Disclaimer

This Background Paper has been prepared as part of the supporting analysis for the National Investment Framework for Transport in Ireland. It reflects the latest data and information available to the author at the time of writing. The views presented in this paper do not represent the official views of the Department of Transport or the Minister for Transport.
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1. Introduction

As part of the National Investment Framework for Transport in Ireland (NIFTI), five major themes with the potential to substantially alter how and where transport takes place have been identified. These are:

1. The National Planning Framework;
2. Economic and Fiscal Context;
3. Climate Change;
4. Brexit; and,
5. Technology.

This paper considers the third of these themes, Climate Change, and identifies key issues which the Irish transport sector faces in relation to climate change and sustainability. The paper then presents these issues in conjunction with the transport objectives set out in Project Ireland 2040. Moreover, this paper will provide an overview of the national plans and policies to support Ireland in meeting its climate change targets while also enabling our transport objectives.
2. Climate Change Targets

Climate change poses a number of challenges for the Irish transport network. As a significant source of domestic greenhouse gas (GHG) emissions (c. 20%), it is vital that the transport sector contributes to policies and initiatives that reduce emissions and increase the use of renewable energy sources, while also meeting increased transport demand. Furthermore, the negative impacts of climate change on transport infrastructure necessitate the introduction of a series of adaptation measures to reduce the vulnerability of critical infrastructure to the impacts of climate change and to enhance resilience across the sector.

Climate change is a global issue that requires a coordinated response at domestic, national and international level. Ireland’s commitments on climate action are formed by policy drivers including international and EU-level agreements to which Ireland is a signatory.

2.1 International Policy Context

The Paris Agreement’s overarching objective is to hold the increase in global average temperatures and pursue efforts to limit temperature increases relative to pre-industrial levels. The EU’s overall contribution to this Agreement includes a reduction of at least 40% in GHG emissions by 2030 compared to 1990 levels. This is to be delivered collectively under the EU Effort Sharing Regulation (ESR), with reductions in the non-ETS1 sector, which includes transport, amounting to a 30% reduction across the EU by 2030 compared to 2005 levels. In support of this goal Ireland’s national emissions reduction target is also a 30% reduction in non-ETS emissions by 2030.

The European Green Deal, which was agreed by the European Commission in 2019, aims to make Europe the world’s first climate neutral continent by 2050. Recognising the tremendous challenge that this presents, the deal outlines a series of policies and measures to support investment in green technologies and sustainable solutions, while also ensuring a just and inclusive transition; including:

- The development of a new circular economy action plan;
- Significantly increasing the renovation rate of buildings;
- Development of a greener and healthier agriculture system;
- Deployment of 1 million electric vehicle charge points across Europe; and,
- Promoting the use of sustainable alternative fuels in sectors such as aviation, shipping and heavy road freight where electrification is currently not possible.

2.2 National Policy Context

The National Policy Position establishes a fundamental national objective of achieving transition to a “competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050”. This objective is based, in part, upon an aggregate reduction of at least 80% in CO₂ emissions, compared to 1990 levels, by 2050 for the electricity generation, built environment and transport sectors.

The Climate Action and Low Carbon Development Act 2015, provides the statutory basis for the national transition objective laid out in the National Policy Position. It provided for the Minister for Climate Action to prepare and submit to Government a series of successive National Mitigation Plans (NMPs) and National

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1 The non-ETS sectors cover those that are outside the EU Emissions Trading System and include the agriculture, transport (excl. commercial aviation), residential, commercial, waste and non-energy intensive industries.
Adaptation Frameworks (NAFs), to chart the pathway to emissions reductions and promote resilience to the impacts of climate change respectively.

The Act also requires the Minister for Climate Action and any other Minister whom they invite to provide an annual transition statement to the Oireachtas detailing mitigation and adaptation measures currently being pursued. The Climate Action Plan 2019 sets out plans to amend the Act, with the aim of enhancing accountability, through the introduction of five-year carbon budgets and the adoption of sectoral decarbonisation targets.

2.3. Current and Projected Emission Trends
From 1990 to 2017 total GHG emissions in Ireland increased by 10.4%. In the same period, transport emissions in Ireland grew by 133% and transport’s share of overall GHG emissions in 2017 was 19.8%, over double its share in 1990. This was by far the largest increase of any sector, and was associated with significant growth in both economic output and car ownership levels.

Under the latest Environmental Protection Agency (EPA) projections it is estimated that Ireland’s national emissions are to set fall by 10%, relative to 2005 levels, by 2030, with transport emissions projected to decrease by 1%, relative to 2017 levels, over the period to 2030. These projections are for a "With Additional Measures Scenario" which includes the mitigation measures set out in the National Development Plan (NDP), but not including the measures set out in the Climate Action Plan 2019. Without the introduction of the NDP measures, national emissions are projected to increase by 6% over the period 2018-2030, while transport emissions are projected to increase by 11% over this period.

Failure to meet the carbon emission and renewable energy targets will have a substantial impact on Ireland with the possible required purchasing of credits to meet compliance targets2, as well as significant disruption to the transport sector caused by the impacts of climate change. Inaction is, therefore, simply not an option.

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2 Missing these combined targets for 2020 could cost the Exchequer between €210m and €690m. However, ascertaining precise figures is difficult as the exact amount that Ireland will miss these targets by is not yet known. The cost of missed targets further down the line is even more difficult to determine.
3. Policy Response

A number of policy measures have been introduced to address the need to reduce carbon emissions in the transport sector and in support of achieving EU targets and legislative requirements. These measures include:

- Basing the vehicle registration and motor tax system on CO₂ emissions rather than engine size;
- A carbon tax introduced on transport fuels;
- A Biofuels Obligation Scheme which requires mineral oil suppliers to ensure that, from the 1 January 2020, 12.36% of motor fuels placed on the market are produced from renewable sources;
- Financial supports for those purchasing electric vehicles; and,
- The introduction of EU Regulations on CO₂ Emissions Performance Standards for cars and vans.

It is important that any planned mitigation measure is assessed in order to estimate its total impact on the economy and society. For example, while the move to vehicle taxation based on CO₂ emissions led to a vehicle fleet which generated fewer GHG emissions, it had the unintended impact of incentivising the purchase of diesel vehicles which led to a decline in air quality in many urban areas.

The best way to avoid these unintended consequences is to plan climate mitigation measures in a coordinated, cross departmental manner. The remainder of this section will outline the evolution of this whole-of-Government approach to mitigation planning.

3.1 National Mitigation Plan

The National Mitigation Plan (NMP) was published by the Department of Communications, Climate Action and Environment in 2017. The NMP sets out key measures and actions that lays the foundations for achieving Ireland’s national transitioning objective and fulfils the statutory requirement set out in the Climate Action and Low Carbon Development Act 2015. The Plan includes over 100 individual actions for Departments and public bodies to advance in order to reduce emissions.

Fifteen transport-specific measures are set out in the Plan that each involve the implementation of a number of supports and actions. These measures include:

- Investments in public transport including the introduction of the Luas Cross City Project;
- The incentivisation of low-emission vehicles through tax reliefs and grant schemes; and,
- A review of the National Active Travel Policy.

3.2 Project Ireland 2040

The National Planning Framework (NPF) aims to guide planning and infrastructure investment over the period from 2018 to 2040. In addition to providing a single overarching strategy for the development of key national infrastructure projects, the Framework will also inform policy making at the regional and local level. The NPF aims to ensure a coordinated approach to planning in order to adapt to projected population growth and changes in settlement patterns in a balanced and sustainable manner.

Both the NPF and NDP are underpinned by a shared set of 10 National Strategic Outcomes (NSOs). The following NSOs are of particular relevance to the decarbonisation of the transport sector:
• NSO 1 – Compact Growth: which aims to achieve significant urban densification over the period to 2040;
• NSO 4 – Sustainable Mobility: which aims to transition journeys to more sustainable transport modes;
• NSO 8 – Transition to a Low Carbon and Climate Resilient Society: which aims to support Ireland in achieving its climate mitigation targets, while also developing adaptation solutions to address issues related to climate resilience.

In order to achieve these NSOs the NDP sets out a €116bn capital investment programme for the period from 2018 to 2027. The NDP sets out a series of climate action measures to support mitigation and promote climate resilience in Ireland. These measures include:

- The investment of €8.6bn in sustainable mobility, including MetroLink and DART+ for Dublin and the delivery of BusConnects and comprehensive cycling networks for all five cities;
- The target of 500,000 Eclectic Vehicles on the road by 2030;
- The banning of new sales of Internal Combustion Engine vehicles in 2030;
- A new Climate Action Fund to support public and private bodies in their efforts to decarbonise; and,
- The development of €940m worth of flood defences across the country.

3.3 Climate Action Plan

While the NMP and NDP go some way to supporting Ireland’s goal of reaching our EU emissions targets and achieving our national transition objective, there remains a significant gap of over 58.4 million tonnes of GHG abatement required in order to meet our 2030 emissions reduction target.

In order to address this issue and put Ireland on an emissions reduction pathway to reach our 2030 EU target the Department of Communications, Climate Action and Environment published the Climate Action Plan in 2019. The Plan also adopts a more ambitious goal of achieving net zero emissions by 2050. Achieving these emission reduction targets will require a step change in action from all sectors of the economy. In this regard the targeted emissions reduction for the transport sector is a reduction of 7 to 8 million tonnes of CO2 over the period 2021 to 2030.

The Plan sets out a range of actions, including significantly increasing the targeted number of electric vehicles on Irish roads to 936,000 by 2030. The Plan also recognises the importance of other technologies, such as biofuels and compressed natural gas, for decarbonising road transport and the crucial role that achieving modal shift to more sustainable forms of transport will play in achieving the emissions reduction target.

Detailed actions to achieve the transport sectoral emissions reduction target include:

- 936,000 electric vehicles on the road by 2030;
- Developing the charging network necessary to support the growth of electric vehicles;
- Developing the compressed natural gas (CNG) fuelling network to support the uptake of CNG vehicles;
- Transitioning the urban public service obligation bus fleet to low emission vehicles);
- Develop and implement cycle network plans for all major cities; and,
- Develop a regulatory framework to support the introduction of low emissions zones in Ireland’s cities.
4. Climate Adaptation

Climate change adaptation refers to how we plan for the negative effects of climate change and take suitable action to prevent or minimize the damage caused by climate change. Adaptation can be described as a policy approach which seeks to protect people, buildings, infrastructure, businesses and ecosystems against the negative impacts of climate change, but also builds resilience to that change, allowing society to take advantage of any opportunities that it might bring. Climate change will create new vulnerabilities for Ireland and worsen existing ones. Adaptation measures also include responsive measures to climate change. For example, more frequent flooding, impacting upon a region’s road network, is an example of the damage caused by climate change, while the introduction of increased drainage is an adaptation measure that is responsive to this damage.

Future transport planning will not only have to account for meeting increased transport demand in a sustainable manner, but will also need to incorporate an adaptation strategy that responds to challenges posed by the effects of climate change on the transport network. This will require identifying key risks and vulnerabilities within the transport network and putting in place actions to strengthen, replace or modify infrastructure and systems to improve their resilience to climate change impacts.

The 2018 National Adaptation Framework (NAF) outlines the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. In line with its requirements under the NAF, the Department of Transport has prepared a Transport Climate Change Sectoral Adaptation Plan, which was approved by Government in October 2019. The plan identifies key road, rail, air and maritime transport networks and assesses their vulnerability to specific risks such as sea level rise, coastal erosion and extreme weather events.

As well as identifying the key sectoral risks and priorities, the Sectoral Plan recommends 21 adaptation actions. These aim to increase knowledge and understanding of the likely impacts of climate change on the sector, support stakeholders in identifying and prioritising risks, and assist in the implementation of adaptation measures to improve resilience across the sector.
5. Stimulating Behavioural Change

The climate action measures outlined in the Climate Action Plan and NDP, if implemented fully, will provide significant emissions reductions across the transport sector. However the ultimate level of emissions reduction will be determined by individual decisions, such as where people choose to live and how they choose to travel.

Therefore, Government’s primary role is to create an enabling environment to support the uptake of green technologies through a range of policies and measures. These measures can be divided into two broad categories: pull factors and push factors. Pull factors are those that encourage people to engage in more sustainable behaviour, such as the provision of public transport services to support modal shift and the development of a comprehensive network of charge points to encourage the uptake of electric vehicles. Push factors are those that discourage polluting behaviours, such as carbon taxation and the introduction of low emissions zones.

Many of the policy levers required to stimulate emissions reductions within the transport sector are located outside of the remit of the Department of Transport. For example, the changes to planning that are required to incentivise compact urban growth, which will result in people living nearer to their jobs and the amenities they use leading to a corresponding decrease in transport emissions. Therefore, it is only through engaging in the whole-of-Government approach outlined in the Climate Action Plan and NDP that we will achieve our long term emission reduction targets and create a more sustainable transport system which is more responsive to users’ needs.
6. Conclusions

Over the next decade, the transport sector will face the significant challenge of meeting increasing travel demand while also ensuring that the sector contributes to a reduction in Ireland’s carbon emissions and an increase in the use of renewable energy sources. However, strategic and considered planning, along with an integrated approach to future land use, can ensure an efficient, effective and sustainable transport network.

This will entail increased investment in sustainable mobility, ensuring an appropriate level of sustainable transport infrastructure is in place to meet the projected population growth in different regions, and ensuring that investment is made to increase market penetration of renewable fuels for transport. Transitioning to a low-carbon and climate resilient society is a key objective of Project Ireland 2040 and it is therefore imperative that NIFTI fully reflects the urgency of actions to promote climate action and build resilience across the transport sector.
7. References


