



# SMR related activities in Europe and business opportunities

LPR Future Energy Solutions - Jekaterina Lavonen

# Content

- FinNuclear
- Activities related to SMRs in neighboring countries and in Finland
- Business opportunities

# What is FinNuclear?

Represents Finnish nuclear energy expertise.

Seeks business and collaboration opportunities to Finnish expertise from national and international nuclear energy projects.

- Network of committed suppliers, contractors and other stakeholders.

# Activities

Focus on networking and promoting cooperation

- Joint marketing
  - Portal of members expertises
  - Finland pavilions in exhibitions
  - Presentations
- Events
  - Conferences
  - Seminars
- E-learning environment and trainings
- Joint offering development projects



**FinNuclear**  
DIRECTORY 2020



**Finnish companies and organisations expertise covers the whole lifecycle of nuclear power plants and associated plants**

**Find all expertises**

- [directory.finnuclear.fi](https://directory.finnuclear.fi)
- [Smart Nuclear from Finland](#) - brochure



# Estonia

## Fermi Energia requests bids from three SMR vendors

15 September 2022



Estonia's Fermi Energia has said it will accept tenders from three small modular reactor (SMR) developers: GE Hitachi, NuScale and Rolls-Royce. The company said bids with comprehensive technical documentation needed to estimate the construction cost are expected by December, and the technology selection will be made in February 2023.





The Swedish Energy Agency has awarded Swedish Modular Reactors AB - a joint venture between Uniper Sweden and LeadCold - funding of just over SEK99 million (USD10.6 million) in support of the construction of a demonstration LeadCold SEALER (Swedish Advanced Lead Reactor) lead-cooled small modular reactor at the Oskarshamn plant site.

# Sweden

## Centre of competence in nuclear technology poised for launch

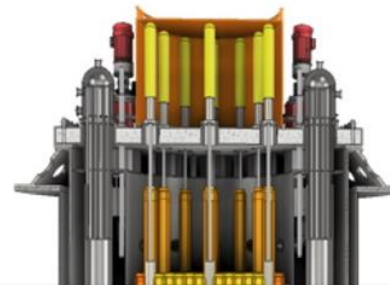
27 January 2022



The planned Centre is one of several initiatives aimed at bringing about a sustainable energy supply in the future.

Photograph: Getty Images

Uppsala University is to host a new centre of competence in nuclear technology. Its purpose is to support development of a knowledge-based strategy for introducing small modular reactors in Sweden. Preparations are now in full swing.



## Fortum launches a feasibility study to explore prerequisites for new nuclear

17 October 2022, 09:28 EEST



Fortum is starting a two-year feasibility study to explore prerequisites for new nuclear. As part of the study, Fortum will examine commercial, technological and societal, including political, legal and regulatory, conditions both for small modular reactors (SMRs) and conventional large reactors. The study's geographic focus is Finland and Sweden.

# Poland

## Last Energy plans to develop 10 SMRs in Poland

2 August 2022



US-based Last Energy, which is developing a new fully small modular reactor (SMR), has announced an agreement with Poland's Legnica Special Economic Zone (LSSE) to scale nuclear energy in Poland. Last Energy aims to develop 10 SMRs in the LSSE to fuel industrial activity. LSSE is home to more than 75 companies and over 16,000 jobs. The 10 power plants will deliver 200MW of capacity to the region.

Last Energy said the agreement marks a significant step toward widespread SMR deployment, representing more than \$1 billion in investment and more than \$5 billion of electricity sales. Last Energy said its power plant uses a proven pressurised water reactor and fully modular plant design, which, it said,

dramatically reduces the time and cost of plant construction. However, as yet the company has no prototype for its planned 20MWe SMR.



# France

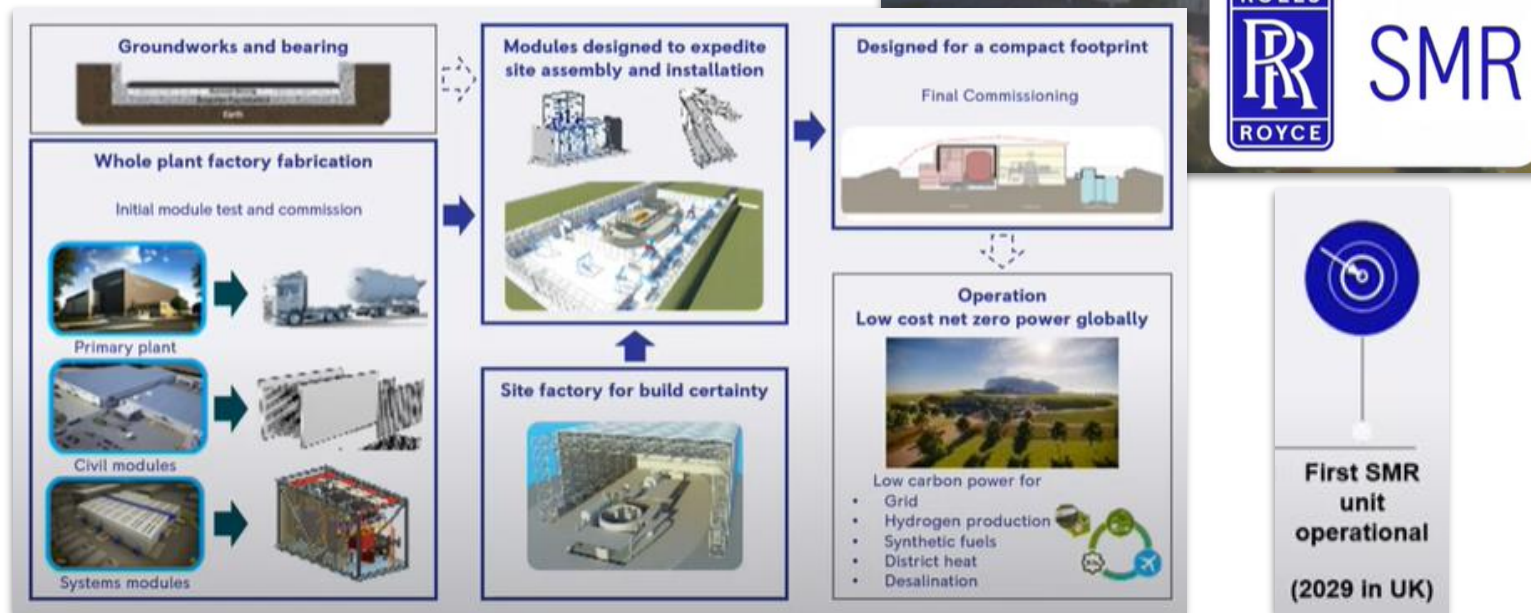


First Nuclear Concrete in France in 2030



- Edf have strategic partnerships around the Europe
- with authorities to harmonize EU regulatory by using Nuward as a “test case”
  - technology organisations for design phase, to understand market and work in manufacturing in the near future

# UK



**First SMR  
unit  
operational  
(2029 in UK)**

Source: Rolls-Royce

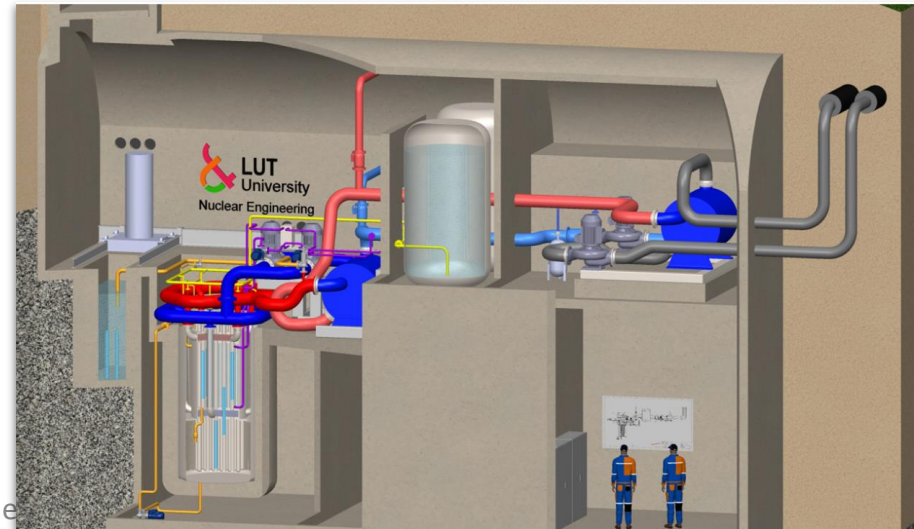
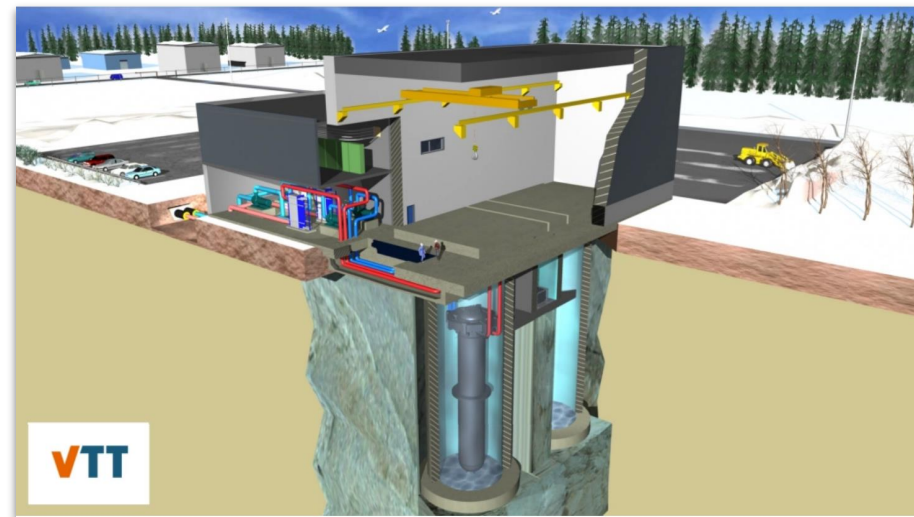
# Finland 1/2

## SMR designs

- for district heating
- VTT's → LDR-50
- LUT University's SMR

## Nuclear Energy Act renewal ongoing

- executed in 2028



## Finland 2/2

### Fortum ja Helen kiinnostuneet rakentamaan pienydinvoimaloita Suomeen

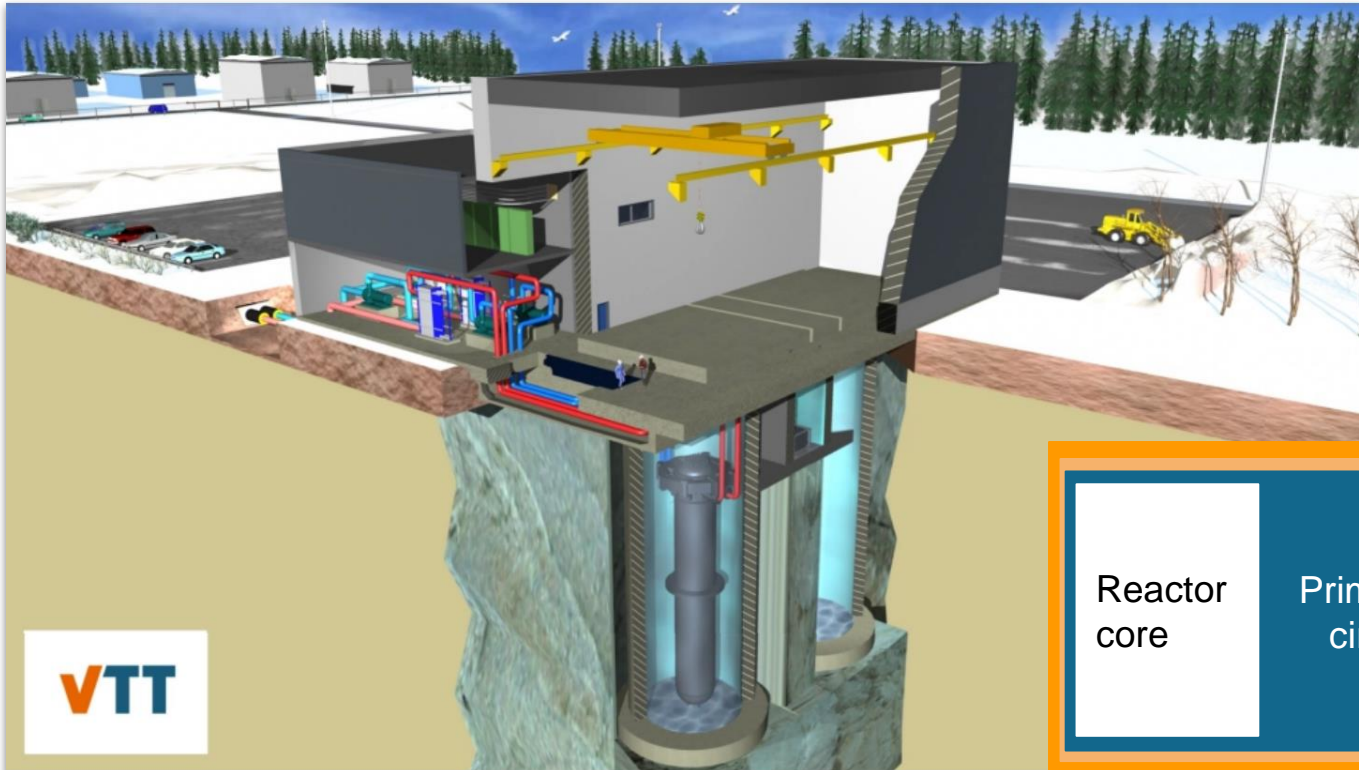
Pienydinvoimassa tapahtuu nyt nopeasti. Fortum käynnistää ison selvityksen rakentamisen edellytyksistä ja Helenkin on kiinnostunut pienvoimaloista. Viranomaisten hitaus kuitenkin herättää huolia hankkeiden aikatauluista.

**Tampereen valtuustossa esitettiin etsittäväksi sijoituspaikkaa pienydinvoimalalle – ”Pystyy sijoittamaan ihan hyvin kaupungin lähistölle”**

Neljä eri valtuustoryhmiin kuuluvaa edustajaa ehdotti maanantai-illan kokouksessa, että Tampere valmistautuu pienydinvoiman käyttöönottoon.

Keskiviikkona sähköverkkoyhtiö Carunan tilaisuuteen osallistunut Espoon kaupunginhallituksen puheenjohtaja **Henrik Vuornos** (kok) kertoi, että kaupungin kaavassa on paikka pienydinvoimalaitokselle.

# Business opportunities 1/2



Reactor  
core

Primary  
circuit

Power  
plant

Facility  
infrastructure



## Business opportunities 2/2

### Plenty of business opportunities for

- Design, engineering and consulting companies
- Constructions companies
- workshops
- Information Technology companies
- Recruitment companies

**Table 1**

*Indicative breakdown of the cost of constructing nuclear power plant by activity*

Activity	Percent
Design, architecture, engineering and licensing	5
Project engineering, procurement and construction management	7
Construction and installation works	
• Nuclear island	28
• Conventional island	15
• Balance of plant	18
Site development and civil works	20
Transportation	2
Commissioning and first fuel loading	5
<b>Total</b>	<b>100</b>

**Table 2**

*Indicative breakdown of the cost of constructing a nuclear power plant in terms of labour, goods and materials*

Item	Percent
Equipment	
• Nuclear steam supply system	12
• Electrical and generating equipment	12
• Mechanical equipment	16
• Information and control system (including software)	8
Construction materials	12
Labour on site	25
Project management services	10
Other services	2
First fuel load	3
<b>Total</b>	<b>100</b>



# JOIN IN FINNISH NUCLEAR EXPERTISE NETWORK



[finnuclear.fi/liity-jaseneksi](http://finnuclear.fi/liity-jaseneksi)

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