An Tionól Saoránach The Citizens' Assembly

Paper of

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delivered to

The Citizens' Assembly

on

04 November 2017

Paper to the Citizens Assembly

Climate Change: Current Transport Policy in Ireland

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Introduction

The transport sector as a whole is contributing 21% of greenhouse gas emissions in Ireland, with cars, road freight and aviation the primary contributors. In global terms, Ireland is a small country with a relatively small population. However, Ireland's greenhouse gas emissions per person are amongst the highest of any country in the world.

The Department of Transport, Tourism and Sport (DTTAS) has a principle role in directing the national objective to achieve a cost effective emissions reduction pathway. The National Transport Authority (NTA) is a statutory non-commercial body, which operates under the aegis of the Department of Transport, Tourism and Sport. The NTA's aims and objectives focus on the development of public transport modes, cycling and walking nationally in order to achieve greater sustainability in transport modes and patterns, thereby enhancing the environment and people's quality of life.

Characteristics of our Transport Network

Ireland has a high road density in comparison to other European countries. With 20.9kms per 1,000 inhabitants Ireland has the 5th highest density in the EU and is significantly above the EU28 average of 9.6kms. Recent years have also witnessed a significant return to growth across the transport sector, for example:

- New cars registrations increased by 31% in 2015 (to 2.6 million)[1];
- The average journey distance across Ireland increased from 13.6kms to 14.6kms; and
- The average journey duration increased from 21.7minutes to 22.7minutes between 2012 and 2014.

In this context emissions and climate change targets will continue to be a challenge for the sector as increased travel demand imposes higher energy use and emissions.

[1] http://www.dttas.ie/sites/default/files/publications/corporate/english/transport-trends-2016/transport-trends-2016.pdf

People Travelling in Ireland

Journey Purposes

Over an average day, people travel for a number of different reasons. Based on the CSO National Travel Survey 2016[2], the breakdown of average daily trip purposes for adults is set out in Figure 1. From this data it is clear that while travel to work is still the most common reason for travel (27%), it only represents just over a quarter of daily trips. Trips which tend to occur outside the peak, shopping, entertainment and visiting family/friends and personal business, represent almost half (48%) of all trips.

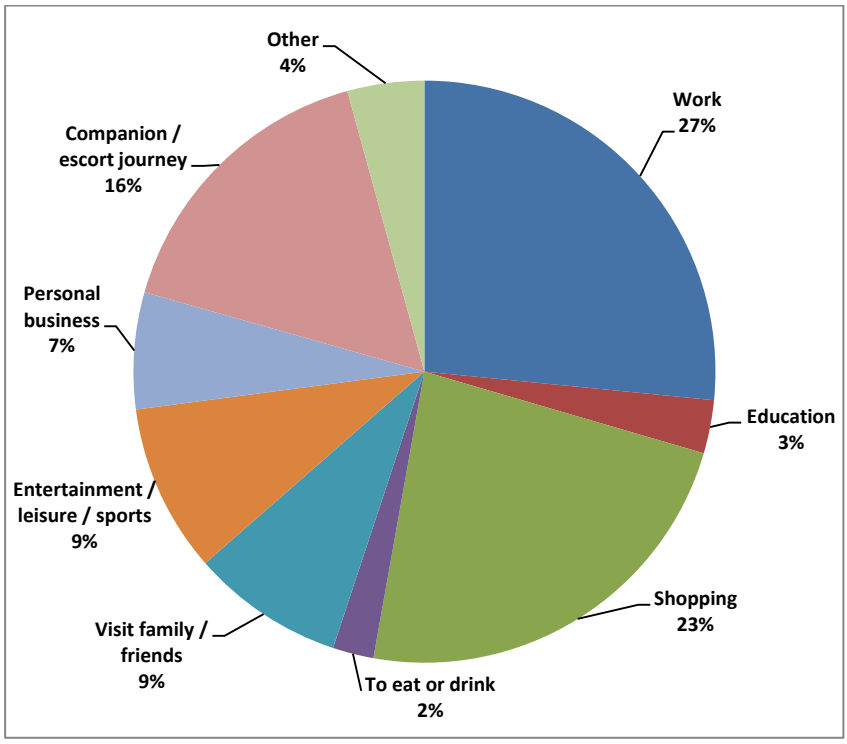

Figure 1: Average Daily Trip Purpose (over 18s) (Source: National Travel Survey 2016)

National Mode Share

The mode share nationally for trips to work or education by car in 2016 was 61%. This is broken down into those driving (41%) and passengers (20%). In relation to sustainable modes of travel 14.6% of people walked to work or education, while 2.8% cycled. The journeys on public transport included 10.7% by bus or coach and 2.8% by train, DART or Luas.

[2] National Travel Survey, 2016 (CSO March 2017)

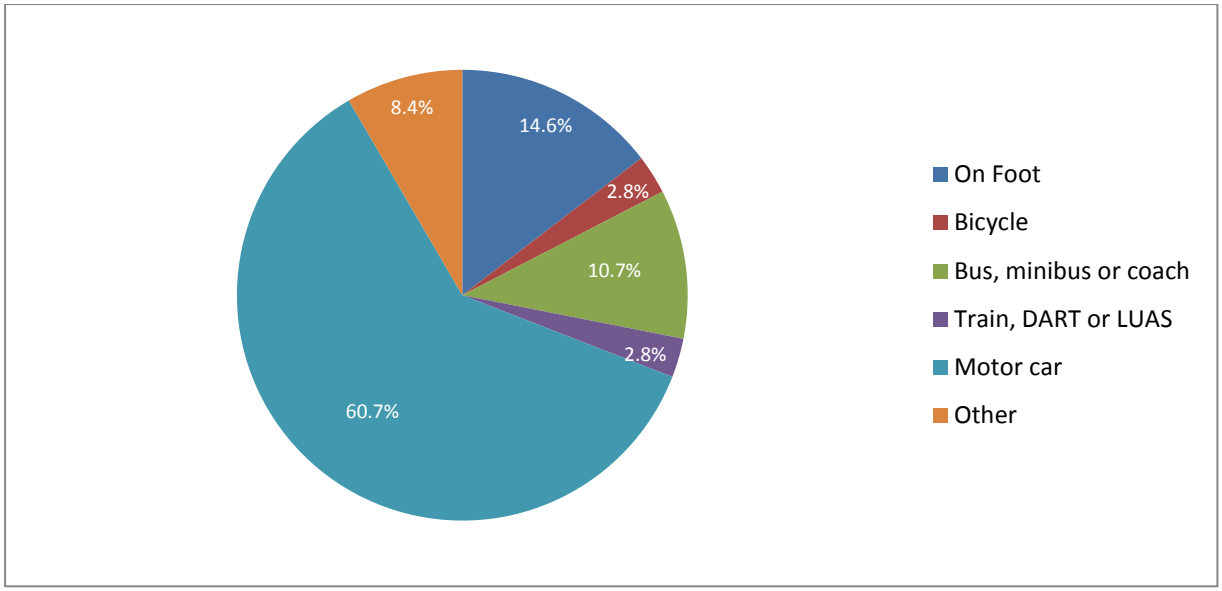

Figure 2: National Travel to Work/Education Mode Share (Source: CSO)

Greater Dublin Area (GDA) Mode Share

The mode share within the Greater Dublin Area (GDA) for trips to work or education by car in 2016 was 51%. This is broken down into those driving (36.7%) and passengers (14.7%). In relation to sustainable modes of travel 18% of people walked to work or education, while 5% cycled. The journeys on public transport included 13.6% by bus or coach and 6.1% by train, DART or Luas. In comparison to the national mode share percentages, it is evident that public transport, walking and cycling play a much larger role within the GDA, accounting for nearly 43% of all trips.

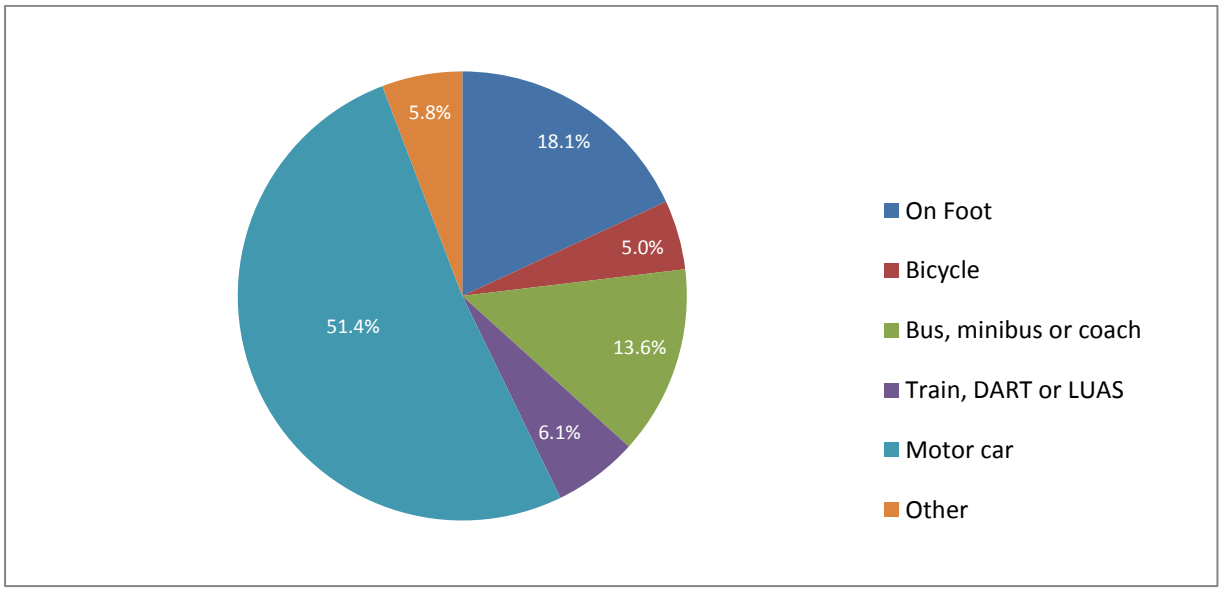

Figure 3: Greater Dublin Area Travel to Work/Education Mode Share (Source: CSO)

Transport and Climate Change (emissions and energy)

The high percentage share of emissions from the transport sector is indicative of the dispersed settlement pattern and low population density that inhibits the cost-effectiveness of mass transport systems and encourages car reliance. Significant reductions in emissions from the transport sector

will require significant modal shift away from car to walking, cycling and public transport. Figure 4 below illustrates the percentage of CO2 emissions from the transport sector by mode. Just under 80% of CO2 emissions come from road based transport modes with over 50% of these from private car usage alone.

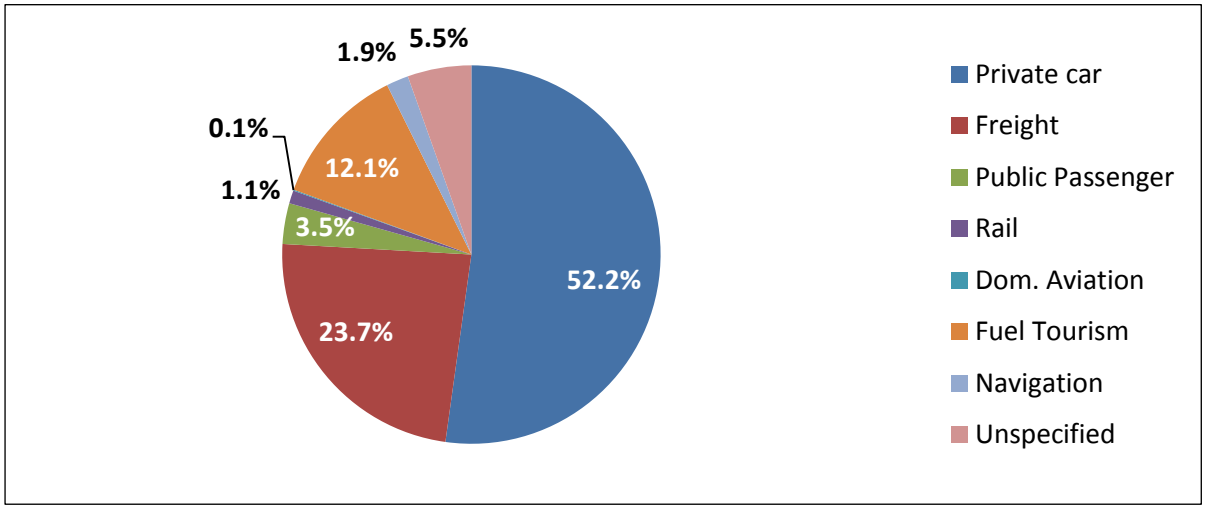

Figure 4: Transport CO2 Emissions by Mode (Source: SEAI 2016)

Climate Change Policy

The ***National Mitigation Plan 2017*** represents an initial step to set us on a pathway to achieve the level of decarbonisation required and lays the foundations for transitioning Ireland to a low carbon, climate resilient and environmentally sustainable economy by 2050. The Plan sets out a range of measures currently in place and under consideration for development across the relevant sectors including transport.

The ***National Policy Framework on Alternative Fuels Infrastructure for Ireland 2017*** mirrors the above vision through the ambition of decarbonising the national passenger car fleet by 2050 and seeking to have greater deployment of alternative fuels within the freight sector.
Climate Change Policy

What is Ireland Doing to Reduce Transport Emissions?

Moving to a low carbon society represents a significant challenge for Ireland's expanding transport sector where the use of fossil fuels and individual travel patterns are firmly established. Decarbonising transport will require a significant step-change in how we travel, how we do business and the types of fuels and technologies we employ.

A number of successful measures have already been introduced to reduce transport sector emissions including: continued investment in the public and sustainable transport network to increase capacity and promote modal shift; implementation of EU regulations limiting tail pipe emissions; redesigning the Vehicle Registration Tax (VRT) and motor tax regimes to promote low

carbon emitting vehicles; incentives to encourage alternative fuel and technologies; and the introduction of a Biofuel Obligation Scheme. Figure 5 illustrates a timeline for the introduction of some of the key transport CO_2 mitigation measures.

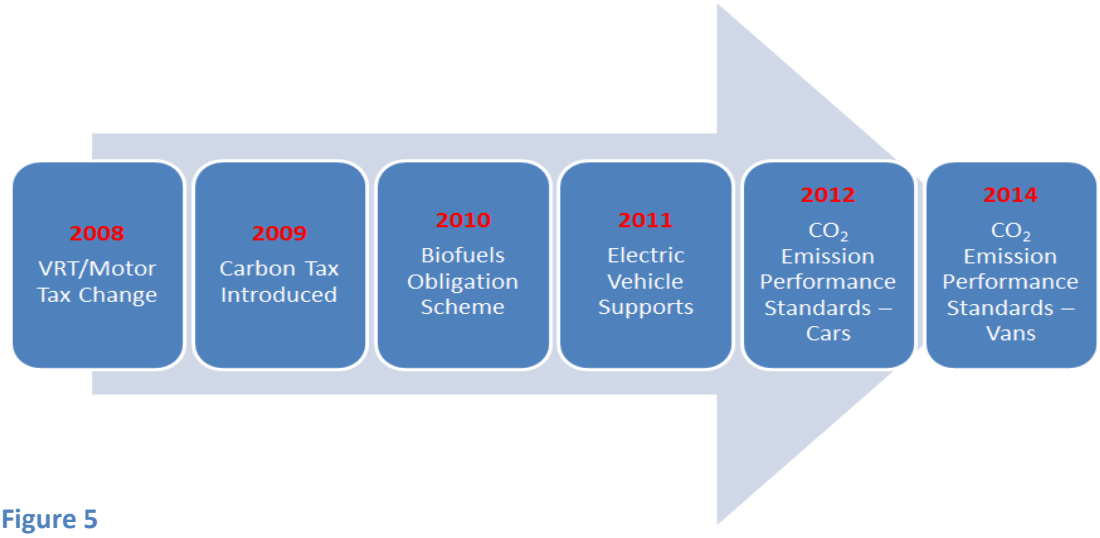

Figure 5

Investment in Sustainable Transport and Promoting Modal Shift:

In 2017 €354m is being invested in public transport and sustainable transport infrastructure and €277m is being allocated to fund the operation of public transport and rural services[3].

In the near future, projects such as the *Luas Cross City* and *10-minute-DART* will help manage some of the increasing demand on the transport network. In the medium and longer term funding is provided for the expansion of the DART line to Balbriggan, to proceed. The largest new single project will be the *New Metro North* which will serve the growing population along the Swords/Airport/City Centre corridor. In addition, €750m has been made available to fund the BusConnects programme which will transform bus services in cities. Collectively, these measures will greatly enhance the capacity of the public transport system and will provide viable alternatives to private car use.

Implementing EU Regulations:

EU legislation sets mandatory emission reduction targets for all new passenger cars registered in the EU; this measure has greatly increased the availability of lower emission vehicles in the Irish market. The legislation is the cornerstone of the EU's strategy to improve vehicle fuel economy and has driven car manufacturers to develop innovative energy efficient technologies. The regulation required that average emissions from new cars registered in the EU would be less than 130g CO_2/km by 2015. By 2021, phased in from 2020, the fleet average to be achieved by all new cars is 95g CO_2/km. The 2015 and 2021 targets represent CO_2 reductions of 21% and 42% respectively compared with the 2007 new passenger car fleet average of 164g CO_2/km. New cars entering the fleet are now approximately 25% more energy efficient than they were in 2007.

[3] http://www.dttas.ie/press-releases/2016/budget-2017-nearly-%E2%82%AC2bn-transport-tourism-and-sport-be-welcomed-%E2%80%93-ross-o%E2%80%99donovan

Similar targets have been set for new light commercial vehicle fleets with a requirement that new vans registered in the EU do not emit more than an average of 175g CO_2/km by 2017 and that by 2021 the average emissions fall to a target of 147g CO_2/km (19% less than the 2012 average). The successful implementation of these regulations in the short to medium term is fundamental in moving the transport sector towards decarbonisation, particularly up to 2030.

Rebalancing VRT and Motor Tax:

Irish vehicles registration and motor taxation systems were changed in July 2008 to be based on CO_2 emissions rather than engine size[4]. The tax changes, which applied to vehicles purchased in 2008 or later, had an immediate and substantial positive effect in changing buyer behaviour encouraging the take up of low CO_2 emission vehicles. Cars with CO_2 emissions of 140 g/km or higher now comprise just 4% of new car purchases.

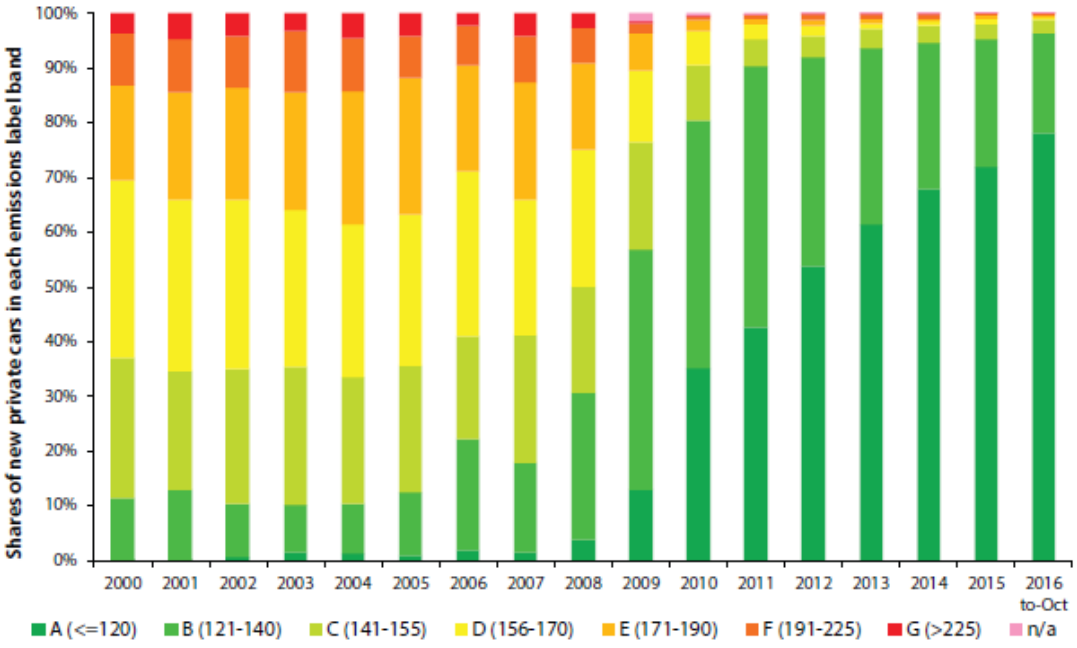

Figure 6: Share of New Private Cars in each Emissions Band 2000 – 2015 (+2016 to October). Source: Based on Vehicle Registration Unit data

Carbon Tax:

Carbon pricing has the potential to drive reductions in consumption of fossil fuels and encourage energy efficiency improvements by households and businesses. A carbon tax was introduced in Budget 2010, at a level of €15 per tonne of CO_2 emitted[5]. This tax applies to both petrol and diesel – representing an increase of €0.042 and €0.049 per litre respectively. Budget 2012 increased this

[4] http://taxpolicy.gov.ie/wp-content/uploads/2011/04/TSG0712.pdf
[5] http://www.budget.gov.ie/Budgets/2010/FinancialStatement.aspx

level to €20/tonne of CO_2[6] emitted resulting in price increase relative to the baseline of €0.014 per litre for petrol and €0.016 per litre of diesel. The impact of this carbon tax in terms of fuel efficiency is difficult to assess, in particular given the complex interaction with vehicle purchasing patterns, other fuel taxation increases, and general economic circumstances impacting on fuel demand. However, research suggests that fuel prices are an important aspect in terms of long term fuel demand and so the contribution of carbon tax to fuel pricing is likely to be a contributing factor to reduced fuel usage.

Promoting New Technologies and Fuels

Public transport and active travel are not always viable travel options, particularly in rural areas; a transition to alternatively fuelled vehicles will be required to effect a substantial national reduction in transport emissions. Ireland's *National Policy Framework* on *Alternative Fuels Infrastructure for Transport in Ireland: 2017-2030*[10] sets an ambitious target that from 2030 all new cars and vans sold in Ireland will be zero emission (or zero emission capable) and that other technologies, perhaps still unknown, will be fuelling larger vehicles; so that by 2050, the nation's car fleet along with much of our public transport buses and rail lines will be low/near zero emissions. In the meantime, Ireland is seeking greater diversification of fuels in the freight sector to include a mix of natural gas, biogas, electricity (light vans), renewable diesel and biofuels. The *Framework* includes a range of measures aimed at supporting the uptake of low emission vehicles and addresses infrastructure requirements to ensure an appropriate national refuelling network, including a sufficient number of electric vehicle (EV) charging points and natural gas refuelling stations. It is expected the implementation of similar Frameworks across Europe will reassure car manufacturers and investors of the EU's long term commitment to the adoption of vehicles powered by alternative fuels.

Incentivising Electric Vehicles

In 2009, electric vehicles (EVs) were identified as an important element in efforts to achieve both energy efficiency and renewable energy targets as part of the EU *Climate Change-Energy Package*[7]. Globally, there are strong indications from energy market analysts and car manufacturers that mass market adoption of EVs is likely. Supporting this finding a commitment was made in the *Programme for a Partnership Government*[8] for Ireland to become a leader in the take-up of EVs. A dedicated *Low Emission Vehicle Taskforce* was established to consider the range of measures and options available to Government to accelerate this uptake. In addition, there are a number of supports already in place to stimulate the market for EVs in Ireland as follows:

- *In April 2011 SEAI launched a grant scheme offering up to €5,000 for a new* Battery Electric Vehicle (BEV) or a Plug-in Hybrid Electric Vehicle (PHEV) purchased & registered in Ireland;
- *These vehicles also qualify for VRT relief of up to €5,000 for a BEV and €2500 for a PHEV*; providing a maximum combined subsidy (grant + VRT relief) of €10,000 for BEVs & €7,500 for PHEVs.
- *Relief from VRT is also currently available for hybrids up to €1,500.*

[6] http://www.budget.gov.ie/Budgets/2012/FinancialStatement.aspx#section18
[7] https://ec.europa.eu/clima/policies/strategies/2020_en
[8] http://www.merrionstreet.ie/MerrionStreet/en/ImageLibrary/Programme_for_Partnership_Government.pdf

- *A nationwide rollout of EV charging points was undertaken with over 1,200 public, standard and fast charge points across the country.*
- *In addition, domestic chargers and the associated installation costs were provided free of charge for the first 2,000 successful applicants.*

Despite the suite of generous incentives available, by the end of 2016 there were only approximately 2,000 EVs licensed in Ireland. There are a range of factors internationally accepted as barriers to the transition to EV technology including limited vehicle choice, range anxiety and low consumer awareness. This slower than anticipated transition is not Ireland-specific and does not indicate a lack of ambition or support. It is expected that with increasing range performances, technology advancements, greater affordability and improved consumer choice will trigger large-scale change in EV purchasing patterns.

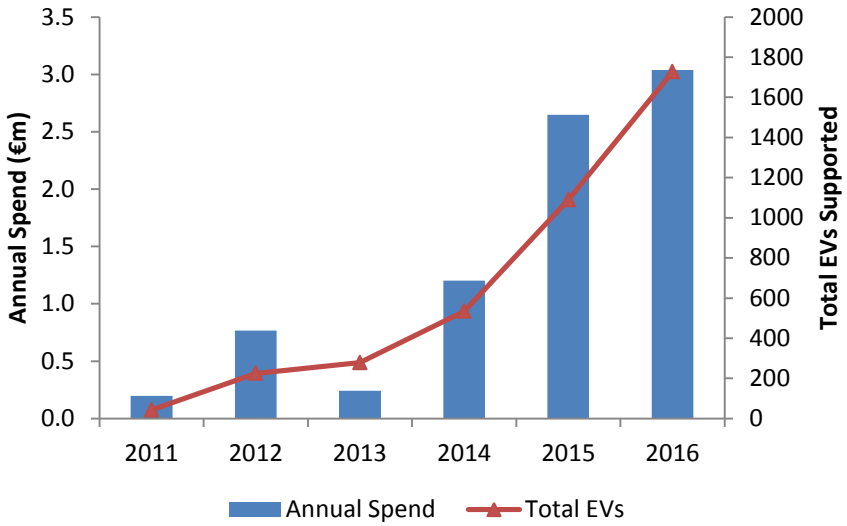

Figure 7: Total Number of EVs Supported and Grant Spend, 2011-2016. Source: Data from the Department of Finance

Incentivising Natural Gas and Biogas:

The full electrification of the Irish car fleet may be feasible but it is unlikely in the short to medium term that electrification will be viable in the freight sector. Instead a range of alternative fuels or combinations of fuels and technologies will be more likely, including: biogas, biofuels, hydrogen, compressed natural gas (CNG), liquid natural gas (LNG) and hybrids. In order to support development of alternative fuels for the freight sector a number of incentives have been employed. In the 2015 Budget[9] the excise rate for natural gas (NG) and biogas was set at the current EU Minimum rate of €2.60 per GJ for a period of eight years. In the National Mitigation Plan[9] there is a commitment to broaden the accelerated capital allowance scheme to include vehicles and refuelling equipment powered by NG. These measures should incentivise the adoption of NG as a transport fuel by putting CNG in a competitive position in relation to diesel. Importantly, the uptake of NG is seen as providing a pathway for the future use of biogas in the transport sector.

[9] http://www.budget.gov.ie/Budgets/2015/2015.aspx

Biofuel Obligation Scheme

Under the Renewable Energy Directive[10] mandatory national targets have been established for the use of energy from renewable sources for all Member States. Ireland's target for the share of its gross final consumption of energy to come from renewable sources by 2020 is 16%; the share of energy from renewable sources for transport must be at least 10%. To assist in meeting this requirement Ireland introduced a Biofuels Obligation Scheme[11] to ensure that a proportion of the transport fuel used in the State consists of environmentally sustainable biofuels. Broadly the approach is that the bio- and fossil- fuels are blended together and made available to consumers at the pump. The existing scheme places an obligation on suppliers of road transport fuels to ensure that a proportion of the fuels they place on the market here are produced from renewable sources. The Biofuels Obligation rate has increased over time from a share of 4.166% in 2010 to 8.695% (by volume) from 2017.

What more can Ireland Do to Reduce Transport Emissions?

In looking to reduce transport emissions, the Avoid-Shift-Improve principle is employed.

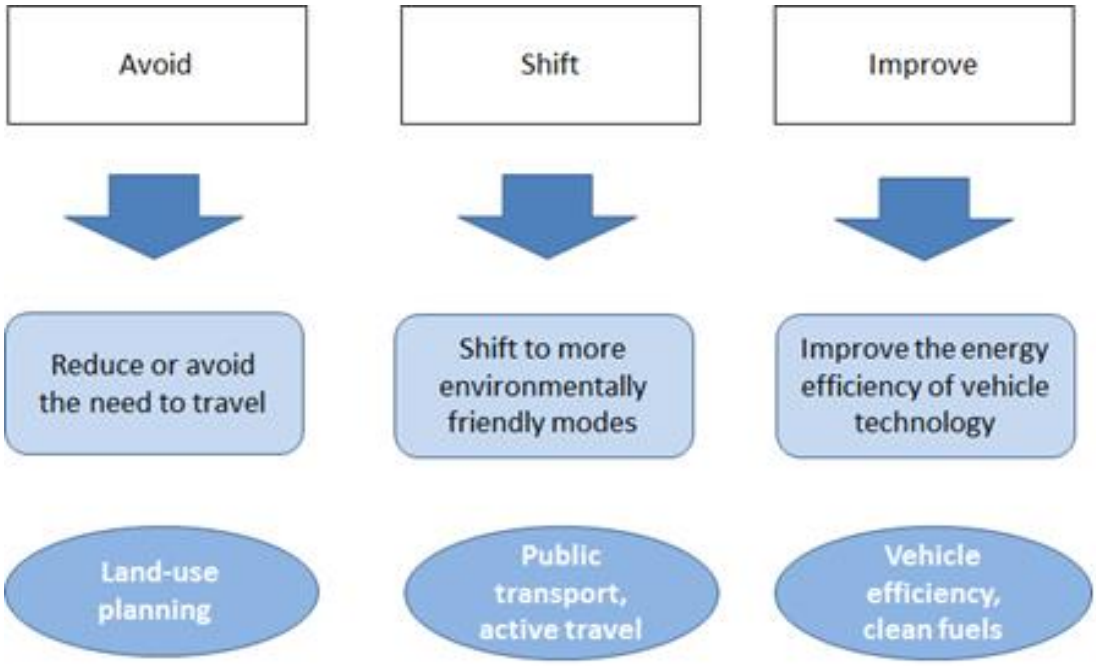

Figure 8: Avoid-Shift-Improve Framework

[10] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN
[11] http://www.irishstatutebook.ie/eli/2010/act/11/enacted/en/html

Reducing the Need to Travel

Integrated Approach to Land Use and Transport Planning

NTA policy supports sustainable transport modes by promoting an integrated approach to land use and transport planning. *Smarter Travel*, published by the Department of Transport in 2009 is still the overriding national policy position with respect to promotion of sustainable and environmentally friendly transport planning. Smarter Travel sets a target for 45% of all work-related commuting trips by car, requiring 55% to be made up of walking, cycling and public transport.

The Department of Housing, Planning and Local Government, recently prepared the draft National Planning Framework '*Ireland 2040 Our Plan*'. This plan places a key emphasis on enabling people to live closer to where they work, moving away from the current unsustainable trends of increased commuting, securing more compact forms of urban development in all types of settlements and regenerating rural Ireland by promoting environmentally sustainable growth patterns. Consolidation of development and the reduction of unsustainable car based commuting are critical if a reduction in transport related emissions are to be achieved.

The NTA's *Transport Strategy for the Greater Dublin Area 2016-2035* sets out a detailed plan for transport infrastructural development and complimentary measures, notably in relation to land use integration and behavioural change. In line with the objectives of the Department of Transport, Tourism & Sport's Smarter Travel policies it is an objective of the strategy to reduce mode share of car based commuting to 45%. **The implementation of the Strategy in full would see this target potentially achieved by 2035.**

The NTA is also working with the regional cities of Cork, Galway, Limerick and Waterford to produce integrated transport strategies, which will guide the build out of more efficient and sustainable transport options. This will focus the delivery of future transport infrastructure, as well as providing certainty to new and existing communities and employers that sustainable travel options will be available, allowing for future reductions in unsustainable commuting patterns, and reduced need for travel.

Shifting to Sustainable Travel

The work of the NTA has many facets which together aim to improve the offer and attractiveness of walking, cycling and using public transport in order to effect mode change and enable the transport system to operate more effectively. A number of NTA initiatives and projects are contributing to this agenda.

Smarter Travel

The government policy, *Smarter Travel: A New Transport Policy for Ireland 2009-2020* sets out smarter travel initiatives. The NTA has developed a suite of smarter travel initiatives including; Smarter Travel Workplaces, Green Schools Travel, carsharing.ie, Workplace Travel Plans – A Guide for Implementers amongst others. Smarter Travel initiatives are allocated €100m funding under the *Capital Plan Building on Recovery: Infrastructure and Capital Investment 2016-2021.*

Improving the Fleet

Bus Fleet

The NTA is committed to a transition of the bus fleet to low emission vehicles. The current Dublin Bus and Bus Éireann fleet all run on Diesel. All vehicles purchased since 2015 meet, at a minimum, the latest Euro VI standard for emissions, which represents a step change reduction in emissions, especially in terms of Nitrous Oxides (No_x) and Particulate Matter (PM). The NTA is working with the operators and manufacturers to establish which vehicle technologies to reduce GHG emissions might work best in the Irish context and will move to commence procure of low carbon emission fleet in 2018.

Rail Fleet

Rail electrification substantially reduces the use of fossil fuels in public transport. There has been significant progress with the introduction of DART and LUAS, and the Capital Plan 2016-2021 provides for further such public investment in the Greater Dublin Area. The NTA are currently working with Transport Infrastructure Ireland (TII) on the development of plans for new Metro North, and is also working with Iarnród Éireann on the extension of the DART line to Balbriggan, as well as the electrification of the Maynooth Rail line. These are key elements of the NTA *Transport Strategy for the Greater Dublin Area 2016-2035.*

Conclusion

Transformation of the transport sector is vital to enable the transition of Ireland to a low-carbon, climate-resilient and environmentally sustainable economy. This must be achieved notwithstanding the context of a recovering economy with an increasing number of transport trips being generated every year. In order to realise the targets sets for Ireland in relation to climate change a significant step-change in attitudes and behaviours must occur. Both policy makers and the public need to embrace the need to put public transport, walking and cycling to the forefront of our thinking as part of the solution to tackle our reliance on fossil fuels and to reduce our carbon emissions. In order to achieve this aim, significant investment is needed in our public transport infrastructure and services as well as sustainable transport measures to promote walking and cycling as a carbon neutral way to travel. The NTA will continue to work towards promoting mode shift to public transport, walking and cycling and investing in the infrastructure and services necessary to achieve this.

Bibliography

- Central Statistics Office, *"National Travel Survey",* CSO, 2016, Dublin, Ireland
- Department of Communications, Climate Action and Environment, "*National Mitigation Plan",* DCCAE, 2017, Dublin Ireland
- Department of Housing, Planning, Community and Local Government, *"Ireland 2040 – Our Plan – National Planning Framework"* DHPCLG, 2017, Dublin, Ireland
- Department of Public Expenditure and Reform, *"Capital Investment Plan "Building on Recovery: Infrastructure and Capital Investment 2016-2021"* DPER, September 2015, Dublin, Ireland
- Department of Transport, Tourism and Sport, *"National Policy Framework on Alternative Fuels Infrastructure for Transport in Ireland – 2017 to 2030",* DTTAS, May 2017, Dublin, Ireland
- Department of Transport, *"Smarter Travel: A New Transport Policy for Ireland 2009-2020"*, DoT, 2009, Dublin, Ireland
- National Transport Authority, *"Transport Strategy for the Greater Dublin Area 2016-2035"*, NTA, 2015, Dublin, Ireland
- National Transport Authority, "*Canal Cordon Report 2016"*, NTA, 2017, Dublin Ireland