

The Norwegian Power System in 2020 and Beyond

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Development Through Hydropower

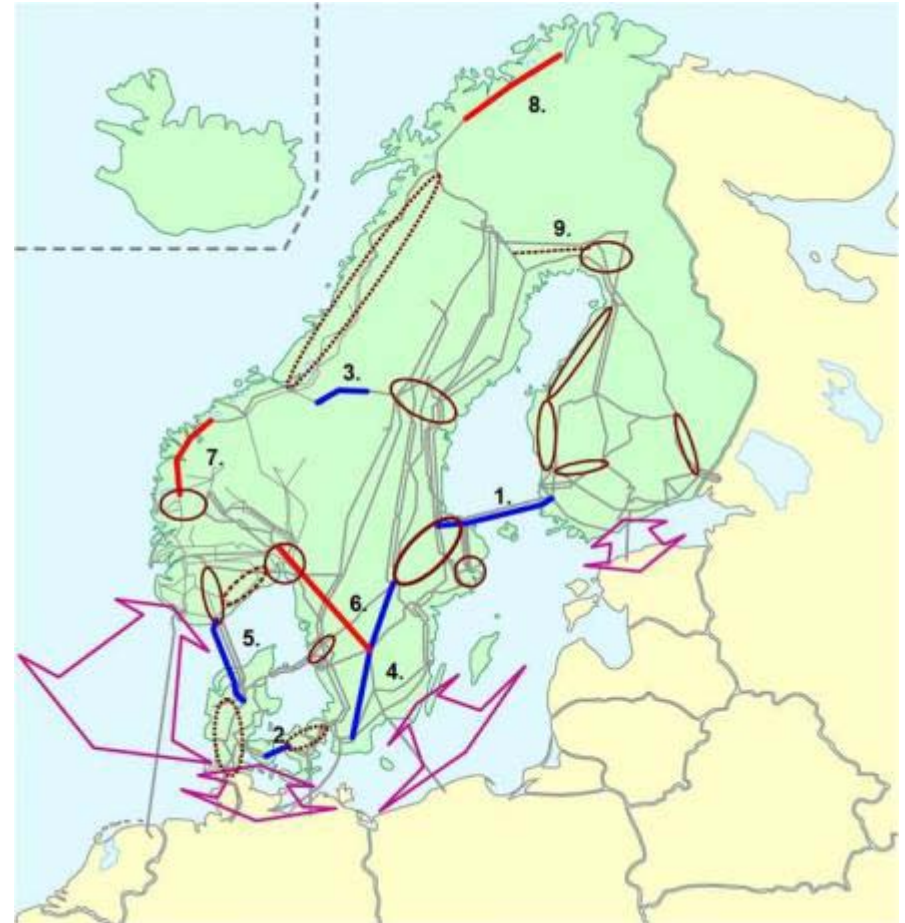
- Norway's history as an energy nation starts with hydropower
- The hydropower industry is more than a century old
- Hydropower has been the foundation for the industrialisation of the country
- Today, Norway is the world's 6th largest producer of hydropower
- Still, virtually all production of electric energy are hydropower production



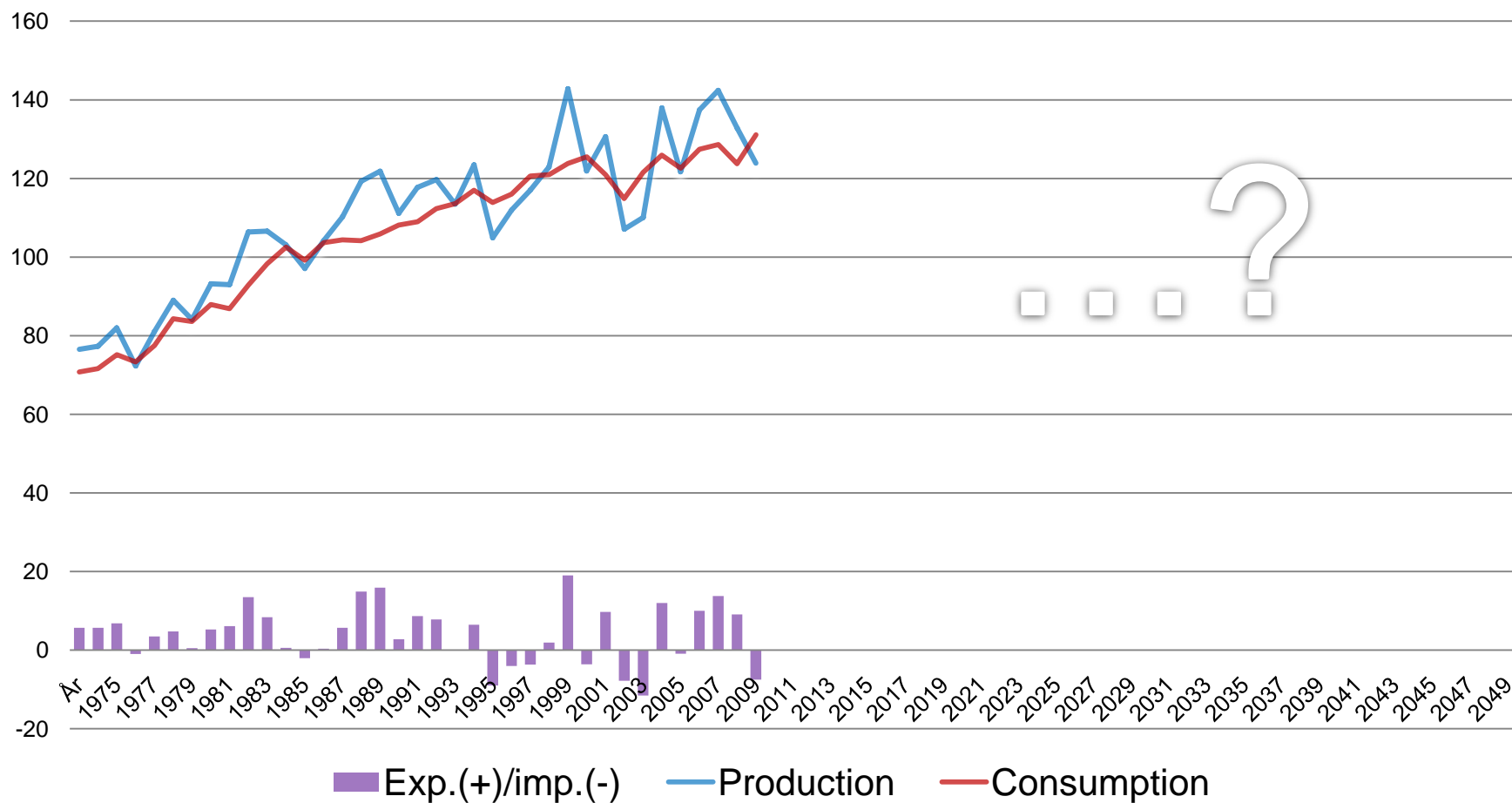
Nedre Leirfoss hydropower station, located in Nedelva in Trondheim, has produced electric power since 1910.

An Integrated Nordic Power Market

- The new Energy act of 1990: Deregulation of the Norwegian power market
- 1996: Common Norwegian-Swedish power market
- 1998: Finland entered the common market
- 2002: Denmark entered the common market
- Today, we have an integrated Nordic market for electric power



The Domestic Power Situation



The RES Directive (2009/28/EC)

- Norway shares the overall EU-ambitions on renewable energy reflected in the directive on promotion of the use of energy from renewable sources.
- The directive sets mandatory national targets on all member states, which sums up to an increase from 8.5 percent to 20 percent share of renewable energy in 2020.
- Norway is in a different situation than the EU countries, with a renewable share in 2005 that was nearly 60 percent.
- The Nordic countries are planning for a large amount of new capacity in renewable energy generation in order to meet the national targets in the RES directive.



The Government's Energy Policy

Main objective:

Security of supply, sustainability and value creation

Main policies:

- More renewable power production
- Infrastructure investments
- Energy efficiency
- New technologies



Green Certificates for Electricity Production

- Common market in Norway and Sweden
 - Start-up: 1 January 2012
- **Target: 26,4 TWh in 2020**
new electricity production in Norway and Sweden combined
 - Norway and Sweden will each buy 13,2 TWh of certificates
- Renewable energy sources
- Technology neutral system



Grid Development



Enova

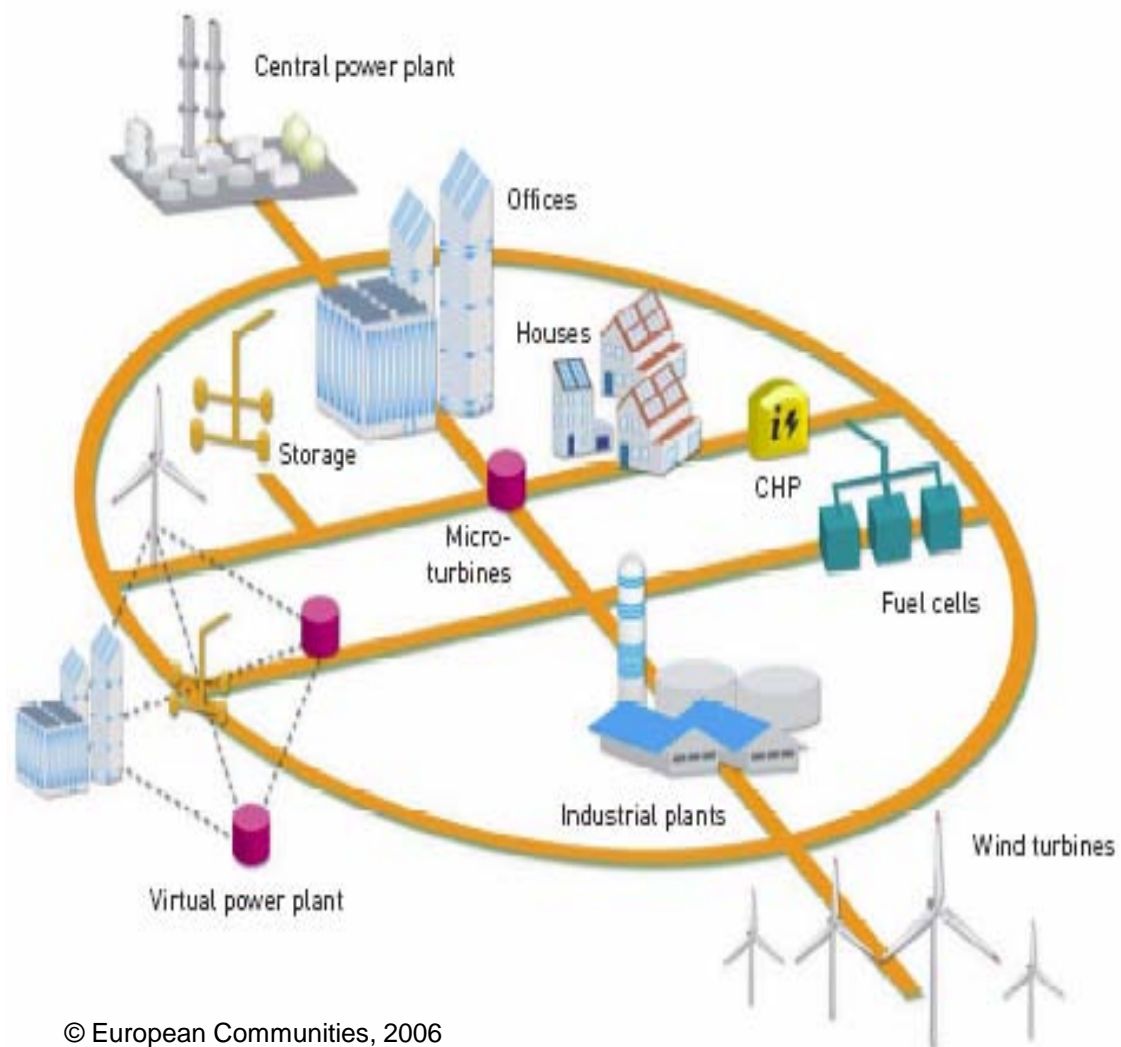
- The objective of Enova is to contribute to an environmentally friendly change in the use and production of energy.
- Enova administer the Energy Fund and implement support schemes
- Priority areas:
 - energy efficiency (in buildings and industry),
 - renewable heat production,
 - renewable electricity production (wind) and
 - demonstration of new technologies.



Smart Meters

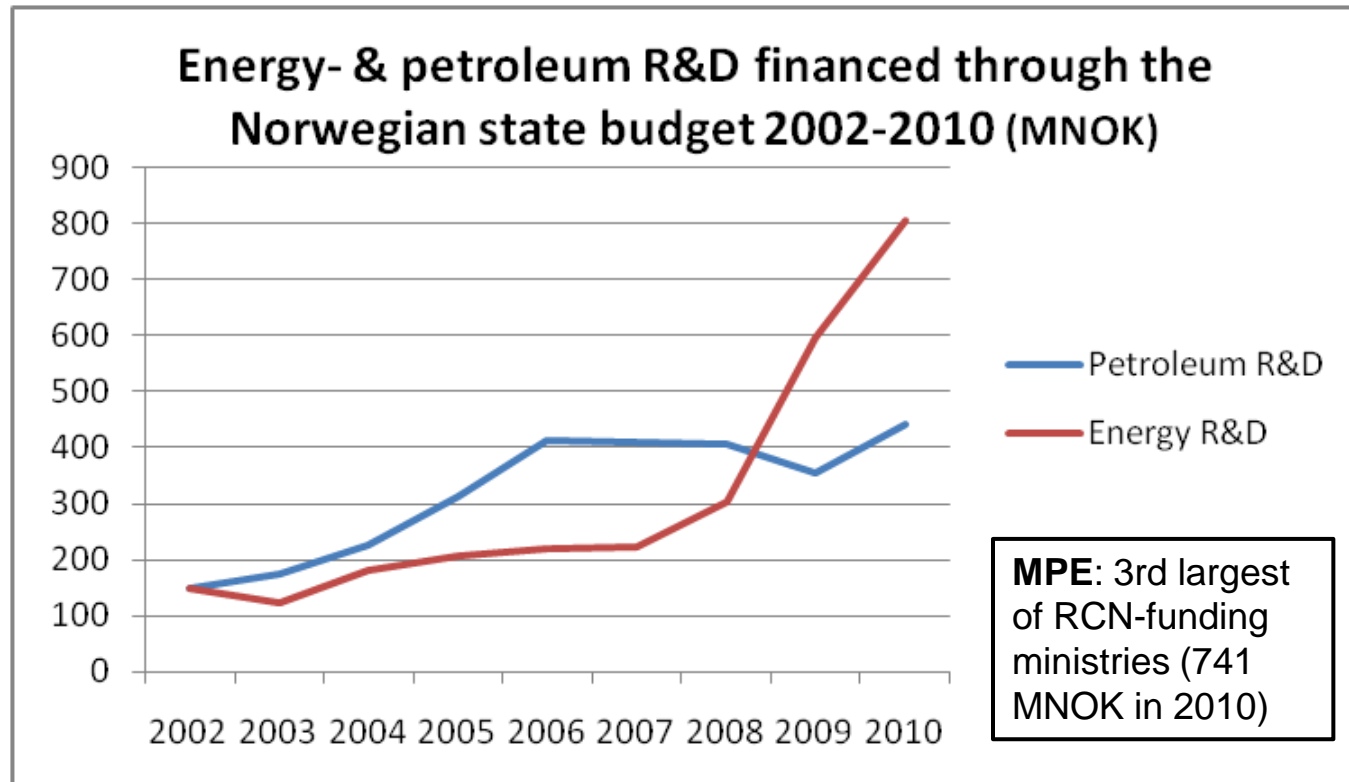
- 80 % of the customers by 1. January 2016
- Many possibilities
 - Increased consumer flexibility
 - Better utilisation of the power grid
 - Better information about actual consumption
 - Etc.
- How to make the most of the opportunities offered by smart meters?

Smart Grids



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Energy R&D in Norway: governmental R&D funding



The Energy Committee

- Will hand in their report the 1st of March 2012.
- Their mandate is to analyse the development of the power balance up to 2030 and 2050.
- Their report will become an important foundation for the work with a white paper on energy.
- The white paper on energy will contain the Government's long-term energy policies.



Thank you for your attention!

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