urban tech

Accelerating innovation in Health tech, Smart city and Greentech

Easy Smart Grid

Enable heat pumps and EV chargers to become „virtual PV batteries“

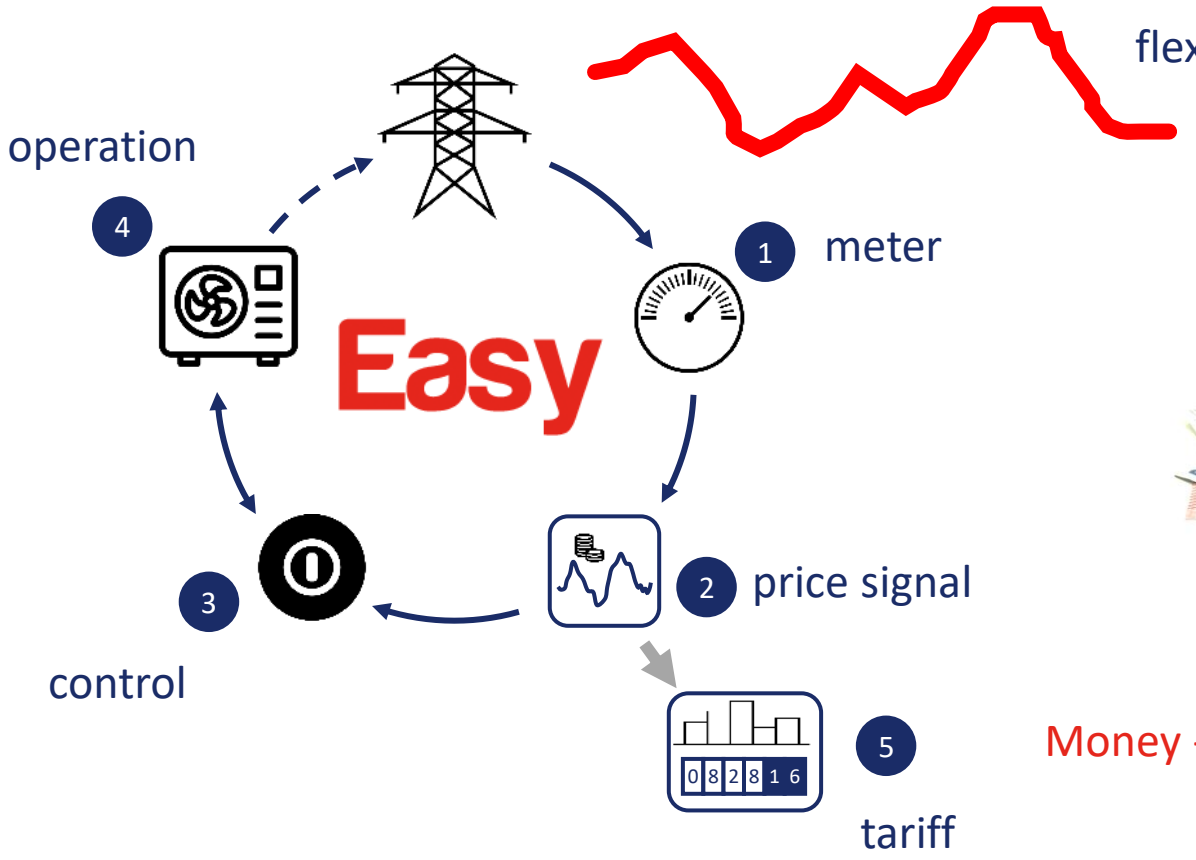
Easy Smart Grid GmbH

Pilot phase overview Aug. 29th, 2023

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101005301

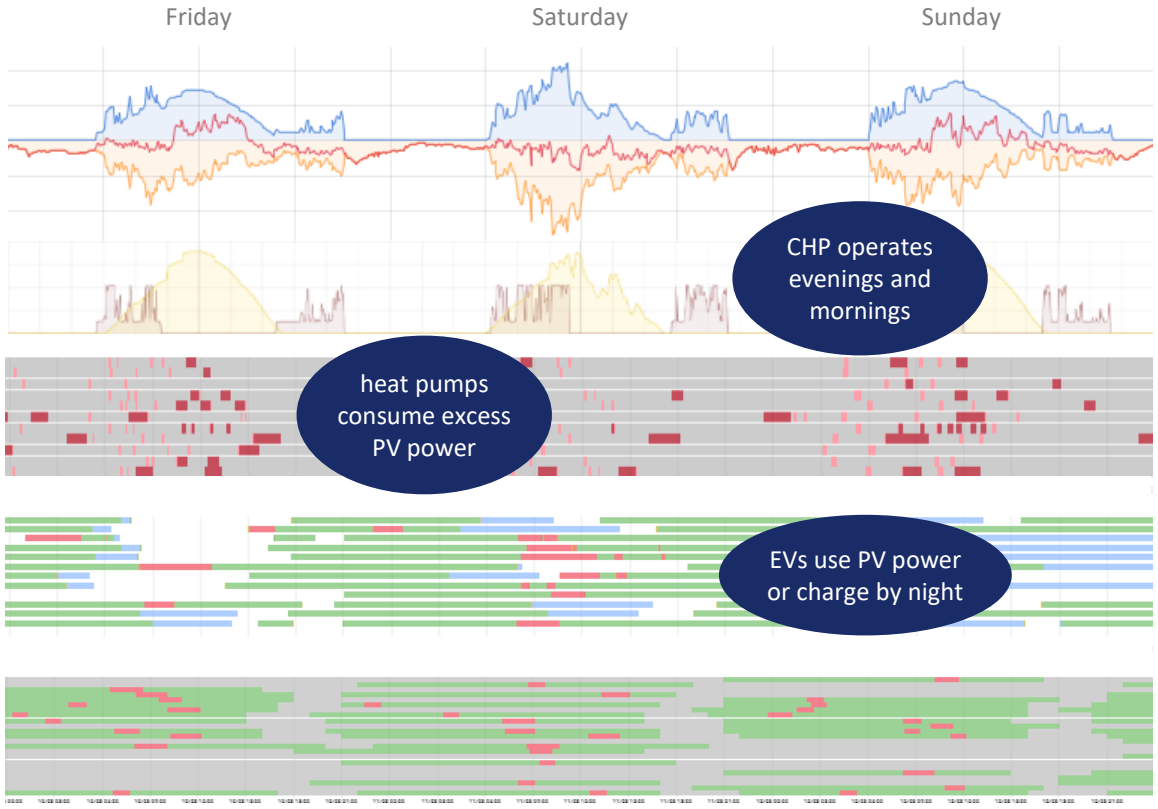
Create “virtual batteries” from flexibility and convert them into value

virtual battery
for free!



Money - a universal language

We piloted the technlogy in a community and it received a “good practice award”



generation
residual power
consumption

15 generators
- 14 roof-top PV
- 1 CHP, modulating

12 heat pumps
- warm water active
- heating active

13 charging points
- car at point
- charging window
- charging active

23 dish washers
- program window
- program running

+ 69 more appliances

SoLAR
Smart Grid ohne Lastgangmessung Allensbach-Radolfzell

Baden-Württemberg
MINISTERIUM FÜR UMWELT, KLIMA UND ENERGIEWIRTSCHAFT

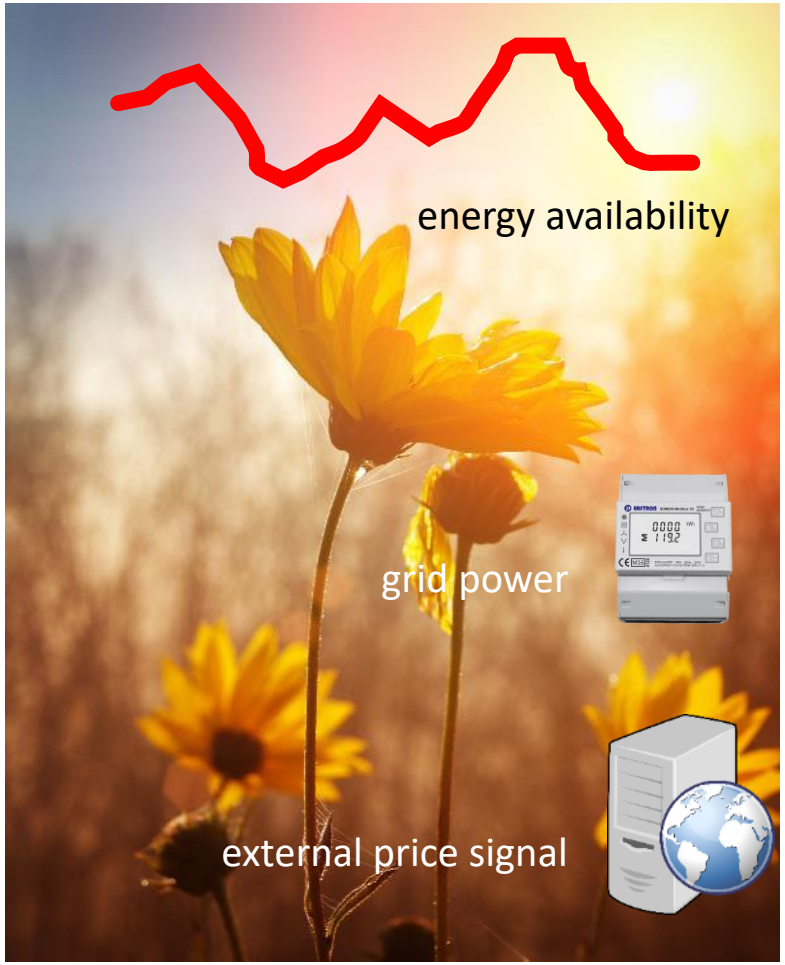
ISC International Solar Energy Research Center Konstanz

eifer

Renewables Grid Initiative

Urban Tech supports product development with our partner Weider Heat Pumps

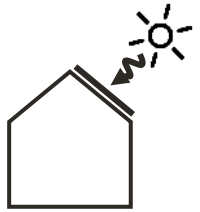
Easy Smart Grid GmbH



„Virtual Battery“

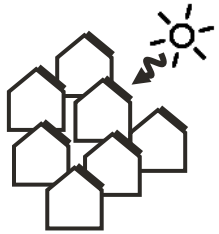
Single Building

- ➔ Maximize prosumer **PV self consumption**
- ➔ Support building **mains protection**



Grid Cluster

- ➔ Maximize self consumption of **energy communities**
- ➔ Support **grid protection**
- ➔ Market optimizing and system stability **services**



WeiTrona® ESG
- customer comfort
- reduced energy cost
- renewable energy use
- grid protection

We will implement a pilot and jointly identify customers to market this smart solution

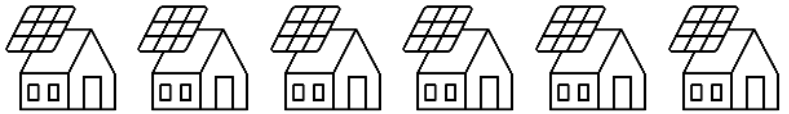
Benefits of smart solution

- Reduction of peak grid connection loads of test building (percentage)
- Increase of PV self-consumption of test building (percentage)
- Proper reaction on external price signal (average price for operation)
- Reliability of connectivity and controller operation (failure events)
- Customer experience (assessment of handling, comfort, economy, ecology)

Pilot phase July to November 2023
Identify interest and discuss opportunities

Actively addressed in pilot phase:

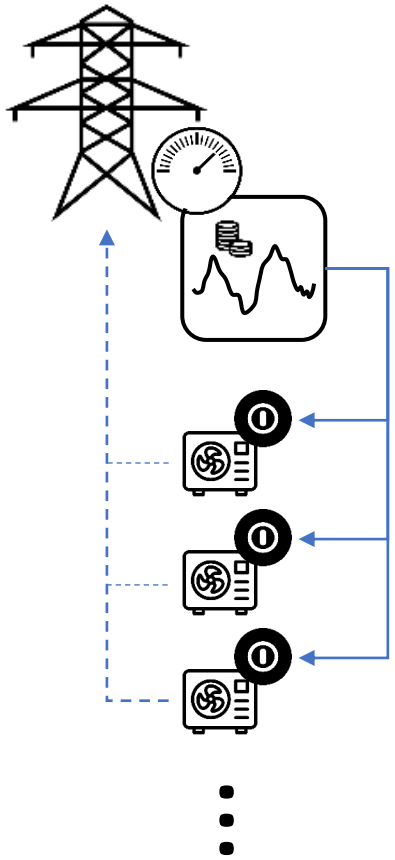
- First geographical market
- Application environment



Target markets (new-built and renovation):

- **Single buildings** with ground ambient heat source potential (water, soil)
- **Clusters** of buildings (renewable/citizen energy communities)
- Quarters with common ambient heat source (**anergy heating networks**)

Novelty and IP: Empower any partner by providing solution or technology license



Easy Smart Grid scaling option:
replacing central control by market mechanisms

- Coordinate **any number of individual devices**
- Realize **any use case** by suitable price signal
- Suitable **algorithms as firmware update** or in externally connected “digital twin”
- **No re-configuration** of control algorithms necessary
- **Easy and fair allocating of benefits** between individual participants
- Provide **flexibility grid services**

IP is patented for Easy Smart Grid in Europe and USA

(19) Europäisches Patentamt / European Patent Office / Office européen des brevets

(11) EP 2 875 560 B1

(12) EUROPÄISCHE PATENTSCHRIFT

(45) Veröffentlichungstag und Bekanntmachung des Hinweises auf die Patenterteilung:
12.10.2016 Patentblatt 2016/41

(51) Int Cl.:
H02J 3/00 (2006.01) H02J 3/14 (2006.01)
H02J 3/38 (2006.01)

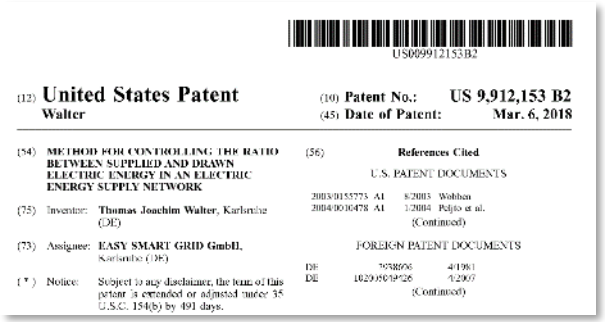
(21) Anmeldenummer: 12743945.3

(22) Anmeldetag: 19.07.2012

(86) Internationale Anmeldenummer:
PCT/EP2012/064219

(87) Internationale Veröffentlichungsnummer:
WO 2014/012595 (23.01.2014 Gazette 2014/04)

(54) VERFAHREN ZUM REGELN DES VERHÄLTNISSES ZWISCHEN EINGESPEISTER UND ENTNOMMENER ELEKTRISCHER ENERGIE IN EINEM ELEKTRISCHEN ENERGIEVERSORGUNGSNETZ



US009912153B2

(12) United States Patent
Walter

(10) Patent No.: US 9,912,153 B2
(45) Date of Patent: Mar. 6, 2018

(54) METHOD FOR CONTROLLING THE RATIO BETWEEN SUPPLIED AND DRAWN ELECTRIC ENERGY IN AN ELECTRIC ENERGY SUPPLY NETWORK

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(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 491 days.

Attractive opportunities – go green at lower cost

250 €/year value per household
➔ Scale up!

Cheaper storage
Less grid extension
Resilient & secure supply

Sector coupling at residential, commercial, industrial and grid scale

TRL 7 reached.
Compatible with future regulation.

Solid patent position – easy transfer

Match massive need with potential for flexibility!