

A turn in the political support of nuclear energy

– a Finnish example

Atte Harjanne / February 2023

Who?

- Atte Harjanne
- MP, Parliament of Finland, Green Party, Helsinki
- Vice chair, Green Party
- Leader of the Green parliamentary group
- Helsinki City council member, Green Party
- Previously: Researcher at Finnish Meteorological Institute, socio-economic impacts of climate change, institutional perspectives on mitigation & adaptation

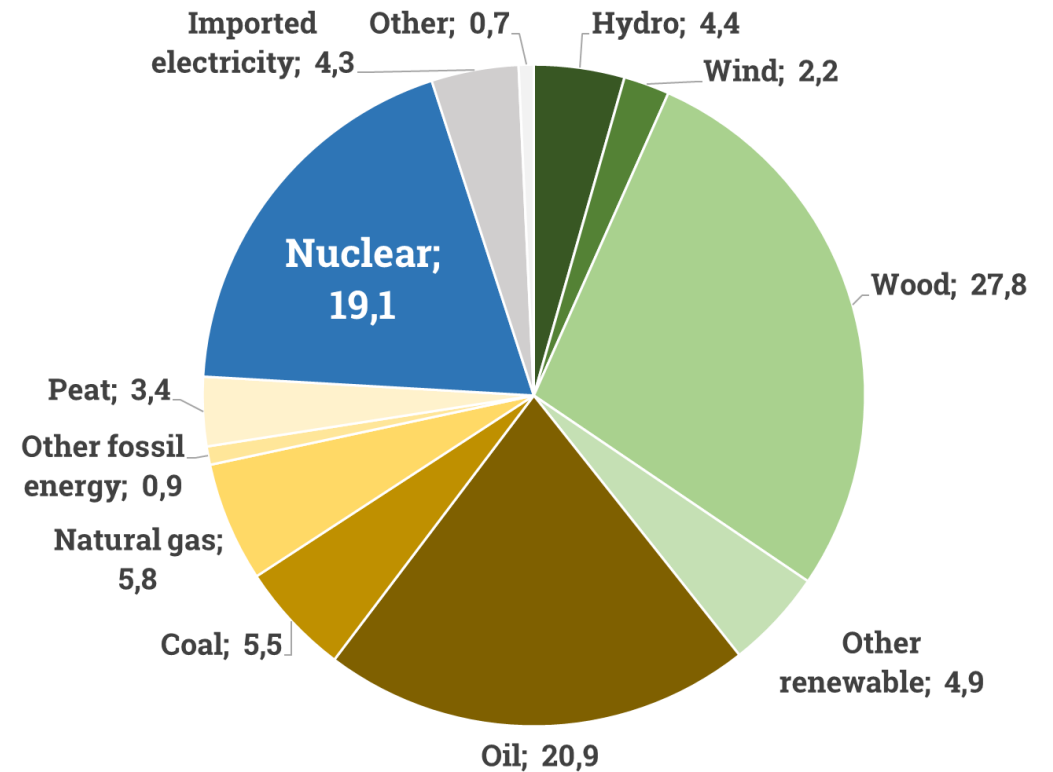


Finnish energy economy

- Finnish climate target: Carbon neutral by 2035 and carbon negative afterwards
- Large dependence on forest bioenergy
- Electricity demand expected to grow over 50 by 2050*
- Coal phase out by 2029
- Total energy use 377 TWh
- Total electricity consumption 87 TWh

*source: Finnish Energy [https://energia.fi/files/4946/Energia-ala_nvahahilisyystiekartta_2020.pdf]

Primary energy sources (%)



Source: Statistics Finland 2022

Nuclear energy in Finland

Currently operating

- Olkiluoto 1: 890 MW, Asea Atom BWR (1978)
- Olkiluoto 2: 890 MW, Asea Atom BWR (1980)
- Loviisa 1: 507 MW, VVER-440 PWR (1977)
- Loviisa 2: 507 MW, VVER-440 PWR (1980)
- Olkiluoto 3: 1600 MW, EPR (scheduled to start for regular operations December 2022)

Decommissioned

- FIR1: 250 kW TRIGA Mark II research reactor (1962-2015)

Under construction

- ONKALO repository (2025)

Cancelled

- Hanhikivi 1: 1200 MW, VVER-1200 (cancelled in 2022)



Current nuclear legislation

- Basis for legislation: "Use of nuclear energy must be in the general interest of the society and must not cause harm to people or the environment or advance nuclear proliferation"
- Each NPP and final repository requires a decision in principle from the parliament (and the municipality in question)
- Radiation and Nuclear Safety authority operates under the Ministry of Social Affairs and Health, energy policy under Ministry of Economic Affairs and Employment
- State-run Nuclear Waste Management Fund, funds collected from the industry
- Nuclear waste created in Finland must be disposed of in Finland

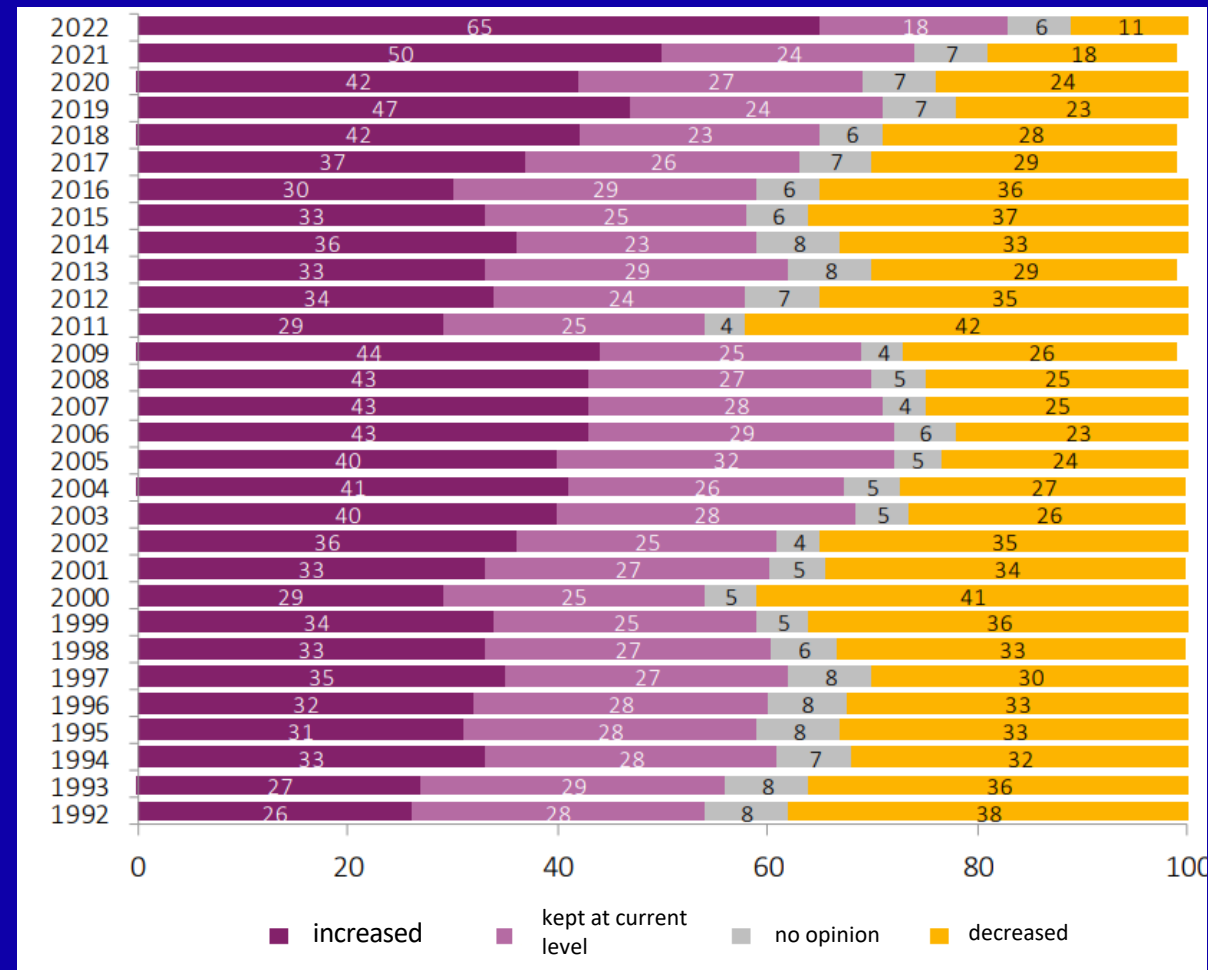
Future perspectives

- Nuclear energy has been and is an important part of Finnish energy portfolio and necessary to guarantee energy security, sustainability and energy equity
- Several trends and factors underline the need for nuclear power also in the future:
 - Replacing remaining fossil fuels and peat
 - Securing carbon sinks and biodiversity in forests
 - Electrification of industries and transport
 - Demand for hydrogen and e-fuels



Trends in public acceptance

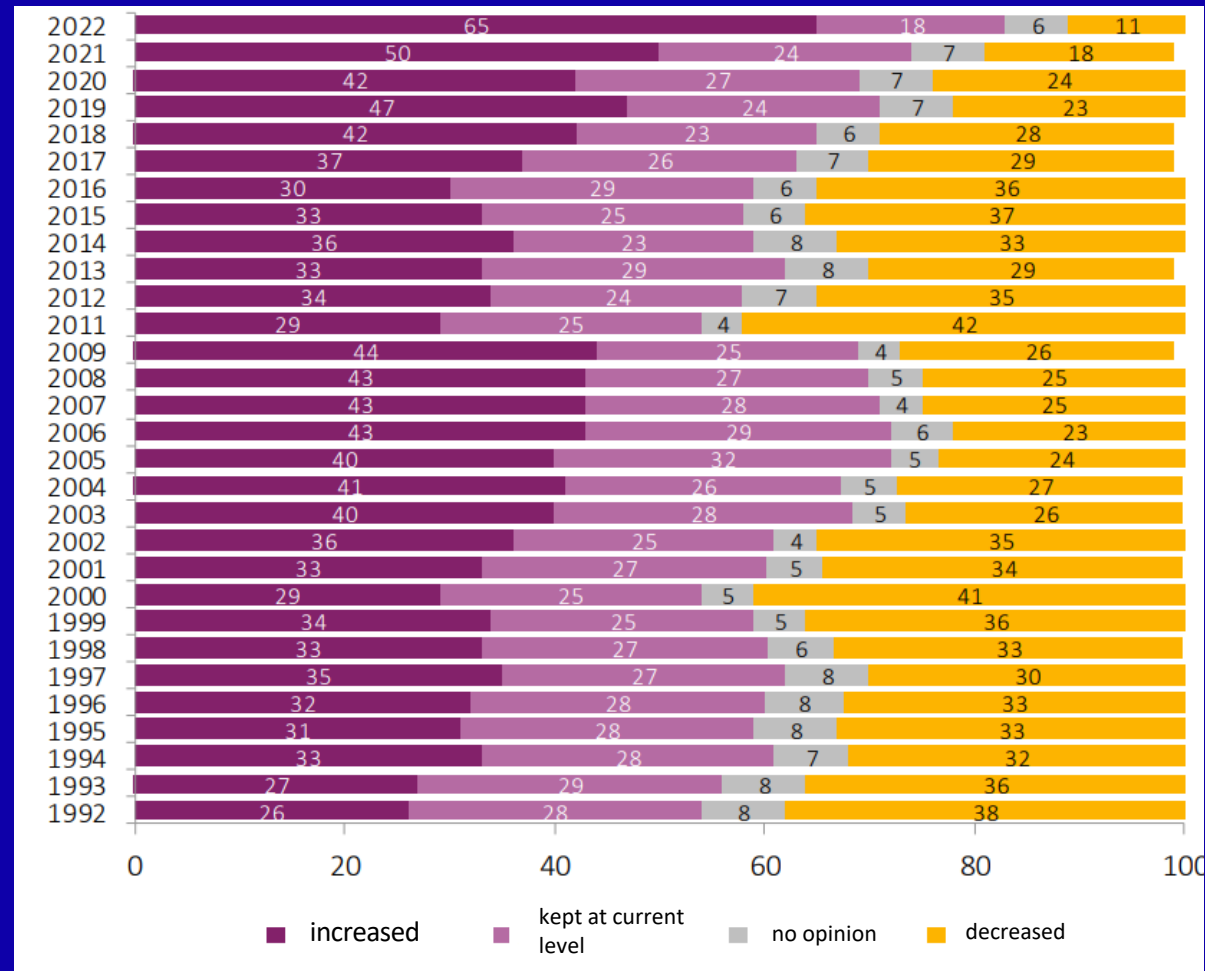
“The use of nuclear energy should be...”



Trends in public acceptance

“The use of nuclear energy should be...”

Green voters 2022:
 52 % increased
 20 % kept at current
 6 % no opinion
 23 % decreased



Trends in public acceptance

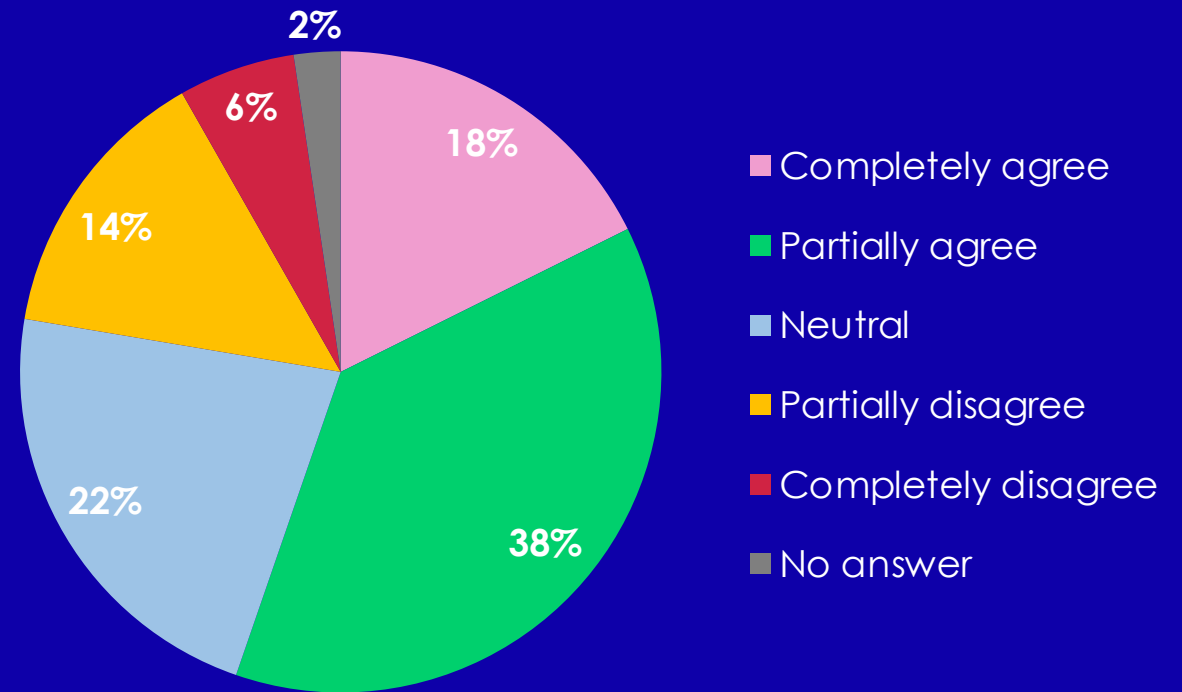
- Green voters 2022:
 - 52 % want increase
 - 20 % want kept at current
 - 6 % have no opinion
 - 23 % want decreased
- 78 % have heard of SMRs, 68 % of population positive towards SMRs, 15 % negative

Local political acceptance

"New kind of small nuclear power plants are being developed.

I accept siting such plant in Helsinki."

(Helsinki City Council Members 2021, N=85)
Source: Iltalehti



Greens for nuclear?

"We want to take care of the safety of nuclear energy as part of a sustainable energy portfolio

- Fennovoima project should be replaced with equivalent amount of stable, zero-emission energy production
- Life time extensions to current plants should be granted if they are deemed safe by the Radiation and Nuclear Safety Authority STUK
- Nuclear energy legislation should be renewed and SMR regulation streamlined without compromising safety."

(Political programme 2023-2027)

"The energy economy must be efficient, based on zero-emission or low-emission forms of energy and make use of all sustainable solutions that reduce the use of fossil fuels."

(Party principle programme 2020-2028)

Why so popular?

Traditional explanations

- Pragmatism, engineering mindset
- Distribution of societal benefits of nuclear power
- High trust towards authorities, including STUK
- Accepted waste disposal solution



Photo: Hannu Häkkinen, Finnish Heritage Agency data base: finna.fi

Why so popular?

More recent explanations

- Cutting dependency of Russian energy
- Sense of urgency, climate change
- Concrete case examples: heavy industry energy needs, decarbonizing Helsinki district heating
- Science-based policy making
- Renewable energy >< Non-combustion based energy



Photo: Hannu Häkkinen, Finnish Heritage Agency data base: finna.fi

Kiitos – Thank you!

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