo

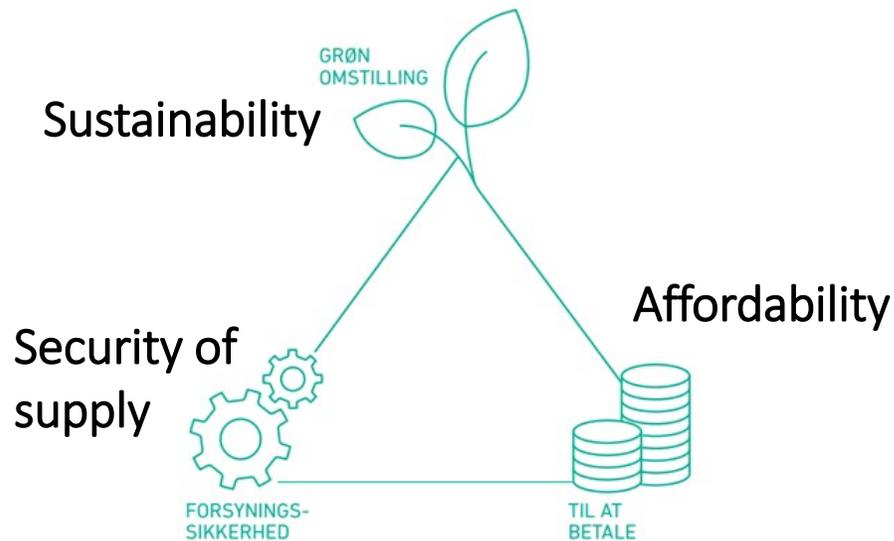
SVP, Energinet, Danish Gas-Power TSO

President, GIE

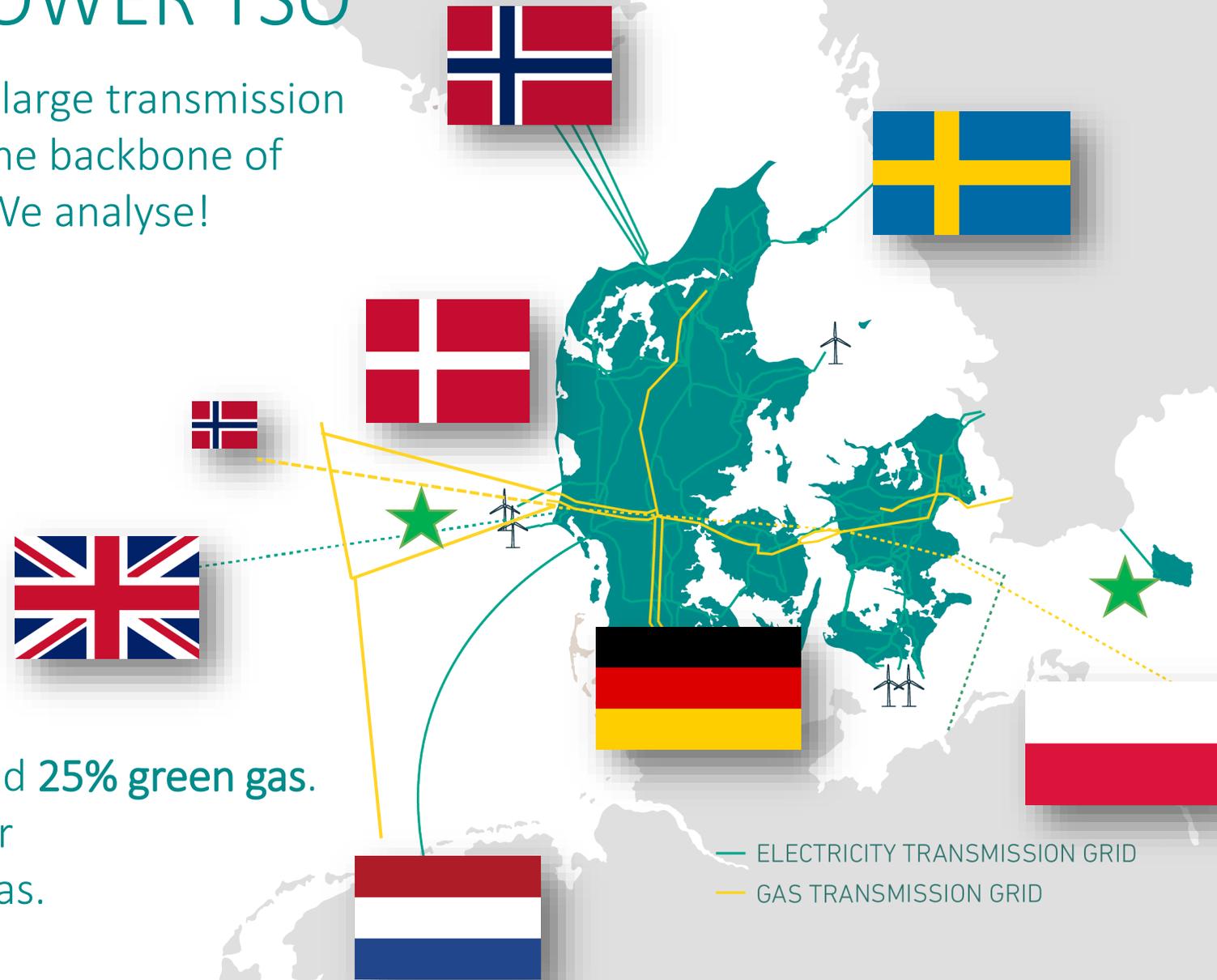
25.3.2022

ENERGINET GAS/POWER TSO

We own, operate and develop the large transmission grids and gas pipelines that form the backbone of Danish electricity and gas supply. We analyse!

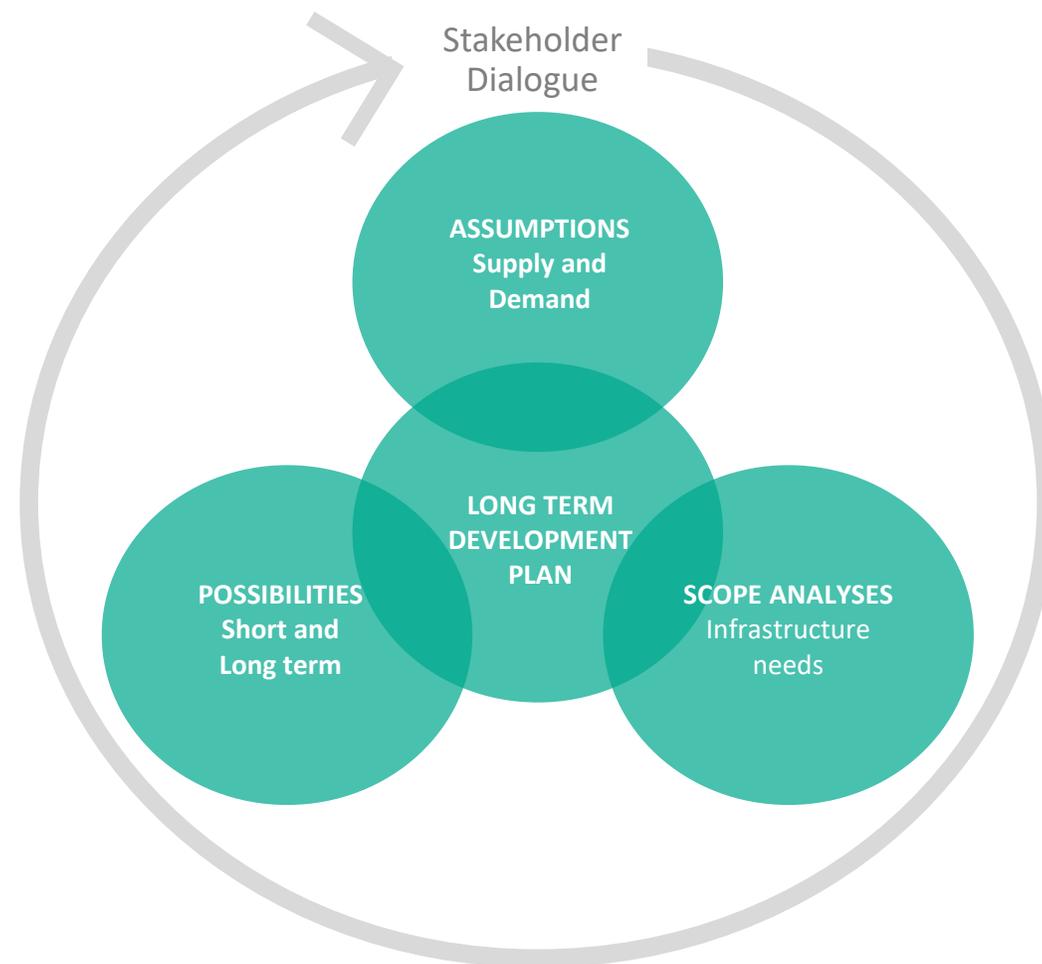


In 2021 we had **65% REN power** and **25% green gas**.
By 2030, we have 100% REN power
and can by 2035 have 100% REN gas.



DANISH ENERGY/IT INFRASTRUCTURE

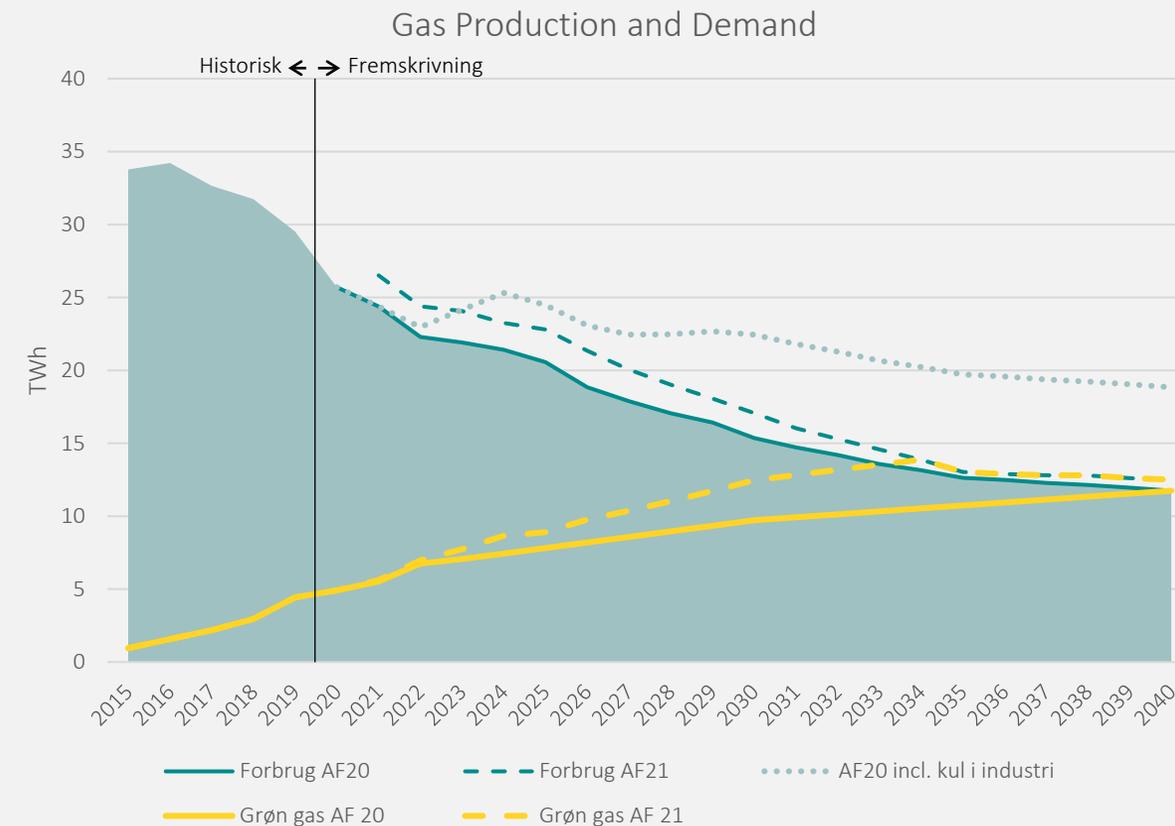
- Longterm development trends
- Stakeholder dialogue (DK, EU, World)
- Prepare projects
- Impact all of Energinet

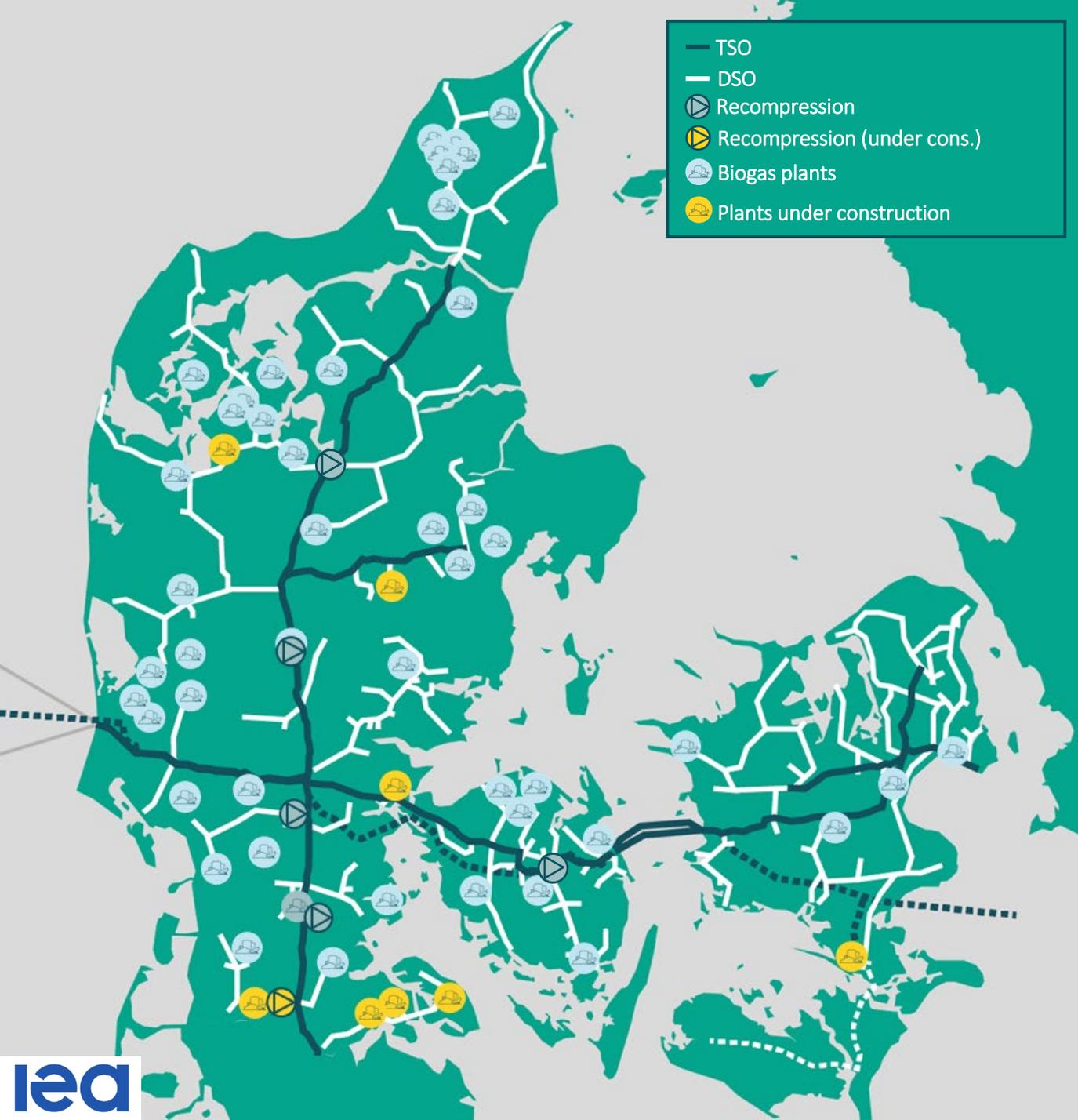


GAS SYSTEM CHANGES

Central Planning Assumptions

- Demand decrease
- Green gasses increase
- Industries on coal converts to gas





GAS SYSTEM 2021

Accelerated green transition

- Biomethane at 25%
- 51 biogas plants in operation
- several under construction
- 4 Recompression units operate
- one under construction
- 1 biogas plant connected to TSO

Uncertainty on where the next plants is constructed

BALANCING BIOGAS AND DEMAND

Surplus of biogas calculated from production and demand – hour by hour – year by year – location by location

Compared to gas system location and DSO possibilities for receiving

Several options assessed: DSO enlarge, DSO-DSO, DSO-TSO, biogas-area, ...

We expect several surplus-areas by 2025



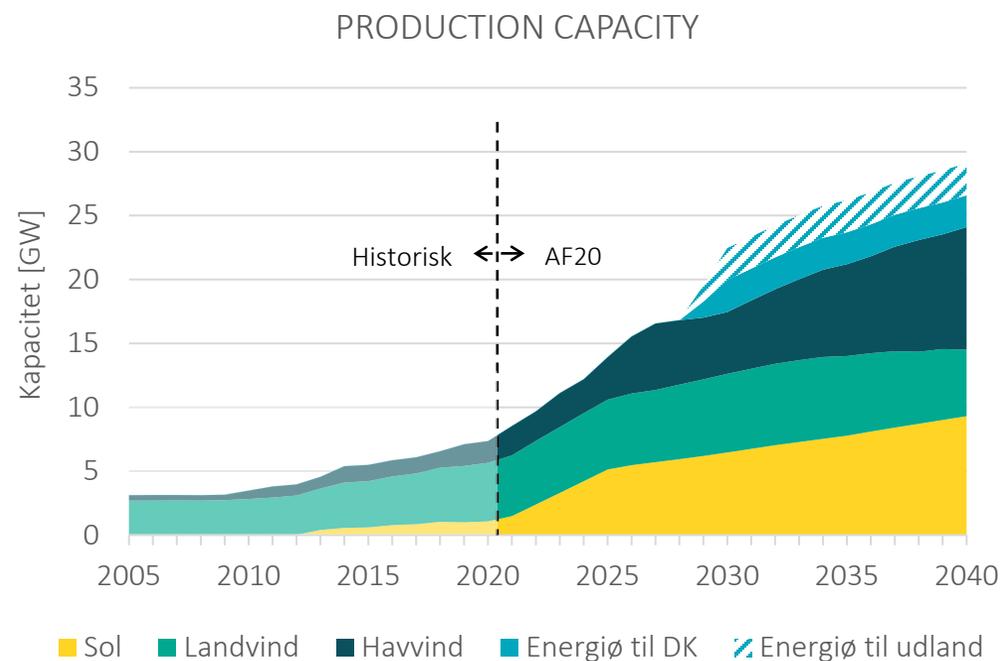
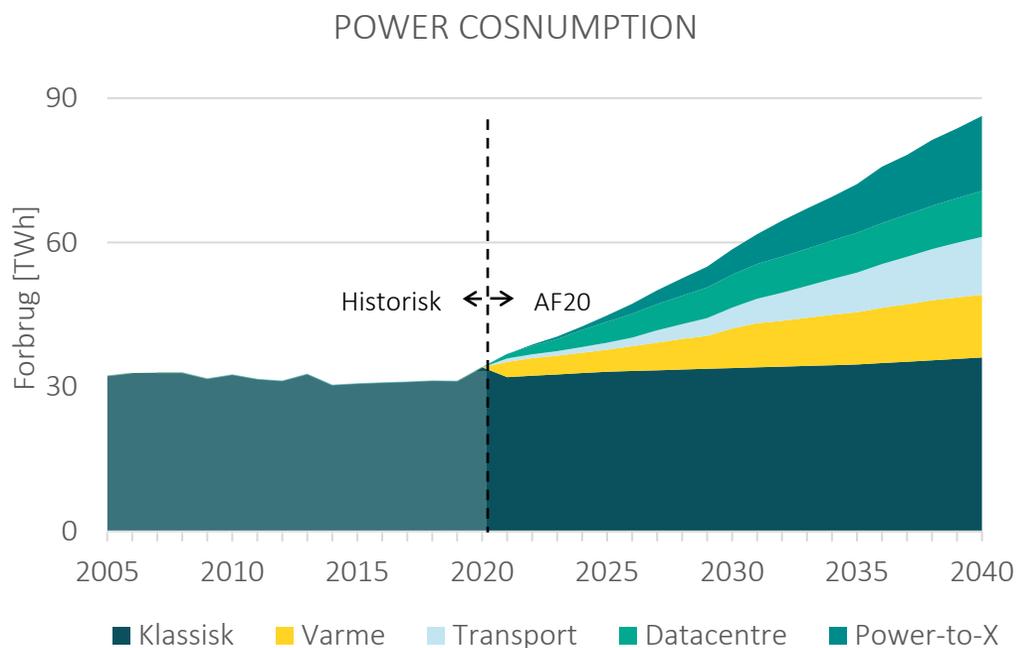
GAS QUALITY O2

Biogas in TSO/DSO allowed more O₂ than in neighbouring countries

- Increase of biogas in TSO challenges existing quality limits (and cross-border trading)
- Existing operational agreements is OK
- But we need new limits / possibilities in the future
- Special focus on start/stop of Baltic Pipe



HUGE INCREASE IN ELECTRICITY PRODUCTION

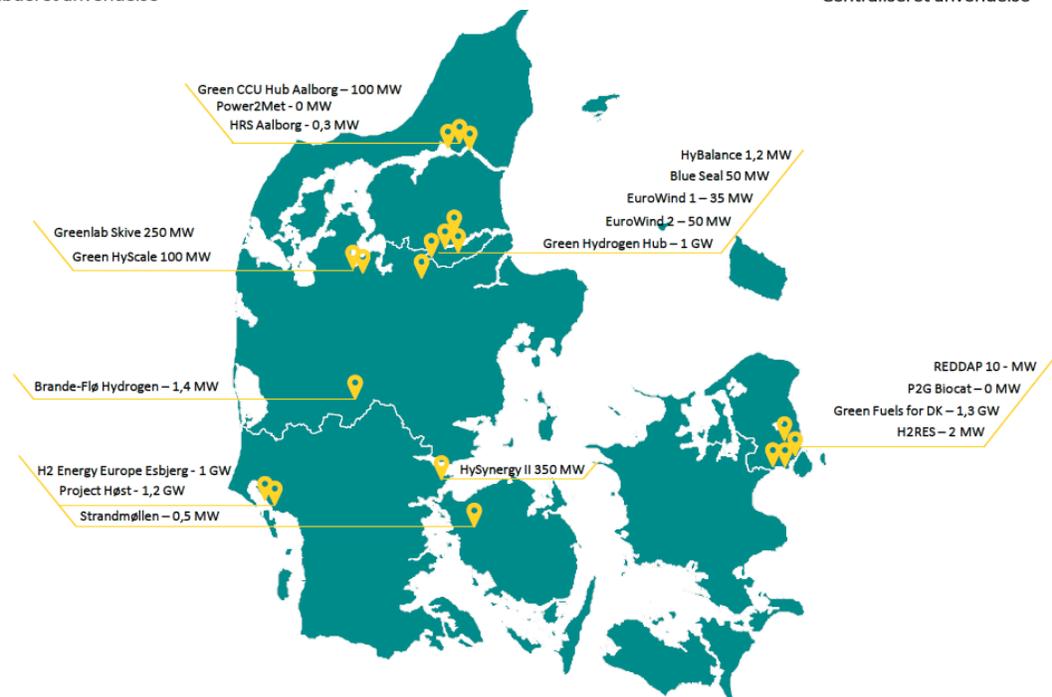
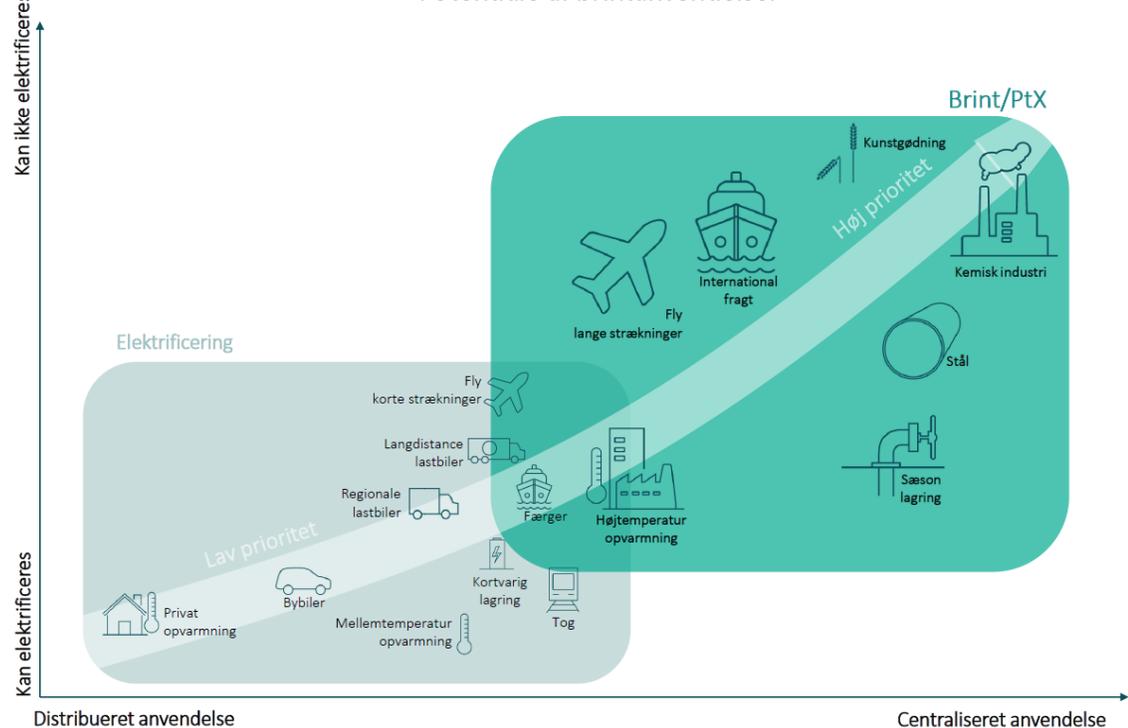


<https://energinet.dk/Om-publikationer/Publikationer/Langsigtede-udviklingsplaner-gas-systemet-2021>

POWER - MOLECULES

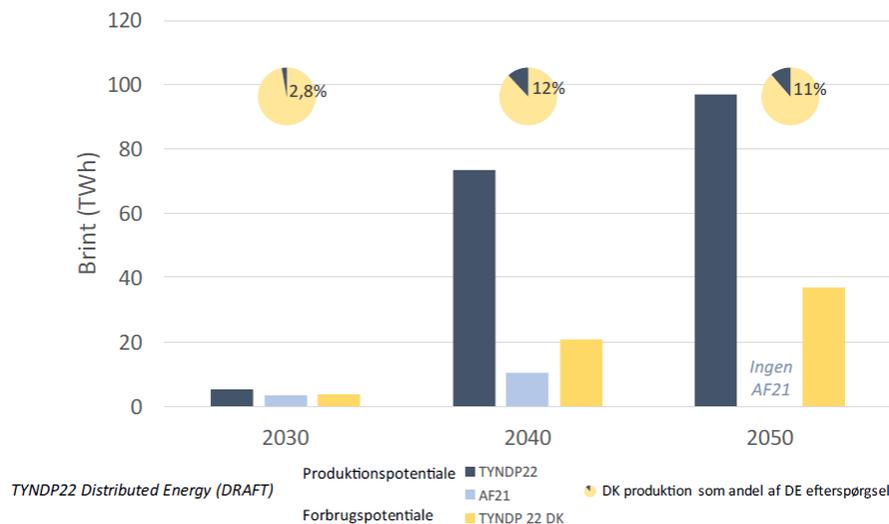
Hydrogen will play a major role in Denmark

- Offshore wind
- Energy Islands
- PtX / H2 projects
- E-fuels
- Clusters, and
- Backbone
- Export?



HYDROGEN MIGHT ACCELERATE

H2

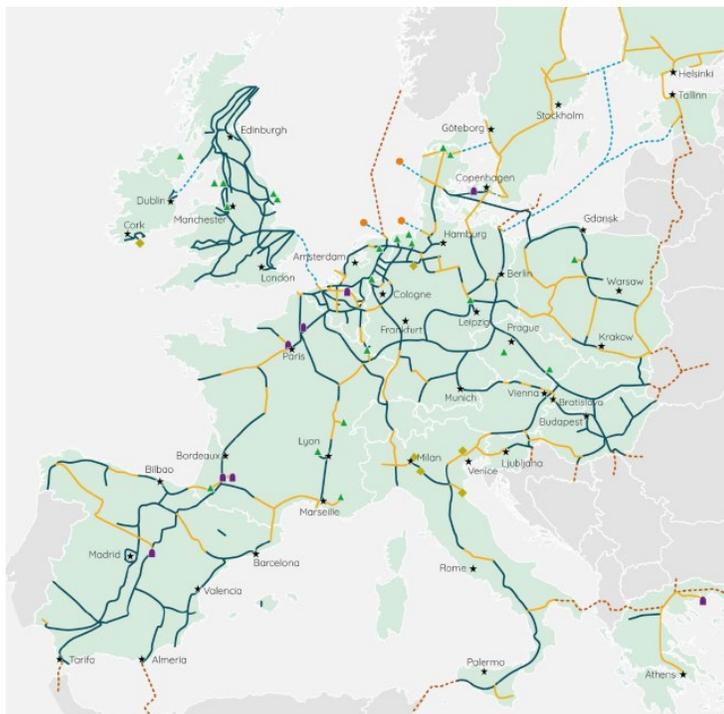


TYNDP22 Distributed Energy (DRAFT)

Location Location Location
 Optimise with electricity and gas systems,
 heat demand, gas consumption / export, etc.

<https://en.energinet.dk/Gas/Gas-news/2021/04/27/GUD-rapport>

PART OF EU VISION



<https://gasforclimate2050.eu/ehb/>

REPOWEREU TO CUT OUR DEPENDENCE ON RUSSIAN GAS



More rooftop solar panels, heat pumps and energy savings to reduce our dependence on fossil fuels, making our homes and buildings more energy efficient.



Decarbonising Industry by accelerating the switch to electrification and renewable hydrogen and enhancing our low-carbon manufacturing capabilities.



Speeding up renewables permitting to minimise the time for roll-out of renewable projects and grid infrastructure improvements.



2030 Doubling the EU ambition for biomethane to produce 35 bcm per year by 2030, in particular from agricultural waste and residues.



Diversifying gas supplies and working with international partners to move away from Russian gas, and investing in the necessary infrastructure.



A Hydrogen Accelerator to develop infrastructure, storage facilities and ports, and replace demand for Russian gas with additional 10 mt of imported renewable hydrogen from diverse sources and additional 5 mt of domestic renewable hydrogen.



https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511



THANKS FOR YOUR
ATTENTION

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