



**New build, LTO and final disposal
projects at Olkiluoto – lessons learned**

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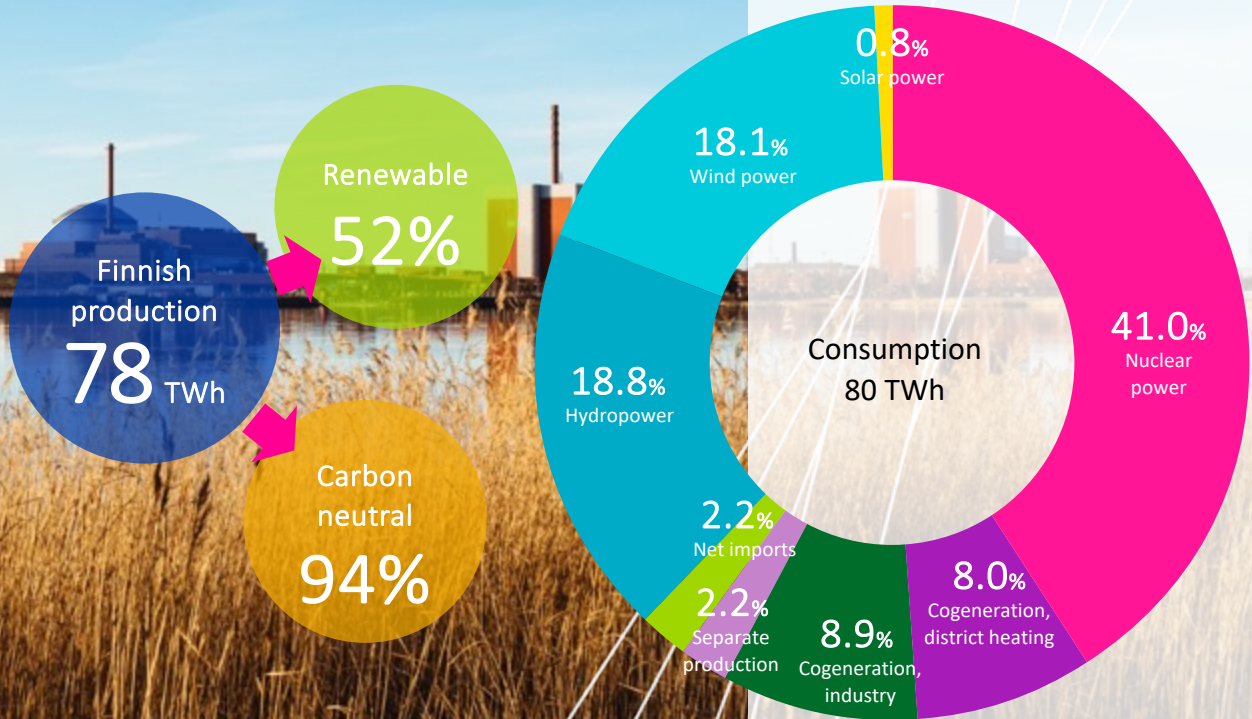


Leader, Active Nuclear Influencer



Nuclear professional
20+ years of experience

Finland's electricity procurement and net imports 2023



ELECTRICITY FOR ALL OF FINLAND



OLKILUOTO

Electricity
production 2023

24,67

TWh

OL1 + OL2 + OL3 = TOTAL
890 + 890 + 1600 = 3380 MW

Final disposal to
start in ONKALO
area in mid-2020s

tvo

All necessary nuclear waste management in Olkiluoto

Interim storage for spent fuel (KPA store)

Spent nuclear fuel brought from the plant unit cools down in water pools extending beneath the ground level

Final disposal of spent nuclear fuel

- Repository in ONKALO®
- The construction licence for the disposal facility entity has been granted and construction has started

Repository for operational waste (VLJ repository)
Repository for low and intermediate-level radioactive waste

Final disposal of the decommissioning waste of the power plant

Reservation for the radioactive decommissioning waste of the power plants

SUPPORT FOR NUCLEAR POWER IN FINLAND



Source; Kantar TNS 2023, Finnish Energy (Energiateollisuus ry)

Photo archives: Eeva Rista, Helsinki City Museum and Aarne A Mikonsaari, Lappeenranta Museums

Start of site works
and excavation
works

Start of
construction

Plant supplier's highest
manpower number:
about 4,500 persons

Installation of
reactor pressure
vessel lid

Containment
pressure tests
completed

Completion of
Full Scope
Simulator testing

Cold functional
tests completed

Finnish
Government granted
operating licence

2004

2005

2009

2013

2014

2016

2017

2019

**CONSTRUCTION
MILESTONES**

2004-2019

16.12.2021
nuclear reaction
initiated

2022-2023
nuclear
commissioning

2.3.2024
1st annual outage

12.3.2022
connection
to grid

16.4.2023
regular electricity
production

The plant's design
basis service life is
60 years minimum

2021

2022

2023

2024

2080

**TEST PRODUCTION
AND FINAL STRETCH 2019-2024**

**EXTENSION OF
SERVICE LIFE
and POWER
INCREASES OF
OLKILUOTO 1 & 2
ARE
INVESTIGATED**

tvo



The safe final disposal will be started the first in the world in ONKALO®



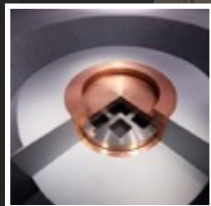
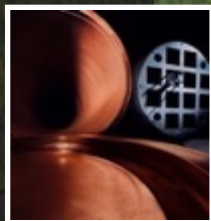
Safe and efficient final disposal concept

We have a solution
for the final disposal
of spent fuel

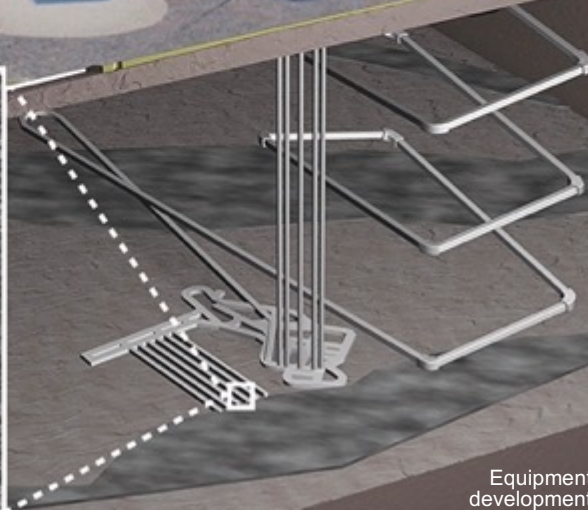


We have a significant
role in climate change
as a part of the
sustainable nuclear energy

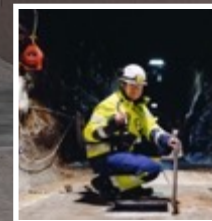
#wehaveasolution



Development of
the engineered
barriers



Site investigations



Equipment
development

A photograph of a nuclear power plant with two large orange and white containment domes and tall smokestacks, situated behind a body of water with a light mist. The scene is captured in a cool, blue-toned light, likely during dawn or dusk. The water reflects the structures and the sky.

Nuclear projects are challenging but are they doable?

1

Size

- Physical size
- Number of organizations
- Amount of data/information

X

2

Duration

- Many years
- People and organization change

X

3

Complexity

- Integrated plant
- FOAK
- Safety requirements
- Proof of compliance

Safety Culture

Design Readiness

Co-operation

Team work

Schedule management

Simulator(s)

Configuration management

COMMUNICATION

Risk management

Data management

Contracts

Resources & Competence

**LESSONS LEARNED
DURING THE
PROJECTS**





**THANK YOU FOR
YOUR ATTENTION!**