

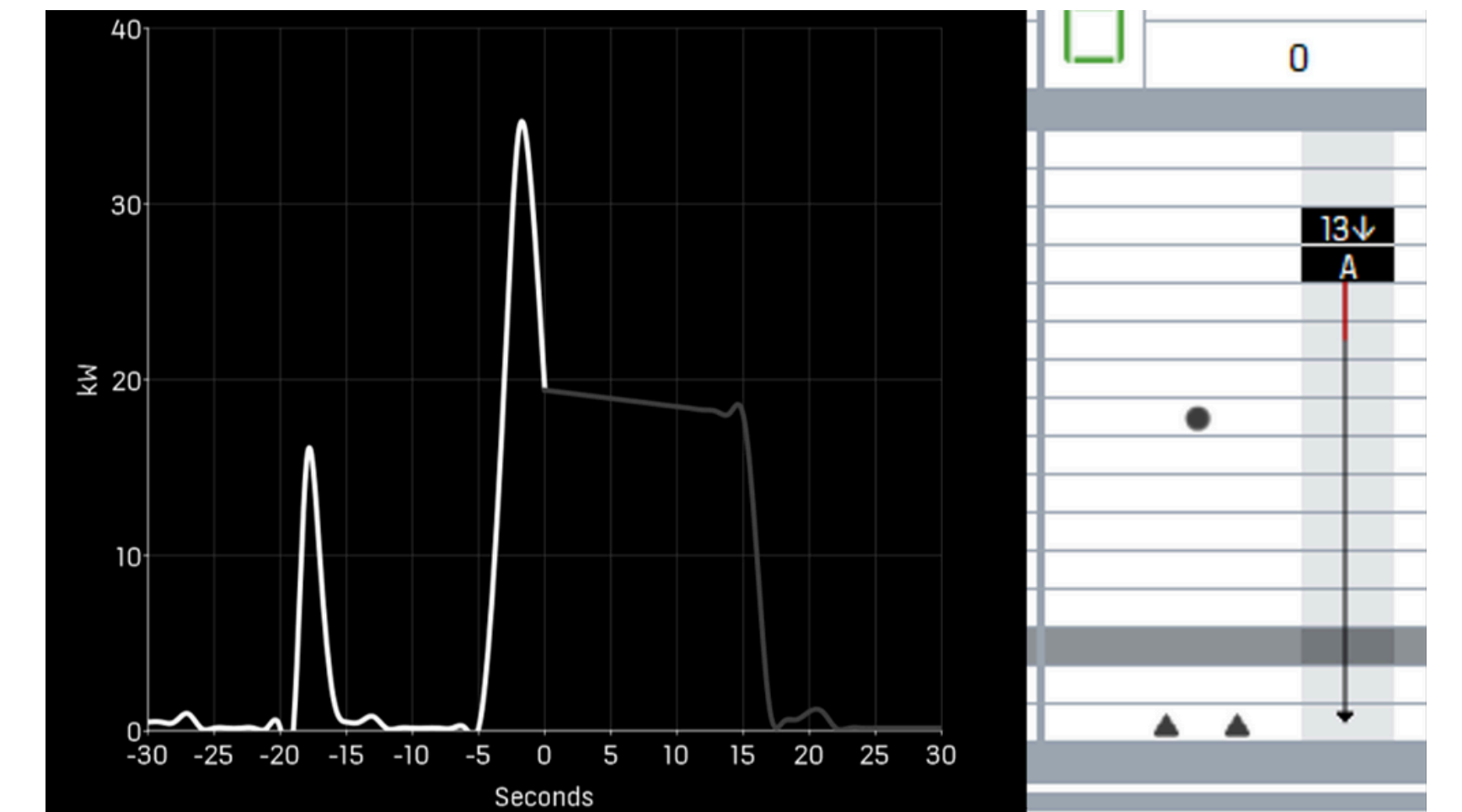
Elevated building energy management through people flow intelligence

Short description

- The main objective is to reduce the peak power demand
- Savings through components size reductions (for new/modernisation projects) or lower peak power tariffs
- The solution provides a real-time forecast of short-term power demand of the elevator/elevator group
- The forecast enables smart building energy management systems to make more exact, in-time decisions on power balancing actions
- Such actions include charging/discharging a battery bank or ramping up/down other building equipment, such as ventilation, lighting, cooling, and heating

Key results during the project lifecycle

- The solution aims at boosting the functionality of the smart building energy management system/virtual power plant
- The energy efficiency within the city/district will be impacted by the quantity and quality of similar set-ups and their interplay



Insights and learnings

- Connecting different systems in the field (both physically and virtually) is time consuming
- The business model likely needs pivoting, as the presumed benefits were less in reality (for now at least)
- The new solution could be an emergency power system, as the current output must remain within a certain range

Challenges

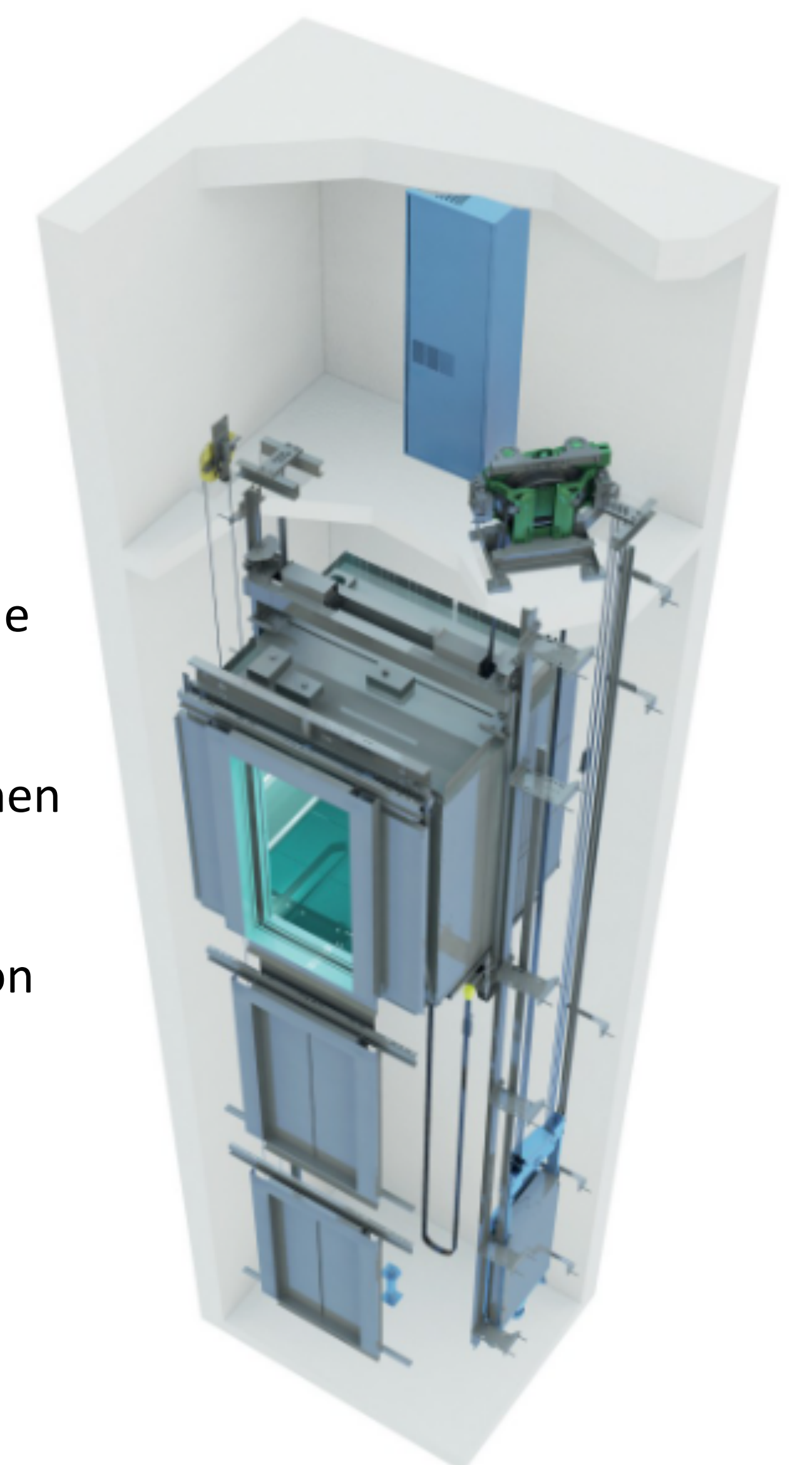
- The stability of the system has been proven difficult with the demo set-up
- Meaningful long-term monitoring of the system performance would have needed more effort and resources

Plans for replication

- The solution should be developed further within KONE to enable more value to the potential new use case of stabilising the emergency power system
- For the current solution, the marked trends related to peak power tariffs should be closely monitored and the high-rise building segment could be then (re)targeted in attractable markets
- The value of the people flow data (e.g. occupancy in different zones of the building) in real-time optimisation of the smart building automation decision should be closely followed

Questions and comments from partners

Comments to be added during poster session at Consortium meeting in Leipzig



DEMO DISTRICT

*Sello shopping centre,
Leppävaara, Espoo, Finland*

PARTNERS INVOLVED



COMPLETION DATE

03/2023

KEY NUMBERS

At demo site:
13 escalators measured
Duplex elevator group demo
Pretesting:
2 test shafts
Quadruplex elevator group

CO₂ REDUCTION POTENTIAL

low-medium

CONTACT PERSON AND LINKS

Toni Tukia
KONE Corporation

