Finnish Energy

Finland´s energy perspectives

Tallinn 23.9.2025

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Finnish Energy

Finnish Energy

- Branch organisation of energy companies having activities in Finland

- We represent around 280 companies in
  - Electricity
  - District heating
  - Gas

- We distribute energy companies´messages and opinions with relevant facts and information to the society.

- Finnish Energy drives energy transition with a target of climate neutral energy system which is good for customers, for the society and for nature.

Energy in Finland – some facts

- High energy consumption per capita
  - Energy intensive industry (paper, chemicals, metals etc.)
  - Cold climate, low population density
- Key elements of Finnish energy system and policy
  - Versatility in energy sources
  - High energy efficiency in generation and use
    - Energy efficiency agreement system, collaboration of enterprises and administration
  - Increase of renewables and phase-out of fossils
  - Trust on and use of nuclear power
  - High use of domestic forest biomasses based on by-products of forestry and pulp & paper industry
  - Open, competitive electricity markets

Finland is energy intensive

Primary energy consumption
(per capita per year)

65 MWh

31 MWh

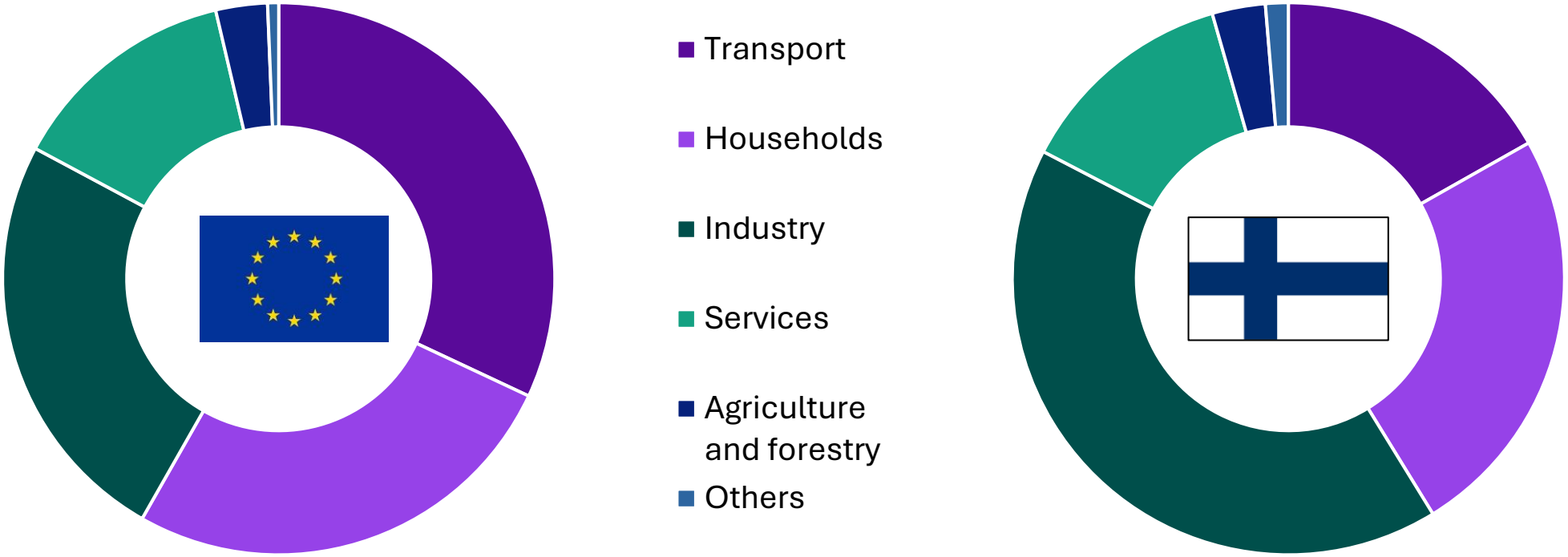
Electricity consumption
(per capita per year)

13 MWh

5 MWh

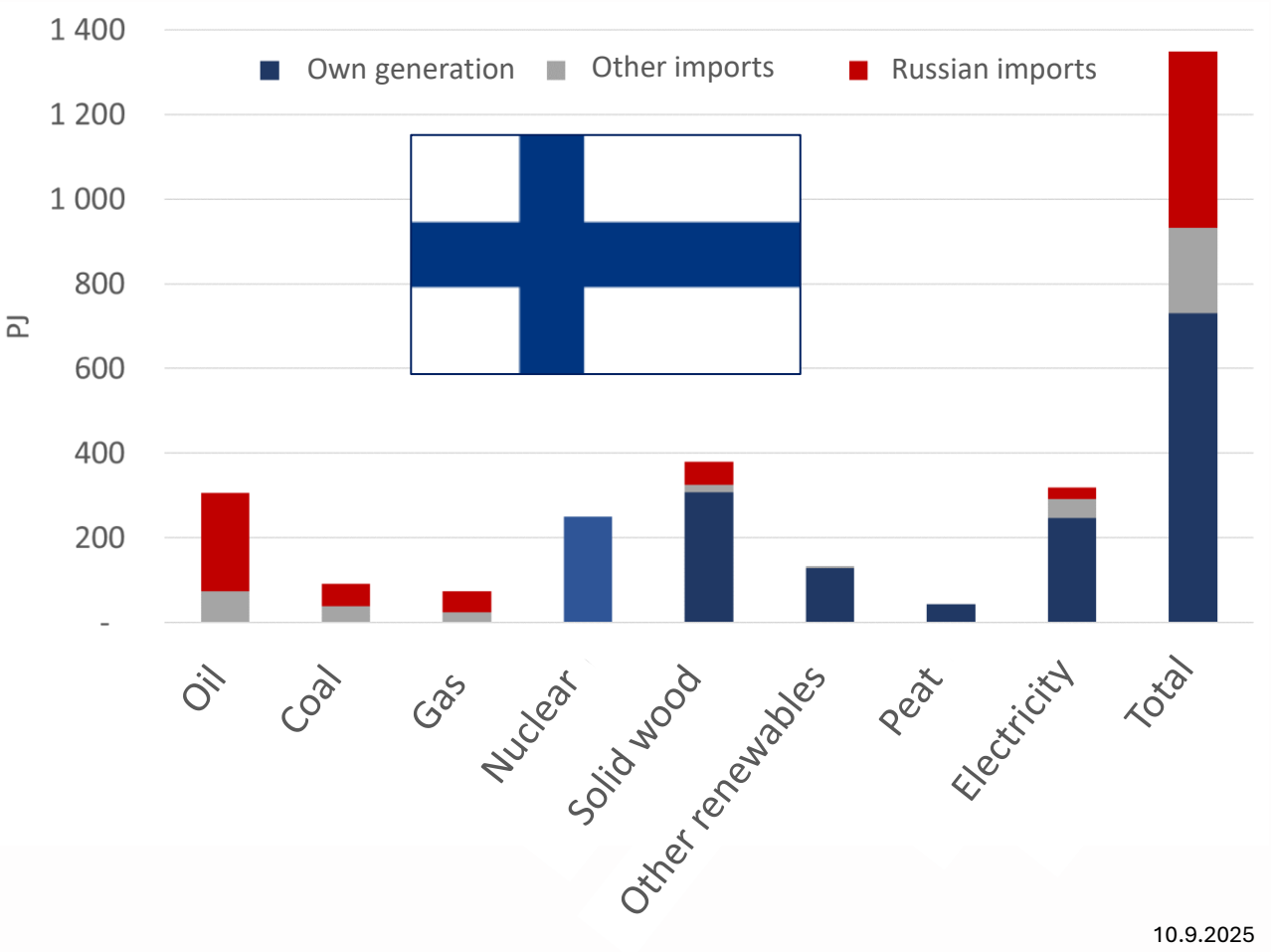
Data: Eurostat, figures from 2023

End use of energy in EU and in Finland
Finland has lots of energy intensive industries

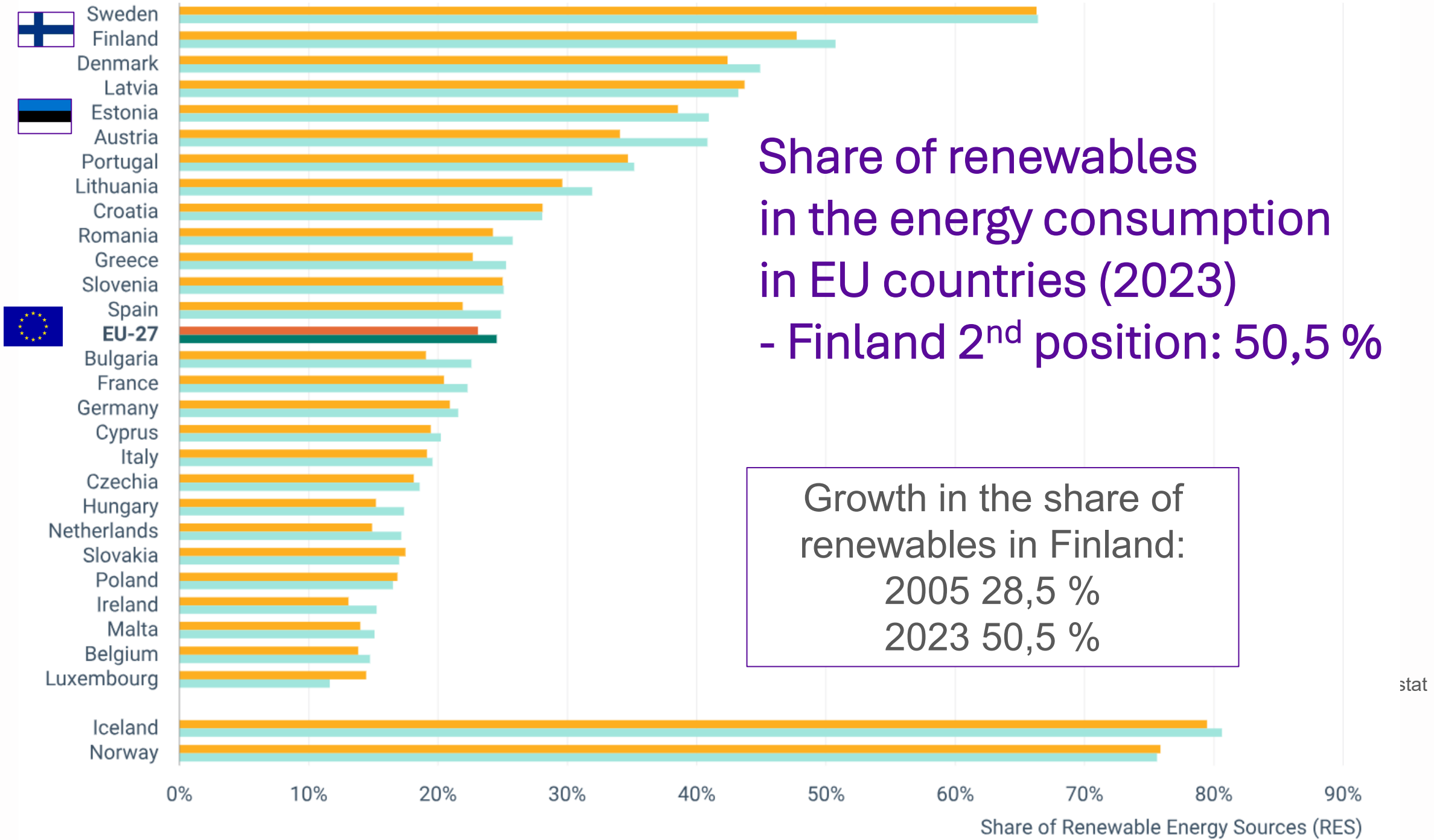


Data: Eurostat

Before Russian attack to Ukraine in February 2022: Share of Russian energy +30 % in Finnish primary energy This all has been replaced



Estimate 2019-20, sources: Statistics Finland, Luke, Finnish Energy



Share of renewables in the energy consumption in EU countries (2023) - Finland 2nd position: 50,5 %

Growth in the share of renewables in Finland:
2005 28,5 %
2023 50,5 %

stat


electric drive

Energy transition - a triple jump

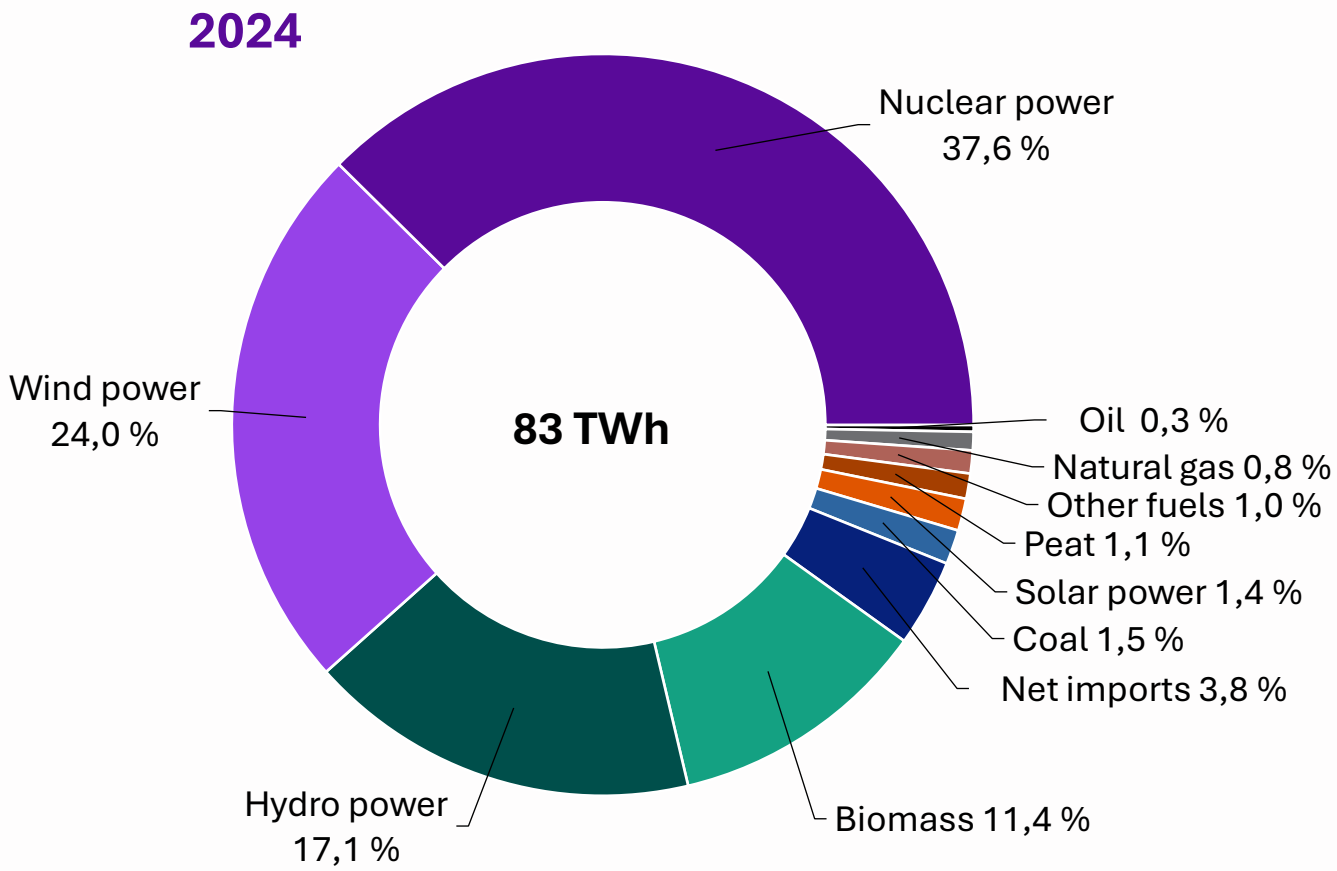
TOWARDS CARBON-NEUTRAL ENERGY

3. Reliable and well-funtioning new energy system

1. Carbon neutral energy production

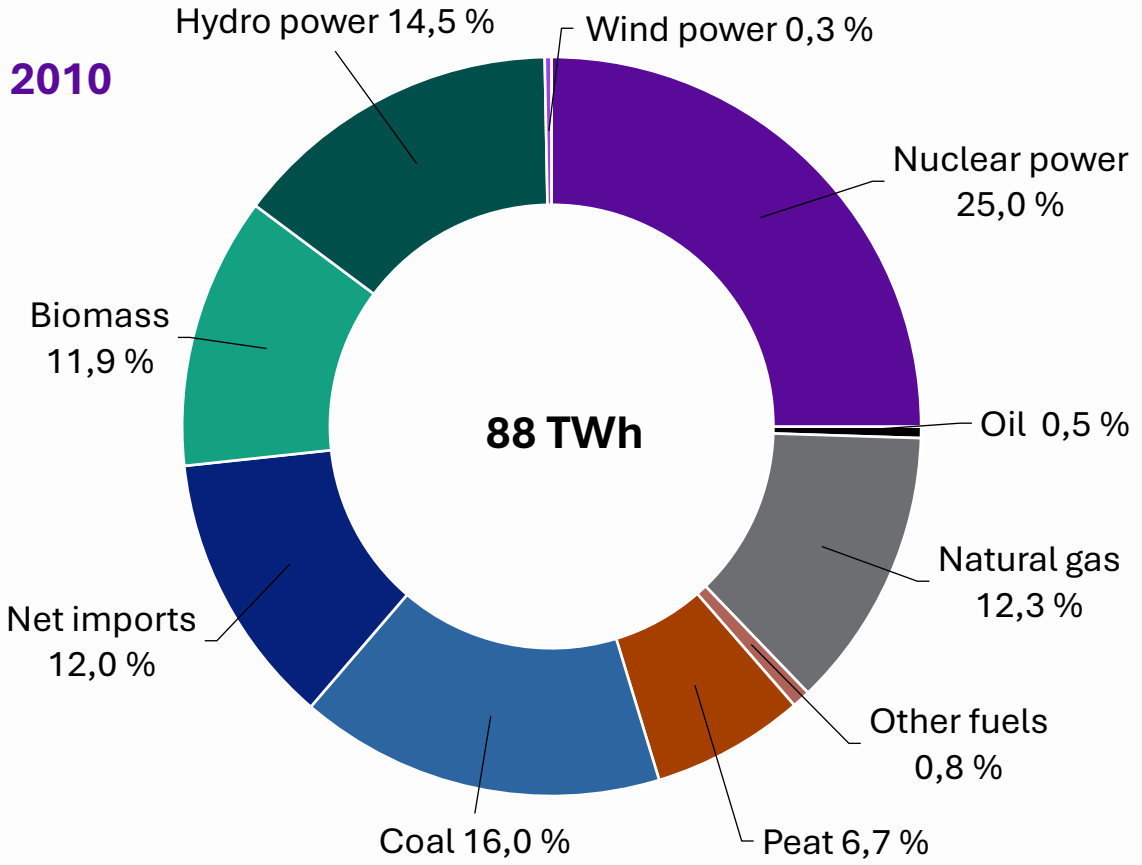
2. Energy transition in consumption: electrification and hydrogen economy

Electricity supply in Finland
Share of fossil energy sources only 3 %



Share of fossil fuels + net imports + peat: 8 %

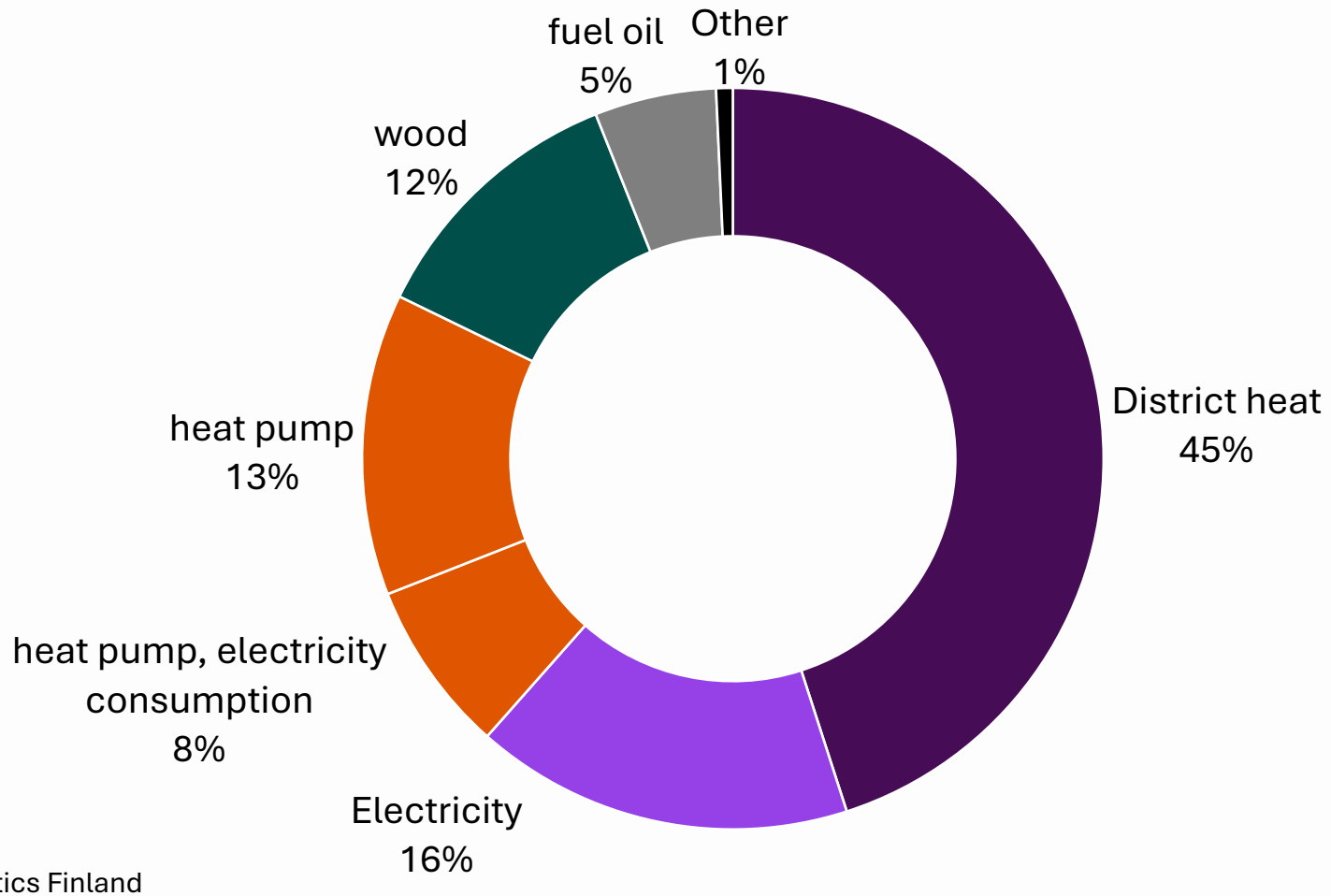
%



Share of fossil fuels + net imports + peat: 48 %

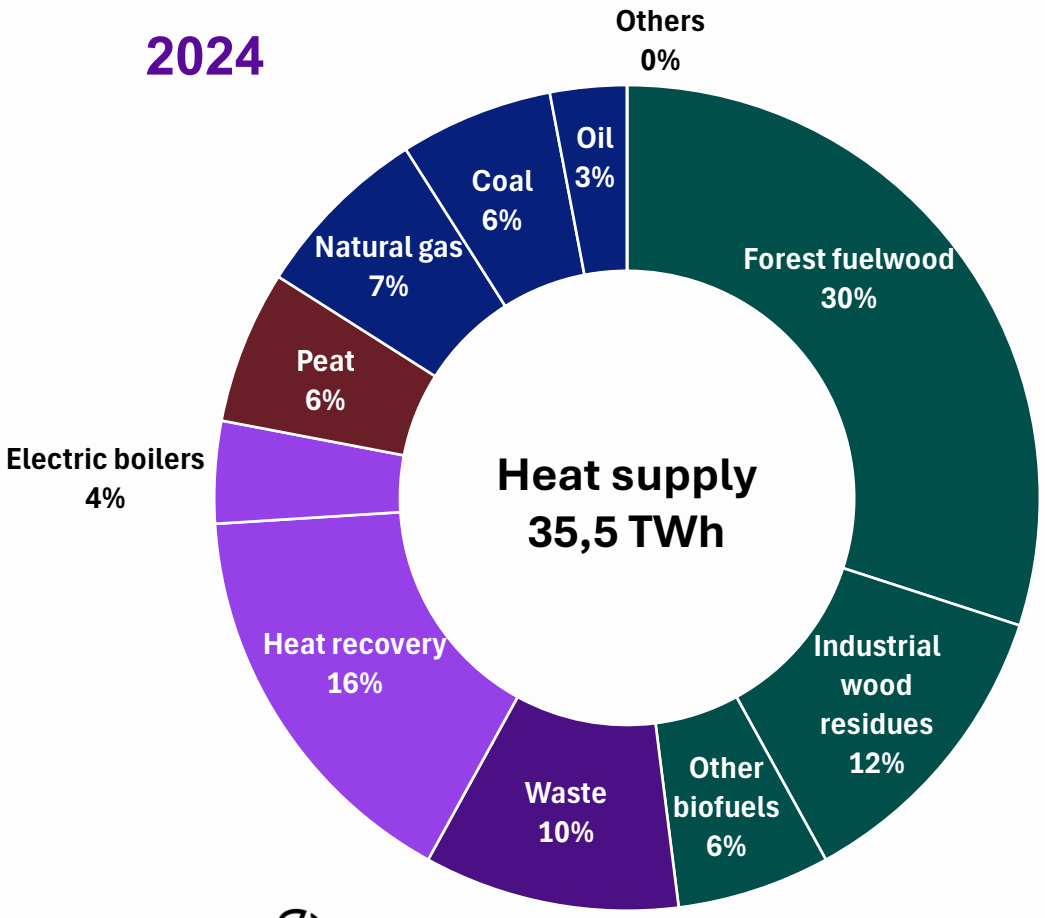
Finland´s buildings are mainly heated with district heat and electricity

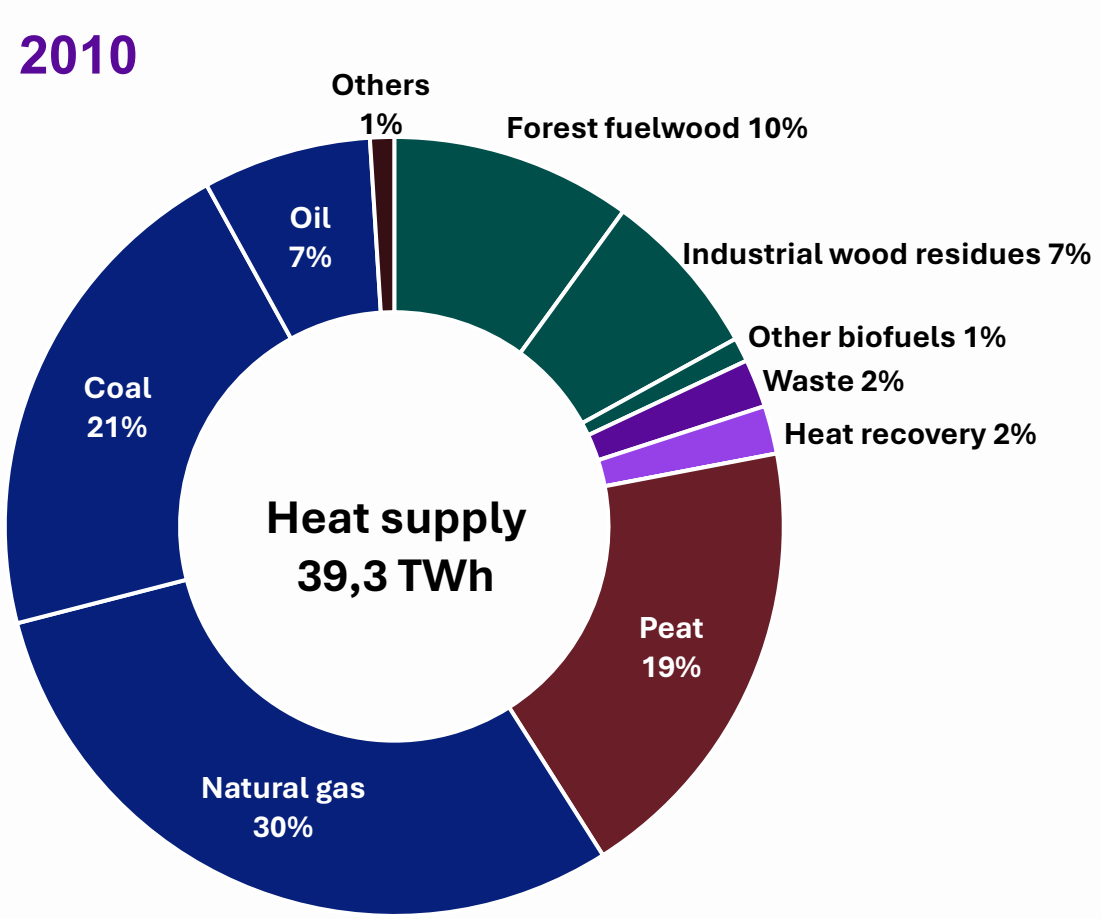
Residential, commercial and public buildings, market shares



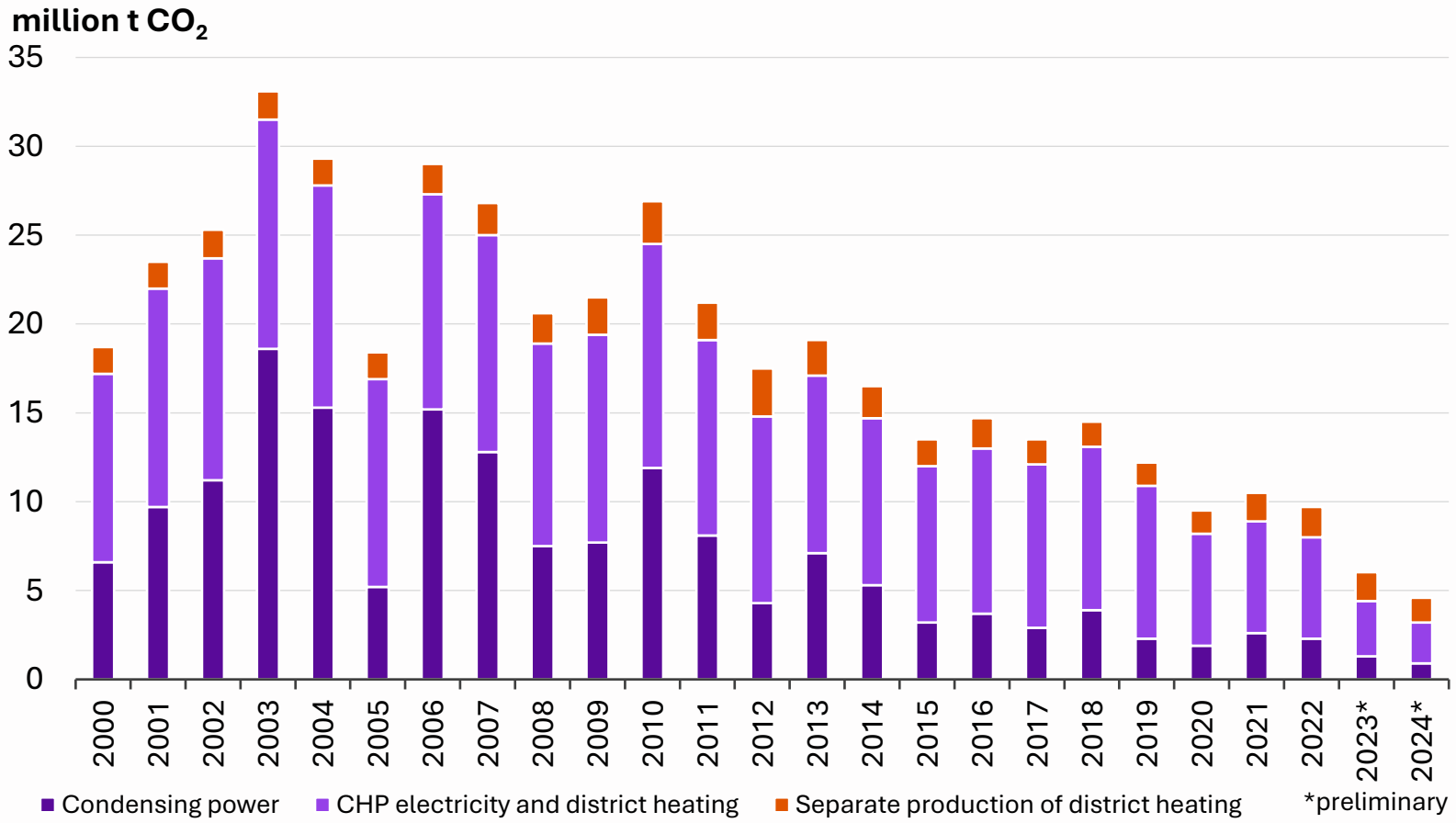
Source: Statistics Finland
The electricity consumed by heat pumps has been estimated by Finnish Energy.

District heating in Finland
Share of fossil fuels has dropped to 16 %





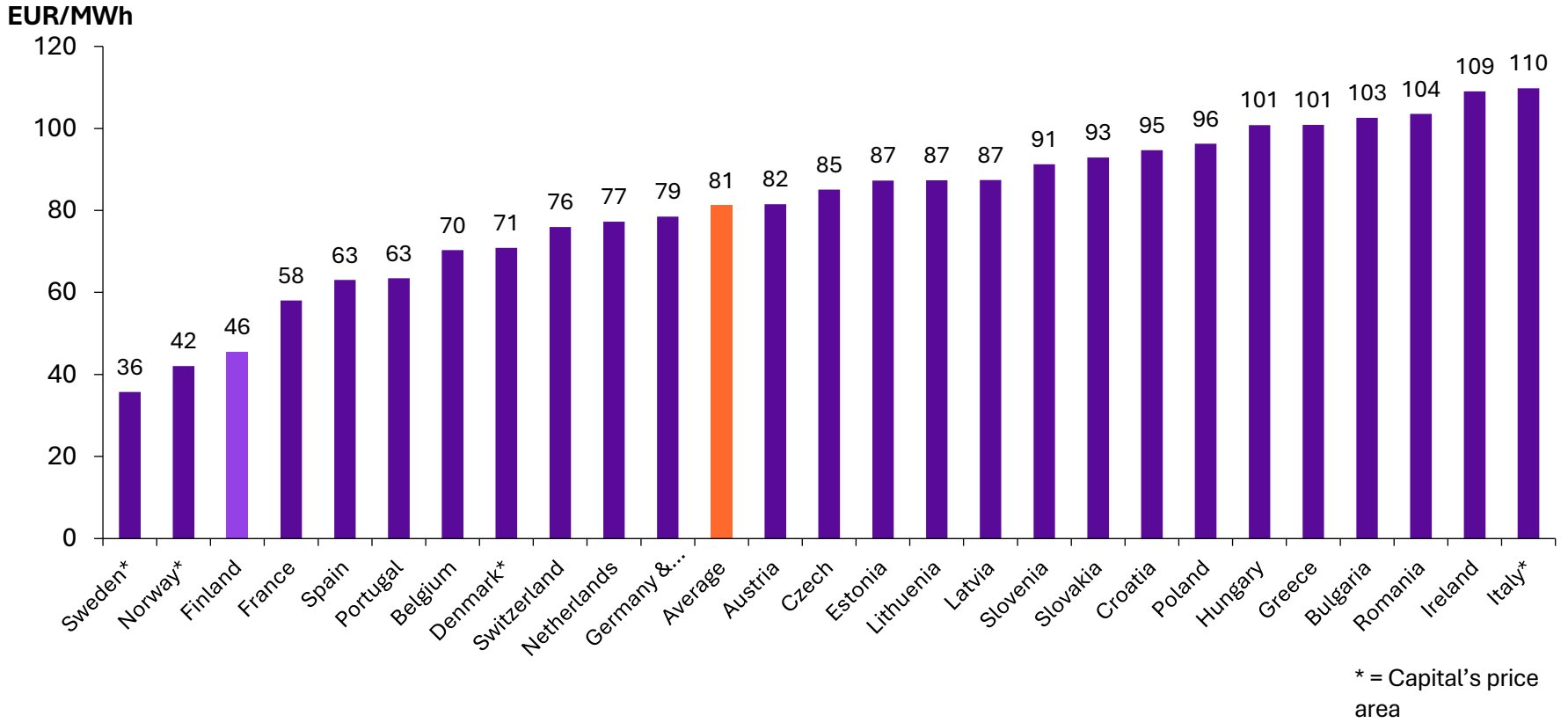
Finland has soon carbon neutral electricity and carbon neutral heating as one of the first countries



- CO2-emissions of electricity and district heating production 4,6 million tons in year 2024
- Emissions have declined 86 % compared to 2000s highest emission year 2003

Finland had the third lowest electricity prices in Europe in 2024

Electricity **wholesale** prices in year 2024 (EU + Norway and Switzerland)



Prices
1.1.-19.9.2025

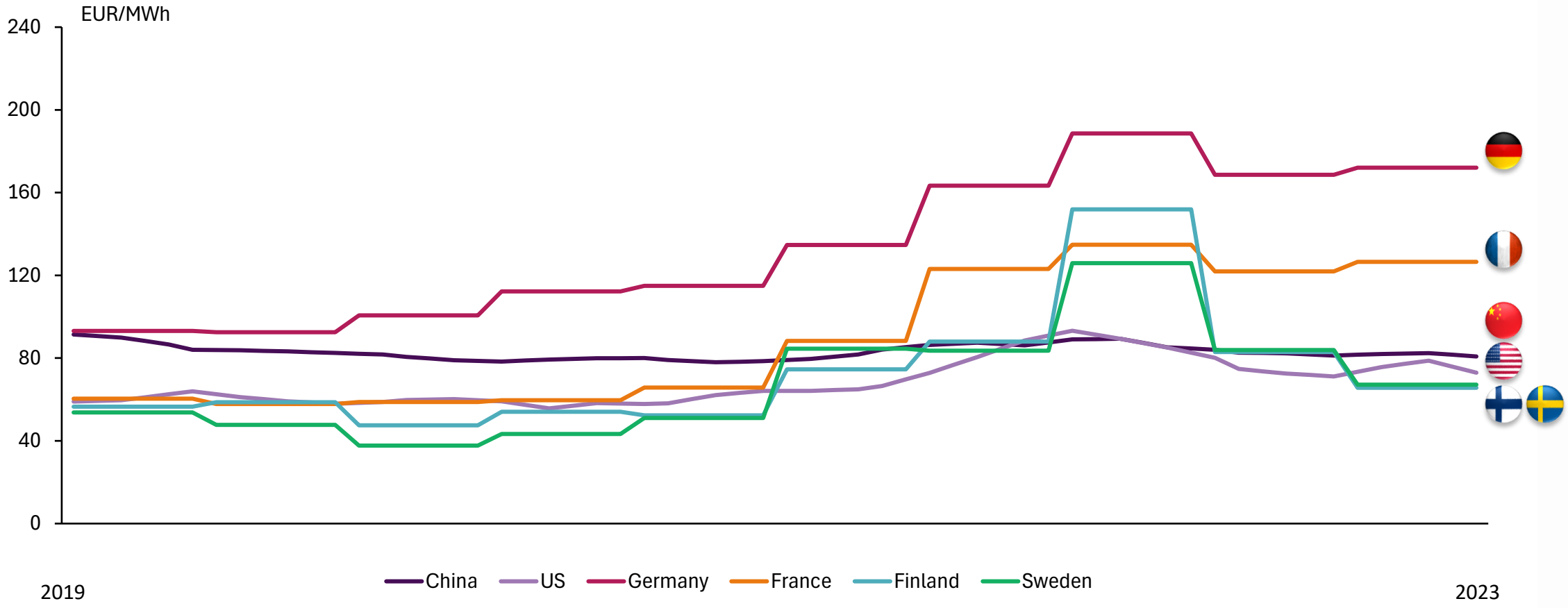
Finland 39,32
Stockholm 42,78
Oslo 56,06
Estonia 79,17
Saksa 87,93

North-Sweden
14,12

In some countries there are multiple price zones. From those countries the price of the zone with the capital is shown.
In northern zones of Norway and Sweden prices are remarkably lower than anywhere else in Europe.

Data: Energy-Charts

Electricity wholesale prices in Finland and Sweden are competitive also with China and USA



Electricity prices for large industrial electricity consumers, incl. energy, taxes and network fees
Sources: Draghi 2024, Eurostat

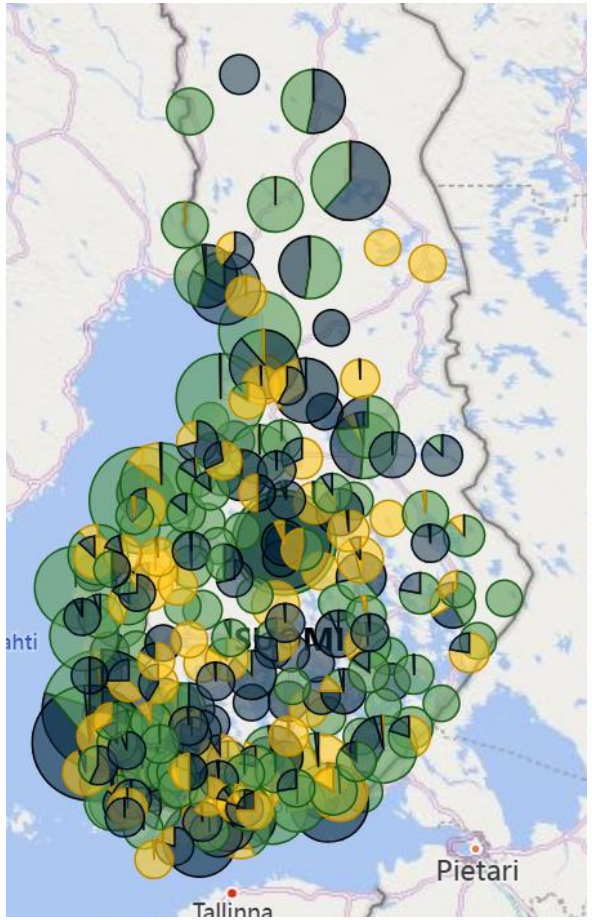
Carbon neutral capacity can be expanded with competitive price

- Huge amount of wind and solar power projects
  - On-shore wind projects under development alone could double or triple Finnish power generation
  - Multiple off-shore wind power projects
  - Industrial scale solar power emerging, tens of GWs in pipeline
- Nuclear power outlook very good
  - ”Old” NPPs lifetime extensions agreed, Olkiluoto 3 on production
  - High public and political support to nuclear
  - Large interest on small modular reactors by energy companies and industrial users

Huge interest for industrial investments based on clean electricity

- Finland attracts industrial companies who need carbon neutral and affordable electricity
  - Hydrogen
  - Green steel
  - Aluminium
  - Ammonia
  - Datacenters
  - Battery technologies
  - …

Data dashborad on green investments available in https://ek.fi/en/green-investments-in-finland/



Finland – Persistent Performer or European Champion of the Energy Transition?

Vision of a prosperous energy future

Finnish Energy

Summary of findings – European Champion scenario

- Green investments are huge opportunity for Finland
  - Re-industrialisation creates investments, jobs, exports
  - Economic growth and welfare
- The electricity system needs to be more than doubled and hydrogen system created
  - 7 billion annual investment (existing rate 3,5 billion)
- There are realistic chances to succeed if there is a common, long term commitment

European Championship of the energy transition - key challenges

- Overall political and economic conditions give investors the confidence
  - The best country to invest in
  - Markets for hydrogen derived products
- Grids development is critical
- Flexibility challenge for the electricity demand-supply balance is huge with no silver bullet to solve it.
  - Demand side flexibility is decisive
  - Security of supply must be reconsidered
- Customers and popular acceptance must be earned
- Need for qualified workforce