



An Roinn Airgeadais
Department of Finance

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1 ENERGY TAXES

1.1 Overview

The threat posed by climate change on a global and national level is widely acknowledged. Ireland's 2030 emissions target, as set by the EU Commission, is a 30 per cent reduction of emissions compared to 2005 levels. We are not on the right trajectory to meet this target and failure in this regard will give rise to significant financial penalties. The Government's Climate Action plan sets out a range of measures to address this situation.

The table below outlines the overall emissions by sector for 2017.

Sector	2017 Emissions Kt CO ₂ e	Percentage of 2017 Emission
Energy Industries	11,744	19%
Residential	5,742	9%
Manufacturing Combustion	4,665	8%
Commercial Services	1,072	2%
Public Services	906	1%
Transport	12,003	20%
Industrial Processes	2,236	4%
F-Gases	1,231	2%
Agriculture	20,213	33%
Waste	933	2%
National Total	60,744	100%

Recorded emissions from road transportation increased by about 11% from 2012 to 2017 – an unsustainable trajectory. Energy taxes contribute towards national policy on decarbonisation and emissions reductions by putting a price on harmful emissions and incentivising the switch to greener fuels and modes of transport.

This chapter sets out energy taxation options to address the need to further incentivise behavioural change towards greener alternative fuels and modes of transport.

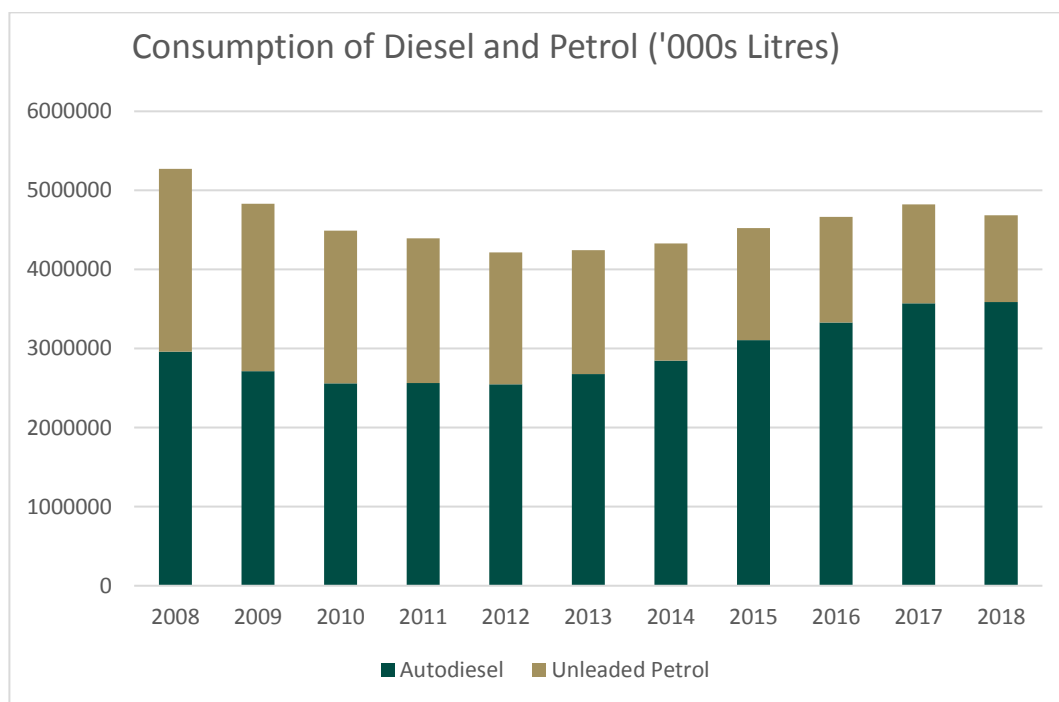
1.2 Current Energy Taxation in Ireland

The table below shows energy tax receipts by tax or product type over the period 2013 to 2018, with heavy oils now responsible for the majority of receipts.

Excise Receipts – Energy Products						
Energy Type	2013	2014	2015	2016	2017	2018
Light Oils	€850m	€800m	€768m	€721m	€682m	€598m
Heavy Oils	€1,177m	€1,219m	€1,351m	€1,447m	€1,556m	€1,565m
LPG	€0.14m	€0.23m	€0.3m	€0.27m	€0.23m	€0.2m
Carbon Tax	€388m	€385m	€419m	€430m	€420m	€431m
Electricity Tax	€6.3m	€5.5m	€4.5m	€4.6m	€3.6m	€2.5m

1.3 Transport Fuels

Petrol and diesel remain the predominant transport fuels in Ireland. The chart below shows the consumption levels of diesel and petrol from 2008 to 2018.

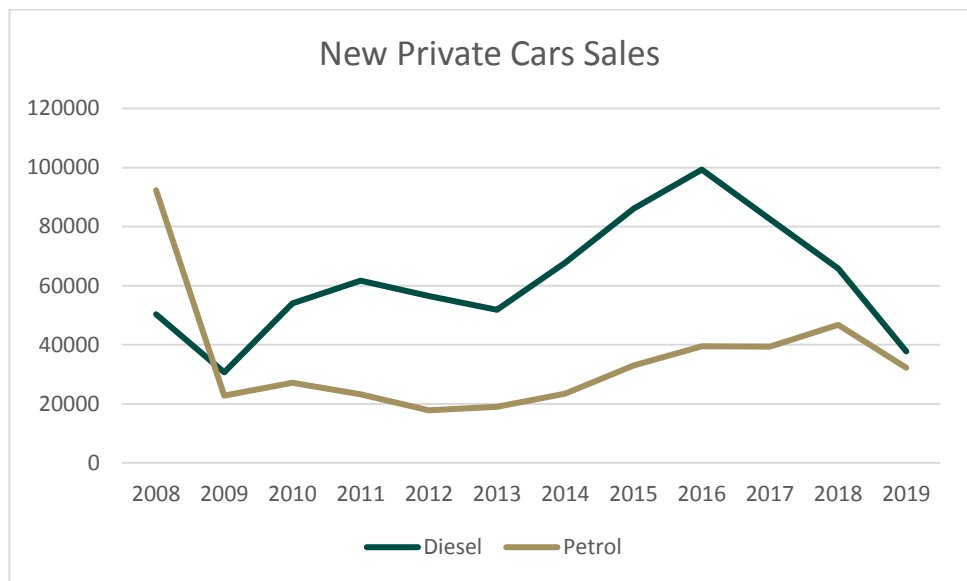


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Ireland's CO₂ based VRT and Motor Tax regimes provide fiscal incentives to motorists to acquire vehicles with low CO₂ emissions and hence better fuel economy. As diesels provide better fuel economy than petrol, this has provided fiscal incentives for the purchase of diesel cars leading to diesel being the dominant fuel in the national market. This is illustrated in the graph on page 7.

However, vehicles emit many pollutants beyond CO₂ which are harmful to both the environment and public health. In particular, harmful pollutants such as nitrogen oxides (NO_x) is very prevalent in diesel vehicle emissions.

¹ Office of the Revenue Commissioners – Excise Volumes by Commodity



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1.4 Auto Fuel and Environmental Health Concerns

Research shows a causal link between exposure to pollutants emitted from vehicles, such as nitrogen oxides (NO_x), sulphur oxides and particulate matter (PM), and a number of chronic conditions including respiratory, cardiac disorders and cancer.

A number of Member States have sought to address specific concerns relating to pollutants emitted in high levels from diesel vehicles. For example, a number of cities have or are moving to ban pollutant and diesel engine vehicles from within their boundaries, such as London, Paris, Madrid, Athens and a number of German cities. Additionally, there are diesel surcharges in place across several Member States, including the UK, in relation to a series of motor vehicle taxes.

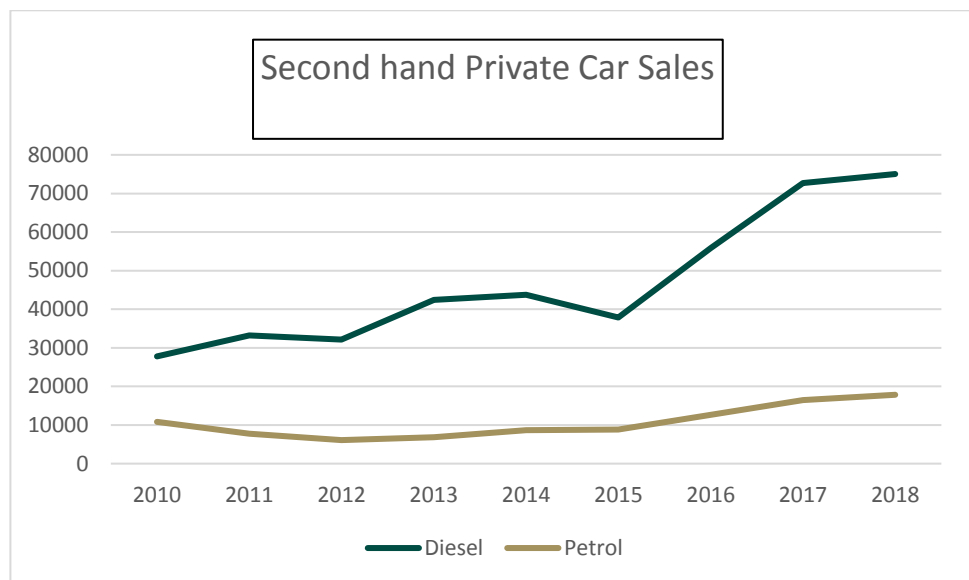
In addition to equalising the excise rates on petrol and diesel, the UK has further incentivised the move away from diesel by the promotion of vehicle scrappage schemes as well as increasingly stricter enhancements to the operation of the Low Emissions Zone including the launch of the Ultra-Low Emissions Zone in April 2019.

This negative sentiment towards diesel in the UK as well as downward fluctuations in sterling has led to large scale importation into Ireland of used diesel cars from the UK in recent years. As the graph below indicates there has been an upsurge in the registration of second hand diesel private vehicles in Ireland since 2015, largely driven by imports from the UK. These

² Source CSO Statbank Table TEA O3 2008-2018

<https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/saveselections.asp>
2019 figures (to 31 May 2019) SIMI Statistics <https://stats.beeppbeep.ie/>

trends exacerbate the environmental health concerns as well as making the attainment of emission reduction targets more difficult.



Ireland did introduce a 1% diesel surcharge into the VRT regime as a measure to address the environmental health issue. While the imports of used diesel cars has reduced in the period January to April 2019 compared to the same period last year, there is still a high volume of used diesel cars imported (average age of around 6 years) and diesel cars remains over 70% of all the used cars imported into the State.

1.5 Fossil Fuel Tax Subsidies

1.5.1 Background

Fossil fuel subsidies make consumption of fossil fuels more attractive relative to other, more sustainable alternatives. There is no globally accepted definition of Fossil Fuel Subsidies. However, the OECD define a subsidy as "any measure that keeps prices for consumers below market levels, or for producers above market levels or that reduces costs for consumers or producers". The origin of the subsidy is usually for broader social reasons, such as to prevent fuel poverty by ensuring that everyone can afford to heat their home. However, these reduced rates fail to properly account for the externalities caused by the combustion of fossil fuels.

³ Source – CSO StatBank / Vehicle Licensing Statistics Annual Series/ [TEA27](https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=TEA27&PLanguage=0)
<https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=TEA27&PLanguage=0>

The European Commission, in its recent Country Specific Recommendations Ireland Report, opined that Ireland has further potential to improve the way its tax system can support environmental objectives, including by way of reducing fossil fuel subsidies.

The Environmental and Energy Taxes TSG paper of July 2017 identified and provided an analysis of fossil fuel tax subsidies. The subsidies identified in that paper were the excise rate applied to Marked Gas Oil, the Diesel Rebate Scheme for hauliers and bus operators, an exemption for domestic users from electricity tax and reduced rates of VAT for heating fuels.

The CSO recently published a Research Paper on Fossil Fuel and Similar Subsidies 2012-2016⁴. It found that total fossil fuel supports in 2016 were almost €2 billion, with the vast majority of this relating to the following sources: Excise Rate on Auto-diesel, Excise Rate on Marked Gas Oil, Excise Rate on Kerosene, Excise Exemption for Aviation Fuel. Other tax measures which could be considered as fossil fuel tax subsidies include the VAT rebate on business diesel expenditure, the Diesel Rebate Scheme for hauliers and bus operators, the exemption for domestic users from electricity tax and reduced rates of VAT for heating fuels.

The recent Climate Action Plan contained the following action points concerning fossil fuel tax subsidies:

- Equalise diesel and petrol excise rates over an appropriate period of time
- Consider the merits of equalising electricity tax rates for business and non-business consumers to €1/MWh.

This section examines the diesel excise gap, the diesel rebate scheme and the rate of electricity tax applied to business users.

⁴https://www.cso.ie/en/media/csoie/releasespublications/documents/rp/fossilfuelandsimilarsubsidies/Fossil_Fuel_and_Similar_Subsidies.pdf

1.5.2 Diesel Excise Gap

Current fuel excise rates are 54.1c per litre on petrol and 42.5c on diesel (with an additional carbon tax charge of 4.6c for petrol and 5.3c for diesel). Accordingly the diesel excise gap is 11.6c per litre excluding VAT. These rates have been in place since 2012.

According to the European Commission Excise Tables for January 2019, the excise rate in Ireland on petrol is the 12th highest in the EU while diesel is the 10th highest. The Euro equivalent excise rates in the UK are 65c on both a litre of petrol and diesel. While many Member States apply a lower excise rate for diesel, a small number, such as the UK and Belgium do not have a diesel excise gap.

The excise gap is effectively a tax expenditure principally designed to protect business but is not well targeted as it is also being enjoyed by private individuals (according to DTTAS data there were over 1,000,000 diesel passenger cars in 2017⁵). Businesses can claim a VAT refund on diesel, while the Diesel Rebate Scheme offers a partial refund of excise duties to qualifying road transport operators.

Diesel Excise Gap Measured by Carbon Content and Fuel Efficiency

The carbon content of diesel is higher than that of petrol; approximately 2,683 and 2,313 grams per litre respectively. Therefore if petrol and diesel were subject to excise duty purely on the basis of CO₂ content, diesel would be subject to a higher excise rate: if the excise rate for petrol were to remain at 54.1c per litre the excise rate on diesel would be approximately 62.9c.

However, diesel is more fuel efficient than petrol - at a rate of 95 gCO₂/km, a diesel vehicle consumes approximately 3.6 litres/100km while a petrol one consumes approximately 4.1 litres/100km⁶. Therefore if petrol and diesel were subject to excise duty purely on the basis of fuel efficiency, diesel would be subject to a lower excise rate: if the excise rate for petrol were to remain at 54.1c per litre the excise rate on diesel would be approximately 46.7c, an excise gap of 7.4c excluding VAT.

⁵ <http://www.dttas.ie/sites/default/files/publications/roads/english/irish-bulletin-vehicle-and-driver-statistics-2017/irish-bulletin-vehicle-and-driver-statistics-2017.pdf>

⁶ See https://ec.europa.eu/clima/policies/transport/vehicles/cars_en

1.5.3 Options to address Government Commitment

Previous TSG papers set out a 5 year pathway to achieving equalisation between excise rates for petrol and diesel. This is again set out below (but with the carbon tax element excluded).

	Petrol excise	Diesel excise	Additional Annual Yield (€m)					Cumulative yield (€m)
Current Rates Per Litre	54.18	42.57						
2020	54.18	44.90	€80.8					€81
2021	54.18	47.22	€79.8	€80.8				€161
2022	54.18	49.54	€79.2	€79.8	€80.8			€240
2023	54.18	51.86	€78.7	€79.2	€79.8	€80.8		€319
2024	54.18	54.18	€78.1	€78.7	€79.2	€79.8	€80.8	€397

Additional Yield from straightforward increases in excise rates on Diesel and Petrol are set out as below.

Increase (VAT inclusive)	Petrol	Auto-diesel
Cent per litre	Yield	Yield
1	€10m	€29m
3	€30m	€86m
5	€51m	€144m
10	€101m	€285m

1.5.4 Diesel Rebate Scheme

Background

Under Article 7 of the Energy Taxation Directive, Member States may apply a lower level of taxation to diesel used as a propellant for commercial purposes provided that it is taxed above the minimum levels set out in the Directive (€0.33/L).

Commercial use of diesel is defined as transport of goods by motor vehicles or articulated vehicle combinations intended exclusively for the carriage of goods by road and with a maximum permissible gross laden weight of at least 7.5 tonnes. The definition also applies to diesel used for the purpose of passenger transport by a motor vehicle which can transport 8 or more passengers.

A Diesel Rebate Scheme was introduced in 2013 in recognition of the prevailing high prices of diesel at that time and in recognition of the role of the road haulage industry in the economy. The scheme provides a partial excise refund on a sliding scale basis to qualifying hauliers and bus operators based on the retail price of diesel. The rebate kicks in when the retail price goes above €1.23 per litre (VAT inclusive); increasing gradually to a maximum rebate of 7.5c when diesel reaches €1.54 per litre (VAT inclusive). Repayments are made on a quarterly basis and the rebate rate is calculated on the basis of the average retail price in a quarter year period (based on CSO data).

Certain qualifying criteria apply, for example, auto diesel must be purchased in the State, either in bulk (over 2,000 litres) or via a Revenue approved Fuel Card, and used in a qualifying vehicle for the purpose of business transport activities. Operators with a licence issued in other EU Member States are also eligible to claim on diesel purchased in the State subject to meeting all the other scheme criteria.

Scheme Cost

The total cost of the scheme to date is approximately €49.8 million. While claims in respect of 413 million litres of diesel were made in respect of 2014, at a total cost of €21 million, the relatively low price of oil in recent years has resulted in low costs for the scheme over more recent years.

The table below shows the total number of litres claimed by qualifying operators and the cost of the payments made in respect of these claims. This relates to activity carried out in the claim

Diesel Rebate Scheme Yearly Claim Volumes and Cost				
Year	Total Litres Claimed (million litres)	Passenger Bus (million litres)	Haulier (million litres)	Total Cost (€ millions)
2013	188	39	149	12
2014	413	79	333	21
2015	164	37	127	13.1
2016	0	0	0	0
2017	158	46	112	1.3
2018*	254	65	189	2.4

**2018 data not final

Exchequer Exposure under the current terms of the scheme

The cost of the scheme is dependent on the volumes being claimed and the rate at which they are being claimed at. The table below shows the Exchequer exposure at various price and volume levels.

AVE Price (VAT Incl.)	100 million litres	200 million litres	300 million litres	400 million litres
€1.23	€0.00m	€0.00m	€0.00m	€0.00m
€1.25	€0.49m	€0.98m	€1.46m	€1.95m
€1.30	€1.71m	€3.41m	€5.12m	€6.83m
€1.35	€2.93m	€5.85m	€8.78m	€11.71m
€1.40	€4.15m	€8.29m	€12.44m	€16.59m
€1.45	€5.37m	€10.73m	€16.10m	€21.46m
€1.50	€6.59m	€13.17m	€19.76m	€26.34m
€1.54	€7.50m	€15.00m	€22.50m	€30.00m

Diesel Rebate Schemes in other Member States

Diesel Rebate Schemes operate in 8 other EU Member States; Belgium, Portugal, Spain, Italy, France, Romania, Slovenia and Hungary. The rates of repayment vary between Member States, Belgium refunds 24.76c per litre while Hungary refunds 2.15c per litre.⁷ There is no diesel refund scheme in the United Kingdom (where the current retail price averages around €1.52 compared to €1.35 in Ireland).⁸ The UK applies a significantly higher excise rate to diesel than Ireland: an equivalent of €650 per 1,000 litres versus €479 for Ireland (which includes the carbon tax element).

In fact, Ireland applies a significantly lower excise rate to diesel than other Member States with Diesel Rebate Schemes like Belgium, France and Italy, which likely means that qualifying

⁷ CNR – Excise Duties and Mechanisms for Partial Rebates on Diesel in Europe
<http://www.cnr.fr/en/CNR-Publications/Excise-duties-and-mechanisms-for-partial-rebates-on-diesel-in-Europe>

⁸ GlobalPetrolPrice.com - Diesel Prices per litre, May 2019
https://www.globalpetrolprices.com/diesel_prices/

operators in these Member States pay higher auto diesel prices in the first instance. Additionally, other Member States, like Belgium apply road user tariffs for HGVs on highways and some urban areas (ranging in cost from approximately 7 cent per kilometre travelled to 20 cent per kilometre).

Criticism of the Scheme

The Diesel Rebate Scheme has been subject to some criticism from an environmental or climate change perspective. An ESRI paper by Morgenrath et al⁹ opined that *“the fiscal focus has dominated discussion of the diesel rebate while the environmental significance has been largely neglected.”* Their study found that the Diesel Rebate Scheme has encouraged greater consumption of diesel and this has had negative environmental consequences over the length of the scheme. The added impact on emissions of CO₂, NO_x and PM₁₀ is estimated to be significant, with over 100,000 extra tonnes of CO₂ emitted.

Broader Taxation of Qualifying Operators under the Scheme

In terms of broader taxes applied to hauliers, it should also be noted that in Budget 2016 the rate of motor tax applicable to commercial vehicles was reduced significantly, in many cases resulting in an annual saving to hauliers in the thousands. At the time the maximum rate was reduced from €5,195 to €900.

Additionally, qualifying operators under the Diesel Rebate Scheme may receive a VAT refund on business diesel expenditure. Thus, when these two are combined, the effective retail price of diesel for (VAT registered) hauliers and bus operators is much lower than for private motorists as shown in the table below.

Retail Price (incl. VAT)	Effective Price for Hauliers and Bus operators
€1.30	€1.04
€1.40	€1.10
€1.50	€1.15

Industry Views

The Irish Road Haulage Association (IRHA) have called for a recalibration of the scheme including an increased repayment rate and lowering of the price floor. The IRHA claim that Irish hauliers are at significant competitive disadvantage vis a vis hauliers based in mainland Europe who avail of diesel rebate schemes operating in Belgium, France and elsewhere. The

⁹ The Environmental Impact of Fiscal Instruments, February 2018

association further state that the Diesel Rebate Scheme is of significant importance to the haulage sector, claiming that fuel represents 28% of the operating costs of IRHA members. The organisation state that diesel is the only viable option as a fuel for Heavy Goods Vehicles as there is no readily available alternative.

Options

There are essentially 3 variables which determine the rate of compensation provided by the Scheme: the floor price (€1.00 excl. Vat), rebate rate (the scheme covers 30% of every additional cent increase above the floor price on a VAT exclusive basis) and the cap (7.5c per litre). These 3 variables in turn determine that the cap is applied when the VAT exclusive price is €1.25 per litre ("the ceiling price").

The essential purpose of the Scheme is to compensate hauliers and bus operators for diesel expenditure when the retail price of diesel is at *relatively high levels*. Whether the current floor price is considered a relatively high price level or not is a debatable point, but reducing this floor levels would not appear to be consistent with the purpose of the Scheme.

At the current rate, any increase in diesel retail prices as a result of increases in the carbon tax, will result in additional exposures for the Exchequer. For example, a €10 increase in the carbon tax, if fully passed through by suppliers, would see diesel increase by 2.66c per litre on a Vat exclusive basis. The scheme, under current rules and at current retail prices, would, in effect, absorb 30% of the increased price.

Thus, the Scheme is well calibrated in order to meet its intended purpose. However, two change options are set out below for consideration:

- *Option 1: Enhance the terms of the Scheme to take account of the position of hauliers and bus operators and their role in the economy.* One means to do this is to double the current rebate rate (from 0.3 to 0.6) when the retail price is above €1.13 (Vat excl.) but retain the same rate when the retail price is between €1 and €1.13. Increase the cap from 7.5c to 11c (which in effect means that the current ceiling price of €1.25 (Vat excl.) remains at the same level).
- *Option 2: Curtail the terms of the Scheme to take account of the environmental perspective.* One means to do this is to half the current rebate rate (from 0.3 to 0.15) when the retail price is between €1.00 and €1.13 (Vat excl.) but retain the same rebate rate when the retail price is above €1.13. Retain the current cap at 7.5c (which in effect means that the current ceiling price increases from €1.25 to €1.32 (Vat excl.).

The estimated costs to the scheme at various price and claims volume levels are set out in the tables below.

Option 1: Enhanced Scheme Terms

AVE Price (VAT Excl.)	100 million litres	200 million litres	300 million litres	400 million litres
€1.00	0.0	0.0	0.0	0.0
€1.05	1.5	3.0	4.5	6.0
€1.10	3.0	6.0	9.0	12.0
€1.15	5.1	10.2	15.3	20.4
€1.20	8.1	16.2	24.3	32.4
€1.25	11.1	22.2	33.3	44.4

Option 2: Curtailed Scheme Terms

AVE Price (VAT Excl.)	100 million litres	200 million litres	300 million litres	400 million litres
€1.00	0.0	0.0	0.0	0.0
€1.05	0.7	1.5	2.2	3.0
€1.10	1.5	3.0	4.5	6.0
€1.15	2.5	5.1	7.6	10.2
€1.20	4.0	8.1	12.1	16.2
€1.25	5.5	11.0	16.5	22.0

1.6 Electricity Tax

Background

Electricity Tax is an excise duty that is charged on supplies of electricity. The tax is charged on the final supply of electricity to the consumer and the liability arises at the time the electricity is supplied.

The Energy Taxation Directive establishes the legislative framework for the application of excise duty to electricity, including the minimum excise duty rates that Member States must apply. Currently there are two rates of electricity tax in Ireland: €0.50 per megawatt hour (MWh) for business use and €1.00 for non-business use¹⁰. These are set at the minimum rates permissible under the Energy Taxation Directive.

In addition to an exemption for household domestic use, there are several reliefs from the tax which means that, as well as the lowest possible rates, the taxation base is narrow¹¹. Consequently receipts from the electricity tax are very low: c€2.5 million in 2018. This represents less than €1 in every €2,200 of excise duty collected in 2018.

Rates and Comparison with Member State

Ireland's rates of electricity tax are the lowest in the EU, alongside certain other Member States who set their rates at the lowest level permitted under the Energy Tax Directive. In relation to business users, several Member States apply rates significantly higher than Ireland, for example the UK's rate is c13 times higher, the Austrian and German rates c30 times higher, the French rate c45 times higher and the Dutch rate c230 times higher. Appendix 1 provides a full table of the rates applicable in Member States for business and non-business use.

Climate Action Plan and Rate of Electricity Tax on Business Use

The Climate Action Plan requires the Department of Finance to consider the merits of equalising electricity tax rates for business and non-business consumers to €1/MWh.

On the face of it, increasing the rate for business use from €0.50/MWh to €1/MWh is a modest proposal: the additional receipts from such a measure would be in the region of €2.5 million¹². However, further consideration would be required in order to assess the impact on any

¹⁰ While the tax is based on the purpose of the use, broadly speaking business use refers to use by commercial entities while non business use refers to use by non-commercial entities such as public authorities. Most taxable supplies are liable at the business rate.

¹¹ For example, reliefs are provided where the electricity has been generated from renewable sources, or from environmentally friendly heat and power cogeneration or when used for chemical reduction or in electrolytic or metallurgical processes, or for or in connection with the production of electricity.

¹² Revenue Estimate

business customers with high volume electricity requirements. In this regard the Department intends to further consult with relevant stakeholders named in the Climate Action Plan.

1.7 Future Energy Tax Policy

1.7.1 Background

The Energy Tax Directive 2003/96/EC EU sets out excise duty rules covering all energy products used for heating and transport, as well as electricity¹³.

In April 2019 the European Commission published a Communication on a more efficient and democratic decision making in EU energy and climate policy¹⁴. The communication points to deficiencies in the Energy Tax Directive such as the lack of mandate to tax energy on content rather than weight/volume, the presence of sector specific energy tax exemptions as well as the absence of any increase in minimum rates in over ten years.

The Commission is currently evaluating the Energy Tax Directive with a view to its potential revision and this report is expected to be published shortly.

The Climate Action Plan foresees and plans for a mass transfer from the consumption of mineral oils to the consumption of electricity over the course of the next decade. This is to be achieved through the replacement of petrol and diesel cars with electric cars and through the uptake of electricity powered heat pump systems.

This has long term implications for the Exchequer as it currently receives some €2.5 billion in annual excise revenues from the taxation of fossil fuels (mineral oil tax, carbon tax), with significant further Vat revenues from fossil fuels. Additionally, some €2 billion is received from the taxation of motor vehicles powered by fossil fuels (VRT, motor tax). This existing revenue base is therefore set to be seriously eroded over the course of the next decade and it is incumbent on the State to seek to address this deficit to ensure fiscal sustainability and funding of essential infrastructures.

The loss of Exchequer revenues from fossil fuel consumption will require consideration of a number of options to raise replacement revenues. It is important to emphasise that such consideration will have to take account of EU developments, in particular any revision of the Energy Tax Directive or any other legislative proposals/initiatives emanating from the European Commission.

¹³ Energy Tax Directive 2003/96/EC

<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0096:en:HTML>

¹⁴Communication From the Commission to the European Parliament, the European Council and the Council

A more efficient and democratic decision making in EU energy and climate policy

https://ec.europa.eu/commission/sites/beta-political/files/communication-efficient-democratic-decision-making-eu-energy-climate-april2019_en.pdf

1.7.2 Possible sources of replacement revenues

In relation to road transport the possibility of user road charging is something that will be explored in conjunction with relevant stakeholders. In relation to HGVs, some Member States currently apply 'per km' type charges. For example, in Belgium this system is facilitated by on board GPS technology, whose maintenance and integrity is the responsibility of contracted service providers. This type of road user charging is critically dependent on technology and the ability to ensure the integrity of the system.

There are other means of applying road user charges for all motorists, such as the extension of road tolls that operate through dynamic pricing models in order to address the economic and social costs of congestion.

According to the 2016 CSO Transport Omnibus a total of 48.5 billion kilometres was travelled on Irish roads in 2016. A kilometre based charging system has the potential to raise significant replacement revenues from road users.

In relation to all fossil fuels, an increased carbon tax to at least €80 per tonne of CO₂ has the potential to raise significant revenues through the next decade, though the extent to which those revenues will be retained by the Exchequer is a matter under active consideration.

As the Climate Action Plan foresees and plans for a mass transfer from the consumption of mineral oils to the consumption of electricity it may be necessary in the future to examine the current exemption from electricity tax for householders as a means to, in small part, replace revenue foregone on home heating fuels as well as auto fuels where electric cars are charged from the household.

Any such analysis would need to allow for the fact that households are currently subject to the Public Service Obligations (PSO) Levy¹⁵ where the current monthly household charge is €3.48.¹⁶ It would also need to take into account the mix of fossil fuels in electricity generation and whether the applicable tax ought to be limited to this element.

¹⁵ The PSO is charged to all final electricity consumers and is designed to recover the additional costs associated with electricity from specified sources of generation, including sustainable, renewable and indigenous sources.

¹⁶Commission for Regulation of Utilities – Decision Paper Public Service Obligation Levy 2018/19
<https://www.cru.ie/wp-content/uploads/2018/03/CRU18148-2018-19-PSO-Decision-Paper.pdf>

1.8 CJEU Ruling on Auto Fuel used by Private Pleasure Craft

Background

Ireland had a derogation under the Energy Tax Directive to apply a reduced rate of mineral oil tax to diesel used as a propellant in private pleasure craft¹⁷. This derogation expired at the end of 2006 and the European Commission declined to bring forward a proposal to extend it. Since then, Ireland is obliged to tax diesel used for private pleasure navigation at the auto-diesel excise rate (rather than the lower marked gas oil excise rate). The Finance Act 2008 provided that private pleasure craft could continue to use marked gas oil but in that event were obliged to make annual declarations to the Revenue of the volume of marked gas oil used in the calendar year (this provided the basis to calculate and charge the additional excise duty liability). The European Commission were dissatisfied with these legislative provisions and the enforcement arrangements and in 2017 initiated proceedings against Ireland.

Court ruling

On 17 October 2018 the CJEU ruled against Ireland as follows:

“Declares that, by not ensuring that the minimum levels of taxation applicable to motor fuels laid down by Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity were applied to gas oil used as fuel for propelling private pleasure craft, and by permitting the use of marked fuel for propelling private pleasure craft, even where that fuel is not subject to any exemption from, or reduction in, excise duty, Ireland has failed to fulfil its obligations under Articles 4 and 7 of Directive 2003/96 and Council Directive 95/60/EC of 27 November 1995 on fiscal marking of gas oils and kerosene respectively”

Implementation of Court ruling

The Department accepts the CJEU ruling and agreed with the European Commission that it would be implemented in Finance Bill 2019, with a commencement date of 1 January 2020. In practical terms the implementation of the ruling will mean that private and hired pleasure craft operating in the Republic of Ireland must use auto-diesel from 1 January 2020.

¹⁷ Private Pleasure Craft is defined by the Directive as ‘any craft used by its owner or the natural or legal person who enjoys its use either through hire or through any other means, for other than commercial purposes and in particular other than for the carriage of passengers or goods or for the supply of services for consideration or for the purposes of public authorities.’

Commercial (e.g. fishing vessels) and public authority craft will be exempt from the requirement.

The Department has informed the relevant State authorities of the ruling and the timeline for its implementation so that they can consider what issues, if any, need addressing from their perspective.¹⁸ There is no policy discretion regarding the implementation of this ruling nor its timing.

¹⁸ For example see December 2018 Notification by Waterways Ireland
<https://afloat.ie/sail/cruising/item/41372-prohibition-on-use-of-marked-gas-oil-on-personal-pleasure-craft>

2. CARBON TAX

2.1 Background

The Commission for Taxation recommended the introduction of a tax on carbon emissions from fossil fuels released for consumption in Ireland in order to broaden the tax base and to protect and enhance the environment.

The Carbon Tax was first implemented in 2009 on a phased basis and applied to petrol and diesel initially. It was extended to other liquid fuels in 2010 and to solid fuels in 2013. The current rate is €20 per tonne of CO₂ and is applied on diesel, petrol, kerosene, natural gas, LPG, coal and peat, used in transport, home heating and machinery.

According to the CSO, businesses contribute 52.4% of carbon tax receipts with the remainder coming from private motorists/households. To the extent that businesses pass through these costs to their Irish consumers, it can be inferred that the majority of the carbon tax is ultimately paid by private motorists/households.

Carbon tax (VAT exclusive) receipts in 2018 were approximately €431 million. The table below sets out the Annual Carbon Tax Yields for the period 2010 to 2018.

Year	Auto Diesel	Petrol	Kerosene	Marked Gas Oil	Natural Gas	Solid Fuel	Other Fuels	Total Net Receipts
2010	€98m	€65m	€17m	€27m	€11m	-	€4m	€222m
2011	€98m	€60m	€41m	€49m	€43m	-	€8m	€299m
2012	€131m	€75m	€40m	€55m	€45m	-	€9m	€355m
2013	€137m	€70m	€47m	€60m	€57m	€7m	€10m	€388m
2014	€145m	€66m	€42m	€54m	€52m	€17m	€9m	€385m
2015	€158m	€62m	€53m	€55m	€57m	€23m	€11m	€419m
2016	€171m	€59m	€53m	€56m	€56m	€24.4m	€11m	€430m
2017	€180m	€54m	€52m	€49m	€54m	€19m	€12m	€420m
2018	€183m	€48m	€59m	€54m	€50m	€25m	€12m	€431m

2.2 Cost to Consumers

The table below shows the impact of the carbon tax on a typical fuel bundle at the current rate and at rates of €40 and €80, respectively.

Fuel Type	Typical Bundle	Fuel	Carbon tax at €20 (incl VAT)	Carbon Tax at €40 (incl VAT)	Carbon Tax at €80 (incl VAT)
Petrol	60 litre fill		€3.39	€6.78	€13.76
Diesel	60 litre fill		€3.93	€7.86	€15.72
Kerosene	900 litre tank		€51.82	€103.64	€207.28
Peat	12.5kg bale		52c	€1.04	€2.08
Coal	40 kg bag		€2.40	€4.80	€9.60
Natural Gas	11,000 kwh annual consumption		€46	€92	€184

The Carbon Tax, at the current rate, typically forms only a very small proportion of the retail price for auto fuels (currently around 3-4% of the retail price of a litre of petrol and diesel). Total taxes on a litre of petrol and diesel are currently about 61% and 55% of the average retail price, respectively. The Carbon Tax forms a larger amount of the retail price on the most carbon intensive fossil fuels, like coal and peat.

2.3 Cross Border Issues

Significant increases to the carbon tax allied to Euro-Sterling currency fluctuations, whether Brexit related or not, have the potential to impact on existing cross-border issues in relation to mineral oils and solid fuels.

Fuel tourism has been an ongoing issue in relation to diesel, due to the much lower rate of excise duty applied in the South than in the North. Previous studies on fuel tourism suggests a significant cross border trade in auto fuels: an ESRI study based on 2015 data suggests that diesel fuel tourism is worth €202m to the Irish Exchequer, with a further €28m for petrol¹⁹. Based on CSO data²⁰ it is estimated that fuel tourism in diesel was around 333m litres in 2014, 510m litres in 2015, 429m litres in 2016 and 183m litres in 2017.

There are also ongoing concerns regarding an illicit solid fuels trade (in the context of environmental regulation) from North to South, which is incentivised by the lower taxes applying to solid fuels in the North (no carbon tax as well as a lower VAT rate).

¹⁹ <https://www.esri.ie/publications/assessing-the-level-of-cross-border-fuel-tourism-2>

²⁰ See table SEI106: Fuel consumption by sector, fuel type and year.

2.4 Recent ESRI Research

Recent work by three groups of researchers at the ESRI has examined the potential impacts of increases to the carbon tax in Ireland on emissions, economic activity, household income, inequality and fuel poverty.

Tovar Reaños and Lynch develop a behavioural microsimulation model, which focuses on modelling households' consumption responses to changes in energy prices²¹. Their model examines the one time increase of the carbon tax and analyses the impacts across households given their consumption responses. Without revenue recycling, they find that the carbon tax increase is regressive, and inequality increases with rural household, older dwellings, those of lower skill level and those in the lowest income quartile most impacted. They furthermore investigate the use of revenue recycling to reduce the regressivity of the carbon tax increase. They examine a 'flat' lump sum transfer, where carbon tax revenues are shared across households equally. Using revenue recycling redistributes income to poorer households making the first three quartiles better off and decreasing inequality. Moreover, they examine a 'targeted' transfer where carbon tax revenues are shared among household in an inverse proportion to their income, i.e. poorer households receive a higher transfer compared to richer. This further redistributes the income from richer to poorer households, with the first two quartiles significantly better-off with the carbon tax increase.

Bercholz and Roantree assess potential budgetary options for compensating households for an increase in the carbon tax, using a combination of data from the Household Budget Survey (HBS) and SWITCH (the ESRI tax and benefit microsimulation model)²². Holding fixed the behaviour of households and firms, they find that although a carbon tax rise would disproportionately affect lower-income and rural households if done in isolation, the revenues raised can be used to leave these households, on average, financially better-off through a lump sum transfer, an increase in the maximum rates of social welfare benefits, or a combination of income tax cuts and social welfare increases. However, they also find using revenues solely to reduce income taxes (through an increase to personal, PAYE, earned income and other tax credits) would leave households in the four lowest-income deciles on average worse-off.

De Bruin and Yakut develop a Computable General Equilibrium model (I3E) to investigate the secondary and macroeconomic impacts of a phased multi-annual carbon tax increase and revenue recycling scheme²³. Their analysis includes price impacts on non-carbon goods and other secondary price impacts, where for example as carbon tax increases, demand decreases, reducing the price, macroeconomic impacts and impacts on household income through labour and capital income, which is also affected by carbon taxes. They too find that without revenue recycling a carbon tax is regressive. Using either a lump sum transfer or an increase in social welfare transfers, revenue recycling schemes result in more progressive impacts. The carbon tax is found to have a small impact on GDP and using a transfer scheme

²¹ Carbon Taxation in Ireland : Distributional Impacts of Revenue Recycling Policies
www.esri.ie/system/files/publications/QEC2019SUM_SA_Lynch.pdf

²² Carbon Taxes and Compensation Options
<https://www.esri.ie/system/files/publications/BP202001.pdf>

²³ The I3E Model <https://www.esri.ie/current-research/the-i3e-model>

will reduce this impact. Using carbon tax revenue to reduce other distortionary taxes can result in a double dividend, where emissions are reduced and economic growth is boosted. They find that this can be achieved with either a wage tax reduction or sales tax reduction in Ireland. The distributional impact of these are regressive and mixed respectively.

The ESRI is undertaking further research examining the potential options of revenue recycling as detailed above. The Department of Finance will continue to work with the ESRI to build an improved evidential base for assessing the environmental, economic and social impacts of putting in place a long term carbon tax trajectory.

2.5 Recent Policy Developments & Carbon Tax Trajectory

There has been much focus on Carbon Tax and future policy in recent times. The Final Report of the Joint Oireachtas Committee on Climate Action (JCCA), *Climate Change; A Cross Party Consensus for Action* recommend implementation of a long term trajectory of rate increases rising to at least €80 per tonne of CO₂ emission by 2030 subject to examination of the social and economic impacts of rate changes. The Government's *Climate Action Plan 2019 To Tackle Climate Breakdown* subsequently adopted this recommendation.

In addition to a commitment to increase the carbon tax rate to at least €80 per tonne by 2030 there is a commitment to 'carry out a full assessment of a trajectory of increases over successive annual Budgets'.

A small number of countries have embarked upon long term carbon tax trajectories. In France, the set long term trajectory is not currently being implemented. In Canada, multi annual increases to the backstop carbon tax are legislated for, however, the tax itself is currently the subject of legal proceedings taken by certain Canadian provinces as well as the subject of political debate in the context of upcoming federal elections.

By the very logic of using the carbon tax as a behavioural instrument and as one of many measures to help meet our 2030 climate change targets, it can be argued that frontloading the increases would be more effective from an environmental perspective and would better support the targets in relation to take-up of electric vehicles, home insulation, etc.

Any trajectory put in place would be predicated on measures being simultaneously put in place to address energy poverty or more broadly to make allowances for households and businesses who currently have no realistic alternative to the consumption of fossil fuels for heating and transport purposes.

In terms of meeting the commitment to increase the carbon tax to at least €80 by 2030, a possible trajectory is to raise the rate by €10 per tonne in 2020 and by €5 per tonne every year thereafter.

However, there are other considerations related to locking in to a long term trajectory of carbon tax increases. Such a move reduces the flexibility of the Minister to react to specific circumstances which may have serious implications for the economy, for example Brexit. Another relevant consideration is the trajectory of crude oil prices, a volatile commodity where unforeseen changes in prices can occur quite suddenly. If crude oil prices were to fall dramatically at some point in the next decade it would seem that this would undermine the

environmental efficacy of locking in to annual increases in the carbon tax of say €5 per tonne. On the other hand, if crude oil prices were to increase dramatically at some point in the next decade it would seem that locking in to annual increases in the carbon tax of say €5 per tonne could be economically damaging. In other words, setting a long term carbon tax trajectory that is wholly insensitive to developments in crude oil markets (or more relevantly price developments at the retail end) may imprudently limit the flexibility of the Minister for Finance to appropriately react to the circumstances of the day.

This suggests that if there is to be a long term trajectory in place it should be flexible enough to allow for both a 'step-off' from the carbon tax escalator or, in the alternative, an ability to increase the speed towards €80 per tonne.

2.6 Public Consultation on uses of carbon tax revenues

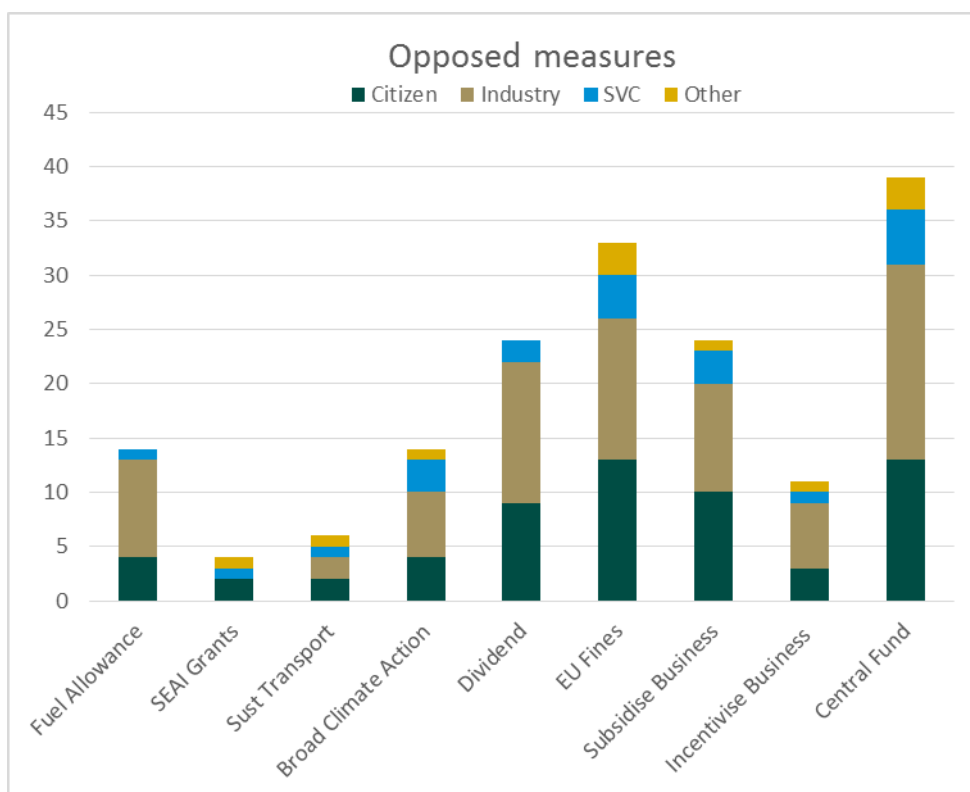
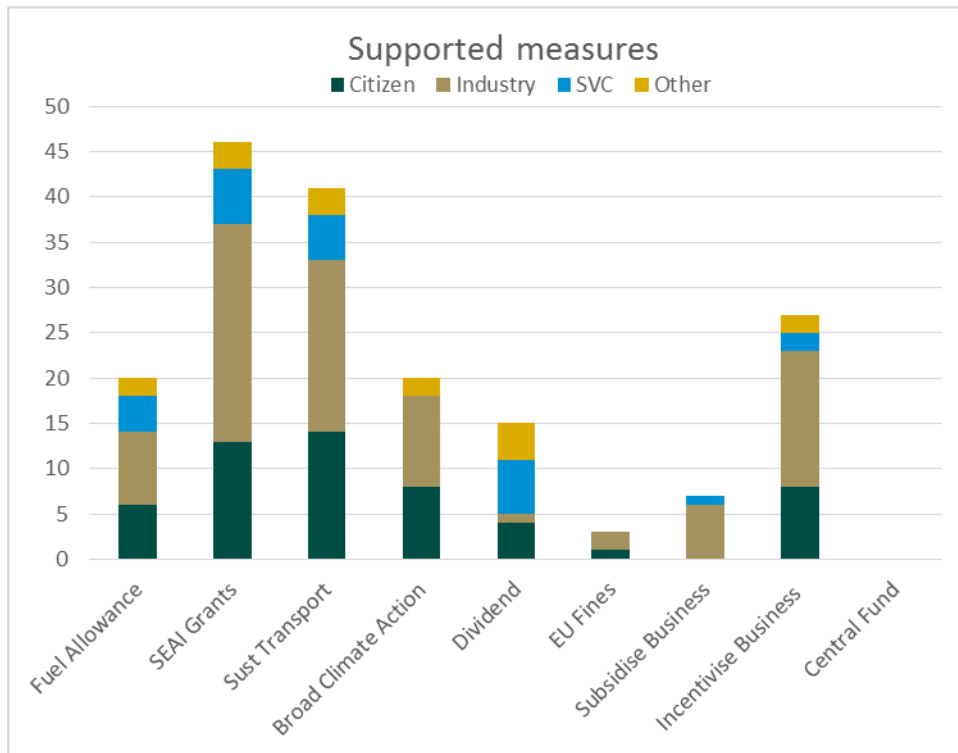
The Department's main role in relation to carbon tax policy is in providing policy advice on the scope of application and rate of the tax as well as any economic, social, Exchequer, administration and legal impacts that may arise from changes to these variables. However, the JCCA final report recommended that the Department conduct a public consultation examining the options for use of revenue raised from increases in carbon tax. In line with this recommendation the Department of Finance launched a public consultation on this issue.

The consultation is now closed. There were 66 submissions received. Responses were received from the following: 19 private individuals, 28 businesses or business representative organisations, 13 Social, Voluntary and Community (SVC) Bodies and 6 other (political or public administration bodies and academics or academic organisations).

Respondents were asked to select from the following list of options on the use of revenue raised from increases in carbon tax:

- a. To increase the fuel allowance to compensate those households likely to suffer from fuel poverty;
- b. To enhance the current grants towards the cost of energy efficiency improvements in the homes of those most vulnerable to fuel poverty through the Better Energy Homes scheme or the SEAI Better Energy Warmer Homes scheme;
- c. To fund sustainable transport including cycling infrastructure and public transport;
- d. For broad climate actions (e.g. earmarked to the Climate Action Fund or similar);
- e. To return the proceeds by way of a dividend to citizens or households through the social welfare and/or tax system;
- f. To be set aside to meet any fines the State is liable to pay arising from failure to meet our climate targets;
- g. To act as a buffer against increasing the cost of doing business for businesses with no realistic short to medium term alternative to continued fossil fuel use and for whom fossil fuels constitute a large amount of overall business expenditures (e.g. by enhancing the Diesel Rebate Scheme);
- h. To incentivise business moving away from the use of fossil fuels to more sustainable production methods;
- i. by the Exchequer for general government expenditure;

The Department wishes to thank those who submitted to the public consultation. A summary of the responses to the options set out in the consultation is set out in the graphs below.



The Department notes that the predominant view from the public consultation is that the additional carbon tax revenues should be ring-fenced for the purposes of enhancing the current SEAI grant scheme for household energy efficiency improvements (option b) and to fund sustainable transport infrastructure (option c).

As can be seen in the charts below, the majority of respondents favoured options (b) and (c). Most respondents were against the use of revenue for general government expenditure or to pay EU fines arising from failure to meet targets.

Option (a), increasing the national fuel allowance to support those at risk of fuel poverty, received a mixed response among all respondents. The option of returning the proceeds by way of dividend to citizens or households through the social welfare and/or tax system received a negative response overall, being one of the least supported and most opposed options.

The option to use additional carbon tax revenues for Broad Climate Action purposes (e.g. Climate Action Fund or similar) received a slightly negative response overall (most respondents stating their preference for transparent and visible use of revenue arising for measures related to climate change). The option to incentivise businesses to switch to more sustainable production measures garnered support among industry respondents and limited support from other respondents.

Among responses submitted, it was noted that Carbon Tax as an environmental tax measure should eliminate the need for its existence in the future, and that general revenue arising from the tax should not be relied upon for general government expenditure.

Set out below is information in relation to existing schemes which were referenced in the public consultation and which, with the exception of the Diesel Rebate Scheme for Essential Road Users, fall under the responsibility of other Government Departments. These schemes have a purpose of helping households and businesses who are vulnerable to high fuel costs.

2.7 Energy Poverty and Mitigation Measures

The National Fuel allowance is a payment under the National Fuel Scheme to help with the cost of heating homes during the winter months. Approximately 370,000 households are in receipt of this payment at an estimated cost of €233m per annum.

Since its launch in 2009 the Better Energy Homes Scheme has provided funding for over 220,000 homes who received in excess of €238m. The Sustainable Energy Authority of Ireland also operates the Better Energy Warmer Homes scheme which provides grants for the full costs of energy efficiency improvements in the homes of the elderly and those most vulnerable to fuel poverty. Over 140,000 low income households have received free energy efficiency upgrades to improve energy efficiency in their homes at a cost of €220m under this scheme.

Business Mitigation Measures

In terms of tax measures to mitigate the impact on businesses for whom diesel fuel comprises a large proportion of business expenditure and who have no realistic alternative to diesel at

the point in time, the operation of the Diesel Rebate Scheme (DRS) and potential options around recalibration of the scheme are examined under Energy Taxes chapter of this paper.

More generally, there is a VAT refund scheme for business diesel expenditure. The effect of this is that businesses pay for their auto fuel at 81% (1/1.23) of the rate that private motorists do. As VAT is applied to the carbon tax, business will be able to secure a refund on the VAT on any additional carbon tax.

General Climate Action Measures (including rural measures)

The Department notes that there is currently a levy on petroleum products part of which is intended to be redirected to a Climate Action Fund which supports climate change objectives. The Department of Communications, Climate Action and Environment has responsibility for implementing the Climate Action Fund, which will have an allocation of at least €500 million over the period to 2027. The objective of the Fund is to support initiatives that contribute to the achievement of Ireland's climate and energy targets in a cost effective manner, or offer the potential for innovative interventions in these sectors, and which, in the absence of support from the Fund, would not otherwise be developed.

2.8 Options

Options in relation to increasing the rate of carbon tax

Increase in Carbon Tax	Additional Revenues (Full Year)
To €25	€108m
To €30	€216m
To €35	€323m
To €40	€430m

Commencement Issues

In the event that there is an increase to the carbon tax rate, consideration should be given to following the previous practice of implementing increases in the carbon tax applying to home heating fuels from 1 May of 2020 to allow for the winter fuel season cycle elapse. The delay in relation to home heating fuels could reduce additional receipts in 2020 by some €20m for a €5 rate increase and some €40m for a €10 rate increase.

3. MOTOR VEHICLE TAXES

3.1 Electric Vehicles

The Programme for Partnership Government outlines this Government's intention to become a leader in the take-up of electric vehicles.

'We want Ireland to become a leader in the take-up of electric vehicles. We will establish a dedicated taskforce involving relevant government departments, agencies, industry and representative groups, to work on this goal and to set ambitious and achievable targets. The taskforce will also investigate the potential role and use of other future fuels such as hydrogen.'

The Government's Climate Action Plan sets ambitious targets for the take-up of electric vehicles: 550,000 passenger Battery Electric Vehicles on our roads by 2030 with a further 290,000 passenger PHEVs. According to the ESB the average battery electric car emits around 70 gCO₂/km with the current mix of electricity generation. This broadly tallies with Department of Finance calculations and confirms that they are significantly less pollutant than conventional cars.

Ireland currently has a well-developed infrastructure for electric vehicles with over 1,200 public charging points and every town with a population of over 1,500 is equipped with at least one. The ESB also provided free home charging points for consumers who purchase a new EV until end 2017, from 2018 a domestic charger grant has been made available by SEAI for new and second hand vehicles up to a maximum of €600. As the up-take of EVs increases so will the number of public charging points. Though EV sales have increased, the base remains relatively low. By the end of May 2019, there were around 6,892 BEVs on Irish roads, showing strong growth from 2018²⁴.

In line with the Programme for Partnership Government, a Low Emission Vehicles Taskforce (LEV) was established to examine options which may be beneficial to the early adoption of this cleaner technology. The taskforce reported progress on Phase 1 (electric vehicles) to the Government in advance of Budget 2018²⁵.

²⁴ By end May 2019: 6,892 battery electric vehicles, 4,524 PHEVs, and 41,507 conventional hybrids.

²⁵<https://www.dccae.gov.ie/en-ie/energy/publications/Documents/21/LEV%20Taskforce%20Phase1%20Progress%20Report.pdf>

3.2 Vehicle Registration Tax

Vehicle Registration Tax (VRT) is a tax chargeable on the registration of vehicles in the State and is levied as a percentage of the open market selling price (OMSP) of the vehicle. Since 1 July 2008, both VRT and Motor Tax on private motor cars have been calculated on the basis of CO₂ emissions, so that cars with higher CO₂ emissions attracted a higher tax liability. The current VRT regime is set out below:

Pre-2013 VRT Band	Pre-2013 VRT Rate	New VRT Bands	CO ₂ g/km	VRT Rate (Petrol)	VRT Rate (Diesel) [Effective 2019]
A	14%	A1	0-80	14%	15%
		A2	81-100	15%	16%
		A3	101-110	16%	17%
		A4	111-120	17%	18%
B	16%	B1	121-130	18%	19%
		B2	131-140	19%	20%
C	20%	C	141-155	23%	24%
D	24%	D	156-170	27%	28%
E	28%	E	171-190	30%	31%
F	32%	F	191-225	34%	35%
G	36%	G	Over 225	36%	37%

3.2.1 Recent Revenues and Trends

The bulk of revenue from VRT is raised on private motor cars. VRT is a highly pro-cyclical tax, with car registrations linked to the economic climate. The table overleaf shows recent trends in VRT yield and new and used car registrations.

Year	VRT Yield	New Car registrations	Used Car registrations
2008	€1,121m	146,637	55,819
2009	€375m	54,055	45,055
2010	€383m	85,264	37,125
2011	€388m	87,086	38,214
2012	€379m	76,237	37,902
2013	€437m	71,317	48,146
2014	€542m	92,613	32,806
2015	€659m	125,221	48,398
2016	€814m	146,806	72,718
2017	€841m	131,683	94,456
2018	€885m	121,092	98,415
2019*	€942m	113,550	103,976

*estimate

Ireland has a very high rate of diesel cars compared to many EU Member States and the continued ‘dieselisation’ of the Irish passenger car fleet, principally arising from used car imports, has been reported on and examined in previous Tax Strategy Group papers. The relative weakness in sterling is one driver behind this trade. However, it is likely that the disparity in the respective tax and regulation policies of Ireland and the UK in relation to diesel fuel and diesel vehicles is also a significant driver of this trade. Market sentiment has turned strongly against diesel vehicles in the UK due to the range of ‘anti-diesel’ measures introduced by its government in recent years. This feeds into the Irish market being a convenient outlet for used diesel cars.

The trend of large volumes of used diesels being imported from the UK to Ireland must be considered in view of the specific contribution of diesels to environmental health issues, of which there is a growing body of evidence (*See Energy Taxes Chapter*). The Society of the Irish Motor Industry have also called for tax policy to redress this trend.

The 1% surcharge on all diesel cars, introduced in Budget 2019, provided a broad signal to motorists that policy in this area is being critically examined. Further measures around addressing these environmental health concerns are set out in the *surcharge option* section.

3.2.2 Objectives of VRT Reform

There are three broad objectives which underpin the proposed changes to VRT below:

1. To strengthen the environmental rationale of VRT, as called for by the Climate Action Plan.
2. To manage the transition to the new emissions testing procedure, WLTP so as to address level playing field issues between cars subject to this test and the old less stringent test.
3. To recognise non CO2 pollutants which are associated with road transport and which give rise to public health and environmental concerns.

3.2.3 Transition to Using New Emissions Testing (WLTP) For VRT Purposes

The 2018 Energy and Environmental Tax Strategy Paper included a detailed section on the implications of transitioning to the new emissions testing procedure, WLTP. In summary, all new cars are now tested under the WLTP, which is a more stringent test and records, on average, significantly higher emissions than its predecessor, the NEDC test.

The WLTP test became mandatory for all new car registrations since September 2018²⁶. In 2019, for the purposes of calculating the VRT charge, WLTP tested cars were taxed based on CO2 values obtained from an adjusted NEDC test, using a conversion tool developed by the EU Commission²⁷. Therefore, the WLTP CO2 values are *not* currently being used for VRT purposes, though they are used for the purposes of the provision of consumer information.

This situation must be addressed as not to do so would be incompatible with the Climate Action Plan commitment that the VRT regime for passenger cars would be reformed in light of recent progress on emissions standards. It would also send the wrong message if the old discredited emissions testing procedure were still being used as the base for the calculation of VRT in place of the new more reliable and robust emissions testing procedure

It is suggested that WLTP CO2 values should be used for the purposes of calculating the VRT charge from 2020. In recognition of the lead-in time for dealerships ordering vehicles, it does not seem unreasonable that the commencement should be delayed until July 2020.

²⁶ A relatively minor 1 year derogation is provided in relation to certain end-of-series cars.

²⁷ For WLTP tested cars, Revenue use the NEDC adjusted CO2 value derived from a CO2MPAS conversion tool that has been developed on behalf of the EU Commission and is underpinned by EU regulations (Commission Implementing Regulation 2017/1153 of 2 June 2017). In effect, the WLTP CO2 value is adjusted downwards to its NEDC equivalent value, resulting in a lower VRT charge than would otherwise be the case. While the adjusted NEDC CO2 value is around 9.6% higher than the NEDC value of a car of the same make and model, according to SIMI, findings from a Dutch study on this issue conclude that the adjusted NEDC value is higher than the unadjusted NEDC value primarily because new WLTP tested cars are heavier and speedier than the NEDC car of the same make and model.

<https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/kamerstukken/2018/10/19/onderzoek-tno-naar-de-wltp-testmethode-en-bpm/onderzoek-tno-naar-de-wltp-testmethode-en-bpm.pdf>

In order to fully transition from NEDC to WLTP in a manner which seeks to maintain a level playing field between all cars, it is necessary to make an adjustment to the CO₂ values derived from cars which are NEDC only tested (used imported cars). Effectively, this would be an upward adjustment which seeks to assign a CO₂ value to a NEDC tested car which is equivalent to the CO₂ value of the car if it were WLTP tested, i.e. to apply a NEDC uplift.

European Commission research from 2017 found that, on average, CO₂ values for passenger cars increased by 21% under WLTP²⁸. However, this was not evenly distributed, with increases of up to 41% for lower emitting cars increasing while the highest emitting cars did not show any material changes in CO₂ values. Analysis conducted by the Department and Revenue, using a large sample of VRT data²⁹, bore similar findings. On average, passenger car emissions values had a WLTP/NEDC ratio of 1.21, with an average ratio of 1.19 for petrol cars and 1.23 for diesel cars. See Appendix 3 for regression analyses and line equations for diesel and petrol cars. We will continue to monitor this situation and the latest available data released by the European Commission.

There are two possible methods for applying an uplift in CO₂ values for NEDC tested cars. One is to use the average 21% uplift found in both the European Commission and the Department/Revenue research. This is simple from an administrative perspective, though it would not be well calibrated to all vehicles as the aforementioned 2017 European Commission study indicates. The Department and Revenue analysis of Irish market VRT data also highlights wide dispersion around this 21% mean, with diesel and lower emitting cars benefitting as their NEDC uplifts should, on average, be higher.

The second option is to adopt the methodology taken in the 2017 European Commission research and use the line equations as shown in Appendix 3. The following table illustrates the effective NEDC uplift for diesel, petrol and PHEV cars based on these equations. For example, a diesel car with emissions of 125 gCO₂/km when tested under NEDC would be assigned a WLTP equivalent value of 154 for the purpose of calculating the VRT charge.

²⁸ <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC107662/kjna28724enn.pdf>

²⁹ Over 2100 registered vehicle types for which eCOCs were available, September 2018 to January 2019

WLTP Equivalent CO2 values for NEDC tested cars

g/km	WLTP Equivalent		
NEDC test	Irish Data - Diesel	Irish Data - Petrol	Irish Data - PHEV
50	67	75	62
65	84	89	77
75	96	99	87
85	108	109	98
95	119	119	108
105	131	129	118
115	143	139	129
125	154	149	139
135	166	159	150
145	178	169	
155	189	179	
165	201	189	
175	213	199	
185	225	209	
195	236	219	
205	248	228	
230	277	253	
250	300	273	

3.2.4 Strengthening the Environmental Rationale of the VRT Regime

Regardless of which option is pursued to equate NEDC cars with WLTP emissions standards, it is necessary to strengthen the environmental rationale of the VRT regime in order to meet the commitment contained in the Climate Action Plan. The 2018 Energy and Environmental Taxes Paper detailed a potential new formula for calculating VRT which consisted of a fixed and variable charge percentage of OMSP. This more linear approach seeks to strengthen the rationale of the tax along the polluter pays principle and to remove distortions caused by the stepped nature of the current VRT regime.

In addition to last year's proposal, this paper outlines a potential restructuring of the tax which more closely reflects the current design (i.e. retains the bands structure). There are a number of ways to strengthen the environmental rationale of the VRT regime for passenger cars. For example:

- to increase the high-low gap, that is the gap between the lowest rate and the highest rate. Currently this gap is 22% (36-14 for petrol and 37-15 for diesel).

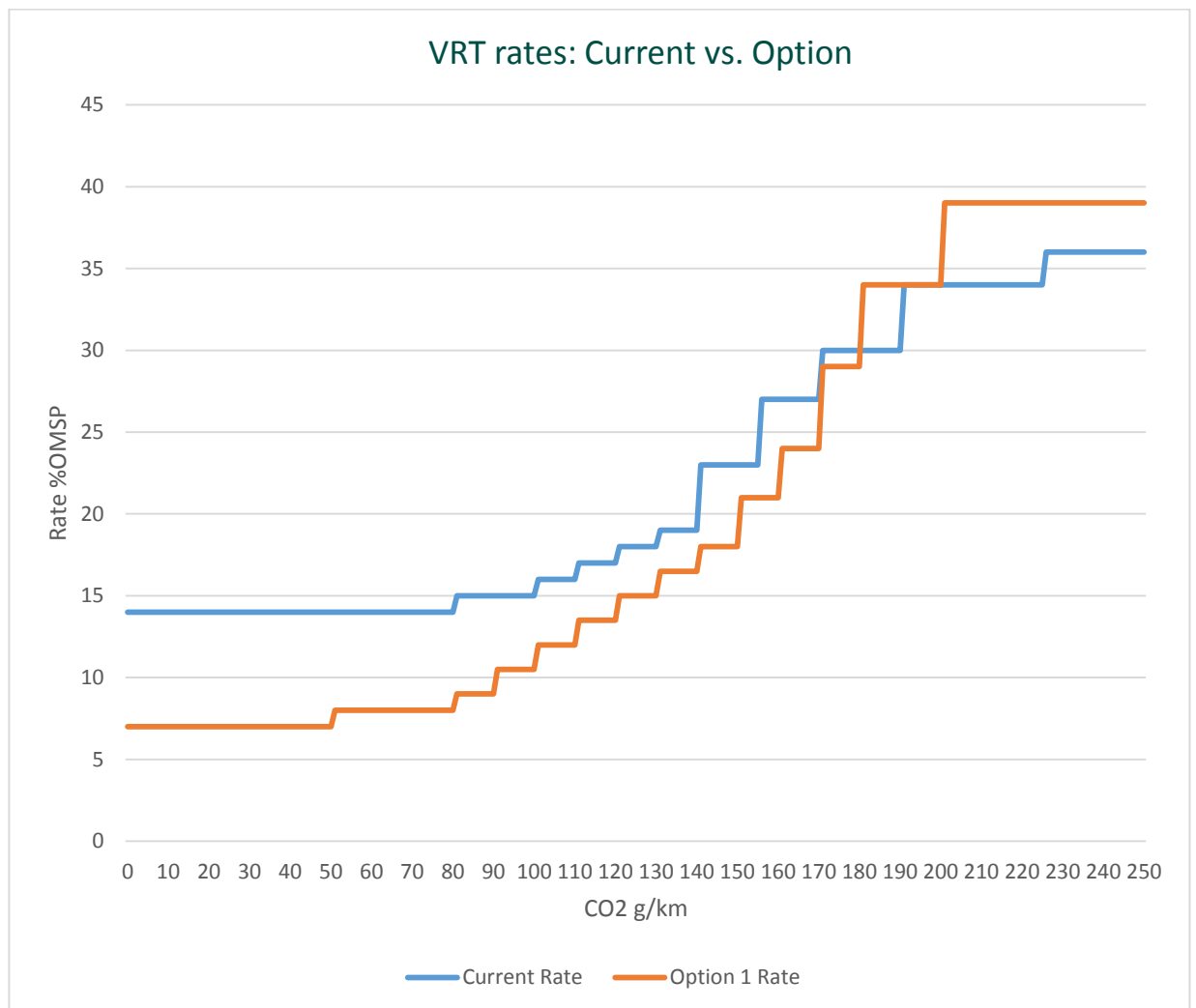
- to increase the rate gap *between* the bands in which most passenger cars fall. Currently this gap is 1% of OMSP for each 10g CO₂/km band (in respect of bands where the majority of cars fall, the four bands between 100 and 140 gCO₂/km).
- to increase the gap between the lowest emitting vehicles and vehicles which have an average or above average CO₂ emissions profile. Currently this gap is 4% of OMSP (18% versus 14%).

Additionally, aligning the VRT rate bands with the EU definition of ultra-low emission vehicle, namely a vehicle with emissions of 50g CO₂/km could help to support consumer choices where, for example, the purchase of a battery electric vehicle is not a feasible option, but where, for example, a very low emitting plug-in hybrid electric vehicle may be.

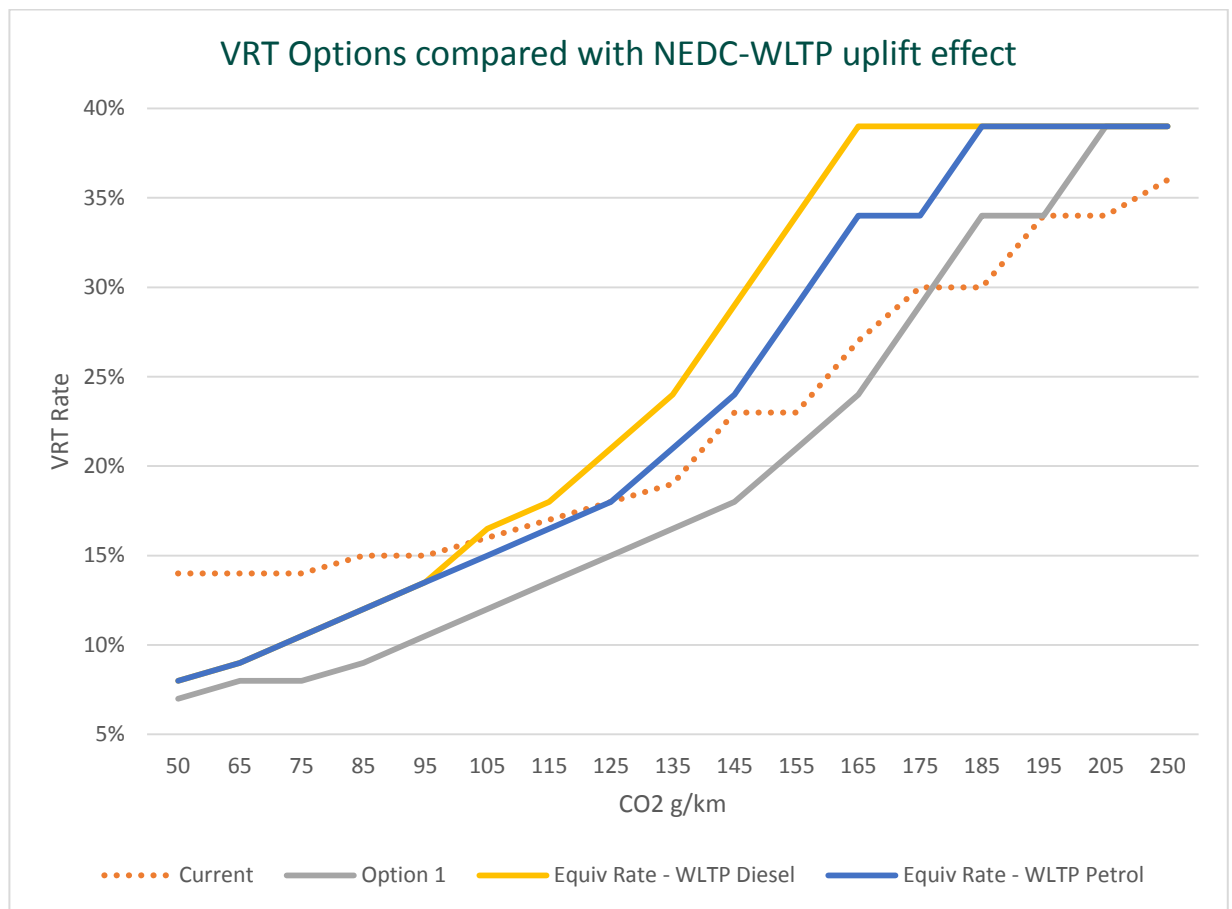
Taking all of these considerations into account, and making allowances for the transition to WLTP, the below table and graph illustrates a potential alternative VRT regime and compares it with the current regime.

Alternative VRT Structure

Possible bands and rates	
Range (g/km)	Rate
0-50	7.0%
51-80	8.0%
81-90	9.0%
91-100	10.5%
101-110	12.0%
111-120	13.5%
121-130	15.0%
131-140	16.5%
141-150	18.0%
151-160	21%
161-170	24.0%
171-180	29.0%
181-200	34.0%
>200	39.0%



The potential new VRT bands/rates set out in the table above appears to apply lower rates for all but the highest emitting cars. However, when account is taken of the fact that WLTP tested cars will, on average show significantly higher CO2 values, the graph looks differently, as illustrated below.



Though the potential new VRT option (grey line) appears below the current structure (dotted line), a more accurate picture is illustrated by the WLTP-adjusted lines (yellow and blue) which take into account the effective uplift in the emissions under the new test. When allowances are made for this NEDC-WLTP uplift effect, the option 1 (which is presented without the 1% diesel surcharge) shows a significantly strong environmental rationale. In general, when compared to the current VRT regime, this means lower VRT rates for cars which are at a below average CO2 profile and higher rates for cars at an above average CO2 profile.

The changes suggested in option 1 are in the context of the transition to WLTP, and therefore are envisaged as *interim* measures. In the medium to longer term, EU regulations will mandate that the average CO2 emissions across car manufacturer fleets' reduces every year. From 2021, the EU fleet-wide average emission target for new cars will be 95 gCO2/km. These are binding emissions targets for car manufacturers and if they're not met financial penalties will accrue. While there are some derogations and exemptions, etc., the broad picture is clear, which is that car manufacturers will be required to produce an ever greater amount of battery electric vehicles in order to meet their emission targets and avoid financial penalties.

From an Exchequer perspective, VRT raises significant revenues and a proposal to reduce the bottom rate from 14% to 7% of OMSP, as well as increase the band to 50 gCO₂/km (to include the lowest emitting PHEVs) will serve to undermine these revenues in the medium to longer term. If rates for the lowest emitting cars are to be reduced radically it is appropriate to consider the current VRT reliefs for electric vehicles.

3.2.5 Reliefs for Low Emitting Vehicles

The following VRT reliefs currently apply for vehicles deemed to be less environmentally harmful:

Type of vehicle	Maximum Relief	Average tailpipe CO ₂ emissions (2018)
Hybrid Electric Vehicles	€1,500	92g/km*
Plug-in Hybrid Electric Vehicles	€2,500	25.5g/km*
Electric Vehicles	€5,000	0g/km
Electric Motorcycles	Exempt	0g/km

*These values will increase significantly under WLTP testing. For example the 2017 JRC study, 1.4-2 litre engine HEVs increased by an average 32% under WLTP.

In Finance Act 2018 the relief for hybrid electric vehicles and plug-in hybrid electric vehicles was extended up until 31 December 2019. Electric vehicles and motorcycles registered before 31 December 2021 remain eligible for relief from VRT up to a maximum amount of €5,000. Electric motorcycles are exempt from VRT until 31 December 2021.

The increasing numbers of hybrid electric vehicles availing of the relief has resulted in significant costs to the Exchequer. Of the €27m total cost of the above reliefs in 2018, almost €15m was attributable to conventional hybrids.

There is emerging evidence³⁰ that the CO₂ emission levels for conventional hybrids under the WLTP may be substantially higher than the values produced under the NEDC system. The 2017 JRC study found that emissions from conventional hybrids were increasing by an average of 23-37%, notably higher than the average of 21% for standard combustion engines. This weakens the environmental rationale of the relief for conventional hybrids. It is also noted that decisions regarding toll road charges did provide relief for EVs and plug-in hybrids on environmental grounds but this didn't extend to conventional hybrids. Similarly, while the Climate Action Plan foresees greater uptake of PHEVs as part of the solution it doesn't extend this to conventional hybrids.

The Department of Finance's Tax Expenditure guidelines³¹ highlight how tax reliefs should be kept under review to ensure value for money and the original policy goals of the expenditure is being achieved. It is difficult to provide a continuing justification for the extension of VRT relief for conventional hybrids in view of the emerging evidence. To the extent that any

³⁰ <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC107662/kjna28724enn.pdf>

³¹ http://www.budget.gov.ie/budgets/2015/documents/tax_expenditures_oct14.pdf

conventional hybrid is low emitting it would gain from a lower VRT rate in any event under the option presented.

More generally it is envisaged all the current VRT reliefs should be phased out at the point when they have served their purposes or where other measures mean they are no longer necessary. Any new VRT structure which reduces the lowest rate of VRT from 14% to 7% would be considered as one such measure. For the lowest emissions vehicles (i.e. <50g/km), the effect of removing the relief could be counterbalanced by the fact that a much lower rate of VRT would be applied. As an example, a new PHEV with emissions of 50g/km and a typical OMSP of €45,000 incurs a VRT charge of €3,800 under the current system $((45,000 \times 14) - 2,500)$. Under the alternative system, with the relief removed, the charge would be €3,100 $(45,000 \times 0.07)$. In other words the net effect of the lower rate and withdrawn relief should still result in a lower VRT charge for PHEVs, particularly PHEVs with the lowest emissions profile.

Should the BEV relief remain in place, it may be prudent from a value for money perspective to taper the relief amounts. Considering the high value profile of certain BEVs availing of these reliefs, value for money concerns arise in relation to this tax expenditure. One means of addressing this is to maintain the €5,000 relief in full for all BEVs with an OMSP of €40,000, but to then taper the relief by 50% for every €1 of OMSP above €40,000 (effectively the relief would end at OMSP of €50,000). The below table illustrates how this would take effect at various levels of OMSP.

Illustration of net effect of reducing VRT rates for BEVs and tapering the relief

BEV VRT Regime with lowest rate of 7% and tapered VRT relief mechanism					
OMSP €	20,000	35,000	45,000	75,000	100,000
Rate	7%	7%	7%	7%	7%
Gross VRT Charge €	1,400	2,450	3,150	5,250	7,000
Less: VRT Relief €	5,000	5,000	2,500	0	0
Net VRT Charge €	0	0	650	5,250	7,000
<i>Effective VRT Rate</i>	<i>0.00%</i>	<i>0.00%</i>	<i>1.44%</i>	<i>7.00%</i>	<i>7.00%</i>

Under the current VRT regime, the effective VRT rate for a BEV with an OMSP of €45,000 is 2.89% of OMSP (after the €5,000 VRT relief is allowed) so even with such a VRT relief tapering mechanism the effective VRT rate would be lower for a car with OMSP of €45,000. However, in a scenario where the lowest VRT rate is set at just 7%, and the €5,000 VRT relief is credited *in full*, a VRT charge only applies to BEVs with an OMSP in excess of €72,000. Consideration should be given as to whether a tax expenditure should be given to purchase high end BEVs.

3.2.6 Environmental Health (NOx) Surcharge Option

There is a view held that motor taxes need to better reflect the negative externalities of air pollution caused by passenger cars. Within the current CO₂ based VRT regime there is no recognition of the specific contribution of other emissions such as NO_x and PM to air pollution and to the detriment of public health and the environment.

In Budget 2019 a 1% surcharge was introduced on all diesel vehicles in recognition of the environmental health costs caused by pollutants emitted in particularly high quantities by diesel vehicles. Diesel surcharges are quite common across EU Member States and to some extent counterbalance CO₂ based systems which incentivise diesels due to their greater fuel economy. One issue with an across the board 1% diesel surcharge, however, is that it is not specifically calibrated to the level of non CO₂ toxic pollutants emitted by cars. Due to the formula for calculating VRT, the 1% surcharge in Euro terms is, for example, twice that for a new diesel with an OMSP of €30,000 versus a used diesel with an OMSP of €15,000, despite the likelihood that the used diesel will emit higher levels of non CO₂ toxic pollutants.

It is possible to apply a surcharge on any vehicle not meeting the latest Euro standards or emitting relatively high amounts of non CO₂ toxic pollutants. The policy intention is to apply the surcharge on a polluter pays principle – the greater the level of non CO₂ toxic pollutants a car emits the higher the surcharge. It is important to state that any such surcharge is envisioned as a replacement to the existing 1% diesel surcharge rather than in addition to it. As such the net effect would be positive for the cleanest diesel cars but negative to the cars which emit high levels of non CO₂ toxic pollutants, including petrol cars.

The environmental health (NO_x) surcharge could be applied as a euro charge per mg/km of, say, NO_x emissions. For example, in addition to the existing CO₂ based VRT formula, a surcharge of say €5 per mg/km NO_x could apply. The Department understands that this type of surcharge is in place in the Norwegian vehicle registration tax regime and works well³²³³.

The following table sets out some rate options. Indicative NO_x levels of 250, 180, 80 (diesel), and 80, 60 (petrol) are used for illustrative purposes as these levels align with the thresholds for the Euro standards 4, 5 and 6 respectively. It is worth noting that these are the upper thresholds, and many cars are likely to record NO_x levels substantially below the threshold.

³²<https://www.skatteetaten.no/en/person/duties/cars-and-other-vehicles/importere/hvilke-avgifter-ma-du-betale/engangsavgift/hva-er-engangsavgiften/>

³³ <https://www.skatteetaten.no/en/person/duties/cars-and-other-vehicles/importere/regn-ut/>

Fuel type	NOx level (mg/km)	Equivalent Euro standard	Charge @ €5 mg	Charge @ €7.50 mg	Charge @ €10 mg
Diesel	250	4	€1,250	€1,875	€2,500
	180	5	€900	€1,350	€1,800
	80	6	€400	€600	€800
	43 (new car average per Revenue data)	Registered in 2018/19	€215	€323	€430
Petrol	80	4	€400	€600	€800
	60	5	€300	€450	€600
	60	6	€300	€450	€600
	23 (new car average per Revenue data)	Registered in 2018/19	€115	€173	€230

Another potential option, to recognise the relative improvements of newer, cleaner vehicles, would be to apply €2.50 rate for, say, the first 50 mg/km NOx. For each mg above 50, a €7.50 rate could apply. To illustrate, a vehicle with NOx emissions of 70mg would incur a surcharge of €275 (50mg @ €2.50 + 20mg @ €7.50).

NOx information is published on the Certificate of Conformity and has been for a number of years. For older vehicles where the NOx value is not stated on the documentation presented to Revenue, it is reasonable that Revenue could require the person to obtain this information from the car manufacturer. Failing the furnishing of such proofs it is reasonable that Revenue could replicate section 132(3)(a)(II) of the Finance Act 1992 (as amended) to calculate the surcharge amount, namely to select the NOx value which corresponds to the NOx value that is at the highest threshold level from the Euro standards tables.

3.2.7 Recent Changes to VRT

Finance Act 2018 extended the definition of the types of vehicles which qualify for entry into the VRT Export Repayment Scheme. The Export Repayment Scheme commenced in 2013 and provides for a repayment of the residual element of VRT contained in a vehicle when that vehicle is permanently exported or removed from the State. The Finance Act 2017 amended the definition of Category A and Category B vehicles to more accurately differentiate between private passenger cars and commercial vehicles.

Finance Act 2018 also introduced a 'Fixed Term Scheme' which provided for an upfront VRT payment for qualifying vehicles which is proportionate to the time the qualifying vehicle is scheduled to remain in the State. The scheme was introduced with effect from 1 July 2019 and implements a ruling by the ECJ in 2017.

3.3 Motor Tax

3.3.1 Background

Motor tax is an annual charge on motor vehicles registered in the State. While HGV's, LCVs, motorcycles, tractors, campervans, etc., are subject to motor tax the focus of this analysis is solely on private passenger cars which are responsible for around 83% of all motor tax receipts and which constitute by far the largest volume of motor vehicles registered in the State, at some 2.1 million vehicles.

From July 2008 there has been two separate motor tax systems for passenger cars. Cars under the pre-July 2008 motor tax system continue to be taxed based on engine size (cc), whereas cars registered from July 2008 are taxed based on their CO₂ emissions level.

The table below shows the current motor tax regime. The last time motor tax rates were increased was in Budget 2013.

Motor Tax Rates for Passenger Cars

Band	Emissions	Rate €
A0	0	120
A1	1 - 80	170
A2	81 - 100	180
A3	101 - 110	190
A4	111 - 120	200
B1	121 - 130	270
B2	131 - 140	280
C	141 - 155	390
D	156 - 170	570
E	171 - 190	750
F	191 - 225	1,200
G	>226	2,350

Most cars registered in the last 5 to 10 years fall into bands A2 to A4. As such the environmental incentives – at €10 band increments – are not particularly strong. Put another way, the current fiscal incentive within the motor tax regime to acquire a car with emissions of say 60 gCO₂/km against a car with say 120 gCO₂/km is just €30 per annum.

This has informed an action point in the Government's *Climate Action Plan* to 'recalibrate the motor tax regime for passenger cars in light of recent progress on emissions standards'. This chapter will set out options for strengthening the environmental rationale of the motor tax system. Other objectives with reform of the motor tax system include making allowances for cars tested under the new WLTP emissions regime and addressing the structural deficit evident in motor tax receipts since 2014.

The table below illustrates recent trends in relation to the motor taxation of passenger cars.

Motor Tax and passenger cars - recent trends

Year	Receipts (€m)	No. Cars ('000's)	Receipts per car (€)
2014	905	1,944	466
2015	880	1,985	443
2016	847	2,027	417
2017	816	2,066	395
2018	772	2,106	367
2019	740 est.	2,165 est.	342 est.

As can be seen total and average receipts per car are reducing each year. In small part this has been because the average emissions of newly registered cars has been reducing (but since 2017 average emissions of newly registered cars has been increasing). In large part this structural deficit is as a result of the fact that pre-2008 cars typically pay significantly more in motor tax than newly registered cars and as pre-2008 cars are replaced in the national fleet by newly registered cars the average motor tax per car reduces. This has led to an 18% reduction in motor tax receipts from passenger cars between 2014 and 2019 (forecast).

3.3.2 Strengthening the Environmental Rationale of Motor Tax Regime for Passenger Cars

There are a number of ways to strengthening the environmental rationale of the motor tax regime for passenger cars. For example:

- to increase the high-low gap, that is the gap between the lowest rate and the highest rate. Currently this gap is, however, quite significant at €2,230 per annum.
- to increase the rate gap *between* the bands in which most passenger cars fall. Currently this gap is €10 per annum and there is scope to increase this gap.
- to increase the gap between the lowest emitting vehicles and vehicles which have an average or above average CO₂ emissions profile. Currently this gap is €80 per annum (200 – 120) and there is scope to increase this gap.

Options

Two options are presented below which seek to strengthen the environmental rationale compared to the current passenger car motor tax regime and also seeks to reduce or reverse the structural decline in annual receipts.

Alternative Options for Passenger Car Motor Tax

CO2 Bands			Current	Option 1	Option 2
Band	From	To	Rate	Rate	Rate
A0	0	50	120*	75	120
A1	51	80	170*	150	170
A2	81	100	180	175	200
A3	101	110	190	200	230
A4	111	120	200	225	260
B1	121	130	270	275	290
B2	131	140	280	300	320
C	141	155	390	400	420
D	156	170	570	600	620
E	171	190	750	800	800
F	191	225	1,200	1,250	1,250
G	226	999	2,350	2,400	2,500
Estimated Receipts (€)			€367m	€387m	€423m

*Current A1 band is 1 – 80 and therefore the €120 charge applies to zero tailpipe emission vehicles only while the €170 charge relates to cars with gCO₂/km of between 1 and 80.

3.3.3 Making Allowances for WLTP

As set out in the VRT section, WLTP tested cars, on average, are scored with higher CO₂ emissions arising from the fact that WLTP is a more stringent emissions test than the old NEDC test. The rationale for making allowances for WLTP tested cars is the same as with VRT, namely to seek to ensure level playing field conditions in the treatment of NEDC and WLTP cars.

Similar to VRT, there are a number of ways to achieve this. A simple way is to use the average WLTP/NEDC multiplier, as derived from analysis of Irish VRT data from September 2018 to end January 2019. This ratio was found to be 21.4%. The drawbacks of this method was discussed in the VRT section. The alternative is to apply a formula based upon the analysis of the Department and Revenue of Irish market data. The ultimate effect of making allowances for WLTP is that WLTP tested cars will, in many cases, be subject to lower motor tax rates than if the motor tax was charged based on their WLTP CO₂ readings.

3.4 Vehicle BIK

3.4.1 Background

Unlike the VRT and motor tax regimes there is no general environmental rationale in the vehicle BIK regime. This is in contrast to several Member States where company car taxation is CO₂ based (and in some Member States, like the UK and the Netherlands, where diesel surcharges also applies).

Finance (No. 2) Act 2008 provided for a CO₂ based system of calculation for BIK on company cars, linked to the VRT bands. Due to the economic landscape at that time it was not commenced. It was provided that company cars with CO₂ emissions up to 155 g/km would be subject to the most favourable BIK treatment. Given the passage of time, and significant improvement in car emission levels, this threshold has lost relevance as an environmental rationale.

Revenue do not provide a breakdown of BIK data and as such they are not in a position to provide the Department with a profile of the population of company cars and vans subject to BIK. However, according to CSO data³⁴ there were 80,789 company vehicles in 2017 broken down into 61,704 diesel vehicles, 17,995 petrol vehicles and 1,090 other fuel types.

Given that the formula for calculating the “cash equivalent” benefit-in-kind is based on the original market value of the car, this indicates that the amount of income tax/PRSI/USC paid by employees in respect of company cars made available to them for private use is substantial.

Company cars typically form a significant portion of newly registered cars each year and, on average, drive significantly more kilometres³⁵ than non-company cars. Company cars typically operate on 3 year cycles following which they are generally sold to the public. Therefore, in addition to the significant volume of company cars that are newly registered in the State each year, there is a much larger volume of ex-company cars on the roads.

This suggests that introducing a general environmental rationale in the vehicle BIK regime can play a positive role in reducing the emissions profile of the national car fleet and ultimately in reducing our CO₂ emissions from road transport.

3.4.2 Recent Developments in Relation to Vehicle BIK

In Budget 2018 a 0% BIK rate for electric vehicles (EVs) was provided for a period of one year to allow for a review of the vehicle BIK regime generally so as to inform decisions in Budget 2019. In Budget 2019 the 0% BIK rate for electric vehicles (EVs) was extended by a further 3 years where such vehicles have an Original Market Value of €50,000 or less.

The Government's Climate Action Plan contained a commitment to consider the introduction of an environmental rationale into the vehicle BIK regime. This consideration must therefore go beyond providing generous incentives for the take-up of battery electric vehicles by companies towards a broader and meaningful fiscal incentive to choose cleaner cars over high emission cars.

³⁴ See Table THA18

³⁵ CSO data estimates that diesel company vehicle travelled, on average, 27,696 km in 2017 and that the population of company vehicles travelled over 2 million kilometres in 2017.

Current vehicle BIK regime

The current system of vehicle BIK is based on the Original Market Value (OMV) of the vehicle and the annual kilometres driven³⁶. This is illustrated in the table below.

Business Kilometres Driven		Tax Rate (% OMV)
From	To	
0	24,000	30%
24,001	32,000	24%
32,001	40,000	18%
40,001	48,000	12%
48,001+		6%

So, for example, an employee provided with a company car originally valued at €30,000 and doing 20,000KM per year would pay tax on €9,000 (€30,000x30%) each year. This is subject to income tax, PRSI and USC, so the weekly tax liability would likely be around €85-90.

From an employee perspective, company cars may be an attractive perk as the BIK rates incorporate wider benefits (where the company pays for motor tax, insurance, maintenance and part fuel there is no upward adjustment to the BIK rate).

3.4.3 Introducing an Environmental Rationale

Introducing an environmental rationale into the vehicle BIK regime is not conceptually or technically difficult. In essence, if the applicable tax rate for the most pollutant cars is higher than that of the least pollutant cars then an environmental rationale is introduced. The larger the tax gap between the least and most pollutant cars, the stronger the environmental rationale.

Another feature of the Irish vehicle BIK regime – generally absent from vehicle BIK regimes in other Member States – is the mileage bands. The existence of mileage bands has been subject to criticism based on the perverse incentives to increase mileage in order to reduce tax liability³⁷. An employee who, by virtue of additional mileage, moves into the next mileage

³⁶ Other rules include: the ability of employees to receive a discount of about 10% from the market value of the car where such discount has been provided by the dealership; the ability of certain low mileage employees to receive a 20% discount from the standard rate where they mostly work away from the business premises; Revenue imposing a minimum 8,000km personal mileage where the employee is unable to produce documentary evidence of personal mileage; an exemption from BIK for certain car-pooling arrangements. These basic rules are considered appropriate and were not the focus of the review.

³⁷ For example, see ESRI paper, February 2018 at <https://www.esri.ie/pubs/BKMNEXT351.pdf>

band reduces the assessable tax by 6% - which will often translate into a significant monetary benefit to that employee. For example, if the car has an Original Market Value of €50,000 and the employee is 1,000km from the next band, driving the company car an additional 1,000km could see his/her annual tax liability reduce by around €1,500 at current marginal tax rates.

The existence of so many mileage bands is likely to have the effect of increasing car emission levels. Nonetheless, there is some logic to retaining mileage bands: essentially, the greater the business mileage, the more the car is a benefit to the company rather than its employee (on average), and the more the car depreciates in value, the less of a benefit it is to the employee (in years 2 and 3) as the asset from which the benefit is derived is depreciating faster.

To balance these two factors, consideration should be given to reducing the number of bands. This would weaken any perverse incentives that currently exist while still seeking to tax the person in proportion to the quantum of benefit derived from the car.

Based on these factors set out in the table below is a possible reformed vehicle BIK regime which introduces a meaningful environmental rationale as called for by the Government's Climate Action Plan.

Alternative BIK Regime

	From	To	Standard Rates (CO ₂ value 100-139)	25% Discount < 60	12.5% Discount CO ₂ 60- 99	12.5% Surcharge CO ₂ 140- 179	25% Surcharge CO ₂ 180+
Band A	0	26,000	30%	22.50%	26.25%	33.75%	37.50%
Band B	26,001	39,000	24%	18.00%	21.00%	27.00%	30.00%
Band C	39,001	52,000	18%	13.50%	15.75%	20.25%	22.50%
Band D	52,001	-	12%	9.00%	10.50%	13.50%	15.00%

The commencement of any reformed vehicle BIK regime should be sensitive to the typical fleet renewal periods. Therefore, consideration should be given to providing a 3 year period before the commencement of any reformed vehicle BIK regime.

Calibration between car BIK and van BIK

Another issue that needs to be considered is the BIK regime for vans. Currently employees are taxed at a cash equivalent of 5% of the Original Market Value (OMV) of the van, with no emission or mileage criteria. If the BIK regime for company cars is to change along the lines set out in the table above, it may be prudent to calibrate this change with the BIK treatment of company vans.

It should be noted that the UK applies a fixed assessable amount of £3,430 (approx. €3,900) to the private use of vans under its BIK regime. Given the average OMSP of a new van (LCV) registering in Ireland in 2018 was €33,000, a 5% BIK rate could be considered low compared to the current UK rate ($€33,000 \times 5\% = €1,650$ = assessable amount for tax purposes). This suggests that the Irish BIK regime for company vans is very generous compared to its UK equivalent and perhaps should be calibrated upwards in line with wider reforms to the company car BIK regime.

Electric vans already are in receipt of the 0% BIK rate (also subject to a €50,000 threshold cap).

3.5 Other Vehicle Tax Considerations

In light of the wholesale changes being proposed across vehicle taxes, it may be prudent to review the vehicle emissions thresholds which exist elsewhere in the tax code.

For capital allowances, €24,000 can currently be claimed in respect of vehicles with emissions up to 155g/km, while €12,000 can be claimed for vehicles with emissions of 155-190g/km.

A VAT deduction also exists for 20% of the VAT incurred in the purchase of a passenger vehicle of which 60% of its use is business-related. The applicable emissions threshold in order to avail of this is 155g/km.

These CO₂ thresholds have been in place since 2008 and no longer reflect what could be considered as high emissions thresholds. In view of trends in vehicle emissions, climate change considerations and increasing emissions from the transport sector these thresholds could be revised from 155 g/km to 140 g/km and from 190 g/km to 160 g/km.

As with the potential vehicle BIK reform, the lead in time for commencing these changes should be sensitive to the typical fleet renewal periods.

4. HOME RENOVATION INCENTIVE

4.1 Introduction

The All of Government Climate Action Plan which was approved by Government in June 2019 sets out a course of action over a number of key sectors for the coming years, with the aim of allowing Ireland to meet ambitious decarbonisation targets. One of the sectors identified is that of the built environment, which accounted for 12.7% of Ireland's Greenhouse Gases in 2017³⁸.

Irish homes are considerably larger than the EU average. Our buildings are typically heated by more carbon intensive fuels such as oil and peat, with 70% being reliant on fossil fuels. Much of the older building stock exhibits relatively poor energy performance with over 80% of Irish homes and other buildings being assessed as having a BER rating of C or worse. As a result, the typical Irish home uses 7% more energy than the EU average and emits 58% more carbon. Emissions from homes are projected by the Environmental Protection Agency³⁹ to increase by 14% over the 2018-2020 period under the “*With Existing Measures*” scenario (this is based on the implementation of existing energy efficiency programmes).

With regard to decarbonisation of buildings, the Climate Action Plan states that in order to meet the required level of emissions reduction, by 2030 Ireland must (amongst other measures):

- Complete 500,000 building retrofits to achieve a B2 BER/cost optimal equivalent or carbon equivalent; and
- Install 600,000 heat pumps (400,000 to be in existing buildings).

Action 58 of the plan, which falls under the regulation and fiscal category, proposes that we “(e)xamine climate related fiscal measures across various sectors”. In this chapter a possible fiscal measure designed to incentivise domestic energy efficiency retrofits is examined.

³⁸ <https://www.dccae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf>

³⁹ Environmental Protection Agency: *Ireland's Greenhouse Gas Emissions Projections 2018-2040* https://www.epa.ie/pubs/reports/air/airemissions/ghgprojections2018-2040/Greenhouse_Gas_Projections.pdf

4.2 Context

The existence of an identified market failure can provide justification for State intervention. This intervention may take the form of a regulatory measure, a direct expenditure measure, or a tax/fiscal measure.

In terms of pre-existing direct expenditure measures designed to incentivise energy efficiency retrofits of domestic properties, the Sustainable Energy Authority of Ireland (SEAI) administers the Better Energy Homes (BEH) grant scheme. Grants are available for a variety of energy efficiency measures with the grant aid covering approximately a third of the cost of qualifying works. Currently there are no specific tax based measures targeted at incentivising domestic energy efficiency retrofits.

The Department of Finance Tax Expenditures Guidelines set out a framework for the ex-ante evaluation of all tax expenditure proposals. In this paper, we use the framework to examine the case for introducing an income tax based measure aimed at incentivising energy efficiency retrofits in the domestic sector.

4.3 Proposal for Domestic Retrofit Tax Incentive

A tax incentive to encourage domestic retrofits could take a variety of operational forms and/or rates of relief but essentially would involve a reduction in income tax otherwise due, on the basis of proof from the tax-payer that retrofit works have been carried out in accordance with the rules of the relevant scheme.

For the purposes of this paper, it is proposed to use the design recently employed in the Home Renovation Incentive which, in accordance with its sunset clause, expired on 31 December 2018. The proposed incentive would be targeted at domestic properties with a BER rating of B3 or less, and would operate as follows:

- Participants in the scheme would be able to claim an income tax credit for expenditure on certain qualifying works;
- The credit would amount to a specified percentage (13.5%) of the total qualifying expenditure (excluding VAT) on the qualifying works, and would be claimed over a 2 year period subsequent to the year in which the works were paid for;
- These works would have to be carried out on a qualifying property by a qualifying contractor.

On the basis of the SEAI Deep Retrofit Scheme, expenditure on any of the following could be defined as ‘qualifying works’:

- Wall insulation (Cavity, Internal, External);
- Attic insulation;
- Floor insulation;
- Window/Door upgrades;
- Ventilation systems;
- Wood burning stoves;
- Renewable energy (heat pumps, solar panels).

A 'qualifying property' could be defined as follows:

- The individual's main home;
- A property that the individual rents out (providing the property is PRTB registered);
- Consideration should also be given to second homes (notwithstanding any tax equity issues);

A 'qualifying contractor' would be required to register for the scheme and demonstrate tax compliance and VAT registration.

The Home Renovation Incentive, during the period of its existence, was not targeted directly at energy efficient works. In fact, the rules regarding qualifying expenditure under the scheme required that the claimant deduct three times the value of any SEAI grant received from the eligible expenditure that the 13.5% tax credit was based upon. Given that SEAI grants are pitched at approximately one third of the total cost of a measure, this meant that any grant-aided energy efficiency works were effectively excluded from the HRI.

For the purposes of the proposed 'energy efficiency' tax incentive, we will assume that if an individual receives a grant for qualifying work, then the total 'qualifying expenditure' under the incentive will be reduced by an amount equal to the grant amount. This will allow for the co-existence of the tax relief with SEAI grants, but will avoid duplication of funding.

Rationale

The rationale for introducing a tax based measure in circumstances where a direct expenditure measure is already in place to encourage the same activity would be to underline the Government's commitment to tackling climate change and to signal the priority afforded to the All of Government Climate Action Plan. In addition, given the level of ambition of the Climate Action Plan (500,000 retrofits by 2030), it could be argued that accelerated levels of retrofit activity need to be incentivised and that a dual direct grant/tax incentive approach may be justified in such circumstances.

4.4 Ex-Ante Evaluation of Tax Expenditure Measure

4.4.1 What is the objective of the proposed scheme?

The objective of the scheme is to incentivise individuals to carry-out energy efficient works on their homes resulting in improved energy performance of the property and an improved BER rating. The proposal would have benefits for both the individual and the State.

At the individual level, an improved BER rating results in a warmer home (which has been linked to improved public health outcomes⁴⁰) and a reduction in heating bills.

At the State level, there would be a reduction in the level of emissions generated by the energy used to heat our homes, which would contribute to the overall objective of meeting Ireland's national greenhouse gas emissions target.

4.4.2 What is the market failure being addressed?

The proposed incentive would seek to address market failures in the area of energy consumption/production and underinvestment in energy efficiency in the built environment; Irish housing stock is reliant to a large extent on fossil fuels for the purpose of heat generation and exhibits relatively poor energy performance.

The Government Climate Action Plan contends that current retrofit activity for the existing building stock is quite limited, amounting to approximately 23,000 (mainly shallow) retrofits per annum.

Based on a number of surveys carried out by the SEAI, lack of funding is often cited by individuals as a barrier to investing in the energy efficiency of their homes. A recent Department of Communications, Climate Action and the Environment evaluation of the SEAI BEH scheme⁴¹ suggested other market failures leading to under-investment in energy efficiency including:

- Lack of access to capital;

⁴⁰ Collins, M and Curtis, J. (2016) "Value for Money in Energy Efficiency Retrofits in Ireland: Grant Provider and Grant Recipients". Available at: <https://www.esri.ie/publications/value-for-money-in-energy-efficiency-retrofits-in-ireland-grant-provider-and-grant>

⁴¹ Department of Communications, Climate Action and Environment (2017). "Focused Policy Assessment: SEAI Better Energy Homes 2009-2015". Available at: <https://igees.gov.ie/wp-content/uploads/2018/05/SEAI-FPA-Better-Energy-Homes-2009-2015.pdf>

- Behavioural inertia on behalf of consumers;
- Split incentive effect (where the economic benefits of reducing energy use do not accrue to the party achieving the savings- for example a landlord/tenant scenario);
- Lack of investment in R&D technologies by the private sector (due to low uptake by consumers and thus limited ability to achieve economies of scale).

4.4.3 Is a tax expenditure the best approach to address the market failure?

Previous tax incentive

The concept of a tax incentive targeted at improving the energy efficiency of the housing stock has been examined previously by the Department of Finance. In Budget 2011, the Minister for Finance announced that a new 'energy efficiency' tax incentive would be introduced to complement the existing grant aid available at the time through the SEAI's 'Home Energy Savings Scheme'. The incentive would have allowed for tax relief at the standard rate on expenditure up to €10,000 on a list of approved works. The total relief available under the scheme in any one tax year was to be capped at €30 million which would have allowed for remedial works to be carried out on a minimum of 15,000 homes.

It should be noted that a co-existing objective for the scheme was to support levels of activity in the construction sector, as there had been substantial loss of employment in the sector as a result of the financial crisis. Almost one in every two workers who lost their jobs in Ireland between 2007 and 2012 had previously been employed in construction.

The underpinning legislation for the scheme was subject to Commencement Order. However, on further review, that legislation was found to have flaws and would have required amendment before it could have been implemented. As part of the Jobs Initiative announced in May 2011, the Government undertook to provide further funding for the grants available under the Better Energy Homes scheme operated by SEAI. Because of these circumstances, the Minister decided to review the requirement for a co-existing tax incentive for similar works that were already provided for under the grant aided scheme. Following this review, the Minister decided not to proceed with the introduction of the tax relief scheme.

Direct Expenditure

In terms of current direct expenditure measures in the energy efficiency sector, the Government continues to make grants available to householders who wish to improve the energy efficiency of their home through the SEAI's BEH scheme.

These include:

- Insulation grants;
- Heat Pump System grants;
- Heating controls grants;
- Solar water heating grants; and,
- Solar electricity grants.

In addition, SEAI offer free energy efficiency upgrades to homeowners who receive certain welfare payments, and they are in the process of delivering a deep retrofit grant pilot programme.

The purpose of the Deep Retrofit Grant programme is to provide enhanced grant support (c.50%) to homeowners who carry-out multiple energy upgrades at once, with the aim of achieving an A-rated home. The SEAI estimate that these projects will require an investment by the homeowner of at least €30,000.

The specific package of measures that need to be carried out to achieve an A-rated home are tailored to the individual property, following on from an energy performance survey of the home.

Consumer Preference

Recent research undertaken by the ESRI⁴² into householder preferences regarding retrofit subsidy schemes found that households strongly prefer cash payment subsidies (i.e. up-front discounts or cash back post works) versus other indirect methods of financial support (e.g. tax credits), roughly by a 70:30 ratio. They also found that households with prior experience of SEAI grants were more likely to have preferences in favour of an ex-post cash payment model (i.e. the format through which SEAI grants are currently made). The relevant ESRI paper concluded in part that the SEAI's grant scheme should continue in its current format.

Tax Equity

From an equity perspective, tax expenditure measures can be regressive by nature, given that only those who pay taxes qualify, and those with greatest income benefit the most. As such, a tax incentive measure as proposed may be of little benefit to certain groups who are most likely to suffer from energy poverty, for example the elderly or those on limited incomes.

⁴² Collins, m., Dempsey, S. and Curtis, J. (2018). "Householder Preferences for the Design of an Energy Efficient Retrofit Subsidy in Ireland". Available at: <https://www.esri.ie/system/files/media/file-uploads/2018-06/JA201837.pdf>

Deadweight

Tax expenditure measures can be difficult to target and may result in individuals receiving tax relief for activities which they were likely to undertake even in the absence of an incentive (i.e. economic deadweight). Pure deadweight occurs when beneficiaries make investments which they would have made in any event in the absence of the incentive. Partial deadweight occurs when the incentive encourages some beneficiaries to bring forward the time of purchase or encourages some beneficiaries to invest at a larger scale than would occur without the incentive. Domestic retrofits provide many benefits to households including energy cost savings, environmental benefits, individual health benefits and increased home values.

Estimates of deadweight are taken into account when calculating the net benefits associated with the grant schemes operated by SEAI. Before the Home Energy Saving scheme⁴³ was launched, SEAI assumed an estimate of 15% deadweight when they were compiling an ex-ante cost benefit analysis in respect of the scheme.

Unintended consequences

Finally, given the current shortage of skilled workers in the construction sector, a demand led measure such as that being examined, is likely to result in higher prices in the market and may decrease the benefit and increase the cost associated with the incentive. A recent Department of Communications, Climate Action and the Environment policy assessment of the SEAI BEH scheme noted that as the economy has improved, there may be some evidence of supply constraints entering the market, with a resulting impact on costs associated with works carried out. In 2009, the average cost (homeowner + grant) per measure was €1,415. By 2015, this had increased by 40% to €2,008, although obviously there are limitations to this comparison.

4.5 Cost

Tax expenditure measures such as this proposal are demand led and it is therefore very difficult to estimate uptake and cost with any certainty.

This paper looks at a tax incentive which would be provided at a rate of 13.5%. However, overall, taking account of direct grants and tax relief, a taxpayer could receive Exchequer support in the order of over 40% of the cost of retrofit work. This would be a very significant level of incentivisation by the State.

⁴³ The Home Energy Scheme preceded the BEH scheme which was launched in 2011.

In order to help examine further the cost issue in terms of tax potentially foregone, we have analysed data on the activity levels and costs associated with the SEAI's Better Energy Homes Scheme for the 2009-2015 period.

Figure 1: Better Energy Homes Activity 2009-2017

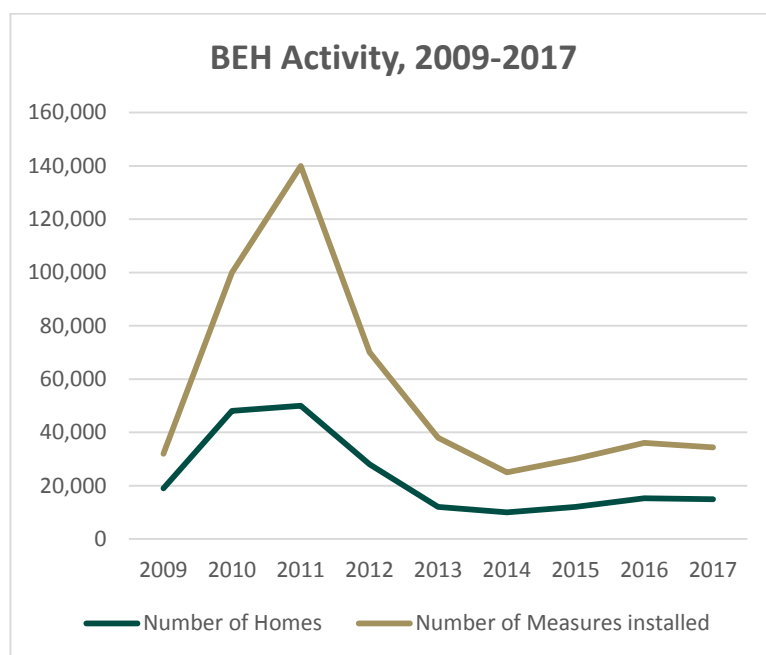
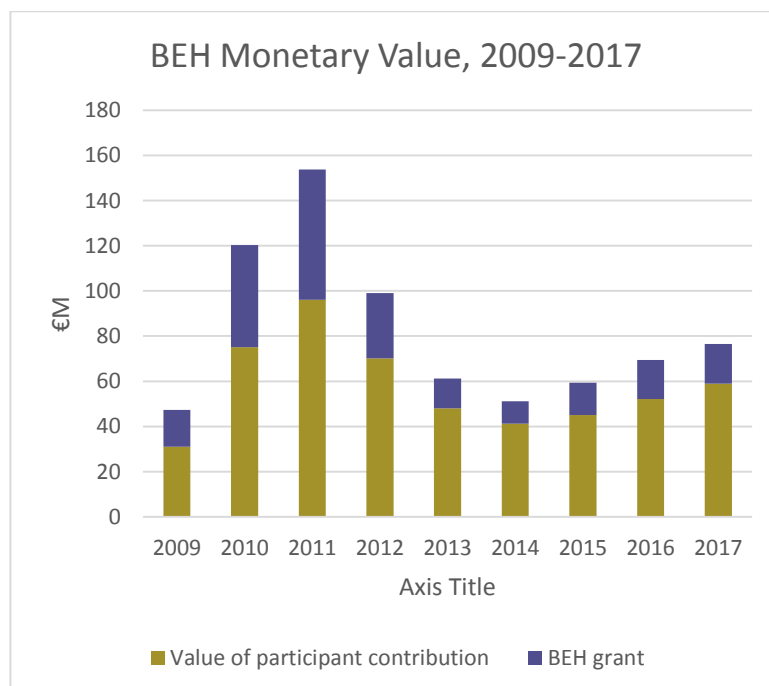


Figure 2: Better Energy Homes Monetary Value 2009-2017



As can be seen in figure 1 and figure 2, the level of activity/cost under the Better Energy Homes scheme decreased between 2011 and 2015, corresponding with a period of recession. There has been a steady increase in cost and activity in the subsequent period, reflecting improvements in the wider economy. In 2017 the SEAI distributed €17.6 million grant aid towards total investment of €76.5 million on works aimed at making homes more energy efficient⁴⁴. If the proposed tax based measure had been in place for 2017, it could be assumed that €58.9 million worth of expenditure would be eligible under the scheme, resulting in some €7 million worth of tax credits available to be claimed in respect of that year.

On the basis of retrospective data, it can be assumed that if a tax-based measure such as that being considered in this paper had been in place between 2009 and 2017, some €62 million in tax credits would have been available to be claimed by participants in respect of expenditure on qualifying works over that nine year period, an average of roughly €7 million per annum (Appendix 2- Table 2). However, bearing in mind that the proposed incentive is to work in tandem with the SEAI grant schemes to drive demand for retrofit activity, the actual cost per annum of the incentive is likely to be significantly higher than the €7 million per year mentioned.

Using certain assumptions (50,000 homes retrofitted each year at an average cost per retrofit of €10,000), the annual tax cost could reach €40 million per annum (Appendix 2 – Table 3).

If the deep retrofit pilot programme (i.e. projects involving multiple energy efficient works designed to achieve an A-rated home) was used as a reference point for estimating the potential cost involved in terms of annual tax foregone, the tax incentive element could cost up to €90 million per year (Appendix 2 - Table 4). It is noted, however, that the ambition in the Climate Action Plan in relation to domestic retrofits is to achieve a B2 rather than an A rating.

The question of finding the necessary resources for funding such a demand-led scheme inevitably arises and would need to be considered in the context of how additional carbon tax revenue should be spent were such revenue to be ring-fenced for climate action initiatives.

4.6 Economic Impact

The Home Renovation Incentive (the tax measure on which this proposal is based) expired on 31 December 2018 following an ex-post analysis of the scheme. The review found that in the context of the current housing supply shortage, and the need to deliver 25,000 additional housing units per annum over the period 2017-2021⁴⁵, there was a risk that the HRI could lead to increased competition for scarce resources within the construction sector, leading to upward

⁴⁴ <https://www.seai.ie/resources/publications/SEAI-Annual-Report-2016.pdf>

⁴⁵ Rebuilding Ireland Action Plan for Housing and Homelessness. Available at:

pressure on construction costs and house prices. The review concluded that the potential for displacement of labour from work on new builds to work on home renovations would create a high opportunity cost of labour associated with HRI which was not present at the inception of the scheme.

Given the continued constraints on the construction sector's ability to hire labour to deliver a supply of new housing units, similar issues may arise with regard to the introduction of this proposed tax based measure.

5. OTHER ENVIRONMENTAL TAXES

5.1 Aviation Taxes

EU Developments on Aviation Taxes

In general activities which generate significant amount of greenhouse gases are taxed to take account of the negative externalities that they generate. There has been growing sentiment among some Member States and international organisations that air travel is lightly taxed in the context of the taxes applied on other transport sectors and in the context of concerns regarding the catastrophic impacts of climate change. Against this backdrop, it is worth noting that the European Commission estimates that direct emissions from aviation account for about 3% of the EU's total greenhouse gas emissions and more than 2% of global emissions⁴⁶. While airlines are part of the 'EU Emissions Trading System', by virtue of the 1944 Convention of International Civil Aviation – the 'Chicago Convention' – and the EU Energy Tax Directive, aviation fuel used for the purposes of intra-EU and international commercial transport is not subject to any excise duties. Therefore, in Ireland, aviation fuels are exempt from excise duties (or 'mineral oil tax') when used for the purposes of international commercial flight.

According to the CSO, the revenue foregone to the Exchequer from the mineral oil tax exemption on aviation fuel was €494 million in 2016⁴⁷. Given the growth in air travel since 2016, this amount is likely to be substantially higher today. Similarly, air tickets are VAT exempt throughout the EU.

The principal argument in favour of the introduction of aviation taxes is that they are required to account for the negative externalities generated by the sector, principally in the form of air and noise pollution, and to support efforts to reduce global greenhouse gas emissions. Another argument put forward is that the removal of tax subsidies provided to the aviation sector is required to "normalise" their taxation regime vis-à-vis other forms of transport which are subject to significant rates of excise duty on fuel used.

At ECOFIN in February 2019 The Netherlands opened discussions around a proposal for an EU-harmonised approach to taxation and carbon pricing in the aviation sector. Many Member States welcomed this discussion and following the positive response the Netherlands hosted a high level conference in June 2019 furthering these discussions. Ireland will constructively engage in these discussions.

Austria, France, Germany, Italy, Norway, Sweden, and the UK all presently operate aviation taxes (based on passenger departures). The increased level of interest in air travel taxes in recent times is reflected in the fact that Sweden's air travel tax was introduced in April 2018⁴⁸ while the Netherlands has legislated for an air travel tax to be introduced in January 2021⁴⁹, though has indicated that its first preference is to apply an air travel tax through an EU wide aviation tax structure. We further understand that Belgium has made preparations for the possible introduction of an air travel tax in 2021.

Given the apparent momentum to examine the taxation of air travel this is an issue that may emerge in future EU discussions and warrants consideration from an Irish perspective.

⁴⁶ https://ec.europa.eu/clima/policies/transport/aviation_en

⁴⁷ CSO Research Paper on Fossil Fuel and Similar Subsidies 2012-2016 (2019)

⁴⁸ See <https://www.skatteverket.se/service/ankar/otherlanguages/inenglish/businessesandemployers/paynigtaxesbusinesses/taxonairtravel.4.41f1c61d16193087d7f5348.html>

⁴⁹ See <https://www.government.nl/latest/news/2019/05/14/dutch-government-tables-national-flight-tax-bill>

5.2 Plastic Tax

Current plastic packaging policy in Ireland

The EU Packaging and Packaging Waste Directive is the main piece of legislation governing packaging and packaging waste in Europe. This Directive promotes the recovery and recycling of packaging waste to reduce its environmental impact and encourage resource efficiency. In accordance with this Directive, each Member State is obliged to meet targets for the overall recovery of waste packaging and recycling targets for glass, plastic, paper & board, metals and wood. Ireland met all EU targets for recovery and recycling of packaging waste for the most recent reference year available (2016)⁵⁰.

Ireland uses the Extended Producer Responsibility model to deal with waste packaging. Repak, the national producer responsible for packaging, is a not for profit company which charges fees to its members in accordance with the amount and type of packaging they place on the Irish market. These fees are used to subsidise the collection and recovery of waste packaging through registered recovery operators across Ireland. Because Repak members pay fees based on the amount of packaging they place on the market, this incentivises them to reduce packaging where possible and in so doing to reduce their fees.

European Commission Strategy

On 16 January 2018 the EU Commission published the European Strategy for Plastics in a Circular Economy⁵¹. The strategy focuses on plastics production and use, and sets a goal of ensuring all plastic packaging is recyclable by 2030. The first action as part of this strategy is a proposal for dealing with the ten single-use plastic products and fishing gear that together account for 70% of the marine litter in Europe. The proposal includes:

- A ban on certain plastic products
- Obligation on Member States to reduce the use of certain plastics (which may include financial measures) and
- Obligations for producers to cover costs of waste management and clean up.

Discussions for a plastic based tax post 2020 Multi Financial Framework have been ongoing within the Own Resources working group since the proposal launched.

UK Consultation on Plastic Packaging Tax

In March 2018, the UK government launched a call for evidence on using the tax system or charges to tackle single-use plastic waste. The call received strong public interest with 162,000 responses submitted.

⁵⁰ Environmental Protection Agency Progress to EU Targets
<https://www.epa.ie/nationalwastestatistics/targets/>

⁵¹ European Strategy for Plastics
http://ec.europa.eu/environment/waste/plastic_waste.htm

Following the response, the UK government announced its intention to introduce a new tax on plastic packaging in Budget 2018. The tax will apply to businesses that produce or import plastic packaging which uses insufficient recycled content, taking effect from April 2022.

A consultation process on the proposed tax was launched inviting submissions from February to May 2019. It is proposed that the tax would apply to all plastic packaging manufactured in the UK and unfilled plastic packaging imported into the UK. It would only apply to plastic packaging (as defined by the tax) with less than 30% recycled content.

The government proposes excluding the smallest operators from the tax. Under the current Packaging Producer Responsibility system, businesses with less than £2m annual turnover and which handle less than 50 tonnes of packaging a year are not required to comply with the system.

The consultation sought views on:

- defining products within the scope of the tax
- setting a threshold for recycled plastic content
- the approach to rates
- the precise point at which the tax is charged and who will be liable to pay
- how to minimise administrative burdens for the smallest operators and/or
- low volumes of production or import
- the treatment of imports and exports
- promoting compliance and preventing opportunities for tax avoidance or evasion
- how business can demonstrate the recycled content of their products in a robust way without introducing unnecessary administrative burdens

Potential Issues to be considered in context of introduction of national tax on plastic

Any proposal to introduce new tax measures on plastics would have to consider the preferred policy approach, existing supply chains, legislation required (to cover the scope of the tax, Revenue powers, offences, reliefs, etc.), IT costs, tax efficiency and state aid implications. In this regard, it should be noted that the development and introduction of the sugar tax gave rise to considerable staff resources over a period of two years. To undertake such measures, consideration would also have to be given to the opportunity cost and staff resource / time involved. The Department will continue to assess the evolving international debate in this area and consider, as appropriate, the merits of the introduction of a tax on plastic from an environmental, revenue and administration perspective.

5.3 Other Taxes

Other than indirect taxes, other taxation measures may be considered to incentivise the behavioural change necessary to reduce greenhouse gas emissions.as outlined in the Climate Action Plan:

“We will use successive annual Budgets as a means to reforming key environmental tax measures, including detailed analysis through the Tax Strategy Group, to: Assess the role for property related taxes such as ... stamp duty to promote major renovations to buildings” (page 40).

The consideration of how property related taxes such as stamp duty might be used to incentivise behavioural change, will require structured consultation and economic analysis in order to fully explore the merits and demerits and wider policy interactions of any proposals.

Appendix 1: Electricity Tax Rates

Electricity Tax Rates in the EU ⁵²				
	Business €			Non Business €
Sweden	0.484	1	Bulgaria	0
Ireland	0.5	2	Hungary	0.9612
Luxembourg	0.5	3	Ireland	1
Croatia	0.5045	4	Luxembourg	1
Lithuania	0.52	5	Portugal	1
Romania	0.5235	6	Croatia	1.009
Denmark	0.5365	7	Lithuania	1.01
Hungary	0.9612	8	Latvia	1.01
Portugal	1	9	Romania	1.0492
Latvia	1.01	10	Czech Rep	1.0984
Bulgaria	1.0226	11	Poland	1.1683
Czech Rep	1.0984	12	Slovakia	1.32
Poland	1.1683	13	Malta	1.5
Slovakia	1.32	14	Switzerland	3.85
Malta	1.5	15	Estonia	4.47
Switzerland	3.85	16	Greece	5
Estonia	4.47	17	Belgium	5.37
Greece	5	18	UK	6.5448
Spain	5.1	19	Spain	9.6
Belgium	5.37	20	Cyprus	10
UK	6.5448	21	Austria	15
Finland	7.03	22	Germany	20.5
Cyprus	10	23	France	22.5
Italy	12.5	24	Finland	22.53
Austria	15	25	Italy	22.7
Germany	15.37	26	Sweden	33.5915
France	22.5	27	Netherlands	117.53
Netherlands	117.53	28	Denmark	118.567
Average	8.68		Average	15.39

⁵² Source **EU Commission Excise Duty Tables** (01/01/2019)

https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/excise_duties/energy_products/rates/excise_duties-part_ii_energy_products_en.pdf

Appendix 2: Fuel Excise Rates

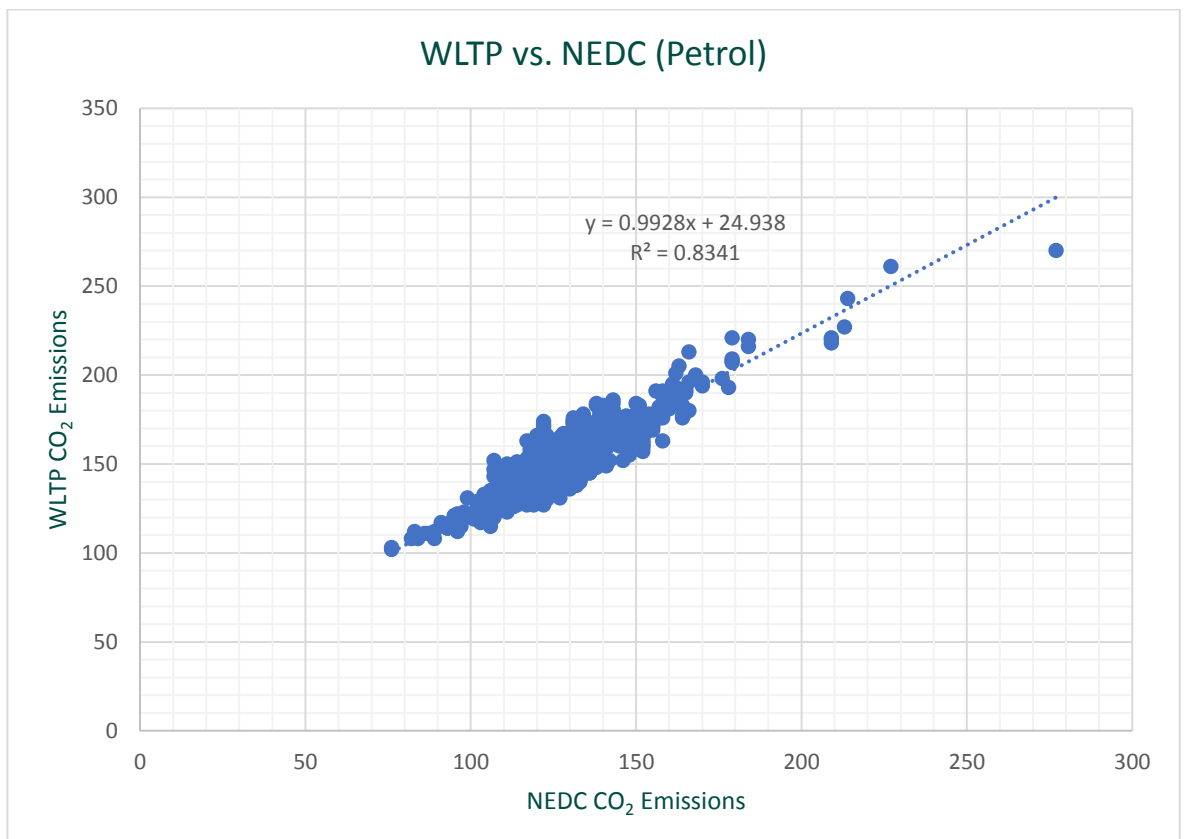
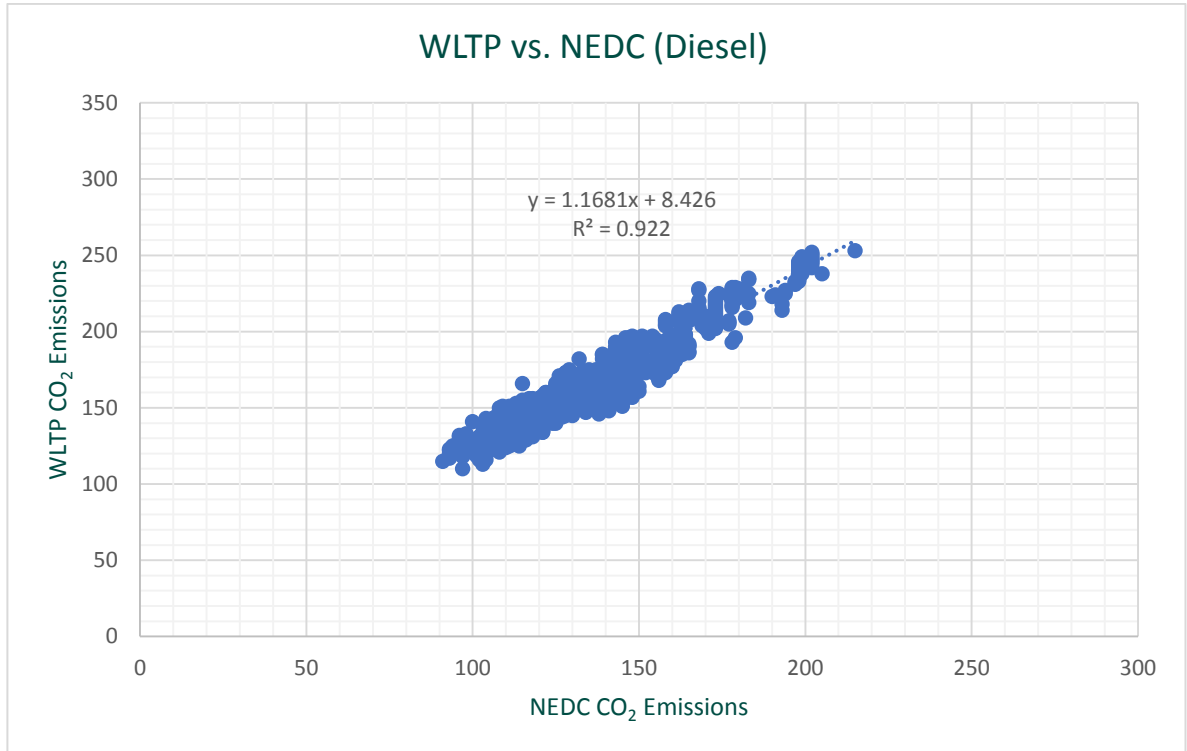
The applicable excise rates for all Member States are shown below.

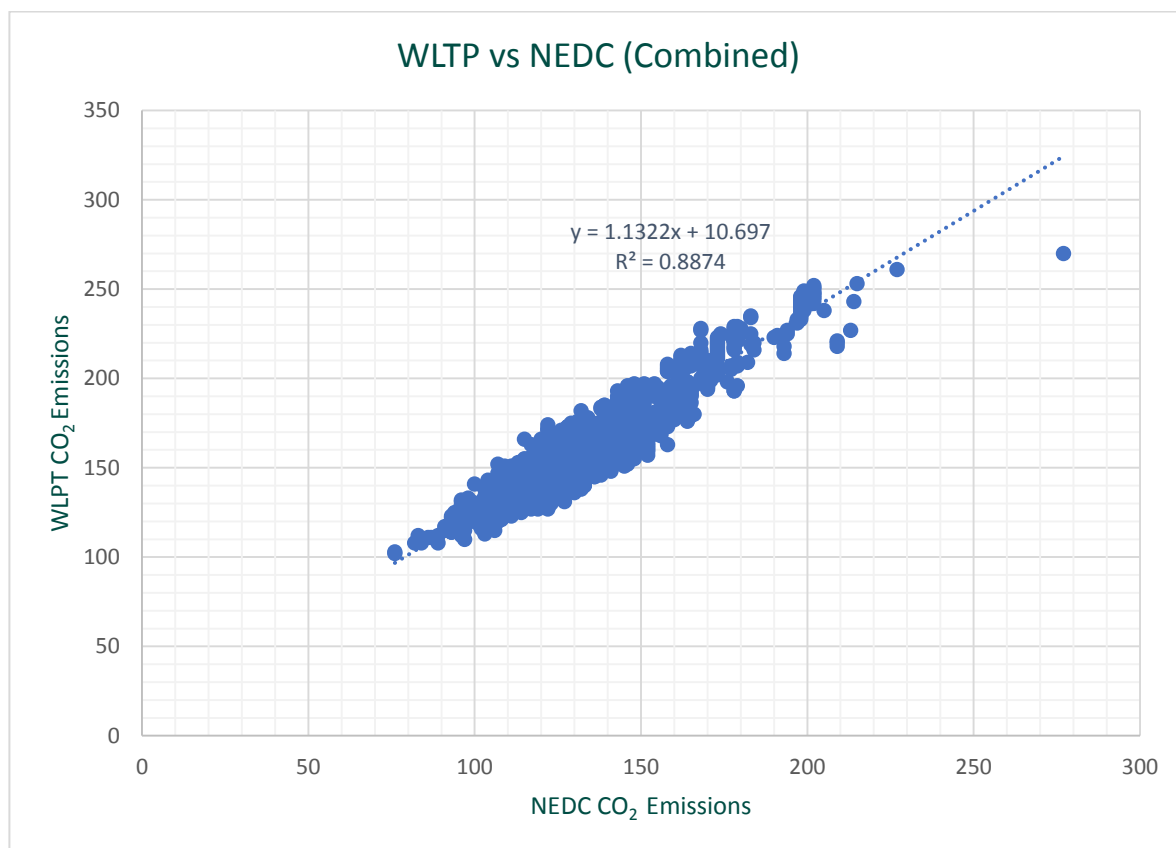
EU Member States' Excise Rates ⁵³				
Petrol			Diesel	
EU State	Rate € per 1000 L		EU State	Rate € per 1000 L
Netherlands	787.73	1	UK	650.5534
Italy	728.4	2	Italy	617.4
Finland	702.5	3	Belgium	600.1586
Greece	700	4	France	594
France	682.9	5	Finland	530.2
Germany	654.5	6	Sweden	502.2265
UK	650.5534	7	Netherlands	495.69
Sweden	648.5963	8	Estonia	493
Portugal	642.58	9	Portugal	485.68
Denmark	625.6958	10	Ireland	479.02
Belgium	600.1587	11	Malta	472.4
Ireland	587.71	12	Germany	470.4
Estonia	563	13	Slovenia	468.99
Malta	549.38	14	Denmark	425.8487
Slovakia	547	15	Czech	424.9951
Slovenia	546.77	16	Croatia	411.6777
Croatia	519.3058	17	Greece	410
Spain	503.92	18	Romania	406.8104
Czech Rep	498.3505	19	Cyprus	400
Austria	482	20	Austria	397
Latvia	476	21	Slovakia	393
Luxembourg	462.0946	22	Spain	379
Romania	437.4252	23	Latvia	372
Lithuania	434.43	24	Hungary	349.353
Cyprus	429	25	Lithuania	347
Poland	390.9735	26	Poland	343.1652
Hungary	379.7486	27	Luxembourg	335
Bulgaria	363.0228	28	Bulgaria	330.2996
Average	556.92			449.46

⁵³ Source **EU Commission Excise Duty Tables** (01/01/2019)

https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/excise_duties/energy_products/rates/excise_duties-part_ii_energy_products_en.pdf

Appendix 3: NEDC to WLTP Analysis Workings





Appendix 4: SEAI schemes

1. Better Energy Homes scheme

The Better Energy Home scheme provides cash grants to individuals who wish to improve the energy performance of their homes. Grants are available for the works outlined in the following table, and are paid to the homeowner after the measures have been completed and the contractor has been paid. Bonus payments are made where a homeowner has carried out three or more measures.

ENERGY EFFICIENT WORKS			CASH GRANT VALUE*
Insulation	Attic		€400
	Wall – Cavity		€400
	Wall – Internal Dry Lining	Apartment (any) OR Mid-terrace House	€1,600
		Semi-detached OR End of Terrace	€2,200
		Detached House	€2,400
	Wall – External	Apartment (any) OR Mid-terrace House	€2,750
		Semi-detached OR End of Terrace	€4,500
		Detached House	€6,000
Heating Controls	Heating Controls Upgrade		€700
Solar Thermal	Solar Thermal		€1,200
Heat Pump Systems	Air to Water		€3,500
	Ground Source to Water		€3,500
	Exhaust Air to Water		€3,500
	Water to Water		€3,500
	Air to Air		€600
Bonus	For 3 rd measure		€300
	For 4 th measure		€100
Building Energy Rating(BER)			€50**

2. Better Energy Warmer Homes scheme

This scheme delivers free energy efficiency upgrades to homeowners who are in receipt of certain welfare payments, and living in a home which was built and occupied prior to 2006.

Qualifying works include:

- Attic insulation;
- Cavity wall insulation;

- External wall insulation;
- Internal wall insulation;
- Lagging jackets;
- Draught proofing;
- Energy efficient lighting.

3. Deep Retrofit Grant

In 2016 the SEAI launched the Deep Retrofit Grant multi-annual pilot programme for homeowners who intend to carry-out multiple energy upgrades at once, with the aim of achieving an A-rated home. These projects must include renewable energy solutions so as to support the transition away from fossil fuels.

SEAI estimate that a deep retrofit of this nature will generally require an investment by the homeowner of at least €30,000. An enhanced grant support of approximately 50% of the total cost is available for these projects on a limited basis.

The specific package of measures that need to be carried out to achieve an A-rated home will be decided on a case by case basis by an independent BER assessor, in conjunction with the project owner, following on from a survey of the current energy performance of the home.

Appendix 5: Home Renovation Incentive Workings

Table 1: Monetary Value of Better Energy Homes scheme

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Value of participant contribution	31.1	75.1	96.1	70.2	48.1	41.3	45.1	52.1	58.9	N/A
BEH grant	16.3	45.2	57.6	28.9	13.1	9.9	14.3	17.4	17.6	18.4
Total Cost of Works €M	47.4	120.3	153.7	99.1	61.2	51.2	59.4	69.5	76.5	
Grant as a % of total expenditure	34%	38%	37%	29%	21%	19%	24%	25%	23%	

Table 2: Retrospective calculation of 13.5% tax credit under proposed tax incentive

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Value of participant contribution €M	31.1	75.1	96.1	70.2	48.1	41.3	45.1	52.1	58.9	518
Value of participant contribution (ex VAT) €M	27.4	66.2	84.7	61.9	42.4	36.4	39.7	45.9	51.9	456.4
Value of Tax credit (13.5%)	3.7	8.9	11.4	8.3	5.7	4.9	5.4	6.2	7.0	61.6

Table 3: Rough estimate of cost of HRI type tax incentive on certain assumptions

Total cost per home	10,000
BEH scheme grant (indicative)	3,300
Participant contribution	6,700
Participant contribution(ex VAT)	5,903
Tax credit (13.5%)	797
Total annual cost (50,000 homes)	39,850,000

Table 4: Calculation of Deep Retrofit tax incentive tax credit:

Total cost per home	30,000
Deep retrofit scheme grant	15,000
Participant contribution	15,000
Participant contribution(ex VAT)	13,216
Tax credit (13.5%)	1,784
Total annual cost (50,000 homes)	89,200,000



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