

FORTUM

HYDRO POWER R&D DAYS UPPSALA

We are one of the cleanest
power generators in Europe

98 %

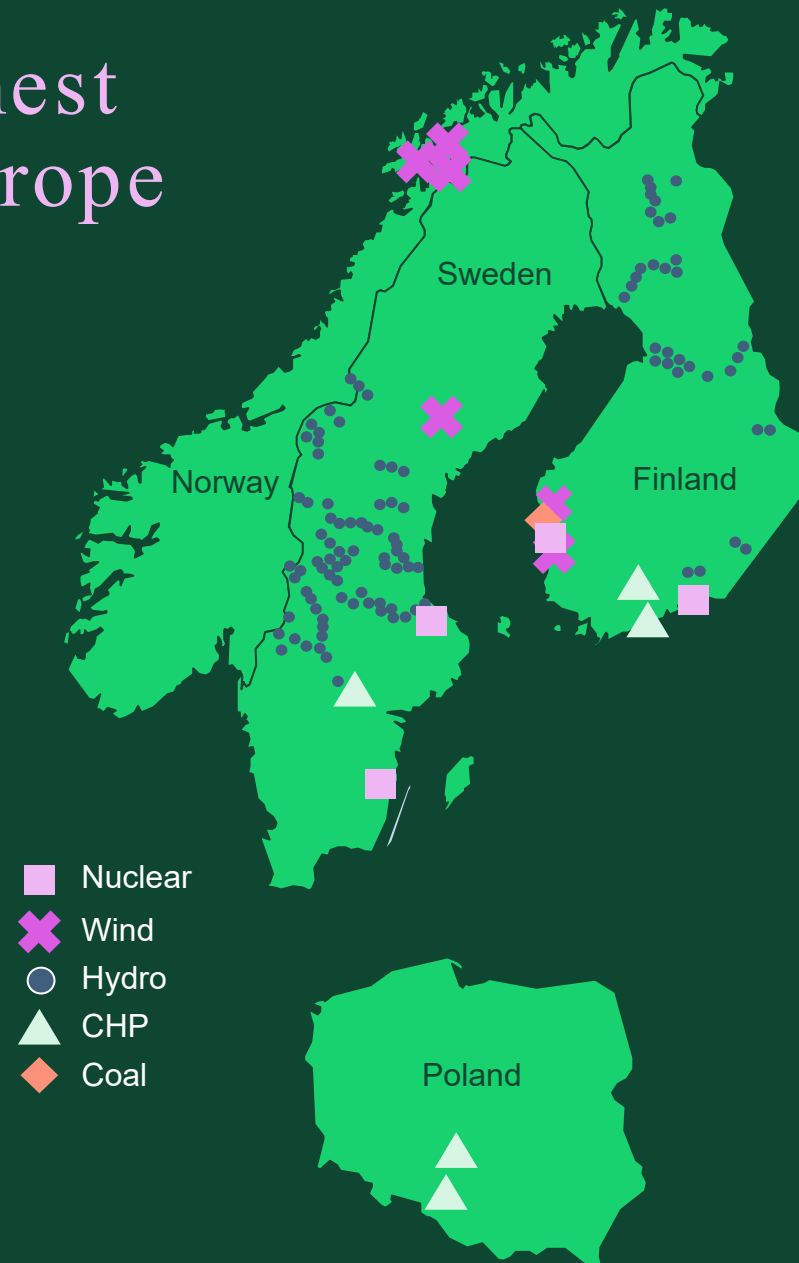
CO₂-free power generation

9 248

Generation capacity in MW

47 TWh

Power generation in 2023



Our business portfolio

FORTUM CORE

Strengthen and selectively grow areas of core competence, while capitalising volatile markets.



Hydro



Nuclear



Flexibility and optimisation



Customer business



Heating and Cooling

DEMAND-DRIVEN RENEWABLES

Prepare ready-to-build pipeline to serve customer demand growth with long-term contracts.



Onshore wind



Solar

EXPLORE

Future-shaping by studying, validating, and developing future opportunities.



Clean hydrogen



Innovation & Venturing

NON-CORE

Businesses not in the core of the strategy. Strategic review.



Circular Solutions

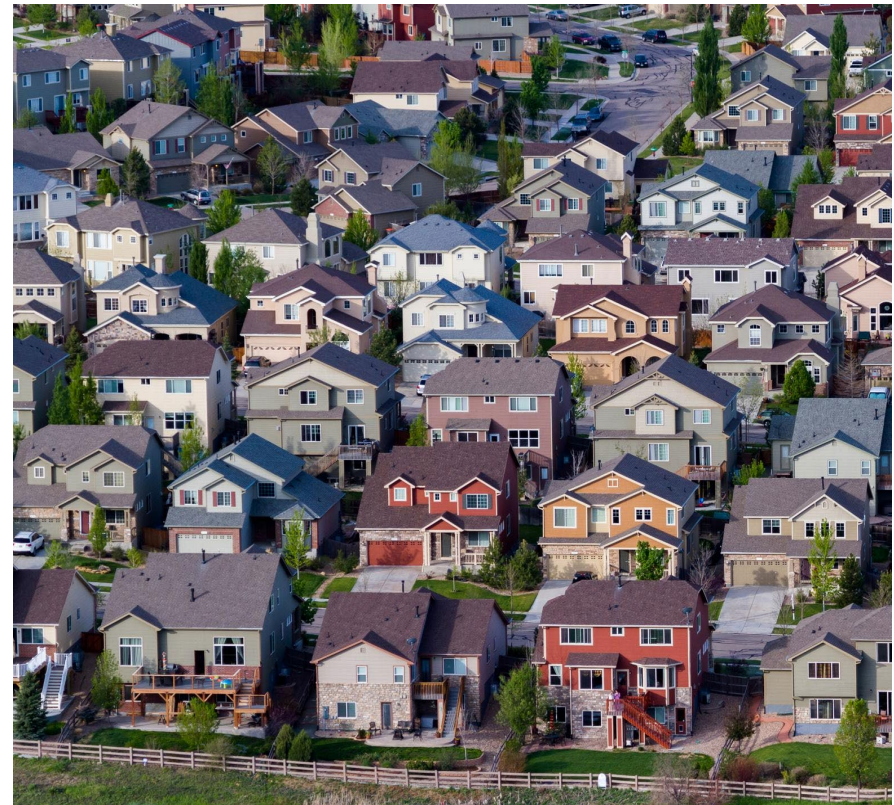
Conversion of 47 TWh per year

Typical electricity consumption in households

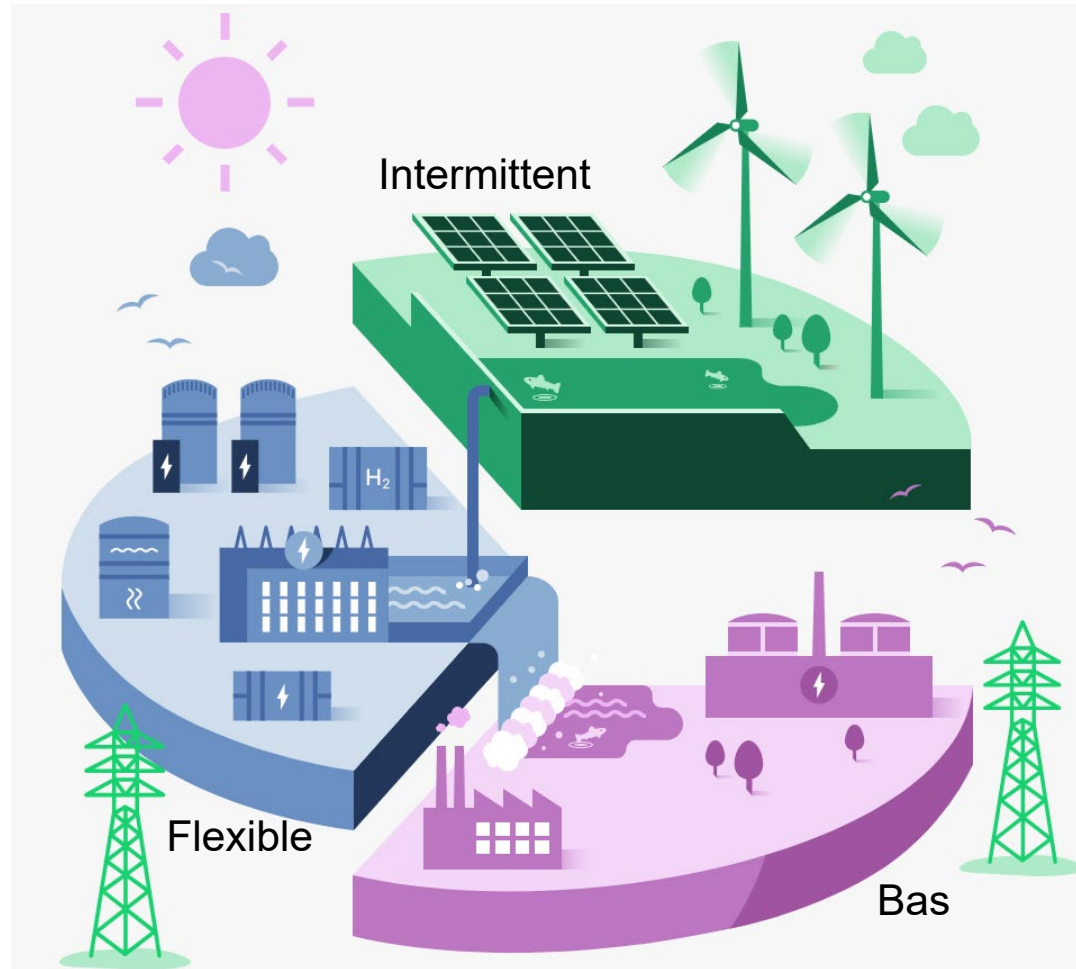
- 4000 kWh/y



A total of 47 TWh has the capacity to supply electricity to approximately **11,75 million homes** per year.



Fortums dinner plate model



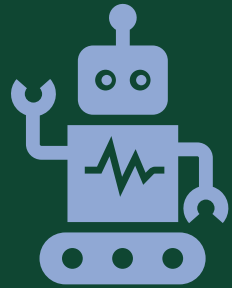
Each source is needed to provide a stable energy system

- Fortum is making investments across all three sectors.
- Affordable and dependable energy generation.
- Sustainable and competitive energy production.

Entry jobs for you!



Trading and portfolio
management



IT, Digital and
Innovation



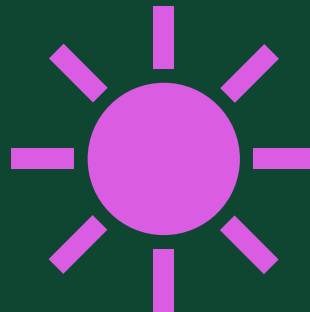
Project manager



Dispatcher



Corporate relations



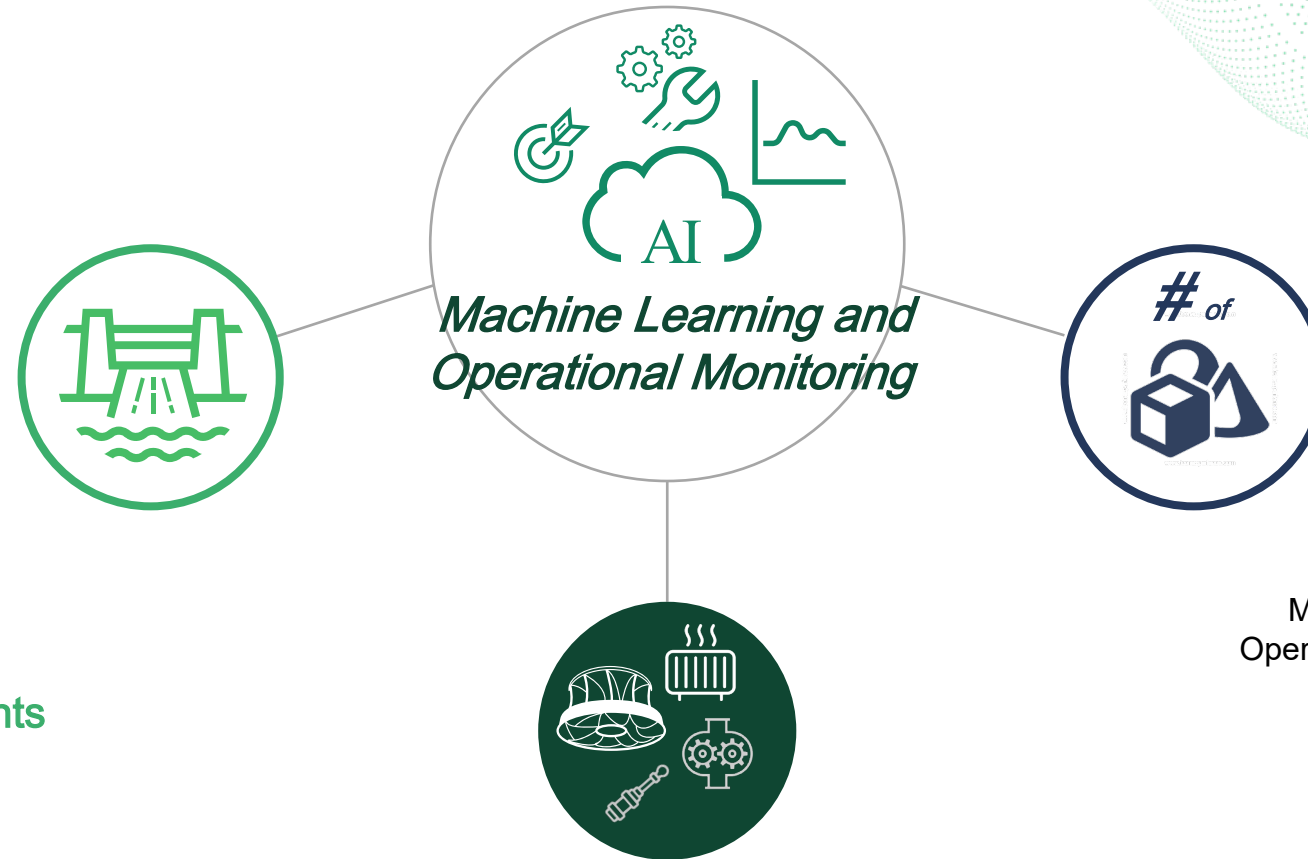
Wind and Solar
development



Strategy and business
development

Predictive Maintenance using Machine Learning

- Coverage



Plants / Dams

Plants: 124
Dams: 427

Sensors / measurements

~38 000 different sensors
+ calculated values

Instances in fleet

Machine Learning Instances: 222
Operational monitoring models: 894

Functional locations

Machine Learning models: 17
Operational monitoring models: 13

JOEL KORPI

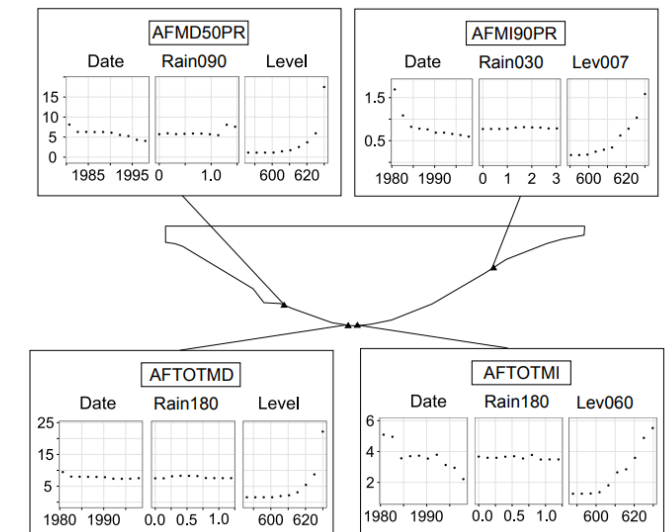
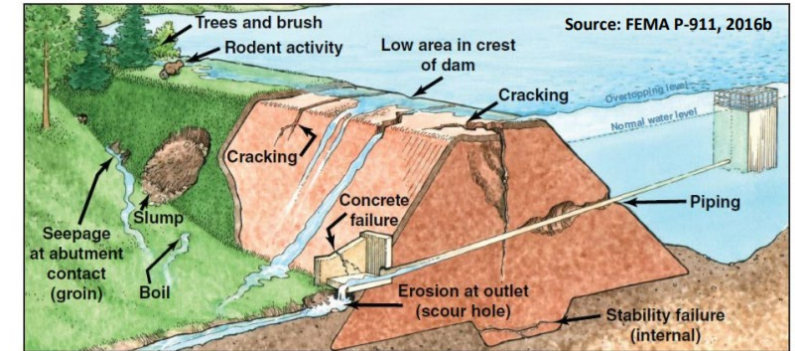
Thesis Worker &
Summer Trainee at Fortum

Uppsala University, Master in Industrial Analytics



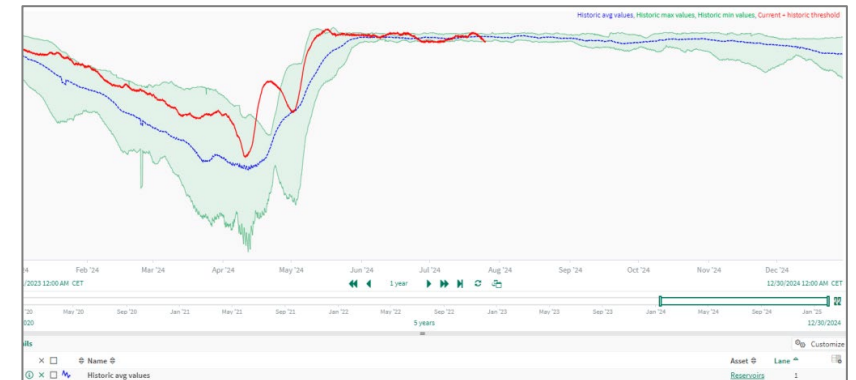
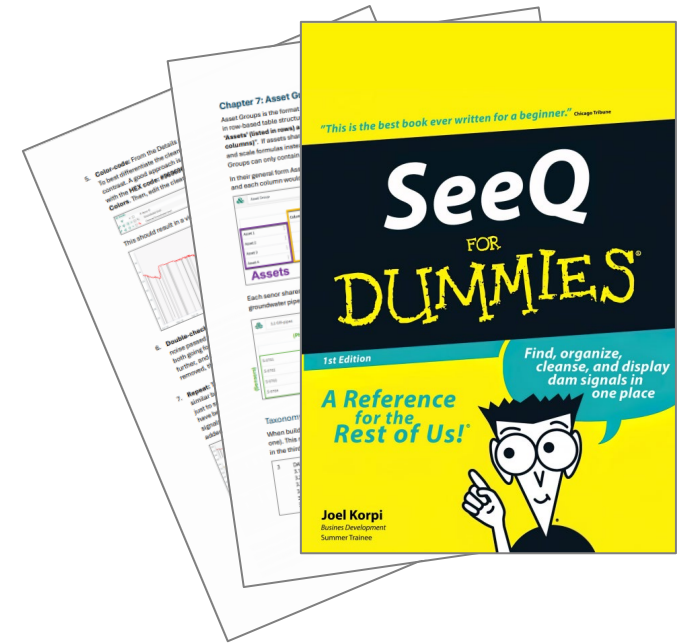
Thesis – Dam Safety & Machine Learning

- Investigate how machine learning and explainable AI can be further applied to Fortum's dam safety work
 - Forecast dam response and detect synthetic anomalies, evaluate how explainable AI methods can aid model understanding
- AIM:** Implement an optimized machine learning model with respects to accuracy and computational efficiency, propose an XAI methodology for standardized safety assessments



Summer Trainee – Business Developer

- Main task was to assist in transferring over from old to a new dam data analysis tool
 - Created a general template for dam monitoring + handbook on using the new tool
- Freedom to follow my ideas, flexible (paid) work and vacation
- Four summer trainees (2 Hydro, Wind, 1 Hydrogen)
- Close collaboration with many colleagues from Hydro & Dam Safety!
- Got to present my findings to many people across Fortum!



TOVALANGELS

Master thesis & Work at Fortum

Who am I?

- Masters in Sustainable Energy Engineering at KTH
- Thesis "Optimization of Complex Power-to-X Plants in the Nordics"
 - P2Xteam
 - Optimized the sizing of components and operation of a hydrogen plant to reduce the LCOH
- Started in August as a P2X Business Developer in the P2Xteam
 - Find, develop and manage the initial phases of hydrogen projects



Why Fortum?

- 1 Positive and enriching thesis experience
- 2 Experience Fortum as a potential employer and workplace
- 3 Chance to gain insights into many different areas
- 4 See first-hand how the team deals with feedback and communication with leadership

Thank you for listening!

Visit our career site for
more info:

