

# Redesigning Ireland's Transport for Net Zero: Towards Systems that Work for People and the Planet

POLICY HIGHLIGHTS





As part of its net-zero goal, Ireland has committed to halve transport-related carbon emissions by 2030 compared to 2018 (excluding international aviation and maritime). Meeting net-zero targets implies economy-wide systemic change, specifically requiring transformative changes in the transport sector, as highlighted by the latest IPCC report. In line with this, the OECD and the Irish Climate Change Advisory Council collaborated to identify ways to trigger deep systemic change in the Irish surface passenger transport sector.

The OECD's innovative approach brings systems thinking to the core of climate action and helps identify policies with the highest potential to bring about the needed transformation. This systemic approach emphasises that a transport system that fosters – and often imposes – growing car use will be unlikely to lead to increasing well-being and reducing greenhouse gas (GHG) emissions at the scale and pace needed. Car dependency hinders the possibility of efficiently managing public space to foster quality access via more sustainable and healthy transport modes. It also limits the effectiveness of improved technologies such as more fuel efficient and electric vehicles as increased car use offsets vehicle efficiency gains. Furthermore, if vehicle fleets continue to grow this will hinder achieving high shares of fuel efficient and electric vehicles on the road. From a life-cycle perspective, too, simply electrifying a growing number of motorised vehicles results in higher emissions linked to production and disposal of vehicles, and the carbon-intensity of electricity production.

Thinking in systems shows that car-dependent systems are not a given. With the right policies car-dependent systems can be redesigned so that the most environmentally friendly modes, such as walking, cycling, micro-mobility and shared modes (including public transport) would be the most attractive and therefore the most used. Prioritising policies with a high transformative potential to redesign the Irish transport system, such as wide-scale road space reallocation, can trigger large-scale behavioural change to achieve what was previously considered unreachable. As shown in this study, which had a specific focus on different types of territories (Dublin, Cork, Kildare, Sligo), moving away from car dependency is possible and desirable across different contexts, although the pace and scope of the change might differ.

This OECD study shows that Ireland has ambitious stakeholders ready for joined-up thinking and for action to address the current car-dependent system and meet its climate and well-being objectives. During exchanges with the OECD, a number of stakeholders acknowledged that achieving such goals requires reducing both private car journeys and the need for long trips, while in the meantime ensuring equitable and safe access to places and opportunities for all. Ireland has already paved the way for this process through proposing policies to reallocate road space, mainstream on-demand shared services, and build awareness to address car-centric mindsets. This provides fertile ground to upscale such policies, drawing on the recommendations in this report.

There is an enormous amount of untapped potential for systems innovation in Ireland. These opportunities will not only improve well-being, but also result in lower energy and materials consumption, and fewer emissions. At the OECD, we welcome Ireland's efforts to harness such opportunities and transition towards better transport systems for better lives.



**Jo Tyndall**  
Environment Director, OECD









With three out of four citizens (on average) opting to travel by car on a daily basis, current mobility patterns in Ireland are incompatible with the country's greenhouse gas reduction targets. Ireland plans to achieve an economy-wide 51% greenhouse gas emission reduction by 2030 (relative to 2018 levels), and has recently established legally binding emission ceilings for relevant sectors of its economy. In line with this carbon budget programme, Ireland's transport sector is required to reduce its emissions by 50% by 2030, with the new sectoral ceilings limiting total emissions from transport to 54 MtCO<sub>2</sub>e between 2021-2025, and to 37 MtCO<sub>2</sub>e for the 2026-2030 period.

The country identified a 13% gap between the expected emission reductions from policies planned for the sector and the 2030 target. The gap is likely even larger than estimated, as the share of abatement expected from electrification will be difficult to achieve.

## The need for transformative policies and a systemic approach

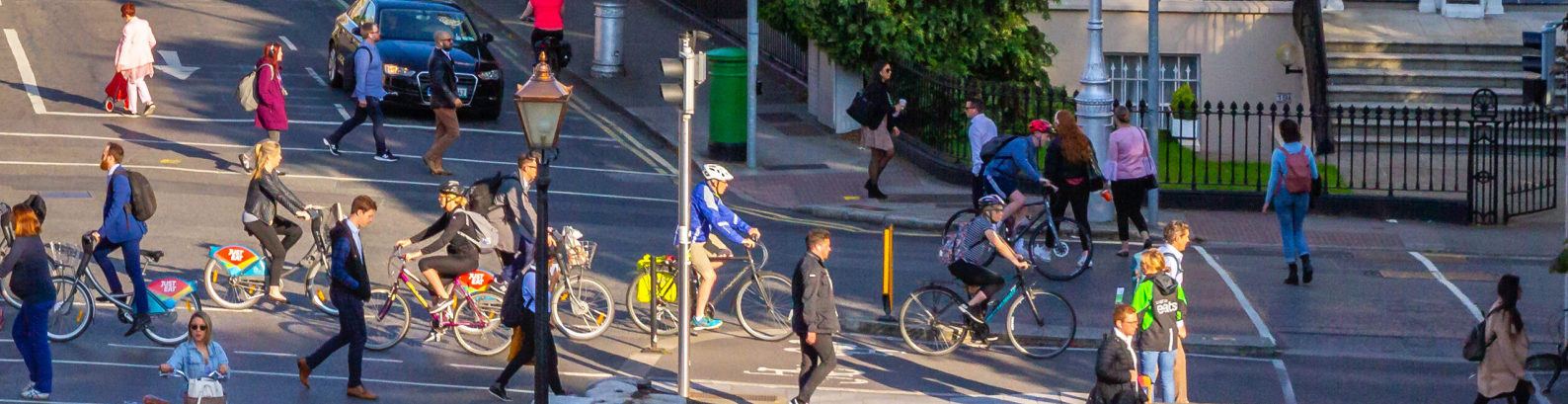
As in many other countries, numerous policy efforts in Ireland to date focused on electrification and fuel efficiency improvements in private vehicles. These efforts are insufficient to reduce emissions at the pace and scale needed to reach the country's targets. They have a low impact in improving the attractiveness of sustainable transport modes and in creating proximity. Policies used, e.g. incentives for private electric vehicles, do not

Significant behavioural change in the direction of sustainable modes (modal shifts, in transport jargon) and travel reduction is needed to achieve the current targets. This behavioural change will only be possible if policies can effectively shift transport systems away from car dependency.

Transport systems in Ireland need to be redesigned so that they make sustainable modes attractive, increase proximity between people and places, and ultimately deliver sustainable accessibility. Evidence suggests that transport systems and policies designed for sustainable accessibility, rather than mobility, can trigger patterns of behaviour aligned with the above greenhouse gas reduction targets and improve well-being via better air quality, health, safety and equity.

weaken or help shift away from, and rather reinforce, the system dynamics underlying induced car demand and urban sprawl – all of which are key drivers of car dependency and high emissions.

Ireland has a unique opportunity to increase the pace and extent of climate action in the transport sector while improving well-being and ensuring a just transition. To unleash this



opportunity, Irish efforts and attention need to be prioritised towards transformative policies.

Transformative policies aim to shift the transport system away from unsustainable system dynamics (and mental models) behind car dependency and unsustainable travel patterns. By changing the car-dependent system from its core, such policies can encourage patterns of behaviour in line with its greenhouse gas targets and well-being goals. Electrification remains necessary and can be more effective and better contribute to the attainment of Ireland’s ambitious climate action if it is embedded in a strategy that prioritises transformative policies and the shift away from car dependency.

The definition of transformative policies used in this report is based on a key insight from complexity science, which guides the analysis throughout the report: the idea that the structure of the system (e.g. feedback loops behind car dependency) causes the patterns of behaviours observed (e.g. growing car use). The iceberg analogy helps illustrate this insight and the added value of taking a systemic approach for policy making. This analogy is a reminder that observed outcomes or events, what we hear on the news (e.g. traffic jams, pollution peaks, road fatalities, growing car use and emissions) are just the “tip of the iceberg”. These events (patterns, when observed over time) are the result of systems that have been designed in a certain way and built on dominant mental models. Both the system design or structure and the mental models are “under the surface”, invisible to

the naked eye, and a systemic approach can bring them to light. A systemic approach allows therefore policies to be designed with the aim of transforming systems rather than simply reacting to or anticipating to their negative impacts.

This report assesses implemented and planned Irish policy efforts to reduce emissions in the transport sector. It identifies the transformative policies that could help the country redesign its passenger surface transport system (transport system, hereafter) to meet its climate goals for the sector, while also improving well-being. It also provides recommendations to scale up the implementation of the transformative policies identified.

The analysis is guided by the OECD “Systems Innovation for Net Zero” process. The process was designed to help policy makers take a systemic approach to identify policies with high transformative potential, via three steps:

1. **Envision** the goal(s) and the patterns of behaviour that a properly functioning 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. **Prioritise** and scale up the policies that can **redesign** systems to foster desirable patterns of behaviour and goals.



# Key findings

The Irish transport system fosters growing car use and emissions by design, and is thus unfit to enable the country to meet its greenhouse gas reduction goals while improving well-being. Growing car use in Ireland is largely determined by car-dependent transport and urban systems, organised around increased mobility and characterised by three unsustainable dynamics: induced car demand, urban sprawl, and the sustainable modes low-attractiveness trap.

**Aiming at decarbonising the system via private vehicle improvements is unlikely to lead to substantially different patterns of behaviour, rapid emission reductions, and large well-being improvements.** Car-dependent systems make rapid electrification slow and difficult, by locking-in large and growing vehicle fleets. Even with improved (and fully-electric) vehicles, they also fail to reduce life-cycle emissions, address accessibility gaps and other negative impacts (e.g. air and noise pollution, congestion, road injuries and fatalities).

**Implemented policies and those expected to bring the highest emission reduction**

shares according to Ireland's Climate Action Plan 2021 are unlikely to help the country transform its car-dependent system. Most efforts and attention in Ireland have been allocated to policies with a low potential to transform the current system. Furthermore, currently prioritised policies, such as electric vehicle incentives, may also reinforce car dependency, further locking the country into a system that fosters growing car use and emissions by design.

Ireland could unleash enormous opportunities by prioritising policies with a high potential for transforming its car-dependent system. While taking different shapes, transformation of the transport system away from car dependency is possible in different types of territories. Policies with a high transformative potential include road space reallocation, the mainstream of on-demand shared services and communication efforts to address car-centric mindsets. Currently, these policies are marginal and implemented on a small scale. The recently issued (2022) Sustainable Mobility Policy increases the centrality of transformative policies, reflecting an effort towards transformative change.



# Key recommendations

- 1. Redefine the goal of the transport system as sustainable accessibility.** This calls for challenging ingrained mindsets and shifting away from identifying high/growing mobility with well-being. Revisiting measurement frameworks and models is also relevant. Setting sustainable accessibility as a goal for land-use/housing planning is also necessary, as ensuring proximity is key for delivering sustainable accessibility.
- 2. Prioritise the up-scale of transformative policies.** While no single policy can transform a complex system, policies with a high transformative potential (see Key Findings) can help Ireland redesign the structure of its transport system so that sustainable transport modes are the first choice for the bulk of trips. As mentioned above, the actions included in the recently issued (2022) Sustainable Mobility Policy have a higher focus on transformative policies. These actions can be complemented and enlarged with the actions recommended in this report to ensure the upscale of such policies. Reflecting the recommendations in this report in the upcoming update of the Climate Action Plan will also be relevant. The effectiveness of the policies identified as having a low or medium transformative potential in car-dependent systems (e.g. carbon and road prices, programmes to improve public and active modes) can increase when implemented alongside transformative policies.
- 3. Redefine the electrification strategy to support the transition towards a sustainable transport system.** Embed the electrification strategy in the goal of sustainable accessibility and reduced car travel, and make sure the strategy prioritises walking, cycling, micro-mobility and high occupancy and shared travel where larger vehicles are the only option. In line with this recommendation, the current target (included in both the Climate Action Plan and the new Sustainable Mobility Policy) for reducing car travel should include total (rather than solely fossil-fuel-based) car kilometres and be set along with a target on the share of car-kilometres travelled by battery-electric vehicles. More ambitious targets on modal shifts, and targets aiming at delivering improved proximity and access with active and shared modes (including public transport and micro-mobility) need to be set.
- 4. Embrace a systemic approach to policy decision-making across government departments.** Achieving transformative change will require aligning action across government and addressing existing inconsistencies. Transformative policies can be prioritised by mainstreaming system-focused policy analysis and decisions to ensure a shared understanding of root causes by all stakeholders and to expose ingrained ideas (and related actions) that hinder progress. Rethinking multi-level governance is also required to improve government engagement with stakeholders, promote bottom-up and participatory approaches, increase local capacity to think in terms of systems, and communicate and implement transformative policies.



**These Policy Highlights are based on the OECD publication  
*Redesigning Ireland's Transport for Net Zero: Towards Systems  
that Work for People and the Planet***

Current mobility patterns in Ireland are incompatible with the country's target to halve emissions in the transport sector by 2030. While important, electrification and fuel efficiency improvements in vehicles are insufficient to meet Ireland's ambitious target: large behavioural change in the direction of sustainable modes and travel reductions are needed. Such changes will only be possible if policies can shift Irish transport systems away from car dependency.

Building on the OECD process "Systems Innovation for Net Zero" and extensive consultation with Irish stakeholders, this report assesses the potential of implemented and planned Irish policies to transform car-dependent systems. It identifies transformative policies that can help Ireland transition to sustainable transport systems that work for people and the planet. It also provides recommendations to scale up such transformative policies and refocus the electrification strategy so that it fosters, rather than hinders, transformational change.

For more information:

OECD (2022), *Redesigning Ireland's Transport for Net Zero: Towards Systems that Work for People and the Planet*, OECD Publishing, Paris

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