Grid stabilisation through a smart socket

DEMO DISTRICT

Virtual (entire city)

PARTNERS INVOLVED

Leipziger Stadtwerke

UNIVERSITÄT LEIPZIG

COMPLETION DATE

10/2022

KEY NUMBERS

1000 units manufactured
approx. 400 units rolled out to customers
About 17 calls to action per month sent to users

CO_2 REDUCTION POTENTIAL

Low

Short description

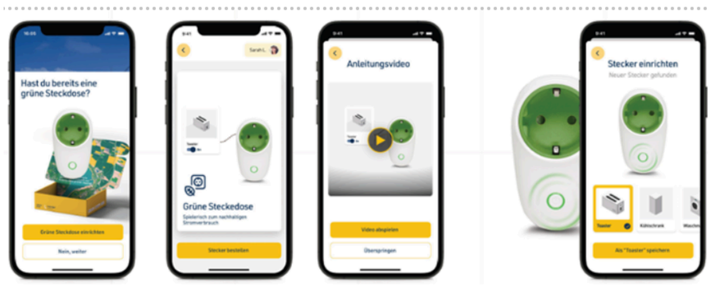
- A digital eco-platform was developed on which the smart socket was mapped as the first service
- In this dashboard the electricity consumption is visualised
- In combination with the user-side (plug and app), LSW has also developed a dashboard to trigger stimulating push messages and also to switch off plugs directly
- Information about the current power grid utilisation
- The idea was to use the smart sockets in a grid-optimised way and raise awareness for individual energy consumption as well as energy saving potential in private hoouseholds
- Regular push notifications to react to power grid load including a gamification approach for increased participation

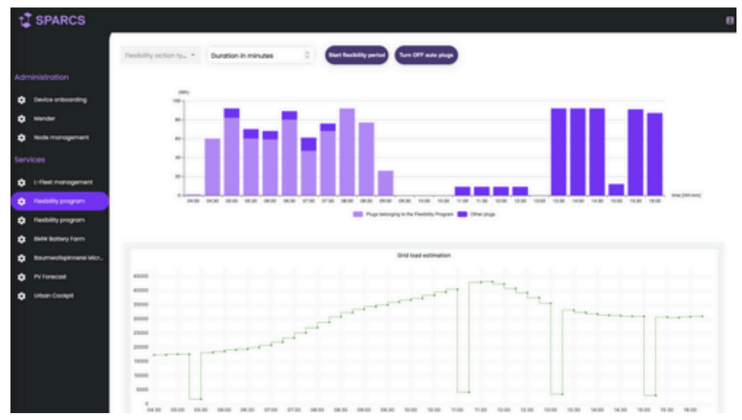
Key results during the project lifecycle

- Completion of the devices (smart sockets)
- Implementation of an operator dashboard and app is finished
- Visualisation of the consumption of individual devices within the app
- Customer feedback is evaluated and used for further development

Insights and learnings

- How to motivate citizens to save energy
- AND which measures work well and which work less well to achieve this goal
- Findings from user behaviour in order to further develop use cases
- Promoting sustainable thinking
- How to overcome barriers in IoT connectivity
- How to design hardware products from scratch
- How to test and trouble shoot new products





Challenges

- High complexity in the setup of the smart socket
- Clarification of the legal framework of the smart socket
- Implementation of logistics processes
- Difficult to find the appropriate devices for demand response
- Numerous technical workarounds necessary (e.g. forcing 2.4Ghz networks)
- Willlingness to use product
- Legal risks: who bears the liability for possible damage
- Financial risk: expenses are currently not in proportion to the benefits
- Actual impact on grid-friendly behavior

Plans for replication

Development of replication approaches:

- Smart socket 2.0
- Green power contracts/community
- Citizen participation
- Outlook:
- Expansion of the development of a gamification approach
- Expansion and further development of product bundling

Questions and comments from partners

Comments to be added during poster session at Consortium meeting in Leipzig

CONTACT PERSON AND LINKS

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