

# Developing Climate and Air Quality Policy in Transport



## Transport Planning Society

Laura Behan

Climate Change Unit

Department of Transport, Tourism and Sport



**An Roinn Iompair  
Turasoireachta agus Spóirt**  
Department of Transport,  
Tourism and Sport

# Overview

- Snapshot of Irish Transport
- Climate and air quality emissions, Ireland and EU
- Making policy choices

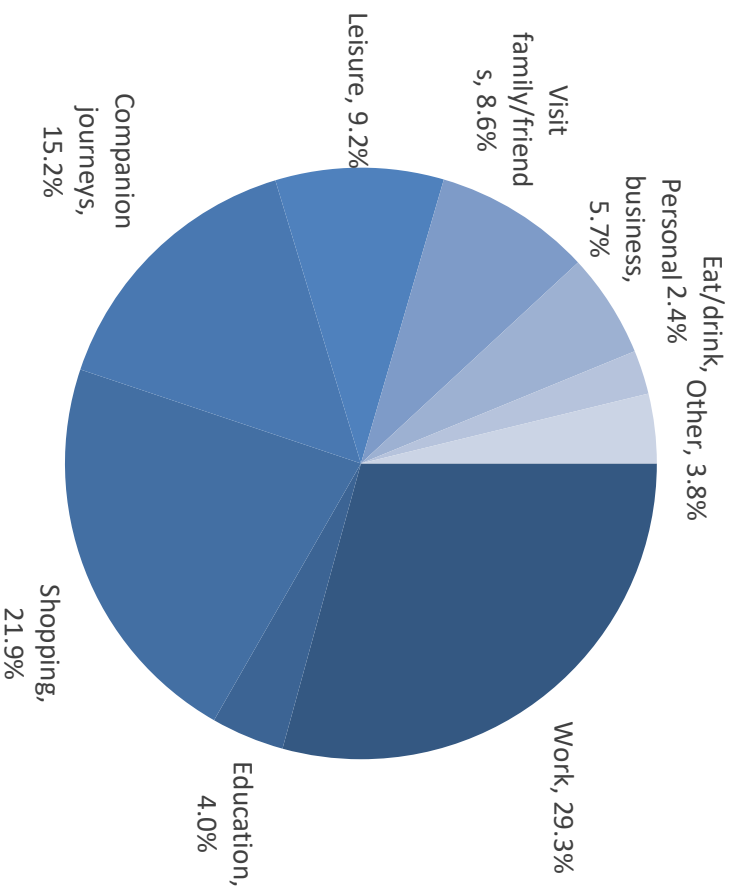




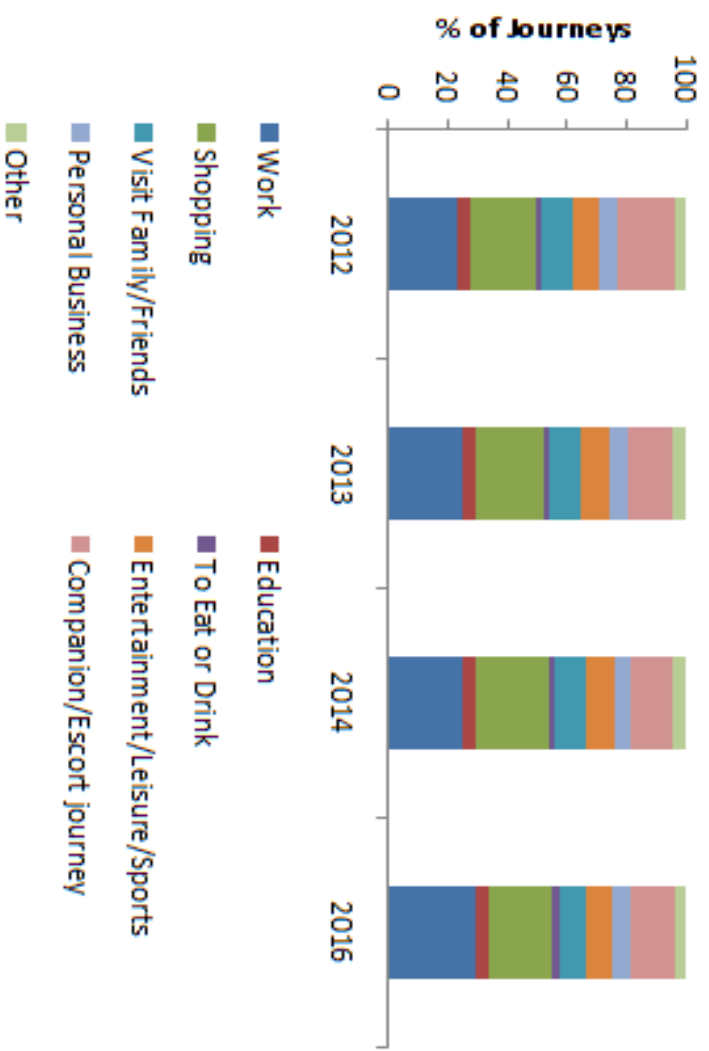
# Transport in Ireland

# Why people travel – journey purpose

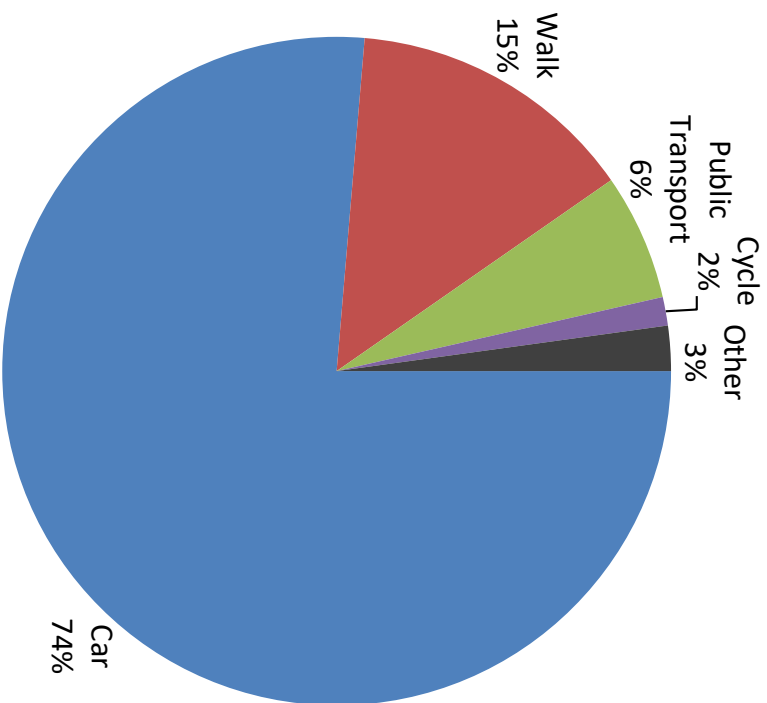
Breakdown of adult daily journeys by purpose, 2016



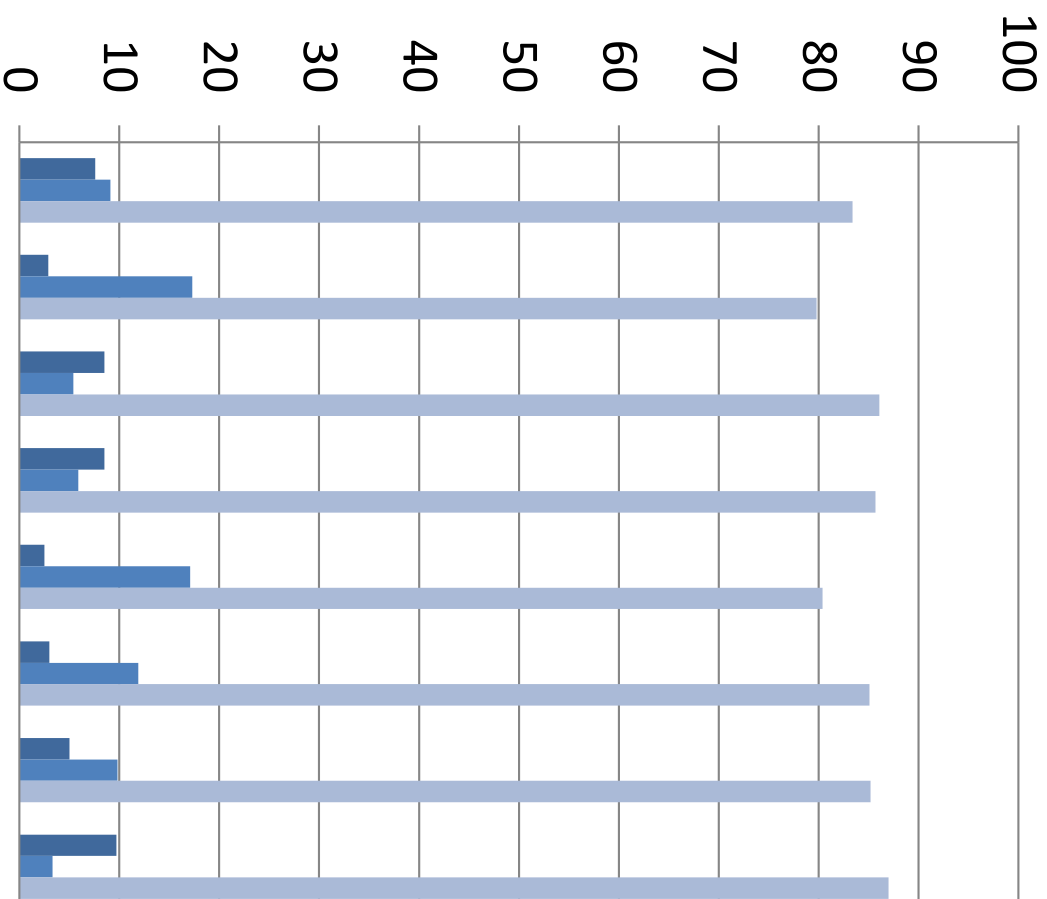
Source: CSO National Travel Survey 2016



# How we travel



Source: National Travel Survey



Source: Eurostat





## Emissions and Targets

## GHGs and Air Pollutants

# National GHG Emissions Targets

2020 – 20% below 2005

## ✓ EU Effort Sharing Decision

- for Ireland 20% reduction in non-Emissions Trading Scheme sector by 2020

2030 negotiations

- ✓ EU Paris commitment - non-ETS emissions to be cut by 30% on 2005 levels - Ireland's target will also be 30% (headline)

2050 goal

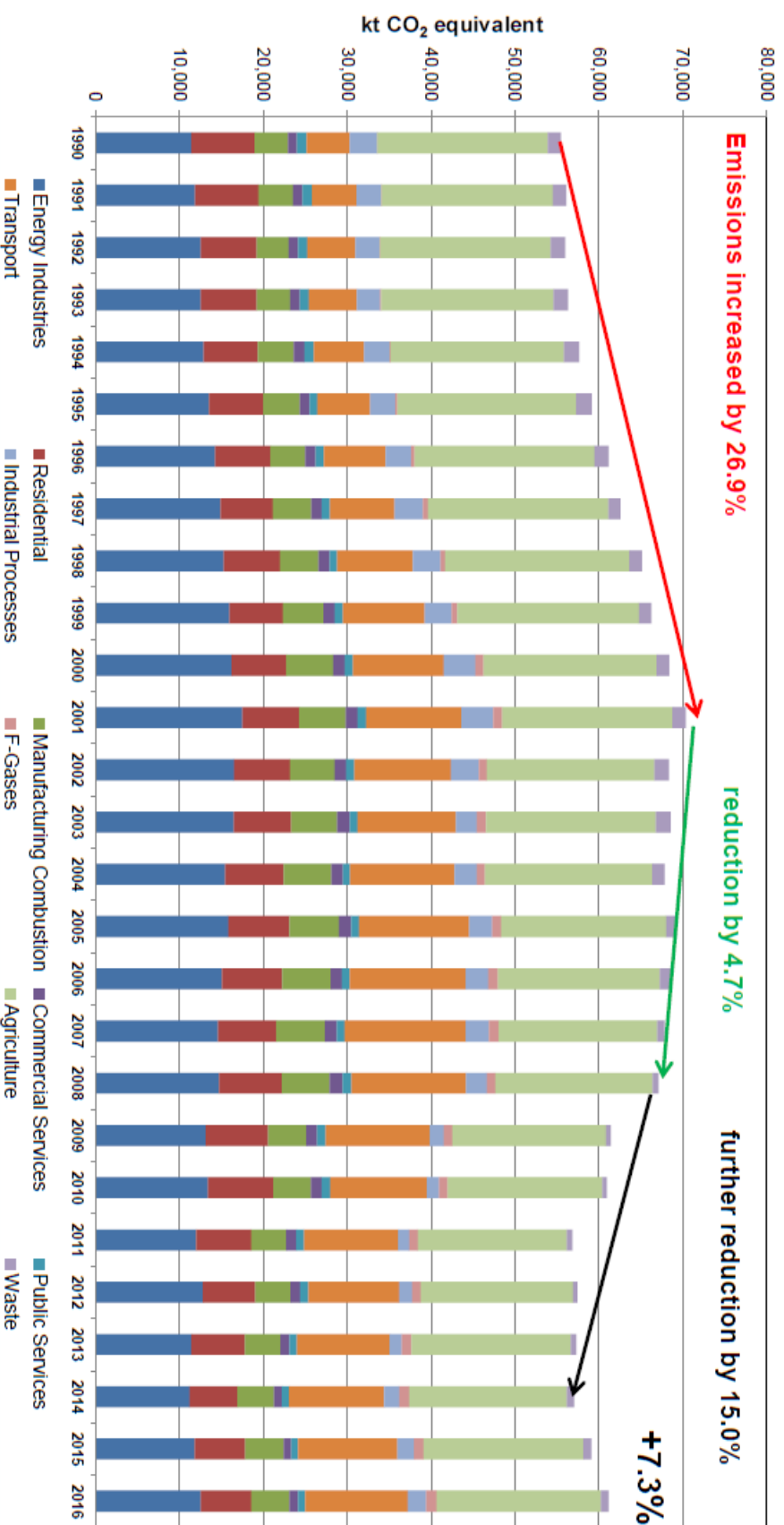
- ✓ Long-term goal of reducing greenhouse gas emissions by 80-95% (compared to 1990 levels) requiring an aggregate reduction in carbon dioxide (CO<sub>2</sub>) emissions of **at least 80%** across electricity generation, built environment and transport sectors



# National GHG Emissions Trends



## GHG emissions 1990-2016

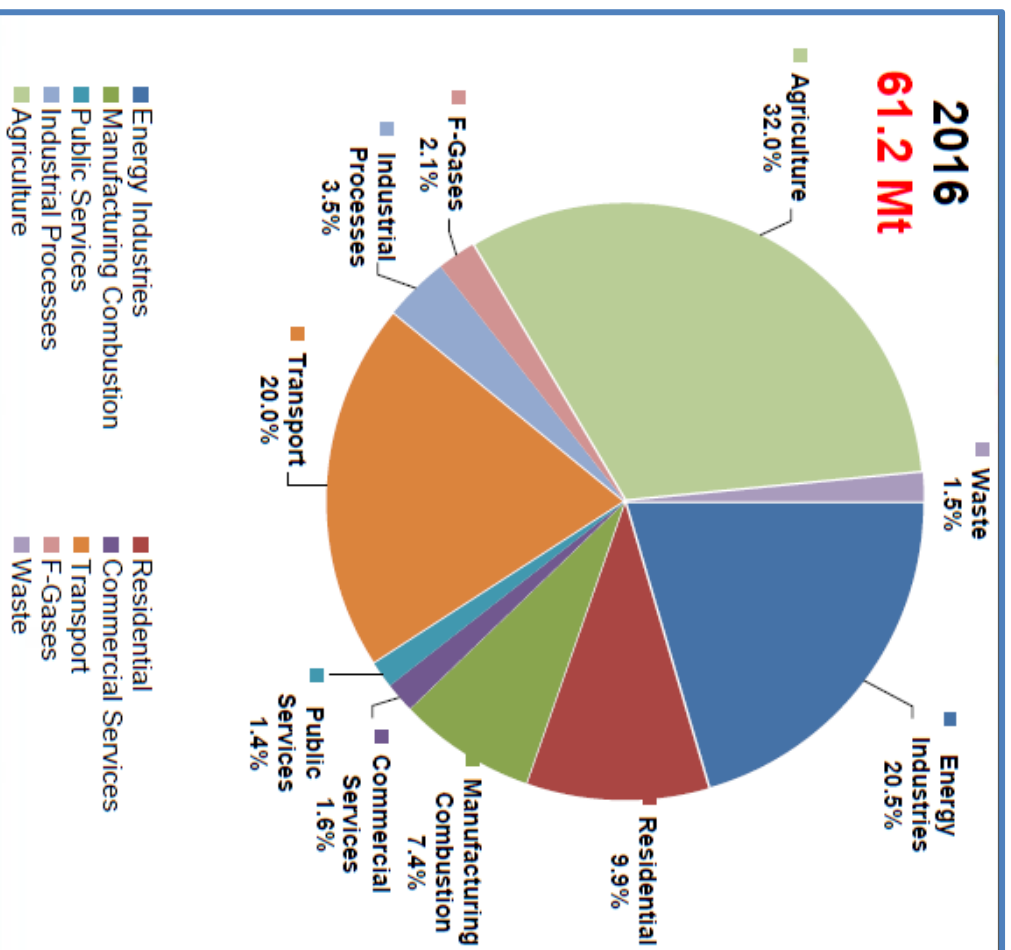


Overall emissions in 2016 are 10.4% above 1990 levels

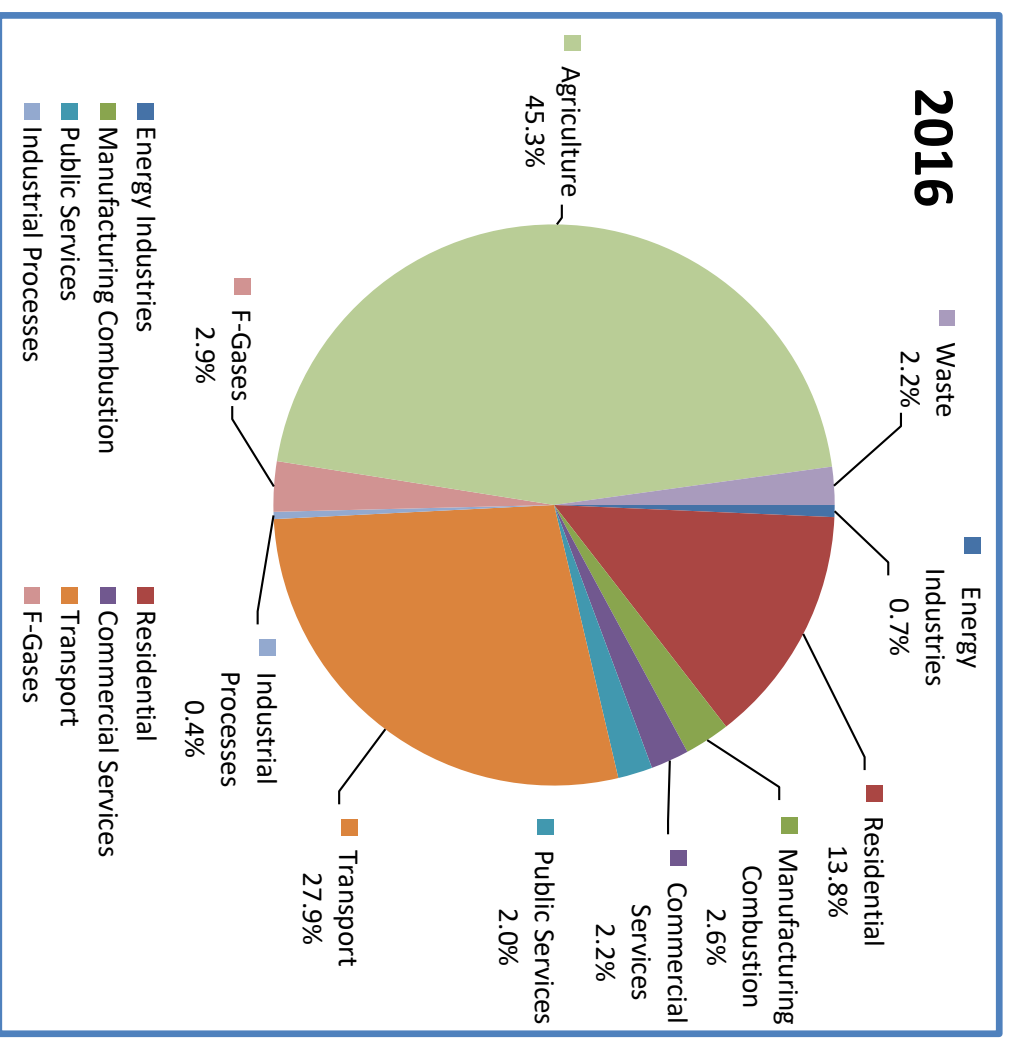


# National GHG Emissions Profile

## Total GHG Emissions

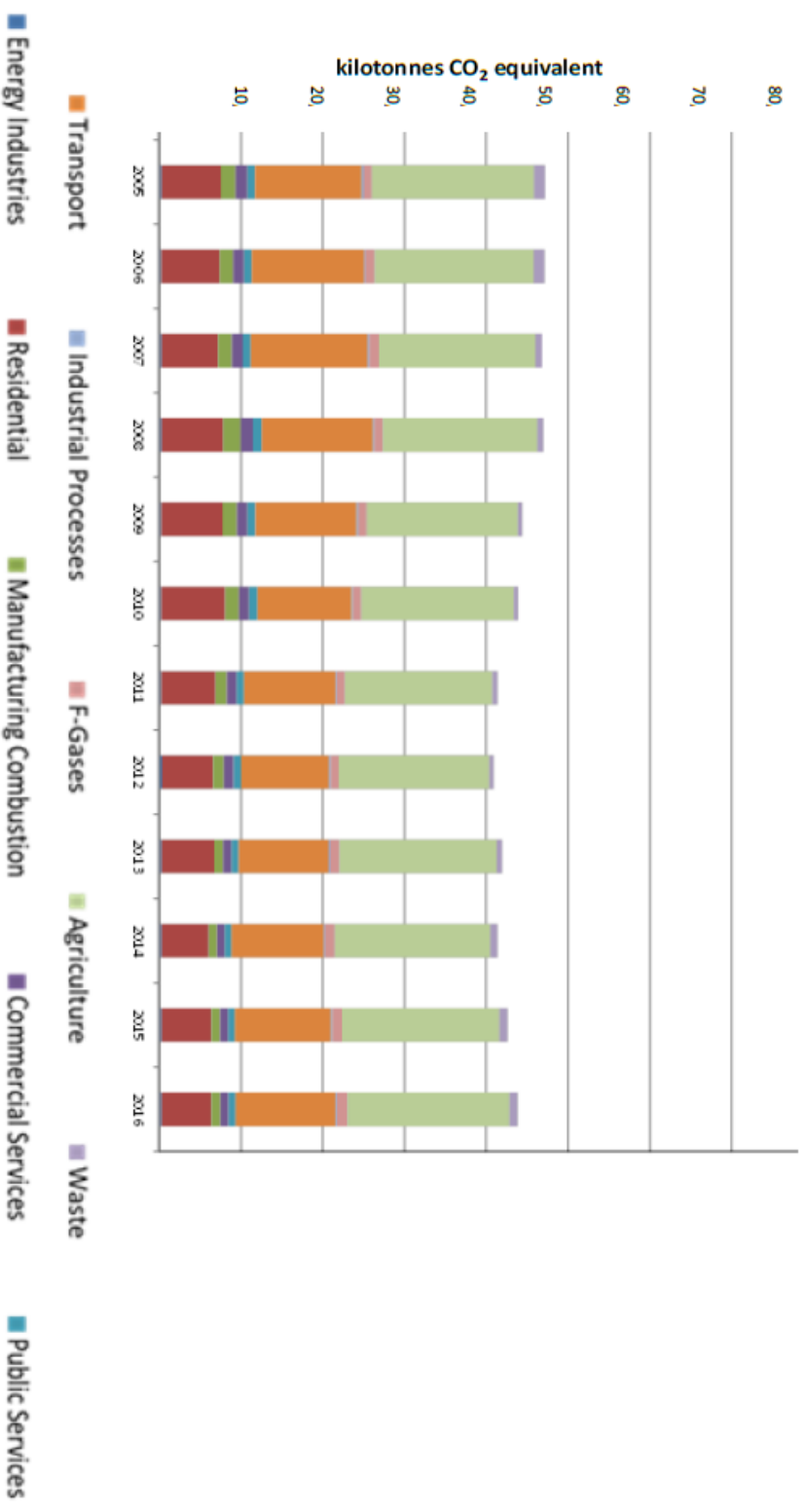


## Non-ETS Emissions



# National GHG Emissions Profile

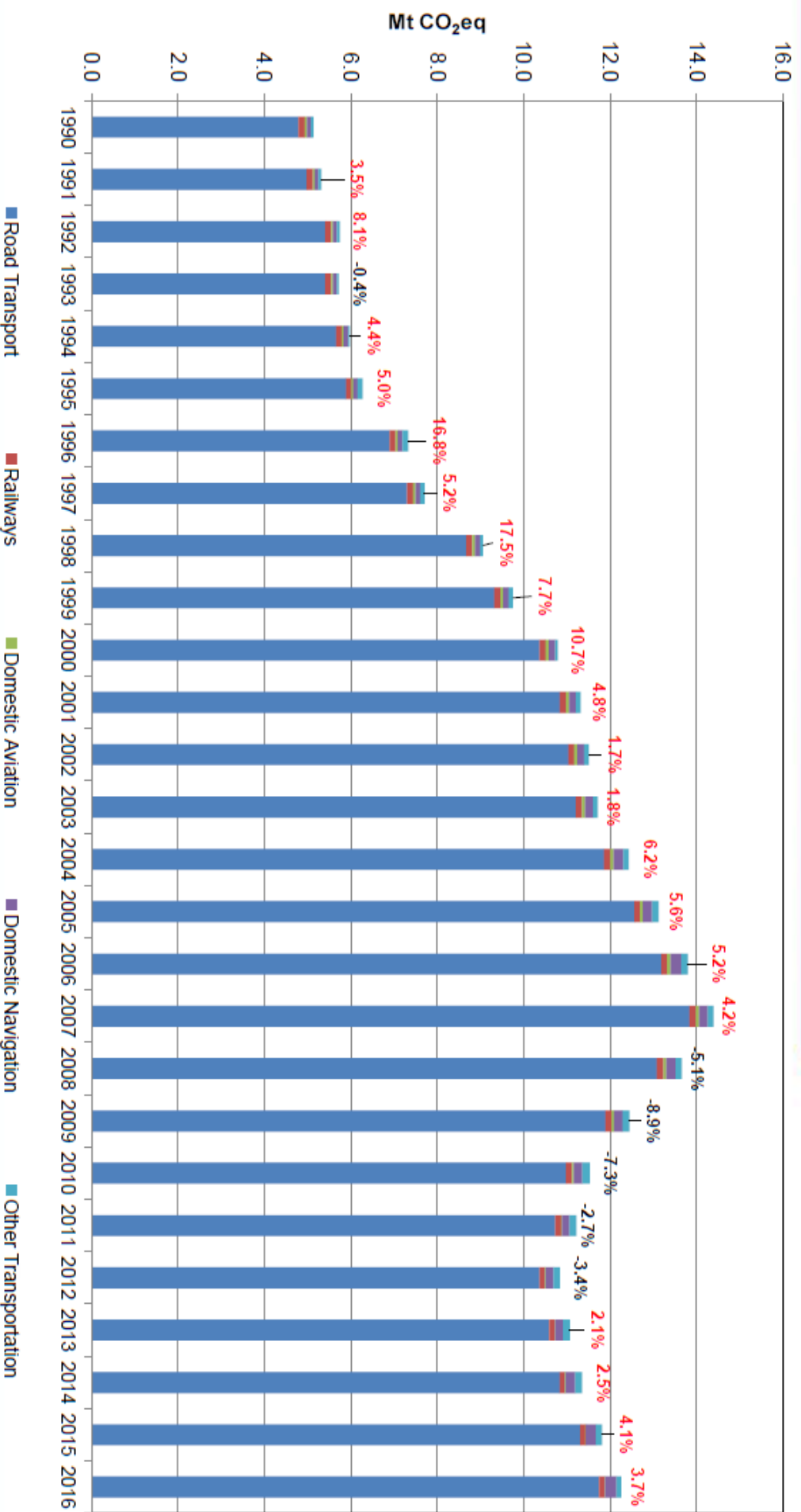
## Non-ETS Emissions 2005 - 2016



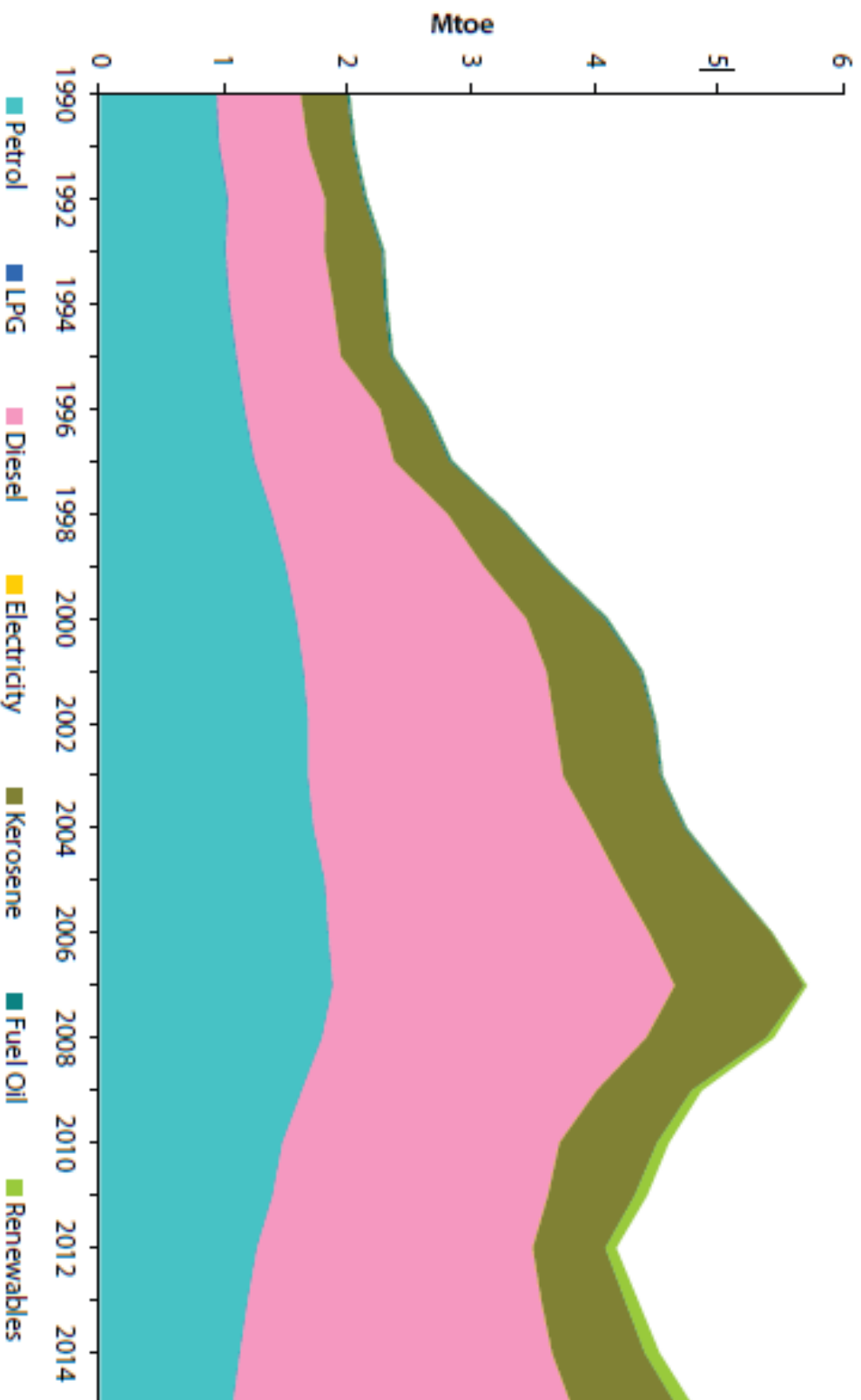
# Transport GHG Emissions



## Transport GHG emissions 1990-2016

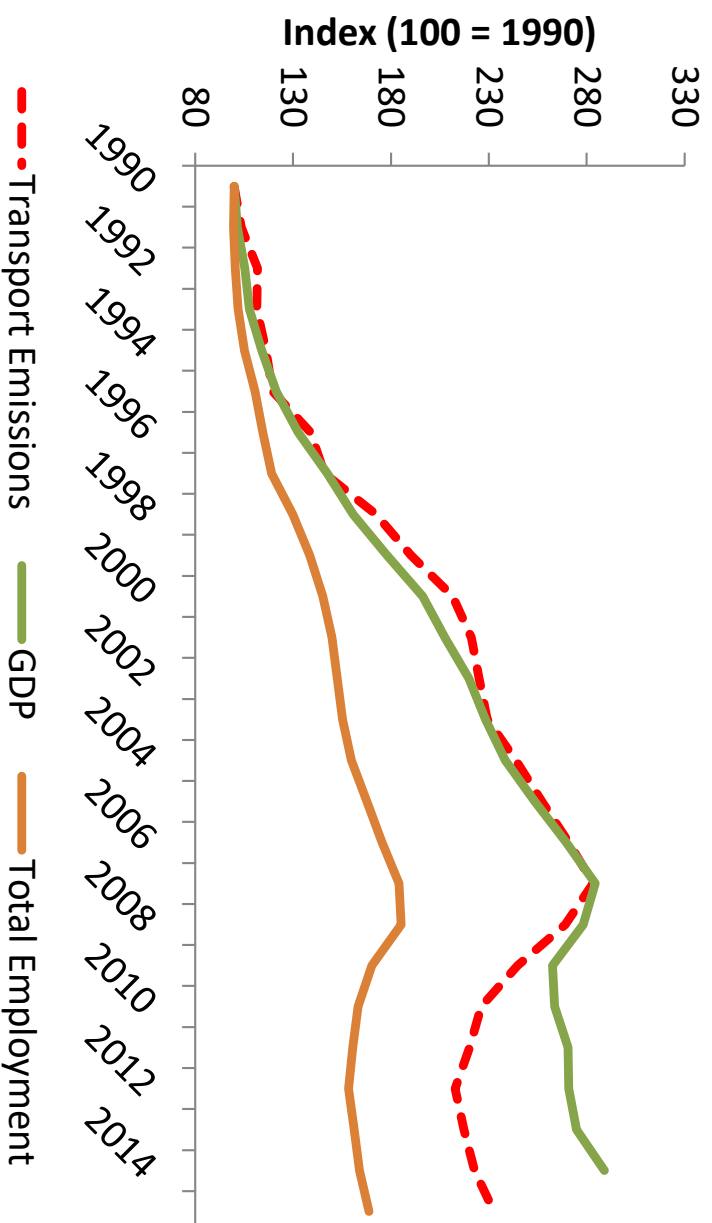


# Transport Energy Use by Fuel

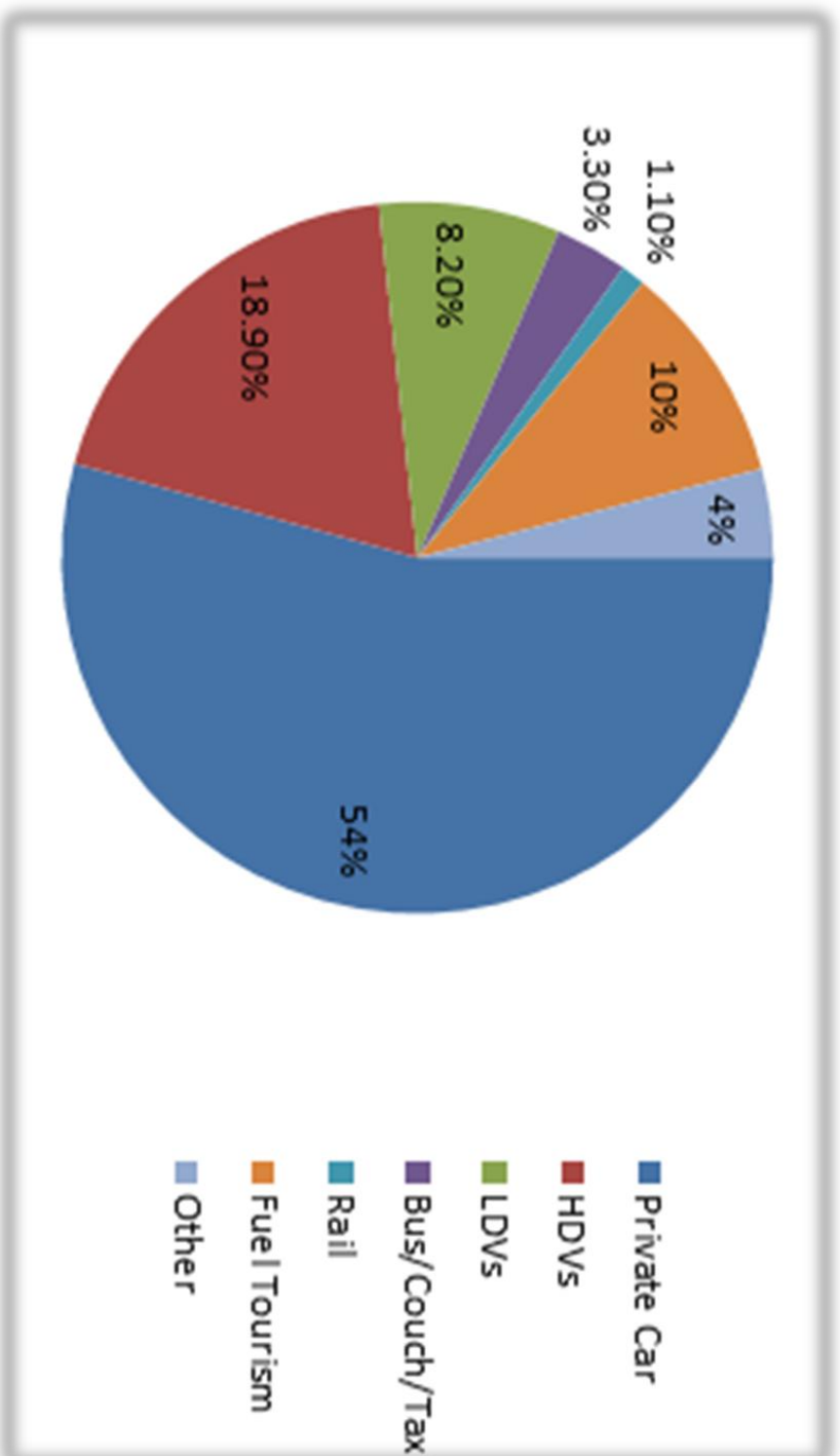


# GHG Emission Drivers 1990 - 2015

## Economy and Transport Indicators, Ireland 1990-2015



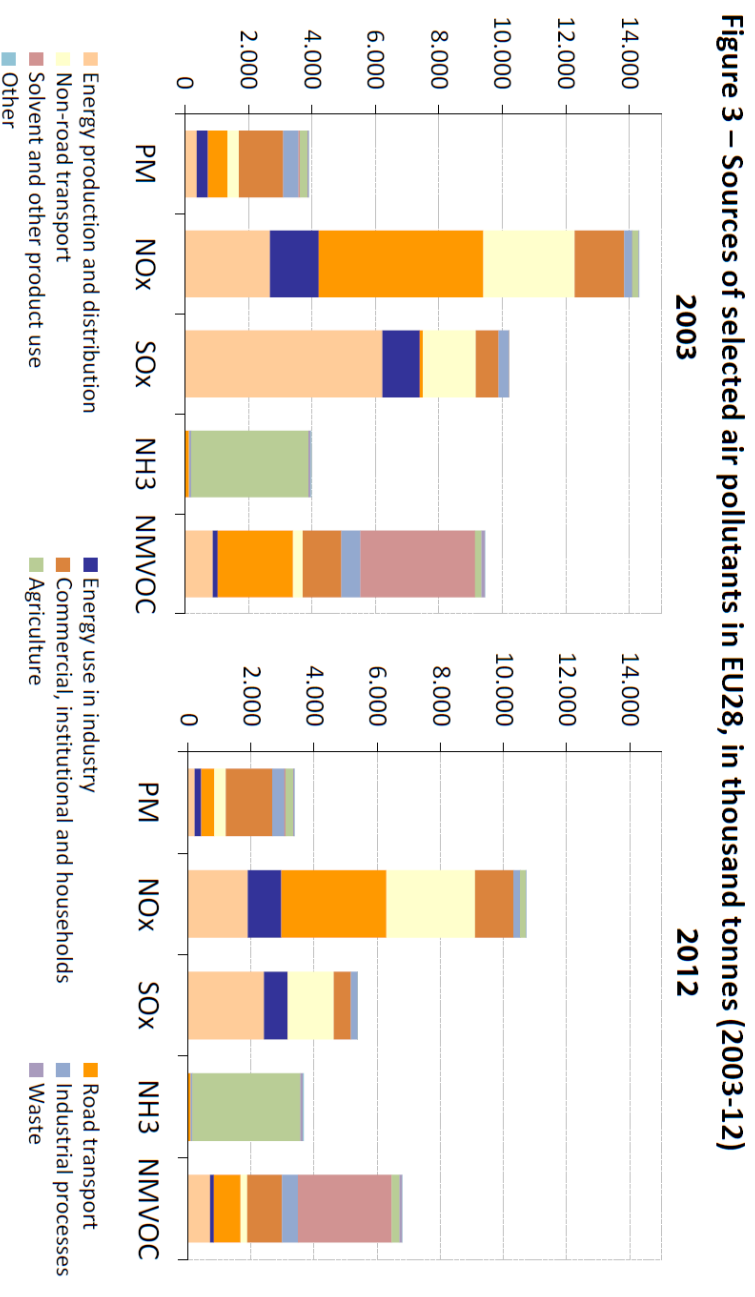
# Irish Transport GHG Emissions Profile



Transport CO<sub>2</sub> emissions % by mode 2016 (SEAI)



# Types and sources of air pollution



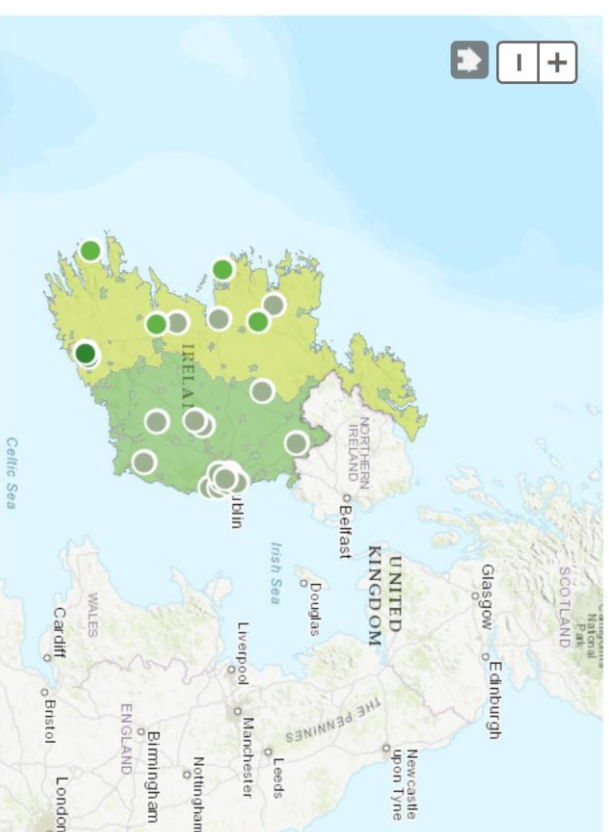
# The Air Quality Index and Ireland

## *EPA Air Quality Index for Health (AQIH)*

1- 10 indicating air quality currently in your region and whether or not this might affect the health of you or your child. The AQIH is calculated every hour.

<http://www.epa.ie/air/quality/index/>













Color Code	AQI Value	Actions to Protect Your Health
Green	Good (0-50)	None.
Yellow	Moderate (51-100)	Unusually sensitive people should reduce prolonged or heavy exertion outdoors.
Orange	Unhealthy for Sensitive Groups (101-150)	Sensitive groups should reduce prolonged or heavy exertion outdoors: People with heart and lung disease Children and older adults People that are active outdoors
Red	Unhealthy (151-200)	Sensitive groups should avoid prolonged or heavy exertion outdoors. Everyone should reduce prolonged or heavy exertion outdoors.
Purple	Very Unhealthy (201-300)	Sensitive groups should avoid all physical activity outdoors. Everyone should avoid prolonged or heavy exertion outdoors.





# EU Emissions Ceilings v WHO

EU urban population exposed to harmful levels of air pollutant concentrations in 2012–2014, according to:

	EU limits/target values	WHO guidelines
$PM_{2.5}$	8–12 % 	85–91 % 
$PM_{10}$	16–21 % 	50–63 % 
$O_3$	8–17 % 	96–98 % 
$NO_2$	7–9 % 	7–9 % 
BaP	20–24 % 	88–91 % 
$SO_2$	< 1 % 	35–49 % 

# In fact the issue is more local...

## All schools over the limit

## State nurseries



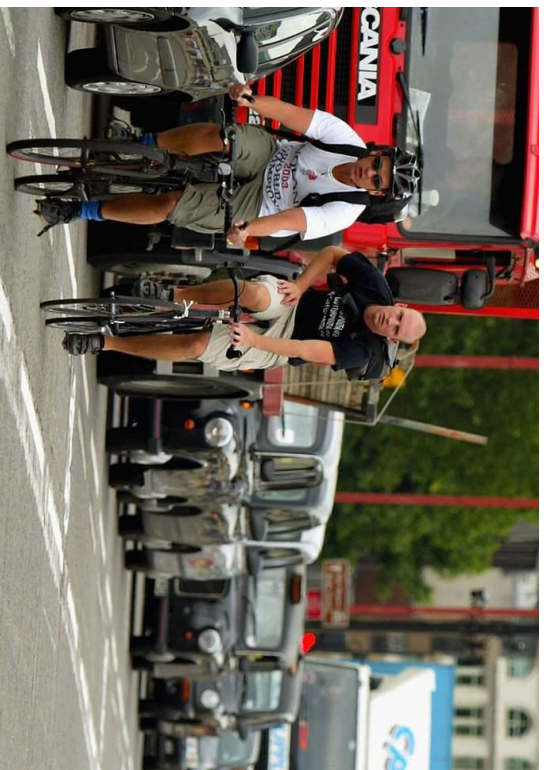
## Primaries

## Secondaries



- In London, 802 out of 3261 nurseries, primary and secondary schools and higher education colleges, are within 150 metres of nitrogen dioxide pollution levels that exceed the EU legal limit of  $40\mu\text{g}/\text{m}^3$  (40 micrograms per cubic metre of air)
- That's 1/3 of nursery schools, nearly 20% of primaries and 18% of secondary schools in the capital in areas where toxic levels of nitrogen dioxide threaten children's health

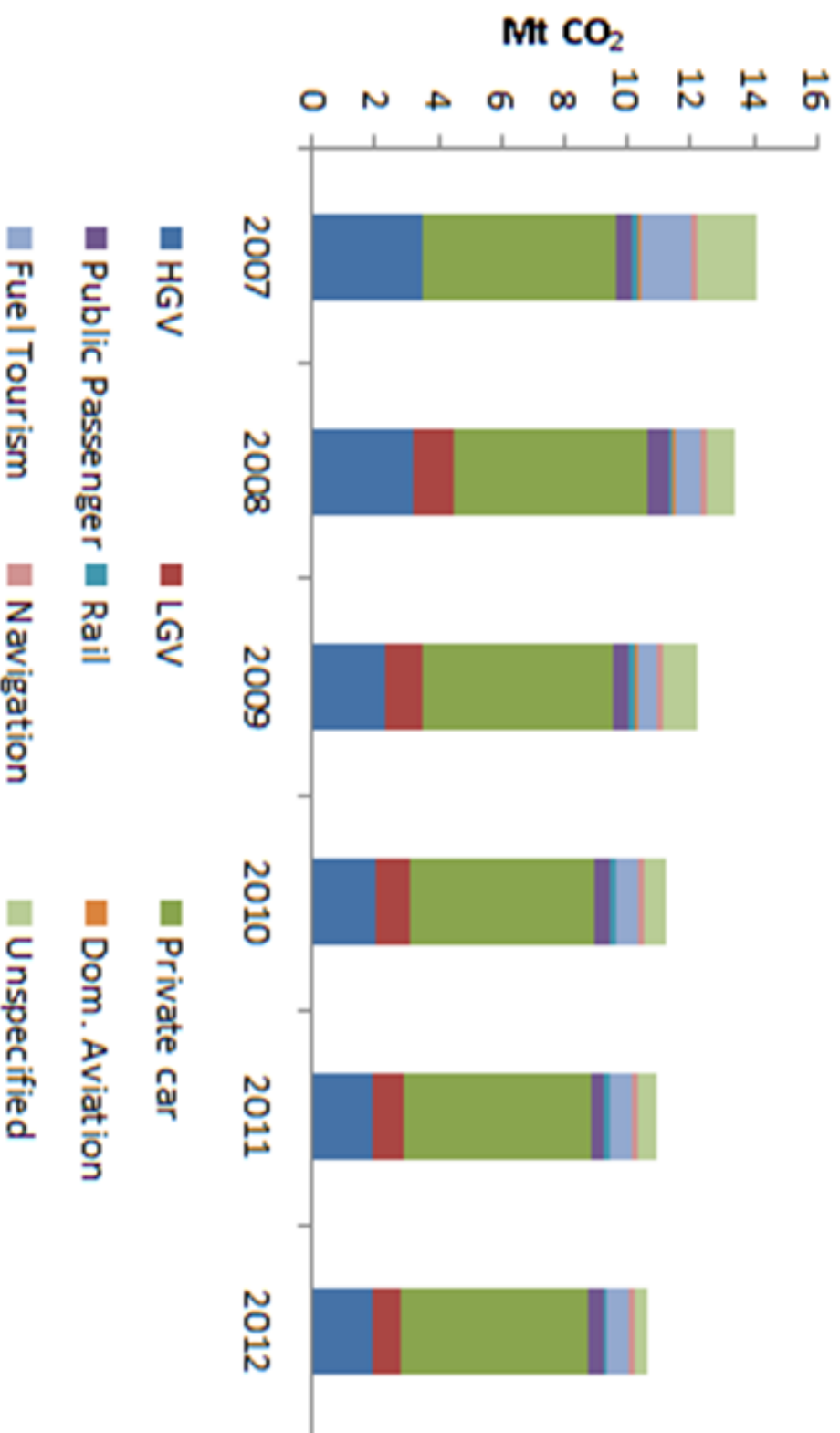
# Impact on cyclists and cycling...





# Making Policy Choices

# Emissions Decline 2008 - 2012

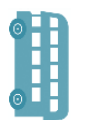
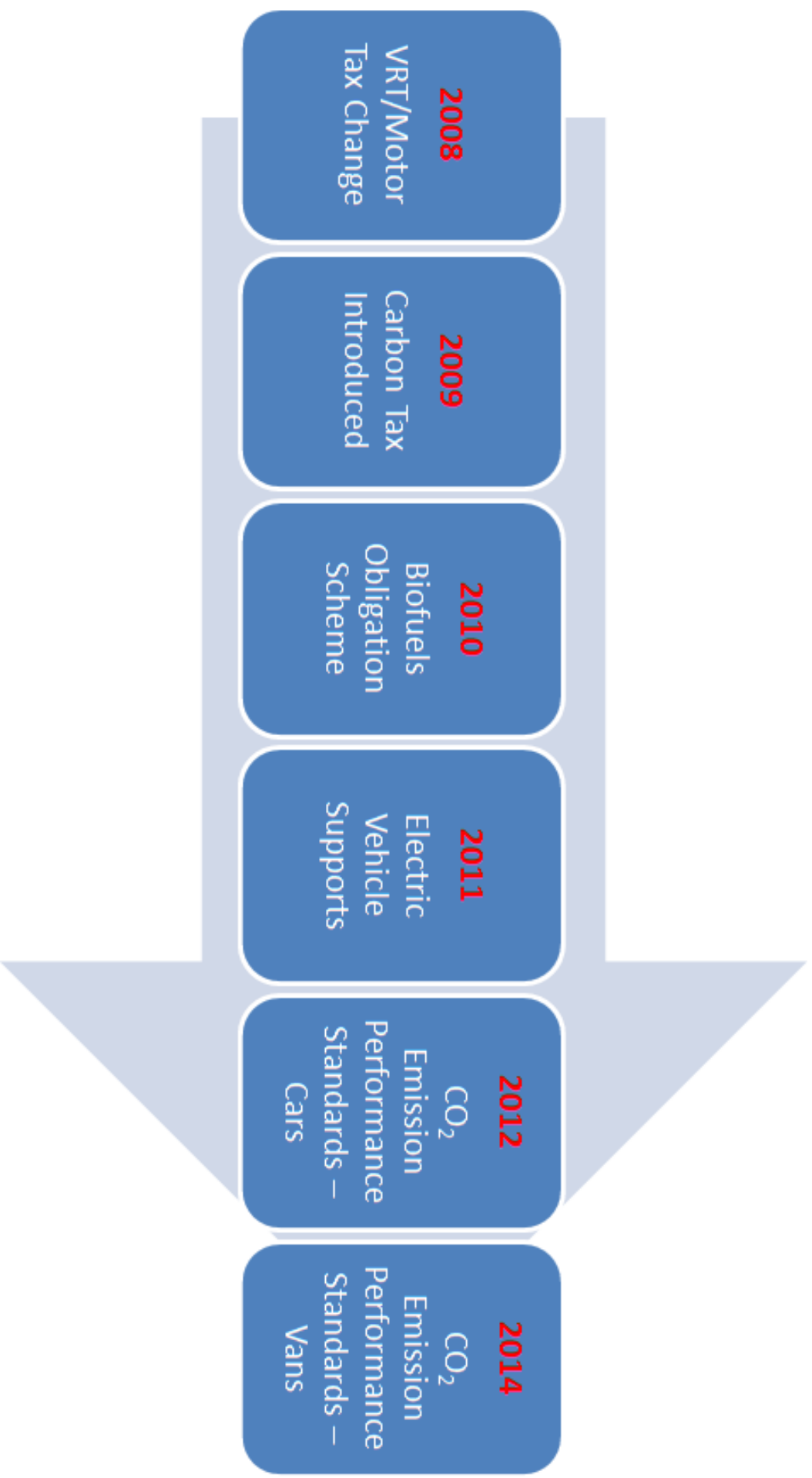


# Emissions Growth 2013 - 2015

	2012	2013	2014	2015	% Growth 2012 - 2015
HGV	1,881	1,726	1,836	1,849	-1.7%
LGV	959	982	935	887	-7.6%
Private car	5,911	5,999	6,096	6,044	2.3%
Public Passenger	444	427	411	403	-9.2%
Rail	142	137	126	129	-9.0%
Dom. Aviation	11	10	9	10	-9.4%
Fuel Tourism	680	624	868	1,397	105.4%
Navigation	182	178	222	219	20.8%
Unspecified	379	723	577	631	66.5%
Total (kt)	10,589	10,805	11,080	11,570	9.3%



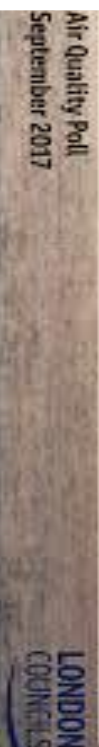
# Policy Response



Half of all childhood pneumonia **deaths** are linked to air pollution.



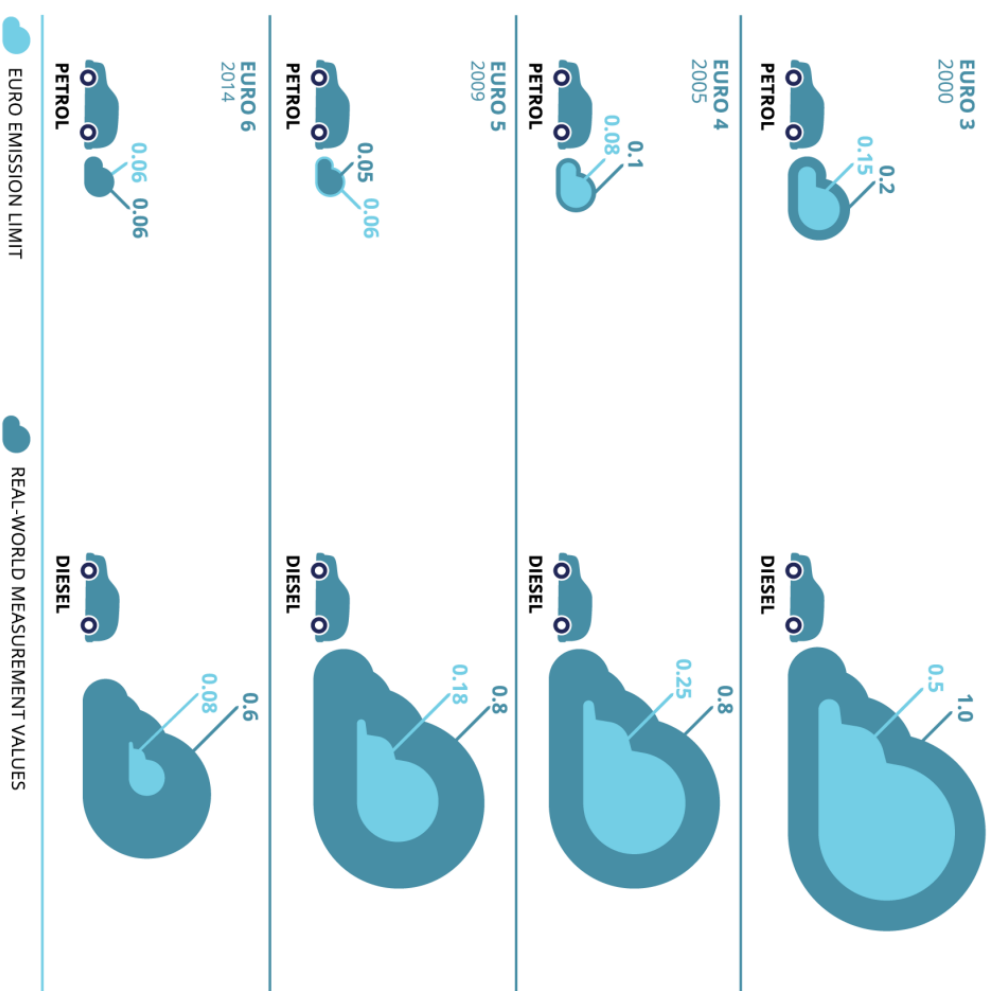
“Nearly half of Londoners feel poor air quality has had a negative impact on their health”





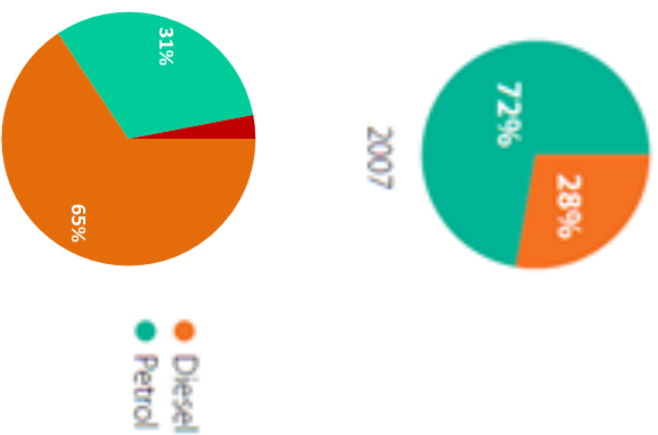
# Why is diesel a problem?

## Comparison of NO<sub>x</sub> emission standards for different Euro classes

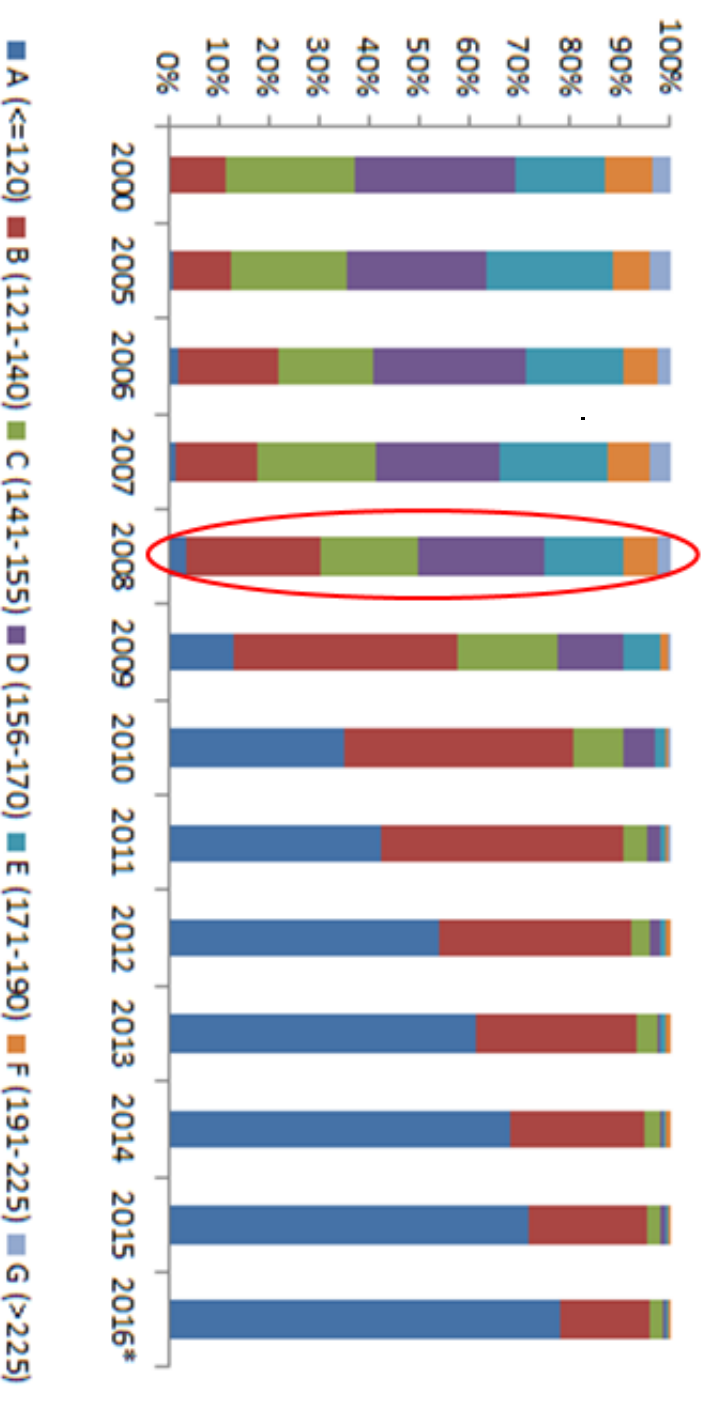


# Car fleet transition...

SHARE OF NEW CARS PURCHASED



Shares of New Private Cars in each Emissions Band



# What about buses?



						
Qty.	268	150	160	369	20	50
mileage (km per bus)	64642	58213	65660	50854	44864	44864
Pass.	95	95	95	95	123	123
Fuel (l/100km)	50.3	45.02	44.28	45.19	63.3	57.96
Energy use (kWhr/km)	5.12	4.58	4.50	4.60	6.44	5.89
CO2 g/km	1349	1208	1188	1212	1699	1555
NOX g/km	14.22	8.21	9.71	0.57	17.50	10.84
PM g/km	0.3715	0.1617	0.1714	0.1032	0.4417	0.1987



**Where to now?**