Published in May 2020

Lahti Energy Choice: supporting citizens' choices for more energy efficient buildings

Lahti, Finland

Vapaudenkatu 28, one of the buildings retrofitted using Energy Choice.
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IN A NUTSHELL

The project 'Energy Choice', was launched by the city of Lahti in 2016 to encourage citizens to renovate their properties through providing information on the potential financial and CO2 savings as a result of adopting energy-efficient solutions.

Context

Lahti approved its environmental programme, including new targets for 2030 and 2050, in June 2018. This ambitious programme serves as a roadmap for Lahti to achieve its objective to become carbon neutral by 2025. For its outstanding achievements, and its ability to produce applicable environmental solutions for other cities and for various conditions, Lahti won the European Green Capital Award for the year 2021.

The Finnish city has already cut down greenhouse emissions by 70% compared to the level of 1990. To continue towards carbon neutrality, Lahti launched the project Energy Choice in 2016 to help citizens to reduce CO2 emissions through shifting their energy production from fossil fuels to renewable and greener sources. The project provides information and practical evidence of the potential financial and CO2 savings in citizens' properties. It targeted Lahti and Lappeenranta.

The 'Energy Choice' website – visualising the energy efficiency potential

The project Energy Choice was developed on the idea of making the data available to citizens through an online platform that would guide them through the different energy choices available to them. For example, for local energy production, the different energy sources and potential savings are calculated by a specialised company that uses data provided by the city. The data sources used for the calculations come from buildings' energy consumption, the National Land Survey, the Geology Research Centre, and solar radiation. Using the city data, the types of energy sources calculated are: solar heat and

LAHTI


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Population: 120,078	***Area*** 517 km^2
Signatory to the Covenant of Mayors since: 2012	***CO_2 emission reduction target:*** carbon neutral by 2025

electricity, air to water heat pump, district heating, geothermal heat pump, wood pellets, and green electricity.

Citizens can use the platform free of charge by entering their property address into the service or selecting it from the map. Users can also visually explore the city buildings using the solar energy and/or geothermal energy maps. These maps help citizens to visually assess solar energy as the map analyses solar potential while also taking into account shade restrictions by other buildings. On the website it is possible to add additional information about the property to obtain a more detailed response. After the consultation, users can request a quote for the different energy options and get in contact with the energy companies in the area.

While at the beginning of the project, the city of Lahti wished to develop a map-based tool to make it visually accessible to citizens, the company in charge of developing the platform was specialised in calculations and did not have much knowledge of GIS mapping. Lahti recommends other cities wishing to replicate or develop a similar project to combine the calculations and data with mapping. This approach will make the platform more comprehensive and easier to interact with.

Results

Energy Choice has proved to be a helpful tool to Lahti's city-owned rental housing company Lahden Talot Ltd. Besides helping in the housing company's long-term budgeting, the platform has provided insight into properties' energy consumption, and helped make choices for retrofitting the houses that are oldest and in a worse condition and build new energy-efficient ones. For instance, Vapaudenkatu 28, a five-floor residential apartment building owned by Lahden Talot Ltd., has been retrofitted by using Energy Choice. The Energy Choice tool showed the potential of CO2 savings annually for solar power, solar heat and green certified electricity, to respectively 6,600, 1,400, and 40,000 kg of CO2 annually. Using the tool to assess the CO2 savings potential, those renovating Vapaudenkatu 28 decided to include interventions for green certified electricity.

What is next?

The project is a first step for property owners to begin exploring different energy sources, and provides them with visual and concrete data on their building's solar energy potential, and other green energy sources. The city of Lahti is now preparing a new campaign to encourage building renovations aimed at those whose heating is based on fossil fuels. In this context, Energy Choice will play an important role as part of the campaign. Finally, the Finnish municipality wants to integrate energy and air experts to provide advice to citizens and show the co-benefits of building interventions.

KEY FIGURES

Potential savings in euros and in CO_2 equivalent calculated for seven different energy sources

2,500 properties targeted by the campaign for decarbonising heating

FINANCING THE PROJECT

Financing source(s):
€311,500 financed by EU Regional Fund; €57,000 funded by City of Lahti, €76,500 funded by City of Lappeenranta

Total project budget:
€445,000

USEFUL LINKS

- Energy Choice website: http://www.energiavalinta.fi
- Check Lahti's Green Capital website: https://greenlahti.fi/en

CONTACT

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