

Nordic Perspectives - integration of renewable energy in the Nordic countries

*Launch of REPLI
DTU Renewable Energy
Policy, Planning and
Integration Advice Group
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$$f(x+\Delta x) = \sum_{i=0}^{\infty} \frac{(\Delta x)^i}{i!} f^{(i)}(x)$$

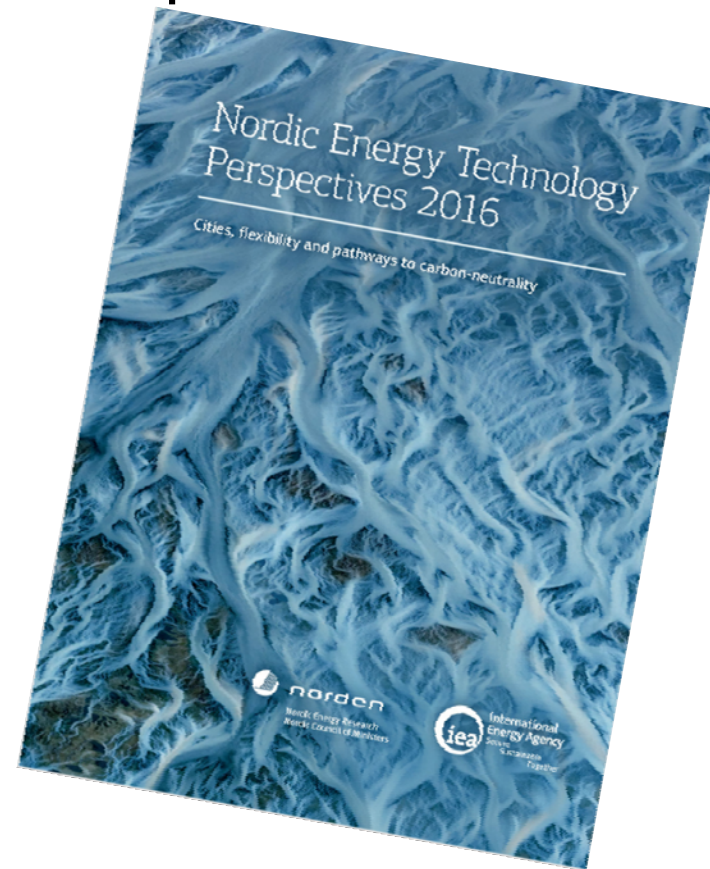
$$\Delta \int_a^b \epsilon \Theta + \Omega \int \delta e^{i\alpha} = \{2.71828182\}$$

$$\chi^2 \Sigma! \gg$$

Nordic Energy Technology Perspectives

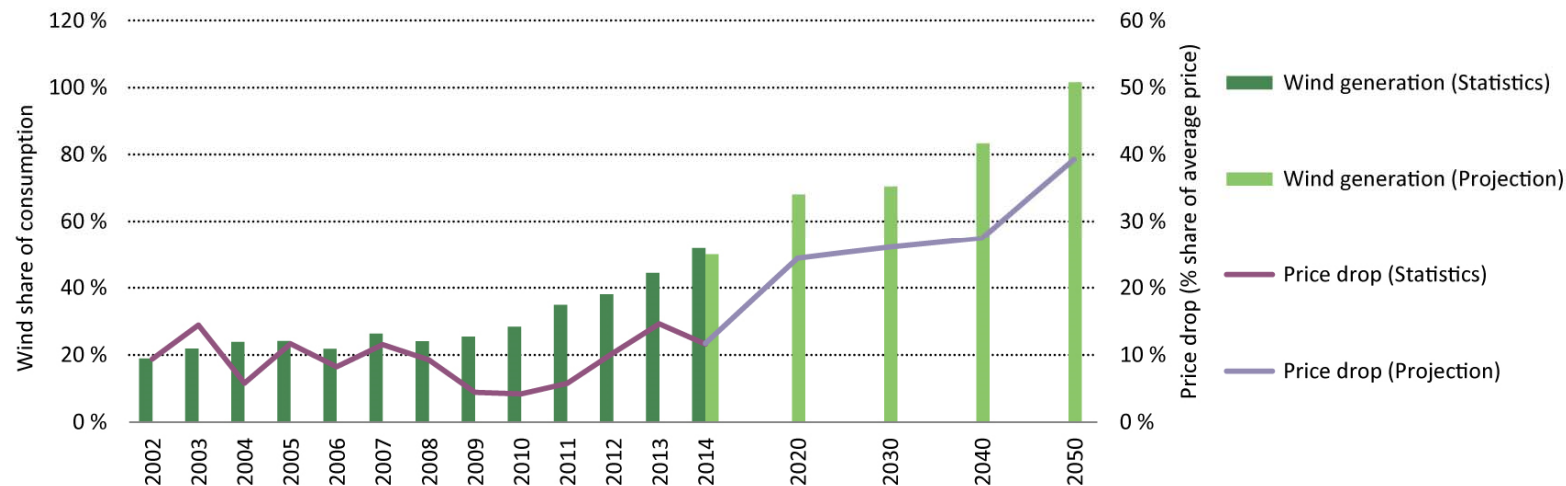


The Nordic ETP is a result of a collaboration between International Energy Agency (IEA), Nordic Energy Research (NER) and researchers and consultants in the Nordic countries.

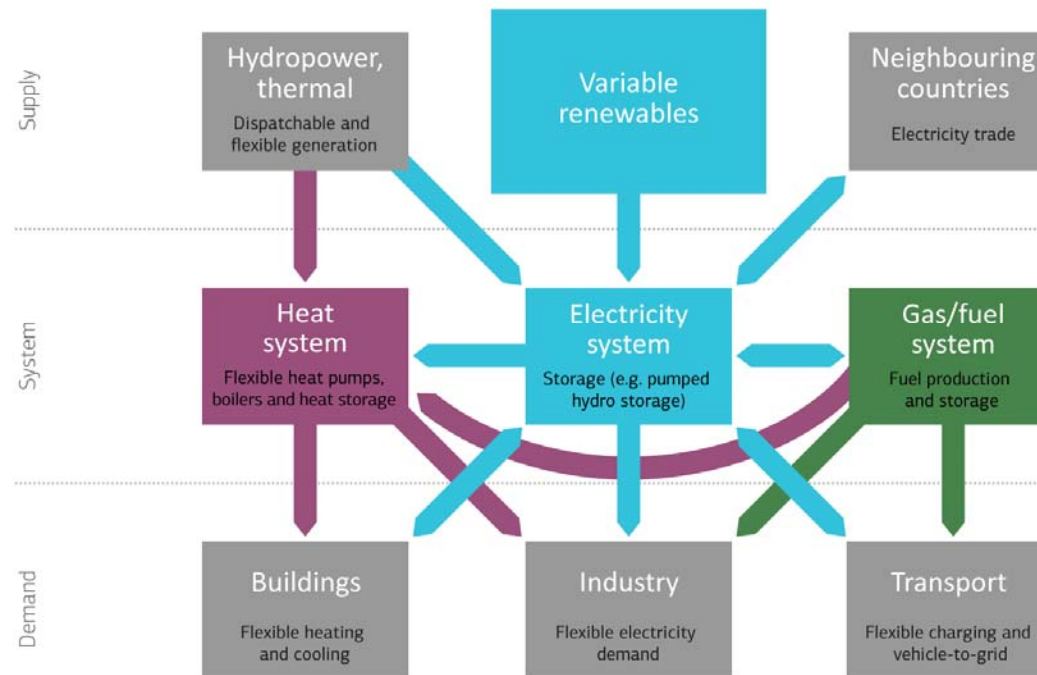


REPLI - DTU Renewable Energy Policy, Planning and Integration Advice Group, www.repli.dtu.dk

Integrating variable renewable energy



Understanding the future integrated energy system



Adequate analytical tools

IEA ETP-TIMES global model

Global model with 28 regions where the Nordic countries are individually represented.
The model framework covers all sectors and all fuels.



Balmore model

Nordic and Northwestern Europe power sector model
with each country individually represented.

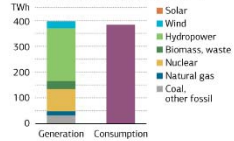


Model interaction

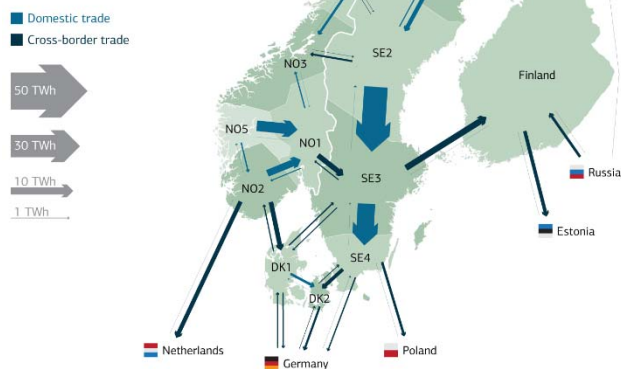


Nordic power system in change

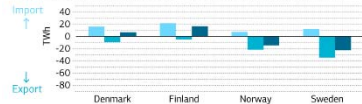
Nordic electricity mix, 2014



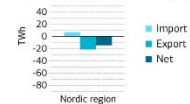
Nordic electricity trade, 2015



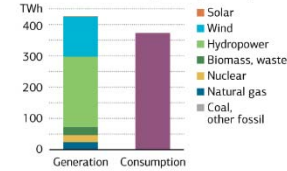
National electricity trade with all partners, 2015



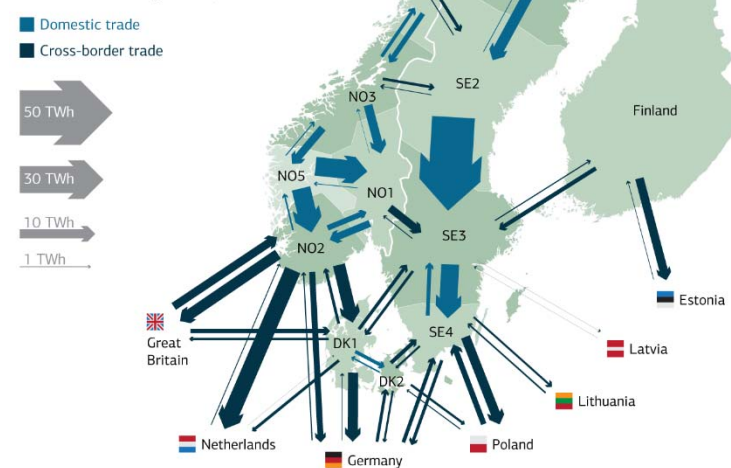
Nordic trade with Europe



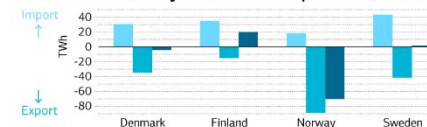
Nordic electricity mix, 2050, CNS-B



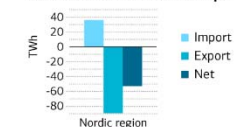
Nordic electricity trade, 2050



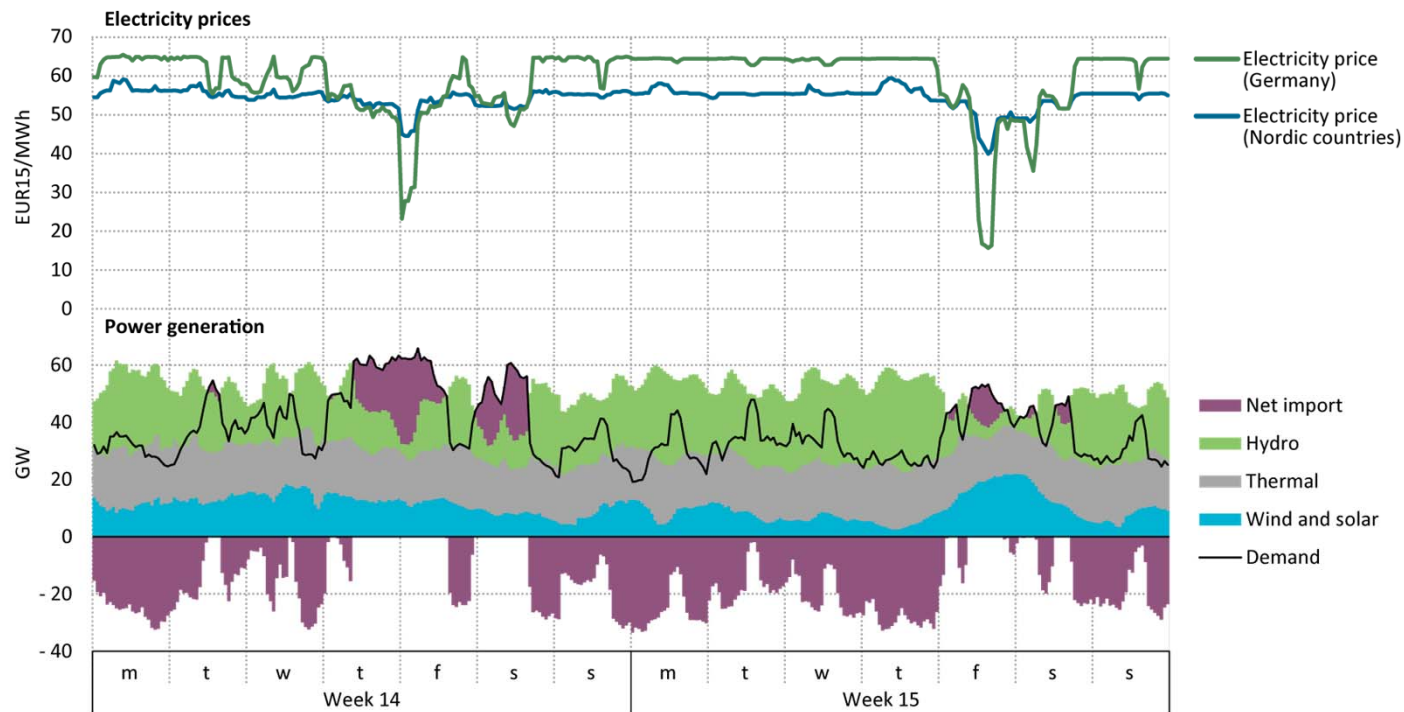
National electricity trade with all partners, 2050



Nordic trade with Europe



Balancing of the Nordic power system



Policy advice



- European and Nordic countries has to develop power infrastructure in a consistent manner to incorporate VRE
- Power prices can be expected to increase from 2030
- Reaching ambitious reduction targets in the Nordic countries will xx mio. DKK cheaper if utilizing the on-shore wind potential
- etc.