



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

City Infrastructure

Charging stations

Action leader
Helen Oy

Contact
hannu.pikkarainen@helen.fi
timo.ruohomaki@forumvirium.fi

ACTION OVERVIEW

Helsinki

Solar powered charging stations for electric devices

This action was implemented by Helen Oy.

► OBJECTIVES

- To alter the modal split from private car usage towards bicycling
- To make solar energy visible in the city infrastructure

► IMPLEMENTATION



CHALLENGE / CONTEXT

Solar energy is one way to a more sustainable and cleaner future. It can replace a part of fossil production methods and is a renewable way to produce electricity. Solar panels transform the continuous flow of energy from the sun to electricity. New technological solutions and equipment are constantly being developed, and there is a need to power these devices on-the-go, preferably with renewable energy wherever possible.

Helen wanted to pilot easy-access and multifunctional benches in the city in order to make renewable energy visible in the city infrastructure and available for everyone.

Mobility will be based more on electric cars and in the future, lighter vehicles will also start to use electricity. The electric bicycle market is taking off, and new types of light vehicles will be introduced. All these need to be charged. It is also important to understand how the behaviour of people will develop in order to build useful services.

PROGRESS

The action was updated from “up-take of two wind-powered e-bike charging stations” to “up-take of solar-powered charging station(s) for electric bikes and/or mobile devices” in spring 2018. The updated action was implemented in 2018 with one electric bike charging station and five solar panel benches.

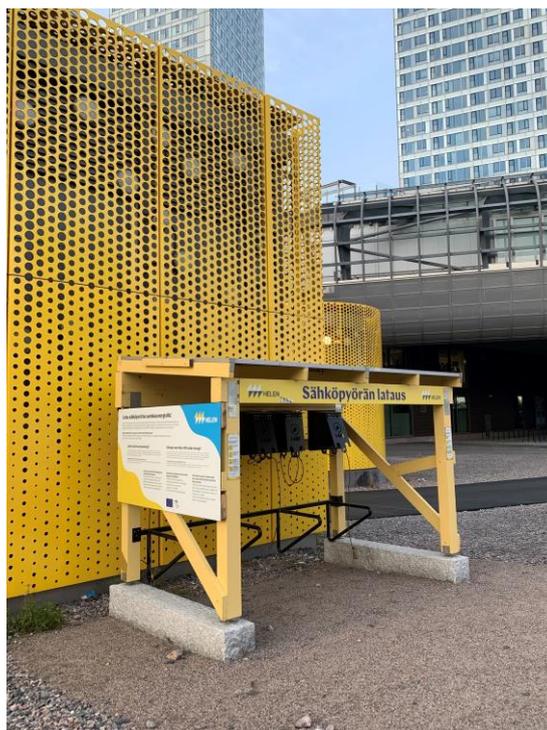
Solar Benches

The 5 Ecotap solar benches were the first of their kind in Finland. The benches can be used for charging up electric devices, e.g. a mobile phone, even when the sun is not shining, as the power generated by the solar panel is stored in an in-built accumulator. The middle part of the solar bench has an integrated solar panel, which also functions as a seat. The power output of the solar panel is about 250 Wp. The benches were equipped with an additional energy meter device, that sends the production statistics to the Urban Platform using the LoRaWAN network.

Benches were placed in three different areas. In 2019, two solar benches were vandalised by skateboarders and removed from use.

Charging station for e-bikes

A charging station for electric bikes was installed in 2018 in front of Allas Sea Pool and later moved next to REDI shopping mall. The charging stations were later equipped with additional energy meters to monitor the performance. On a sunny summer day, the panels of the bike charging point generated up to 4.24 kWh.



Bicycle charging station next to REDI shopping mall in Kalasatama.

▶ LESSONS LEARNT

It was learnt that it is not simple to find a suitable location for a bench, as there are several stakeholders, who take care of the city infrastructure and city architecture. Also, private landowners make sure that the solution fits their brand and is useful for their customers.

It is important to make sure that the benches are functioning, as it may have a negative impact on the company brand if the charging sockets are malfunctioning. Still, it may have a positive impact to the feeling of a certain location, if there is a place to sit down that is also functional.

Based on the pilot, it would be more recommendable to provide e-bike and mobile device charging services in a safer and more protected environment, since the benches were subject not only to changing weather conditions, but also to some inconsiderate use for what the benches were not meant for (i.e. skateboarding), resulting in damages.

FURTHER DEVELOPMENT

Both charging stations represent a technology that was state-of-the-art in 2018 but is now getting outdated. As part of the findings of the project, the next versions of the charging stations may be easier to relocate and have the monitoring capability installed as a standard feature.



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