

# Finland's New Energy and Climate Strategy

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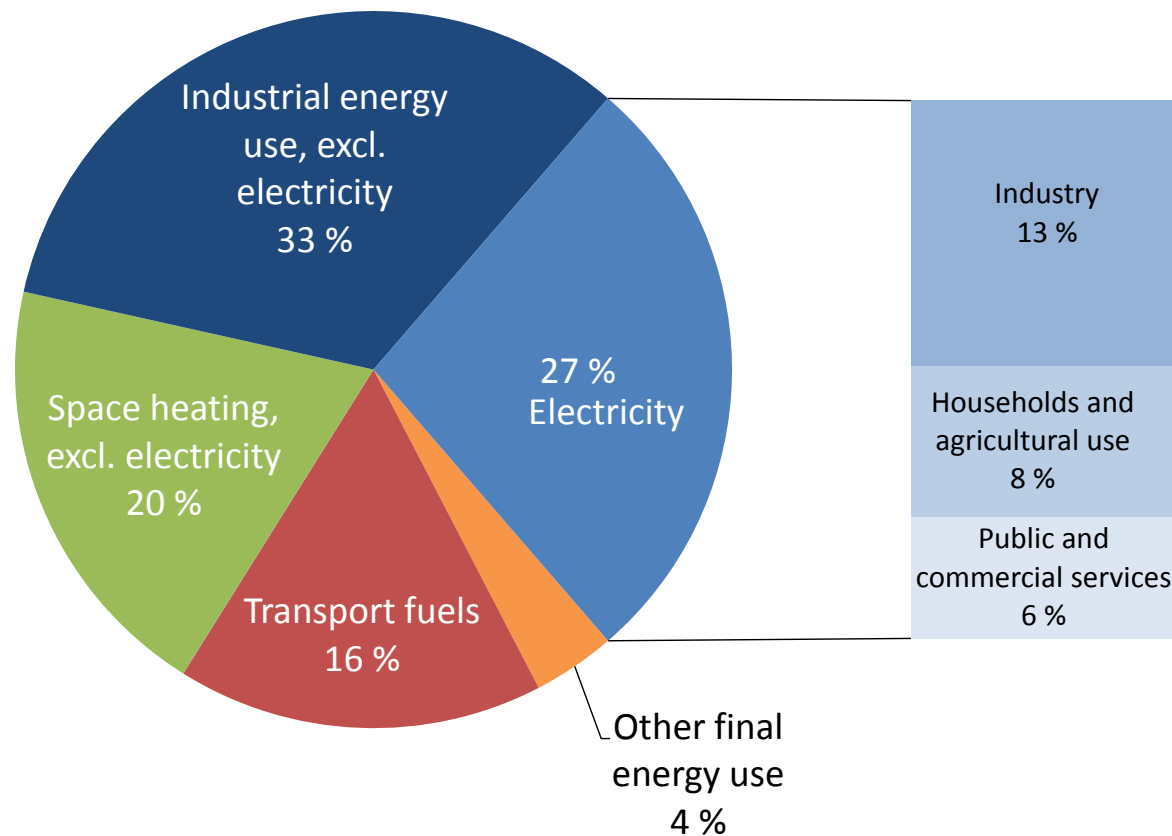
Ministry of Economic Affairs  
and Employment of Finland



# Themes

- The National Energy and Climate Strategy for 2030
  - Situation today in Finland: Energy balances
- Background
  - EU policies
  - Government Programme
- General description and outcome
- How climate affects Finnish national strategies?
  - Electricity, heating, transport

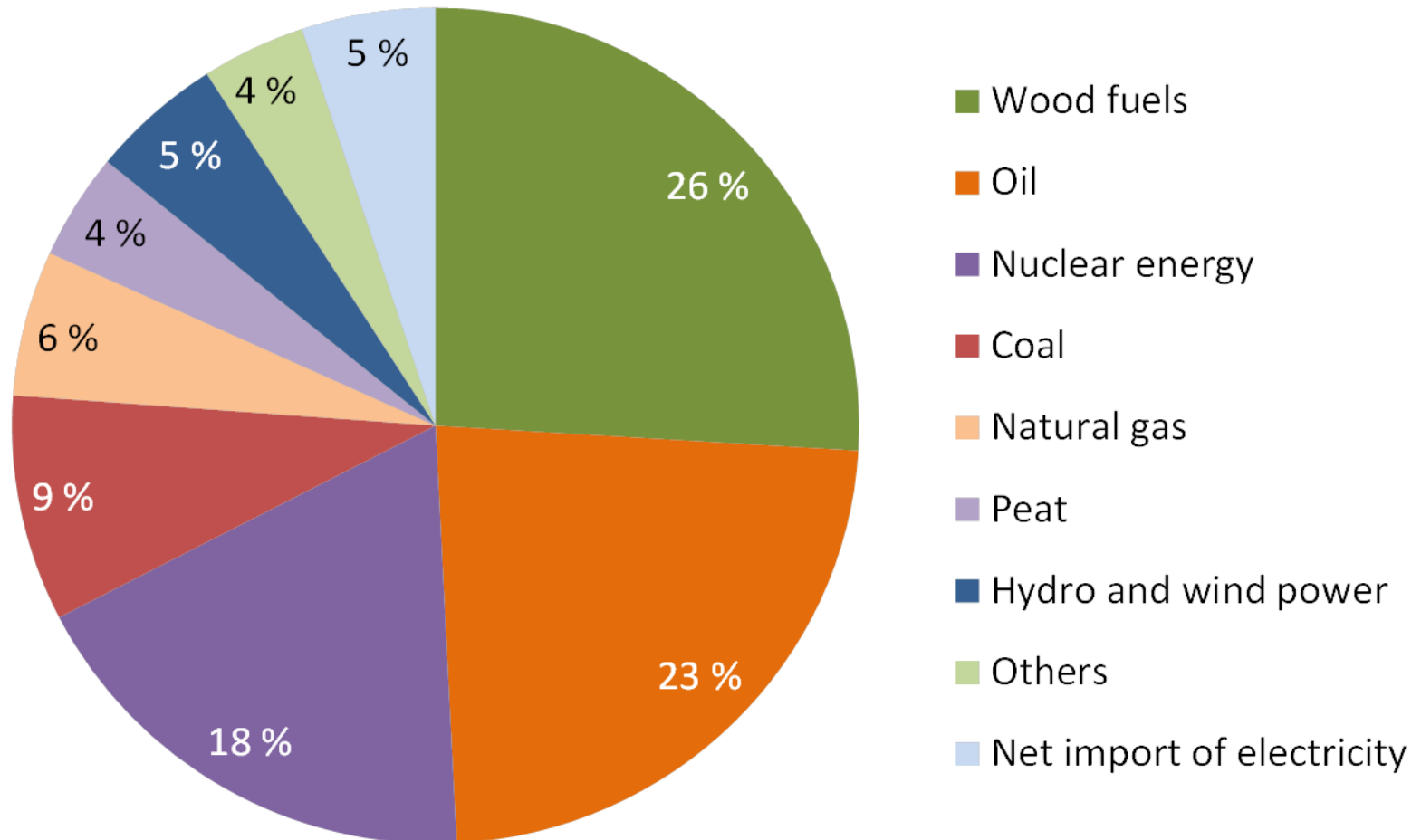
# Final energy consumption in 2015 (293 TWh)



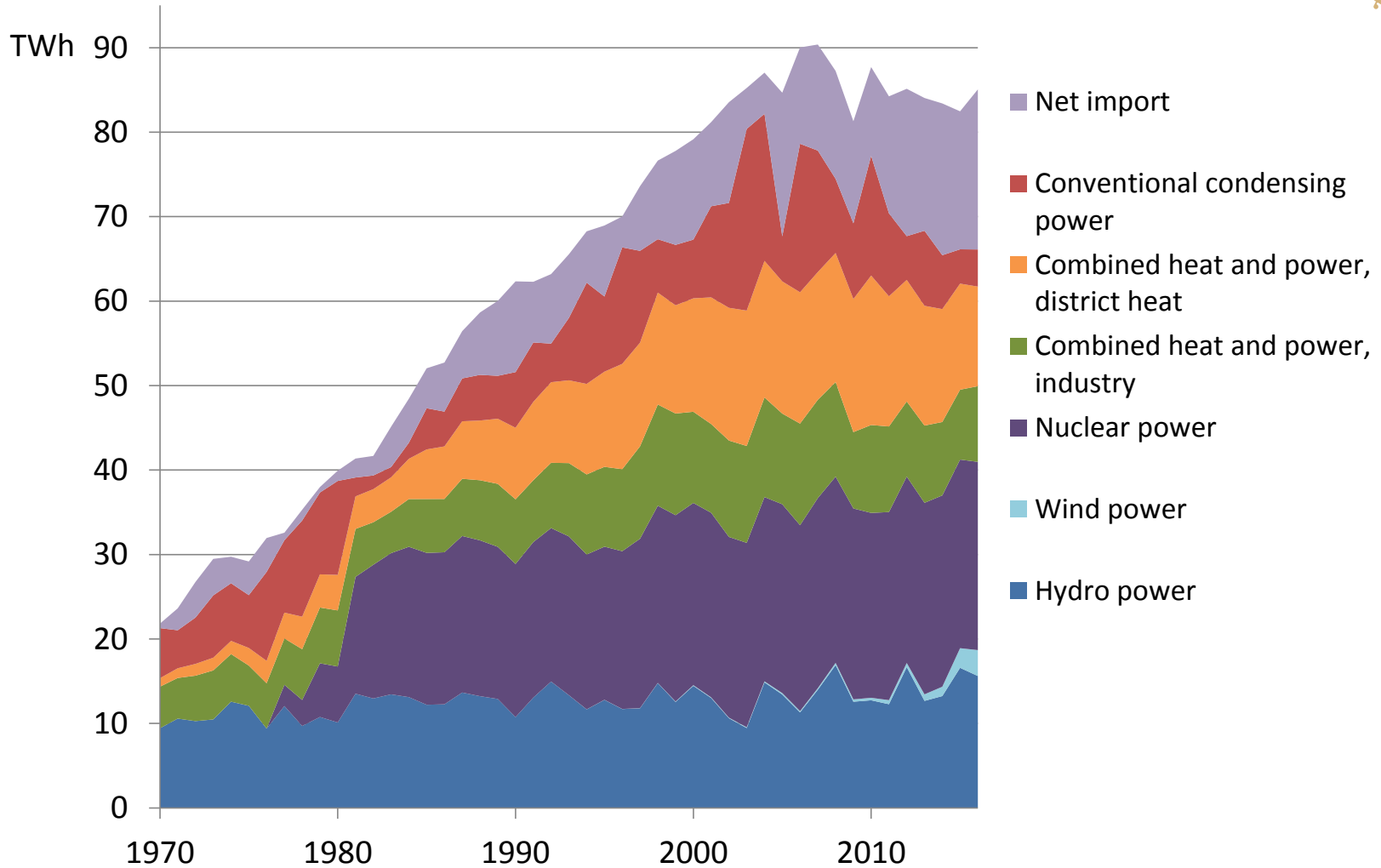
# Big picture: Renewables progressing, fossil fuels losing ground



## Primary energy consumption 2016 (371 TWh)



# Supply of electricity 1970 – 2016



Source: Statistics Finland

# Political background for the Strategy



## EU climate and energy policy targets for 2030

- Greenhouse gas emissions: -40% from 1990
  - EU Emissions Trading Scheme: -43% from 2005
  - Sectors outside the ETS: -30% from 2005; (Finland: -39%)
- Energy efficiency: 30% improvement target
- Renewable energy: 27% of final consumption

## EU's Energy Union

- Security of supply etc., five policy dimensions

## Government Programme

- Emphasis on clean energy, renewables, bioeconomy

# Juha Sipilä's government programme:

## Towards carbon-free, clean and renewable energy cost-efficiently



- The use of **emission-free, renewable energy** will be increased in a sustainable way so that its share will rise to **more than 50 per cent** during the 2020s and the self-sufficiency in renewable energy to more than 55 per cent, also including peat. This will be based, in particular, on the growth in the supply of bioenergy and other emission-free renewable energy. The greatest opportunities will be achieved in increasing the production and technology of liquid biofuels and biogas.
- Aid for lowering the costs of the increase in renewable energy that is compatible with the EU guidelines will be based on technology neutrality and ranking of economic priorities.
- Meeting the **sustainability criteria** for biomass and **fair burden sharing** in the EU and international climate negotiations will be secured.
- **Coal** will no longer be used in energy production and the use of **imported oil** for the domestic needs will be cut by half during the 2020s.
- The **share of renewable transport** fuels will be raised to **40 per cent** by 2030.

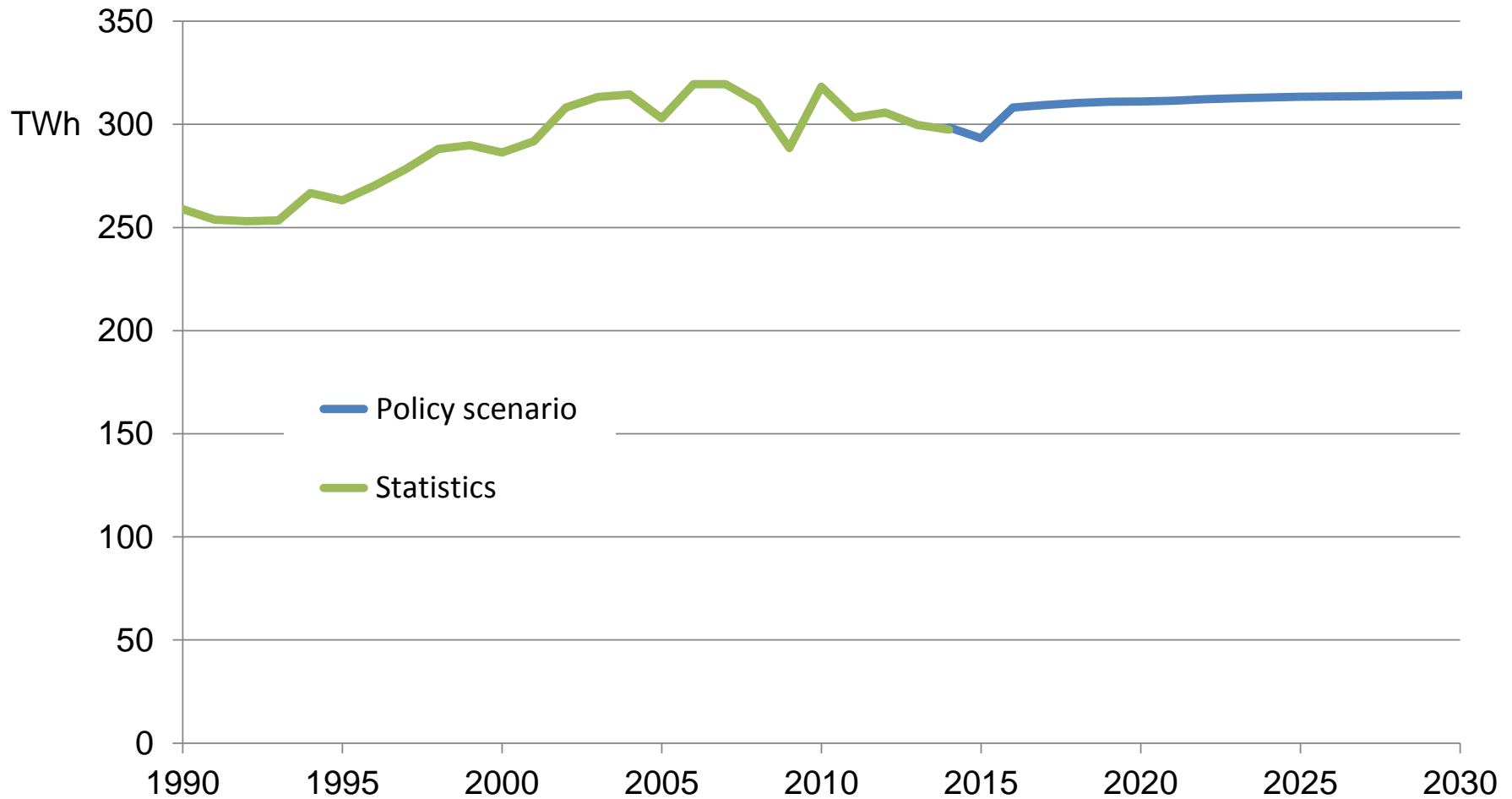
# National Energy and Climate Strategy for 2030



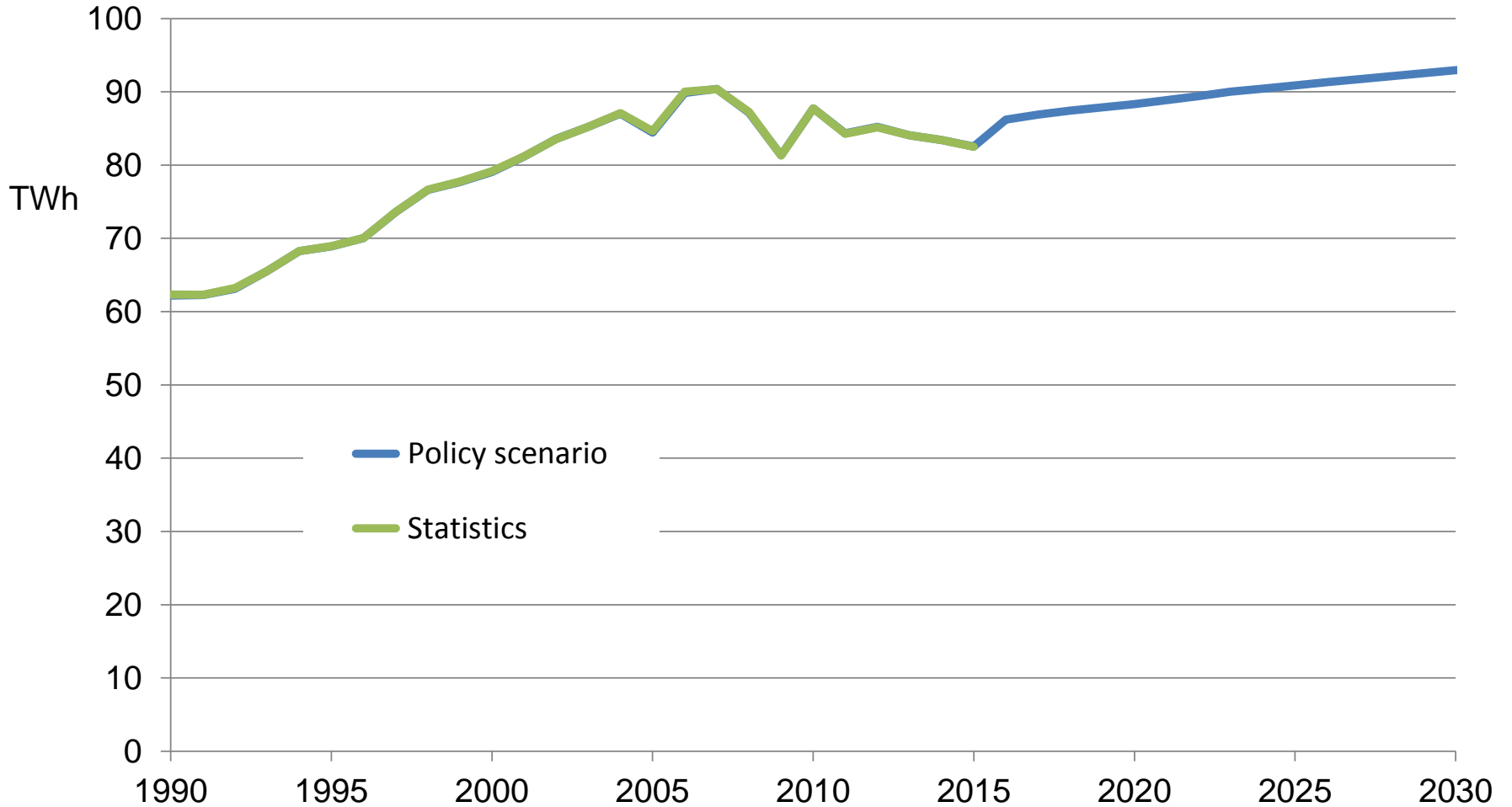
- Approved by the Government in November 2016 as a Report to the Parliament; Parliament report on 1 June 2017
- The aim is to reach Government and EU 2030 targets
- Emphasis on reducing CO2 emissions and promoting renewable energy
  - **50% of final energy consumption covered by renewables in 2030**
  - **Transport fuels: at least 30% renewables** by 2030 (especially by biofuel blending obligations)
  - **Phasing out the use of coal** in energy production by 2030 (with some conditions regarding security of supply etc.)
  - **Halving the use of imported oil** for energy
- Development of regional, competitive electricity and gas markets is promoted



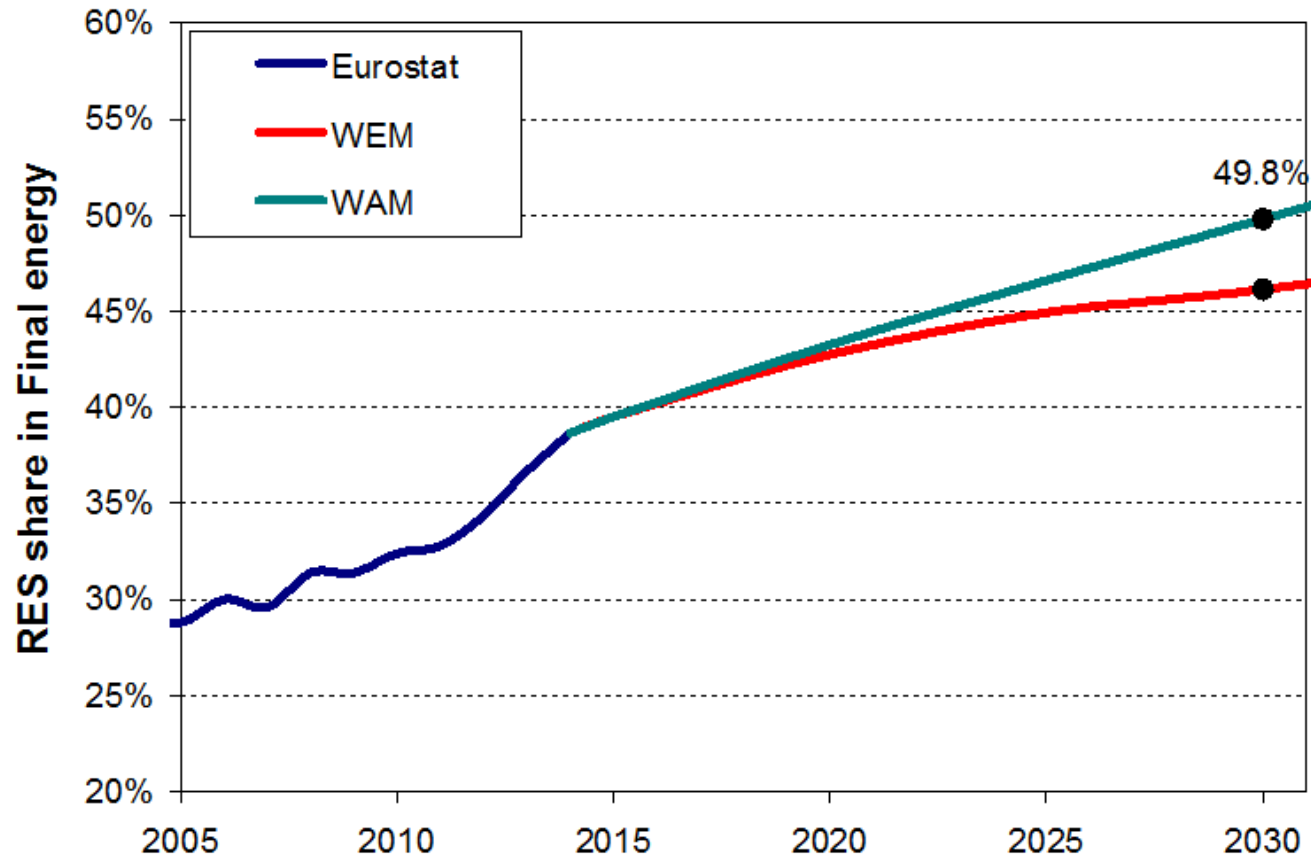
# Final energy consumption



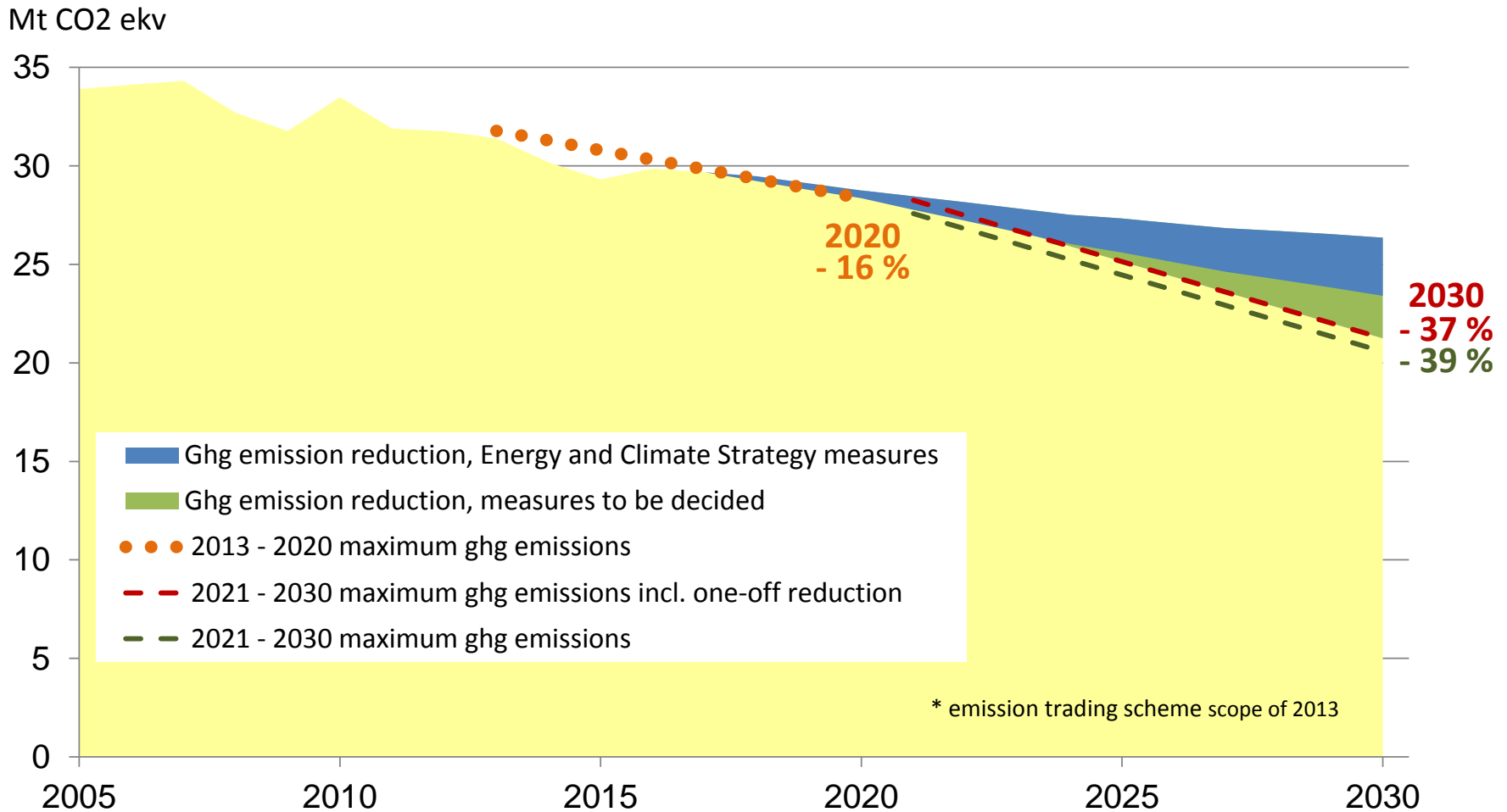
# Electricity demand



# Renewable energy, share of final consumption

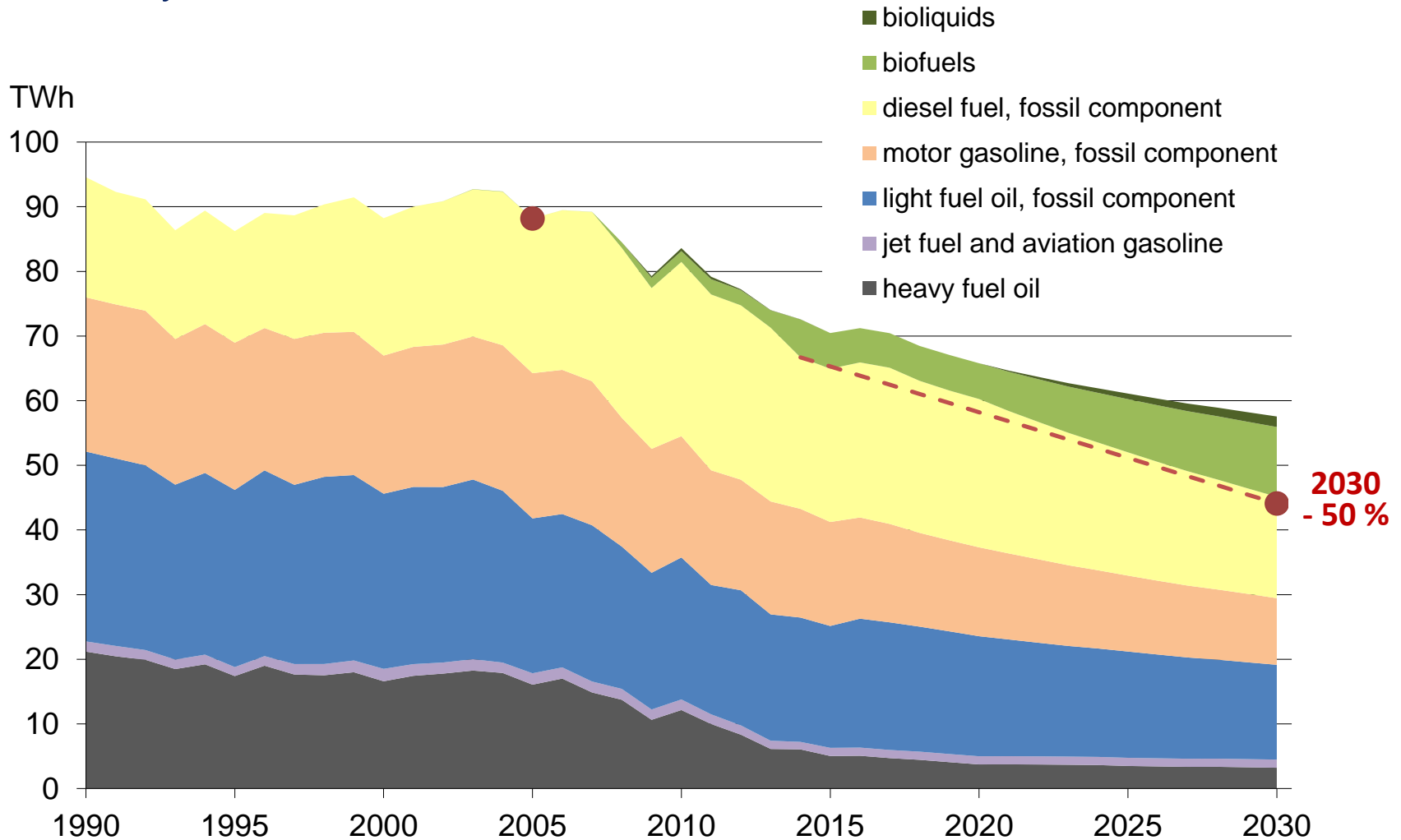


# Non-ETS\* greenhouse gas emissions



# Oil demand

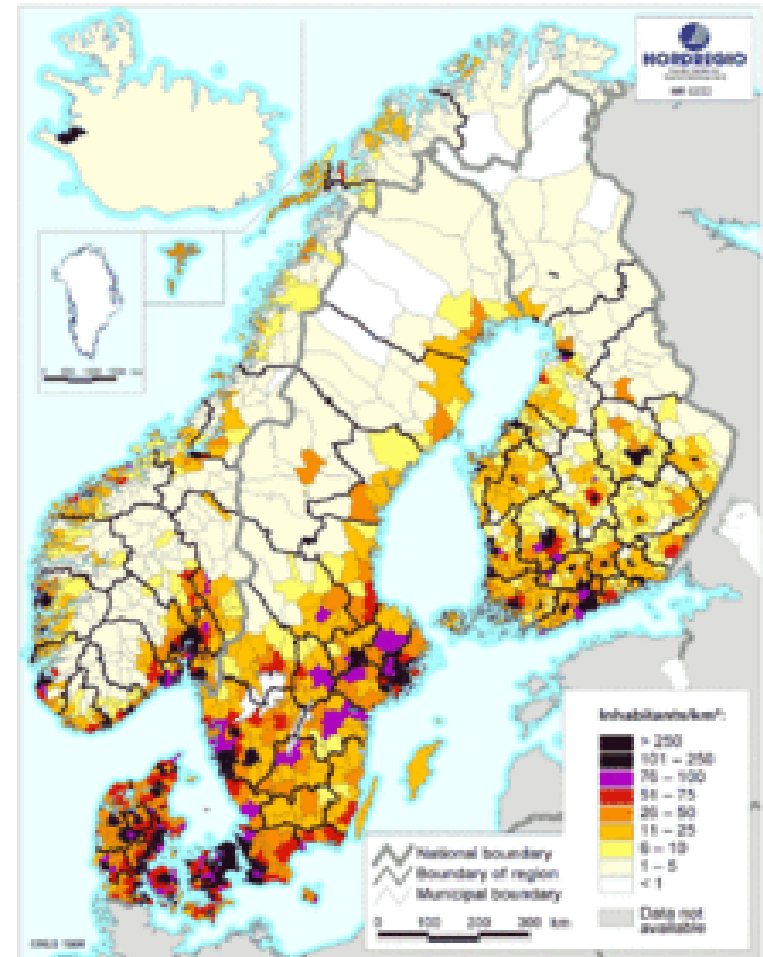
## Policy scenario



# Specific issues in Finland with regard to the subarctic location



- Finland is the northernmost (coolest!) country in the EU
- Security of supply is even more important in cold climate
  - High heat demand
  - Strong seasonality in power demand
  - Transport needs: long distances, harsh winters



# How the subarctic location affects national strategies? (1)



- **All the same solutions don't work as elsewhere**
  - Burning fuels needed for heating
  - Seasonality in solar/wind power production: during peak demand in winter sun doesn't shine and winds are weak
  - Technologies and design have to reflect the climate conditions, e.g. energy efficiency of buildings
- **Electricity market**
  - Network-based: some problems e.g. in distribution systems in Lapland; 2013 security-of-supply legislation
  - CHP challenges
  - Smart grids development, demand response
  - Strong regional markets (Nordic-Baltic)

# How the subarctic location affects national strategies? (2)



- **Heating/fuels**
  - District heating (based on CHP) very common
  - Heat pumps
  - Wood-based fuels are important
  - Preparedness is needed i.a. due to the climate: oil stocks etc.
- **Transport**
  - A lot of transport, also heavy road vehicles
  - Fuel quality issues
  - Limits for the electrification of transport
- **Costs**
  - Additional costs for industries
  - Cost-effectiveness of measures cutting emissions is crucial



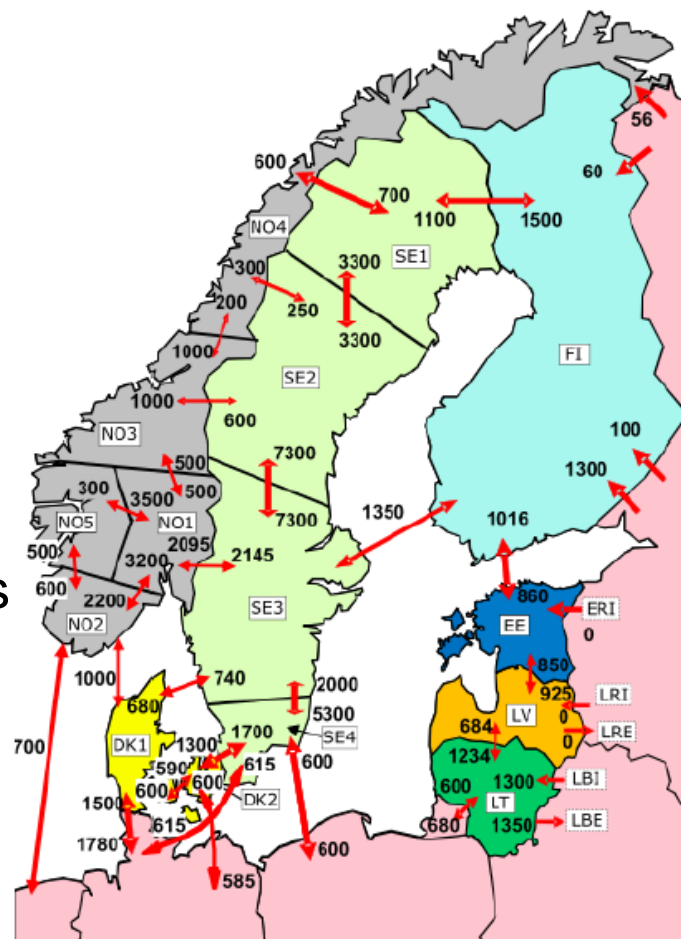
# The regional electricity market – a success story



- Finland, Sweden, Norway, Denmark and the Baltic States
- Baltic States: desynchronisation from the Russian system?

## The joint market

- Advantage of different production resources and consumption patterns
- Better market functioning
- Increased cost-efficiency





**Thank you**