



## Lahti: The first carbon rationing experiment applied to local journeys

### Research notes

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The City of Lahti in Finland was the first to experiment with a carbon trading scheme among its inhabitants to reduce transport-related emissions. Based on a mobile app that measures the emissions of each daily trip and let users manage their individual carbon allowance, this system was voluntary, incentive-based and participatory. Could this pioneering initiative, financed by the European Urban Innovative Action fund, be replicated in other European cities?

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### Research participants

MOBILE LIVES FORUM

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## The project's ambition

After carrying out a feasibility study on a national transport carbon rationing scheme in France, the Mobile Lives Forum wanted to document and analyse the only rationing experiment that had been in operation: that of the city of Lahti, in Finland.

The city teamed up with researchers and companies to develop a mobile app that enables users to manage their carbon allowance, by measuring and deducting the emissions

users to manage their carbon allowance, by measuring and deducting the emissions linked to each of their daily trips. The app was used on a regular basis by 350 citizens between the end of May and December 2020, and rewarded those who didn't exceed their weekly carbon allowance by offering them, for instance, vouchers for local businesses or transport tickets. This experiment is part of an action plan financed by the European Urban Innovative Action fund, called CitiCap, the goal of which is to develop alternatives to individual combustion engine car use.

The description and analysis of this experiment is based on data and documents in English made available on the UIA website and on interviews carried out with the project's manager, Anna Huttunen, and one of the researchers on the project design and evaluation team, Ville Uusitalo. By documenting the practical, organizational and financial aspects of the project, this memo aims to guide public actors who may want to reproduce this type of experiment in their territory.

## **The main results**

### **The method used to create individual allowances**

The city of Lahti wanted its inhabitants to be involved in defining the methods by which the participant's carbon allowance would be allocated and then progressively lowered. The citizens who were consulted during work groups and through questionnaires agreed on the following principles:

Assign a larger CO<sub>2</sub> budget according to certain specific criteria: the number of children, the distance from home to the city centre and any health problems requiring frequent travel.

The ability to resell excess carbon or buy additional credits, through a virtual currency managed by the app

All participants have the same target percentage reduction in their carbon allowance, set at -25% over 6 months (this was the initial target at the start of the project, but it was disrupted by the Covid-19 crisis)

### **The impact of carbon rationing on travel**

Because of the pandemic, researchers were only able to collect and analyse reliable data over a three-month period. This data and the results of the questionnaires given to the participants show a general trend towards fewer trips made by individual cars:

App users reduced their car use more than the control group and more than what city traffic data showed over the same period.

36% of users claimed that their **mobility** was more sustainable during the project

The app also served as an information and communication tool on the carbon impacts of mobility. The participants' main motivations were to:

Better understand the emissions associated with their mobility (67%)

Make the effort to improve their practices (56%)

## **The necessary conditions for success**

Although not perfect and disrupted by the covid pandemic, this experiment allows us to identify the necessary conditions for success and levers of improvement in order to deploy this system in other European cities.

According to the local team that led the project, the conditions that allowed for its successful implementation were as follows:

A medium-sized city where people can manage without a car, but that is too small to justify the development of heavy transport infrastructure

Political consensus and sustained communication: the European funding facilitated the formation of a local political consensus around the project; strong communication and activities with residents helped win their support

Participatory governance and a coalition of complementary actors: the non-compulsory nature and the inclusion of citizens in designing the app reinforced the project's acceptability. The collaboration with private actors enabled the quick development of a fully functioning app. And the work carried out with university researchers made its assessment possible.

Mastering new digital technologies: digital tools proved to be essential for measuring the emissions associated with each trip; the collected data made it possible to manage carbon allowances and analyse the evolution of practices.

## **The lessons to be learned from this experiment**

### **On the design methods of the digital rationing app:**

The city of Lahti chose to pilot the design and development of the app itself, creating it from scratch, which involved significant project time and technical and organisational challenges. The project team now wonders whether companies might be interested in developing this type of "product," thus relieving cities of it.

### **About the group of volunteers and how they used the digital rationing app:**

To address the limits of a voluntary system based on a digital app (people abandoning it, cheating, getting bored, etc.), the project's manager recommends

making it more fun, for instance by introducing daily or weekly challenges. To be more inclusive for elderly people and limit the negative impacts of digital technology (data and battery consumption, personal data management, etc.), a more “low-tech” alternative system could be imagined, such as an individual card that would be debited when purchasing fuel.

## Download the complete file

To access all the information on the project’s creation, financing, operation and results, download the summary sheet produced by the Mobile Lives Forum:



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#### Introduction



The City of Lahti in Finland was the first to experiment with a carbon trading scheme among its inhabitants to reduce transport-related emissions. The inhabitants who volunteered to take part in the experiment were assigned a carbon allowance that decreased proportionally to the carbon emitted from their journeys. To implement the scheme, the city teamed up with researchers and companies to develop a mobile app that enabled users to manage their carbon allowance, by measuring and deducting the emissions linked to each of their daily trips - a “Personal Carbon Trading” (PCT) scheme. The app was used on a regular basis by 350 citizens between the end of

May and December 2020 and it rewarded those who did not exceed their weekly carbon allowance by offering them, for instance, vouchers for local businesses or transport tickets. This experiment is part of an action plan financed by the European Urban Innovative Action fund, called CitiCap, the goal of which is to develop alternative practices to driving cars. Lahti won the European Green Capital 2021 award, in recognition of the innovative actions implemented over the past three years in this medium-sized city, guided by a strong political drive towards decarbonisation. The project exemplifies the paradigm shift called for by local officials, who argue that greater ecological resilience can be achieved by slowing down - as shown in one of CitiCAP’s promotional videos which ends with a slogan that is still unimaginable in France: “Lahti. Slow, dark, enduring.”<sup>1</sup>

#### Methodology:

The description and analysis of this experiment is based on data and documents in English made available on the Urban Innovative Action website and on interviews carried out with the project’s manager, Anna Huttunen, and one of the researchers involved in the project design and evaluation team, Ville Uusitalo.

## Mobility

For the Mobile Lives Forum, mobility is understood as the process of how individuals travel across distances in order to deploy through time and space the activities that make up their lifestyles. These travel practices are embedded in socio-technical systems, produced by transport and communication industries and techniques, and by normative discourses on these practices, with considerable social, environmental and spatial impacts.

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<sup>2</sup> <https://en.forumviesmobiles.org/marks/mobility-450>