



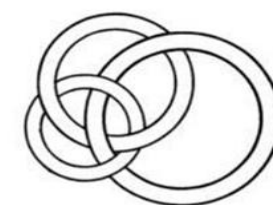
ENERGY PRODUCTION

Vaka Sif, Neve Adele,
Nora Agnete and Jonas



Nordland
FYLKESKOMMUNE







BRØNNØYSUND
VIDEREGÅENDE SKOLE



VAALAN
LUKIO



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-  Hydropower energy
-  Wind energy
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-  Nuclear power
-  Forest energy
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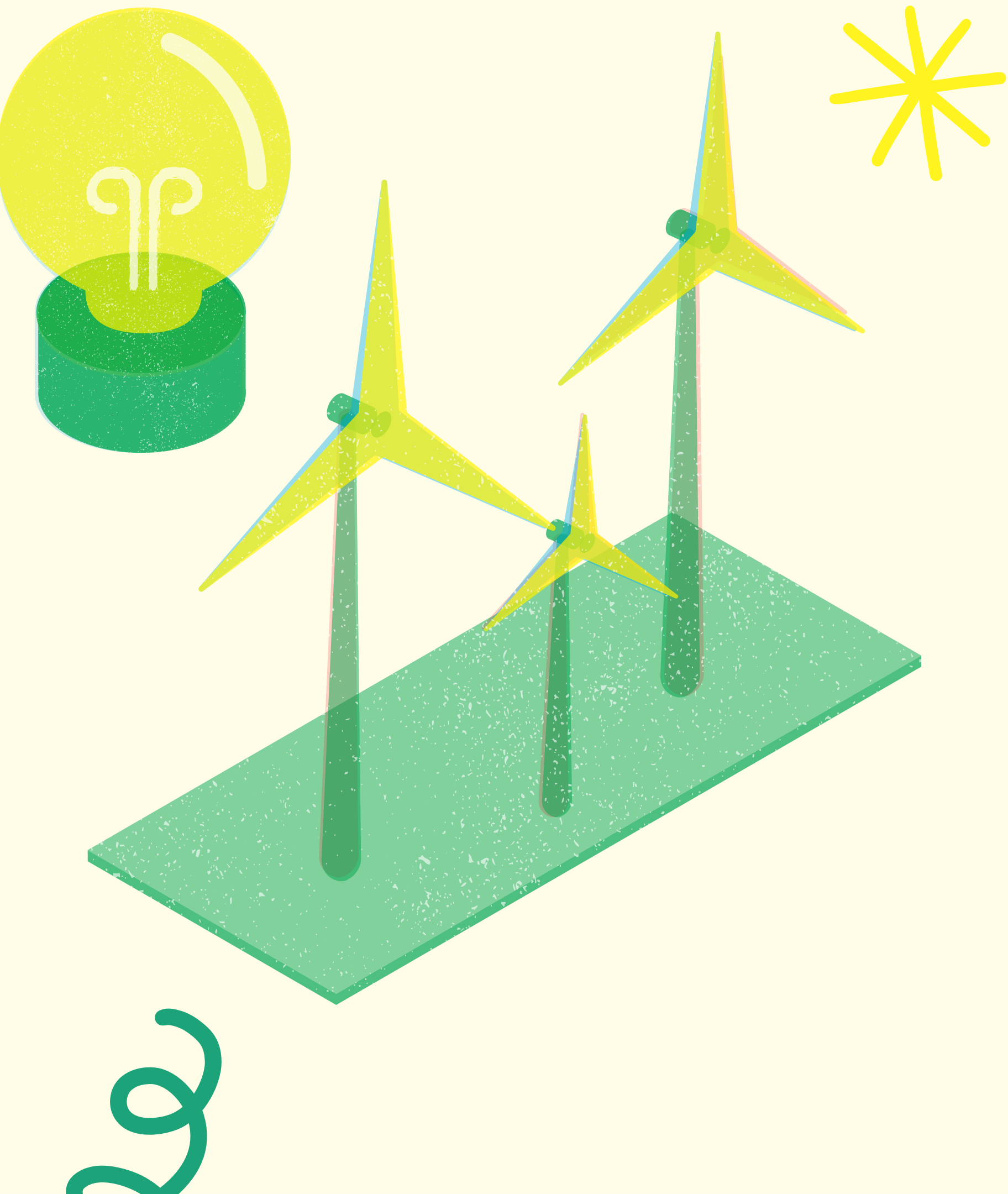
HYDROPOWER ENERGY

- Hydropower is clean and sustainable.
- Finland: 250 plants.
- Iceland: 15 plants.
- Norway: 65 plants.

How will it be in 20 years?

- Finland: Hydropower 9% by 2045, with tech improvements.
- Iceland: Focus on hydropower, balancing growth & environment.
- Norway: Innovating to boost hydropower & reduce impact.





WIND ENERGY

- Finland: Hydropower 15–20%
- 1,601 wind turbines (2023).
- Wind power growing fast with Nordic Green Energy & TuuliWatti.
- Iceland: 2 test turbines, 0.1% of electricity.
- Norway: 65 wind farms, 1,392 turbines, 10% of energy.

How will it be in 20 years?

- Finland: Wind power growing; 24% of electricity by 2030.
- Iceland: Minimal wind power, but small projects may emerge.
- Norway: Expanding offshore wind, but onshore faces resistance.

OIL AND GAS



- Oil and gas are a big part of Norway's economy.
- Most of Norway's oil and gas is exported, but it is also used in transportation.
- Finland and Iceland have no domestic oil and rely entirely on imports.
- Finland is shifting towards sustainable energy like wind and hydropower but still depends on oil for transport, industry, and heating.

How will it be in 20 years?

- Finland: Cutting oil use, shifting to renewables.
- Iceland: Still imports oil but expanding renewables.
- Norway: Oil remains, but focus shifts to sustainability.



NUCLEAR POWER



- Finland: 5 nuclear plants (2 in Loviisa, 3 in Olkiluoto).
- Nuclear is 40% of Finland's electricity, carbon-neutral.
- The first one was built in the 1970s and the newest was built in 2021, they use steam to drive turbines.
- Iceland & Norway: No nuclear power plants.

How will it be in 20 years?

- Finland: Likely to upgrade or expand nuclear, with SMRs in the mix.
- Iceland: No nuclear plants expected.
- Norway: May explore SMRs, but no large plants.

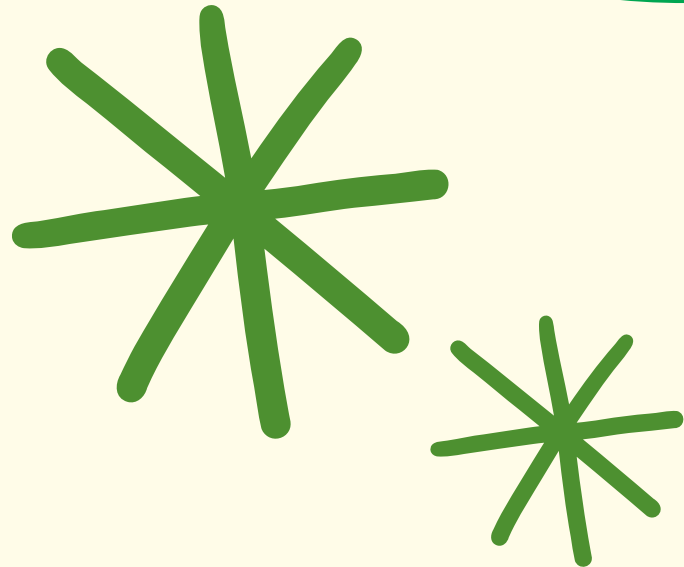


FOREST INDUSTRY

- Finland: Forest industry key; major bioenergy producer.
- Metsä Group: Among top renewable energy producers.
- Energy from wood, power plants, methanol, and bioproducts.
- Iceland: No large forests for energy use.
- Norway: not a big industry.

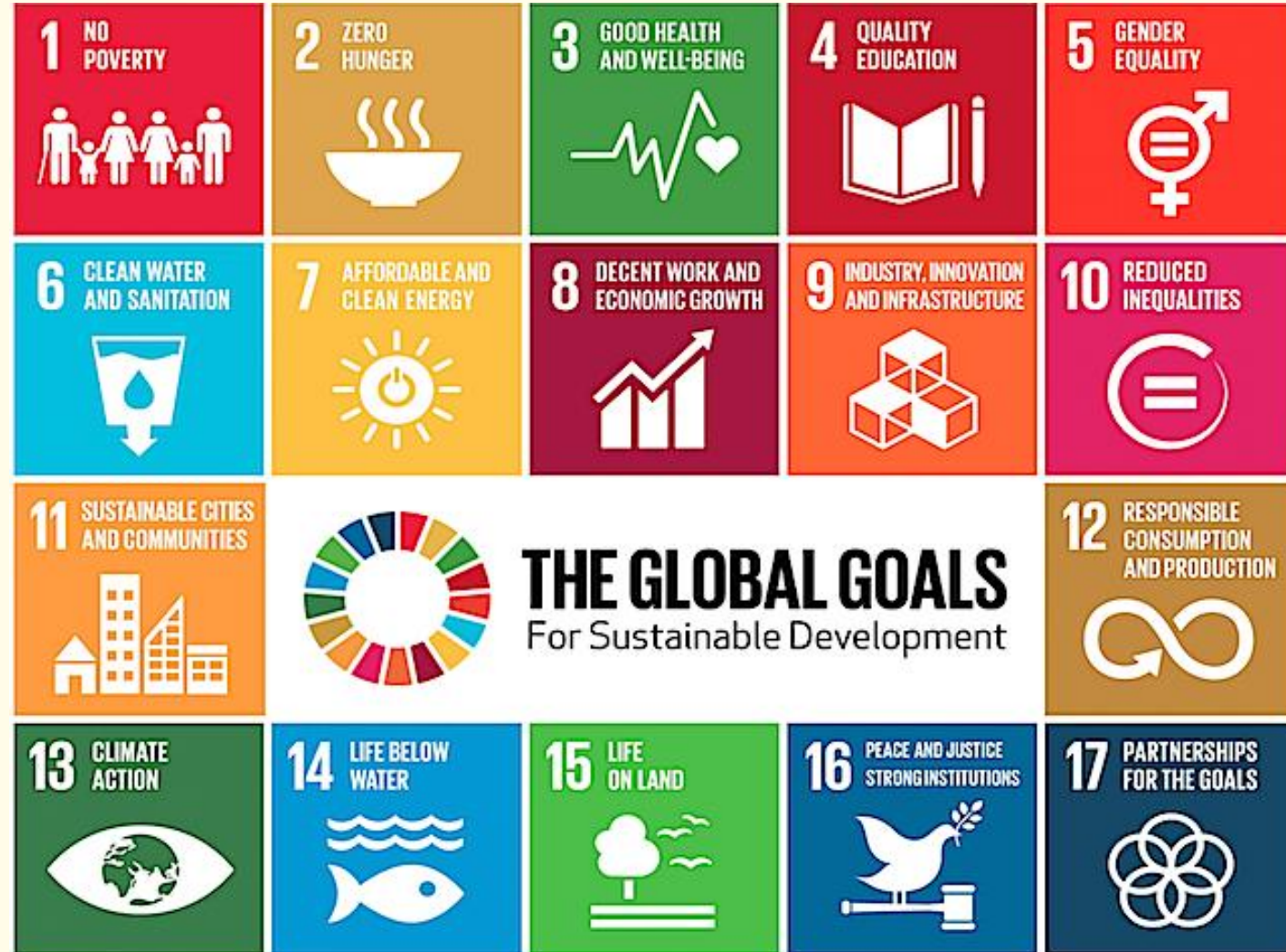
How will it be in 20 years?

- Finland: Forest industry remains key, with bioenergy advances.
- Iceland: Focus on other renewables due to small forests.
- Norway: Sustainable forestry supports bioenergy growth.

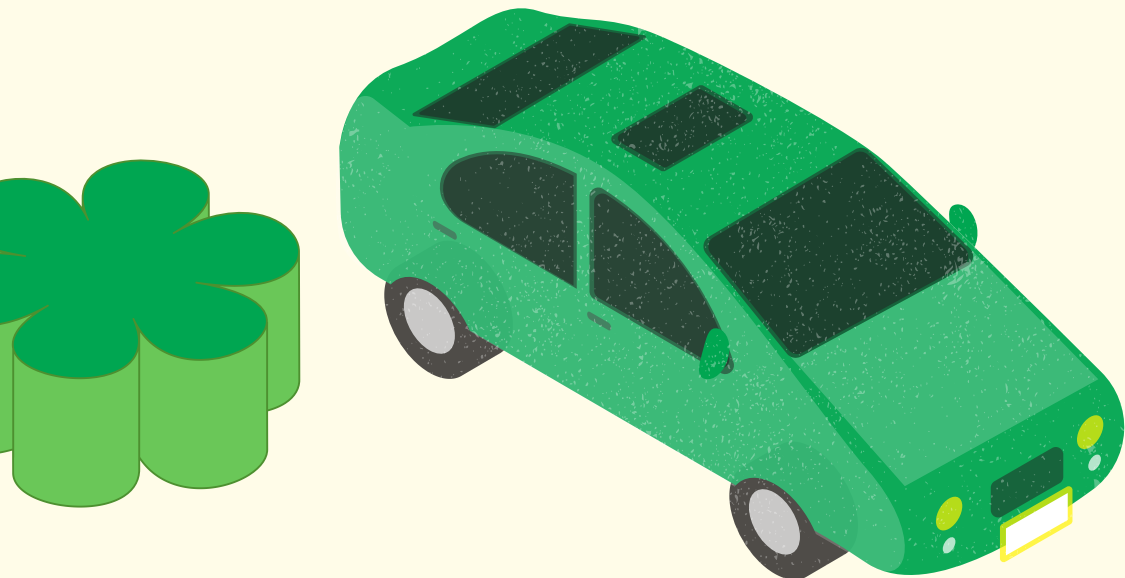


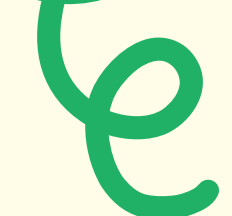
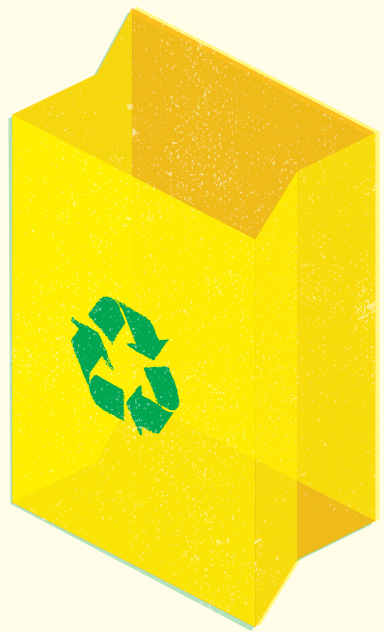


HOW IS ENERGY CONNECTED TO THE SUSTAINABLE DEVELOPMENT GOALS



- SDG 3: Energy supports healthcare, clean water, and reduces air pollution.
- SDG 7: Renewable energy ensures sustainability and accessibility.
- SDG 9: Innovation (e.g., SMRs, offshore wind) strengthens infrastructure.
- SDG 11: Clean energy reduces pollution and supports cities.
- SDG 12: Sustainable energy minimizes waste and fossil fuel reliance.
- SDG 13: Renewables cut emissions and fight climate change.
- SDG 14: Less fossil fuel use protects oceans and marine life.
- SDG 15: Sustainable bioenergy preserves biodiversity and land.

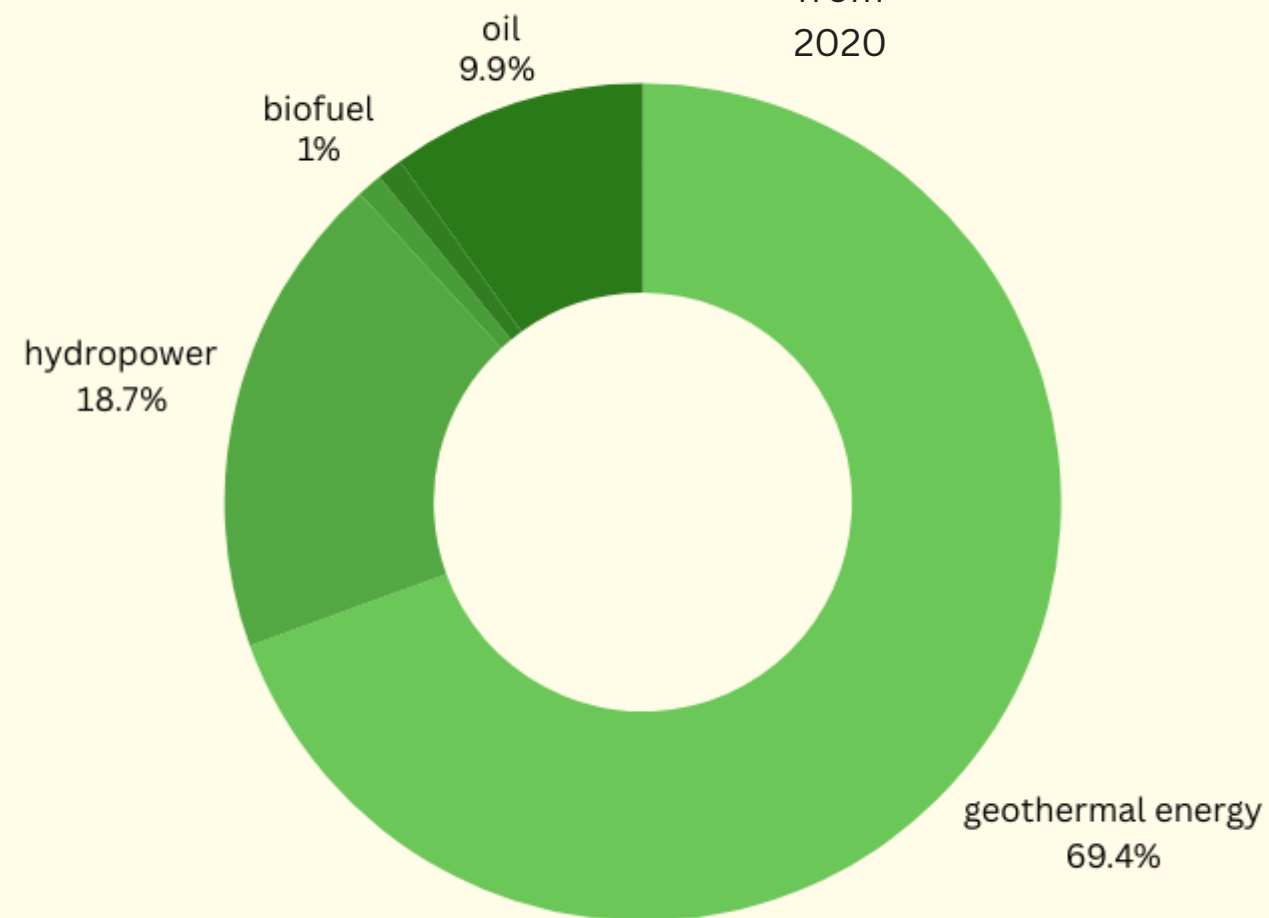




GRAPH OF ENERGY USE

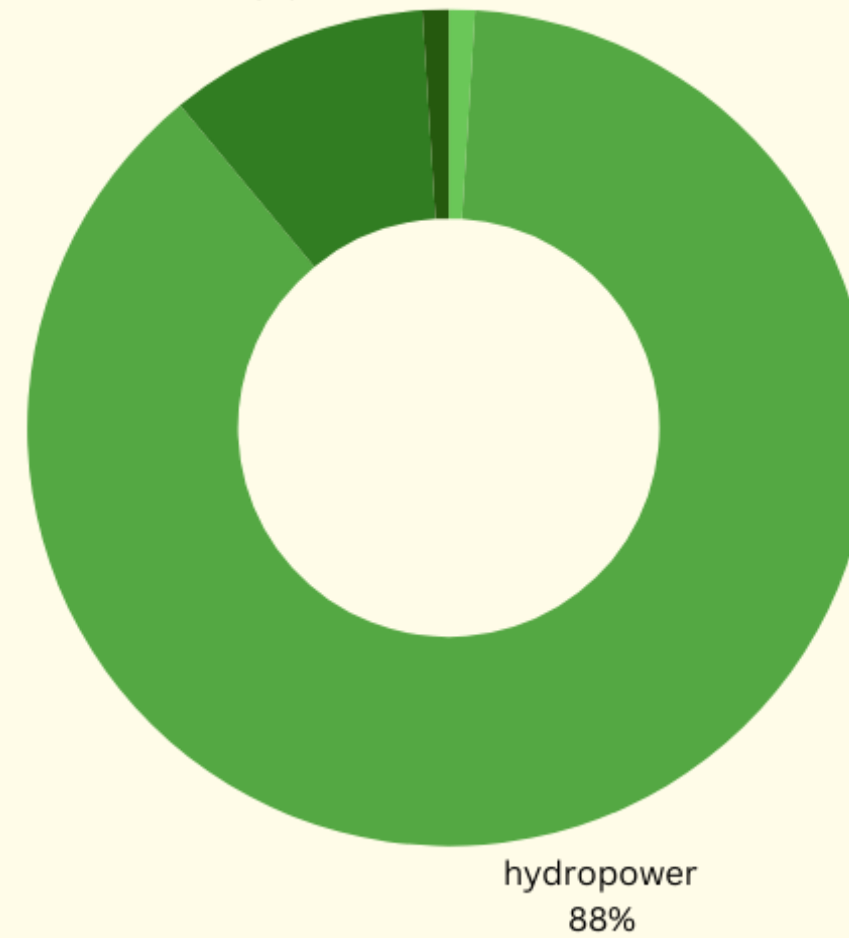
Iceland

from
2020



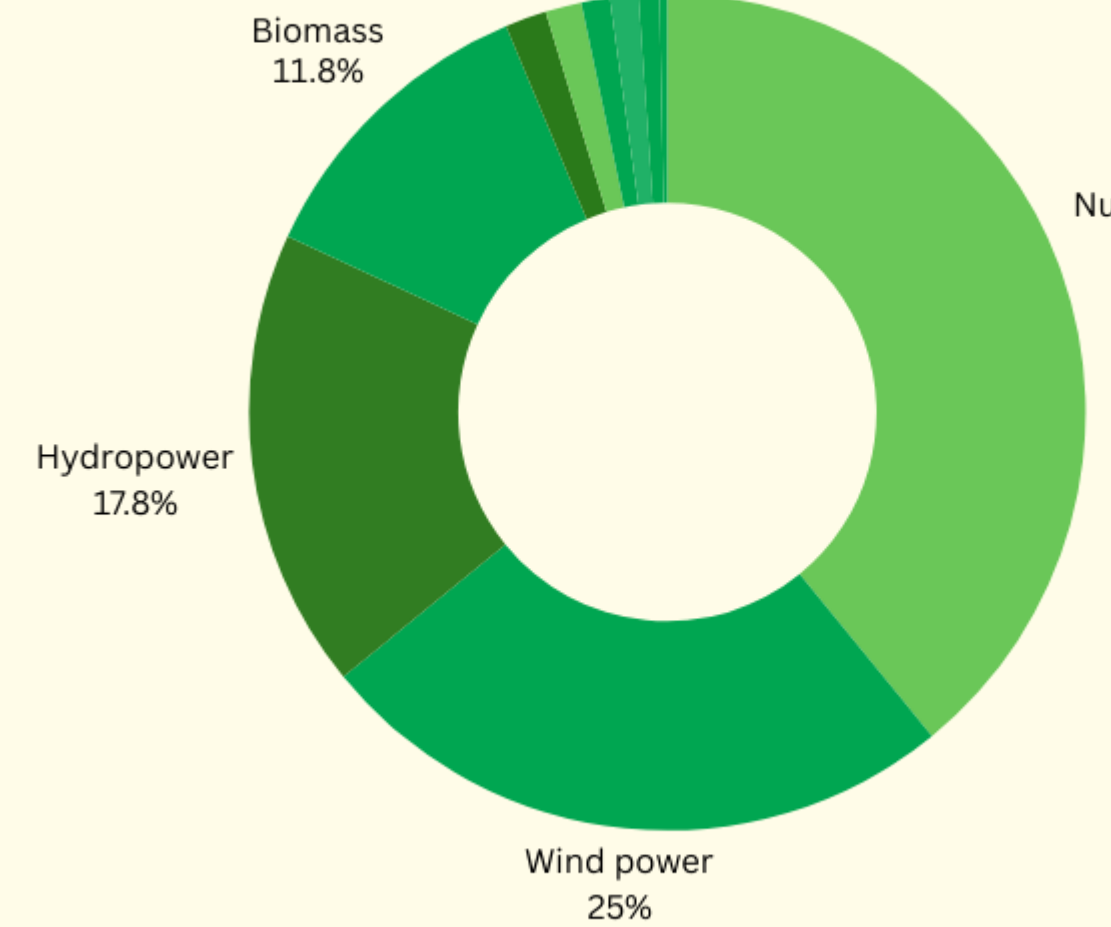
Norway

wind turbines
10% Thermal
1%

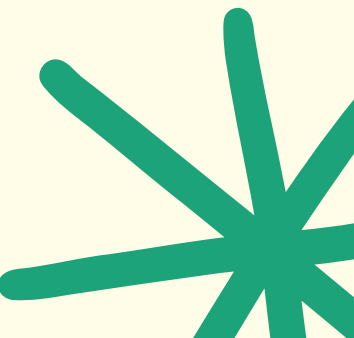
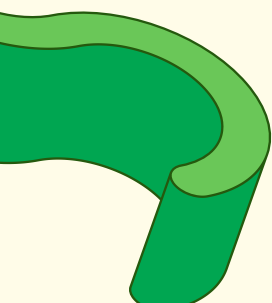
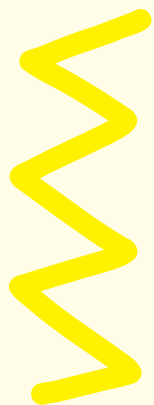


Finland

Charcoal
1.6% Oil
0.3%



Nuclear power
39.1%





Thank you!

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