### Multiconsult

### **Login Vagle**

Commercial implementation of optimized power control based on forecasts for an interrelated electrical and thermal system at REMA Distribution Central in Rogaland, Norway

MSc Håkon Person, Multiconsult hakon.person@multiconsult.no 07.11.2019



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### **The Main Participants**



A contracting client, proactive and with the necessary guts



A client advisory team with competence covering the whole system



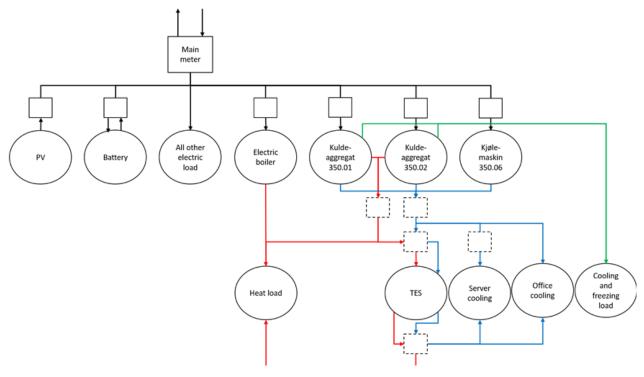
A solution oriented and open minded supplier of the energy control system



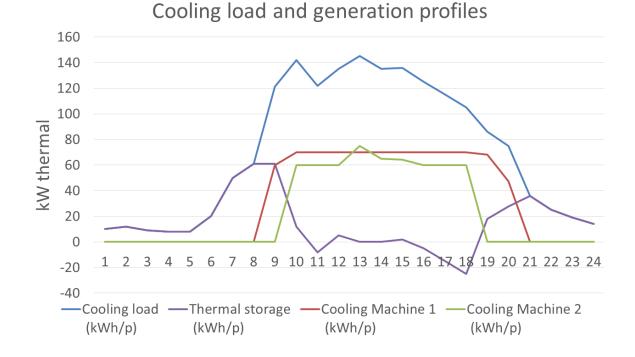
### **Control End Product**

Based on modelling and forecasting the interrelated electrical and thermal system

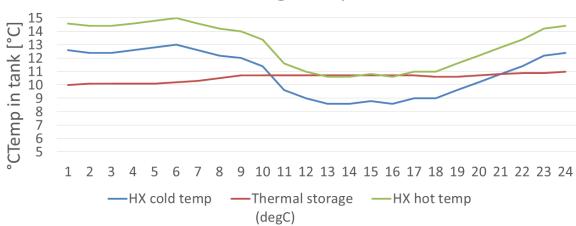
→ Hourly control plan for thermal storage and battery is generated and for a rolling 24 hour horizon



# Example Result - example day







### **Obtained Values by this Practical Solution**

- 1. Reduced electricity bill
- Reduced peak power tariffs
- Reduced energy consumption
- Utilize electricity price variations

- 2. Resource utilization & reduced emissions
- Max cooling machine efficiency (Temp, load, energy recovery)
- Battery prolonged lifetime
- Double use of 300 m<sup>3</sup>
  Firewater tank
- Utilize PV insolation / CO<sub>2</sub>
  efficient modules

#### 3. Insight

- Live visualization of KPIs
- Forecasts
- Quality assurance of energy data
- Optimization, not suboptimization





### Thank you for the attention!

## Now questions

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