DENMARK: GREEN TRANSITION WITH GREEN GAS GRIDS

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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

ASSUMPTIONS
Supply and Demand

POSSIBILITIES
Long Term Development Plan

SCOPE ANALYSES
Infrastructure needs

Stakeholder Dialogue

Prepare
Budgets
O&M
LongTerm system
Markets
Communication
......
Procurement
Data and digitalisation
Authorities
GAS SYSTEM CHANGES

Central Planning Assumptions

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

Here we likely should invest!
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

POWER CONSUMPTION

PRODUCTION CAPACITY

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

Location

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

PART OF EU VISION

https://gasforclimate2050.eu/ehb/

THANKS FOR YOUR ATTENTION

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