

Transforming Catalonia's Mobility System for Net Zero



Introduction

To achieve net zero goals and limit global warming to well-below 2°C (as envisioned in the Paris Agreement), systemic transformations are needed. While governments are making efforts to limit greenhouse gas emissions, climate action is not always focused on triggering such transformations.

The focus of governmental efforts on incremental – rather than systemic - change is one of the main barriers to reducing emissions at the scale and pace needed. Climate action could be more efficient and effective if focused on transforming systems so that – by design – they achieve well-being outcomes, such as health and safety, with less energy and materials, and while producing less emissions.

Catalonia's Smart Specialisation Strategy (RIS3CAT 2030) has adopted a systemic and transformative approach based on “shared agendas for sustainability and social change”.

Inspired by work carried out by the OECD for transforming policies in the transport system in Ireland, the Catalan Government has partnered with the OECD to develop a shared agenda for a sustainable mobility system.

The OECD will conduct a study in the region to identify transformative policies to reduce emissions in the passenger transport sector while improving life quality. The study will inform the co-design and implementation of a shared agenda for a sustainable passenger transport system in Catalonia.



Context

Catalonia committed to reducing GHG emissions by 51% in 2030 (compared to 2005)¹. Transport is the second highest emitting sector in the region². Transport emissions have increased by 23% between 1990 and 2019 and accounted for almost one third (32%) of total GHG emissions in 2019².

Road transport was responsible for 95% of total transport emissions in 2019³. Road transport emissions have continuously increased in the past decades, except for a decrease in the period 2007-2012 due to the effect of the economic crisis⁴. While numerous initiatives are in place to reduce transport emissions in the region, they are not enough to offset the emissions arising from growing motorised car use, nor avoid negative impacts on well-being such as air and noise pollution, congestion, road injuries and fatalities, reduced travel options, and unequal access to opportunities.

Citizens' preferences leading to growing car use are largely determined by transport and urban systems organised around car driving. While

there are exceptions, private vehicles often allow better access to places and opportunities than sustainable modes such as walking and cycling, thus fostering private car use in the region. This is the case even in a heavily densified area such as the Barcelona region (Sistema Integrat de Mobilitat Metropolitana de Barcelona, SIMMB), where most of the connection trips to and from Barcelona during working days are made by private vehicles (48%), followed by public transportation (46%) and active mobility (6%). In contrast, within Barcelona city - where there are more transport alternatives and car traveling is less effective due to congestion - trips are mostly made by active mobility (64%), followed by public transportation (23%) and private vehicles (13%)⁵.

1. [Horitzó 2030: INDC. Canvi climàtic \(gencat.cat\)](#).
2. [Emissions de GEH a Catalunya. Canvi climàtic \(gencat.cat\)](#).
3. [Emissions de GEH a Catalunya | Dades obertes de Catalunya \(transparenciacatalunya.cat\)](#).
4. [Informe-Progres-1990_2019_versio_2021_f.pdf \(gencat.cat\)](#).
5. [Enquesta de mobilitat en dia feiner 2022 \(EMEF 2022\) cfa7a5e9-9d7a-8311-ced4-f9f30e12cccd \(omc.cat\)](#).



Objectives

In the context of the Smart Specialisation Strategy (RIS3CAT) shared agendas, and in line with IPCC findings, Catalonia aims to transform its passenger transport system so that sustainable transport modes such as walking, cycling, public transport and other shared transport services provide easy access to places and opportunities, and thus become those that most people choose for the bulk of their trips. Based on the OECD's experience in Ireland ([Redesigning Ireland's Transport for Net Zero](#)) and the RIS3CAT 2030 framework, this project aims to:

- Identify transformative policies that could help Catalonia redesign its passenger land transport system for it to become net

zero and simultaneously deliver well-being outcomes (e.g. equitable access to these opportunities, better health).

- Build the capacity of Catalan stakeholders engaged in the RIS3CAT 2030 to identify and implement transformative (or systemic) policies.
- Create spaces for stakeholders' mobilisation towards net-zero transport systems.

The insights from this project will inform the co-design and implementation of a shared agenda for a sustainable passenger transport system in Catalonia.

Why systems thinking

The need for thinking in systems to achieve net-zero targets can be explained by a key insight from complexity science: the results we see (e.g. high GHG emission, poor health, high inequalities) as well as the choices or patterns of behaviour observed in complex systems are not entirely the result of people's individual choices or preferences. They are, instead, conditioned by the structure of the system in which they are embedded.

Systems thinking sheds light on the system structure at the root of unsustainable results and patterns of behaviour, as well as on the mental models (or engrained ideas) having led to such structure. By doing so, it can help policymakers identify transformative policies, trigger the much-needed large-scale behavioural change towards sustainable lifestyles, and achieve more sustainable results.



Methodology and outputs

The project will take a systemic approach to identify the root causes underlying unsustainable levels of emissions from road transport, and the policies able to tackle such causes and accelerate the transition towards net-zero transport systems in the region. The process is guided by the 3 steps of the OECD Systems Innovation for Net Zero process.

1. *Envision* the goal(s) and the patterns of behaviour that a sustainable system would foster, and challenge ingrained mental models underlying poorly functioning systems.
2. *Understand* why the current system is not achieving the envisioned goals and patterns of behaviour and whether implemented and planned policies have the potential to redesign the system.
3. *Redesign* the system by scaling up policies able to reverse unsustainable dynamics, and by enabling the conditions for multidisciplinary collaboration.

A launch event will take place on September 20th 2023. Workshops will be carried out beginning of 2024 and an OECD report will be available by November 2024.

The OECD Team will carry out desk reviews of climate, transport and territorial planning strategies, interviews and workshops with stakeholders at the local (e.g. from city halls), regional (e.g. climate change office, academic experts) and national levels (e.g. Ministry of Transport, Ministry of Environment), as well as visits to selected territories.



OECD Report

The report will include an overview of the shared future vision of the Catalonia transport system, a system dynamics analysis underlying the root causes of unsustainable levels of emissions, an assessment of the transformative potential of current and planned policies in Catalonia, and policy recommendations to accelerate the transition towards net zero.

Methodological Note

In collaboration with the OECD, government bodies and local experts, the Catalan Government will elaborate a methodological guide based on the learnings and tools used in the project. The guide will provide guidelines, practical tools and examples for applying systems thinking into RIS3CAT shared agendas.

Workshops

The workshops will be spaces for actors to convene and gain a shared understanding and vision. Workshop discussions will include:


- What a sustainable transport system can look like.
- The root causes of high emissions and growing car use.
- The transformative potential of current policies and actions.
- Barriers for policy implementation.
- Ways forward to develop the sustainable mobility shared agenda and accelerate the transition towards net zero.



For more information:

 <https://oe.cd/cc-si>

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