



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

Smart City

Global project

Coordination: Cartif
European grant: 18 M€
30 partners, 6 countries

Period: Dec. 2016 - Sept. 2022
Demonstrators:
Hamburg, Helsinki, Nantes

@mysmartlife_EU
<https://mysmartlife.eu/>

Helsinki demonstrator site

Coordination:
The City of Helsinki
European grant: 5,6 M€
7 partners

Coordinator:
maria.viitanen@hel.fi

helsinginilmastoteot.fi/my-smart-life

Mobility

Charging stations

Action leader
VTT Technical Research Centre of Finland Oy

Contact
marko.paakkinen@vtt.fi

www.vttresearch.com

ACTION OVERVIEW

Helsinki

Charging as a Service (A24)

This action was implemented by VTT Oy.

► OBJECTIVES

- › To promote the transition to an electric sustainable transport system, including public transport, but also other transport needs with adapted charging infrastructure

► IMPLEMENTATION

CHALLENGE

The availability of charging infrastructure for electric vehicles is crucial for the proliferation of electromobility. The charging infrastructure needs to be available at the location, where the vehicle needs to be charged and provide the necessary power to be able to replenish the needed energy in the given time.

Public Transport Authorities and cities are facing the following challenges: "How to optimally deploy the charging infrastructure within the cities?", and "how the charging capacity could be effectively shared?". Building the infrastructure, maintenance, billing of the electricity and service are also required, and the operating models can sometimes become complex, if the equipment is owned by the municipality.

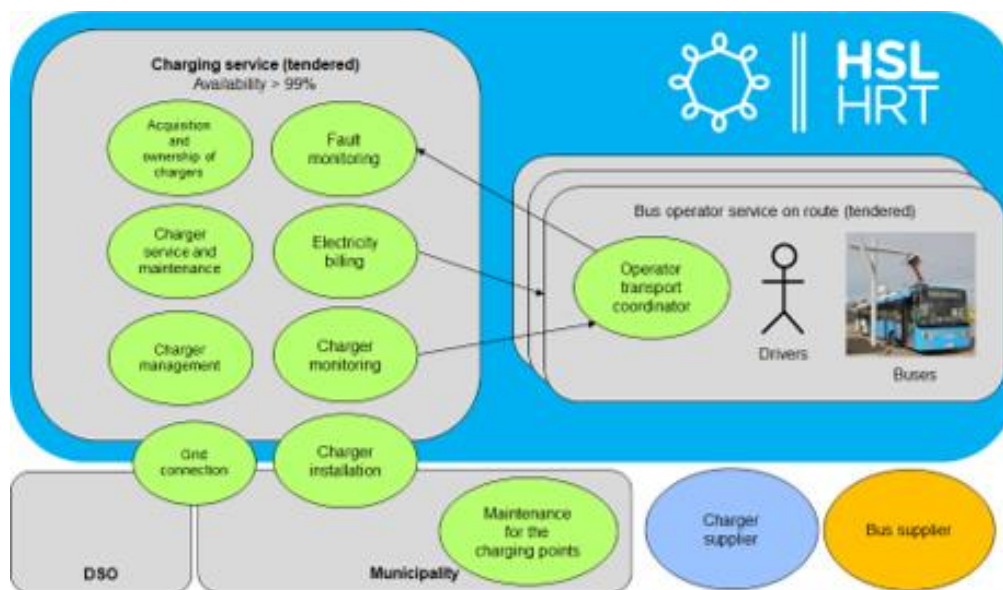


PROGRESS

As the first 10 e-buses were taken in use in Helsinki and Espoo in 2016 in a pilot project ePELI (see Infosheet on [Data from Charging Infrastructure](#)), the municipalities procured 6 new chargers to increase the supply of the charging infrastructure. During this pilot phase, it became obvious that this operating model was too complicated to deliver good quality charging service for the operators. The complexity of communication between the many actors involved (owner of the infrastructure, installation partner, service partner, charging point operator, bus operators, Helsinki Region Transport Authority - HSL) became an issue, creating long delays in the system service, and causing long downtimes for the charging infrastructure. This would not have been acceptable in an operational environment.

In 2019, the local Public Transport Authority (HSL) initiated the first commercial procurement process containing e-buses. Alongside the e-bus procurement, a new business model was piloted for the charging infrastructure. Based on the lessons learnt from the pilot phase, another tender was set to provide charging as a service to the winning operators. The charging service operator would procure, install and maintain the charging infrastructure and bill the electricity directly to the bus operators. This would greatly simplify the operational model.

The service model for e-bus charging has proven to be successful. The very strict requirement for availability of the service (99 %) has been exceeded continuously. The existing charging infrastructure, still owned by the municipalities, has also been shifted to a charging point operator, who is taking care of the maintenance and operation of the chargers, and is billing the electricity. Data from both the municipality owned chargers, and from the chargers procured with the service model, are available in the Urban Platform.



Actors and processes related to the charging as a service model (Image: VTT)

▶ LESSONS LEARNT

- › Operating charging infrastructure with the service model has proven to be very effective, and to improve greatly the availability of the chargers
- › Fast development in the battery technology may lead to some stranded assets in charging infrastructure

FUTURE OUTLOOK

Presently, neither the City of Helsinki nor HSL have any plans of extending the existing number of municipally owned infrastructure, but to procure the necessary public charging infrastructure completely as a service.

As the e-bus manufacturers are continuously expanding the available battery capacity, there is less and less need for the opportunity charging, and charging will happen more and more at the operators' depots. This need is presently limited to high-capacity trunk lines with large articulated buses.



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