

Nuclear power in Norway?

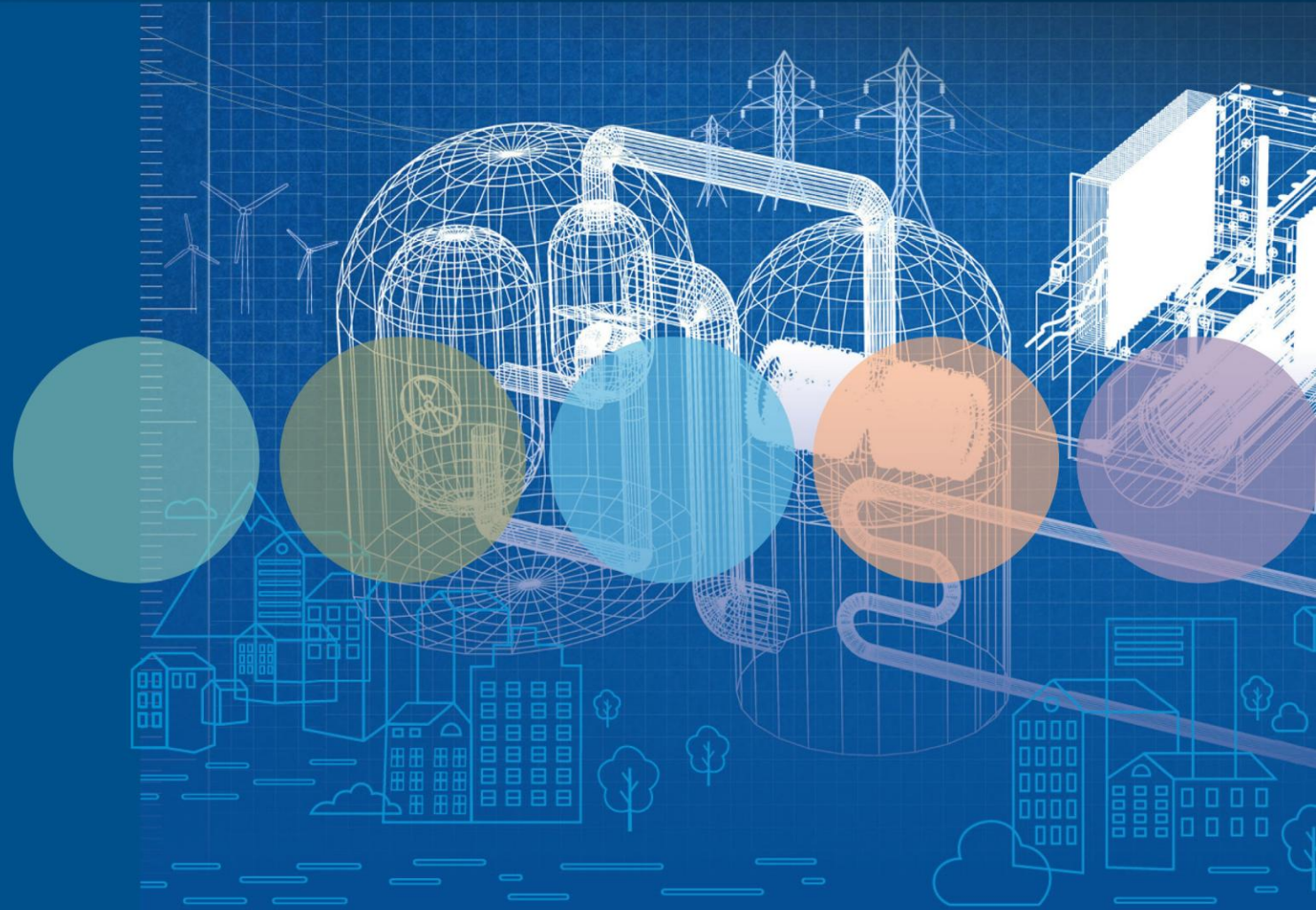
*Nuclear is not a trivial, private decision in a
'non-nuclear' country like Norway*

Presentation of *NOU 2026:4*

To the VIII Conference of the European and Western
Balkan Cooperation in Energy Law

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Members of the Commission



Mandate

1

What role can nuclear power play in the Norwegian energy system?

2

What would be required for Norway to introduce nuclear power?

3

Establish an up-to-date knowledge base for assessing the introduction of nuclear power in Norway.

- Previous official report on nuclear power in Norway: Official Norwegian Report 1978: 35A *Nuclear Power and Safety*
- In 1986, the Norwegian Parliament (the Storting) concluded that: 'Nuclear power is not an option for Norway's energy supply'
- Norway had research reactors in Halden and Kjeller until 2018/2019

Advantages of nuclear power

- Low greenhouse gas emissions
- High energy density, a lot of power in a small area
- Stable and high energy production
- Good system characteristics, operationally reliable, and dependable
- Fits well into the Norwegian energy mix
- Can be located where it is beneficial for the grid and in areas with high demand and low production



Olkiluoto, Finland. March 2025.

Disadvantages of nuclear power

- Radioactivity and radiation hazards requiring a high level of safety throughout the process
- Extensive central government responsibility for management and regulation
- Requires a plan for interim storage, decommissioning, and safe disposal for 100,000 years
- High costs – cannot be covered by market prices
- Cannot supply power in Norway until the mid-2040s at the earliest
- In addition, opening the door to nuclear power now may delay investments in renewable energy
- Introduces a new type of import dependency for the Norwegian power system



Competence and capacity

- Norway currently lacks sufficient **competence** and **capacity** to operate nuclear power plants
- Competence is needed among **operators, suppliers** and **investors**
- Competence and capacity are needed within the **authorities** to manage safety and process applications
- Many European nuclear energy countries **lack the capacity** to upgrade old plants
- Developing training programs, graduating candidates, and cultivating a safety culture all require **time**
- Many roles require **security clearance** – challenging to rely on international expertise and capacity



The state must accept extended responsibility and obligations

The State's responsibilities and obligations

- The State is bound by **international obligations**: it must develop **regulations**, carry out **supervision** and **safety checks**, and ensure the necessary nuclear emergency **preparedness** at all levels
- The State is responsible for **clean-up** and **rehabilitation** following serious accidents, in the event of bankruptcy, or if a company is unable to meet its obligations – it is not sufficient to rely on commercial operators only
- The state must ensure **institutional control** for the foreseeable future, even though the nuclear power operators are responsible for the safe decommissioning of the facilities and the disposal of waste
- Nuclear power requires a different and more challenging approach to coordination with electricity **network planning**, **cooling water** disposal, national **defence**, and local emergency **planning and capacity**, as compared to other sources of electricity



Nuclear power is expensive

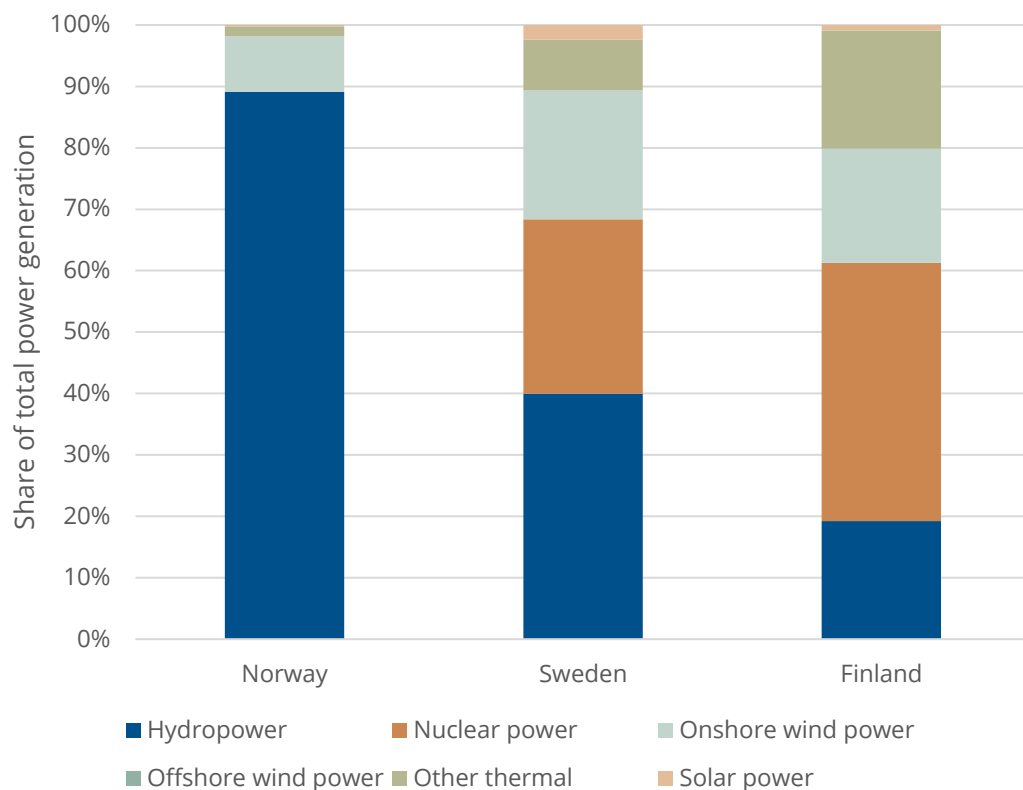
- Expected **cost per kWh**: 141 – 236 øre/kWh (13-22 eurocent/kWh)
 - Investment costs 109 000 to 177 000 NOK/kW
 - Opex, reinvestments and waste management 13 to 30 øre/kWh
 - Revenue from sale of heat, GoO, and ancillary services push break even price down by 9-17 øre/kWh
- Financing costs driven by high capex and long development and building time
- Given what we know today, the market prices would need to be **2–4 times higher** for nuclear power to be profitable
 - Alternatively, investment costs will have to fall by **70 to 80 per cent**
- Nuclear power in the Nordic region requires substantial government subsidies



The additional socioeconomic benefits are small

Topic	Reflected in the present value of the business	Socio-economic added value
Positive characteristics for the power system	Yes	No
Contribution to security of supply	Yes	No
Production independent of weather	Yes	No
Low greenhouse gas emissions	Yes	No
Land use and location conflicts	To a large extent	Uncertain, potentially positive
Government costs	To some extent	Negative

Norway can achieve the energy transition without nuclear power



Multiple alternatives

Wind and solar power, hydropower, nuclear power, and more efficient energy use

The alternatives have different characteristics

Safe and stable grid operation is ensured using proven technology and at reasonable costs

A unique starting point for Norway

No analyses indicate that Norway MUST have nuclear power to succeed in the transition

Safe and stable grid operation is ensured regardless, using proven technology and at reasonable costs

Climate Goals, Climate Risk, and Nuclear Power

- Nuclear power is emission-free during operation, on par with wind and hydro—an argument for more nuclear power **globally**, particularly in countries with a high share of fossil fuel-based power
- Norway's climate targets: -55% by 2030, -70–75% by 2035, a low-emission society by 2050
- Nuclear power cannot be operational in Norway until the mid-2040s at the earliest → can **contribute** only **to a limited extent to achieving the climate goals** for 2030, 2035, or 2050
- The climate argument for nuclear power in Norway depends on what the alternative is: does it replace fossil fuels or renewables?
- Transition risk: climate policy is constantly evolving – an investment with an 80–100-year time horizon must withstand uncertainty regarding future framework conditions



The Commission's key recommendation

A full process with the aim of making Norway a nuclear energy country should not be initiated now

A competence project for nuclear power should be established to potentially shorten the path towards nuclear power in the future



The Norwegian Nuclear Power Commission

Appointed 21 June 2024



<https://nettsteder.regjeringen.no/kjernekraftutvalget/>