SPARCS

Ilmatar Arena demand response case

DEMO DISTRICT

Ilmatar arena, ice hockey rink
Espoo, Finland

PARTNERS INVOLVED

SIEMENS

PLUGIT™

COMPLETION DATE

09/2022

KEY NUMBERS

1 DC charger 160 kW
4 AC chargers á 22 kW
150 kW power drop in 5 s

CO_2 REDUCTION POTENTIAL

Medium, as an enabler for integration of more weather dependent renewables

CONTACT PERSON AND LINKS

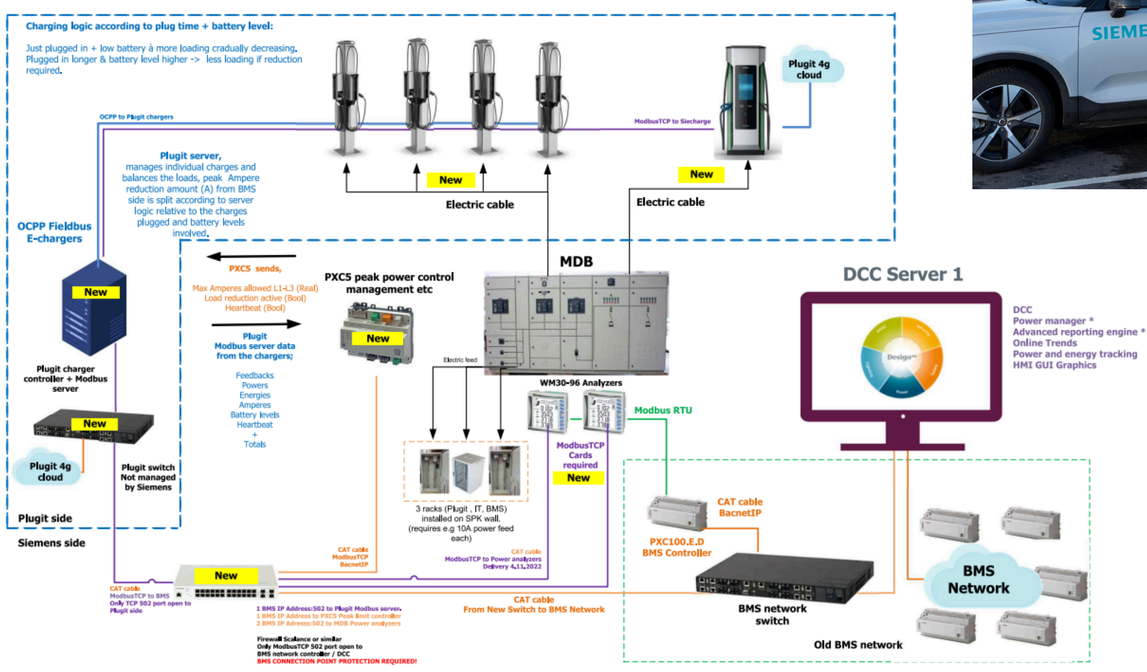
Siemens - ***Sami Laakso***
Plugit - ***Joona Töyräs***

Short description

- The electricity **supply and demand have to be in balance** constantly. Traditionally, the balance is maintained by adjusting the supply based on the demand.
- The customer's assets are connected to the IoT platform, which lets the market operator to offer the **consumer's flexibility to the market** in order to balance the grid.
- The solution allows the consumers to become prosumers: be an active part of the energy markets and earn money by providing their flexibility to the markets.
- The flexibility of the energy system is improved and allows integration of more weather-dependent renewables to the system.

Key results during the project lifecycle

- The EV chargers can be used as a flexible asset for energy markets.
- The chargers offer the possibility of peak limitation
- Both solutions can be implemented in the same system, although the simultaneous use is limited



Insights and learnings

- Chargers can be added to existing sites and electrical connections by limiting the power demand
- Sufficient metering and live data is required

Challenges

- Many buildings don’t have automation and sufficient metering yet
- None of the EV chargers supports standard communication protocols
- The delays in real-time communication may be too long

Plans for replication

- Productisation of the solution on-going
- Supported chargers need to be identified

Questions and comments from partners

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