

Spent Fuel Disposal in Finland

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Nuclear power in Finland



Olkiluoto NPP (TVO)

- 2 operating units - BWRs 860MWe (-78, -80), AFR storage, LILW repository
- New EPR under construction
- Decision in Principle for a new NPP
- SNF Repository site with ONKALO URCF under construction

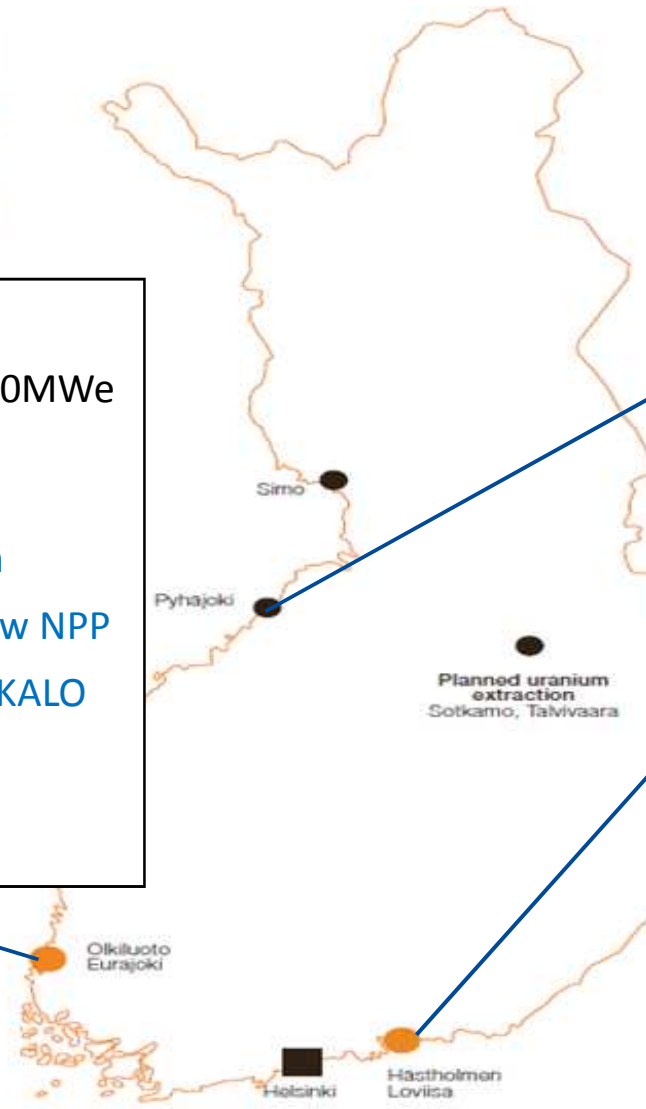


Hanhikivi NPP (Fennovoima)

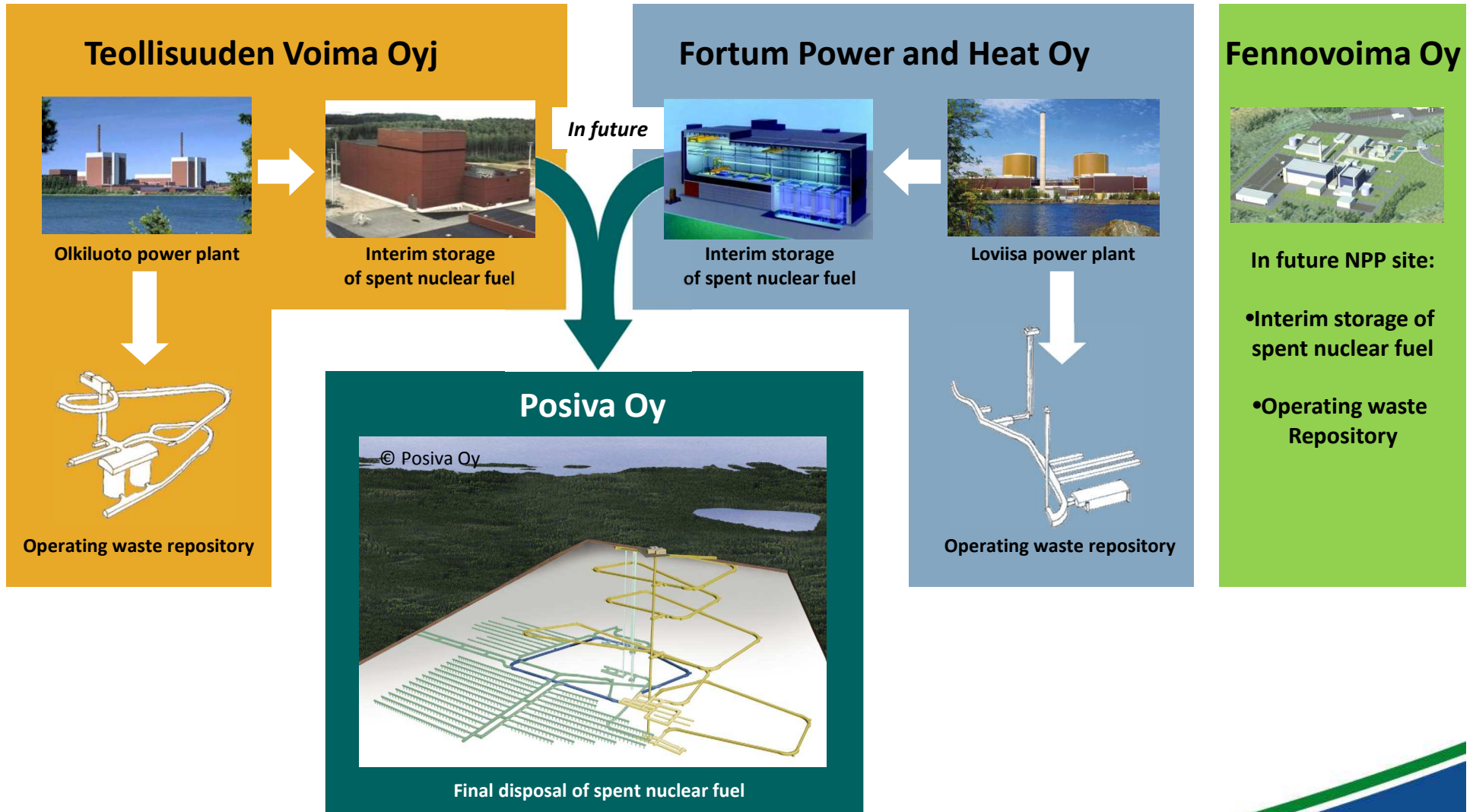
- Decision in Principle for a new NPP, AFR storage, LILW repository

Loviisa NPP (Fortum)

- 2 operating units - VVERs 488MWe (-77, -81) AFR storage, LILW repository



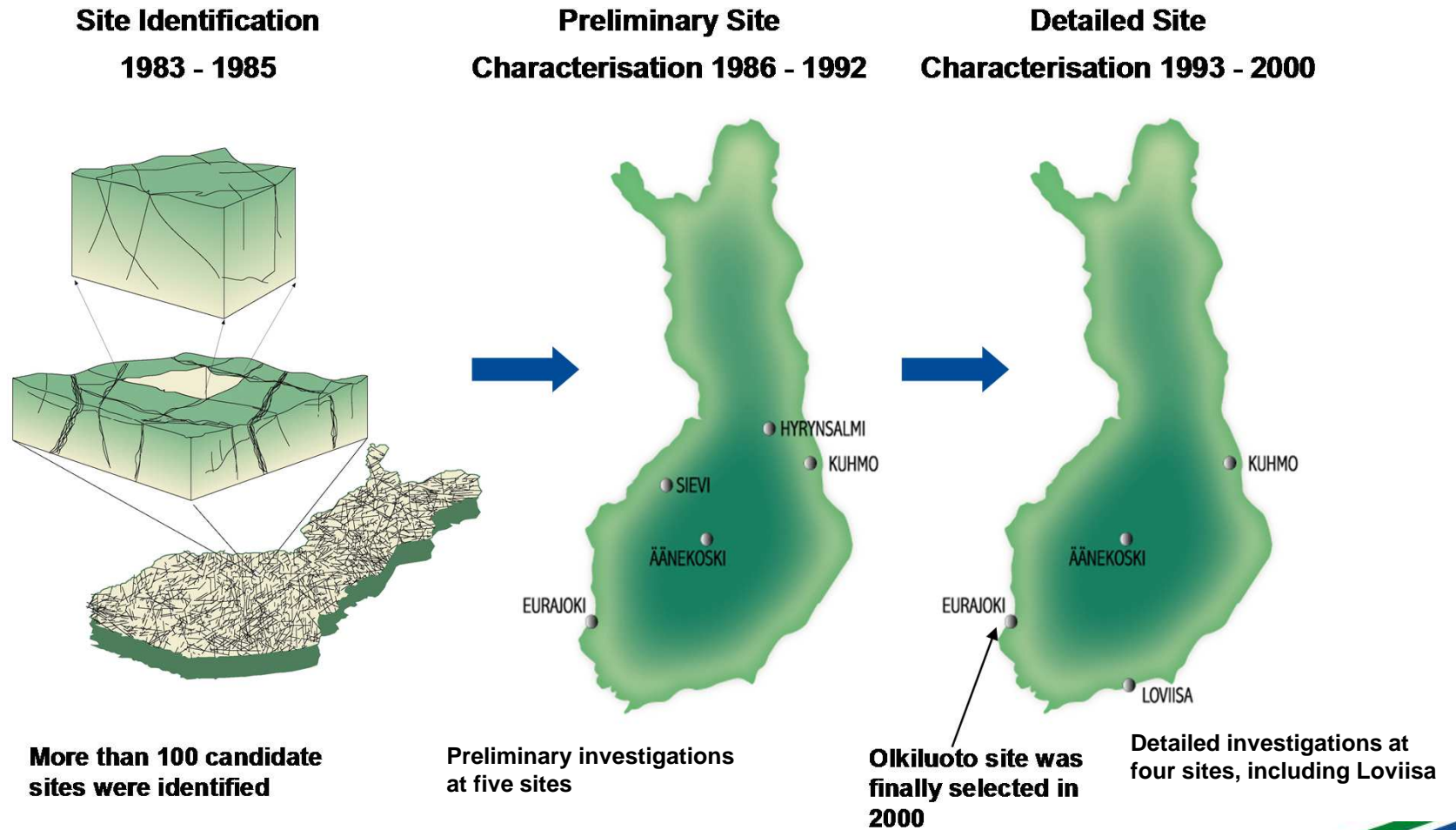
Spent fuel management and disposal in Finland



Spent Fuel Disposal – a Long-term Project

Period	Implementation	Regulatory oversight
1983-1999	<ul style="list-style-type: none"> -Conceptual design, research and development -Site selection process: 100 > 5 > 3 -Detailed site investigations 	<ul style="list-style-type: none"> -Government's policy of 1983 -STUK's safety reviews of 1987, 1994 and 1997
1997-2001	<ul style="list-style-type: none"> -EIA program and report -DiP application for a disposal facility at Olkiluoto 	<ul style="list-style-type: none"> -Safety regulations 1997 -EIA hearings and judgement -STUK's preliminary safety appraisal as part of DiP process
2000-2012	<ul style="list-style-type: none"> -Confirming site investigations, including underground rock characterization facility ("Onkalo") -Research and technical development, start detailed design 	<ul style="list-style-type: none"> -Updated safety regulations 2008 -Oversight of site investigations and construction of "Onkalo" -Review of the state and plans of research and technical development, in three year periods
2012-2020	<ul style="list-style-type: none"> -Construction licence application -Construction of the facilities 	<ul style="list-style-type: none"> -Review of licence application -Oversight of construction
2019-	<ul style="list-style-type: none"> -Operating licence application -Operation of the facilities 	<ul style="list-style-type: none"> -Review of licence application -Oversight of operation

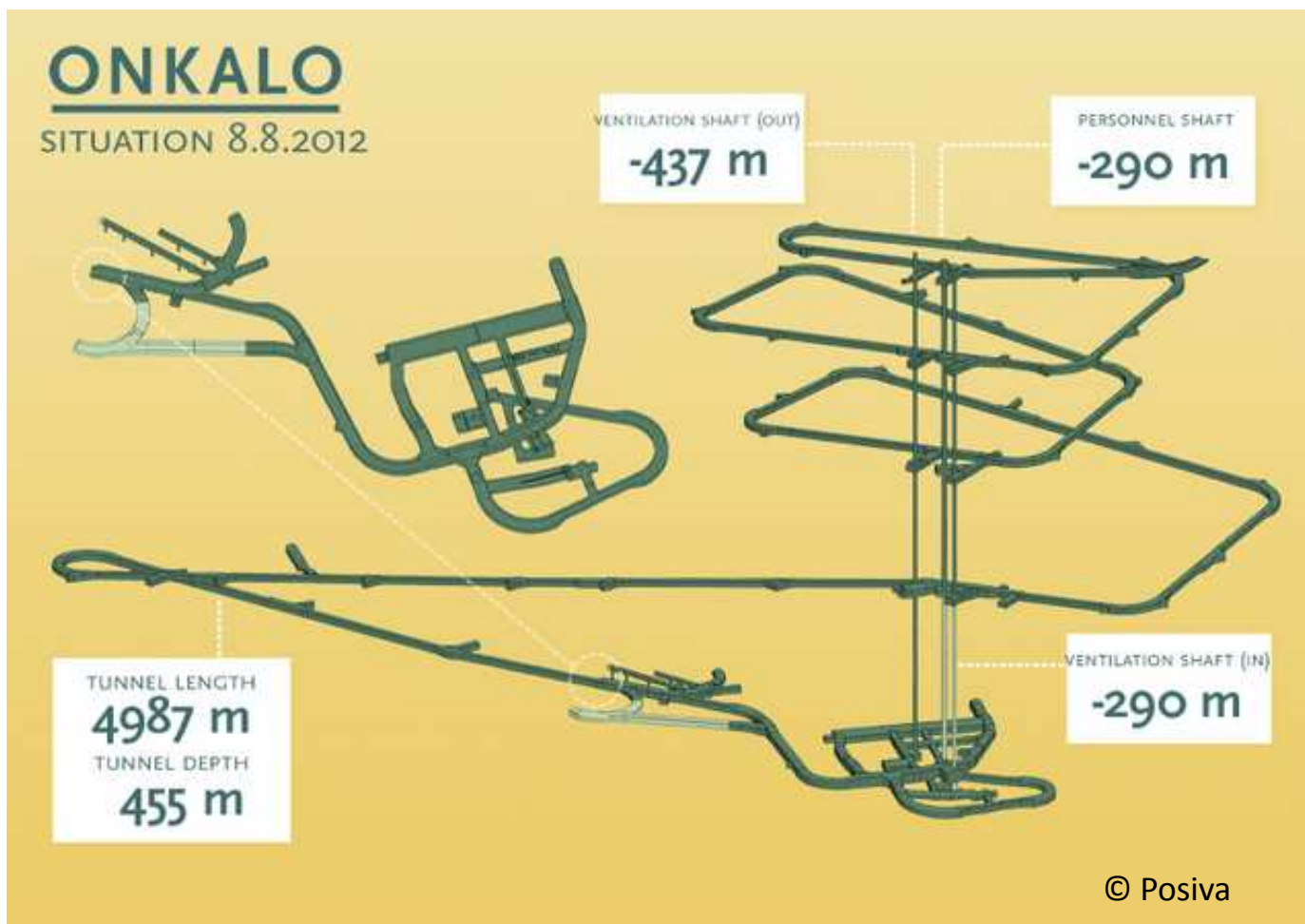
Siting of the disposal facility



Steps in licensing of SNF repository

- 2000/2001 **Decision in Principle** was made. Political and societal acceptance of the Olkiluoto Repository
 - STUK's Preliminary Safety Appraisal followed by municipal acceptance, Government Approval and Parliament's ratification,
 - Authorization to construct URCF (Onkalo), planned to be part of the repository
- **2012-2014 Construction License application**
 - Authorization to construct deposition tunnels, deposition holes and other underground facilities
 - Authorization to construct encapsulation plant & EBS components
 - No nuclear waste to be introduced into repository
- **2020 -2022 Operational License application**
 - Authorization to introduce nuclear waste into encapsulation and repository
 - Fixed period with full safety review at 15 y intervals (or as specified in license)

Rock characterisation facility Onkalo



The rock characterization facility is needed for safety demonstration.

Excavation of Onkalo started in 2004.

Onkalo will form a part of the final disposal facility.