

Energy market developments in the Nordic countries

Advances in the Regulatory Framework
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Energy Market Authority
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Structure

- Characteristics of the Nordic market today
- Characteristics of the regulatory framework
- Development trends
 - Common Nordic retail market project
 - DA, ID and Balancing, Implicit auctioning
 - BEMIP, REMIT, MiFID and other ingredients in the alphabet soup...
 - Fading Russian imports
- Capacity situation

Characteristics of the Nordic market today



- Common Nordic wholesale market since early 90's
- Dominance of hydro in N and SE, complemented by thermal in FI and DK.
- Emergence of intermittent generation and the opportunities to use hydro for balancing
- Expansion of traditional Nordic model to Baltic's
- Interconnection of Nordic to continent
- Developing a common retail market

Characteristics of the Nordic wholesale market



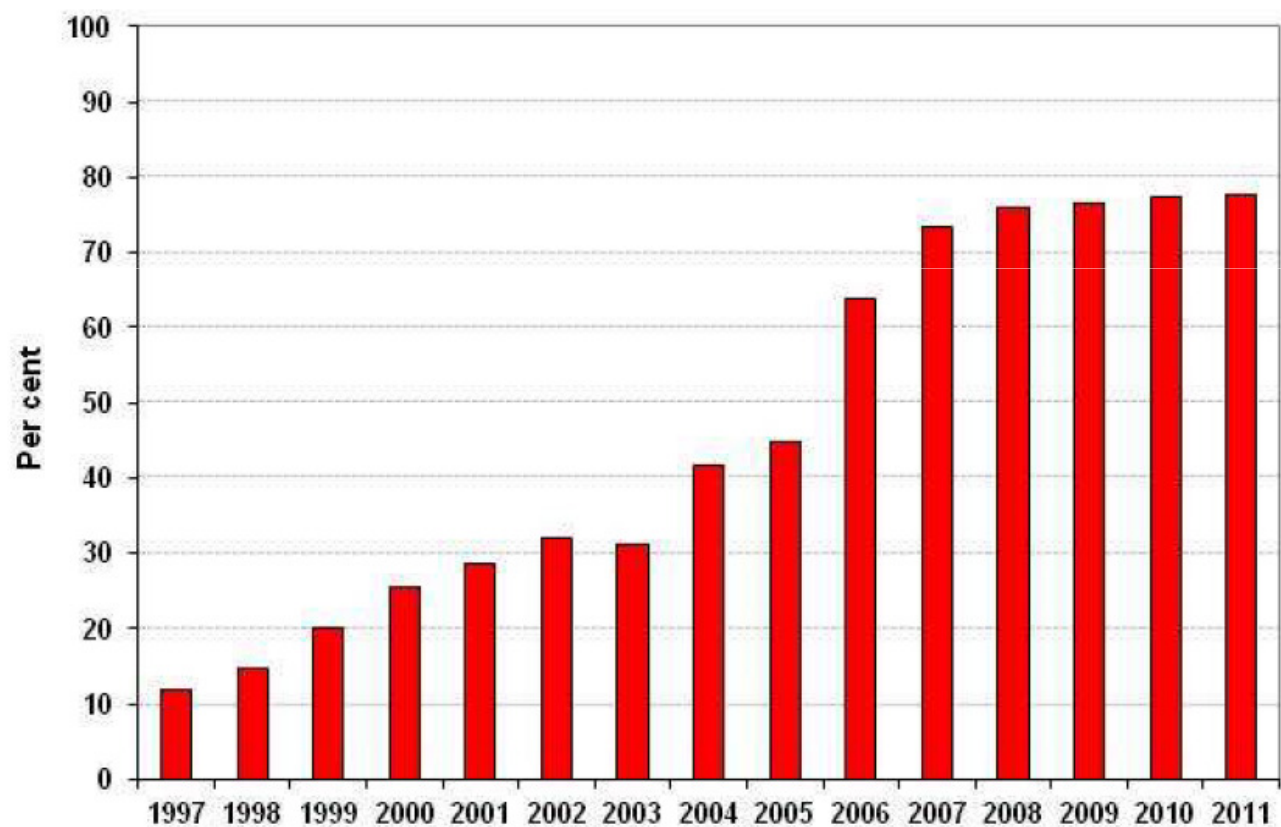
- The Nordic markets are seen by many as an example of a functioning electricity market with competitive prices, low emissions and consumer choice.
- Total Nordic consumption was 379.6 TWh in 2011 - a decrease of 4.4 % compared to 2010.
 - The decrease in demand was mainly due to the weak economic outlook and
 - warm weather that decreased the demand for electric heating.
- The Nordic region has a total of 98.414 MW installed capacity for power generation and the total power generation in the Nordic region in 2011 was 370 TWh
- There was a common Nordic price for 26.2 % of the hours in 2011. By comparison, there was a common Nordic price for 18.6 % of the time in 2010.
- 370 companies from 20 countries trade on Nord Pool Spot's markets. In 2011, 316 terawatt hours (TWh) were traded at Nord Pool Spot.

Nordic Generation capacity (MW) by power source, 2011



	Denmark	Finland	Norway	Sweden	Nordic region
Installed capacity (total)	13 540	16 713	31 714	36 447	98 414
Nuclear power		2 716		9 363	12 079
Other thermal power	9 582	10 651	1 062	7 988	29 283
- Condensing power	1 590	2 155		1 623	5 368
- CHP, district heating	7 118	4 300		3 551	14 969
- CHP, industry	674	3 362		1 240	5 276
- Gas turbines etc.	200	834		1 574	2 608
Hydro power	9	3 149	30 140	16 197	49 495
Wind power	3 949	197	512	2 899	7 557

Share of NPS trading of the physical demand in Nordic area

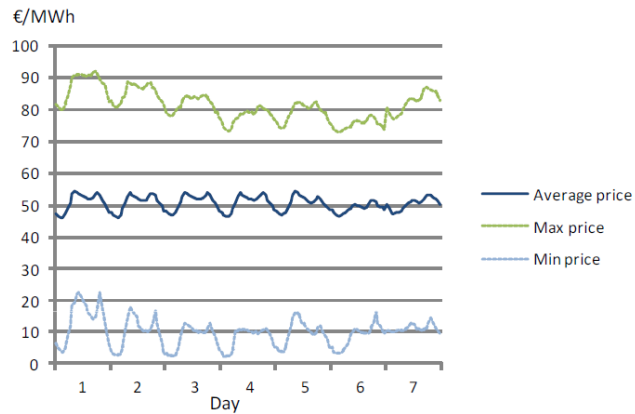


Hourly Prices EEX / NPS in 2011

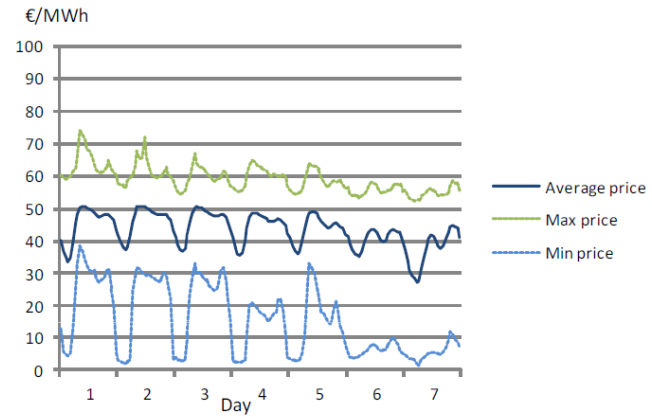


NPS

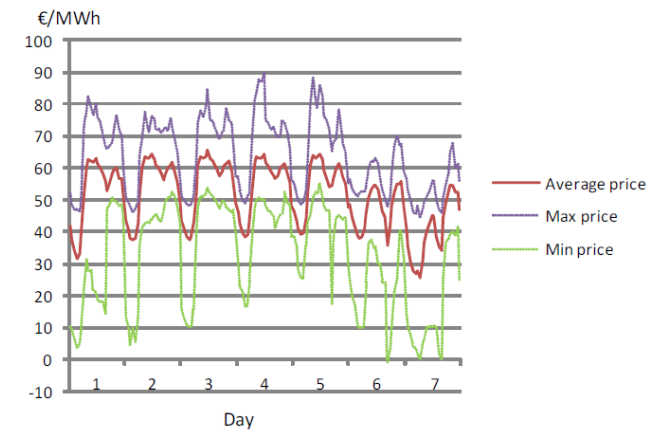
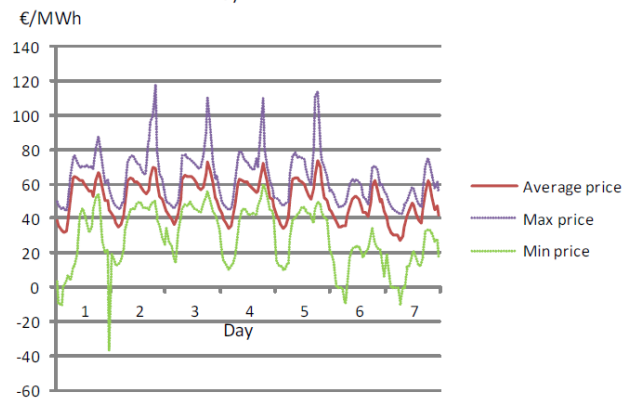
winter (week 40-13 2011)



summer (week 14-39 2011)

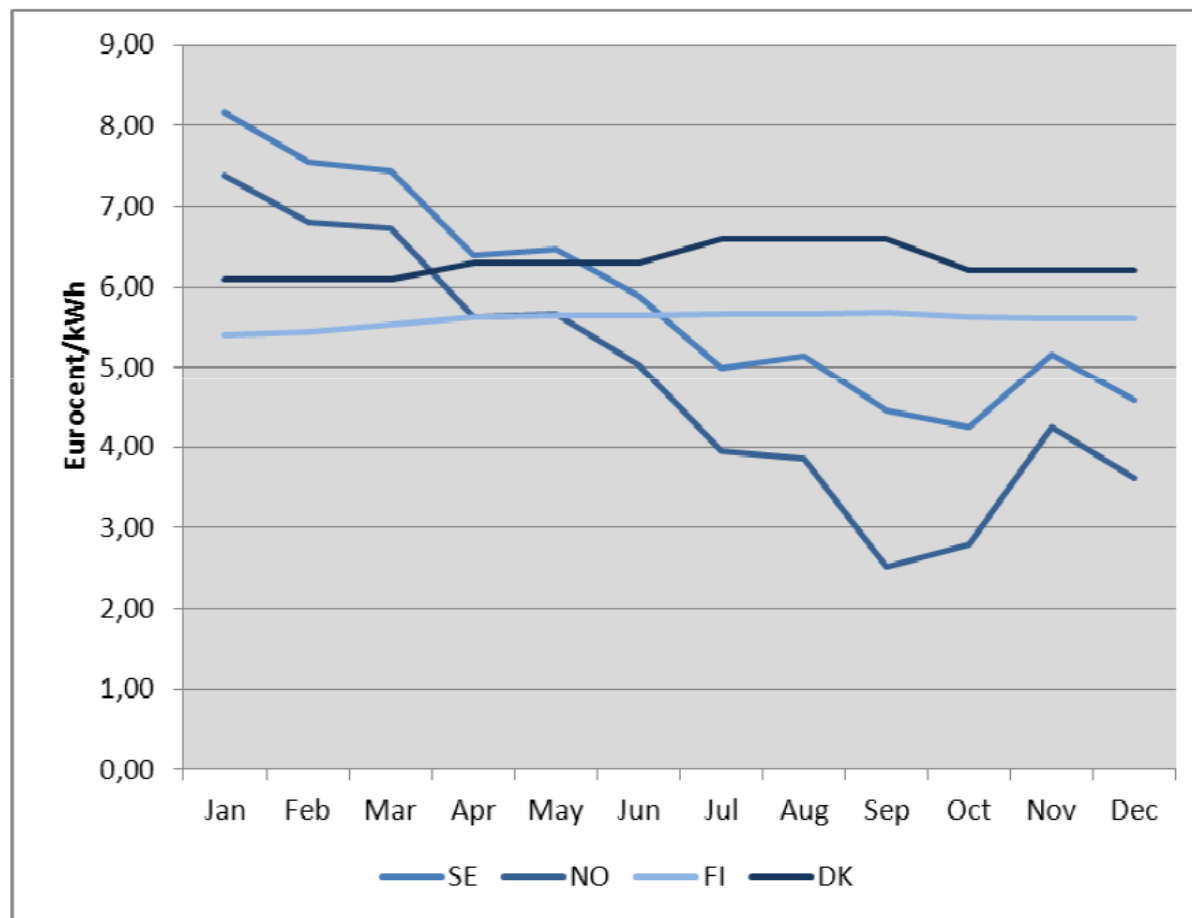


EEX



Average retail prices in Nordic 2011

(excl. taxes, VAT, distribution tariffs etc.)



Development in Retail Supplier switching %

	2008	2009	2010	2011
Norway	9.0	8.0	10.2	11,2
Sweden	9.0	11.0	10.0	11,3
Finland	4.4	8.1	7.6	7,6
Denmark	2.8	6.1	4.2	3,5

Development in the retail market

- Common Nordic retail market project
- One invoice – concept, resisted by some
- Customer to be free to choose the retailer from other country
- Data exchange protocols to be harmonized, data warehousing principles etc...
- Solvency risk and other risk coverage to be settled



Characteristics of the regulatory framework

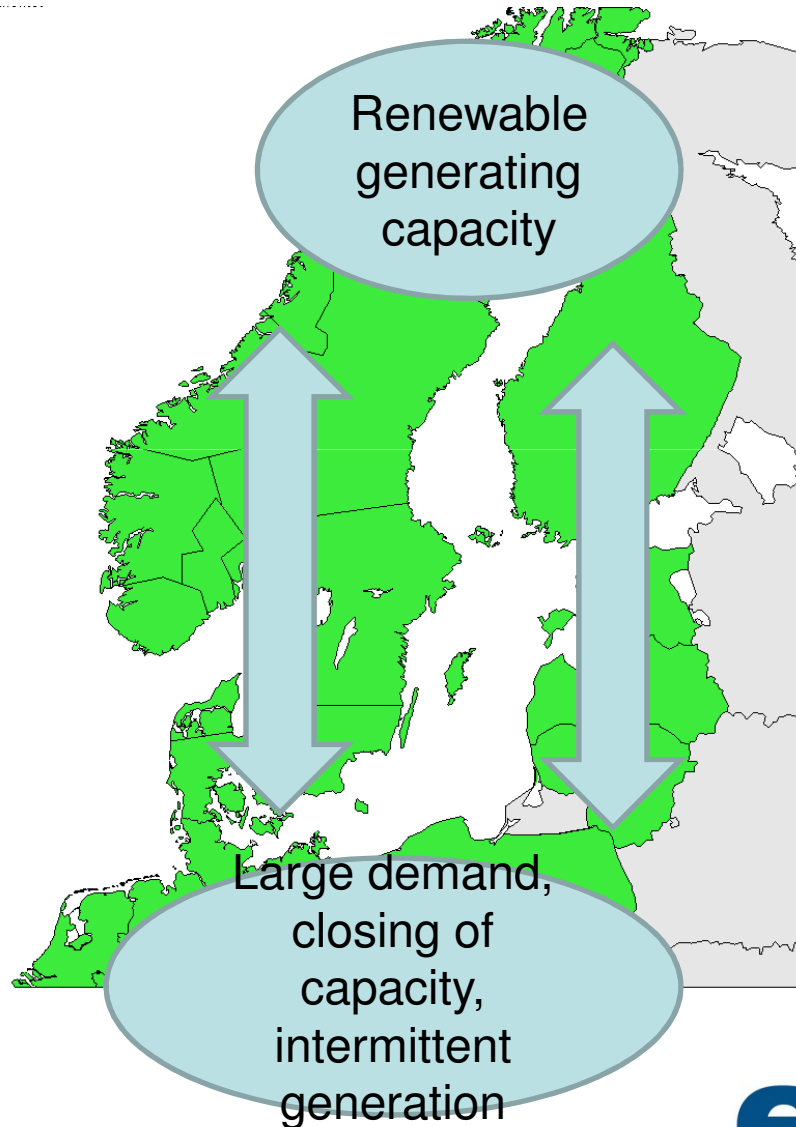
- Common regulatory platform, NordREG with rotating chairmanship
- Tight co-operative tradition between the TSO:s
- Differences in climatological and energy demand patterns due to differences in geography
- Every Country has a slightly different regulatory profile and tradition
- Differences in price zone policy, power reserves, nuclear power policy, position of hydro etc...



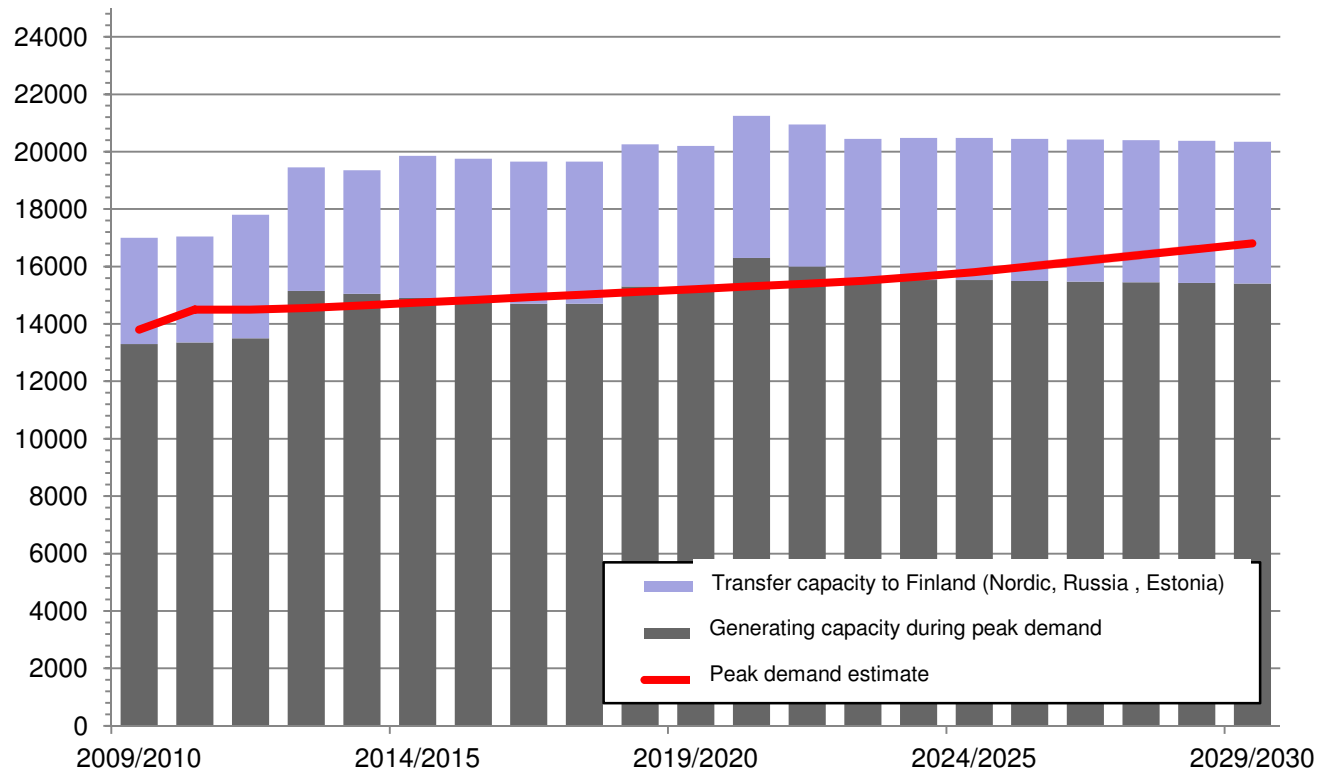
Development trends, problems

- European market integration:;
 - PCR and ID, Implicit vs. Explicit, CfD vs. PTR/FTR
 - Energy only target model vs. capacity remuneration
 - Heavy penetration of intermittent generation and back-up generating and the need to strengthening the TSO network
 - Further integration, bidirectional trade with Russia with market harmonization challenges
- European Regulatory integration:
 - Establishment of ACER and subsequent FG and NC work
 - Aligning regulatory framework, but exclusion of REG policies

Future challenges for transmission in the Baltic's area

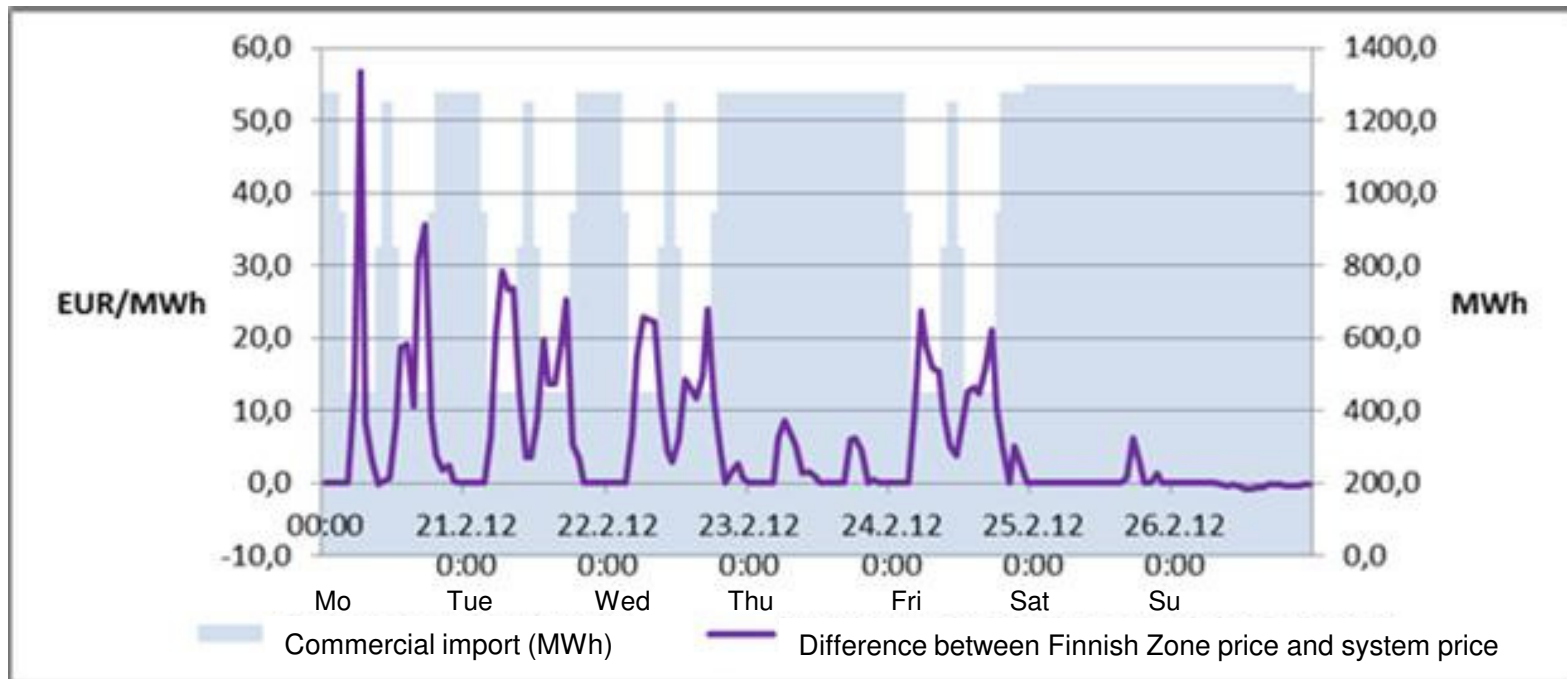


Generation adequacy in Finland

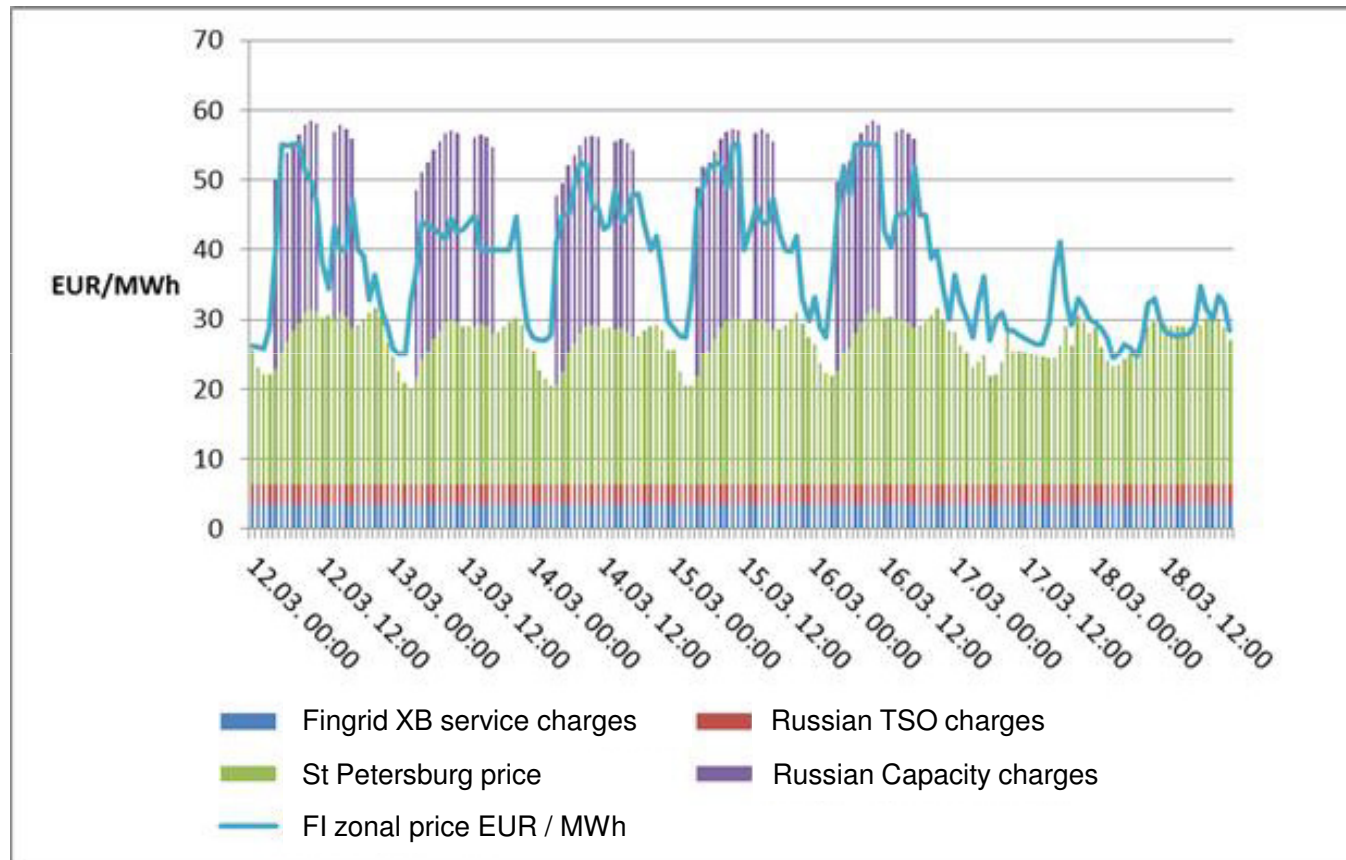


Source: Climate and Energy Strategy 2008

Impact of Russian import on power prices in Finland



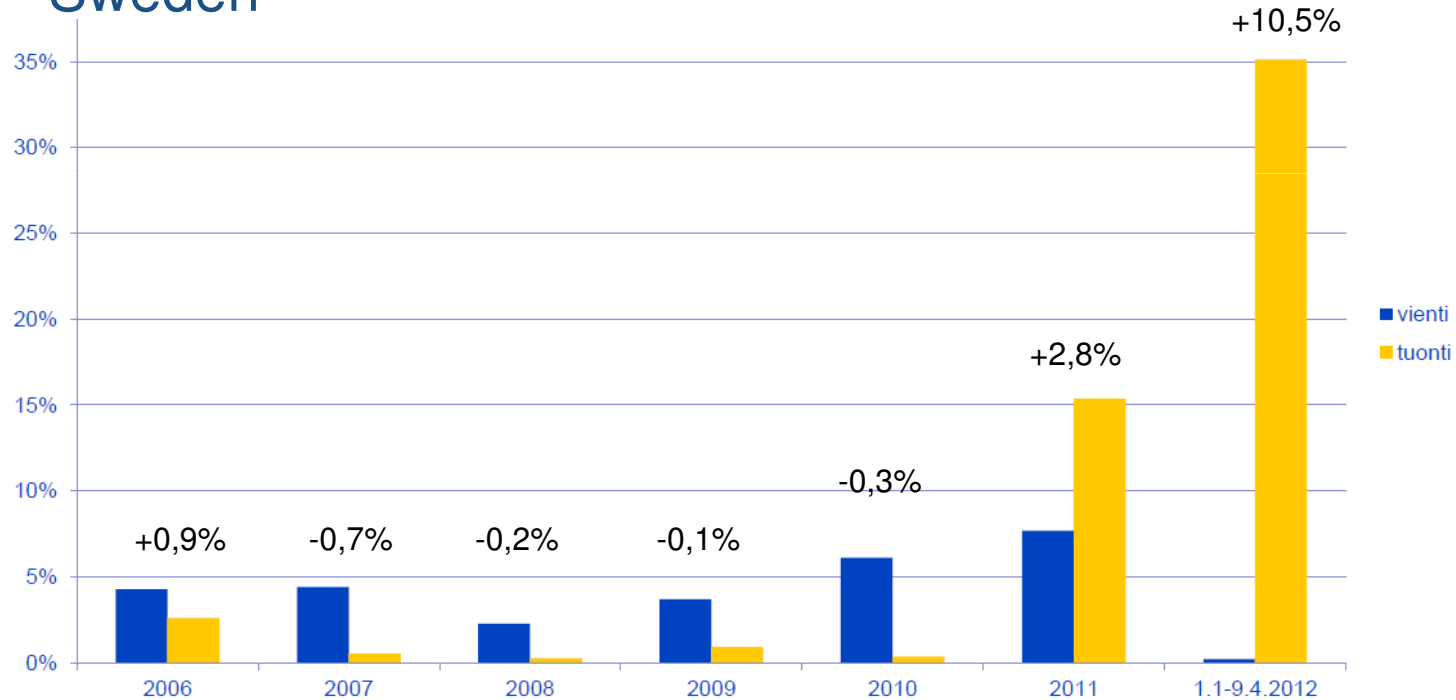
Changes in the power imports, prices in comparison



Source: Fingrid

Recent changes in the power market

- Four Swedish price zones introduced 1.11.2011
- Increase in congestion hours between Finland and Sweden



Congested hours between Finland and Sweden (% of time).
Price difference %, positive figure FI > SE, Negative figure SE > FI

Source: Fingrid

Finnish Energy and Climate strategy

- Previous strategy from 2008
- Update process ongoing, expected results by end of 2012
- Roadmap 2050 to be prepared, and tangible action plan



Strategic national objectives in the Energy and Climate strategy



- Share of renewables by 2020 38 %
- Non-ETS sector emissions -16 % compared to 2005
- Present toolset not sufficient, new actions needed
- Energy efficiency measures and Energy savings to be encouraged
 - By 2020 total energy end use 310 TWh (-37 TWh compared to base scenario), electricity use 98 TWh (-5 TWh)
- Substantial increase in renewables
 - Forest industry share of renewables today 70 %
 - Wood chips with big incremental potential (2-3 fold incr.)
 - Wind power (6 TWh) and heat pumps (5 TWh) important
 - In traffic 10 % share of renewables yields 6 TWh
- Self-sufficiency in energy to rise from 32 % to 36 %



Thank you for your attention!

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