HEGRID
Hybrid Energy Grid Management

eit Digital

KIT — Karlsruhe Institute of Technology

Multi-Commodity Energy Management Applied to Micro CHPs and Electrical Heaters in Smart Buildings

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This activity creates an interoperable energy management platform (based on EF-Pi framework) that allows for optimal use of flexibility in smart grids across multiple commodities: electricity, gas, and heat. It provides a generic interface between multi-commodity devices and demand response algorithms (e.g. by the utility company). This enables interoperability between devices and demand response algorithms, thus creating more flexibility than would be possible with traditional silo based energy management solutions.
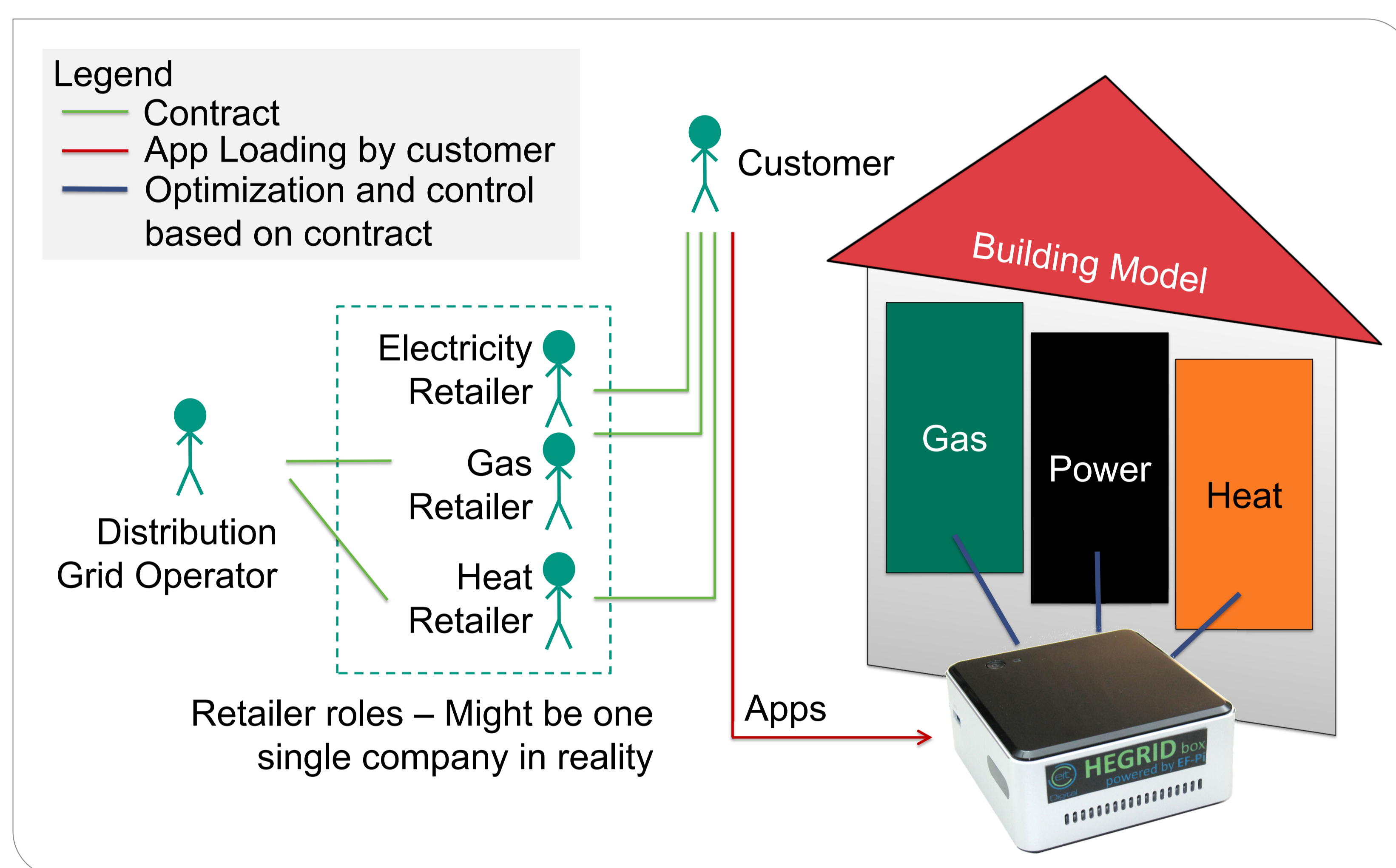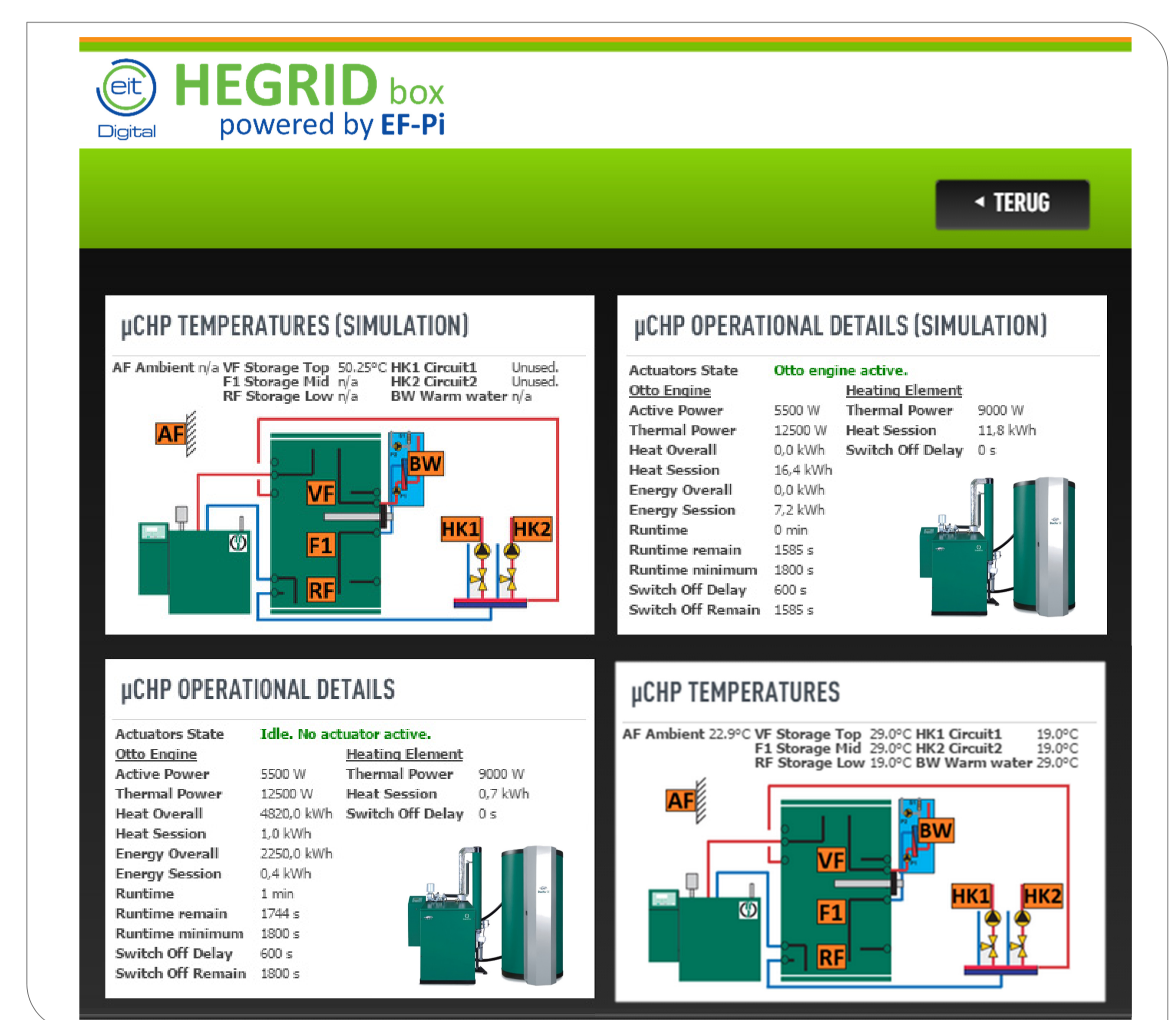

Figure 1: Market scenario
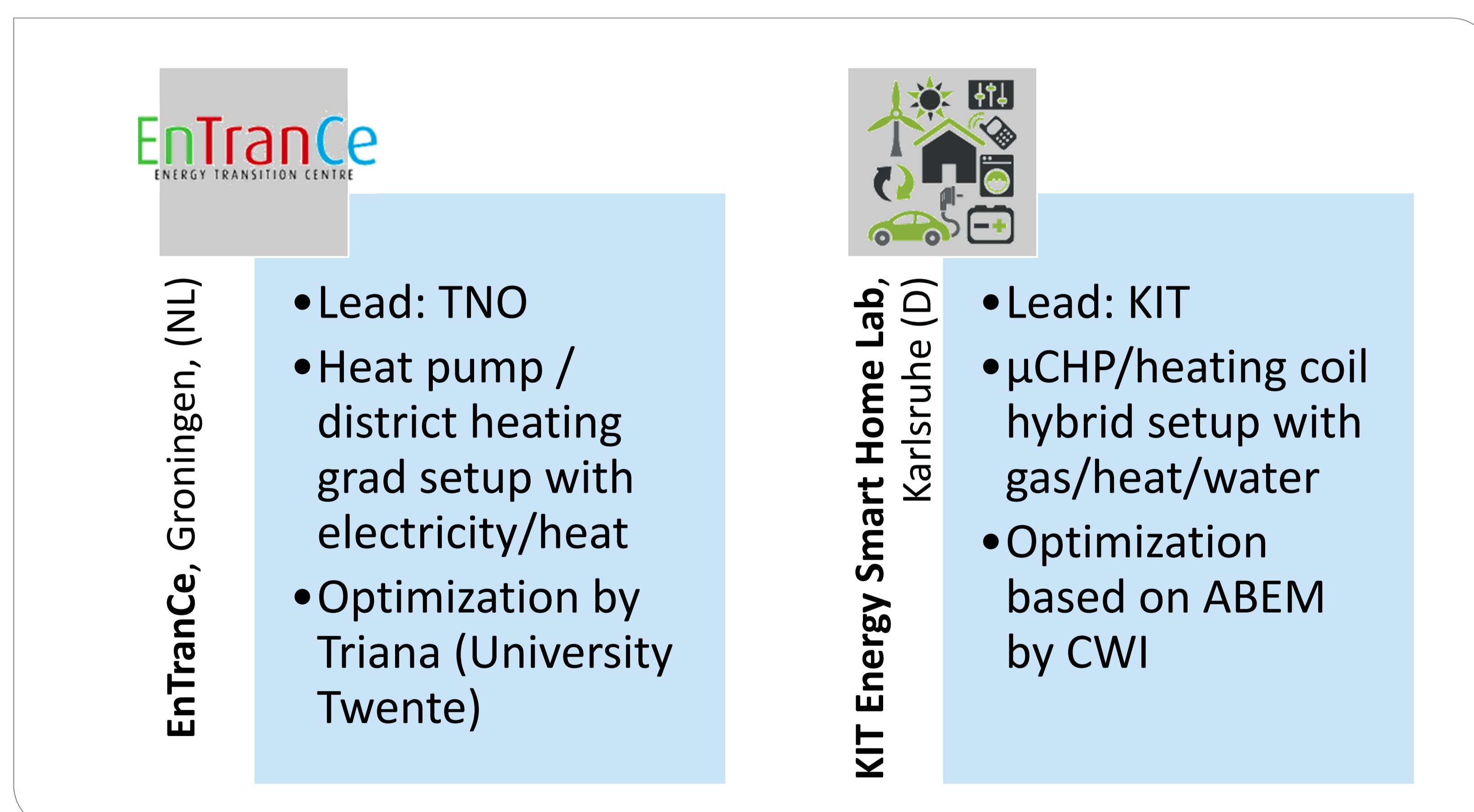

Figure 2: Widget-based user interface

EnTranCe, Groningen, (NL)
- Lead: TNO
- Heat pump / district heating grad setup with electricity/heat
- Optimization by Triana (University Twente)

KIT Energy Smart Home Lab, Karlsruhe (D)
- Lead: KIT
- µCHP/heating coil hybrid setup with gas/heat/water
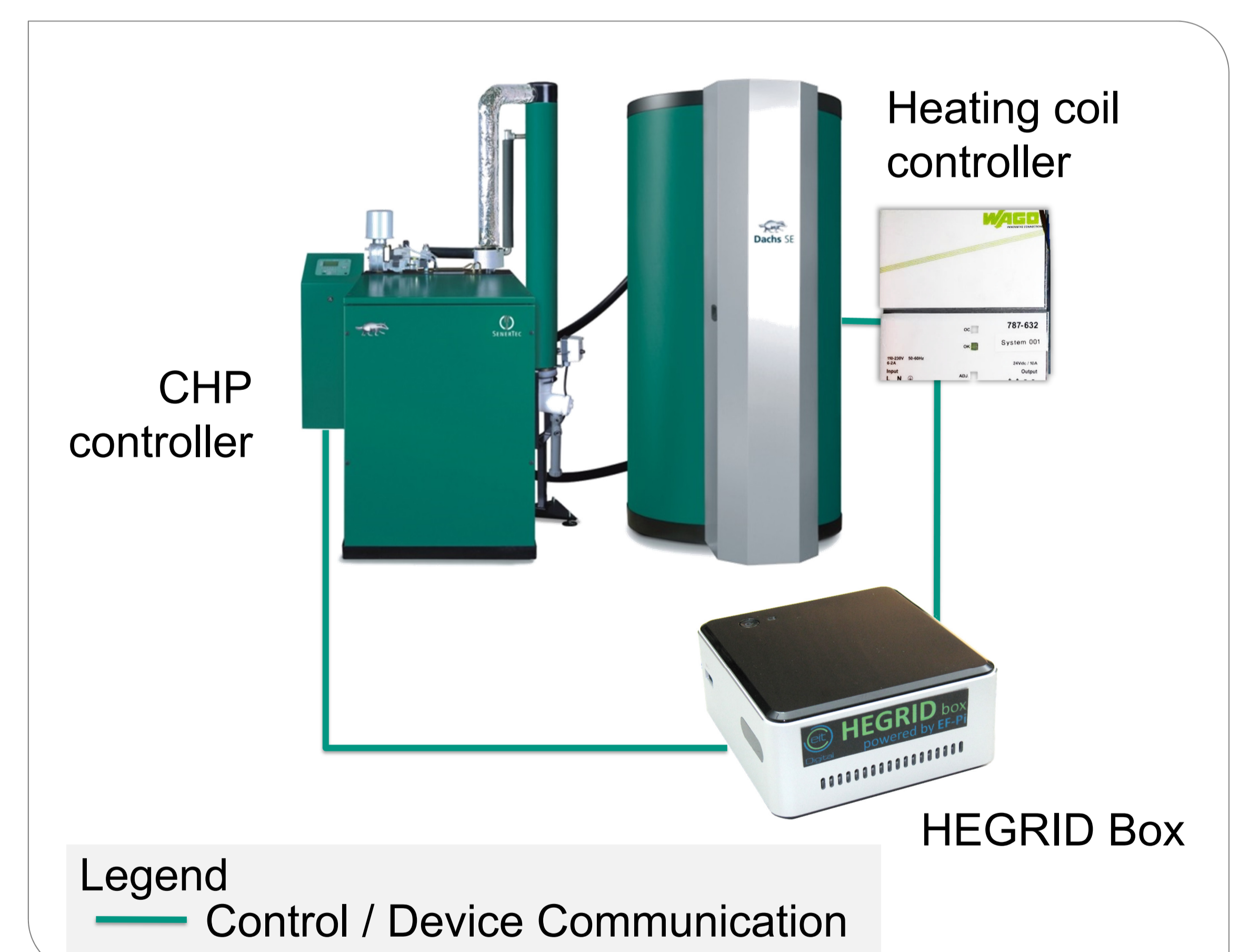- Optimization based on ABEM by CWI

Figure 3: Demonstrators

Figure 4: Physical setup at Energy Smart Home Lab, Karlsruhe

Partners

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