



VALTIONEUVOSTO
STATSRÅDET

Finland: A Pioneer in Clean Energy Solutions

Minister of Climate and the Environment Kai Mykkänen
Future Data Summit
October 16 2024

How to accelerate the transition from fossil fuels and support sustainable economic growth?

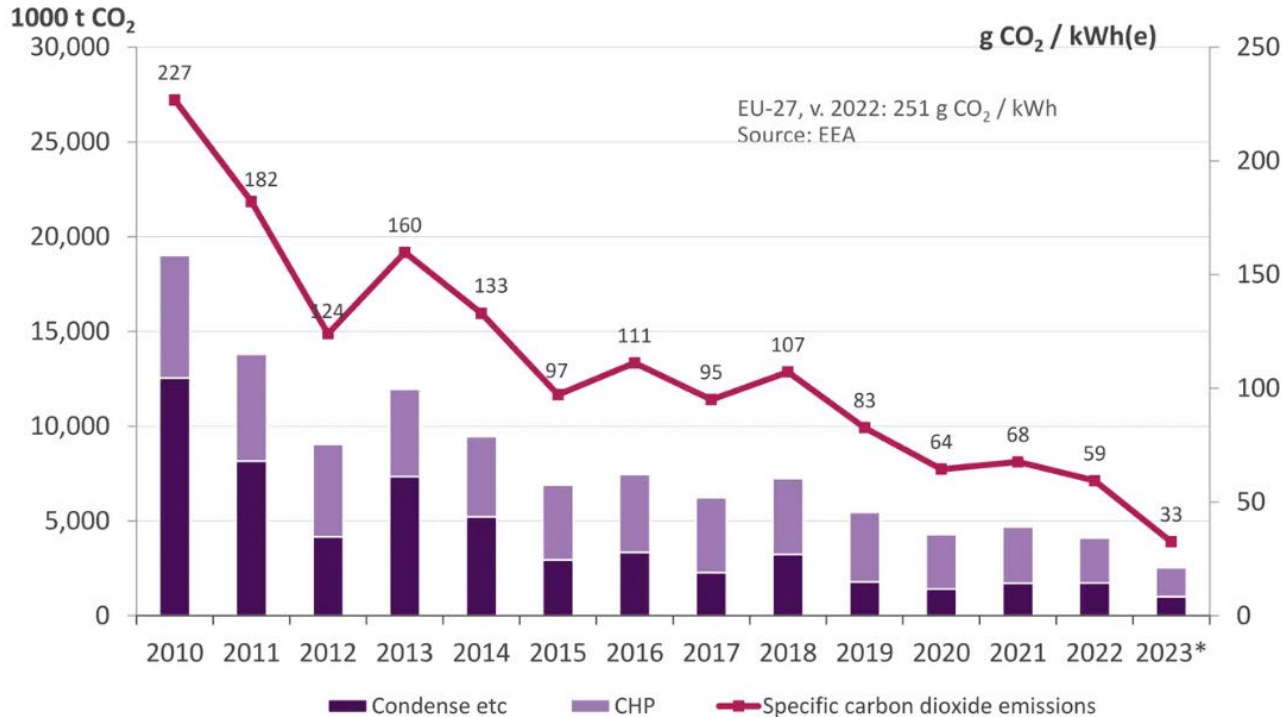
Carbon neutral
Finland

Fossil-free heating
and industry



Clean electricity

CO₂-emissions of power generation: downward trend continues



CO₂-emissions of power generation:

- 2.5 Mt in year 2023
- 4.1 Mt in year 2022
- 4.7 Mt in year 2021
- 7.5 Mt in year 2016
- 19 Mt in year 2010

→ 2023 vs. 2022 **-38 %**

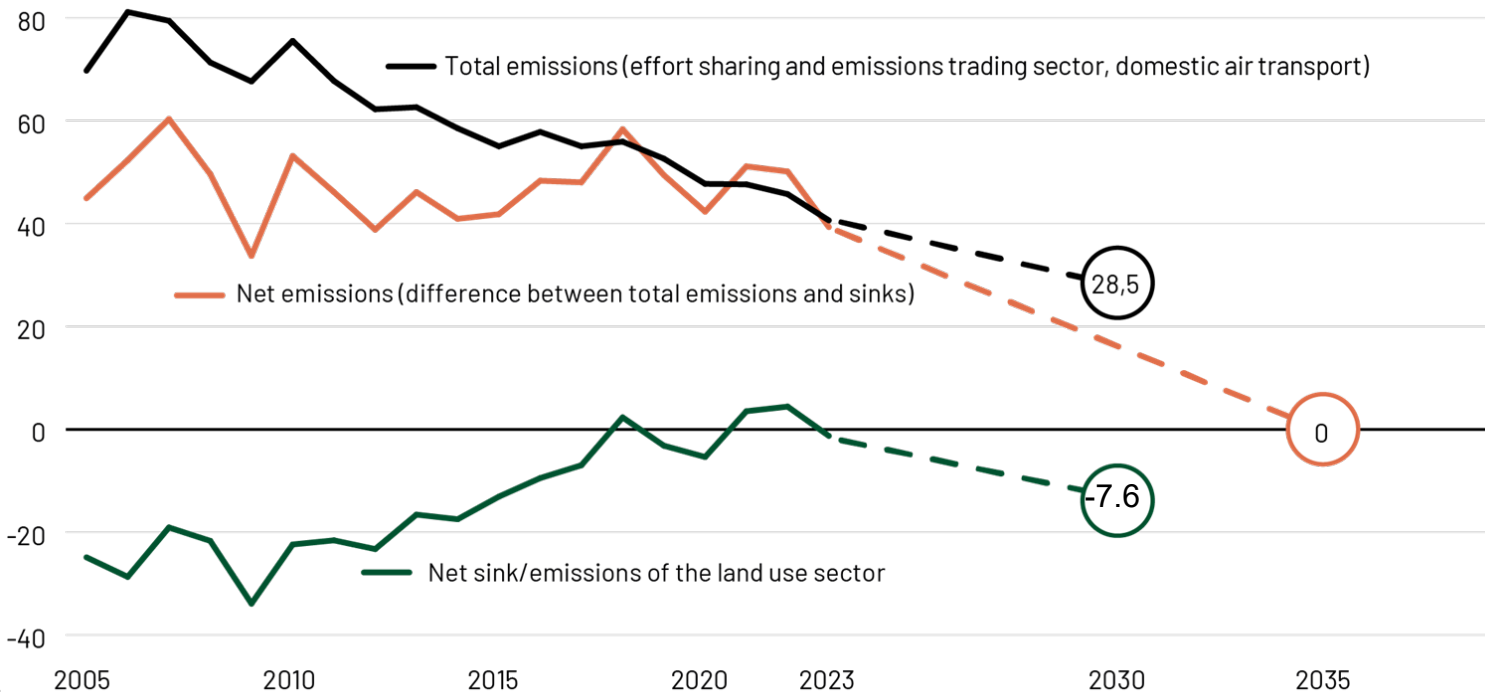
→ Emissions **-65 %** in last 5 years

→ Emissions **-87 %** vs 2010

source: Finnish Energy: Energy Year 2023

Fossil emissions are declining - challenges with the land use sector

100 Million tonnes of carbon dioxide equivalent



Utilizing waste heat from data centers for sustainable energy



NEWS 20.05.2024

GOOGLE ANNOUNCED AN EXPANSION OF ITS HAMINA DATA CENTER AND A NEW HEAT RECOVERY PROJECT



Picture: Vist Hamina

Google announced earlier today a new €1 billion investment into the expansion of its data center campus in Hamina, Finland, underpinning job creation, innovation and economic activity.

Since 2009, Google has invested €3.5 billion in its Hamina data center and related infrastructure. Today's announcement also includes a new partnership with Haminan Energia, the local district heating provider, to capture and repurpose heat from the data center for district heating.

"Today is a good day for Finland and a proud moment for Business Finland. With today's announcement Google is cementing its position as the largest inward investor into Finland in the last decade. Finland needs foreign investment as they create sustainable growth, bring jobs, and strengthen the national economy", says **Nina Kopola**, Director General of Business Finland.

Using waste heat from a new data center to cover 40% of Espoo's district heating needs

City of Espoo

15.7.2024 14.34 | Updated: 26.8.2024 10.08

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Solutions for increasing demand of flexibility



Construction of Finnish pilot SMR plant to start in 2025

Thursday, 6 June 2024

Steady Energy said it is set to start construction of its first LDR-50 district heating reactor pilot plant in Finland next year, with potential sites including the Finnish capital Helsinki and two other cities.



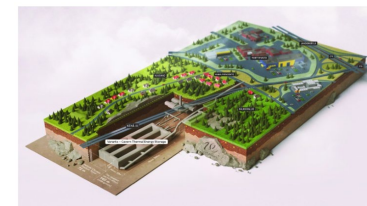
A multiple LDR-50 unit plant (Image: Steady Energy)

Source: World Nuclear News 6.7.2024



World's largest thermal energy storage to be built in Vantaa, Finland

8.4.2024

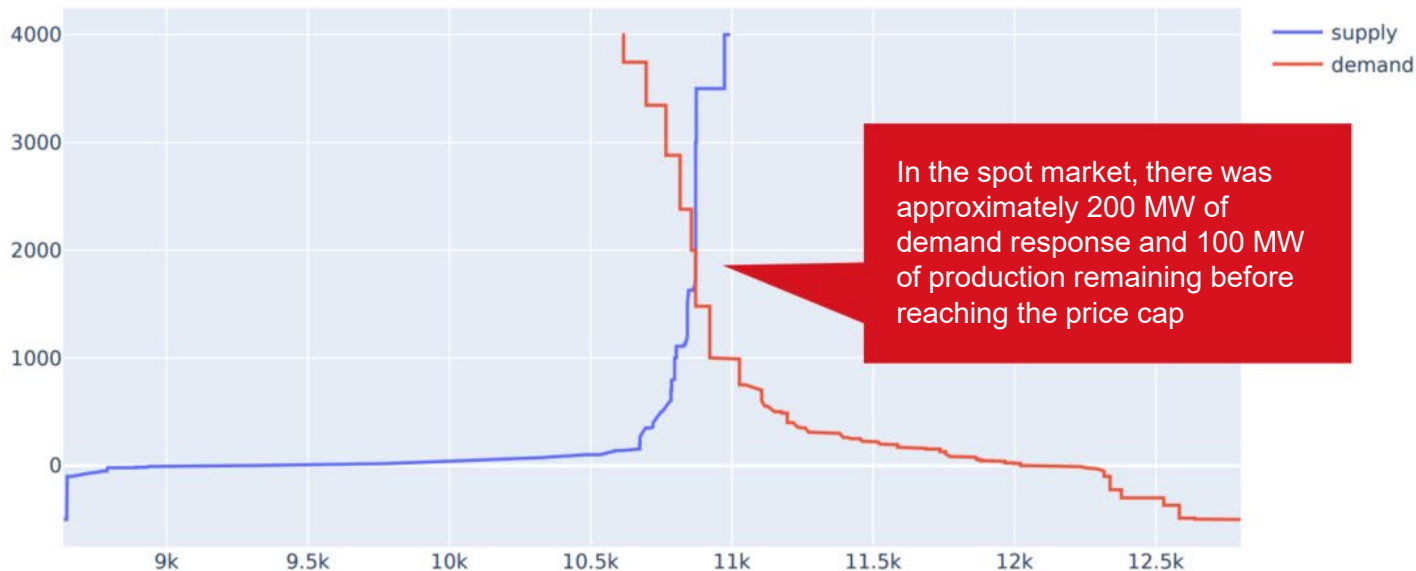


The revolutionary innovation enables cost-effective storage of renewable energy and waste heat on an industrial scale. The energy equivalent of as much as 1.3 million electric car batteries and could heat a medium-sized Finnish city all year round.



Example of spot market supply and demand during a peak hour (Nord Pool)

2024-01-05, Area: FI, Hour: 17



Project on one-stop services started 2023

Monitoring group

Establishing a permitting, guidance and supervisory agency

Preparation of legislation for the permitting, guidance and supervisory agency in the legislation of the administrative branch of the Ministry of the Environment (the Ministry of Finance responsible for the preparation)

One-stop service legislative project

Implementation of a permit procedure promoting the one-stop model: "The aim is that, as a rule, the combined permitting procedure will lead to one single official decision and request for review procedure."

Environmental targets for water resources management and derogations from these

"The Government will respond to the requirements of the Water Framework Directive with national legislation."

"The national flexibilities allowed by the Water Framework Directive will be utilised."

Reform of land use regulation

"One way the Government will make it easier to invest is through industrial parks."

"Processing of an environmental permit based on an approved decision on a plan without waiting for it to become final, etc."

Separate measures, incl.

Assessing the possibility to include compensation in environmental permit conditions

Review of the precautionary principle

Assessing the possibility to reintroduce conditions for the review of the permits in the permit regulations.

Automation, target dates

Assessment and development of the priority procedure, pumped storage power plants

Assessing the possibility to enable the Government to fast-track the procedure (exceptionally important projects)

Project on digital one-stop services started

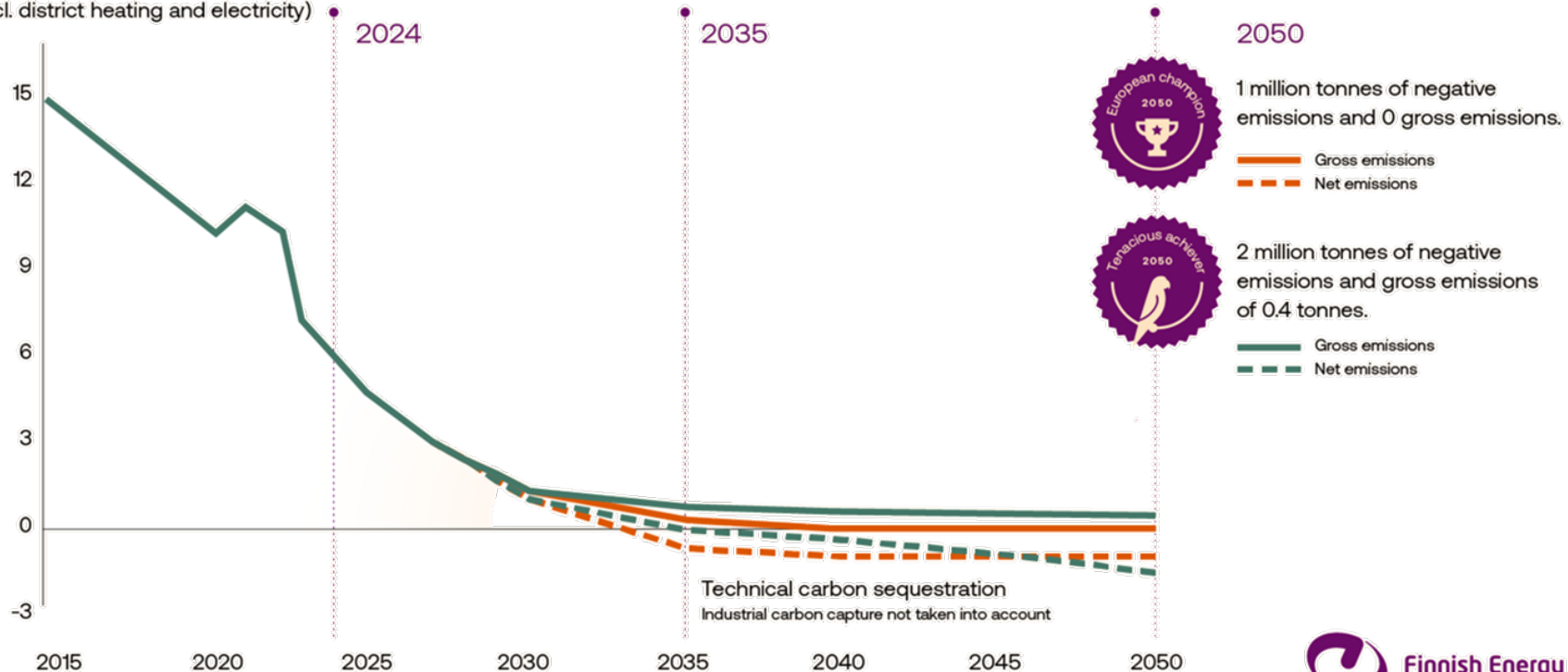
Implementation project on the reform of the agency started

Net emissions from the energy sector to be zero or even negative by 2035



Emissions, MtCO₂

(incl. district heating and electricity)



Thank you!



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