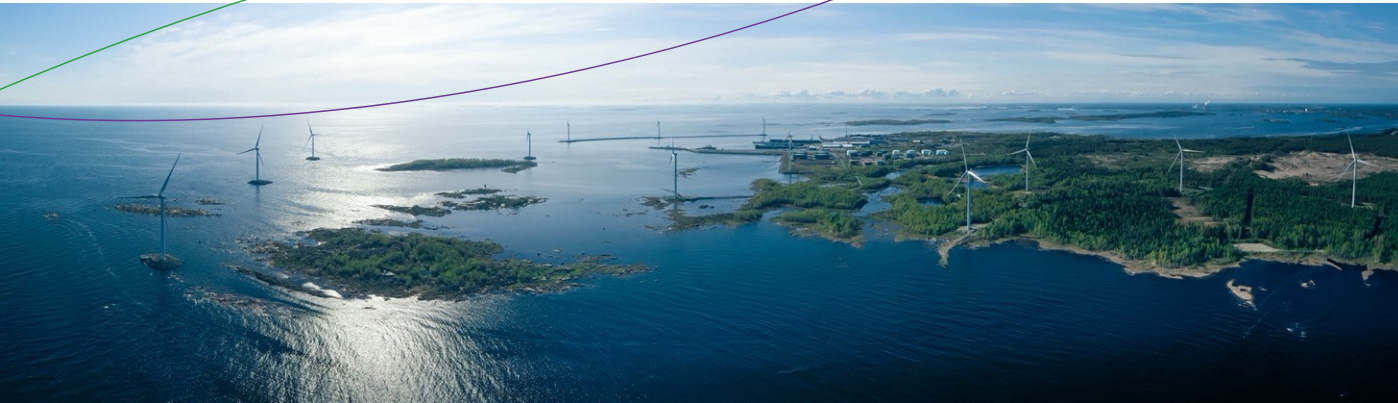
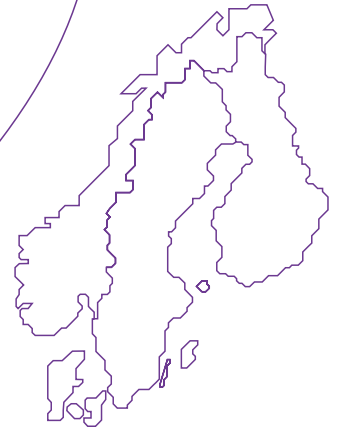


Key elements in a well-functioning future Nordic Market

NordREG November 23rd 2023

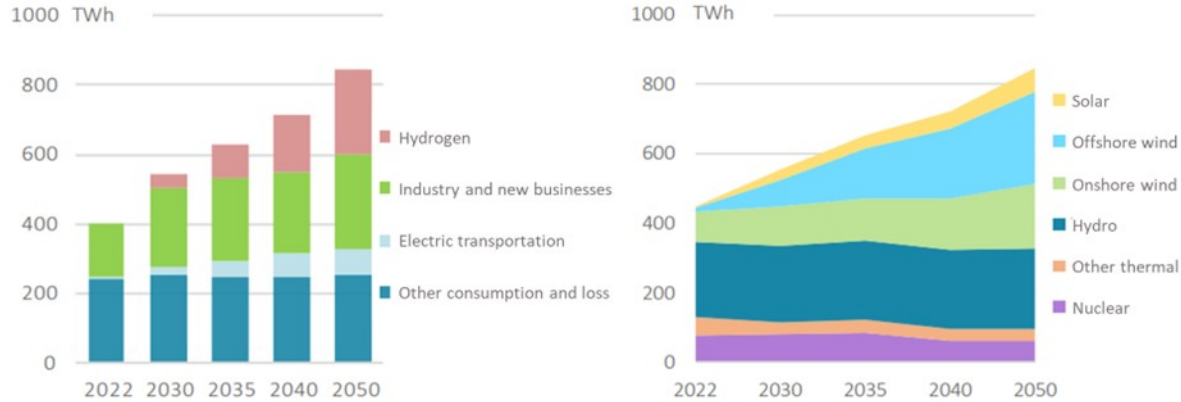
Halvor Bakke, Statnett



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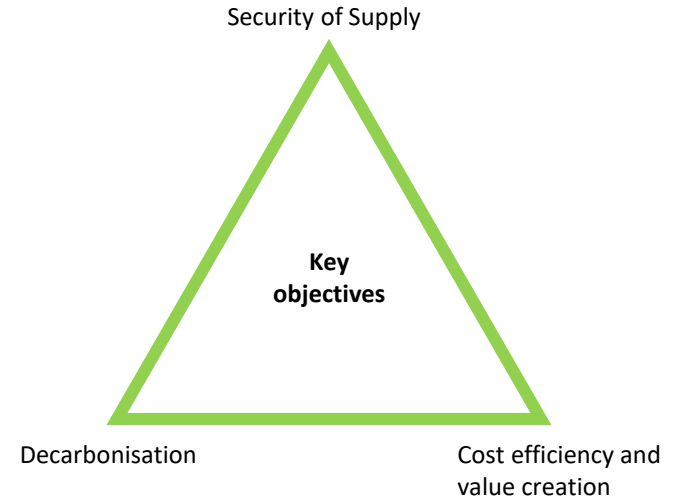
The Nordic power system is changing rapidly



Changes in the Nordic consumption and production towards 2050, Source: Statnett

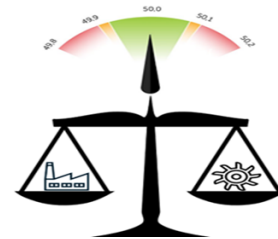
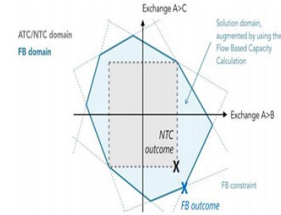
The market is not a goal, but a mean to achieve different objectives

- How we design the market is crucial for what the market will deliver
- The market can deliver on key objectives if designed properly



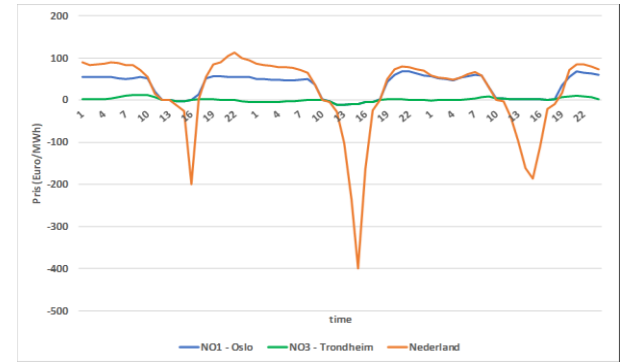
Two projects to underpin an efficient market are under implementation in the Nordics

- **Flowbased market coupling:** Will give a more detailed estimation of the flows and enable a better utilisation of the grid
- **The Nordic Balancing Model:** Will deliver an automatization of the system operation



More demand side response is needed

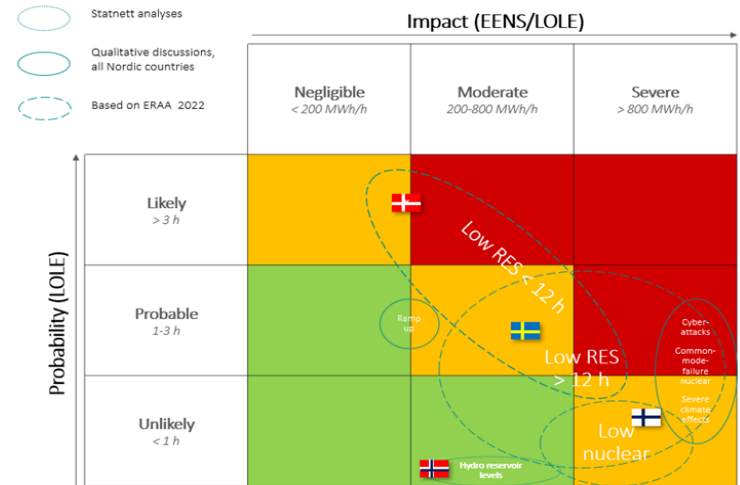
- Demand should adapt better to changes in supply
- It is important that consumers are exposed to price signals
- The interaction between flexibility on the supply- and demand side and storage is a key
- Fixed price contracts should not remove incentives for flexibility



Power prices in Norway and the Netherlands
27-29th May 2023

Decarbonisation gives adequacy concerns

- The Nordic TSOs have made a pre-study on adequacy based on the ERAA* for 2022 and input from experts
- The overall adequacy risks are expected to increase in the Nordic Countries



*European Resource Adequacy Assessment

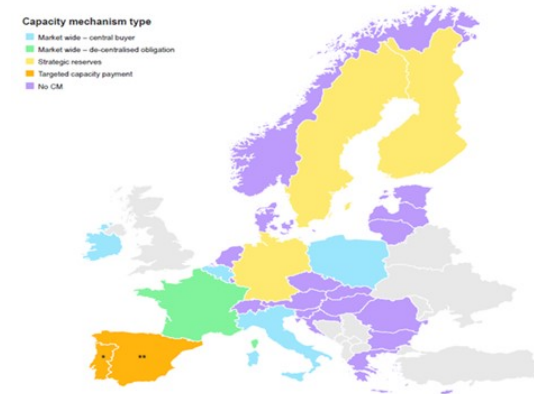
Will an energy-only market give sufficient investments in new capacity?

- In an energy-only market the investment signals for new capacity is given through the electricity price
- Several factors can make it difficult to trust an energy-only market:
 - Low flexibility on the demand side
 - High volatility on the supply side
 - Does the scarcity pricing in today's market reflect the need for new capacity in the future?
 - Risk aversion
- An energy-only market depends on that the market is allowed to work



A market wide capacity market might be needed in one or several Nordic countries

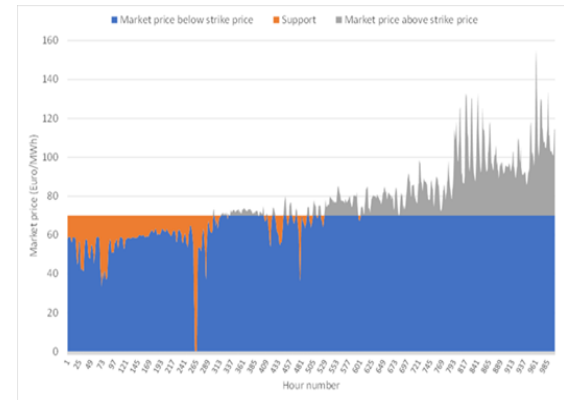
- The need for a capacity mechanism is being discussed in Sweden, Denmark and Finland
- The Nordic TSO's support the ongoing process to reform the framework for capacity mechanisms
- It's also interesting to follow the discussions regarding CfD's for investments in new nuclear and support for hydrogen (Germany)



Source: ACER

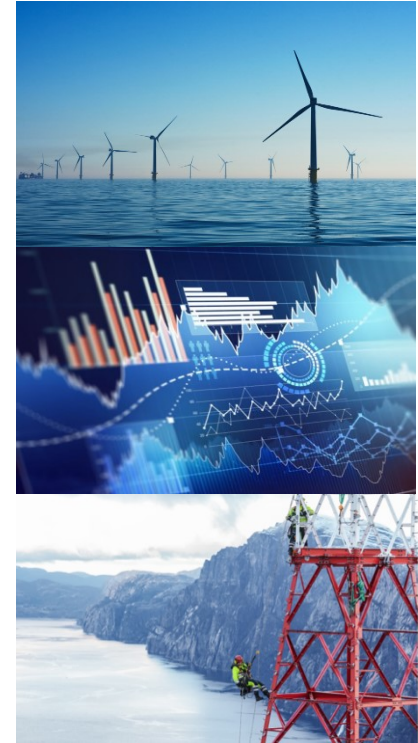
CfD's for wind and solar should give incentives for efficient production in all timeframes

- A two-sided CfD can be an efficient support mechanism for wind and solar when needed
- However, traditional CfD's will not always give correct incentives for efficient production in intraday and balancing timeframes
 - With an increased share of wind in the system, this can be a challenge for system operation
- Capability based CfD's will give correct incentives for efficient production in all timeframes, and should be considered as an option going forward



Conclusions

- An efficient market design is a key for achieving decarbonisation of the power system at a lowest cost possible
- We need more demand side flexibility – important that consumers are exposed to short term price volatility
- It's not given that an energy only market will deliver sufficient investment signals – the reform of the capacity market framework is important
- CfD's should give efficient incentives in all timeframes



Thank you for your attention



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