

Smart Technology for RE dominated Energy Systems

Presentation to H2020 project teams PARITY and INTERPRETER

Easy Smart Grid GmbH, Mar. 16th, 2021 Dr.-Ing. Thomas Walter, Dipl.-Ing. Stefan Werner



PARITY and Interpreter objectives and how our demo relates to them



| Flexibility management | Use flex as virtual battery (cost!) Any number, power, time, availability Intelligence in HEMS or appliance |
|---------------------------|---|
| Smart contracts | Based on dynamic tariffs (seconds) Switch "ON": I accept current tariff Smart agents act for customer |
| Real life demo | Most inhabitants moved in Compliant with current regulation Industry involved (utility, suppliers) |
| Value for grid | Is grid friendly or even supportive Simple ICT implementation (cost!) High privacy and cyber security level |
| | |

Real World Demo SoLAR Location: Lake Constance, Germany

Smart Grid ohne Lastgangmessung Allensbach - Radolfzell



Research Center Konstanz



, Easy Smart

Grid GmbH

WEIDER





B/S/H/





SLAR

Real World Demo SoLAR Site outline





- 9 buildings, total of 24 apartments
- KfW 40 insulation
- 14 PV plants (Σ 80 kWp)
- 12 heat pumps
- 1 CHP
- up to 24 EV chargers
- Optional batteries (KfW 40+)
- Flexible appliances for 24 apartments (washing machine, dishwasher, fridge, freezer)

→ about 100 participating devices

Real World Demo SoLAR Scenario Summer



Easy Smart

Real World Demo SoLAR Scenario Winter



Easy Smart

Real World Demo SoLAR Scenario Spring



Easy Smart

Real World Demo SoLAR Increased Self Consumption Rate (SCR)











Virtual Demonstrator



Result of Simulation in SoLAR Phase I



Real World Demo SoLAR Cost Target: Smart Grid on a Chip



, <mark>Easy</mark> Smart



Conclusion

• "Smart energy means bringing market and physics together.

What is good for the system is financially attractive, and vice versa."



Thank you for your attention!

Dr.-Ing. Thomas Walter Easy Smart Grid GmbH www.easysg.de thomas.walter@easysg.de +49 171 229 4629 Dipl.-Ing. Stefan Werner Easy Smart Grid GmbH www.easysg.de stefan.werner@easysg.de +49 162 596 6748

