LONG-TERM OPERATION AND OPTIMISED LIFETIME EXTENSION OF NPPS

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Fortum is a strong Nordic nuclear operator

Over 45 years of reliable production

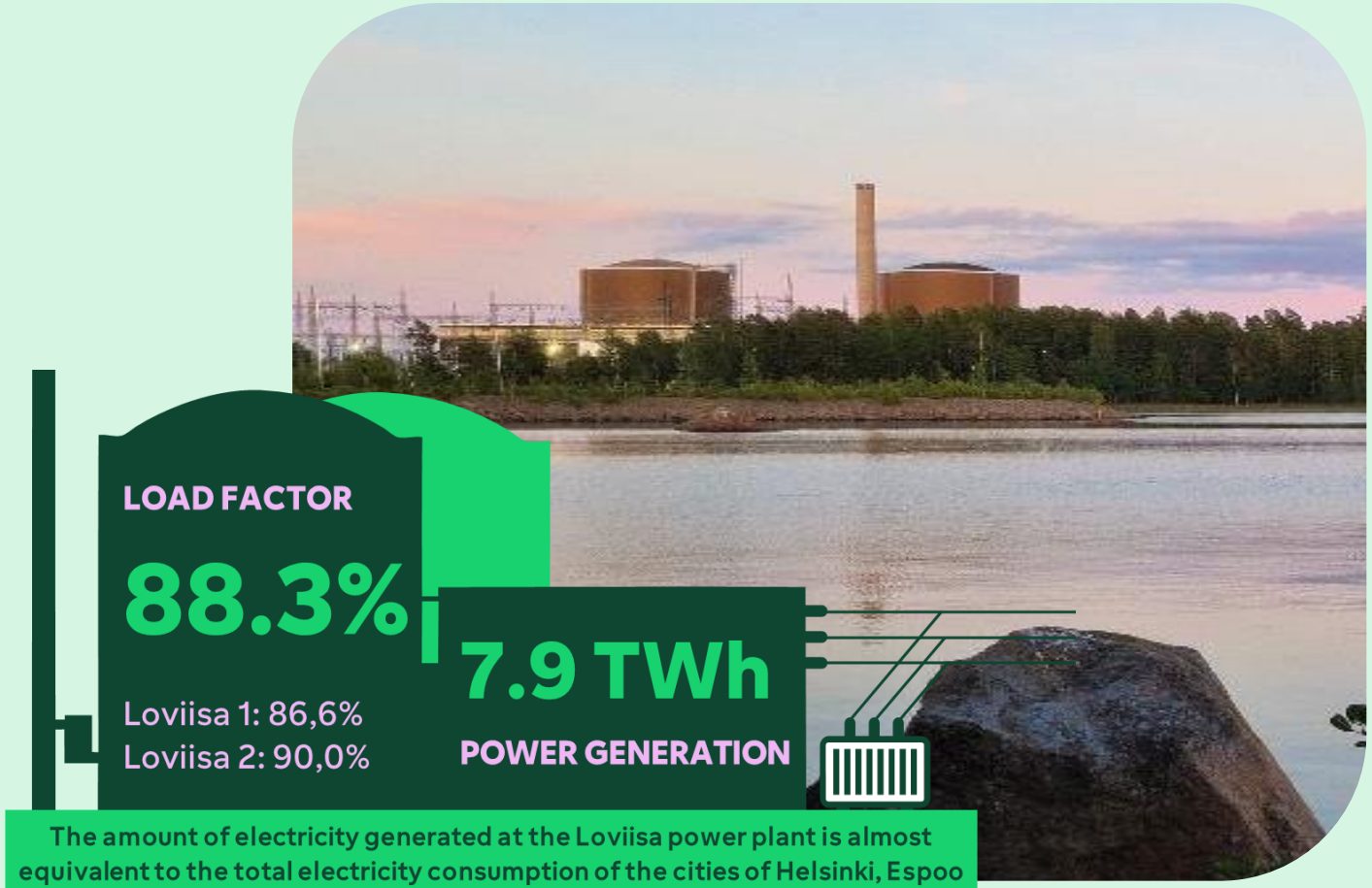
- We have two own nuclear reactors in Loviisa and seven co-owned nuclear reactors in Finland and Sweden
- New Nuclear development in Finland and Sweden
- We develop new, innovative products and services
- Our expertise covers the entire lifecycle of nuclear power plants, from new build to decommissioning and final disposal of nuclear waste

24,3 TWh	3,2 GW	52 %	800
Nuclear generation	Nuclear capacity	Share of Fortum's total power generation	Nuclear professionals



Loviisa nuclear power plant in a nutshell

- Loviisa power plant has two VVER type pressurised water reactors, with capacities of 507 MW net/each
- Both units were built to meet the most advanced Western safety requirements at the time
- The power plant produces more than 10% of Finland's total electricity production
- Loviisa 1 was commissioned in 1977 and Loviisa 2 in 1980
- New operating license for both units is valid until the end of 2050



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Loviisa nuclear power plant
- Timeline of operation and lifetime extensions

Safe, reliable and sustainable electricity production for 70 years

Original operating license 30 years | 1st lifetime extension +20 years | 2nd lifetime extension (2050)

LO1: 1977
LO2: 1980

1980	1990	2000	2010	2020	2030 ->
Safety improvements and reactor core modifications	Modernisations, reactor power: to 1500 MW	1st Operating License Extension up to 50 years I&C renewals start More focus on ageing management	I&C renewals continue Modernisations, electric power to 531 MW PSR 2015	2 nd Operating License Extension up to 2050 LTOP, incl. diversification of nuclear fuel	LTOP investment program Continuous improvement Periodic Safety Reviews

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Ensuring safe, reliable and profitable operation until 2050 through strategic investments

- Long-term operation of Loviisa NPP requires several investments in the coming decades
- LTOP - investment program implementing projects to enable operation until 2050
- Investment needs identified in business case for operating license application
- Overall value of needed investments ~1 billion euros

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Loviisa Long-Term Operation Program

9 portfolios

~300 single projects

All actions aim to improve nuclear safety

- Safety Improvements
- Safety classified Mechanical Components and Readiness for Repairs
- Turbine Island modernization
- Buildings, Structures and Infra
- **Fire and Safety Technology**
- Nuclear fuel and waste
- I&C modernization
- Emergency Diesel Generators and Electrical equipment modernization
- Ventilation and Air conditioning systems Modernization
- Others

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Loviisa Long-Term operation program General status 9/2026

- A large number of projects started during 2024-2025
- **Number of ongoing projects at the moment**
  - 28 in planning and pre-engineering phase (TG1 → TG2)
  - 47 in execution phase (TG2 → TG3)
- **Highlights:**
  - Projects implemented in 2023-25 successfully; safety, implementation time, technical quality
  - 14 projects under implementation in Loviisa outages 2026
- **Recognized challenges**
  - Ensuring resource adequacy
  - Configuration and interface management between projects/portfolios
  - Lead time of document review/approval process



Fortum Nuclear Services

-Transforming operating experience into value for nuclear operators

- We leverage our long operator experience and in-house expertise to support safe, sustainable, and cost-efficient nuclear production.
- Key strengths for LTOs, including
  - LTO planning and program development consultation
  - Owner's Engineering/Advisory for I&C modernization projects.
  - Advanced tools like Apros® for analysis and virtual commissioning.
  - Consulting for outage optimization, reliability, and component qualification.

SELECTED CUSTOMER REFERENCES	
	**Client: EPZ, Borssele NPP – 2025 ->** - Investment study review - EPZ is exploring the possibility of extending Borssele NPP's lifespan by 10-20 years. - Fortum carried out an investment study review
	**Client: SUI operator – 2026 ->** - The client is studying investment necessities for LTO - Fortum is supporting in LTO planning by reviewing investment plans
	**Client: Slovenske Elektrarne – 2025 – on-going** - I&C renewal support for MO1&2 - SEAS has launched a large scale I&C modernization for Mohovce 1 and 2 units - Fortum supports SEAS in Owner's advisory role
	**Client: TVO – 2021– on-going** - renewal support for OL1 and OL2 - TVO is renewing a significant proportion of reactor automation and operational automation systems - Fortum supports TVO in Owner's engineer role

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THANK YOU!

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