Virtual Energy Storage Network based on Residential Heating Systems

Martin Geidl
Head of Energy Services
Swisscom Energy Solutions AG

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Swisscom Energy Solutions AG

2012:
- Foundation of Swisscom Energy Solutions AG
- Launch of be-smart.ch (today tiko.ch)

2013:
- Partnership with Repower
- TRL market entry
- Successful prequalification test for SRL

2014: SRL market entry

2016:
- Successful prequalification test for PRL
- Launch of tiko sun and tiko mountain
- Projects in Germany, France, and Austria
The tiko Demand Management Platform

A diagram illustrating the components of the tiko Demand Management Platform, including T-Sensor, K-Box, M-Box, Private Cloud, Web, App, Actors and sensors, Gateway, Backend/Algorithms, Front-end.
• Control of electric loads that can be delayed without significant impact on customer comfort
• Focus on small residential loads such as heat pumps, electric heaters, night storage heaters, water boilers
• Accept utility’s tariff structures and ripple control times
• The participants keep full control over their devices
• The solution has to be highly secure
tiko power Installation

1: M-Box: Communication module (one per house)
2: K-Box: Measurement and control module (one per device)
tiko power Hardware
Control Aspects

- Local weather conditions
- Consumer behavior
- Consumer comfort
- Ripple control times
- Ancillary service requirements
- Device properties and state
Example: Air-Water Heat Pump
More than 6500 domestic participants in operation

Prequalified and in operation
- SRL since 2014
- PRL since 2016
Secondary Control Example
Value Proposition for tiko Participants

**Monitoring**
- Detailed consumption analysis and comparison with other users

**Comfort & Savings**
- Remote control Ecomode for energy savings

**Security**
- Alarming system for device failure
Special Characteristics of tiko

1. Small loads
   - Focus on domestic loads, mainly electricity based residential heating
   - Small and medium enterprises
   - Creating additional value for participants

2. Proofen concept
   - First aggregator in the world providing primary and secondary control / dynamic FFR with domestic loads
   - 24 x 7 operations since 2014

3. Inhouse development hardware/software
   - All options for parameterisation
   - Changes and further developments are easy to integrate

4. Data and control per second
   - Real-time power measurement of each device in the pool
   - Individual control commands to each device

5. Centralized and decentralized intelligence
   - Intelligence can be centralized or decentralized depending on application
   - Combinations of centralized and decentralized intelligence
tiko

is reality
Thank you!

martin.geidl@tiko.ch