ENERGY CRISIS IMPACT ON HPC CENTRES

Case study:
HPC centre of the University of Tartu

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There are three major HPC service providers in Estonia:

- **Tallinn University of Technology**
- **Institute of Chemical Physics & Biophysics**
- **University of Tartu**
Average electricity price in Estonia (Mar 2021 - Oct 2022)

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hpc.ut.ee
EstoniaHPC

cent / kWh (incl VAT)
HPC center of the University of Tartu

- Established in 2008
- Currently the largest HPC center in the Baltics
- 30 employees
- Services are open for scientific researchers, industry, SMEs, and the public sector
- Two computer clusters: “Rocket“ and the large memory machine „Atlas“
- 12,000 cores, 50 GPUs
Energy consumption (Mar 2021 - Oct 2022)
Facts to consider

• The price of electricity is formed on the stock exchange (Nord Pool) as a ratio of supply and demand
• No financial support from the (current) government
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Should we increase service prices?

Why not?

Current prices:
- 0.014 EUR/CPU-hour
- 0.06 EUR/GPU-hour
How to make HPC technology greener?

The waste energy of LUMI supercomputer produces 20% of the district heat of the city of Kajaani!
Thank you!