PROMOTION OF SMALL-SCALE CHP IN DENMARK

Workshop:

New market-ready gas utilisation technologies for commercial users

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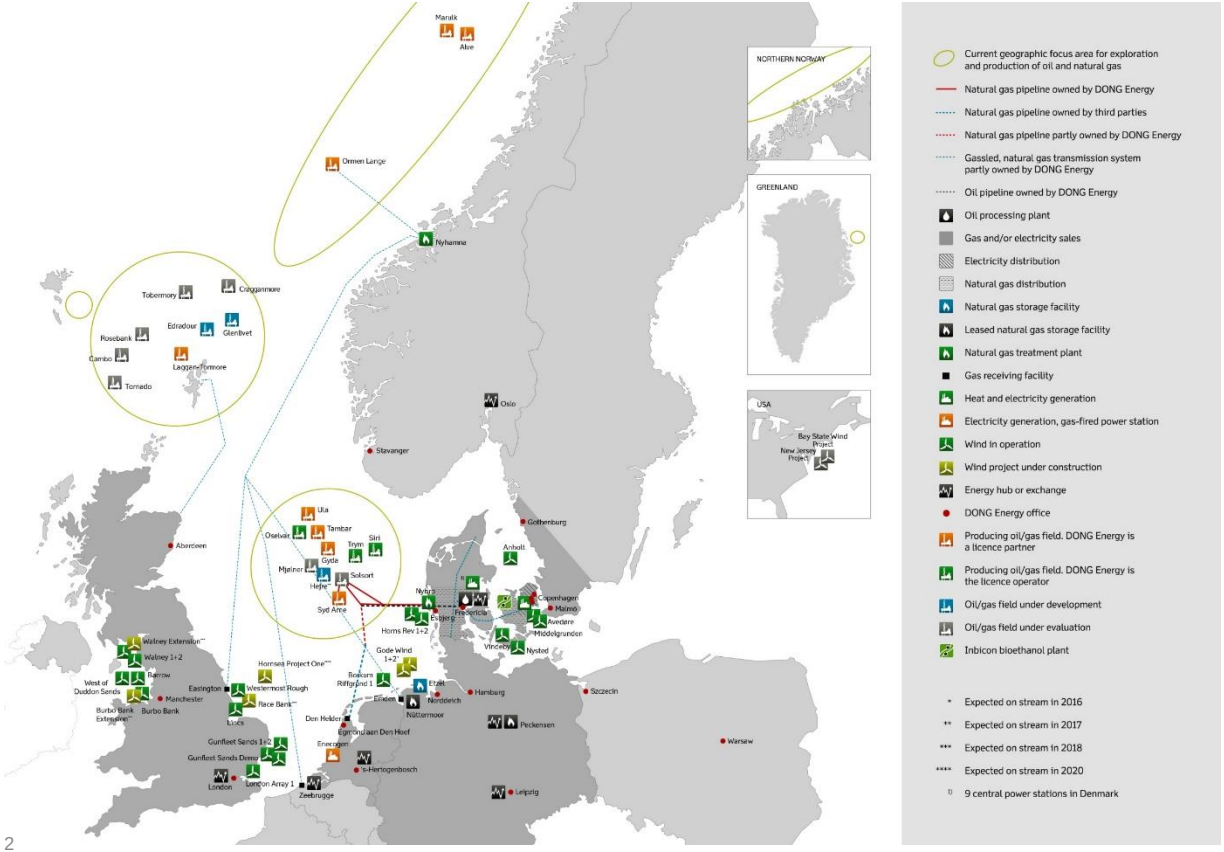
DONG energy

DONG Energy is one of the major energy companies in North Europe – Headquartered in Denmark



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Small-scale combined heat and power production (CHP) can strengthen the market position for natural gas

- Natural gas is facing increased competition from alternative heating solutions to commercial users
  - District heating
  - Electrical heat pumps

- Small scale CHP can offer increased value to (some) customers
  - The value is highly dependent on taxes on purchased power and natural gas
  - Taxation depends on utilisation and business area
  - Local power production is only favourable for own consumption
    - Avoided costs: Power (market) price, distribution, taxes

- Small-scale CHP's create demand side flexibility
  - Optimisation options towards power price variations
  - Potential supplier of regulatory services to grid operator

DONG Energy and EC Power is co-operating to promote small-scale CHP in Denmark

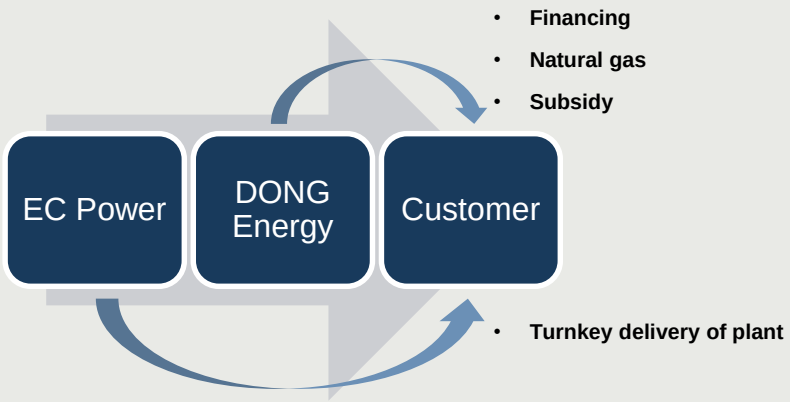
- EC Power is a experienced Danish producer of small-scale CHP plants
  - Established 1995
  - 7000+ sold units
  - Primarily export

- Both EC Power and DONG Energy is promoting the solutions through existing sales organisations

- The systems are designed to produce power only to own consumption
  - Export of produced power to the grid is not favourable

- EC Power is delivering turnkey solutions to the customers
  - CHP unit(s)
  - Heat pumps and gas boilers (if relevant)
  - Installation

- DONG Energy is delivering
  - Natural gas
  - Financing of investment (if needed)
  - Subsidy for realisation of energy savings (if relevant)



Subsidies for energy savings is a driver for CHP projects

- All energy companies in Denmark are obliged to promote energy savings
- In order to meet our targets for realised savings, DONG Energy is paying a subsidy to customers energy savings projects
- CHP projects can result in energy reductions, if:
  - The CHP unit replaces an old/inefficient boiler
  - It is combined with electrical heat pumps
- Electrical heat pumps create or increase a power consumption that is highly taxed (because it is used for heating purposes)
  - This increases the value of the power production from small-scale CHPs

The results of the campaign is still limited

- 5-10 realised projects
  - Primarily oil-to-LPG and oil-to-NG conversions

- A pipeline of interesting gas-to-gas projects is being processed

- Long decision process due to:
  - Higher complexity and investments than boiler-to-boiler conversion
  - Uncertainty due to political signals that natural gas shall be phased out for heating purposes
  - Investigation of alternative heating solutions

- Barriers:
  - Low power prices
  - No subsidies
  - Tender processes for public customers
    - Benefits more simple solutions (business as usual)