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CEO

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Assens Fjernvarme

About Assens Fjernvarme

- Cooperative established in 1960
- Non-profit, i.e. profit and loss is transferred to the heatprice of the coming year
- +4.300 district heat customers (“Shareholders”)
- Of totally ~350 district heat companies, we offer some of the lowest heatprice in Denmark

~1.665€ budget 2026 standard house

(Standard house 125m2; 13,4 MWh/year)

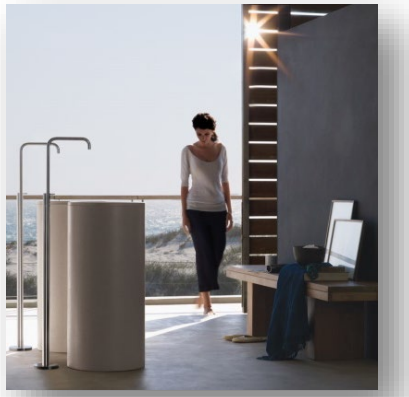
About Assens Fjernvarme

- 100% CO_2 neutral since 1988 due to biomass, heatpump, solar- and windpower
- One of Denmark's first combined heat & power plants based on biomass
    - Certified woodchips are sourced locally within a radius of 50 km
- 7,8MW Heatpump
- 6,2MWp Photo Voltaic park
- 1,3MW Windturbine
- Heat-production 120.000 MWh
- Power-generation 36.000 MWh

Sustainability

Assens Fjernvarme production is equivalent to:

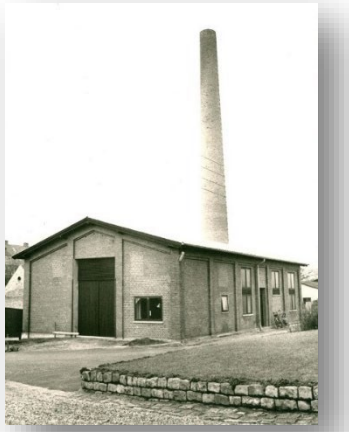
+4.300 Households with CO_2 neutral district heating



+4.300 Households with CO_2 neutral electricity

+4.300 Electric cars with CO_2 neutral electricity to drive 15.000 km/year

Drivers in the Danish DH sector



1960-1985

ESTABLISHMENT.

- Comfort
- Technology
- Economy

1985-2010

DEVELOPMENT.

- Environmental policy
- Energy policy
- Technology
- Combined heat and power
- Decentralization

2010-2035

CONSOLIDATION.

- Large-scale operation
- Environmental policy
- Climate policy
- Energy policy
- Sustainable Energy paradigm shift
- Bilateral security of supply

From 2021 (& 2025) – …….

- Energy policy = Geo- and safetypolitics
- Ability to national self supply

Paradigmshift in the powermarket

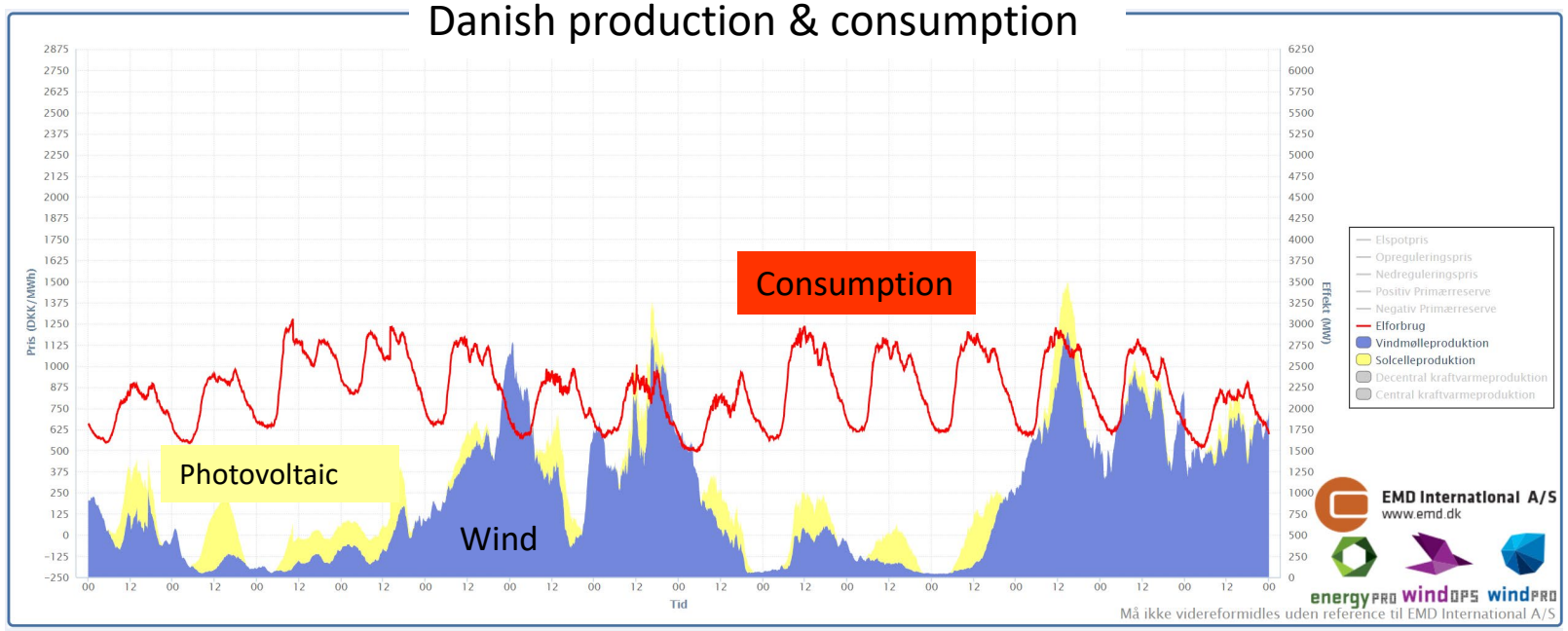
Danish photovoltaic- and wind plants produces power equal to +50% of the market demand.

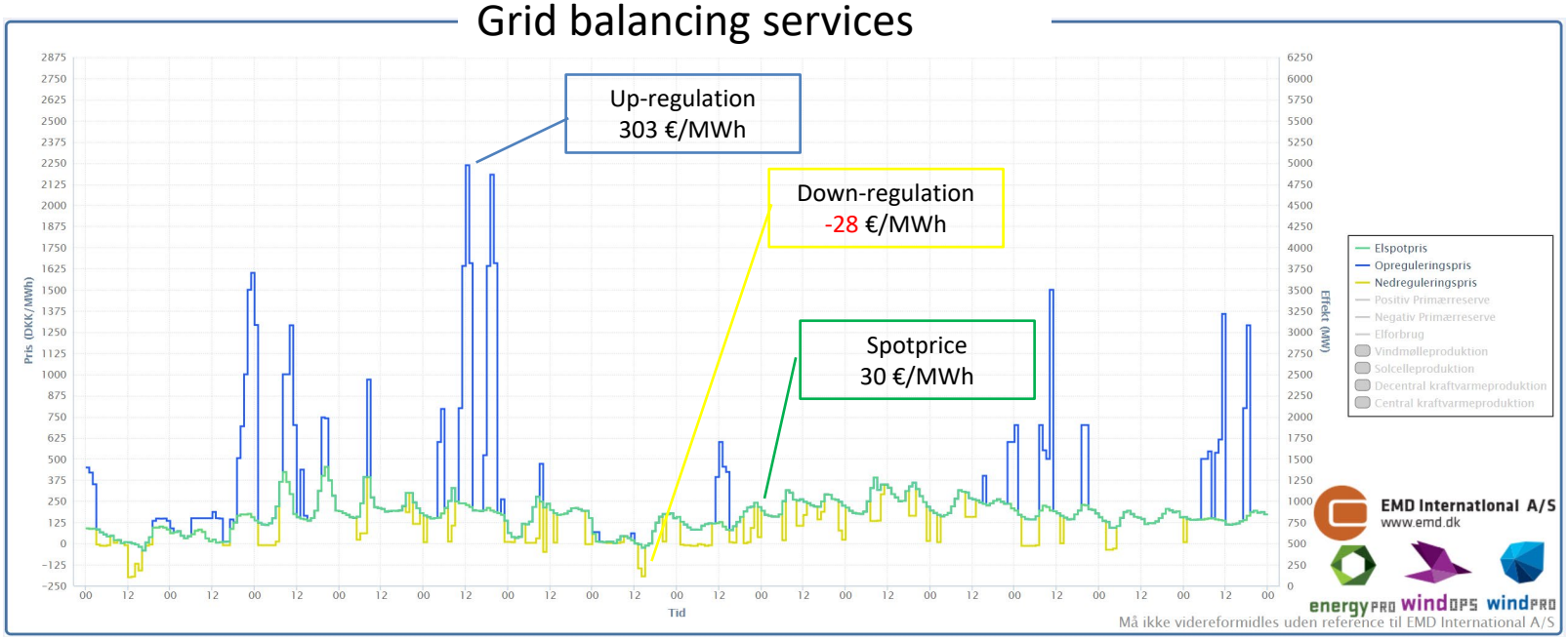
That's a doubling in 10 years.

The development in sustainable production causes very big fluctuations in the market.

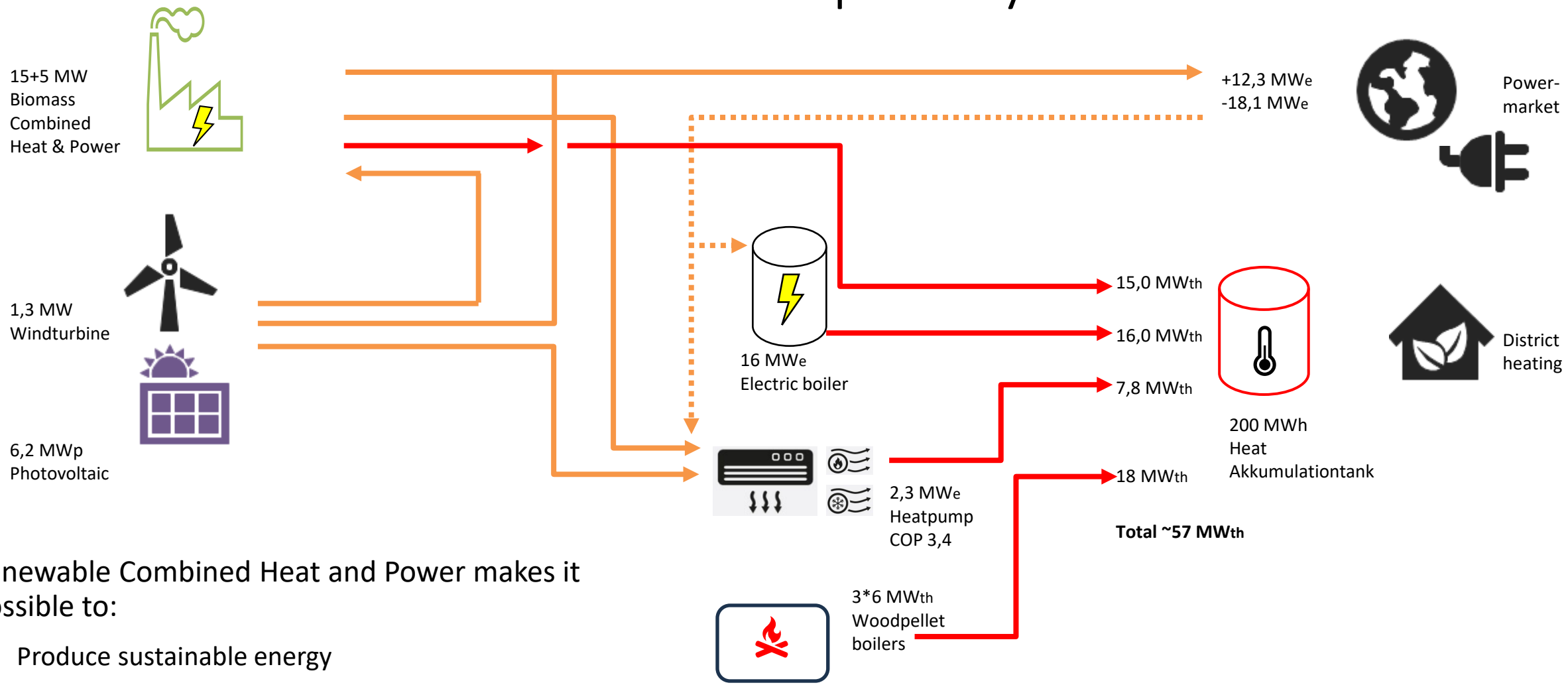
There’s a need for:

- High flexibility in consumption
- High flexibility in production (thermic whereas there is neither wind or sun)
- Avoid over- and underproduction (market balancing)





A sector-coupled system



Renewable Combined Heat and Power makes it possible to:

- Produce sustainable energy
- Sell sustainable power when the price is high-level
- Purchase sustainable power when the price is low-level
- Use own power to gain efficiency when the price is mid-level

A complex system requires complex planning

A seven-day forecast software dynamically optimizes the optimal production based on the following forecasts:

- Spot price
- Outdoor temperature
- Heat requirement
- Wind
- Sun

The software controls and regulates production independently, including up and down regulation in relation to the power balance market

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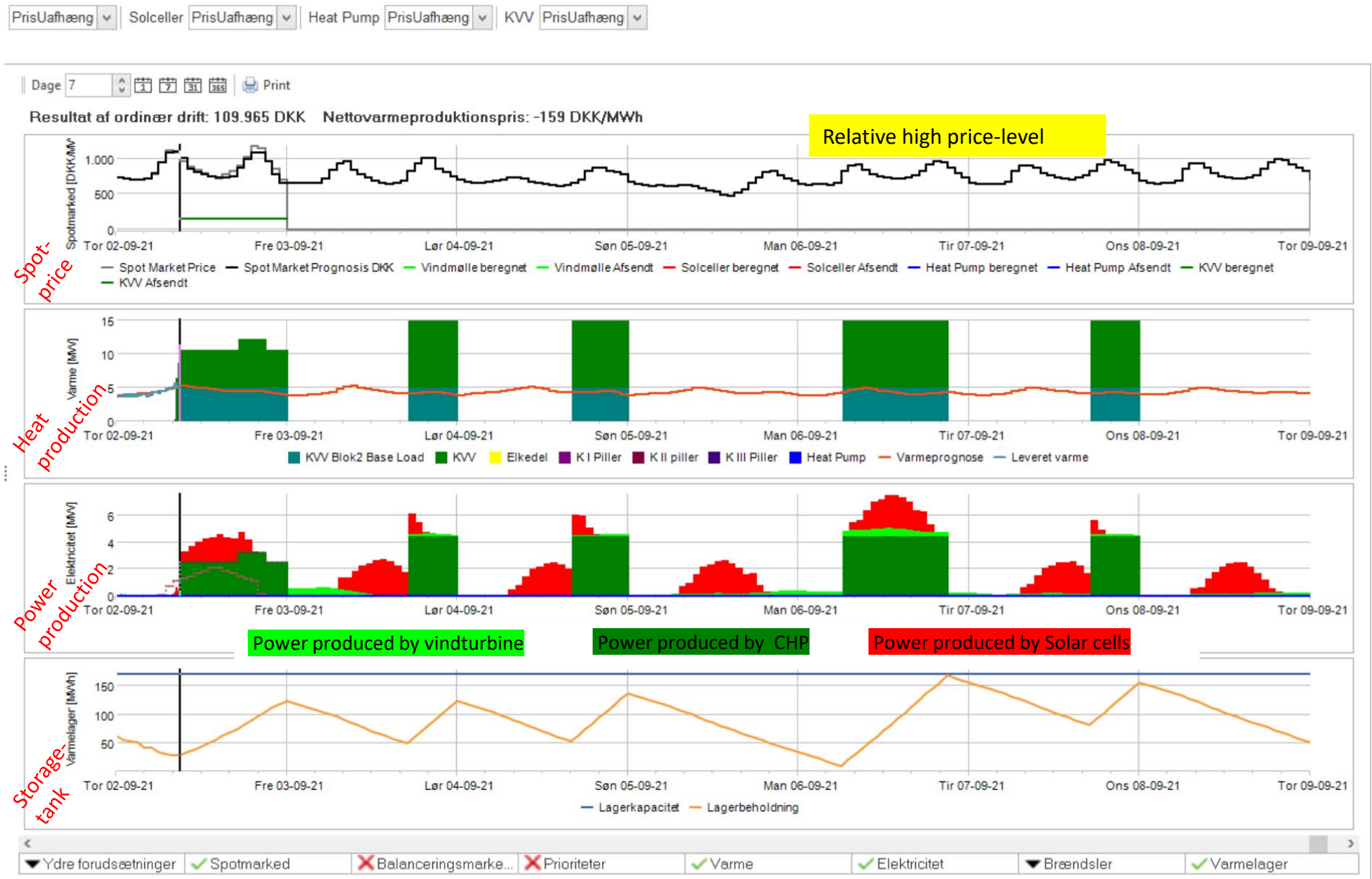

Recommendations and experience

More wind and solar power means fluctuating electricity prices.

- District heating companies can benefit from low electricity prices by using:
  - Electric boilers
  - Large heat pumps
- District heating companies can benefit from high electricity prices by using:
  - Photovoltaic parks
  - Windturbines
- Heat storage tanks are essential:
  - Store heat when electricity is cheap
  - Use the heat later when needed
  - Increase flexibility and reduce costs
- CHP plants remain important:
  - Produce power and heat when there is little wind or sun
  - Support security of supply
  - Produce electricity at high electricity prices
- Direct connections between renewable power plants and district heating facilities can:
  - Lower energy costs
  - Reduce grid dependence
  - Improve overall efficiency
- Future investments should focus on:
  - Heat pumps
  - Electric boilers
  - Heat storage tanks
  - Flexible CHP operation
- District heating companies have a strong opportunity to become key players in the green energy transition while keeping heat reliable and affordable.

Thanks for listening