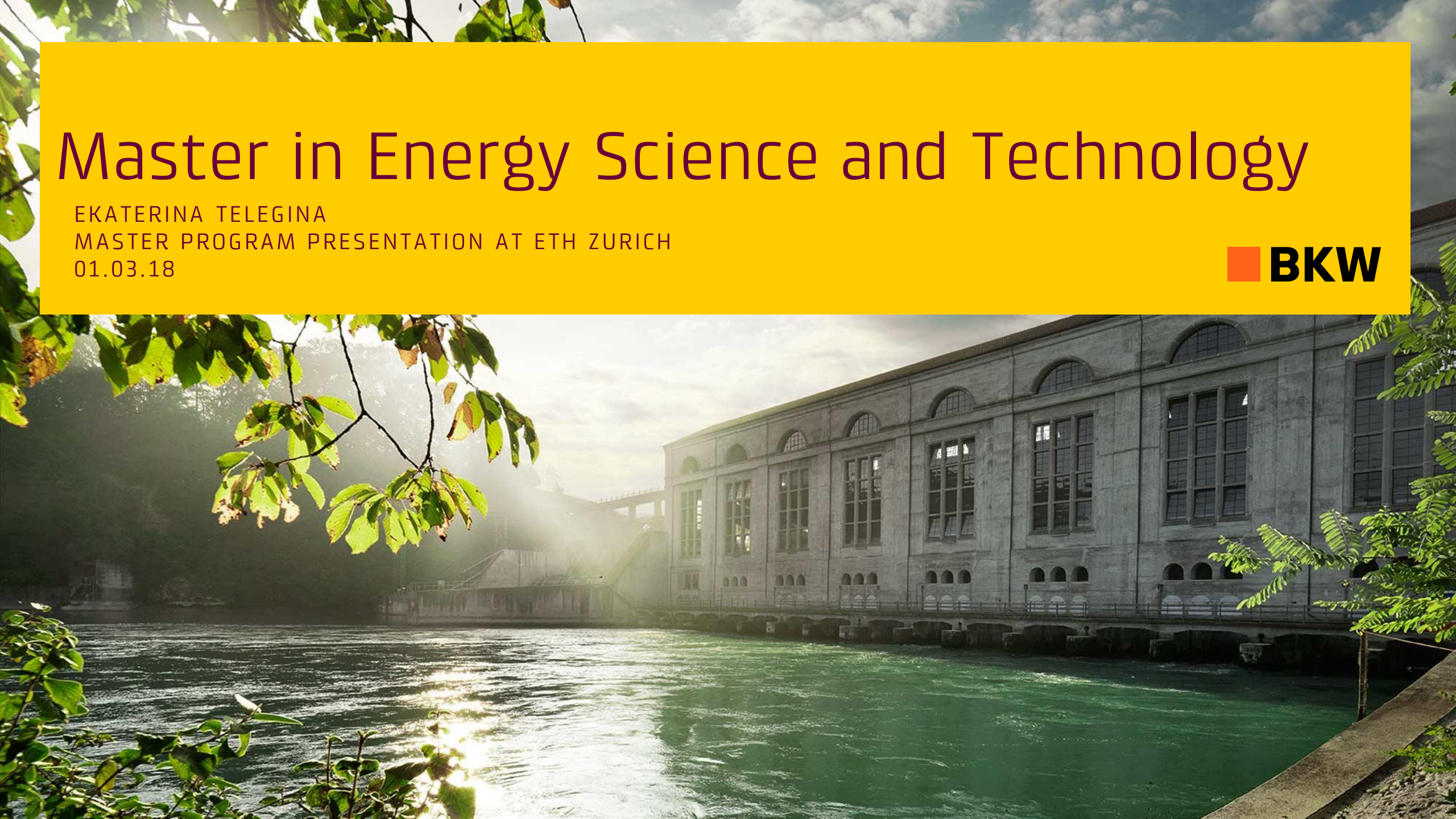


Master in Energy Science and Technology

EKATERINA TELEGINA
MASTER PROGRAM PRESENTATION AT ETH ZURICH
01.03.18



Before MEST

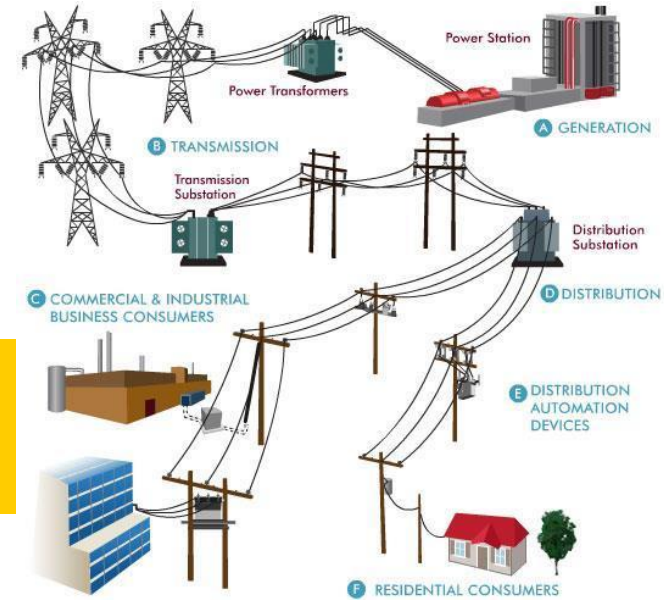
2013



POLYTECH

Peter the Great
St. Petersburg Polytechnic
University

**Major: Electric Power
Systems and Grids**



2012

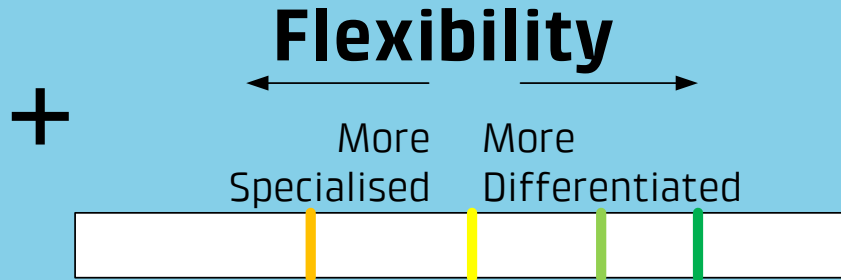


What's next?

- Learn more! Broaden my perspective
- Industry – tackle real problems
- Only move to a place that I like

During MEST: Multidisciplinary Program

Compulsory courses from different areas of energy science

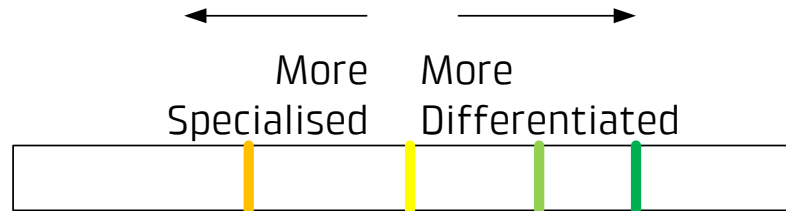


Meets the new challenges of the energy sector

Broader perspective



During MEST: Role of Tutor



In my case:

Focus on Power Systems + Energy Economics & Business

Tutor: Prof. Dr. G. Andersson

(2000-2016 – Head of the Power Systems Lab)

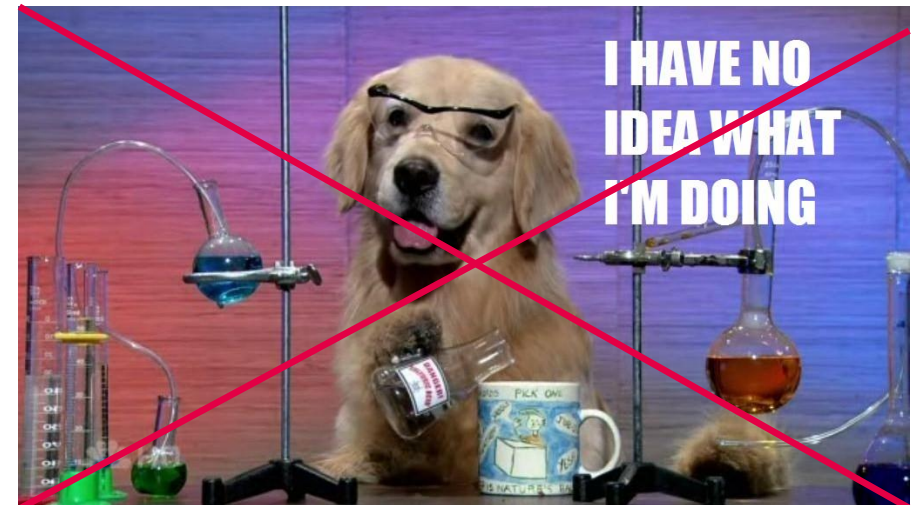
During MEST: Our different backgrounds

In my case:

- Electrical Engineering
- Mechanical Engineering
- Energy Engineering
- Environmental Engineering
- Physics
- Aerospace Engineering
- Chemical Engineering




Synergies



During MEST: Compulsory Internship in Industry

In my case:

 **BKW**
High Voltage Engineering Intern
@ Grid Solutions Department



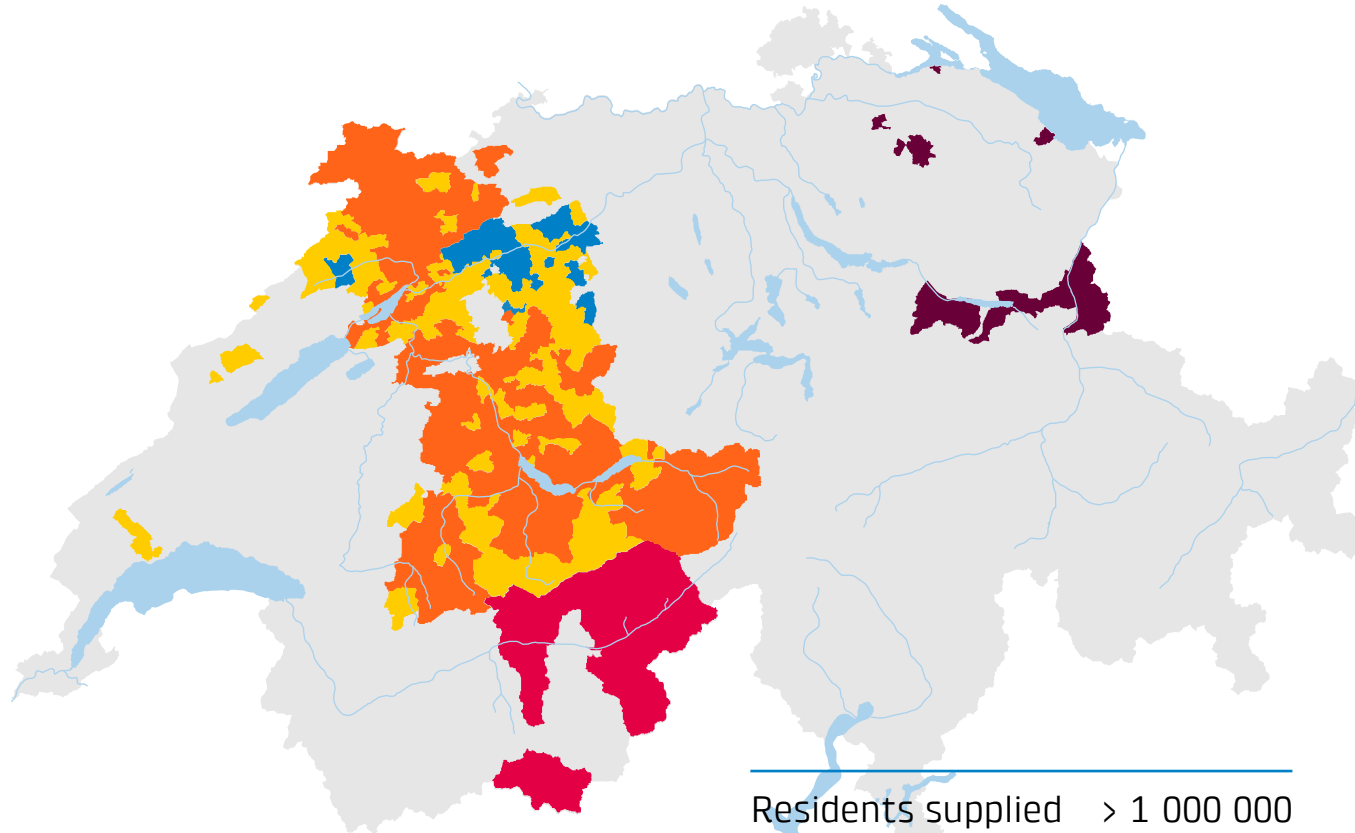
01/2016 – Present:
High Voltage Technology
Engineer
@ Grid & Hydro Engineering

Assessment of feasibility of a high voltage cable grid, using historical measurement data and forecasts of energy consumption dynamics -> Cable grid optimization

- How to address real problems and practical tasks?
- What is expected from me as employee?
- What do I like?



After MEST: BKW



Residents supplied	> 1 000 000
Private customers	362 204
Business customers	3 055
Distribution partners	148

BKW

"We are shaping the future of energy – straightforward, reliable and integrated"

- >6'000 employees
- Headquarters in Bern
- Founded in 1898 as "Bernische Kraftwerke"
- Energy & Engineering Portfolio:
 - Energy (power plants, market activities, supply)
 - Grid 0.4 kV-132 kV -> DSO
 - Services

"The Group plans, builds and operates infrastructure to produce and supply energy to businesses, households and the public sector..."

After MEST: BKW – My Role (1)

01/2016 – Present: Ingenieurin Hochspannungstechnik @ Grid & Hydro Engineering

- Primary equipment at substations + HV lines – construction and renovation
 - High-voltage cable



"The term primary technology covers all components that are connected to the electric power system and carry high voltage and currents"

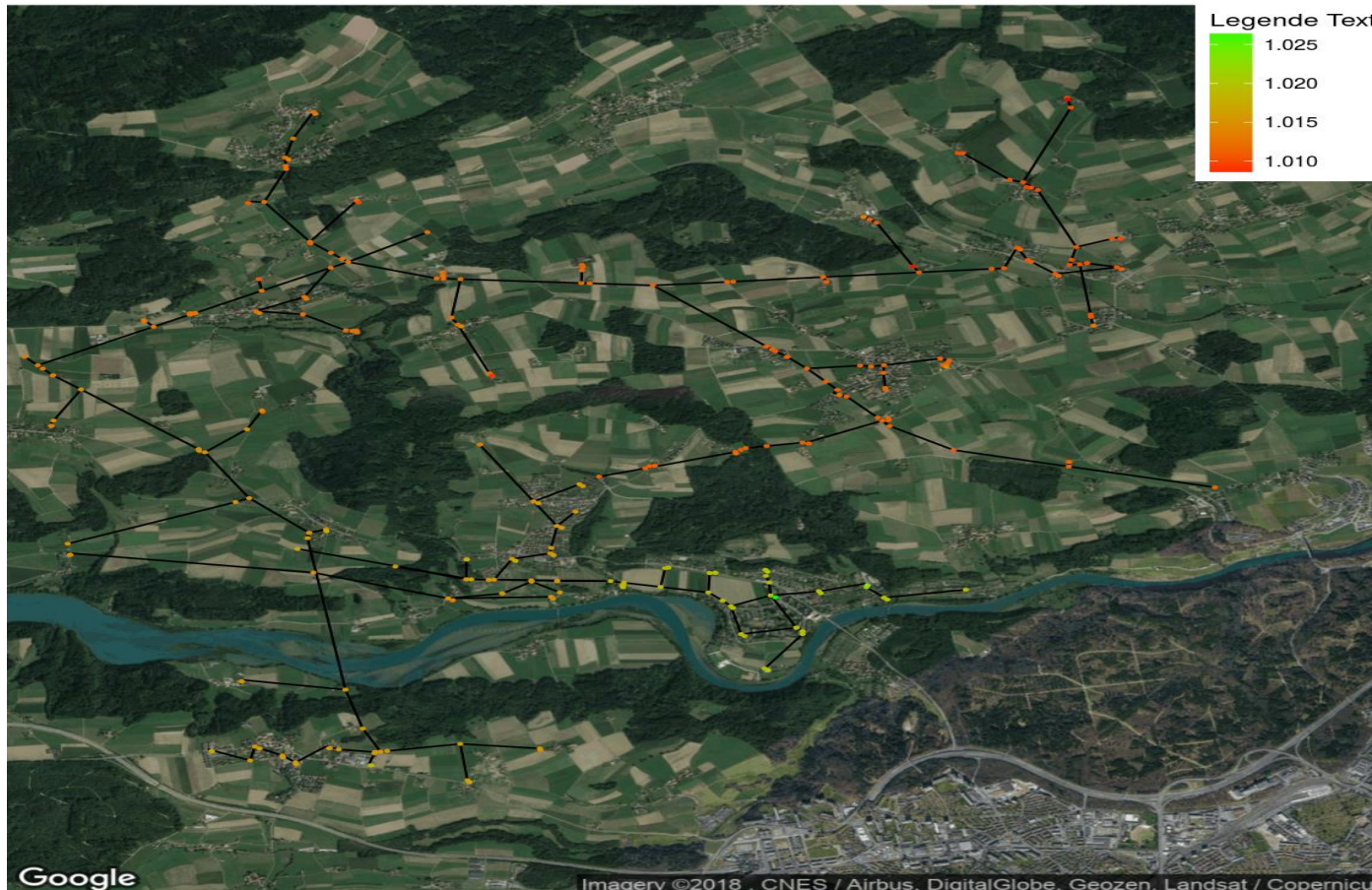
[Technology of Electric Power System Components course, ETH Zurich]



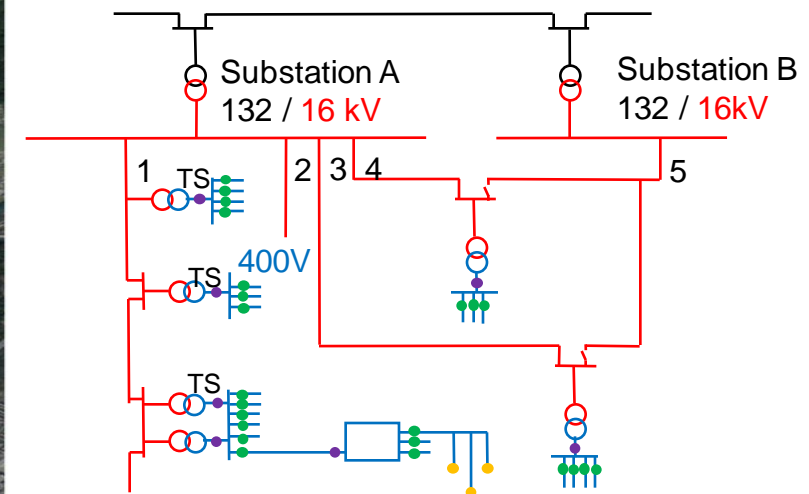
After MEST: BKW – My Role (2)

01/2016 – Present: Ingenieurin Hochspannungstechnik @ Grid & Hydro Engineering

- Power system modelling and simulations
 - State estimation -> monitoring



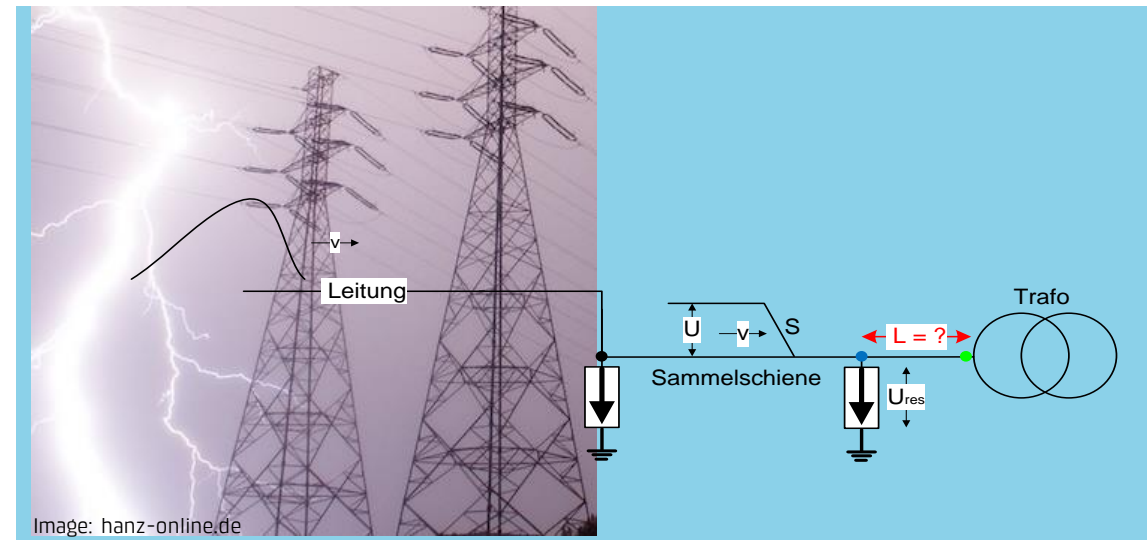
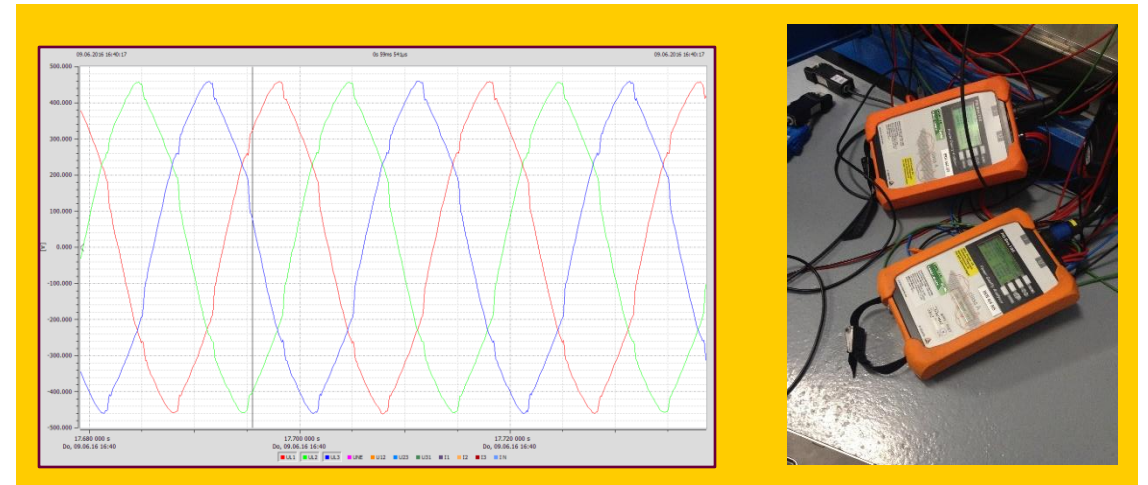
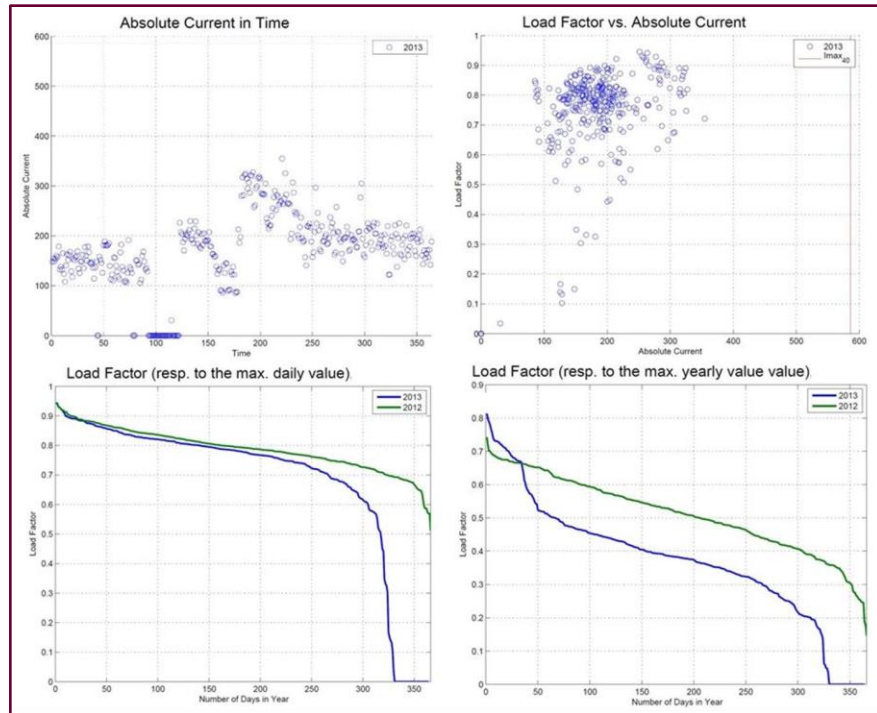
"The goal of State Estimation is to determine the most likely state of the system based on measured quantities"
 [Power System Dynamics and Control course, ETH Zurich]



After MEST: BKW – My Role (3)

01/2016 – Present: Ingenieurin Hochspannungstechnik @ Grid & Hydro Engineering

- Studies and analysis
 - Power Quality, reliability of supply
 - Overvoltages and insulation coordination
 - Thermal calculations for HV components
 - Statistical analysis
 - etc.



Thank you for your attention!

Ekaterina Telegina
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www.bkw.ch



Backup 1: Our strategy at a glance

We are evolving from a traditional electricity producer to a leading provider of energy and infrastructure services

