

Nordic Winter Power Balance Forecast 2016-2017



Reliable Sustainable Connected

POWER BALANCE 2016-2017



With estimated power exchange [MW] Cold winter day in 1 of 10 winters

NORDIC MARKET	TOTAL
P = Available capacity for market, TSO reserves excluded	*) 70 500
C = Peak demand	**) 72 100
B = Balance without power exchange	- 1 600

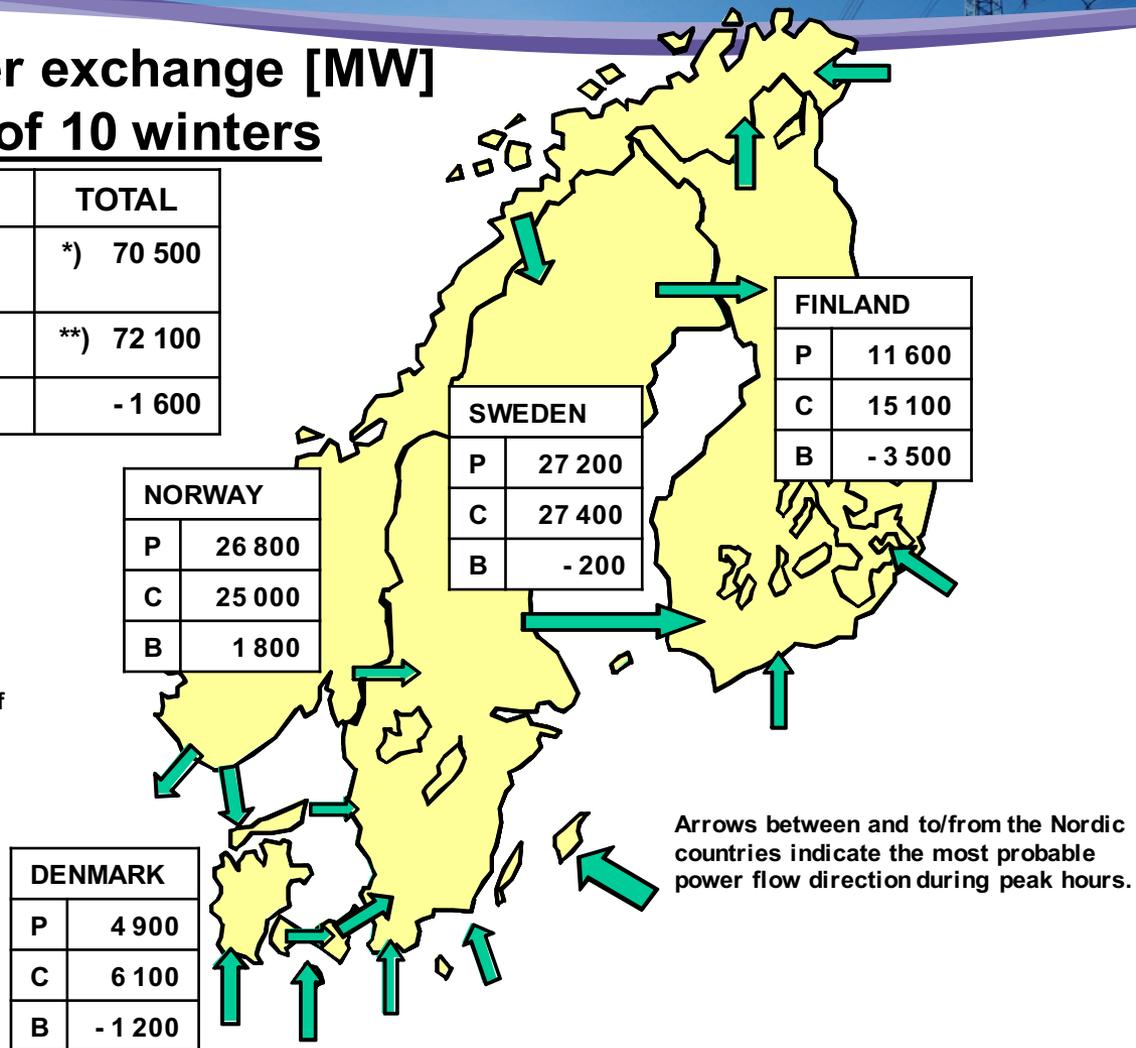
Remarks :

*) Assumed availability in percentage
Nuclear power: 100 % in Finland, 90 % in Sweden

Wind power: 6 % in Finland, 11 % in Sweden, 5 % in Norway, 5 % in Denmark

**) Nordic peak demand 2 % lower than sum of national peaks.

TSOs' contracted reserves are excluded from this forecast.



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Comments

Denmark

- The winter 2016/2017 is expected to be normal with no particular problems, even if Denmark is a deficit area in severe winter conditions. The critical point in the Danish system is the power balance in Denmark East, which is weaker compared with Denmark West. The balance on Denmark East is dependent on interconnectors from Denmark West, Sweden, and Germany. The wind power in Denmark is only taken into account with 5% which is the statistical value, but there might be a higher amount depending on wind conditions. Solar power is not taken into account as we predict the peak to be in the late afternoon.

Finland

- Finland is strongly dependent of electricity import during peak hours. Compared to the previous winter, the situation has remained quite the same. The 3.5 GW deficit is expected to be met with import from neighboring areas. However, in case of a major power plant or interconnection failure in cold period, there is a risk for power shortage. The import capacity on interconnections, 5.1 GW, is sufficient to meet the deficit. However, it should be noted that there are uncertainties with Russian import due to the impact of capacity payments on the Russian electricity markets.

Norway

- The power balance in Norway is expected to be positive during peak hours, with export to Denmark, Sweden and the Netherlands. The exchange between Southern Norway and Sweden is expected to be around zero on a cold winter day. The export capacity is reduced compared with last winter due to reduced capacity on 420 kV cable Sylling-Tegneby.
- The natural gas power plant Kårstø is in preservation, and the capacity is no longer available for the market.

Sweden

- Outdoor temperatures and availability of the Swedish nuclear power are the main factors impacting on the balance.
- During the winter period of 2016/2017, there is 334 MW load reduction available as a part of the peak load reserve, in addition to the figures presented on the previous slide.
- The Swedish power balance is approximately 600 MW weaker than previous winter, mainly due to a reduced amount of available thermal capacity.



Overall assessment

- On a cold winter day in 1 of 10 winters the total Nordic power system is for the winter 2016-2017 expected to have a negative power balance of -1600 MW in peak hours, which must be imported from neighbouring systems. This is a change of - 650 MW from last year's forecasted power balance.
- The Nordic power balance is highly dependent on the availability of transfer capacity between the Nordic countries, import from other synchronous areas and high availability of nuclear power plants.
- Available capacity on interconnectors into the Nordic system cannot simply be added to the power balance. The transmission capacity for the market may be reduced to keep the transmission system within agreed limits for operational security.

Comments and assumptions

- Assumed wind power production will be 90 FI + 714 SE + 44 NO + 250 DK = 1098 MW (900 MW in previous winter), but naturally the uncertainty is high during a peak load situation.
- During high-price periods, the price elasticity of consumption might reduce the peak demand compared to the presented values. This will improve the power balance.

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Production and Consumption trending

