

Small Assets, Big Impact – Wie Gebäude durch verteilte Flexibilität zu aktiven Prosumern werden

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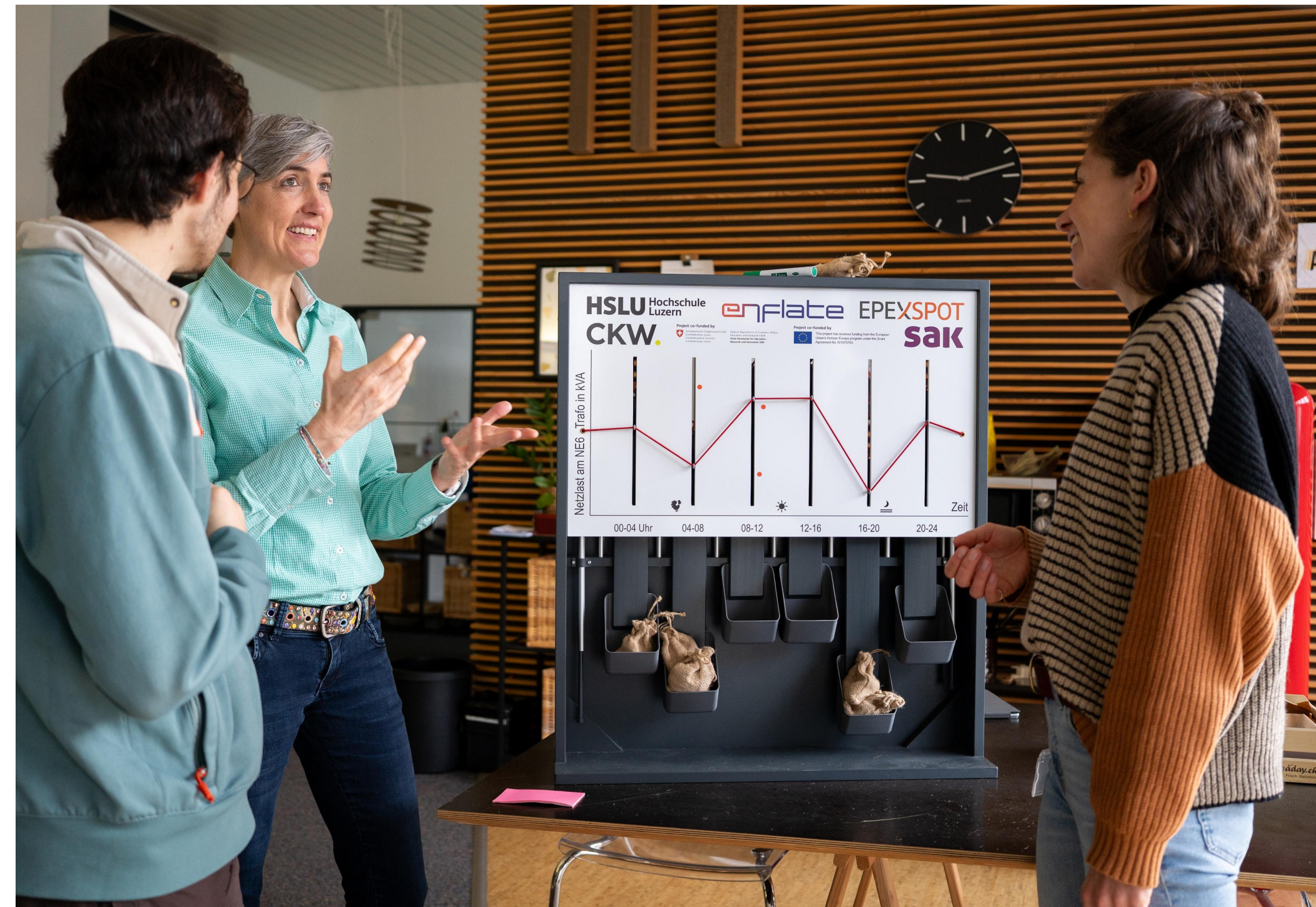


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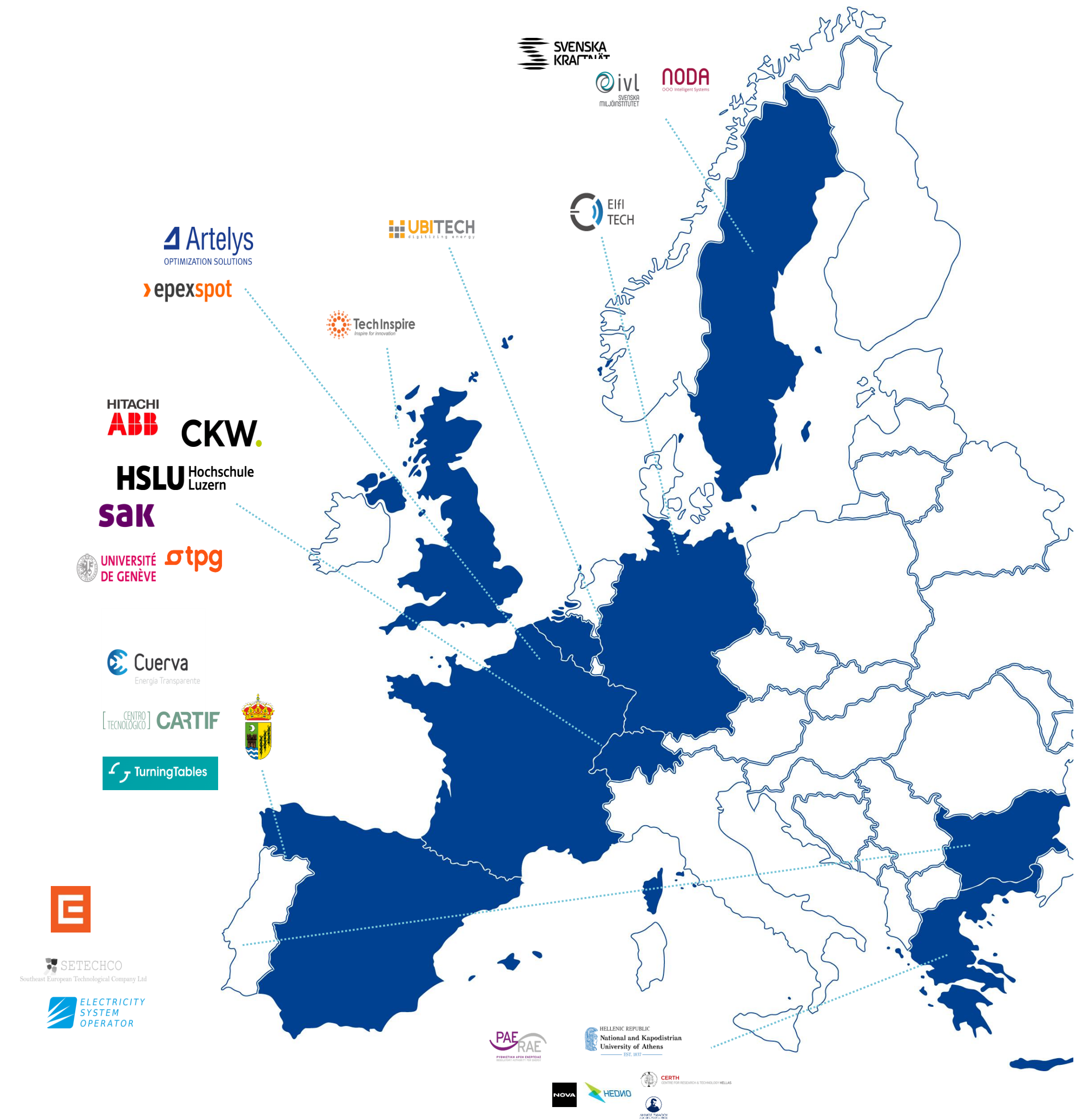


ENabling **FL**exibility provision by all **A**ctors and sectors through markets and digital **TE**chnologies



- Flexibility services for the distribution grid
- Consumer-centered flexibility platforms
- 6 test areas in Greece, Bulgaria, 2x Switzerland, Sweden & Spain

Sept. 2022 – Aug. 2026

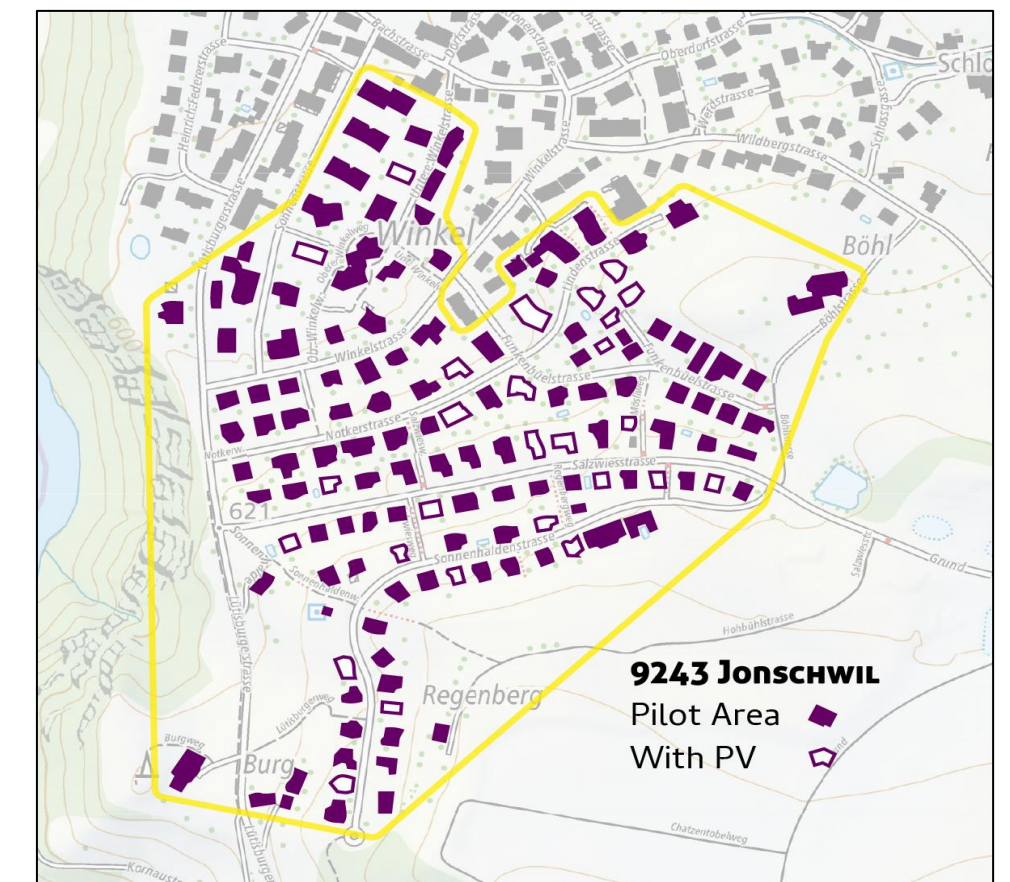
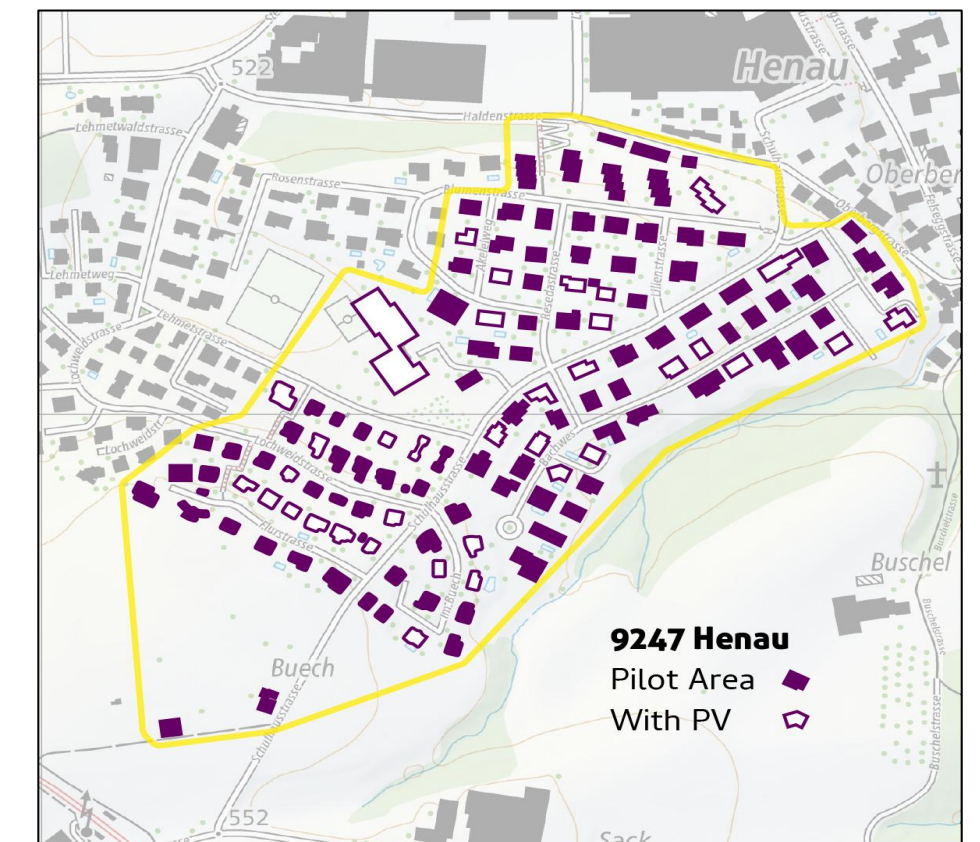


Characterization of the pilot area

ENFLATE consists of six demo sites. **Demo#2** is a pilot area in Eastern Switzerland under the leadership of HSLU. It involves SAK (energy supplier), CKW (Aggregator), EPEX SPOT (trading centre) and VIVAVIS (IT service provider).

Characterisation of the pilot area

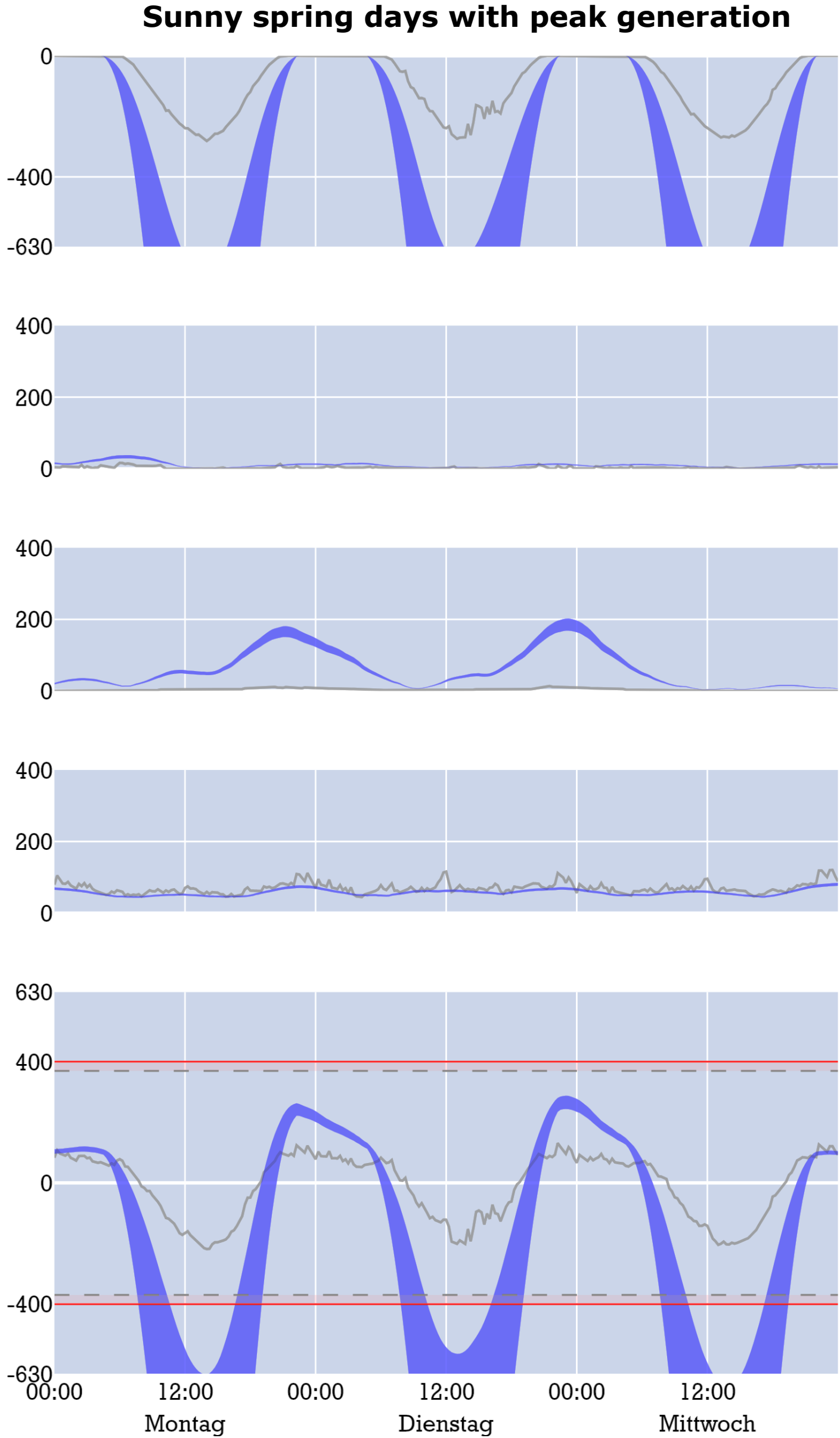
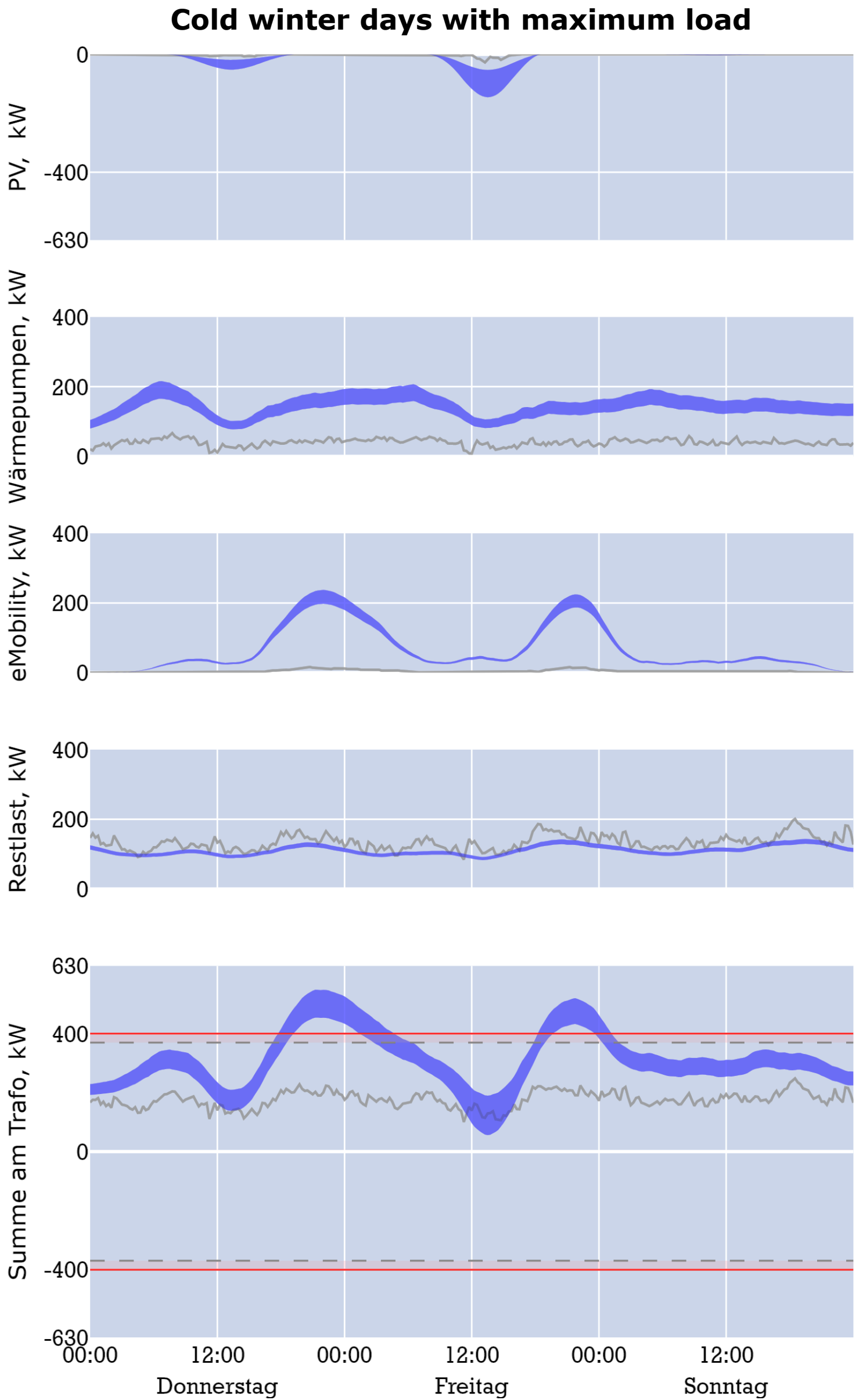
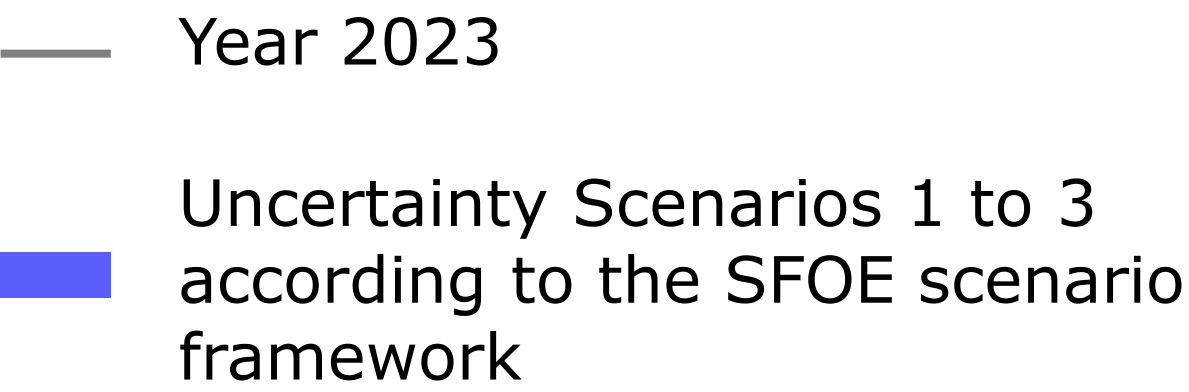
- 419 measuring points with smart meters.
- 60 PV systems with a total of 710 kWp.
- Approx. 20 electric cars (rising trend).



Situation 2040

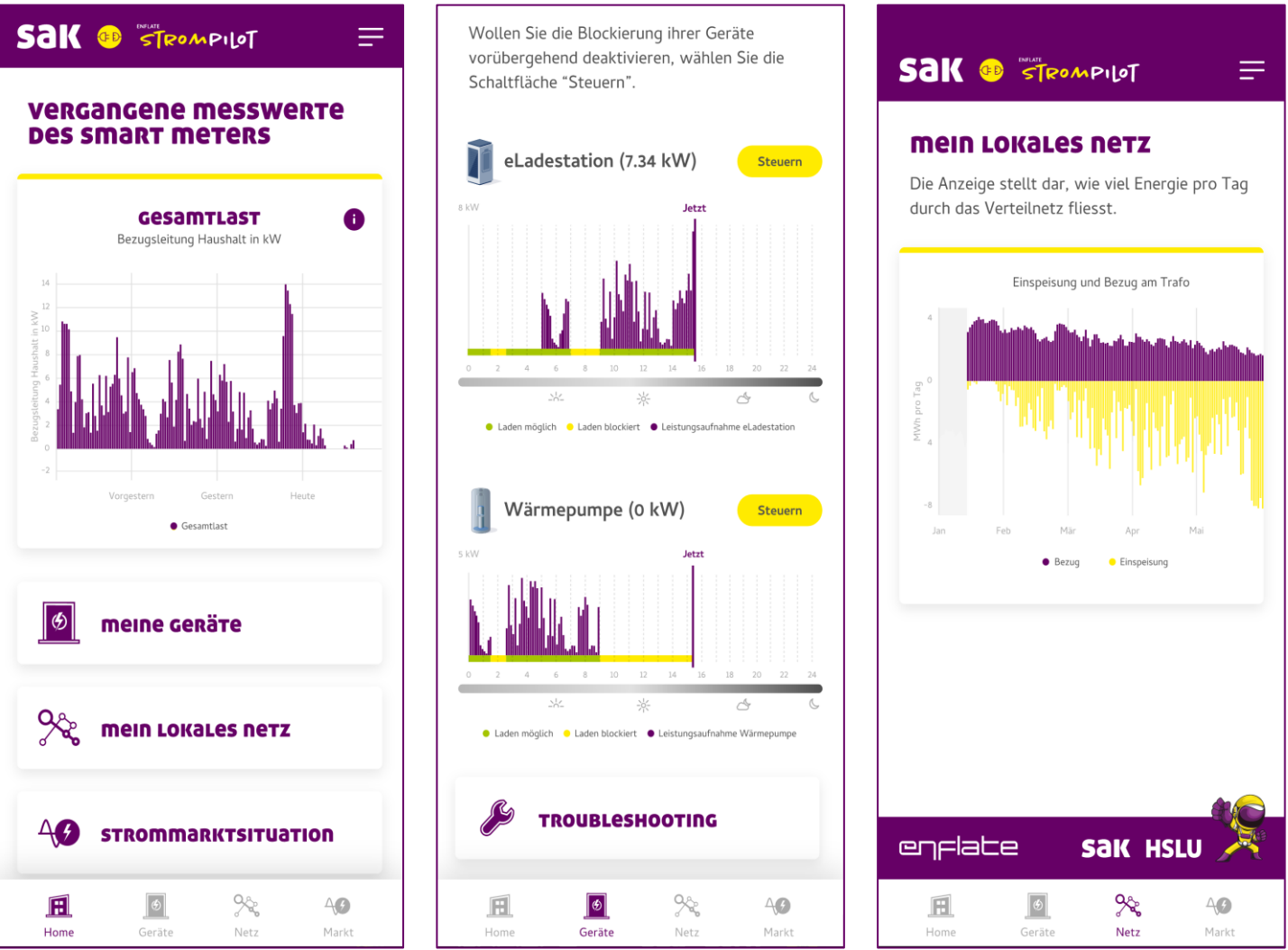
Shown are the projected load flows at a 400 kVA transformer in the pilot area.

Assumption: No flexibility is utilized.



Consumer engagement activities

Via App



SAK

FLEXIBEL UND ENERGIEWENDIG – IHR STROM ZÄHLT.

ENFLATE STROMPILOT

news

DIE INITIATIVE
Die SAK (St.Gallisch-Appenzellische Kraftwerke AG) und die Hochschule Luzern laden Sie ein, die Energiewende aktiv zu gestalten.

news

ENFLATE TEAM



Grünse – Blick 2024

Weiter lesen



ein UPDATE

Weiter lesen



Wie bestimme ich das Enflate-Strompilot Interface?

DAS INTERFACE

Wenn alle Stromzähler installiert worden sind, starten die Messungen. Dann werden Sie über ein Online-Portal Zugriff auf verschiedene Messdaten erhalten. Das Portal ist optimal für die Nutzung auf Ihrem Smartphone ausgelegt und gibt einen guten Überblick über die Beschleunigung der SAK StromPilot-Mess- und Steuerwinde.

Weiter lesen



Die Mess- und Steuerwinde

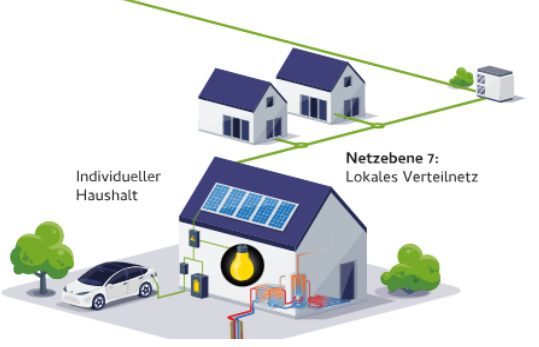
DIE STEUERUNG VON LASTEN

Nun ist es bald soweit und die letzten Mess- und Steuerwinde werden aktiviert. Aber was ist das Unterschied zwischen der ENFLATE Strompilot-Mess- und Steuerwinde und der SAK Smart Meter?

Weiter lesen



Via Social Events



DAS PILOTPROJEKT

Das Forschungsprojekt
Das Projekt setzt beim individuellen Haushalt und der Netzebene 7 an. Mit einer Plattform, die den flexiblen Handel mit Strom ermöglicht, wollen wir einen wichtigen Beitrag zur Energiewende leisten. Zusammen mit der Hochschule Luzern laden wir dabei private Haushalte aus zwei Gemeinden im Raum St. Gallen zur Teilnahme ein. Vor Ort soll dabei die Wirkung eines Marktes für flexible Energiebezüge und Einspeisungen untersucht werden.

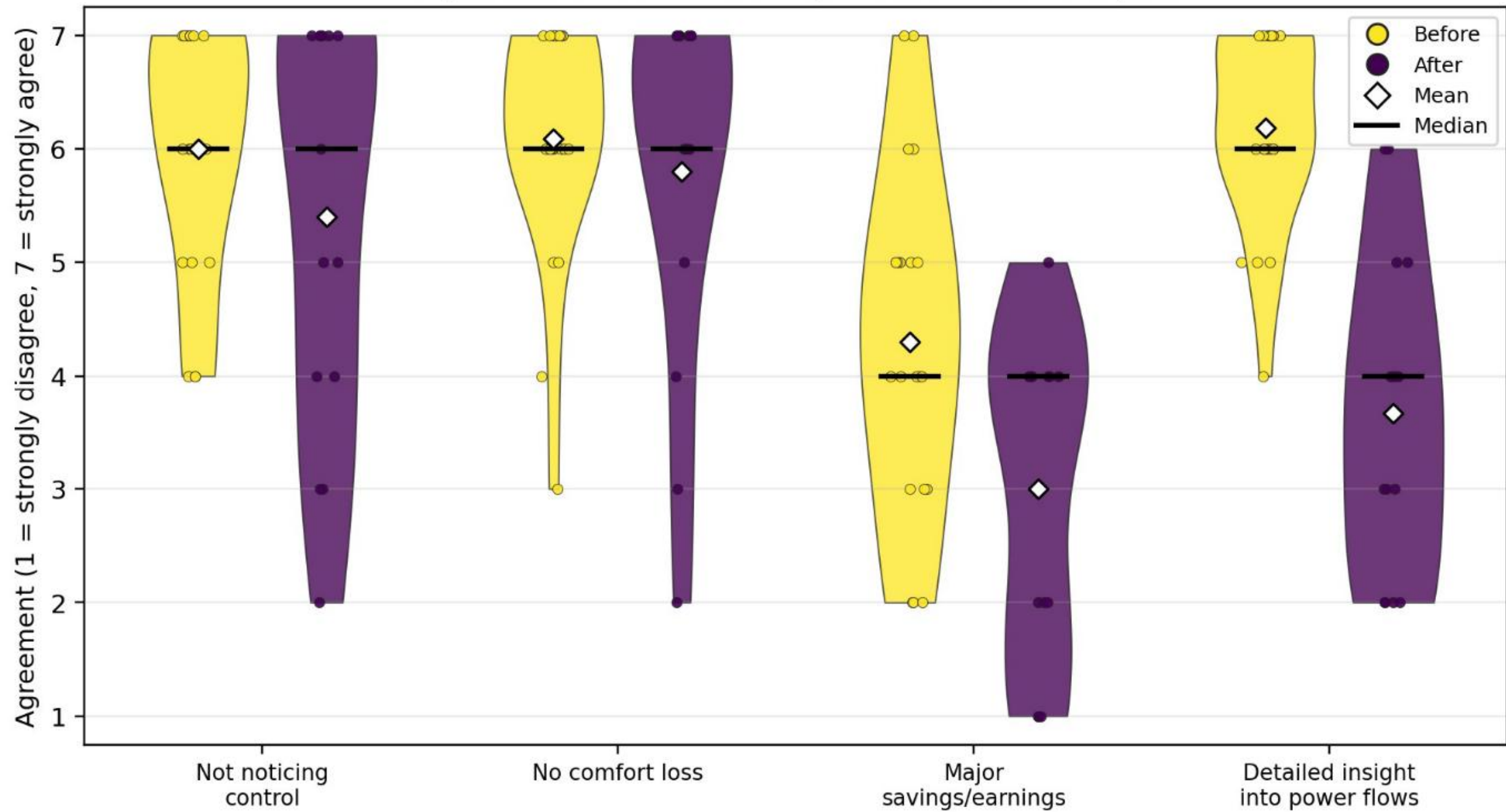
Das Projekt setzt sich zum Ziel, einen lokalen Flexibilitätsmarkt aufzubauen

Survey

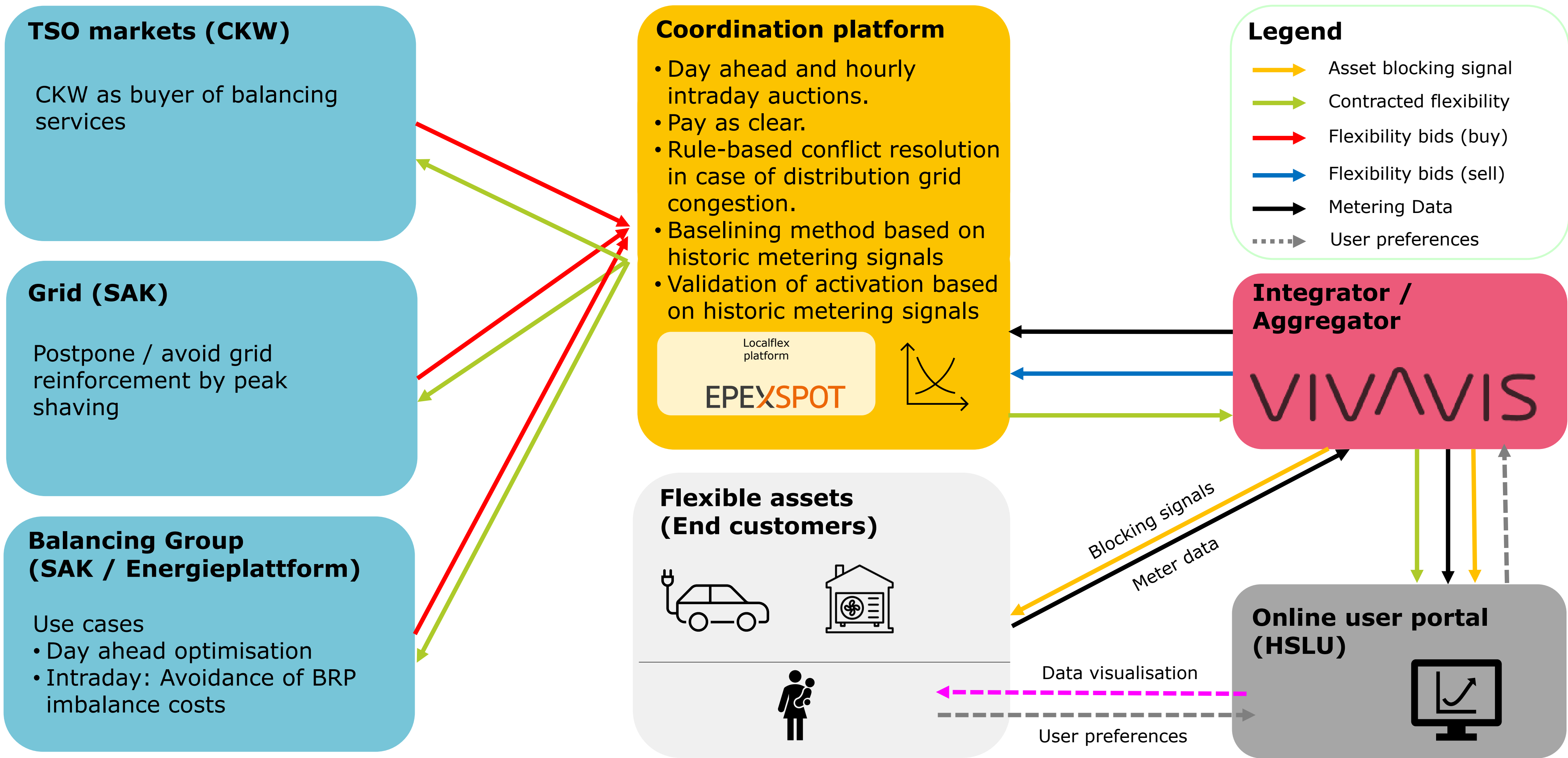
Energy knowledge before and after the pilot



Expectations before vs. experiences after the pilot

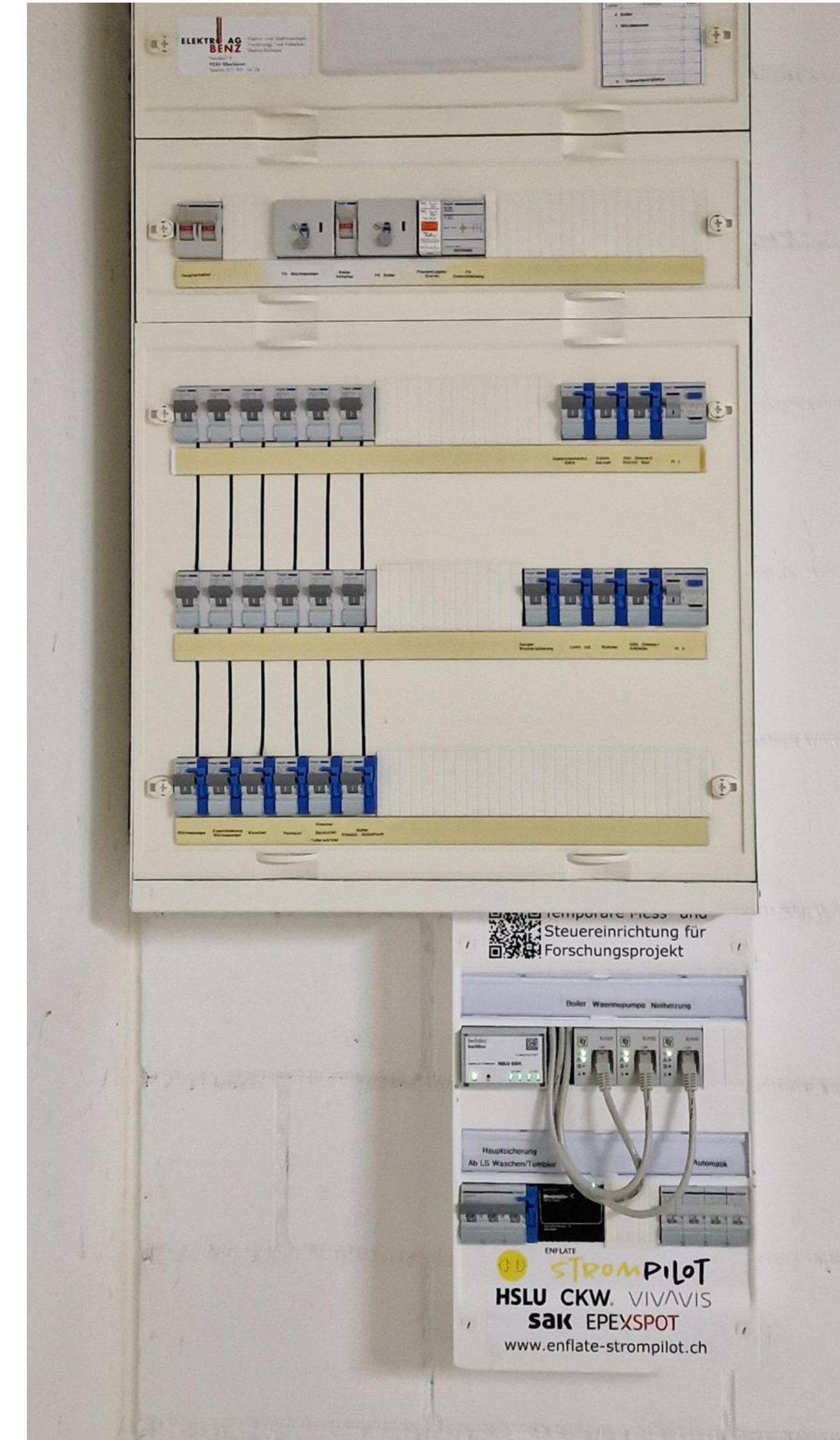
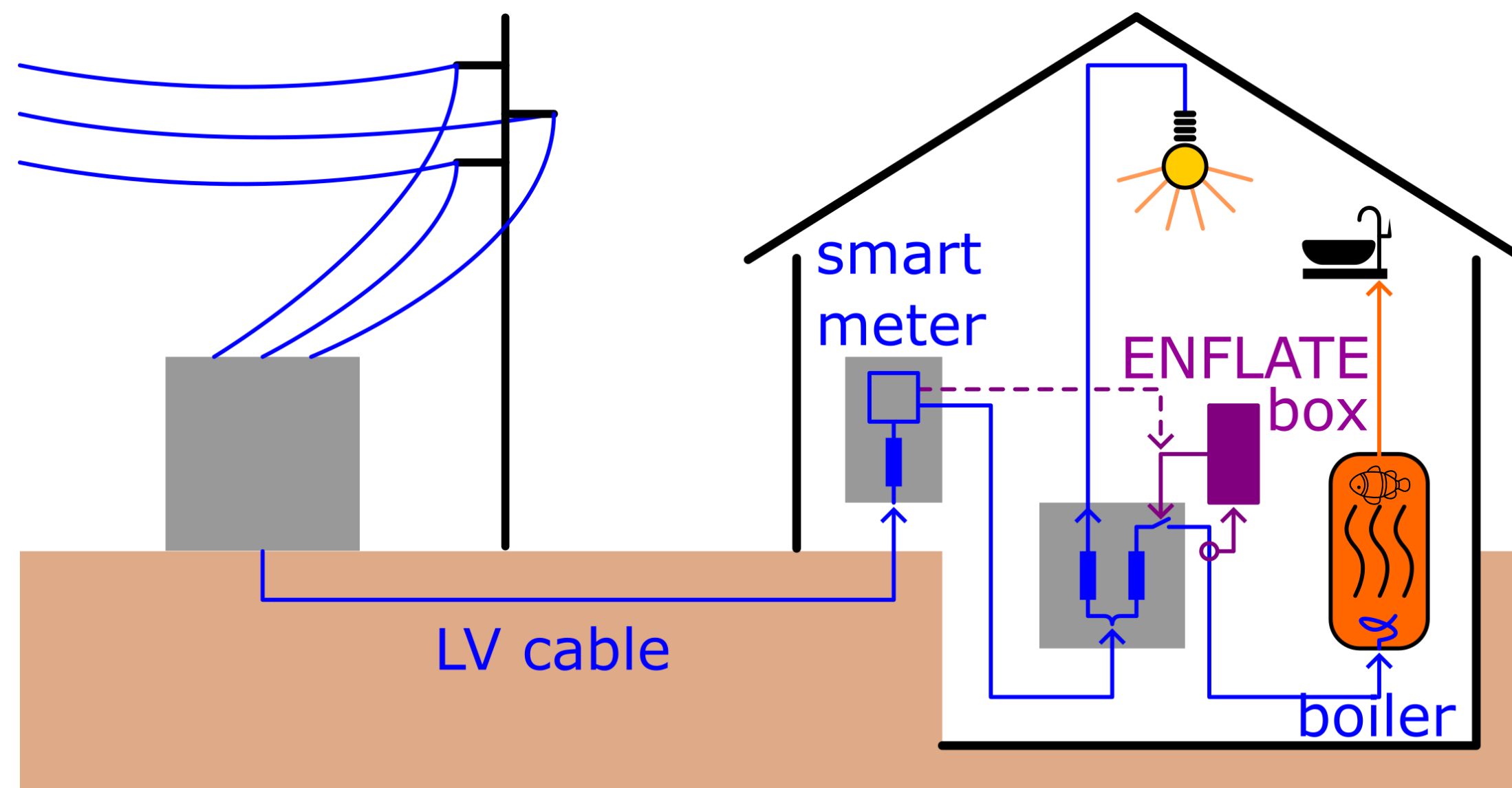


Systemarchitecture

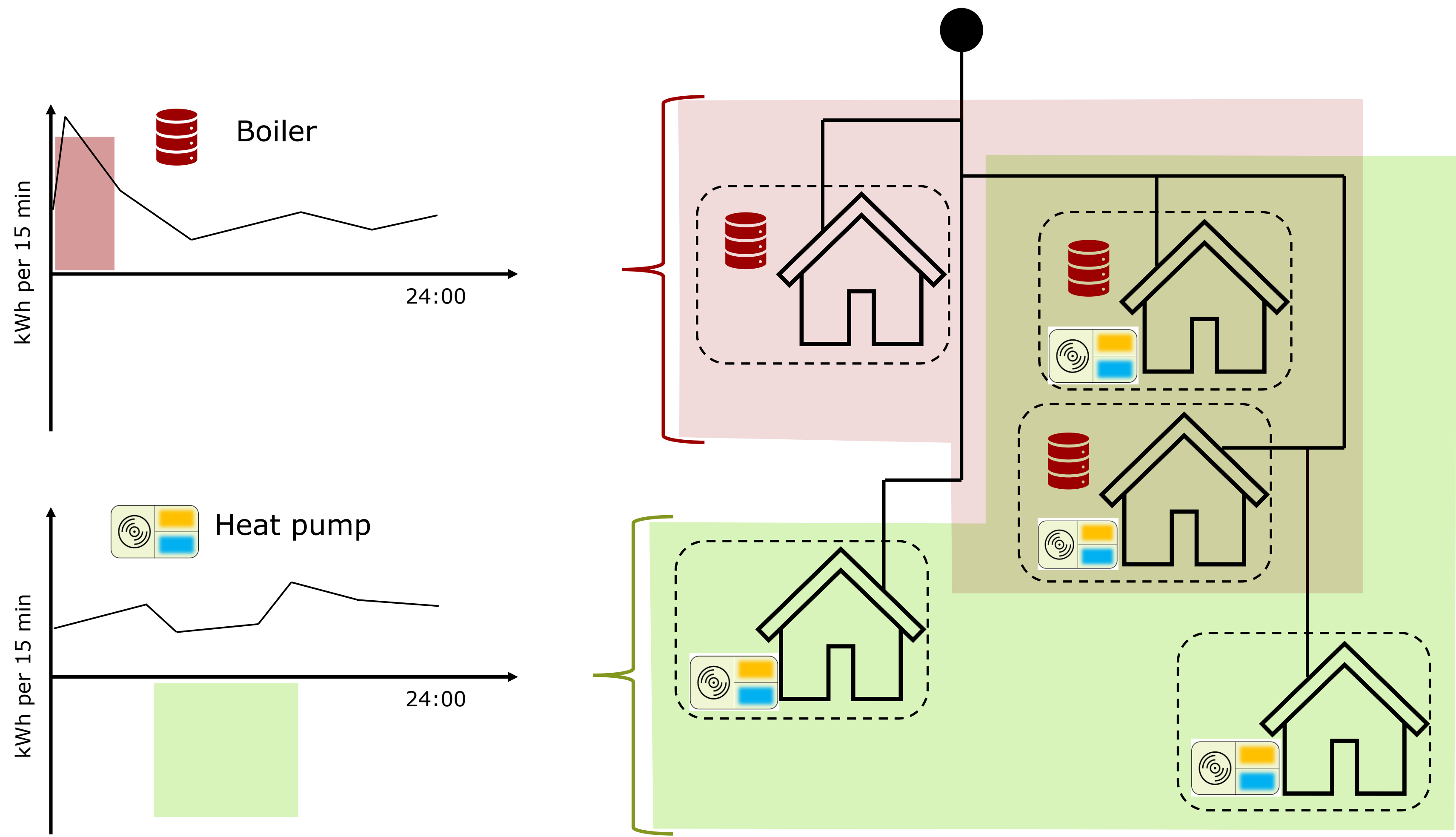


Metering and control hardware

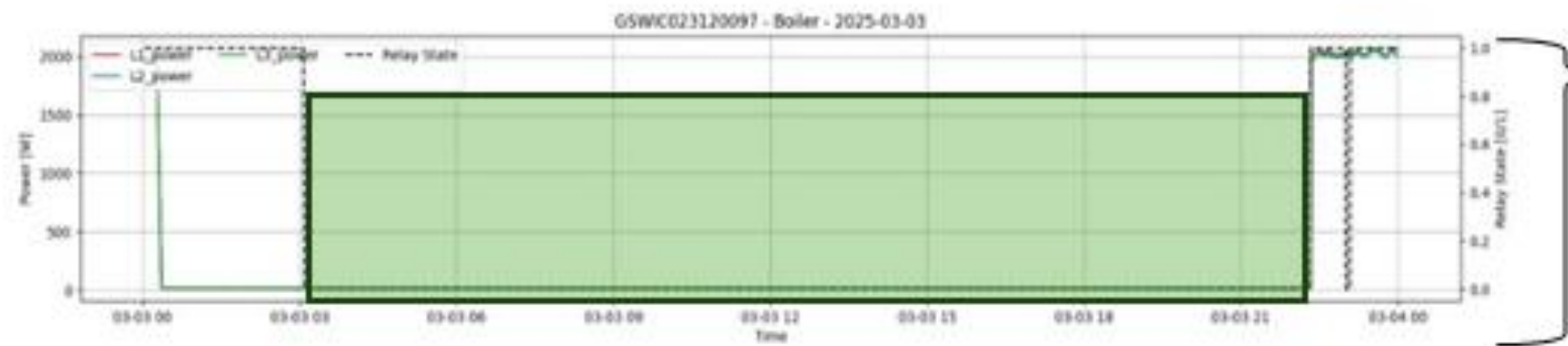
- Temporary household installations were needed during the pilot period of about two years.
- Aim was to minimise installation efforts by integrating with the existing ripple control system. The hardware was procured, assembled and tested by HSLU. The hardware was then installed on site by the local DSO (SAK).



Purchasable flexibility in the pilot area



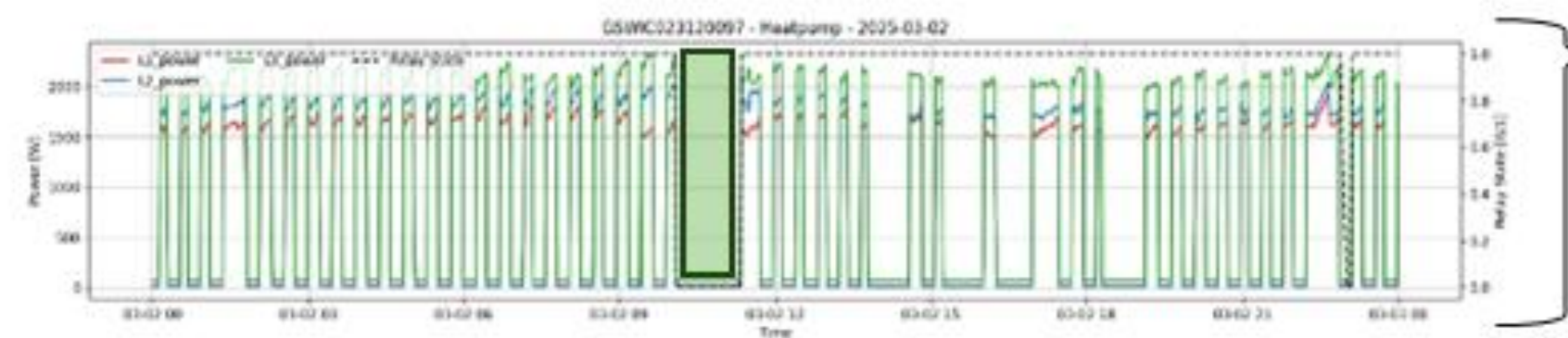
Boiler



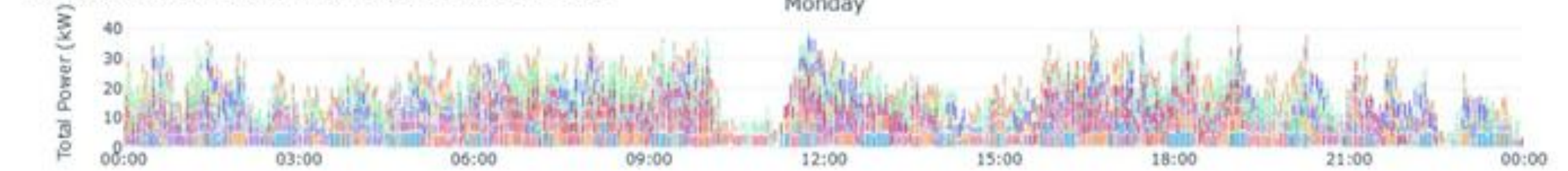
Aggregation of all controllable boilers



Heatpump



Aggregation of all controllable heatpumps

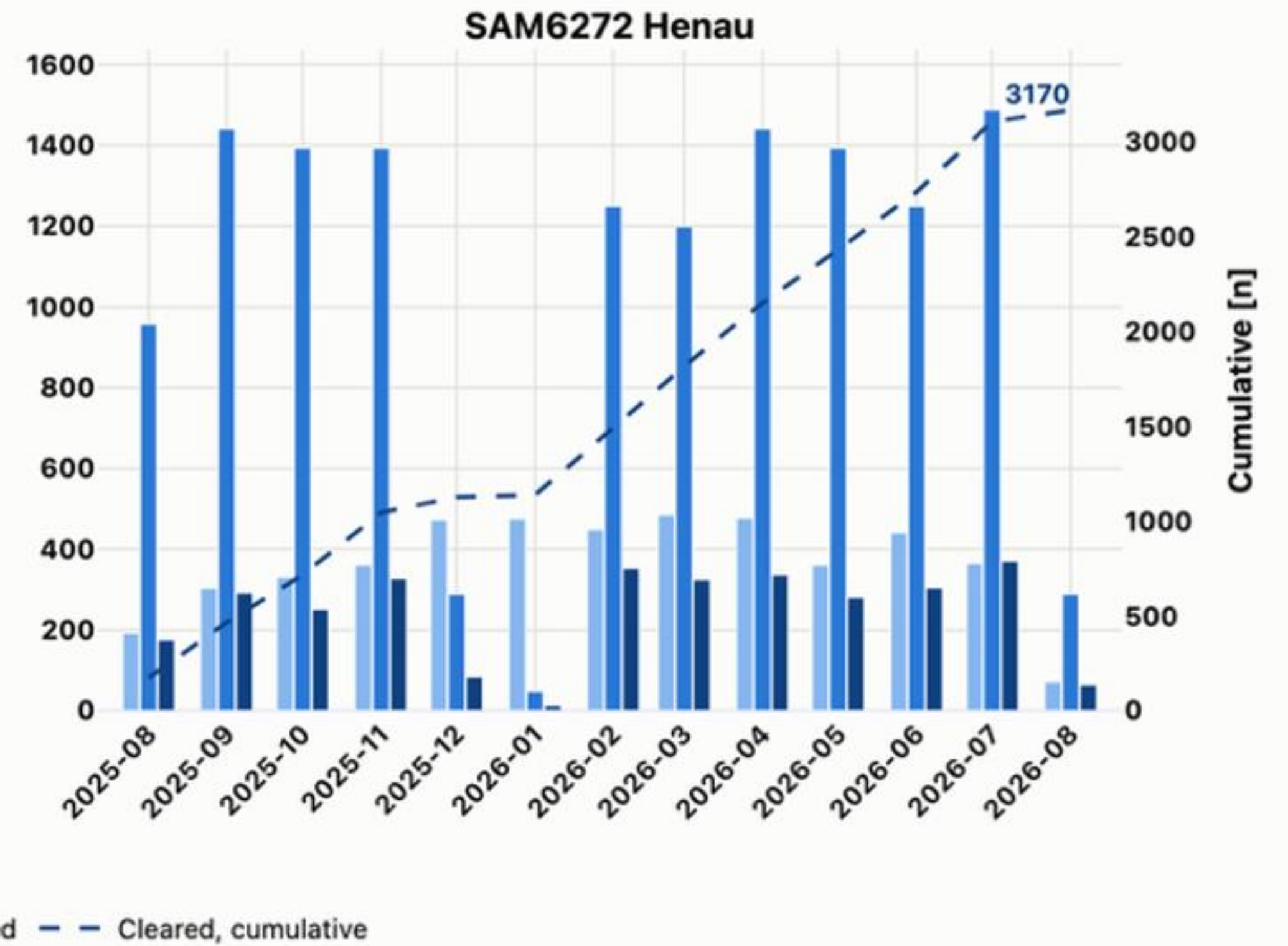
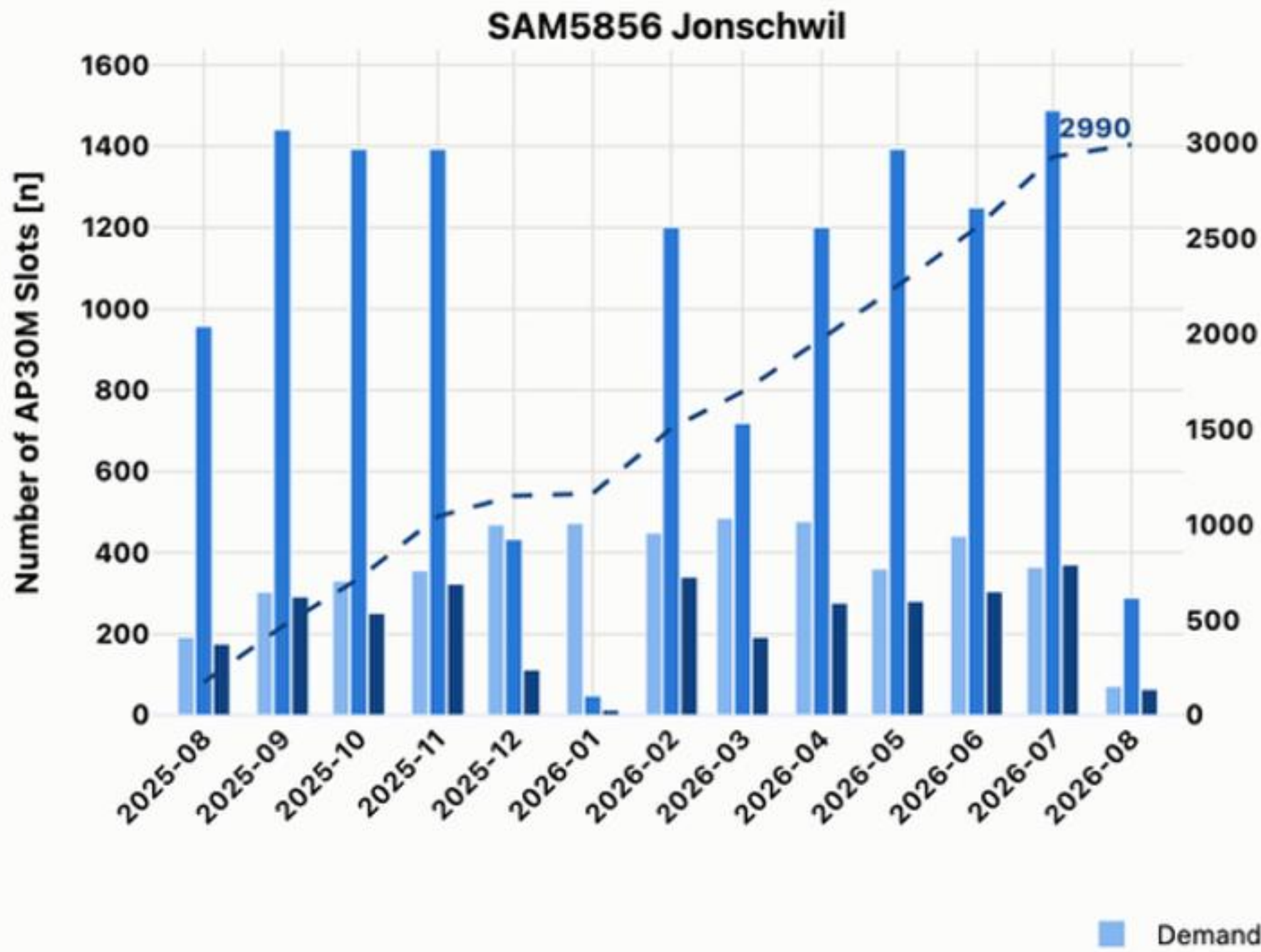


Representative individual-asset measurements. The highlighted areas indicate the applied control windows: activation of electric hot-water boilers and temporary interruption of heat-pump operation.

Aggregated daily power profiles of all controllable assets in each asset class.

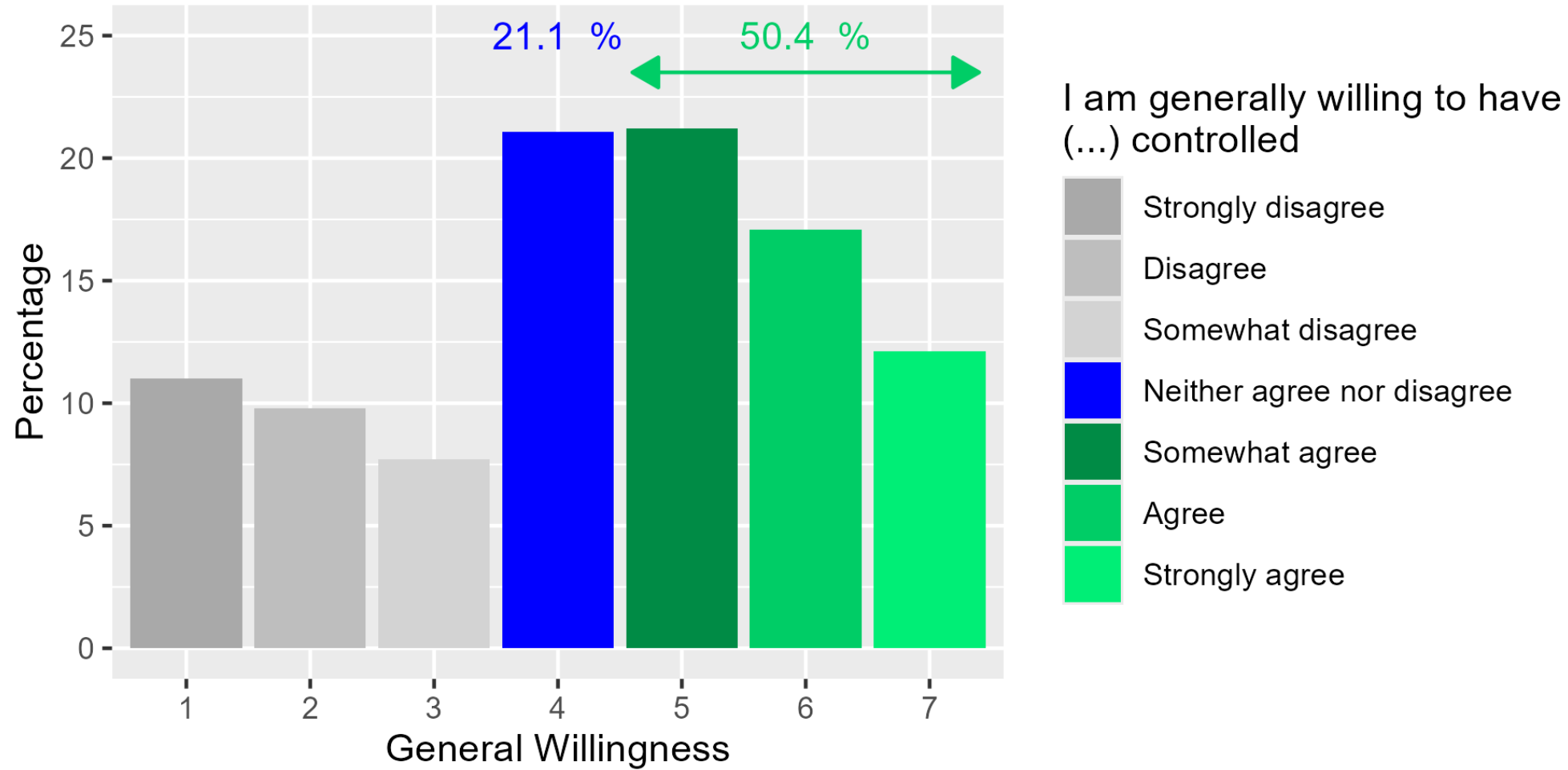
Market Volume Up (Boiler)

Period: Total

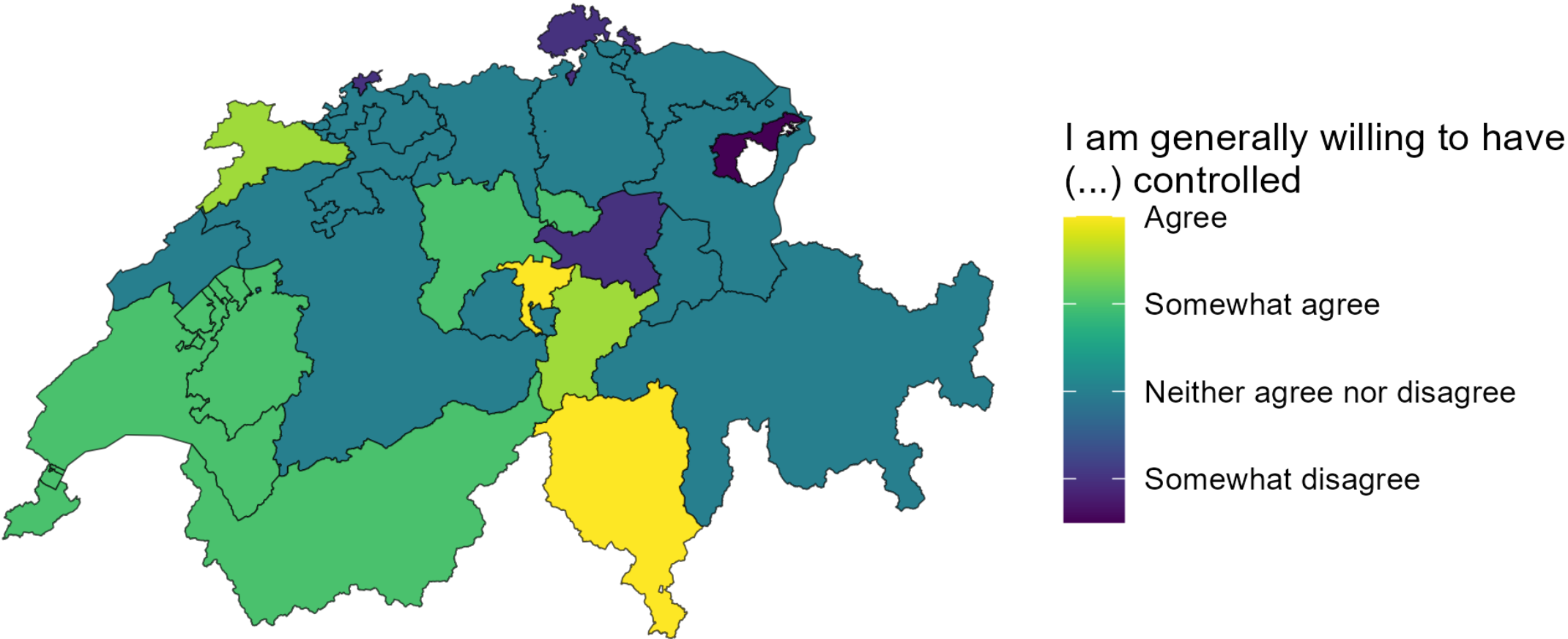




Cross Sectional Survey



General Willingness by Canton



n=726

- > 70% of respondents are willing to participate in the ENFLATE flexibility market.
- People who already own an electric vehicle, a heat pump, or a PV system are more willing to participate in such a market.
- In general, respondents indicated that they would participate both for monetary reasons and to contribute to the common good.
- Potential inconveniences, such as occasionally taking a cold shower or having a slightly cooler home (in winter) for a few hours, are not considered significant.

Thank you!

Hochschule Luzern

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Partner**

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