



ACTION OVERVIEW

Carbon Ego mobile application

This action was implemented by Forum Virium Helsinki. A full report (D 4.9), written in English in November 2019, is available on <https://mysmartlife.eu/publications-media/public-deliverables/>

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:
Hamburg, Helsinki, Nantes

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

Helsinki demonstrator site

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

Coordinator:
maria.viitanen@hel.fi

helsinginilmastoteot.fi/my-smart-life

Urban Platform

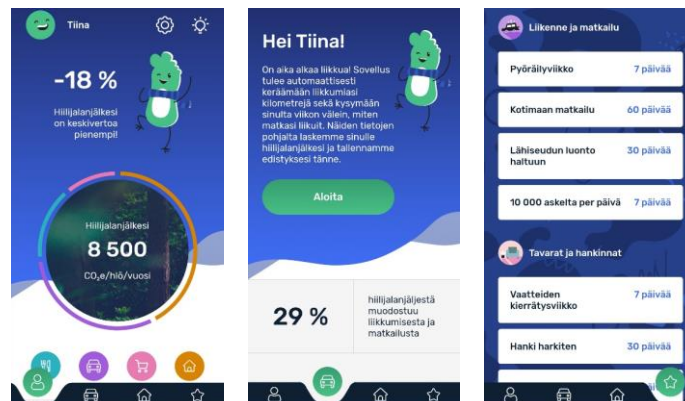
Action leader:
Forum Virium Helsinki

Contact:
timo.ruohomaki@forumvirium.fi
tiina.inki@forumvirium.fi
<https://www.forumvirium.fi>

OBJECTIVES

- › To make the project interventions visible and to provide easy access to project services
- › To improve awareness of a user's carbon footprint
- › To utilise open data sources and allow other providers to improve their services

IMPLEMENTATION



CHALLENGE / CONTEXT

The City of Helsinki has set the goal of being carbon neutral by the year 2035. While the goals set on primary energy consumption or production of renewables can be pursued on a systemic level by guiding investments and tax incentives, carbon neutrality is a more complicated target, requiring actions of the citizens.

Incentives may generate reductions up to a point, but more detailed guidance supporting behavioural change is also required. Currently, three trends are identified as relevant for motivating new behaviour: significance, self-importance and moderation. The mobile platform and apps provide powerful features for such a guidance service, including spatial awareness, mapping locations with actions and gamification.

The aim is to create an app that provides tools for “easy behaviour change”, naturally a demanding goal. The concept is based on a modular and personalised design that provides useful insights for the residents. The app informs the user about energy production and demand based on real data (personal daily RES %, daily CO₂ emissions, daily heating costs, etc.), and provides tools for behaviour change (nudging towards the use of electromobility or lowering home heat).

PROGRESS

The development of the app started with a careful evaluation of earlier pilots and services. In August 2018, the service design company **Kuudes Helsinki** started an extensive service design phase, including interviews, workshops and concept labs. The focus was on privacy, data rights and motivation. Based on the information collected, a design of the service was completed. The materials provided at this stage were specifications, wireframes and mock-up layouts.

After the concept and motivational elements were completed, the work begun on the front end design, and the screen flow of the application. One of the most relevant data sources was identified to be the 3D Energy and Climate Atlas that provided the energy consumption information of buildings in the Helsinki area. With this approach, users were able to get relevant (and possibly new) information regarding them living without spending too much time manually entering the information. In the case of mobility, there are a few relevant data API's, but the combination of standard smartphone functions and some additional sources provide the first steps on creating a meaningful user experience also on the mobility domain.

The data requirements were further refined with a focus on mobility and energy use cases and taking into account the open data available to support them. As in many pilots before, the lack and quality issues of available data remained a problem. The concept was revised towards gamification by embedding a lifestyle profile by **Sitra** as the basis, and complementing the data driven actions with challenges. The challenges are activities that help to nudge the user towards a more sustainable lifestyle. After several trial rounds, the Carbon Ego app was released in public in April 2021, in Apple's App Store and Google Play Store. In the summer of 2021, Forum Virium Helsinki organised a trial for 70 test users from Helsinki, who tried out the application for four weeks and then provided feedback by filling in a questionnaire.

LESSONS LEARNT

The service utilises widely available open data sources. The open development approach allows other providers to improve their services with the new opportunities. As it is an open source app, the design documents, such as concept studies, are provided to developers community.

The key findings of this action are observations about the nature of app development work. With modern tools, developing an app is not technically challenging or time-consuming anymore. However, meeting the expectations of the potential users is not easy. It requires extensive surveys, prototyping and collection of background information.

The Carbon Ego App was developed with a detailed scope in order to best utilise the data made available by the project. The most meaningful dataset originating from the project was the building energy dataset used in 3D Climate and Energy Atlas (see info sheet on Urban data services to boost energy efficiency). This dataset provides the basis for the personal carbon footprint calculation. For other areas of daily life, finding useful and up to date data was more challenging. Since the application and its concept are developed in an open fashion and the source code is available, the app can be extended for more data-driven use cases in the future.

FURTHER DEVELOPMENT

The app is provided as open source on a GitHub repository together with the other developments of the mySMARTLife Helsinki demo. All the other materials created during the process are open as well, and published in the same repository. With this approach, not only the app but its core functionality can be re-used and embedded in other mobile services, such as route planners or city apps.

When the project reaches its end in 2022, another partner or project is expected to continue the upkeep of the service, or to utilise the lessons learnt in forming a new service. Everything learned in the project and the trial can be freely shared among the different organisations of City of Helsinki and other stakeholders.



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