

1

Click on the icons above to jump to sections and speakers, this deck includes poll results.



2

House Keeping (Teams)

The screenshot shows a Microsoft Teams meeting window. The main content area displays a slide titled 'Training' with the 'seai' logo and 'SUSTAINABLE ENERGY AUTHORITY OF IRELAND' text. The slide also includes the website 'www.seai.ie'. On the right, a 'Meeting chat' panel is visible. Overlaid on the left side of the meeting window is a list of housekeeping instructions, each with a corresponding icon:

- Can you see the screenshare?
- Sound on? Phone on silent please
Keep to hand for surveys
- Video off (on when speaking)
- Turn off other apps (for bandwidth)
- Raise hand to interrupt (questions welcome)
- Use chat to share links, files and questions Upvote other's questions using 👍 emoji to save typing

At the bottom left of the slide, there is a logo for 'CONCERTED ACTION ENERGY EFFICIENCY DIRECTIVE'. At the bottom right, there is a 'seai' logo and the text 'SUSTAINABLE ENERGY AUTHORITY OF IRELAND'. A red box highlights the 'Leave' button in the top right corner of the Teams window, and another red box highlights the 'Type a new message' input field in the chat panel.

3

3

Agenda

- 1400 Warm-up / soft start Slido test, allow 5-10mins for all to get logged in
- 1405 Alan Ryan Public Sector Programme Manager
- 1410 Maurice Harnett Principal Officer Dept. of Transport
- 1420 Our approach to transport (C.Molloy) update from Helsinki 2019
(Vehicles types, options, procurement, M&V, ecodriving, 50001)
- 1440 John Smith Sustainability Infrastructure and Facilities Manager An Post
- 1450 James Jones National Fleet Manager ESB
- 1500 Panel discussion on lessons learnt and remaining barriers to change
- 1530 SESSION ENDS – space for ad hoc discussion

4

Transport: Our topics today

- **Share Ireland's experience** in implementing in transport and public sector fleet specifically three articles from the EU EED
 - Art.6: **PURCHASING** BY PUBLIC BODIES
 - Ensure that central governments purchase only products, services and buildings with high energy-efficiency performance
 - Art.7: ENERGY EFFICIENCY OBLIGATION SCHEMES (**EEOS**)
 - Obligates energy suppliers to help customers become more energy efficient
 - Art.8: **ENERGY AUDITS** AND ENERGY MANAGEMENT SYSTEMS
 - Aims to identify energy saving opportunities in large organisations



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Alan Ryan

Public Sector Programme Manager

SEAI



Have your phone
to hand and on
silent



7

Multiple-choice poll

Your experience of transport energy saving and emissions reduction to date (choose one) anonymous poll.

009

None, I am new to this topic

 22 %

Some experience, I am comfortable discussing transport policy

 67 %

Expert, I feel confident leading on transport policy

 11 %

8



An Roinn Iompair Department of Transport

Maurice Harnett
Climate Change Unit

An Roinn Iompair
Department of Transport



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Departments
Consultations
Publications
Policies
Languages

Consultation

Public Consultation on the EU 'Clean Vehicles Directive'

From [Department of Transport](#)
Published at 19 October 2020
Open for submissions from 19 October 2020
Submissions closed 31 December 2020
Last updated 23 October 2020

Consultation is open

Share
Email

The 'Clean Vehicles Directive' (Directive (EU) 2019/33/EC) sets out minimum targets for 'clean' (low-emission) vehicles in public procurements. The Directive entered into force on 13 June 2020 and must be transposed into Irish law by the Minister for Transport by 13 August 2021.

The Department of Transport has prepared a Regulatory Impact Assessment (RIA) to explore the options for transposition, and to provide a detailed and systematic appraisal of the potential impacts of this regulation.

Regulatory Impact Analysis

Transposition of the Clean Vehicles Directive

Clean Vehicles Directive

Public Consultation

19/10/2020

These changes are expected to have significant and far-reaching impacts on public procurement and, consequently, the Department encourages all public sector bodies to become acquainted with the text of the Directive and its potential specific implications for their organisation. A copy is available for consultation on the EUR-Lex website: <http://data.europa.eu/eli/dir/2019/1161/oj>.

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Clean Vehicles Directive' (Directive (EU) 2019/1161)

- Minimum procurement targets** set across the EU for all member states
 - Above % are Ireland's targets
- Reporting commences in 2022** and every 3 years thereafter
- Contract award date is reporting date** i.e. all contracts awarded from 2nd August 2021

Category	From 2 August 2021 to 31 December 2025	From 1 January 2026 to 31 December 2030
C		
Light vehicles (cars, vans)	38.5%	38.5%
Minimum criteria to qualify as clean vehicles	< 50gCO ₂ /km	0 g CO ₂ /km
Trucks (vehicle category N2 and N3)	10 %	15 %
Buses (vehicle category M3) (*1)	45 %	65 %
Minimum criteria to qualify as clean vehicles	Alternative fuels	



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This new legislation will . . .



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Department of Transport

- provide for the setting of **binding minimum targets** for the share of 'clean' vehicles, as defined in the Directive, in **procurements undertaken by public sector bodies** over the relevant service contract value thresholds;
- allow for the expansion of the scope of the Regulations to apply to **vehicle purchase, lease, hire-purchase and rental contracts**, as well as vehicles supplied to carry out works under **certain types of service contract**;
- provide for the **repeal of the common rules for calculating the lifetime costs** linked to the operation of vehicles set out in S.I. No. 339 of 2011;
- provide for the **granting of exemptions** to certain types of vehicles;
- allow for the identification of an **appropriate monitoring body** for public procurements of 'clean' vehicles establish the reporting obligations upon public sector bodies to the appropriate monitoring body; and the reporting obligations upon the State to European Commission.



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Table 4: Summary of Transposition Options in the RIA

Option	Description	Preferred Option
1	Do Nothing/No Policy Change	This option is not recommended
2	Transpose the Directive by Statutory Instrument under the <i>European Communities Act 1972</i>	This is the Preferred Option
2a	Application of Minimum Targets over the Aggregate of Relevant Procurements	This is the Preferred Option
2b	Application of Minimum Targets to each Relevant Procurement	This option is not recommended
2c	Distribute Obligation Equally Between all Public Bodies	This is the Preferred Option
2d	Distribute Obligation on the basis of Predetermined Criteria	This option is not recommended
2e	Implement the Optional Exemptions	This is the Preferred Option
2f	Do Not Implement the Optional Exemptions	This option is not recommended
2g	Align Clean Vehicles Directive Reporting with Existing Public Sector Reporting Requirements	This is the Preferred Option
2h	Establishment of a Dedicated Reporting Mechanism for Clean Vehicles Directive Reporting	This option is not recommended

Transposition
options

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Services

Table 1: Service Contracts to which the Directive applies

CPV Code	Description
60112000-6	Public road transport services
60130000-8	Special-purpose road passenger-transport services
60140000-1	Non-scheduled passenger transport services
90511000-2	Refuse collection services
60160000-7	Mail transport by road
60161000-4	Parcel transport services
64121100-1	Mail delivery services
64121200-2	Parcel delivery services



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DoT alternatively fuelled HDV Grant



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Department of Transport

- The Department of Transport is currently designing a **new alternatively-fuelled heavy duty vehicle (HDV) purchase grant**, which is expected to be rolled out in early 2021.
- While still being finalised, it is anticipated that the Scheme will support the purchase of new, non-retrofitted large vans, trucks, buses and coaches with an **unladen design gross weight of more than 3.5 tonnes**.
- To accord with EU State Aid rules, grant levels under the Scheme will be set **as a percentage of the cost differential between a conventionally-fuelled HDV and its alternatively-fuelled equivalent**.
 - [The aim is help bridge the price difference to electric, hydrogen, CNG and LNG fuelled vehicles – not diesel EUROVI/6 or hybrids]
- **Maximum grant levels per vehicle will be dependent on the size of the undertaking applying for the grant**, i.e. whether the undertaking can be categorised as ‘small’, ‘medium’ or ‘large’.
- When launched, details of the new Scheme, including terms and conditions, grant eligibility, supported vehicle categories and **grant support levels will be published on the website of the Department of Transport**.



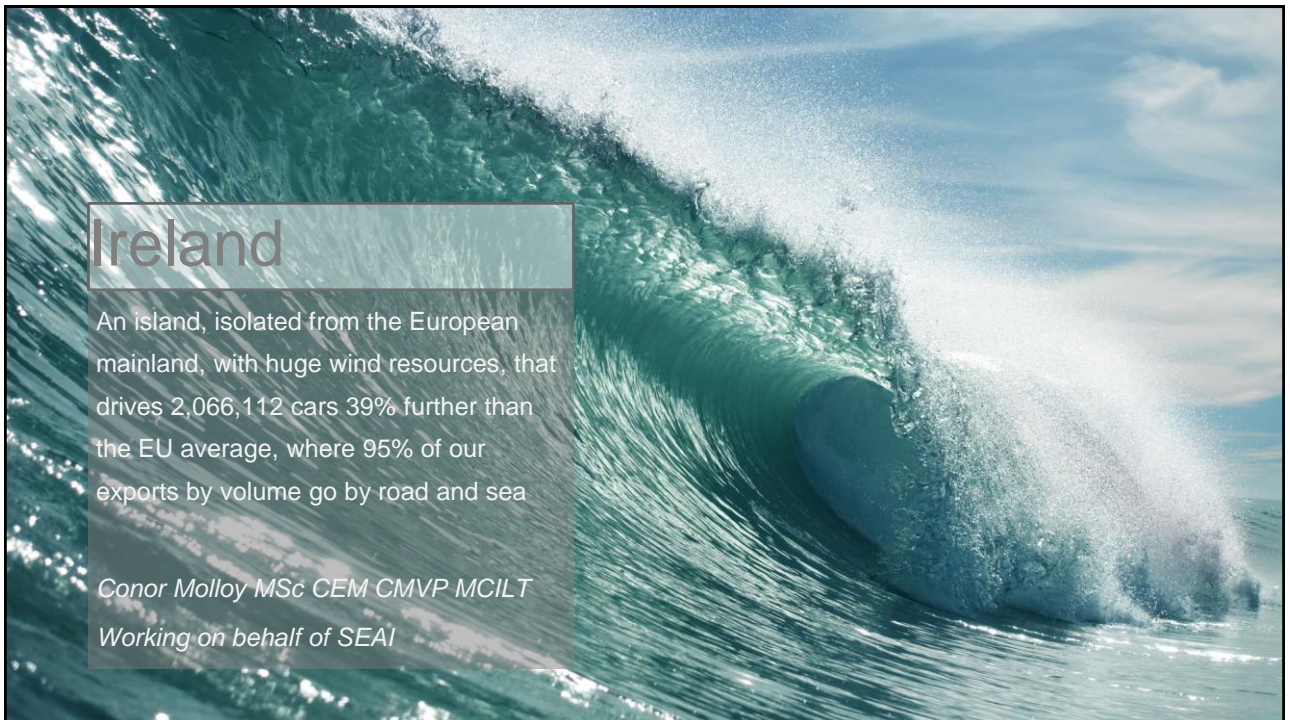
15

EU Background: Relevant legislation

- [Revised Clean Vehicles Directive \(2019/1161\)](#)
- [Directive on the promotion of clean & energy-efficient road transport vehicles \(2009/33/EC\)](#)
- [Report on the application of Directive 2009/33/EC on the promotion of clean and energy efficient road transport vehicles](#)
- [Impact Assessment of the Revised Clean Vehicles Directive \(2019/1161\)](#)
- [Support study for the Impact Assessment \(Final report, annexes, executive summary\)](#)



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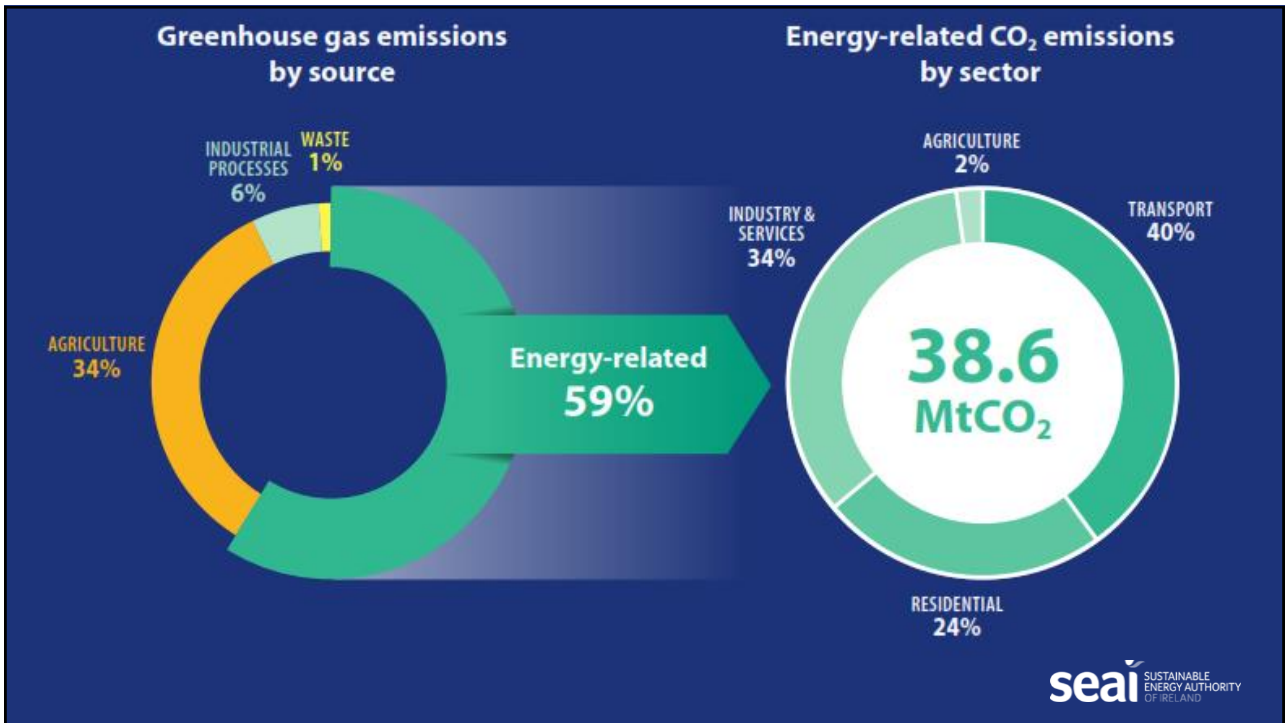


Ireland

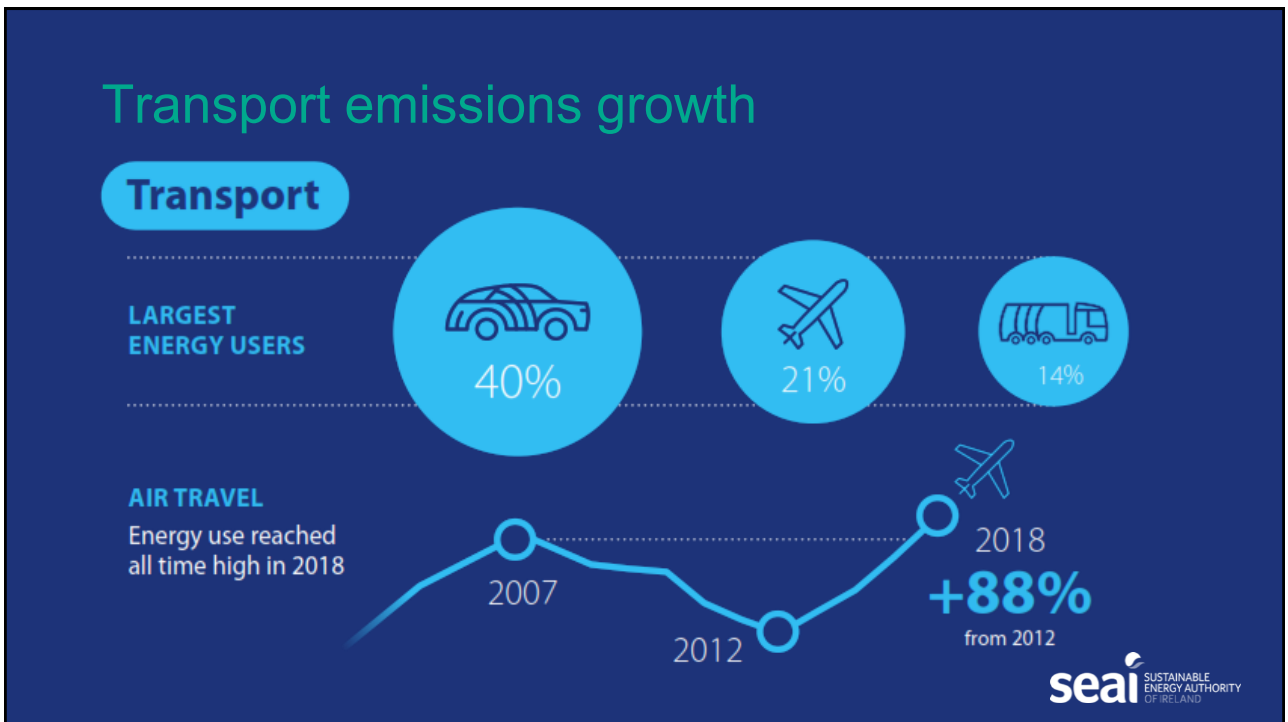
An island, isolated from the European mainland, with huge wind resources, that drives 2,066,112 cars 39% further than the EU average, where 95% of our exports by volume go by road and sea

*Conor Molloy MSc CEM CMVP MCILT
Working on behalf of SEAI*

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EPA – Ireland's environment 2020 (Nov'20)

Chapter 11 Environment and Transport

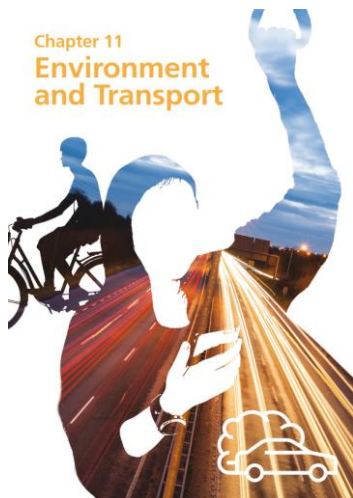


Table 11.1 Transport carbon dioxide emissions per capita, Rank in EU-27, 2018
(Sources: Crippa et al., 2019; Eurostat, 2020)

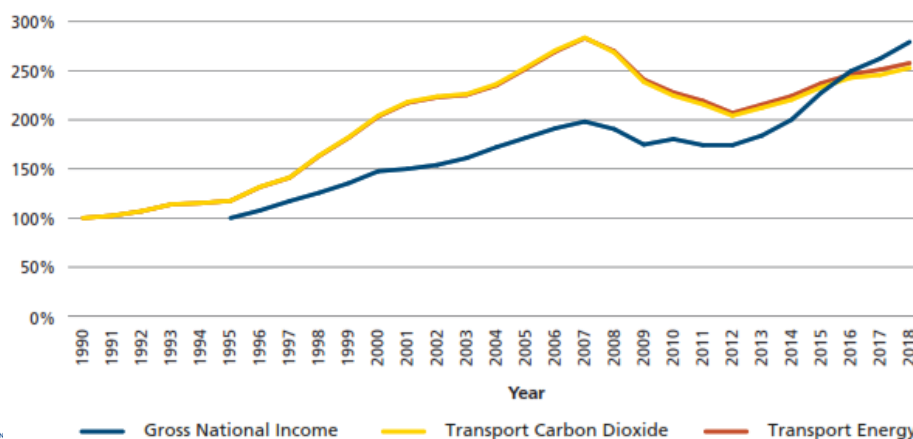
RANK	STATE	CARBON DIOXIDE PER CAPITA (TONNES)
1	Luxembourg	10.23
2	Austria	2.77
3	Slovenia	2.76
4	Ireland	2.51
5	Belgium	2.31
–	EU average	1.80



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Growth and transport emissions

Figure 11.1 Trends in transport carbon dioxide emissions, energy by final consumption and in the economy by gross national income at constant market prices (Source: SEAI 2019b and CSO 2019a)

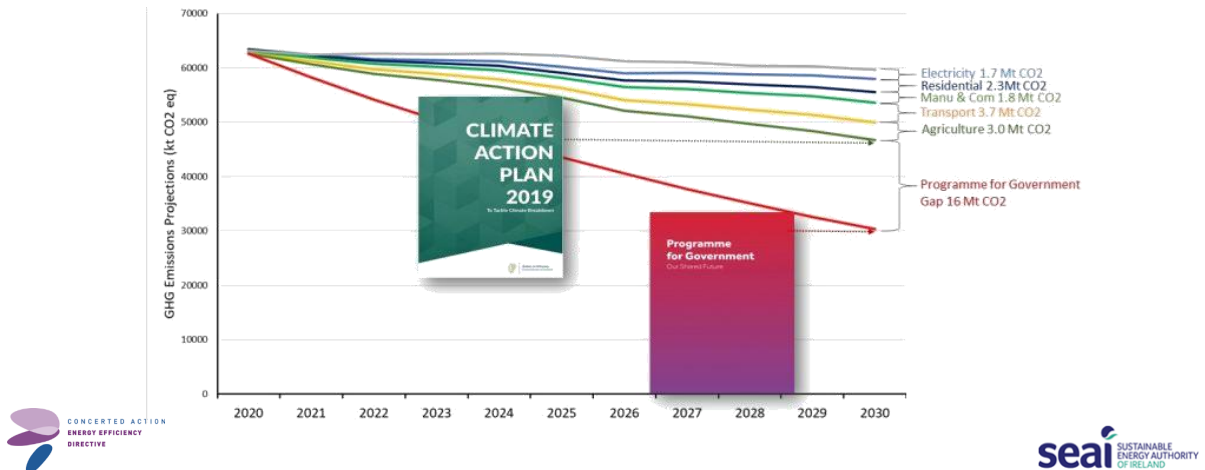


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Programme for Government (July 2020)

Paul Deane UCC <https://www.linkedin.com/feed/update/urn:li:activity:6709019825034838016/>

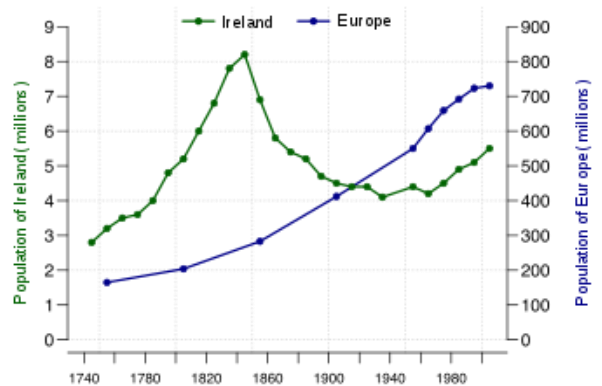
Ireland: Greenhouse Gas Projections and Savings from Climate Action Plan



22

Scale of challenge ahead - CSO population projections (ROI - NI not included)

- 2020 4.9m
- 2030 5.2m +10%
- 2050 Low 5.6m +19%
- 2050 High 6.7m +42%
- *How will these new citizens move, heat, cook and work with 50% less emissions?*



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Key findings – CSO 2019 via EPA

- **64.9% of journeys** were made as a driver of a private car
- **43.6%** of all [car] journeys in 2019 were of **less than 4 kilometres**, ideal for active modes.
 - Within this, **51.5% of journeys of less than 2 kilometres were by car**,
 - rising to **66.1% for journeys between 2 and 4 kilometres**.
- Industry data also appear to show an increasing dominance of the more energy- and carbon-intensive sport utility vehicle (**SUV**) market segment, at **39.4 per cent of registrations in 2019 and increasing** (SIMI, 2020).



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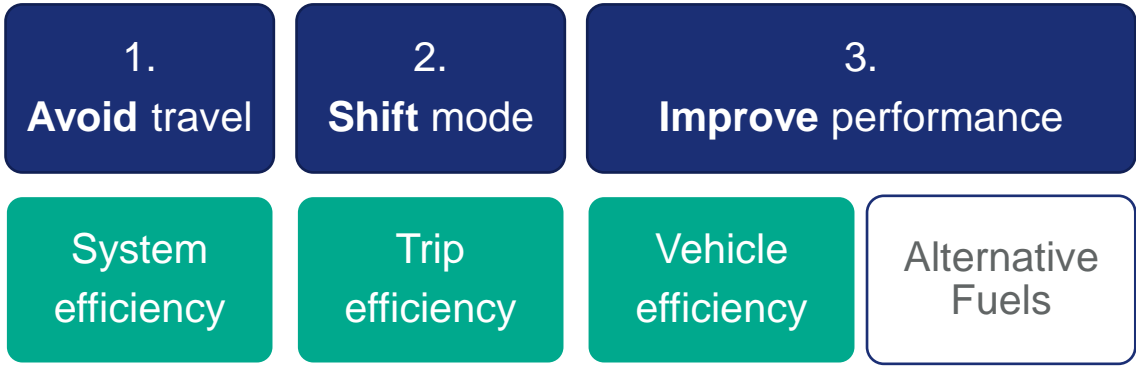
Our approach

- Energy efficiency first
- Avoid
- Shift
- Improve
- *Conor Molloy MSc CEM CMVP MCILT
Working on behalf of SEAI*

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Where to start? **ASIf**

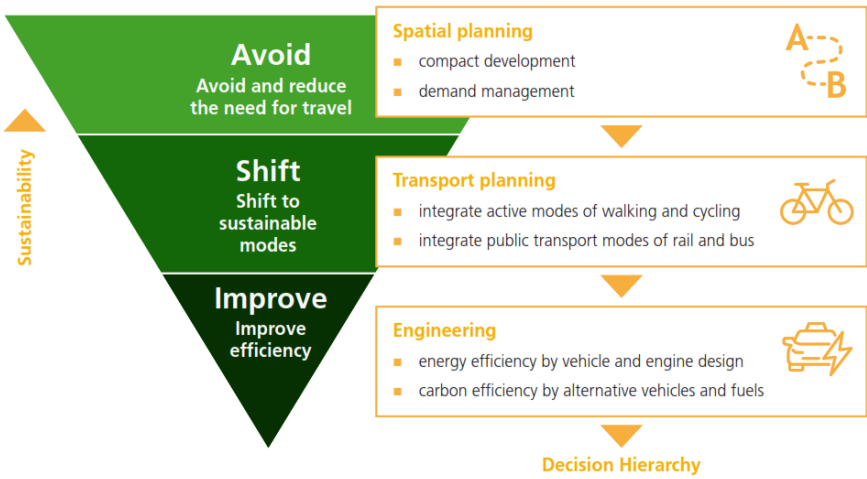
Energy efficiency first e.g. apply ISO50001



ASIF framework devised by Schipper and Marie (1999) and adopted by the IPCC (Kahn Ribeiro et al, 2007; Sims et al, 2014)



Figure 11.4 The hierarchy of transport sustainability in the *avoid-shift-improve* framework (Source: EPA, adapted from EEA, 2016)



Policy

Delighted to see widespread citing of ASI in policy documents over the last 12-18 months

Taken from **EPA – Ireland’s environment 2020** (Nov’20) shows ASI being cited

Avoiding Travel: COVID19 has shown us we can change

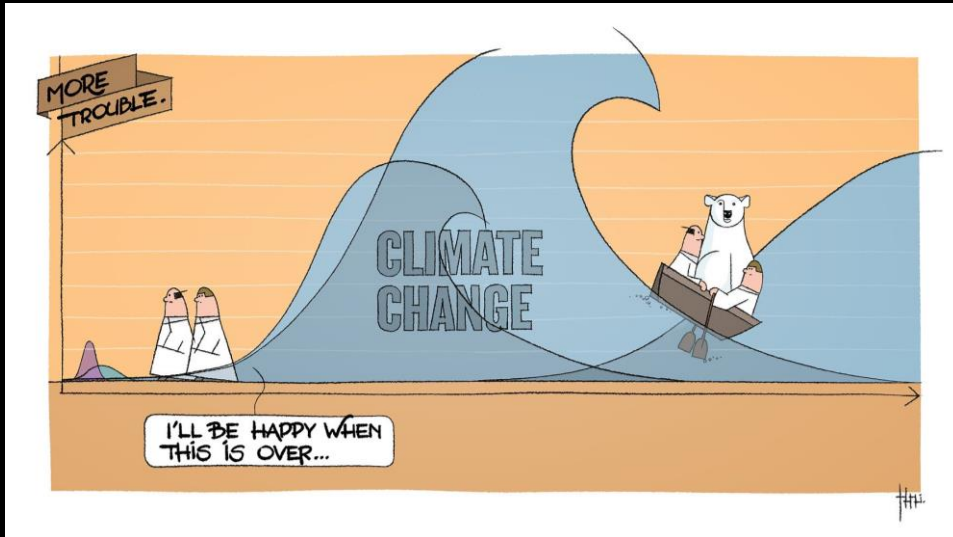


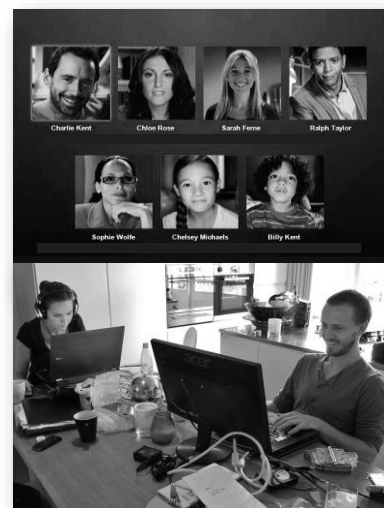
Image courtesy Raf Schoenmaekers Gent Belgium @komkomdoorn Insta @statisticallycartoon

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Avoiding travel

- In Ireland during COVID lockdown 1 (Q2) **43%** worked from home nationally (CSO)
- **20%** (minimum) to **40%** remote work target being discussed in government
- Have we learned how to “*transport electrons not molecules*”?



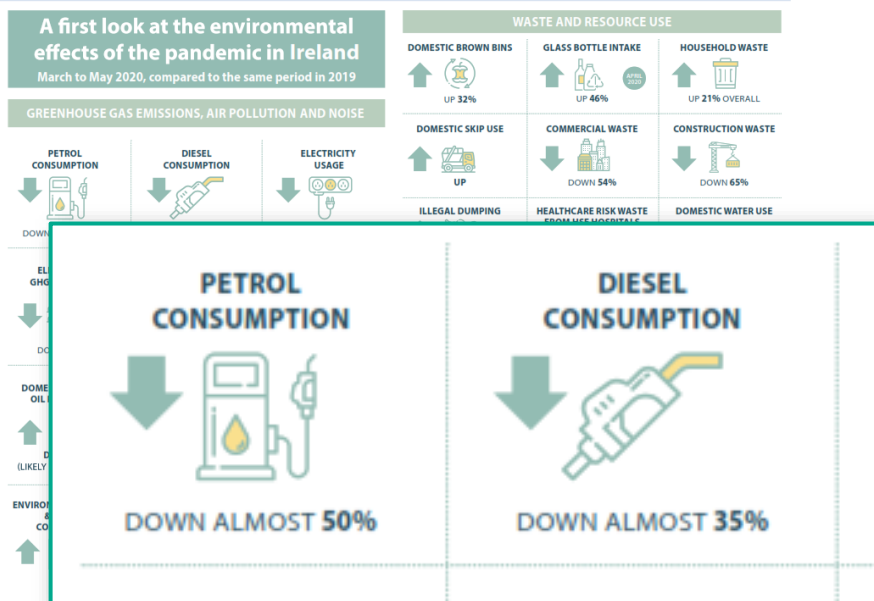
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[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)

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Figure 1.1 Ireland in the pandemic – environmental indicators (Source: O'Leary, et al., 2020, with updates on overall greenhouse gas (GHG) emissions from EPA)



EPA.ie

COVID environmental impacts March to May 2020 compared to same period in 2019



Have your phone to hand

30

Multiple-choice poll

Survey (2/2)

013

Will your country return to the 'normal' 9-5, 5 day week in the years to come?

Yes

31 %

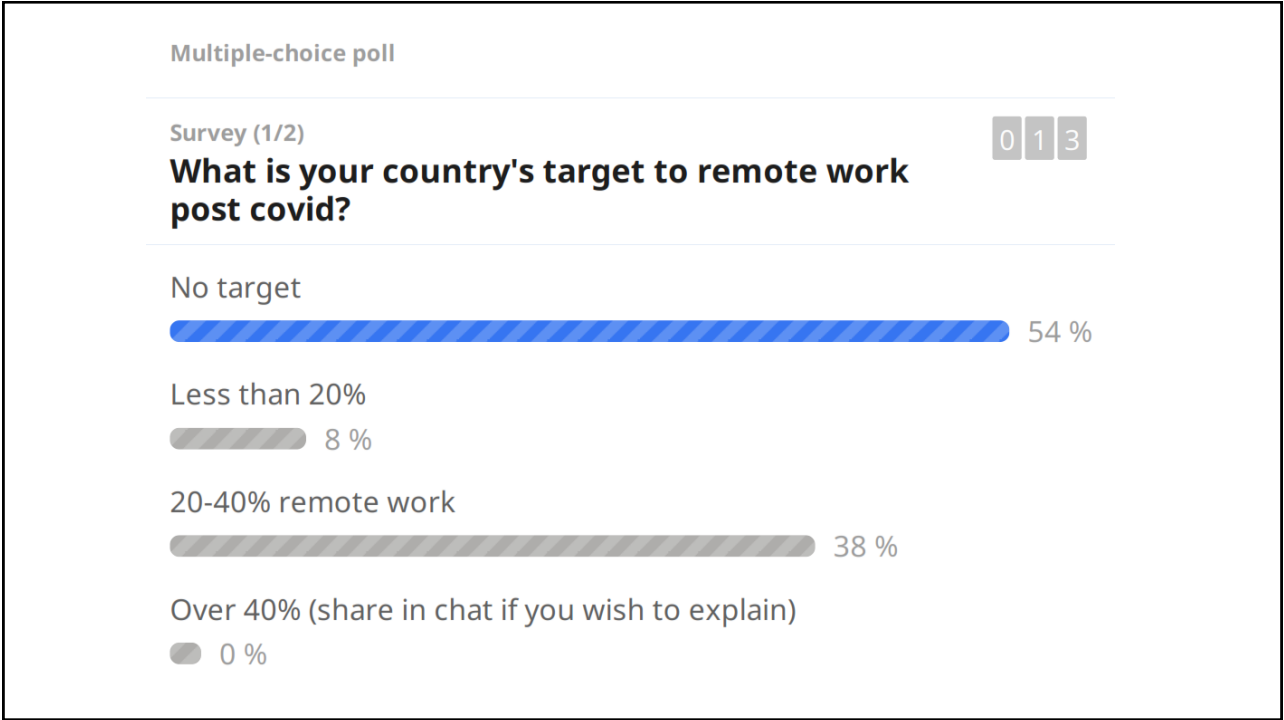
No

23 %

Too early to say

46 %

31



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Avoid Freight? Foldable shelving to significantly reduce km travelled in urban delivery scenarios – 2 trips per day instead of 3 (60% increase in payload)

Shelving in use



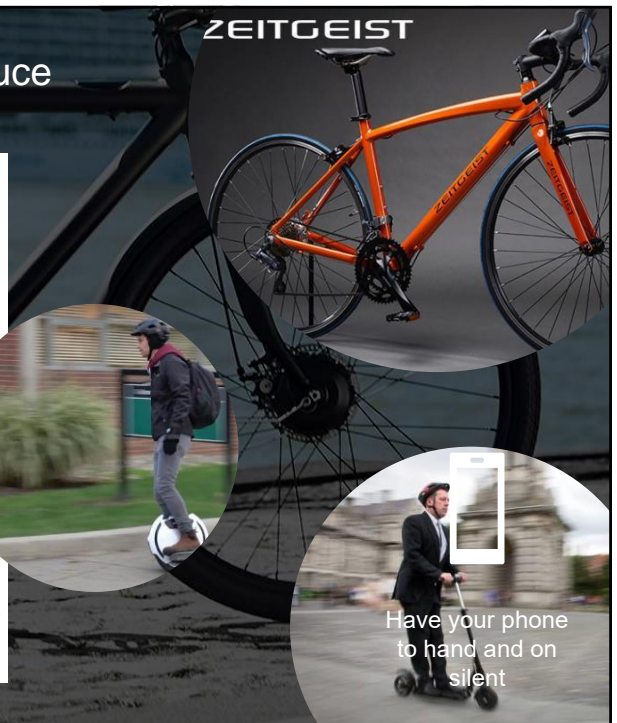
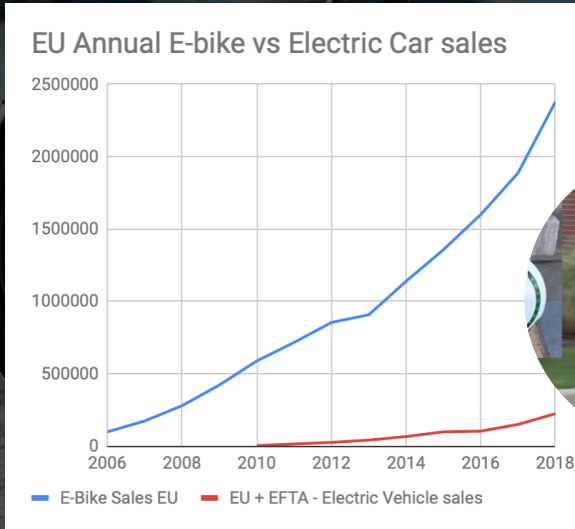
Shelving folded up



an post

33

All are electric, but which will reduce emissions the fastest?



36

Multiple-choice poll

How well does your member state / agency collect electric bike sales data?

009

None, we have very little data

100 %

Some data, but incomplete compared to car (sales) data

0 %

Full and complete data (please share/comment in chat)

0 %

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Public transport investment – sustained? – increased 3x!

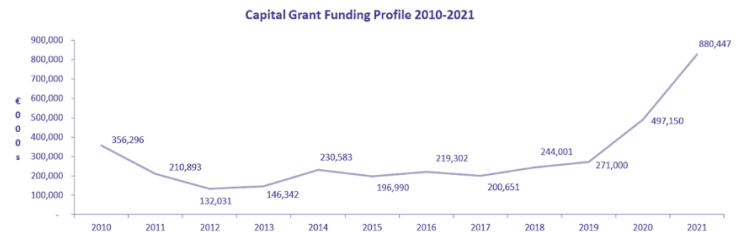
Project Ireland 2040
Building Ireland's Future

Key Projects

- Metrolink
- BusConnects
- DART +
- Cycling Infrastructure

Project Ireland 2040
Building Ireland's Future

NTA
Údarás Náisiúnta Iompair
National Transport Authority



The 2021 DoT Capital Grant funding allocation to the NTA is expected to be more than 3 times the 2019 allocation.



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- **Anticipate traffic flow**
 - Look ahead as far as possible and anticipate surrounding traffic
- **Maintain a steady speed at low rpm**
 - Drive smoothly, using the highest possible gear at low RPM
- **Shift up early**
 - Shift up between 1,200 (diesel) and 1,800 (petrol/gas) revolutions
- **Check tyre pressures frequently**
 - At least once a month and before driving at high speed
- **Consider any extra energy**
 - Take-off roof racks/boxes, air conditioning, loads

ecodriving
5
Golden
Rules

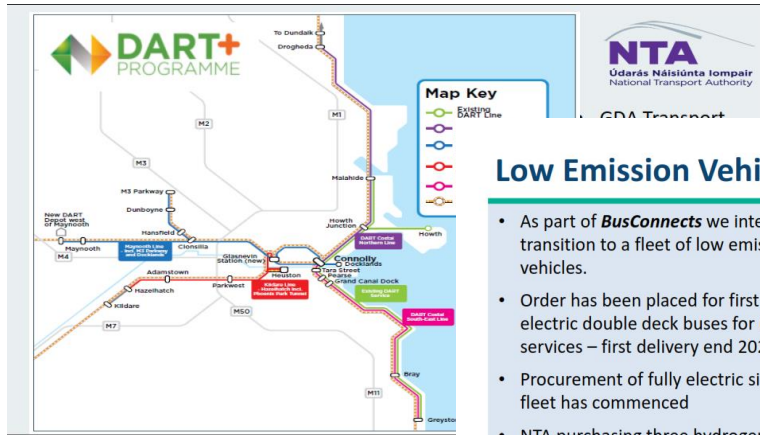
Source: EU Ecodriven
project 2005-2012



seaí
Sustainable Energy Authority
of Ireland

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Public transport; vehicle improvement



Low Emission Vehicles

- As part of **BusConnects** we intend to transition to a fleet of low emission vehicles.
- Order has been placed for first 280 diesel electric double deck buses for urban services – first delivery end 2020
- Procurement of fully electric single deck fleet has commenced
- NTA purchasing three hydrogen fuelled double deck buses for trial commencing in 2021

BUS CONNECTS
TRANSFORMING CITY BUS SERVICES



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Irish Rail; Intercity Diesel Fleet Hybrid Conversion (retrofit)

- Irish Rail: Hybrid Drive for Inter City Railcar fleet Up to €15 million is being invested to design new hybrid power-packs for (250+) intercity railcars to reduce diesel use and greenhouse gas emissions. Phases:
 1. ZF Gearbox ✓ enables
 2. Diesel-electric hybrid to replace diesel
 3. Full battery only mode (zero emissions)
- **33% fuel cost and CO₂ reduction**
 - 75% less noise in stations
 - NOx -75% PM -90%



42



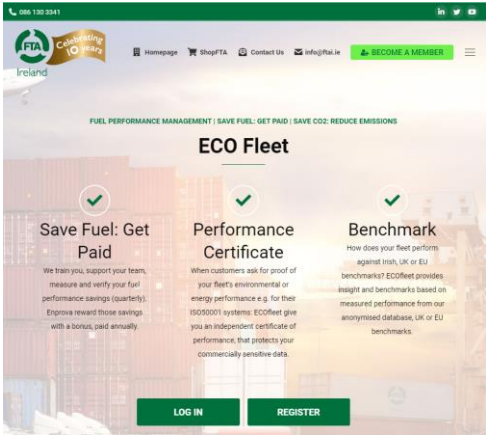
Improving freight

Using Article 7 to engage SME fleets and how we do measurement and verification in bulk.


43



Freight – Article 7 supports for Green Freight Programmes

2014-2030 EEOS funded



2021 IRHA programme





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FTAI ECOfleet

[<https://www.ftai.ie/ecofleet>]

sustainable logistics to global standards



TruckSafe Silver & Gold

Ireland's Green Freight Programme

safe

compliant

clean & green



- Mature; 2014 – 2020
- Automated; ECOfleet online app
- Active; 50+ participants, annual pay-outs
- Recognised; Smart Freight, GLEC, RSA, HAS
- Training funded by Enterprise Ireland (Mar'20)

ECOfleet

 Smart Freight Centre



Global Logistics Emissions Council

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Freight solutions already exist for many e.g.



REDUCE FREIGHT TRANSPORT DEMAND



- supply chain restructuring
- Standardized modules/boxes
- 3D printing
- Dematerialization
- Consumer behavior

OPTIMIZE FREIGHT TRANSPORT MODES



- Modal shift
- Multi-modal optimization
- Synchromodality

INCREASE ASSET UTILIZATION



- Load optimization
- Load consolidation and asset sharing
- Logistics centers and warehouse management

IMPROVE FLEET ENERGY EFFICIENCY



- Cleaner and efficient technologies
- Efficient vehicles and vessels
- Driving behavior
- Fleet operation
- Fleet maintenance

REDUCE CARBON CONTENT OF ENERGY



- Cleaner and lower-carbon fuels
- Electrification
- Fuel management

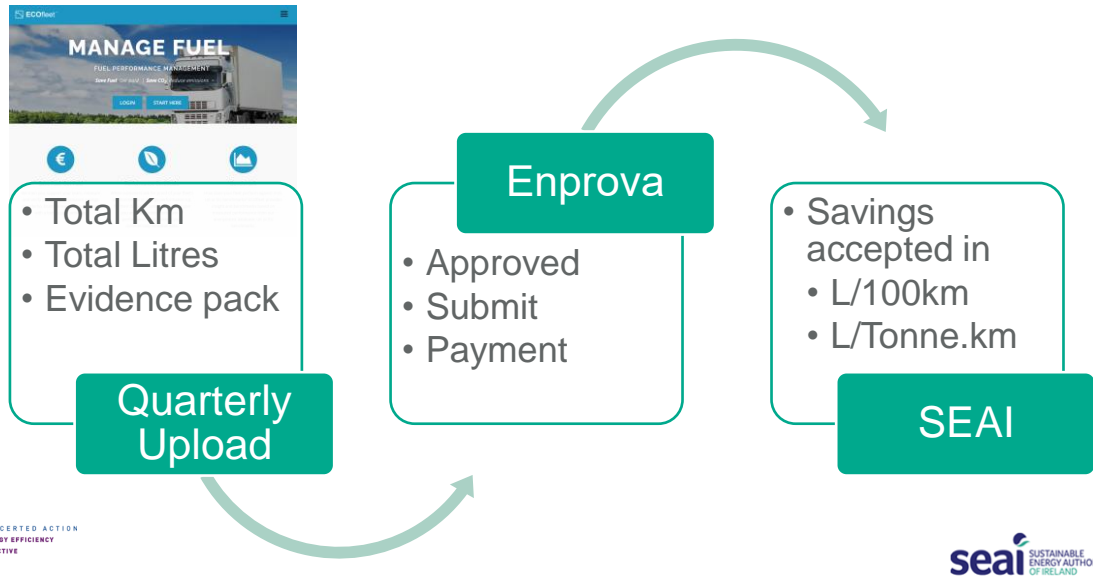
- These solutions combined can reduce emissions by >80% by 2050
- GLEC framework (soon to be ISO14083) provides a common reporting metric



Smart Freight Centre. Solutions based on Alan McKinnon 'Decarbonizing Logistics' 2018

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M&V Measurement & verification 2014-2030 (EEOS)



Progress to renewable energy targets 2018

RENEWABLE ENERGY TARGETS

2020 TARGETS

Overall RES target

11.0%

16.0%

+0.5% point increase from 2017 to 2018

Transport

-0.2% point decrease from 2017 to 2018

Heat

6.5%

-0.2% point decrease from 2017 to 2018

Electricity

33.2%

40.0%

+3.1% point increase from 2017 to 2018

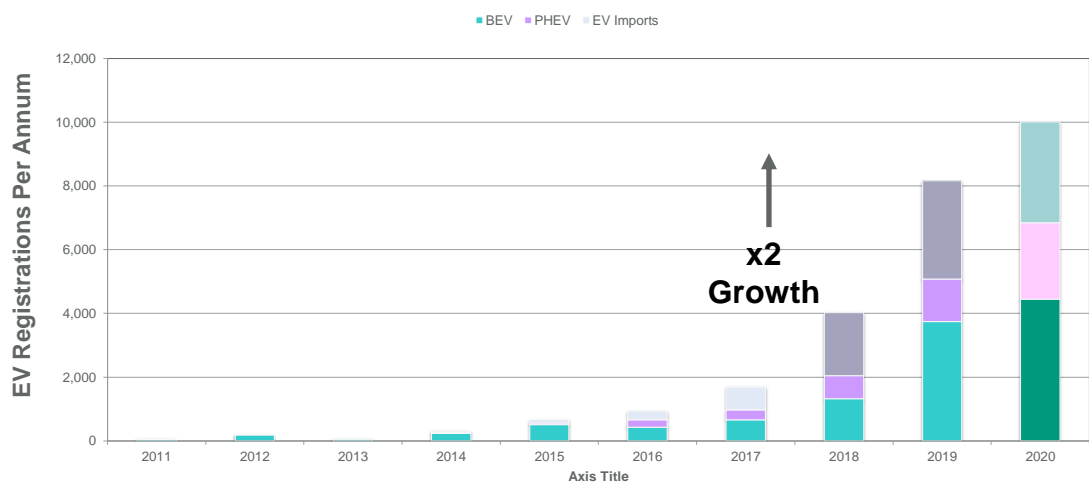
2030 target is for 70% of electricity to come from renewables

SEAI Energy in Ireland 2019

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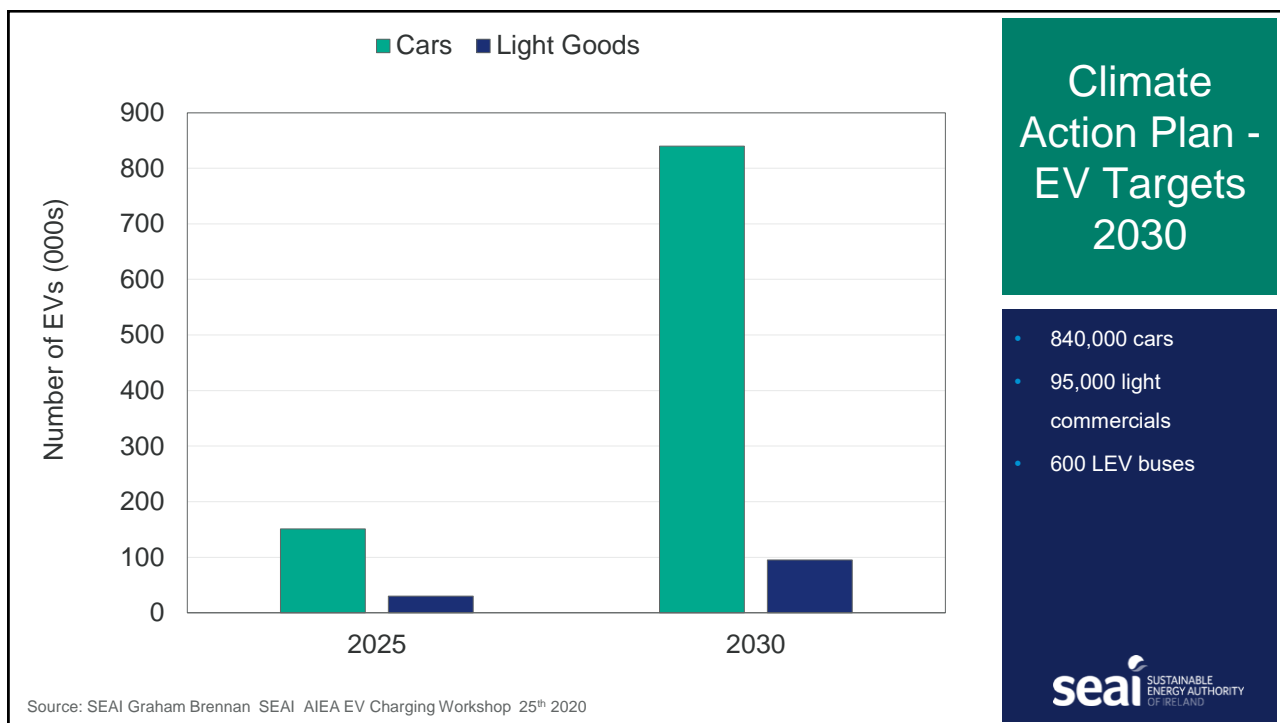
23,500 EV cars on our Roads as of end of Oct 2020



Source: SEAI Graham Brennan SEAI AIEA EV Charging Workshop 25th 2020

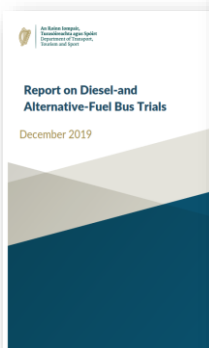
seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

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Low Emissions Bus trials leading to hybrids and hydrogen



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Energy Efficiency in transport

Sustainability Infrastructure and Facilities Manager
John Smith


Date: 02.12.20 online

For Internal use only



For your world

59



Post & Parcels

Insurance

Money

Government Services

Changing from one world to another

We are making big moves to become a sustainable, profitable business, successfully delivering in a digital world

Read about our strategy

60

Timeline - transport

An Post employ 9,000 people using over 3,000 vans to deliver to every address in Ireland every day

- 2011 Clean Vehicle Directive An Post includes on-road testing for shortlisted vehicles
- 2013 Ecodriving competition for European post drivers held at Mondello park (race track)
- 2014 Article 7 EEOS funding received on a consistent year on year accounting basis
- 2015 Article 8 – Energy Audit of transport fleets to achieve 2015 period compliance
- 2018 ISO50001 training commences as transport included in the existing 50001 scope
- 2019 ISO50001 certification achieved to achieve article 8 compliance
- 2019 An Post Driving school develops standardised EV ecodriving course for all new EV drivers



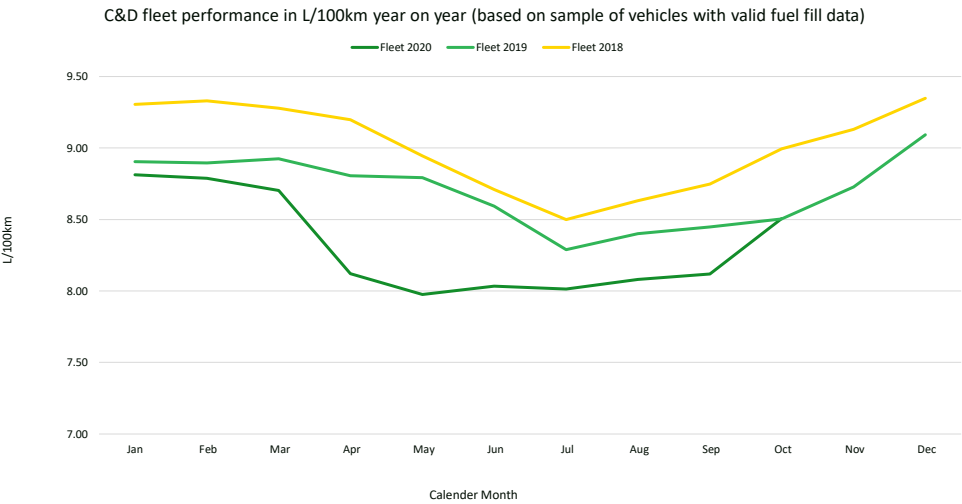
3.5%
Reduction in annual carbon
emissions from 2018

1st
Gender balance
Management Board

50/50
Dublin is the 1st Capital City globally with
zero emissions postal delivery

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ISO50001: 2020 C&D fuel performance YTD vs Baseline (2018) and 2019



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Electric Vehicles



DECARB EUROPE
Enabling technologies for a cleaner future

Irish cities to get their local parcels delivered at zero-emissions

September 23, 2020 Case Studies, Technologies

An Post (national postal service operator Ireland) is replacing all 220 local delivery diesel vehicles in the cities with electric vehicles by 2020, and a total of 750 EVs will replace its urban fleet by 2022.

Fact sheet

- Company: An Post (national postal service operator Ireland)
- Locations: All Irish cities

Benefits

- Zero-emission local postal deliveries in all six Irish cities will save 1.12 GWh of energy per year at an average 10,000 km per vehicle per month.

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2019 full year Savings diesel vs electric vans

2019 totals		Litres	kWh	Kg CO2e	
Business as usual (diesel van)	9.08L/100km	42,723	434,450	135,432	3.17Kg CO2e / L WTW
EVs used a total of			169,565	56,194	.3314Kg CO2e / kWh
Savings			264,885	79,238	
100% green electricity				135,432	Kg CO2e avoided

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Electric HDVs

First 7.5t eHDVs
on road in Dublin
to replace
trucking vehicles



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Driver Training (Eco Awareness) Programme 2020 – Leaflet

An Post Eco Drive - 8 golden rules

Check your tyre pressure regularly; underinflated tyres may be dangerous and can increase consumption. Min thread depth 1.6mm.

Avoid unnecessary engine idling time; a typical 420hp heavy duty engine consumes fuel at the rate of around 2-3 litres an hour when left idling.

Drive away immediately when starting from cold; idling to heat the engine wastes fuel.

Plan your journeys to avoid congestion and road works; Rural, hills, uneven surfaces, busy roads can increase fuel consumption.

Know your vehicles's optimum operating bands; and change gears accordingly.

Do not exceed speed limits (Breaking the law); and make your fuel go further.

Anticipate road conditions and drive smoothly; avoid sharp acceleration and heavy braking. This saves fuel and reduces accident rates.

Use air conditioning sparingly; as it significantly increases fuel consumption.

Page 66

Title of Presentation

66

Thank you

<https://www.anpost.com/AnPost/media/PDFs/Annual%20Reports/Sustainability-Report-2019.pdf>



67



ISO50001- Fleet Strategy

James Jones National Fleet Manager ESB Networks

SEAI Public Sector Conference 20200206

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Advanced Telematics fuel / fleet management.



Improvements

- Speed by road type.
- Driving style reporting.
- Accurate fleet utilisation data.
- Accurate hoist / attachment utilisation.
- Accurate Idling reporting.
- Linked to the fuel card supplier.
- CO2 reporting via Canbus data (available but unstable)

esbnetworks.ie

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Vehicle usage strategy for the future.



We are also focused on the weight and aerodynamic savings ESB could potentially make if they were to review their fit out strategy,

Improve aerodynamics of vehicles

- Remove unnecessary roof racks
- Remove unnecessary tow bars
- Store Ladders Internally
- Review internal fit outs of vehicles, using lighter materials

Improve Weight

- Remove unnecessary weight in vehicles
- Weight check vehicles before use

Improve Rolling resistance

- Examine tyre efficiency (reduce rolling resistance)
- Regular tyre pressure checks (TPMS fitment)

Vehicle Types

- Right vehicle for the job?

esbnetworks.ie

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Decarbonization Journey to Date



75 Nissan ENV200 purchased Q4 2019

Specification

- GVW: 2200KG
- Range: 280KM
- Payload: 705KG
- Battery: 40KWh
- Motor: 80KWh (107BHP)

Charging Options

- DC Fast Charge: 80% in 40Mins
- Normal Charge: 7.5H

esbnetworks.ie

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Mercedes eSprinter



Specification 35kWh

- GVW: 3500KG
Range: 120KM
Payload: 1045KG

Specification 47kWh

- GVW: 3500KG
Range: 168KM
Payload: 891KG

Charging Options

DC Fast Charge: 10-80% 20 Min

Normal Charge: 8H @7.4kWh

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EV Infrastructure and Rollout



Considerations for EV replacement.

- Average daily distance from FMS
- Current EV ChargePoint rollout plan – number of charge points proposed per building
- other factors - maximum number of vehicles per site.

Initial Phased Rollout.

- Phase 1 Garages - 10 EV's (1 per garage) to happen immediately.
- Phase 2 Stores – 30 EV's proposed for rollout when new charging infrastructure in place.
- Phase 3 Wider Business – 31 EV's identified for replacement.

Infrastructure.

70 Smart charge points installed through out Depots.

Units have been installed in quantities 1-3 units depending on site requirements.

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Other projects



Hydrogen as a Project.

Considerations for Fuel Cell replacement.

- Vehicle Type and Suitability. HGV only.
- Payload.
- Infrastructure.
- Hydrogen Types , Green, Blue and Grey?
- Availability 2025 +

Members of:

- Hydrogen Europe.
- Aggregated Hydrogen Freight Consortium IRL &UK.
- Hydrogen Mobility Ireland.
- FTAI

Electric forklifts

- ESB have successfully completed a trial of electric fork trucks 1.5 -5T capacity.
- Tender Awarded to Linde.
- At least 11 to be purchased this year to decarbonise our central stores.
- Further studies to take place into 2021



Footer

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Transport in Ireland – a summary

- Significant **growth** and **behavioural change** challenges ahead
- **Energy Efficiency first:** Avoid Shift Improve model cited by policy makers
 - Up to 43% of workforce worked remotely during lockdown
- **Investment** in sustainable transport modes being expanded **x3**
 - Active mode routes (cycling, walking) expanded on an emergency basis
 - CVD actively applied 2011 to date, large numbers of EVs being deployed
 - Modal shift to rail and bus being supported with hybrids, electric and hydrogen
- Investment in **sustainable freight** commencing in 2021
 - An Post & ESB leading with large investments in vehicles and chargers



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Panel topics

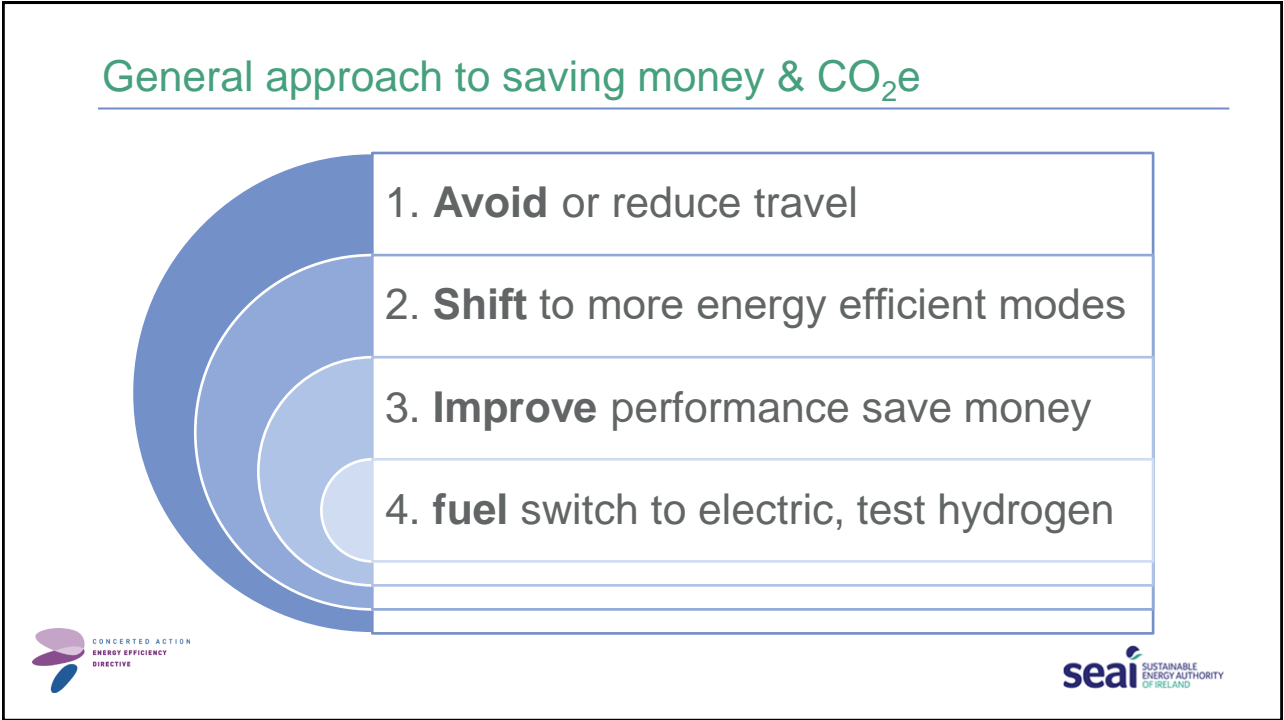
- Raise hand  or enter your question in chat 
- **Questions on any of the preceding topics?**
- Art.6: PURCHASING BY PUBLIC BODIES
- Art.7: ENERGY EFFICIENCY OBLIGATION SCHEMES (EEOS)
- Art.8: ENERGY AUDITS AND ENERGY MANAGEMENT SYSTEMS



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Thank you for your participation

Please leave your **feedback in chat**

See / visit

✓ <https://psmr.seai.ie/Public>

✓ <https://www.seai.ie/energyacademy/>

