NTA
Údarás Náisiúnta Iompair
National Transport Authority

The future of mobility in a low carbon economy

Making Dublin Climate Brave
February 2020

Emissions targets

Emissions reductions required per annum to meet 2050 target based on 2019 projections (WAM)
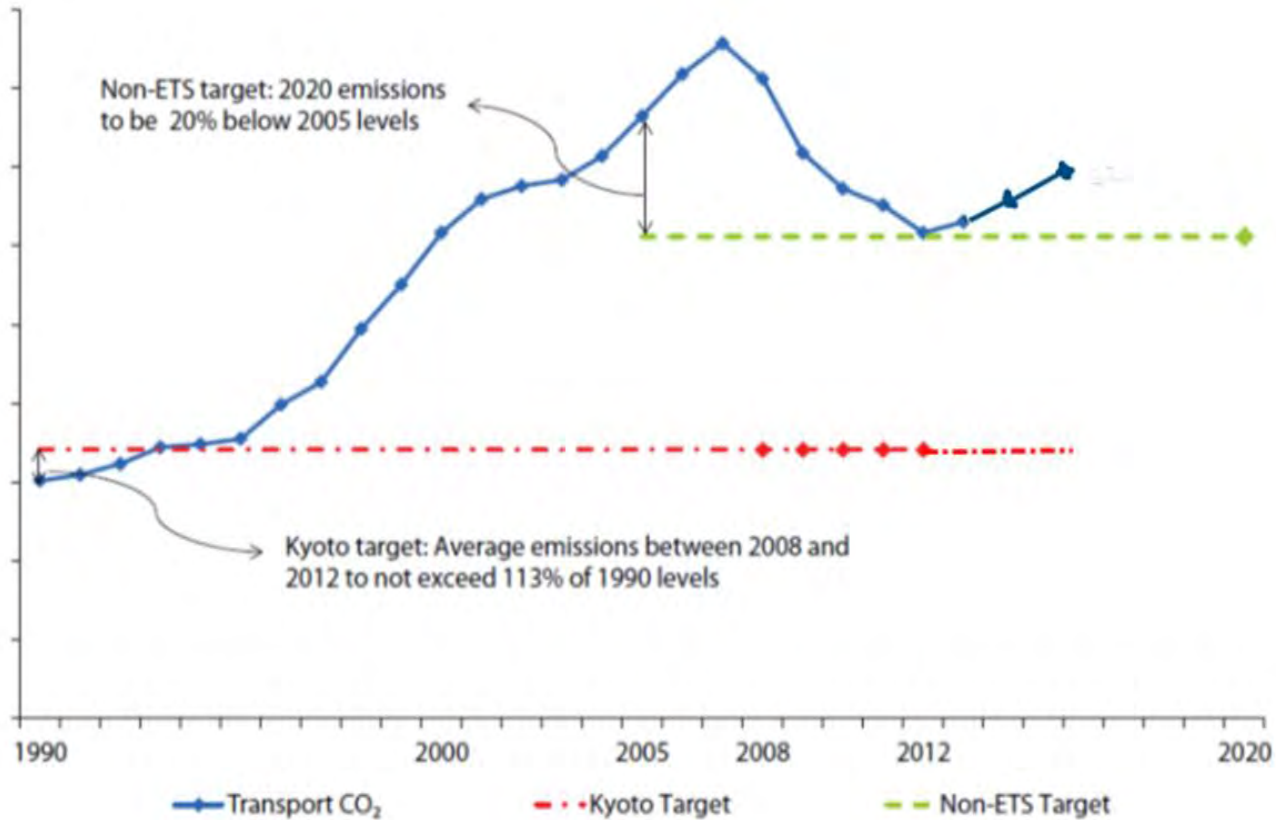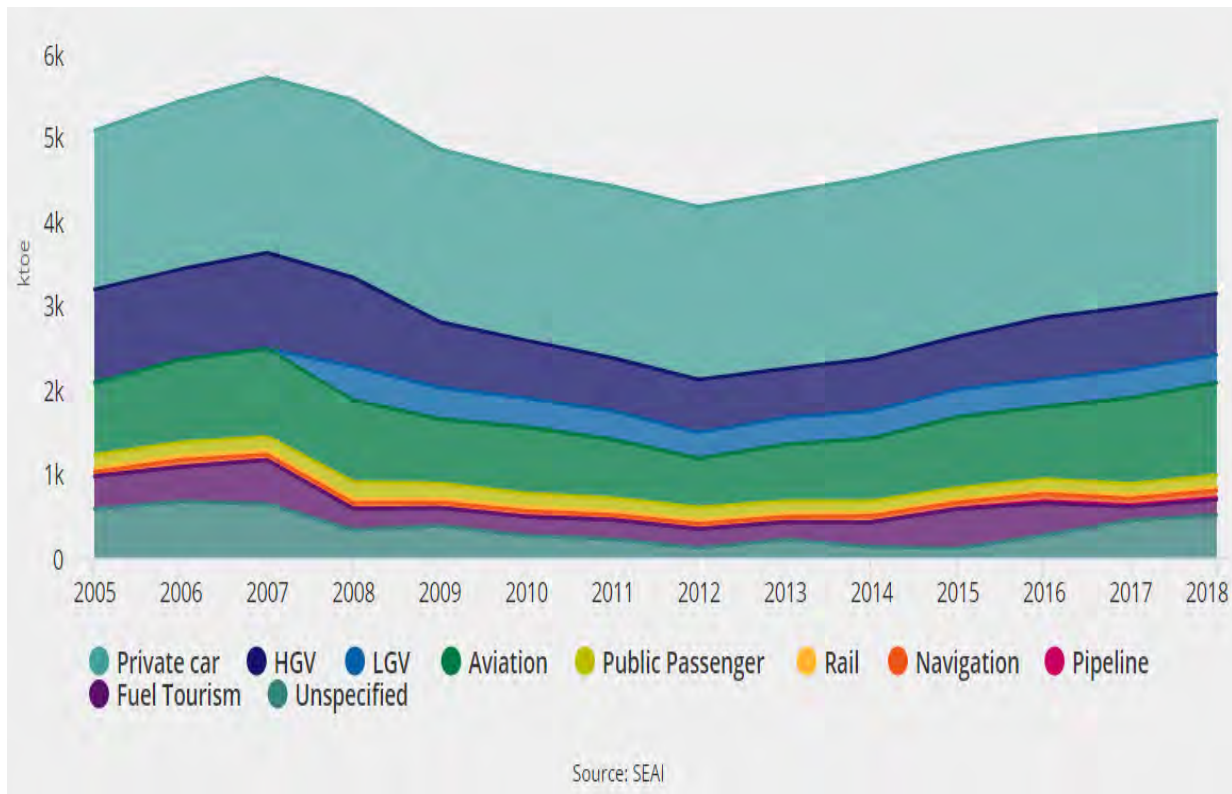
Transport Sector

- The Transport sector is a large consumer of energy and as a result is a significant contributor towards national greenhouse gas (GHG) emissions;

- Transport also represents the sector with the fastest growing greenhouses gas emissions in Ireland; and

- The Transport Sector in Ireland is the largest fuel consumer in the economy (33%), and the sector with the largest share of energy related CO_2 emissions (35%).

Transport Sector

Non-ETS target: 2020 emissions to be 20% below 2005 levels

Kyoto target: Average emissions between 2008 and 2012 to not exceed 113% of 1990 levels

1990   2000   2005   2008   2012   2020

Transport CO$_2$ · · Kyoto Target   – – Non-ETS Target

Transport Sector

Source: SEAI

Reducing carbon emissions in land transport

Addressing emissions

Avoid	Shift	Improve
⬇	⬇	⬇
Reduce or avoid the need to travel	Shift to more environmentally friendly modes	Improve the energy efficiency of vehicle technology
Land-use planning	Public transport, active travel	Vehicle efficiency, clean fuels

Lowering Carbon Emissions in Transport

Reduce demand for travel

- Better integration of land-use & transport planning

Encourage greater use of sustainable modes

- Make existing public transport services more attractive

- Provide new public transport infrastructure
  - Giving higher priority to sustainable modes on existing roads
  - Providing safe segregated walking & cycling routes

- Change attitudes to walking, cycling and public transport usage

Lowering Carbon Emissions

Transition to Low Emission fleet

- Purchase low emission bus fleet for subsidised services

- Electrify rail fleet

- Regulate commercial bus services to use low emission fleet

- Regulate small public service vehicle industry to use low emission fleet

Reduction in Travel Demand

Reducing the Need to Travel

DESTINATIONS FURTHER FROM HOME ✗

BRINGING DESTINATIONS CLOSER TO HOME ✓

Destinations further from home increase car use adding to congestion.

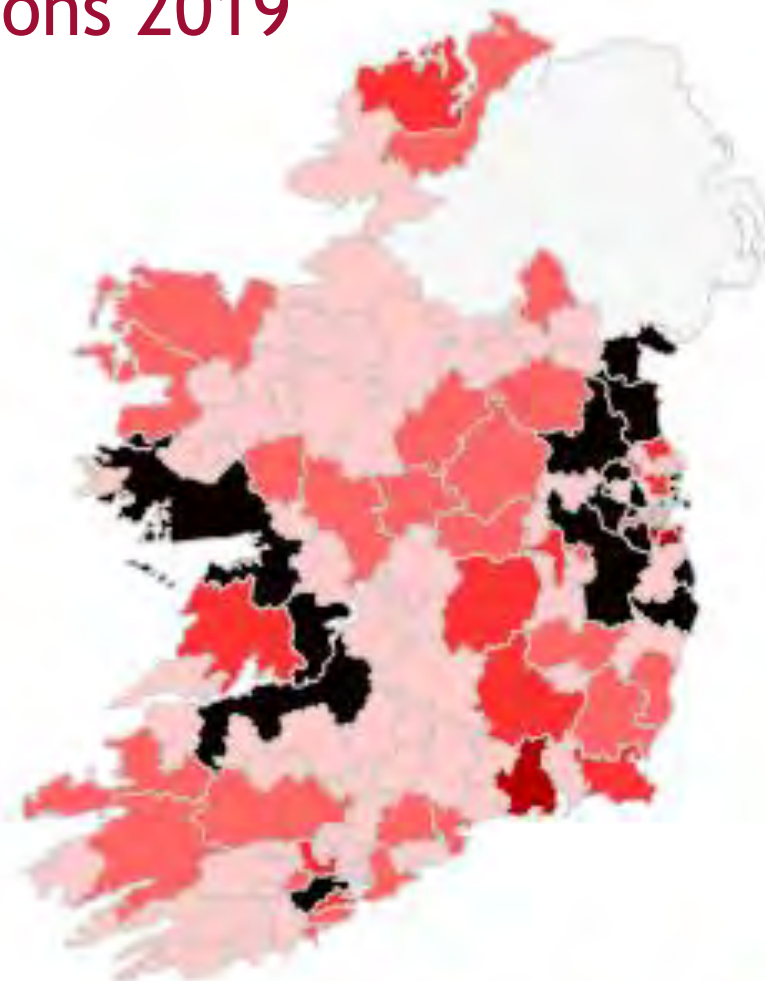Destinations closer to home reduce car use and congestion

Commuters travel times

- The average commute for those at work rose in 2016 to 28.2 minutes, having fallen between 2006 (27.5mins) and 2011 (26.6mins).

- Counties bordering Dublin had the longest average commuting time at 34 – 35 mins

- On average, workers lived within 15 Km of their place of work in 2016, up from 14.7 Km recorded five years previously.

Commuter hell: 'My daily commute is affecting my mental health'

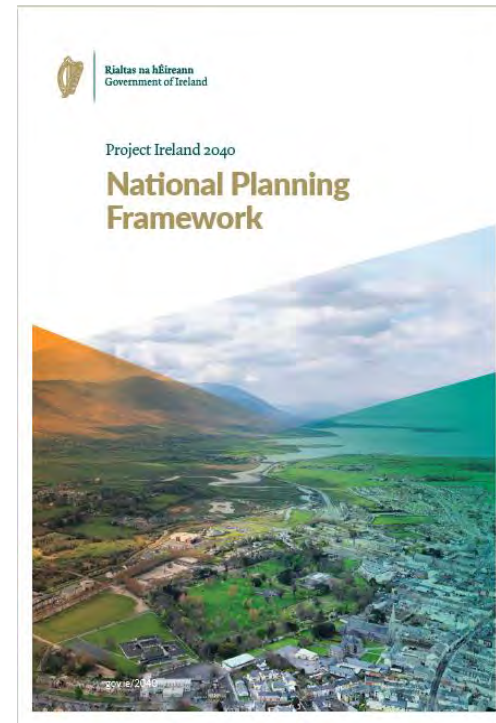Commuter-belt living is fruitful for some, but the majority are dismayed by transport links
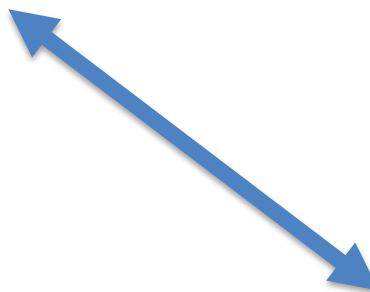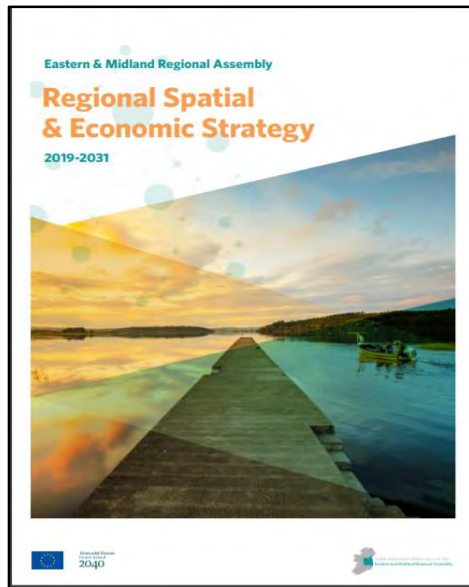
New Dwelling Completions 2019

Source: CSO

+	< 99	100 – 199	200 – 299	300 – 399
–	> 400			

Key National Strategies

Key National Strategies

Key Plans & Strategies

Eastern & Midland Regional Assembly
Regional Spatial & Economic Strategy
2019-2031

Transport Strategy for the Greater Dublin Area 2016 - 2035

City & County Development Plans

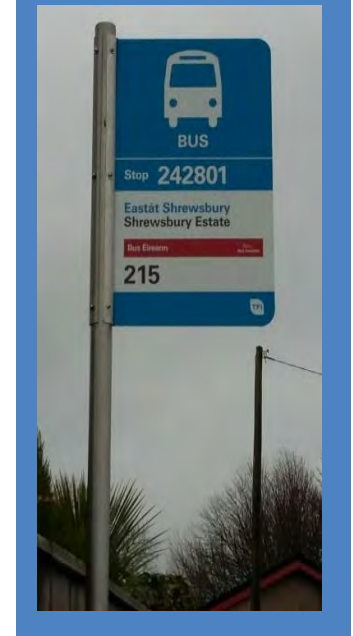# Making public transport services more attractive

Technology and integration

- National intermodal online journey planner and app has been completed

- Real Time Passenger Information signs & app available at www.transportforireland.ie
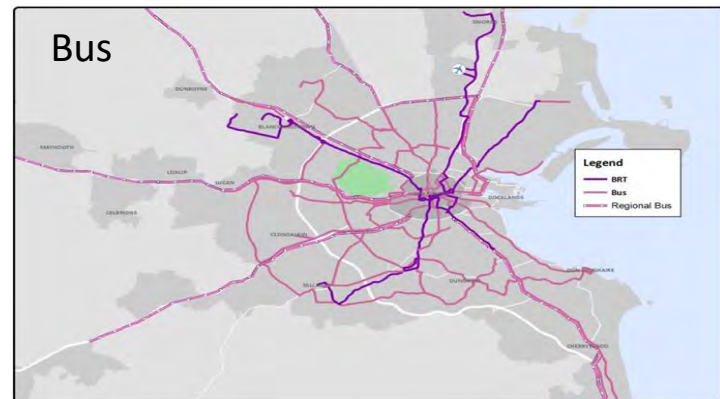
- Integrated ticketing via our Leap card
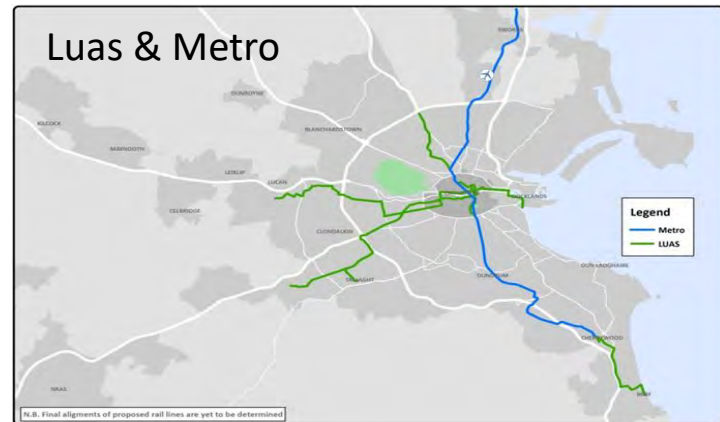
Public transport improvements

- Additional services
  - 24 hour services
  - Weekend services

- Improved reliability & punctuality

- Improved information at stops

- Integrated customer information

Provide new public transport infrastructure

GDA Transport Strategy

Park & Ride

Luas & Metro

Rail

Bus

Other Measures in Strategy

- GDA Cycle Network

- Park and Ride

- Demand Management
  - ✓ parking standards
  - ✓ parking charges
  - ✓ congestion charging
  - ✓ road pricing

Planned Outcomes

Mode Share 2011 — 336,000 AM Trips: Car 62%, Bus 22%, Walk 10%, Cycle 6%

Mode Share 2035 Without Strategy — 465,000 AM Trips: Car 56%, Bus 26%, Walk 11%, Cycle 7%

Mode Share 2035 With Strategy — 467,000 AM Trips: Car 45%, Bus 35%, Walk 10%, Cycle 10%

Commuting Growth 2011–2035 = 39% More Trips

National Development Plan 2018 - 2027

Key Projects

- BusConnects €2.4bn

- DART Expansion €2bn

- Metrolink €3bn

- Cycling Infrastructure

Public Transport Network 2027

Legend:
- Core Bus Network
- Dart Network
- Non-DART Rail Network
- Luas Network
- Proposed Luas extensions
- Metro

Labels on map:

M3, M2, M1

Swords

Malahide

Dublin Airport

M50

Balgriffin

Santry

Donaghmede

Ballymun

Beaumont

Cooltock

Finglas

Glasnevin

Artane

Raheny

Howth

Luas to Finglas

Donnycarney

Clontarf

Dunboyne

Blanchardstown

Ongar

Castleknock

Broombridge

Cabra

Drumcondra

Leixlip

Phoenix Park

Docklands

M4

Lucan

Liffey Valley

Ringsend

Luas to Lucan

Ballyfermot

Luas to Poolbeg

Celbridge

Adamstown

Clondalkin

Crumlin

Kimmage

Ranelagh

Donnybrook

Booterstown

Greenhills

Rathgar

Blackrock

Terenure

Clonskeagh

Dun Laoghaire

M7

Tallaght

Rathfarnham

Dundrum

Mount Merrion

Saggart

Jobstown

M50

Sandyford

Dalkey

Foxrock

Killiney

M7

Naas

Stepaside

Cherrywood

Luas to Bray

M11

Bray

5KM

BusConnects

BUS CONNECTS

TRANSFORMING CITY BUS SERVICES

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Core Bus Corridors providing continuous bus priority

Redesign of Network of Bus Services

State-of-the-art Ticketing System

Simpler Fare Structure

Cashless Payment System

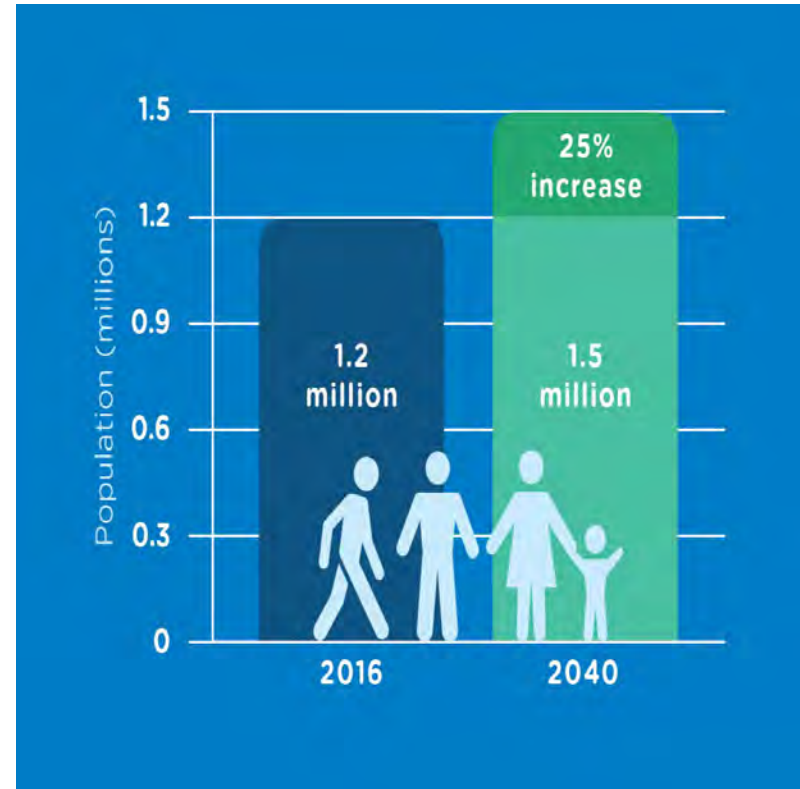Park & Ride facilities

New Bus Livery

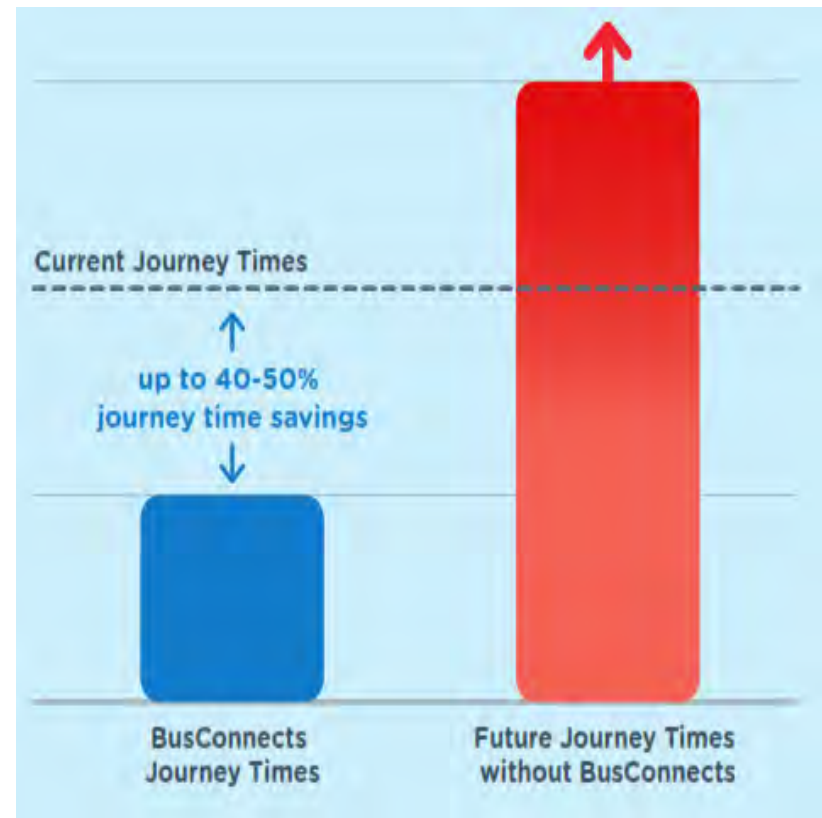New Bus Stops + Shelters

Use of Low Emission Vehicles

BusConnects – Why we need it?

- Address congestion

- Enable population growth

- Allow economic growth

- Reduce emissions

The Benefits it will bring:
For bus users

➢ **Time Savings:** Bus journey time savings of up to 40-50%

➢ **Reliability:** Reliable and punctual bus services

➢ **Capacity**: Increased capacity to carry a 50% uplift on current 140 million passengers per year. Faster journey times means the same bus fleet can operate more services.

Current Journey Times

up to 40-50% journey time savings

BusConnects Journey Times

Future Journey Times without BusConnects

➢ **Cycling:** BusConnects is the single biggest cycling infrastructure plan in the history of the state – 200kms of cycle tracks/lanes will be provided.

➢ **Greater Dublin Area Cycle Network Plan:** Delivery of the BusConnects corridors will provide the foundation of the overall Greater Dublin Area cycle network plan.

➢ **Improved urban environment:** More road space made available for walking, cycling & sustainable public transport

200kms of cycle track/lanes to be provided

MetroLink Project

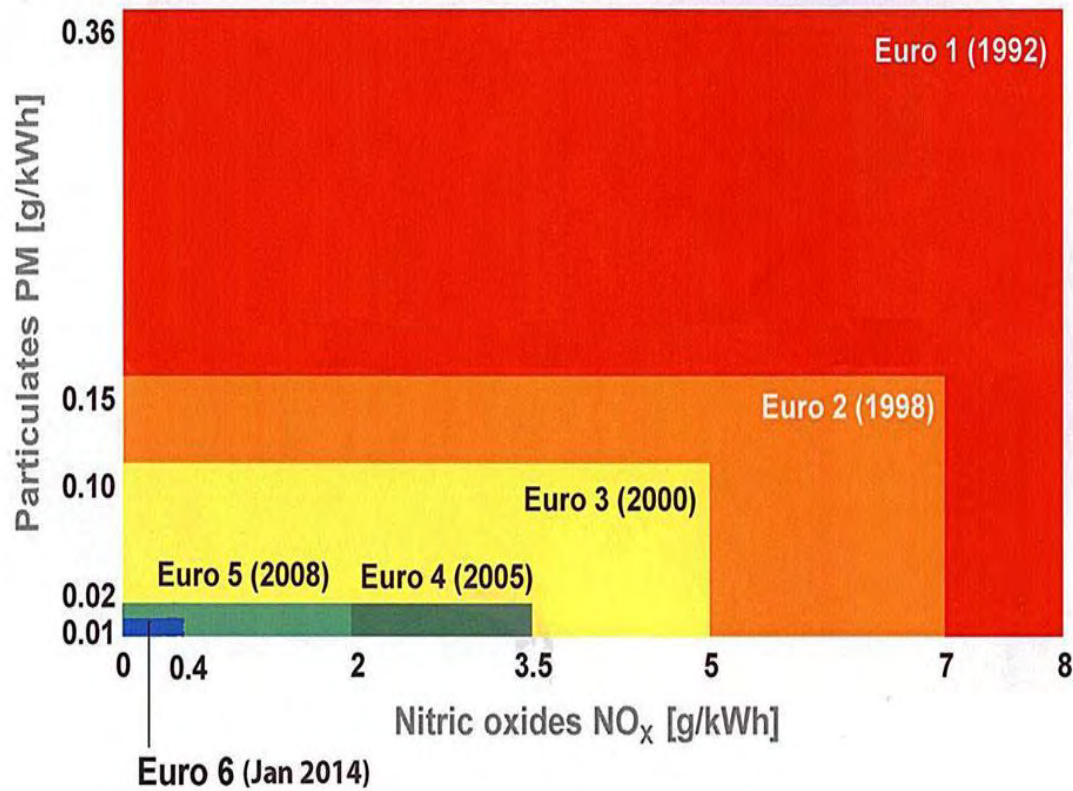# Transitioning public transport fleet

Rail Fleet

- Currently DART and Luas services are only fully electric rail services

- DART Expansion programme is a key project in GDA Transport Strategy

- Funding in current capital plan of €2bn

- New fleet required to meet growing demand

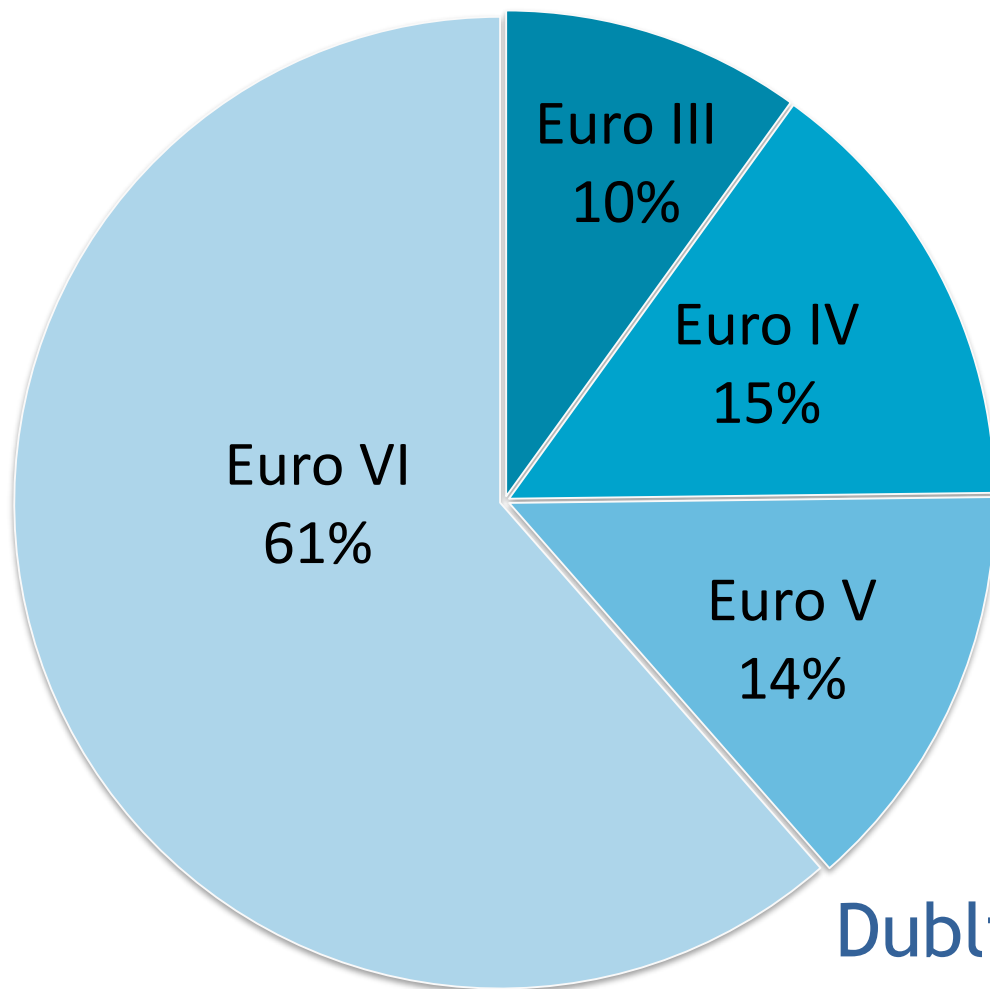- Electrify the lines to Drogheda, Maynooth, and Sallins

Current Bus Fleet

- All of the current fleet run on Diesel;

- All vehicles purchased since 2015 meet at a minimum the latest Euro VI standard for emissions;

- As most of vehicles being replaced date back to the early "Noughties" the reduction in emissions especially in terms of Nitrous Oxides (Nox) and Particulate Matter (PM) is very significant.

EU Exhaust Emissions Standards: Buses/Coaches

Euro III 10%

Euro IV 15%

Euro VI 61%

Euro V 14%

Dublin Metropolitan Area Urban Public Bus Fleet
(2019)

Urban Bus Fleet Strategy

BusConnects

- Half of the urban public bus fleet in Dublin of approx 500 buses, will be converted to low emission vehicles (LEVs) by 2023.

- Full conversion of the DMA's urban public bus fleet to LEVs will be completed by 2030.

"Transition to low emission buses, including electric buses, for the urban public bus fleet, with no diesel-only buses purchased from July 2019 [...]"

(Source: NDP 2018-2027)

Urban Buses:
Main Technologies

Series Hybrid
powered by
batteries and/or ultracaps
charged via braking & diesel engine

Battery-Electric
powered by batteries
charged via braking &
plug-in charger and/or pantograph

Electric
powered by overhead wires
via trolleypole

Parallel Hybrid
powered by diesel engine **OR**
batteries and/or ultracaps
charged via braking

(Bio-)Gas
powered by
compressed natural gas engine

H_2-Electric
powered by
batteries and/or ultracaps
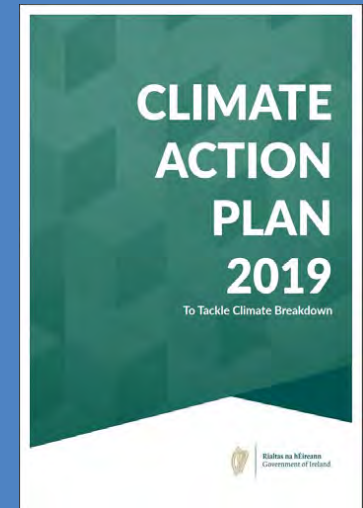charged via braking & H_2 fuel cell
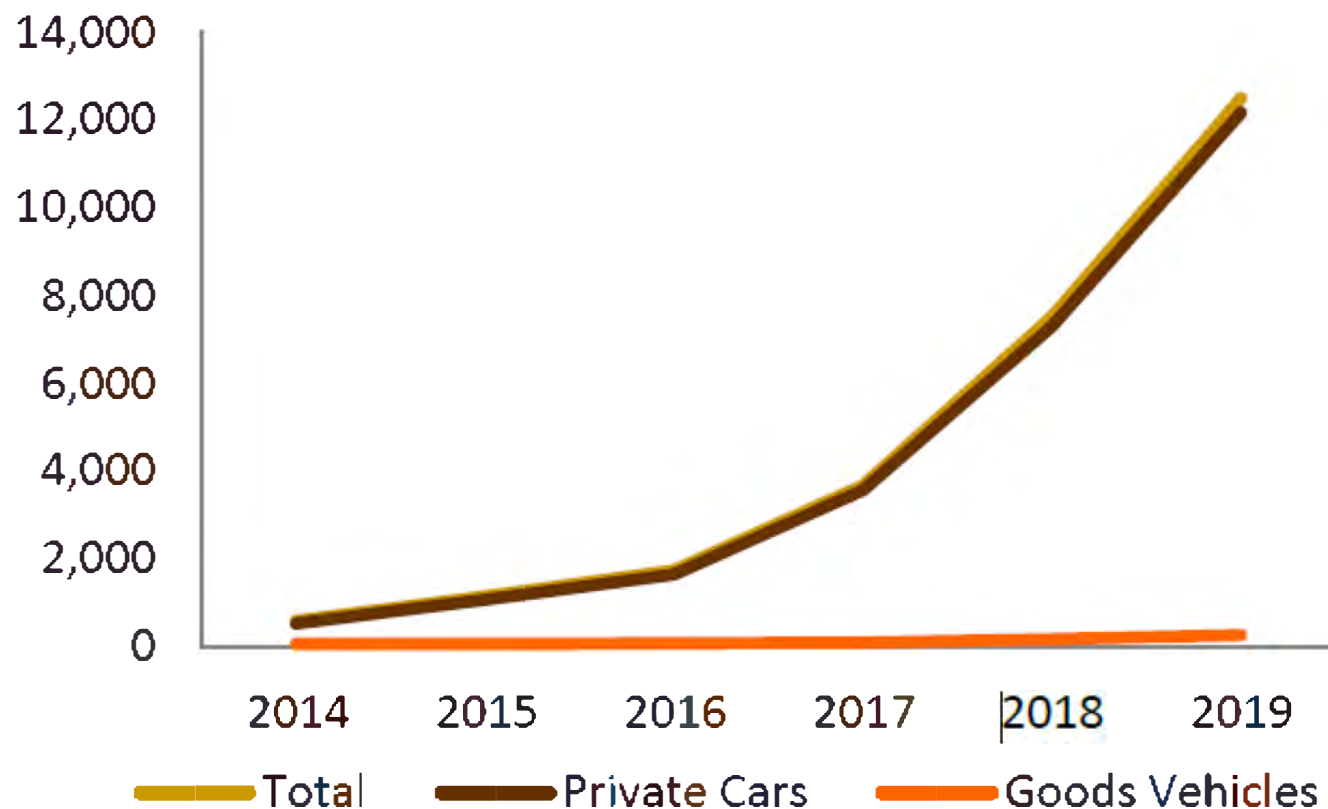
Transitioning car transport fleet

Key National Plan

Support growth of EVs to 800,000 by 2030

Support the introduction of up to 200 on-street vehicle charging points

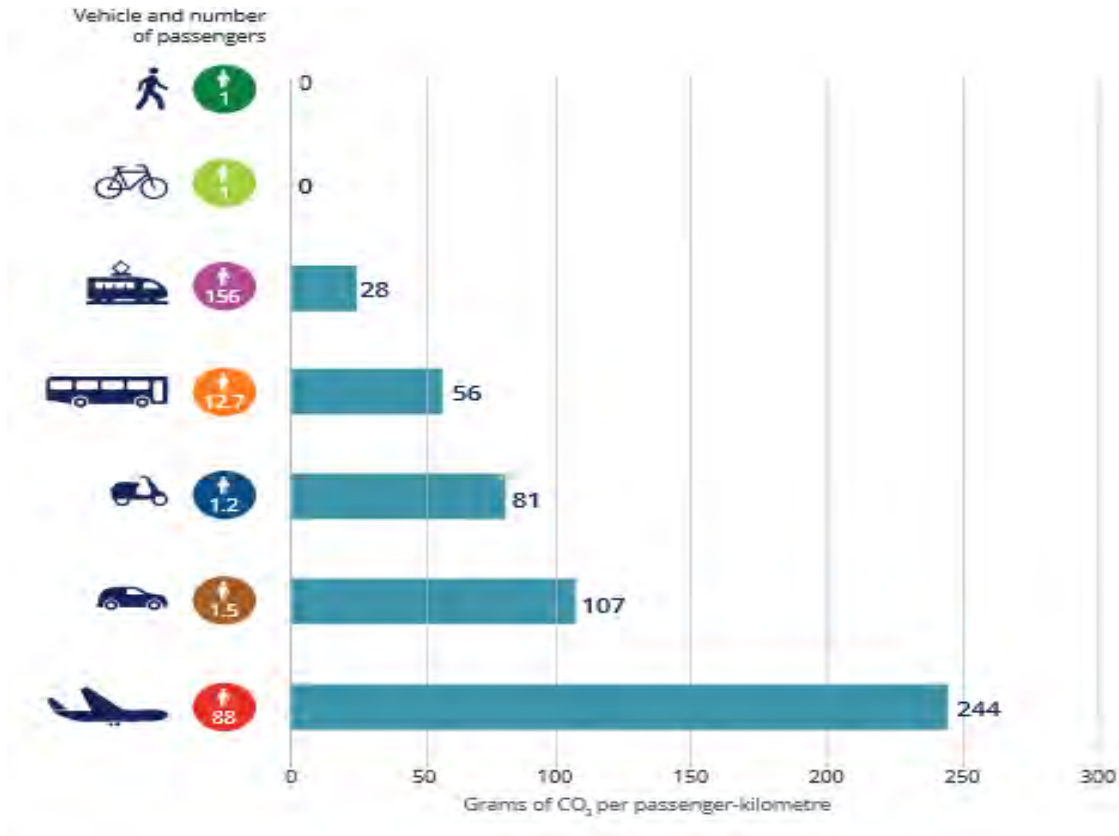EVs Under Current License, 2014 -2019

Note: 2019 to July only

Source: DTTAS

Other interventions

Future low carbon mobility in cities

- Fueled by electricity or hydrogen

- Vehicles driving at lower speeds

- Electric scooters (if regulated)

- Low Emission Zones

- Travel restrictions on vehicles based on age and/or engine size

Carbon Emissions from passenger transport

Vehicle and number of passengers

Vehicle	Passengers	Grams of CO_2 per passenger-kilometre
Walking	1	0
Bicycle	1	0
Tram	156	28
Bus	12.7	56
Motorcycle	1.2	81
Car	1.5	107
Airplane	88	244

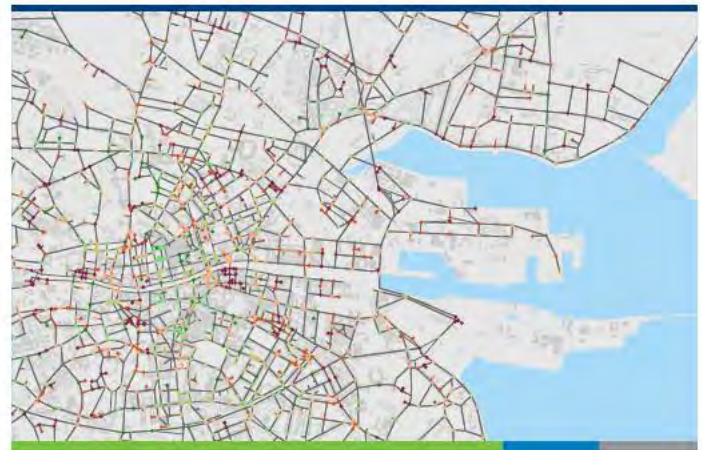Grams of CO_2 per passenger-kilometre

Shared Mobility

Study showed that today's mobility in GDA could be delivered with 2% of current private vehicles

Keep rail systems & use shared mobility would reduce carbon emissions by 38%

International Transport Forum

Shared Mobility Simulations for Dublin

Case-Specific Policy Analysis

OECD

Conclusion

Future Mobility Could Be

- Short journeys to work & education & shops & services

- A significant majority of those journeys are by walking, cycling (e-scooters even) or public transport

- All transport both public & private will be low carbon as a minimum and no carbon where feasible

- Where cars must be used they should be shared and using electric fleet

Let's be Climate Brave in transport