



Polymers in nuclear applications 2019

Welcome to Fortum!

Eero Vesaoja / 27.11.2019

Join the
change

 **fortum**




This is Fortum

February 2019

Join the
change

 **fortum**



“The urgent need to respond to climate change will impact the whole society. Decarbonisation is needed in all sectors and clean electricity can be a significant enabler. Hence, we see the 2020’s becoming the decade of electricity.”

CEO Pekka Lundmark



Climate change and
resource efficiency



Active customers



**The global
megatrends
affecting our
industry**



Urbanisation



Digitalisation,
new technologies

Fortum in brief

Our core

Hydro and nuclear
Combined heat and
power production
Circular economy
Energy-related
products and expert
services

We are the largest
electricity retailer in
the Nordics and one of
the leading heat
producers globally.
We have
2.5 million
customers.

96% of our
electricity
production is CO₂
free in Europe,
57% in all
operations

8,300
professionals
in the Nordics,
the Baltics,
Russia, Poland
and India

2/3 of our
power
production is
**hydro and
nuclear**

Nuclear power plays an important role in our energy production

Nuclear power plays an important role in Fortum's energy production. As a **CO₂-free and reliable base-load source**, nuclear power is needed to secure the supply of energy and to mitigate climate change.

Our nuclear power plant in Loviisa, Finland, is unique and exemplary. It has provided clean and reliable base production of energy for the last **40 years**.

Nuclear R&D at Fortum – science to improve nuclear business

Safe and Efficient Operations

Enhance operational excellence of LO and co-owned NPPs with innovative R&D

- Guarantee the needed understanding for LTO
- Decrease production, maintenance and engineering costs with digitalization
- Search for cost effective alternatives for large investments

Nuclear Business Growth

Utilize our engineering competence to increase cash flows of Nuclear Services

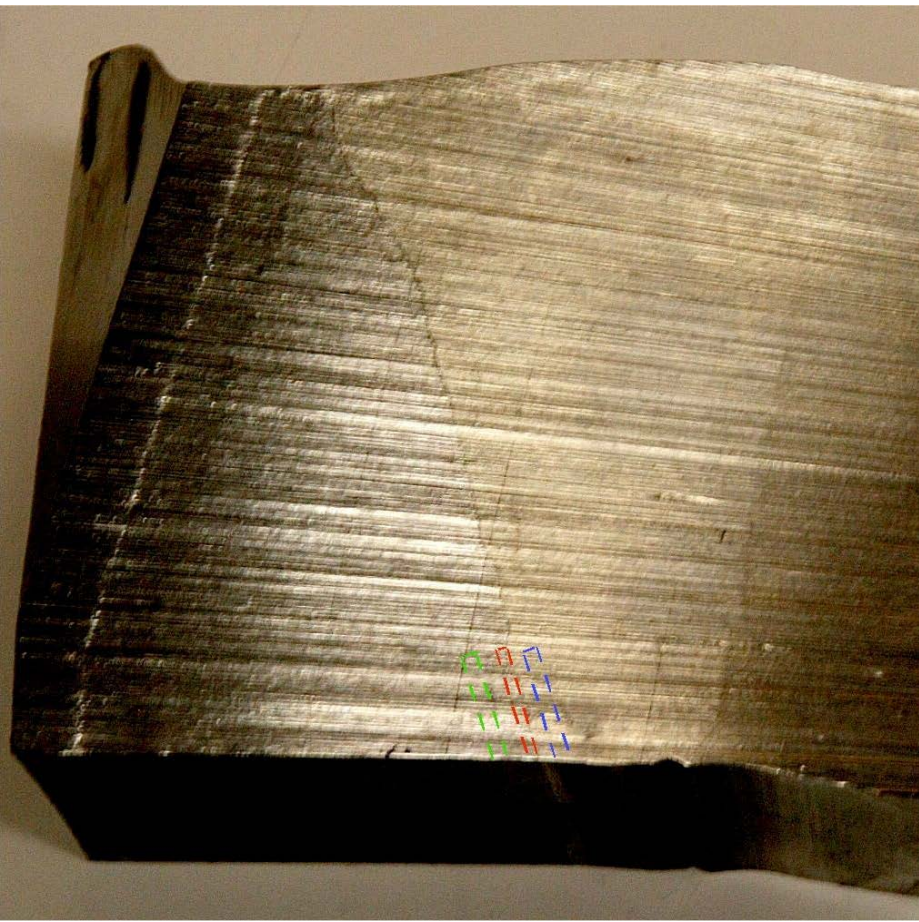
- Improve successful Nuclear services products such as APROS and NURES
- Develop new growing offerings like eSite, decommissioning and ADLAS

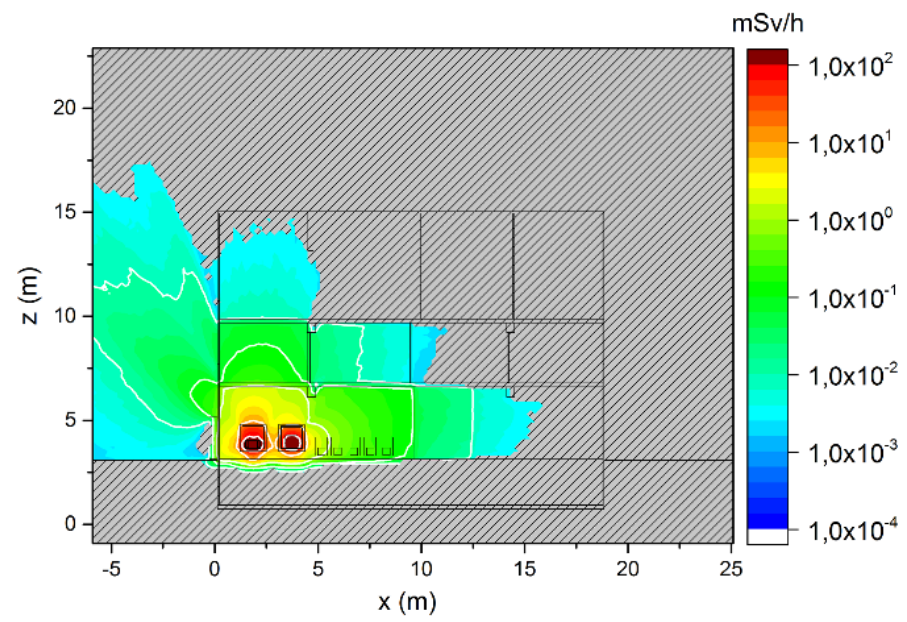
Future Nuclear Technologies

Study and pilot promising early technologies to transform nuclear power

- Utilizing AI to help deal with huge information amounts and regulation
- Find and test cases in maintenance where robotics offer benefits
- Enable huge business opportunities with SMRs in the longer run

Collaboration with SAFIR, Energiforsk, NKS, Nugenia, SNETP, NC2I, FORATOM, Business Finland, ...





Apros-based full-scope training simulator inaugurated in 2017

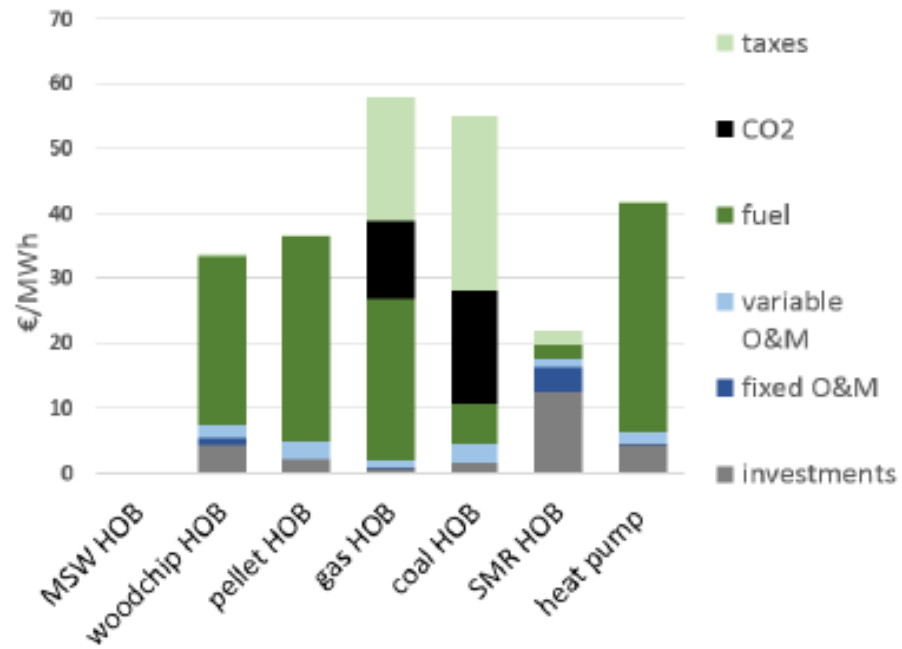
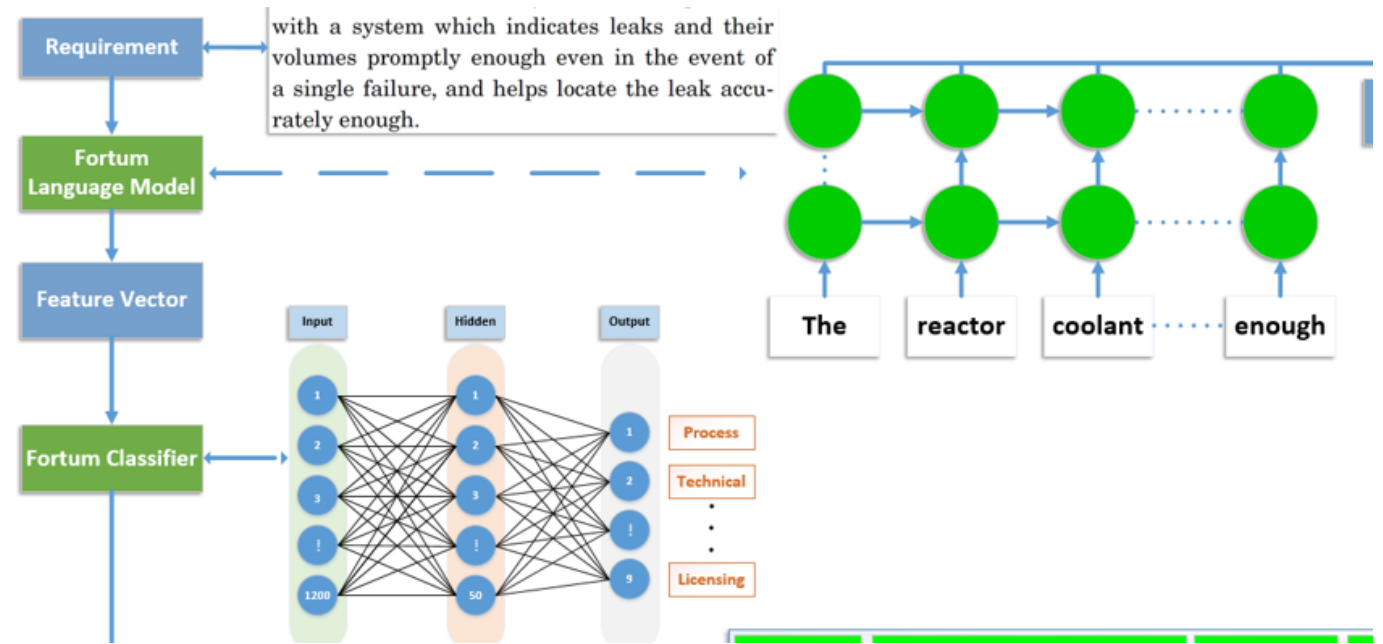


Figure 18: The LCOH breakdown of the heat only plants considered



Thank you!