



A European urban transition project towards more sustainable cities through innovative solutions, in the fields of mobility, energy and digitality.

Smart City

Global Project

Coordination: CARTIF
European grant: 18M €
30 partners, 6 countries
Period: Dec.2016 - Nov.2021
Demonstrators: Nantes, Hamburg, Helsinki

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<https://mysmartlife.eu/>

Hamburg

Coordination: Borough of Hamburg-Bergedorf
European grant: 5,25M €
14 partners

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Mobility

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ACTION OVERVIEW

Load Management

This action was implemented by the Free and Hanseatic City of Hamburg in collaboration with Stromnetz Hamburg GmbH.

A full report (D 3.8), written in English, November 2019, is available on <https://mysmartlife.eu/publications-media/public-deliverables/>

▶ OBJECTIVES

- › The design and implementation of a smart load management as an alternative solution to the grid expansion in order to deal with potentially insufficient grid capacity

▶ IMPLEMENTATION



CHALLENGE

In connection with the rapidly rising number of electric vehicles and the simultaneous growth in the number of charging stations, site-specific grid connection capacities are becoming increasingly important. The electrification of (public) fleets often shows that the existing grid capacities are not sufficient. The necessary expansion is usually cost-intensive. An intelligent charging technology, so-called intelligent load management, provides a solution here.

As part of the mySMARTLife project, the Borough of Hamburg-Bergedorf is electrifying its vehicle fleet. This provides a good basis for demonstrating load management functionality using master-slave management. The expansion of the charging infrastructure at this location was realised with wall boxes which have a charging capacity of 22kW. The 22kW per charging point peak power is transmitted with a Type 2 connector. In addition, the fleet is charged with 100% green electricity in order to be able to act as a sustainable example.

PROGRESS

Within the scope of the load management project, five steps were run through:

1. Information technology basis: upgrade of the IT back-end so that it is prepared on the software side for piloting.
2. Use Case Identification (pilot environment): selection of the location as a pilot.
3. Hardware installation and backend connection: providing a ready-to-use charging infrastructure's hardware.
4. Load management: putting into operation of the vehicles, the optimized charging infrastructure and the load management.
5. Workshop: the planned activities in the project have been completed. The goals have been met and the vehicles are in service. Stromnetz Hamburg will continue to support the City of Hamburg and provide new generations of load management software and functions.

LESSONS LEARNT

- › The Hamburg Senate is actively and steadily driving forward the expansion of electric mobility in Hamburg. In addition to the expansion of the publicly accessible charging infrastructure, municipal vehicle fleets are also increasingly and promptly converted to battery electric drives.
- › Location-based grid connection capacities play an important role in connection with the rapidly increasing number of electric vehicles and the associated increase in the number and performance of necessary charging stations. The electrification of (public) fleets in Hamburg shows that the existing network capacities in many places are not sufficient.
- › The necessary expansion of connection capacities is usually cost-intensive and requires an expansion of the public network. This can be remedied by intelligent charging technology, so-called intelligent load management, and the use of an IT back-end that uses open protocols to control charging processes and loads.



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