

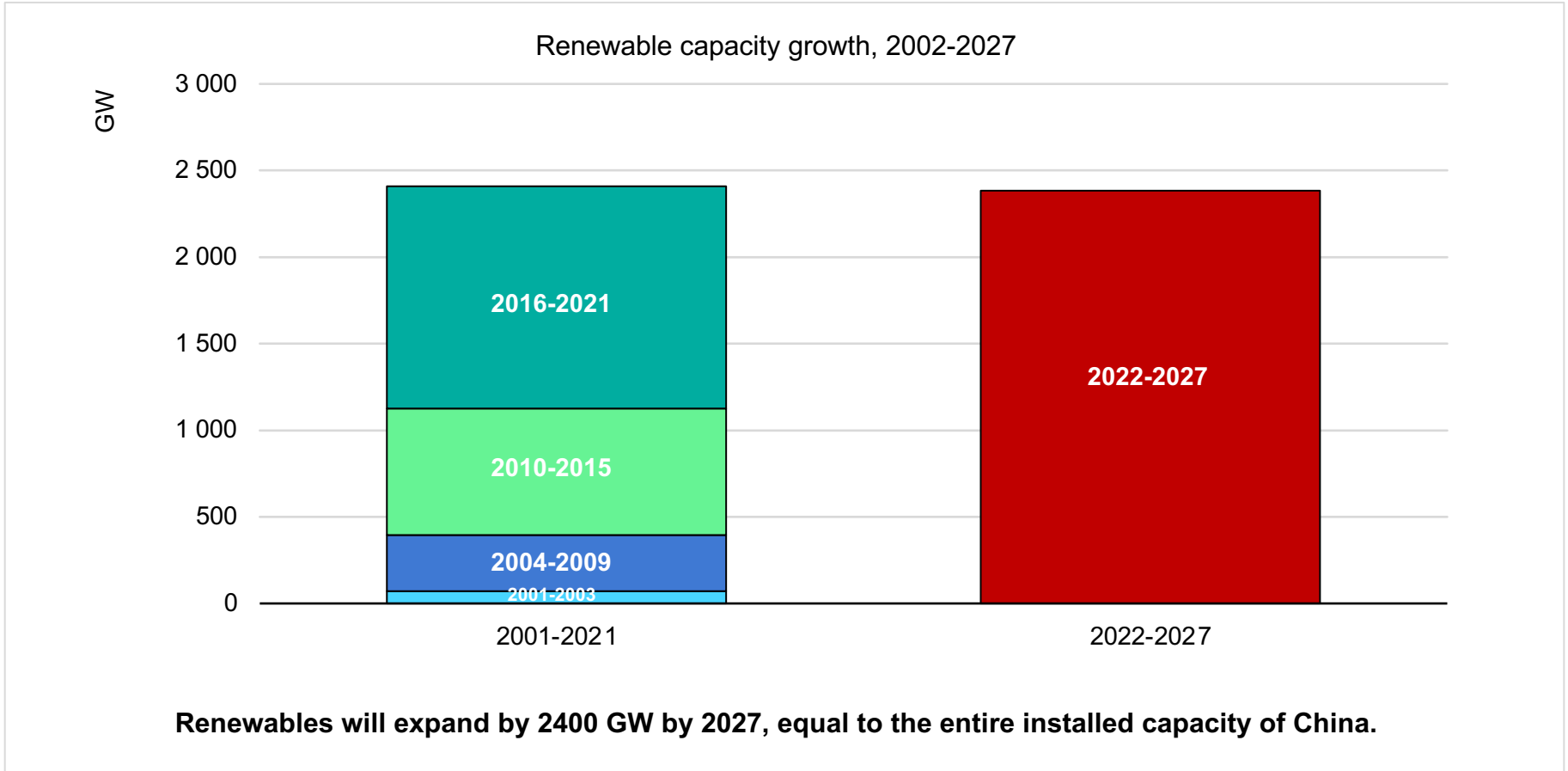


# Renewable energy and the Nordic-Baltic region

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11 December 2022

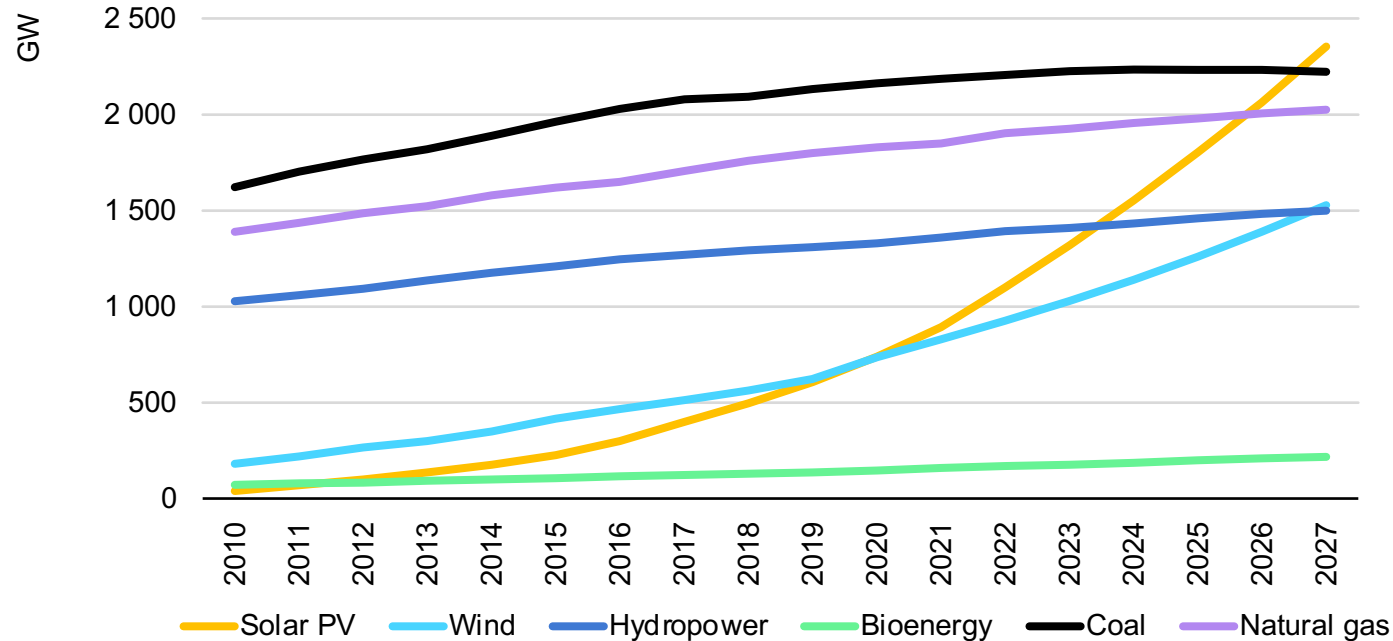
# It took 20 years to achieve renewables growth in the next five years



**Renewables will expand by 2400 GW by 2027, equal to the entire installed capacity of China.**

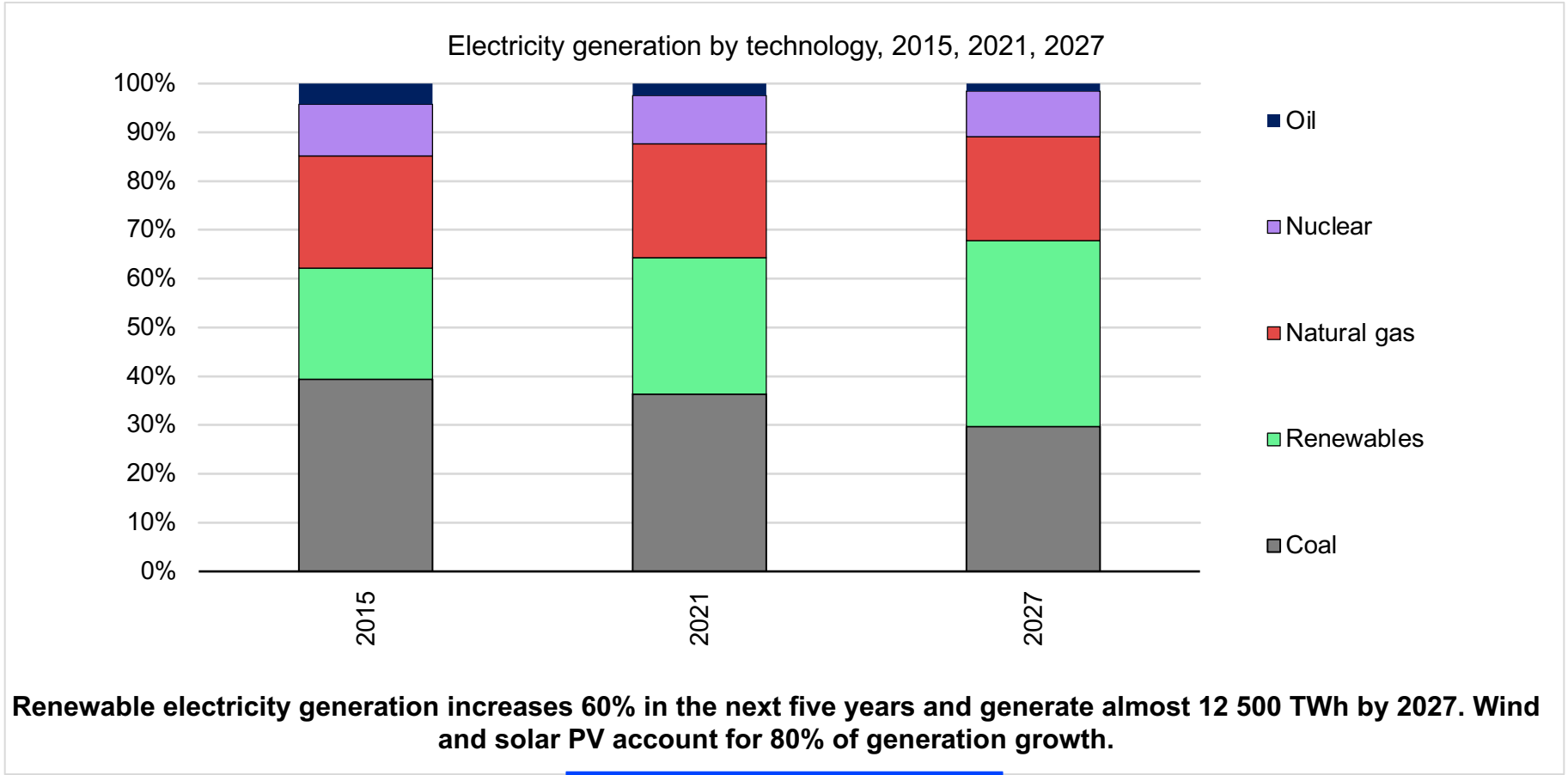
# Solar PV becomes the largest installed capacity surpassing coal

Cumulative global installed capacity by technology, 2010-2027



**Cumulative solar PV capacity almost triples 1500 GW surpassing natural gas by 2026 and coal by 2027. Renewables account for 90% of global electricity capacity expansion over the forecast period.**

# ...And renewable electricity generation surpass coal by early 2025



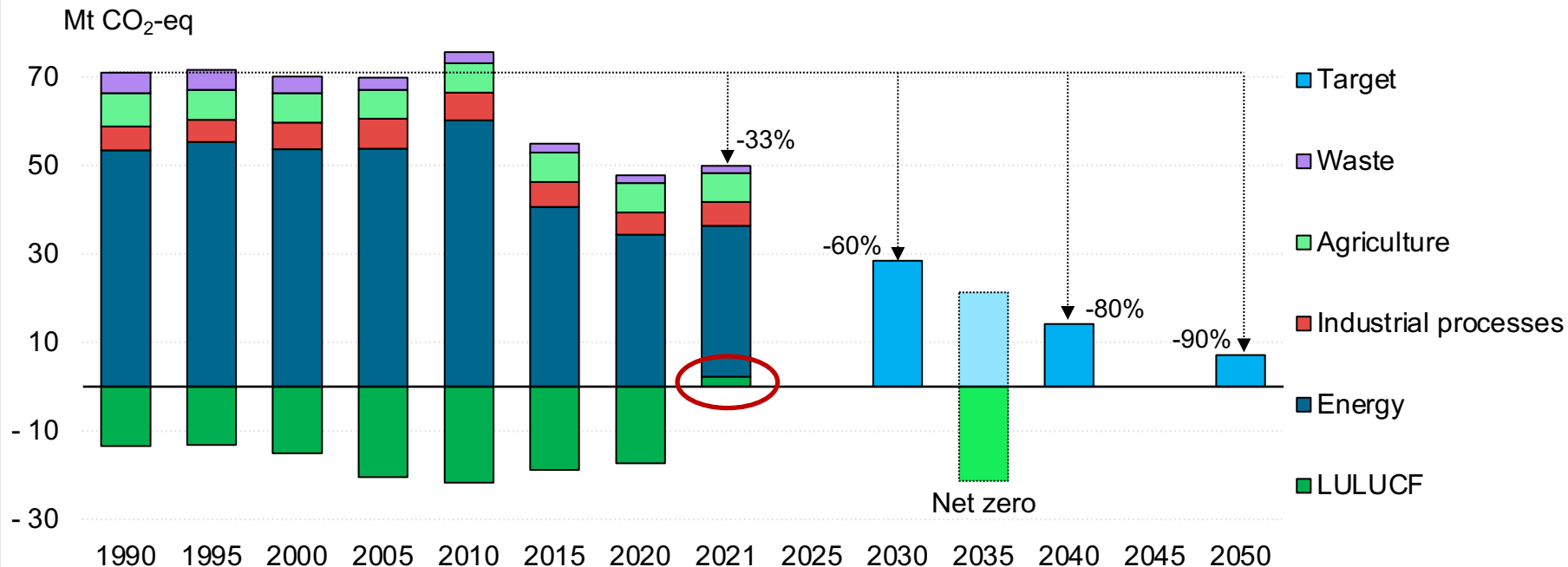
# Recent IEA in-depth reviews in the region



**IEA regularly conducts in-depth peer reviews of the energy policies of its member countries. This process supports energy policy development and encourages the exchange of international best practices and experiences.**

# FIN: World's most ambitious net zero target, challenges from land use

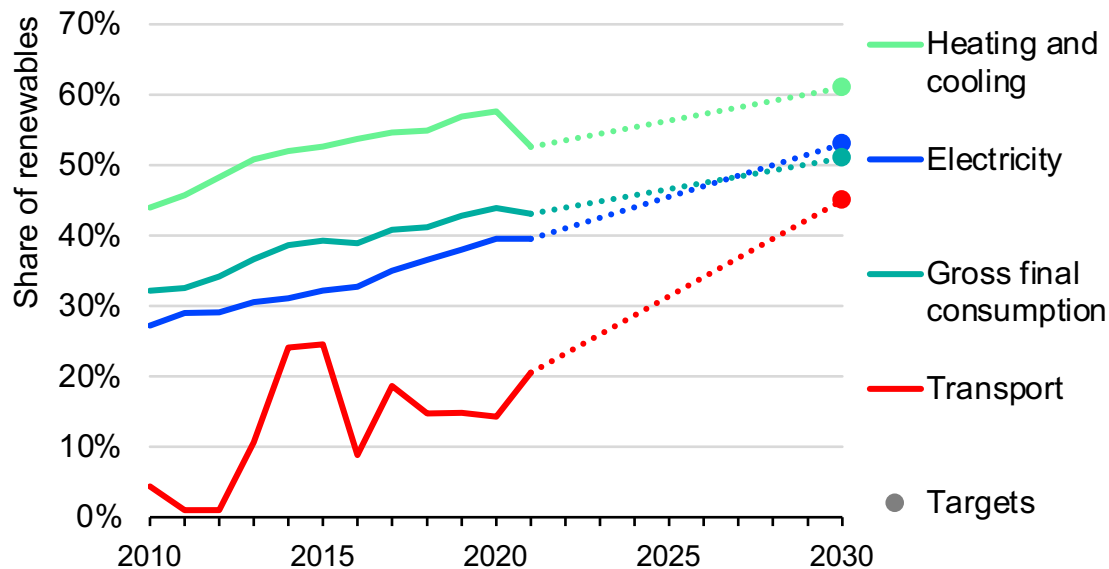
GHG emissions by sector in Finland, 1990-2021 and targets



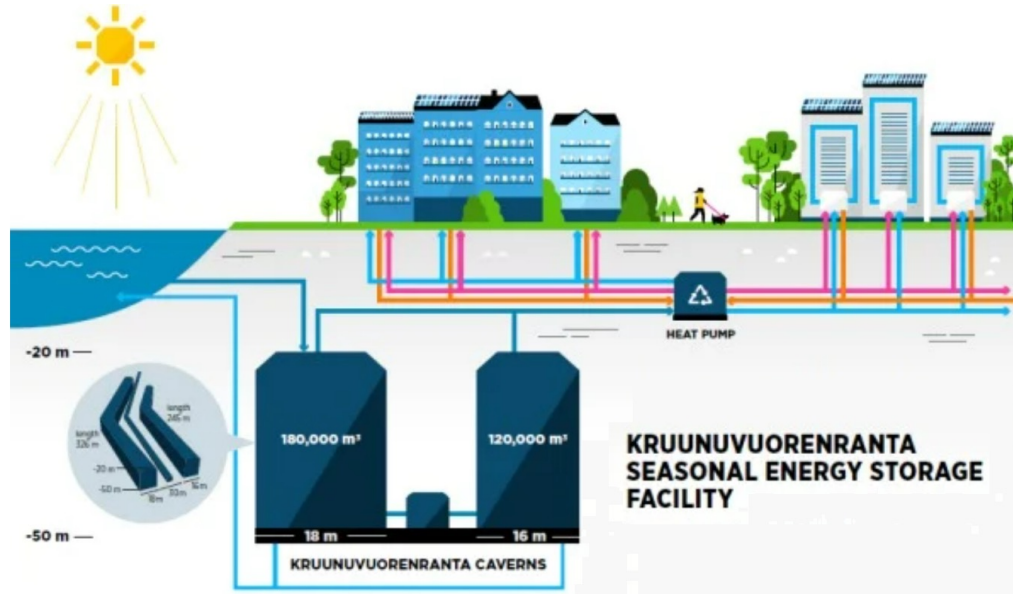
- Stronger emissions reduction and increased LULUCF carbon removal needed to meet targets
- LULUCF was a net emission source in 2021

# FIN: Need to increase renewable energy deployment

2030 renewable energy targets and status



- Meeting climate target requires accelerated deployment of wind and solar PV generation and storage
- Need to address barriers around permitting, defence and rapidly start offshore wind deployment



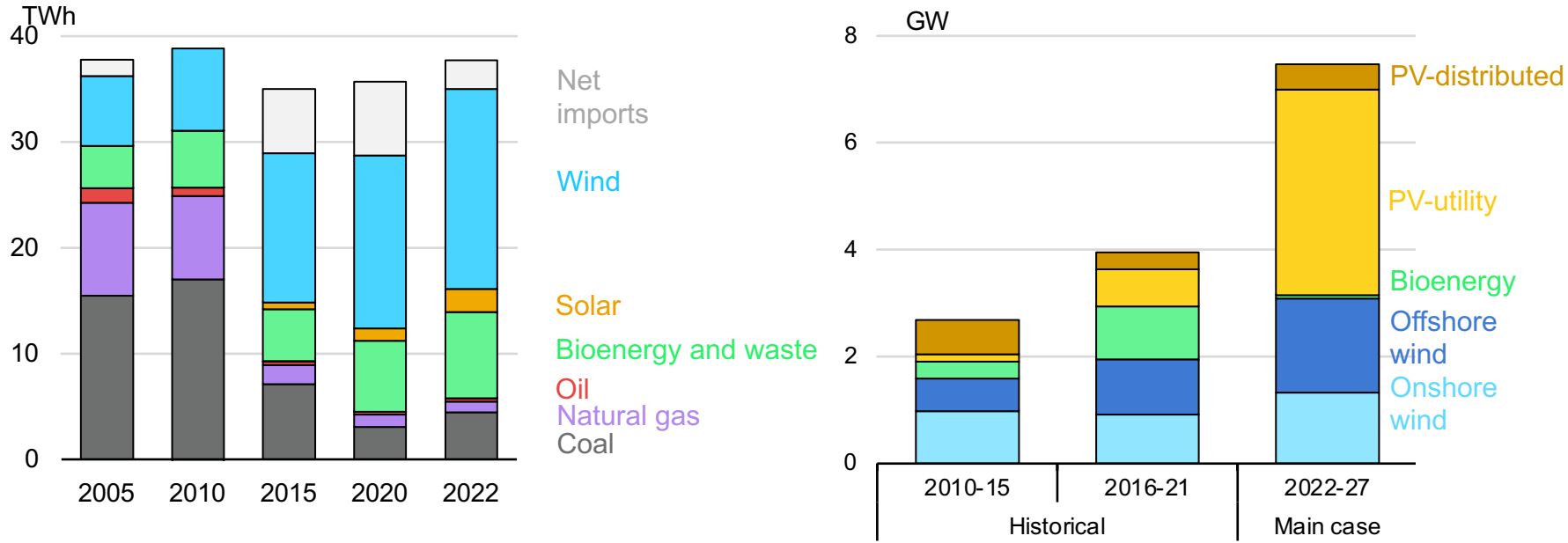
Source: helen.fi

- Finland is a global leader in deploying thermal energy storage
- This simple and low-cost technology can boost the efficiency of district heating and integration of renewables



# DNK: Preparing for very high shares of variable renewables

Electricity generation by source, 2005-2022, and renewable capacity over time



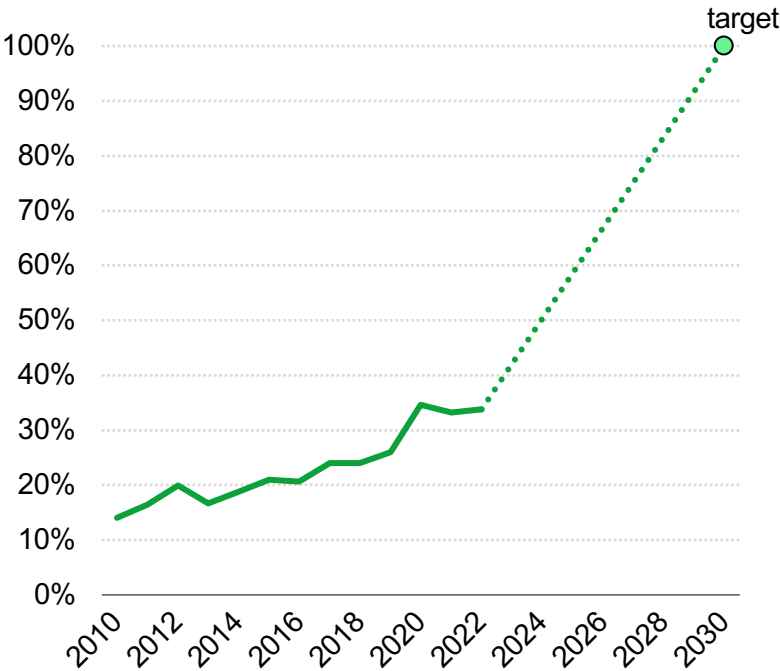
Source: IEA, Renewables 2022

**Renewables-based capacity is set to double by 2027 (7 GW) with utility-scale solar PV and no subsidies. More is possible by lifting onshore barriers in permitting, and supporting grid investment.**

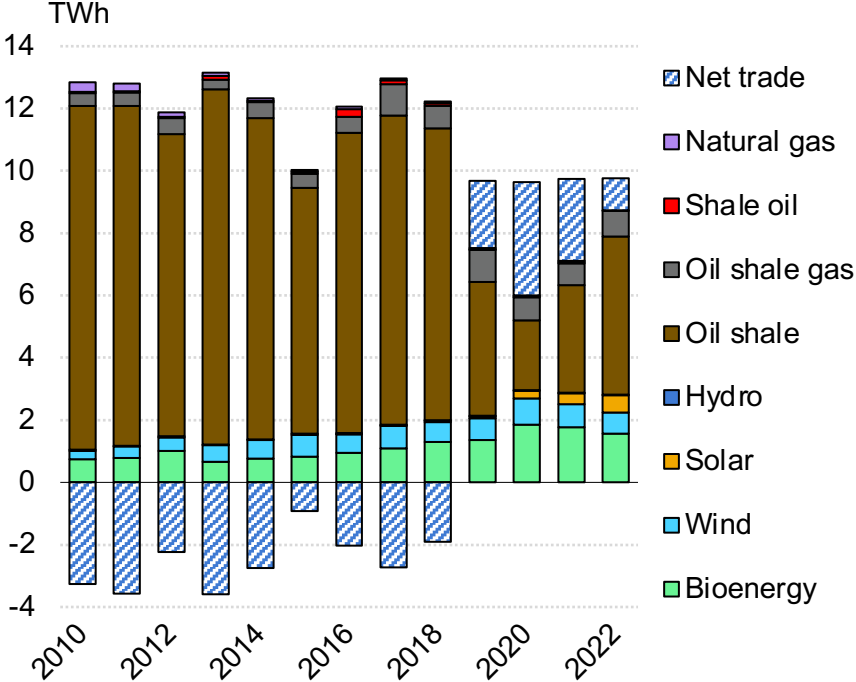
# EST: The challenge of reaching 100% renewable electricity target



Share of electricity demand covered by renewables



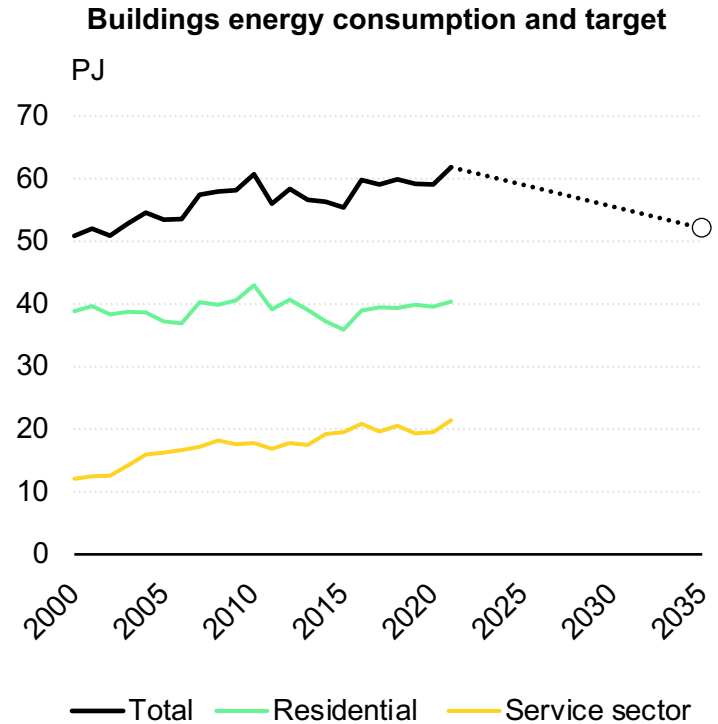
Electricity generation and trade



**Oil shale electricity generation decreased notably but has rebounded. Pace of renewable deployment not aligned with 100% target.**

# EST: High potential to reduce energy demand & emissions from buildings

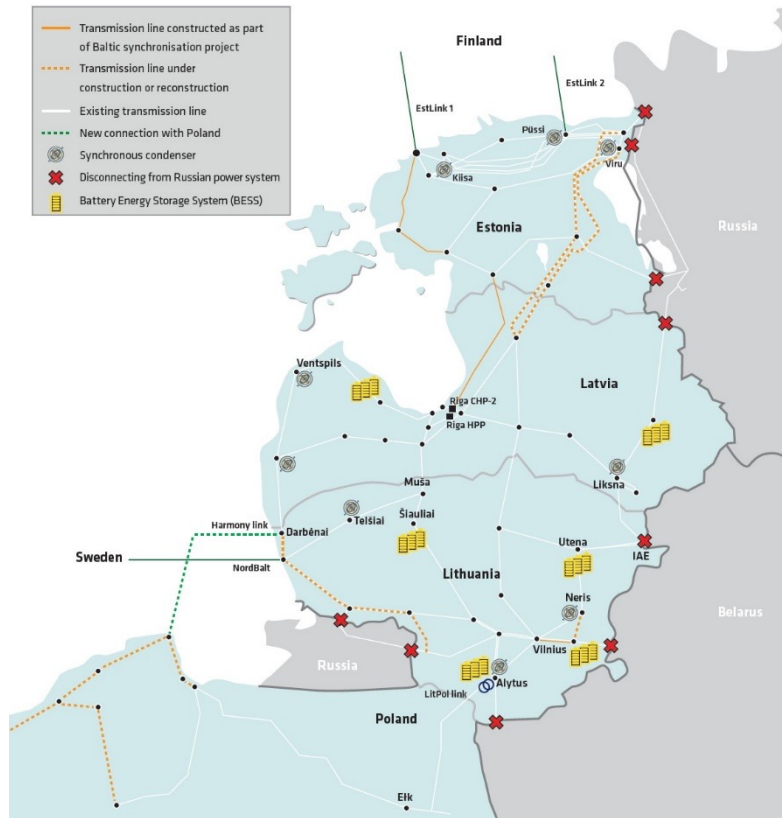
- Building stock relatively old and inefficient: 90% of buildings built before 2000
- Low level of information on building energy demand: less than 7% of buildings have an energy performance certificate
- Among buildings with EPC, 80% have energy performance below class C



**Digital tools can help improve buildings efficiency**

# Baltic sync with EU as opportunity to increase regional interconnectivity

- Baltic states aim to desynchronise from BRELL and synchronise with continental Europe by early 2025
- This project will further integrate the Baltics in the EU electricity market
- Cross-border offshore wind projects will also provide opportunity for boosting interconnectivity



- Accelerate deployment of renewable electricity generation by reducing permitting time and increasing system flexibility, for example deploying more energy storage projects.
- Increase electrification of energy demand, especially for transportation and heavy industry, to take advantage of clean electricity supply.
- Sustain and expand regional electricity interconnectivity, leveraging opportunities from Baltic synchronisation with Europe and cross-border offshore wind projects
- Scale up renovation of the building stock, especially targeting those occupied by low-income households
- Support investment in the future energy system by creating the necessary framework conditions for energy sector integration and international industrial net zero partnerships.

**iea**