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Towards a local experiment in travel-based carbon rationing

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Présentation longue

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The Mobile Lives Forum is exploring the idea of using carbon rationing as an alternative to a carbon tax. Taxation is criticized as being unfair, as it weighs more heavily on the poorest households, while also being inefficient as it has little effect on

the lifestyles of the richest, even though they are the biggest emitters of CO2. Rationing would have at least two advantages over taxation: setting a national cap on CO2 emissions and giving each French person the right to emit the same amount of CO2, regardless of their financial situation. In 2020-2021, a team of six students in the Energy MA program, supervised by engineer and transport historian Arnaud Passalacqua, worked on a proposed plan to implement a nationwide carbon rationing scheme. This work allowed us to answer three initial questions: does such a rationing system seem possible, fair and desirable, within the limits of certain pre-designated parameters? The Mobile Lives Forum also documented an experiment conducted in the Finish town of Lahti, where a carbon trading scheme was set up, providing each resident with a carbon budget for travel, which they managed via a mobile app. For 2021-2022, the Forum engaged a new multidisciplinary team of 8 students (engineers, political scientists,...) within the Energy MA degree to design a local carbon rationing experiment, to be applied to individual trips taken by volunteer participants within a given territory in France.

The results:

The Mobile Lives Forum has drawn up 5 major recommendations based on the exploratory work carried out by the student group:

1/ Set up the simplest possible system, limited in time and incentivized

- The scope: travel by internal combustion engine car and domestic flights
- Duration: a full year
- The tools: a mobile app and/or manual reporting
- Mobilizing volunteers: incentivized, collective and participatory
- Number of volunteers: 150 to 200 at the beginning, to secure a group of at least 100 active participants until the end of the project
- Assessment: quantitative and qualitative, by a team of social scientists, assisted by students

2/ Invest in communication and mobilization beforehand to guarantee the success of the experiment

- An initial stage will aim to assemble local actors and stakeholders, who are ready to get involved and support the project. If applicable: local authorities,

associations, social centers, schools, employers, etc.
- The mobilization of volunteers must be based on active and positive communication and/or on pre-existing networks (student-parent associations, local neighborhood residents, etc.) because collective dynamics work well in mobilization, as shown for example by the “family zero waste challenge”.[^1]

3/ Meet all the conditions for a real change in practices, less focused on carbon-emitting travel

- An interesting target could be people who use their car extensively, even though their daily lives are lived within a relatively small radius: 30% of the population carry out all of their activities (excluding social activities) within a 9 km radius (Mobility and Lifestyles Survey, 2020), while 60% of trips under 5 km are made by car (INSEE, 2019).
- Another solution is to draw up a diverse sample of the population in the chosen territory, in terms of mobility practices, job type, family situation, etc. in order to draw conclusions about the profiles with the greatest potential for change.
- The team recommends choosing a medium-sized city, as in these territories the distances traveled are the lowest, yet they are mostly done by car. The students highlight the importance of targeting a territory where public transport is free (Dunkirk, Niort, etc.) to allow for a change in practices and compensate for rationing car travel.
- Involving public actors will be essential to enact measures that enable car-free mobility: for example, by making temporary adjustments to the public space (e.g. school streets dedicated to walking and cycling), providing electric bikes...

4/ Involve the volunteers in designing the tools and materials for the experiment

- The volunteers can collaborate in defining the experiment’s parameters, targeted routes and goals, as well as the rules of the carbon measuring system, to correspond to their social characteristics and practices, and to involve them in the project.
- The quantities of CO_2 involved could be translated by reference to specific, real journeys (for example a round trip by plane) or in points, to make the notion of a budget and trade-offs in terms of “carbon expenditure” clear.

- Several methods can be considered for measuring the volunteer’s carbon emissions:

1. digital (website, mobile app) or more “low tech” (manual monitoring via a logbook);
2. in the case of a digital app, based on geolocation or on the voluntary reporting of trips.

5/ Assess quantitatively and qualitatively the effects of rationing throughout the experiment

- Prior to the experiment, the participants’ mobility practices and carbon footprints will be recorded and measured, through qualitative interviews and quantitative measurements.
- Throughout the project, a team of researchers in human and social sciences will monitor the experiment, not only to measure the impact of rationing on emissions, but also to identify obstacles and levers to changing practices.
- The team stresses the need to provide volunteers with individualized support, in order to reduce the risk of them quitting the project and to offer adapted solutions to each situation.
- The assessment will have to bear in mind that the final goal is to contribute to an examination of the feasibility and the fairness of implementing an individual quota system, at a national or even European scale.

Conclusion

This exploratory work confirms the value of testing a voluntary and collective carbon rationing scheme for travel at the local scale. From an operational standpoint, caution must be taken with regards to the costs linked to developing a digital app, given the relatively small number of users. To stick to a budget of approximately 200,000 euros, priority must be given to active support for participants who are changing their habits. It is worth remembering that the experiment in Lahti cost 1 million euros. The next stage of this project will be to reach out to local authorities and/or associations that are interested in implementing an experiment in their territory, on the basis of a pre-operational document (costs, schedule, time and skills, selected methods…).

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Chapô
At a time of increasing calls for energy sobriety, the Mobile Lives Forum proposes to reflect on real solutions that are both fair and effective, to collectively reduce our emissions and implement a new mobility system that is less dependent on fossil fuels. Carbon rationing, which initially seems radical but is become increasingly topical, is worth examining in this respect. Inspired by the pioneering initiative in Lahti, Finland, a team of students in the Energy MA program (Paris Cité University) is examining the possibility of conducting a local experiment in carbon rationing for travel.
Chapô
The Mobile Lives Forum is exploring the idea of carbon rationing as an alternative to carbon taxing. Following the projected plan to implement a nationwide carbon rationing scheme carried out in 2021, a new team of students from the Master’s degree in Energy, supervised by Arnaud Passalacqua, will design a local experiment: what choices, strategies and technical solutions should be recommended to elected officials who wish to experiment the carbon rationing applied to travel on their territory?
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