



**Consultation on proposed motor tax restructuring to
include CO₂-emissions differentiation**

**Comhar Sustainable Development Council Recommendations
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Consultation on proposed motor tax restructuring to include CO₂-emissions differentiation – Comhar SDC submission

Introduction

Comhar – Sustainable Development Council (SDC) made recommendations in December 2006 regarding the content and modalities of the 2007 Budget in which we emphasised the importance of ensuring that our quality of life in general, and in regard to environmental and social domains in particular, is protected and enhanced.² Fiscal decisions are the key shapers of economic, social and environmental performance. If the signals at this level do not actively promote sustainable behaviour, no amount of rhetoric or programmes in other areas will be effective. In this regard, the first Comhar SDC recommendation to the 2007 Budget was to “Carbon proof all new fiscal measures to ensure that they do not incentivise a rise in greenhouse gas emissions and other pressures on the environment, and ideally encourage reduction”. The recommendations targeted transport taxes and stamp duty in particular. Therefore we welcome the initiative of Budget 2007 to revise the VRT and motor tax systems to take account of the CO₂ emissions of cars and we address the motor tax issue in this response to the consultation.

The road transport sector is the main source of growth in Irish greenhouse gas emissions. Unless this trajectory can be modified, it will be impossible for us to contribute usefully to the abatement of greenhouse gases and to reduce our dependence on imported oil. There are many facets to changing the trajectory, including congestion prices, which manage demand on roads to the point that it flows freely and buses can operate effectively, and more clustering of households and jobs in the vicinity of public transport nodes so high quality cost-effective and frequent-mobility services can be provided. However, one key to moving quickly to make our new fleet more fuel and environmentally efficient is to change the taxes we pay to buy and operate a car.

The EU Commission has proposed that vehicle taxes in the European Union be restructured on the basis of CO₂ emissions as soon as possible.³ While holding revenue from vehicle taxes constant and therefore not affecting public revenues, this can provide an incentive to consumers to shift their purchase preferences to low-carbon emitting vehicles. The objective of restructuring the vehicle tax system to take account of CO₂ emissions is to change the growth trajectory of fuel use and carbon emissions in the transport sector by moving towards a fuel- and carbon-efficient car fleet. Rather than the current system of assigning vehicle tax rates by engine size, tax rates should be determined by the CO₂ emissions produced by the vehicle. CO₂ emissions bands with associated vehicle tax rates should be established, which in turn should be aligned with car labelling to improve consumer information and lead to further CO₂ emissions reductions. It is important that vehicles be taxed by CO₂ emissions performance rather than any particular technology, which is currently the case with the motor tax exemption for electric vehicles, so that the best vehicle performance is incentivised and there is no market distortion.

Comhar SDC Review of Department of Environment, Heritage, and Local Government Proposal to Restructure Motor Tax

² See www.comhar-nsdp.ie

³ It is also proposed that vehicle registration taxes be abolished by 2016 (Proposal for a Council Directive on passenger car related taxes Commission of the European Communities, COM261 final, 2005/0130 (CNS), Brussels, 5.7.2005).

The Department of Environment, Heritage and Local Government (DEHLG) has proposed that the current motor tax system be modified to include a 3-class CO₂ emissions system in each engine size band. While any CO₂ emissions differentiation in the vehicle tax system is welcomed, three levels of CO₂ emissions will most likely not provide sufficient CO₂ emissions differentiation. There are some points to take into consideration under the proposal made. It is desirable that any CO₂ emissions differentiation of the motor taxes system be aligned with the system decided upon for VRT in order to provide a clear message to consumers on CO₂ emissions. First, in terms of CO₂ emissions there should not be inconsistencies, where for example a vehicle with a small engine of less than 1400cc and high CO₂ emissions (above 191g/km) would pay a lower motor tax than a vehicle with a larger engine (above 1901cc) and lower CO₂ emissions (even below 146g/km in Option 4).

Secondly, the CO₂ emissions bands should not be too wide, which would reduce the effectiveness of the vehicle tax on CO₂ emissions choices. The objective of the CO₂-differentiation of tax regimes is to encourage consumers to purchase more fuel-efficient vehicles. Sometimes this may mean encouraging consumers to switch their purchase from a higher fuel-consuming vehicle segment class to a lower class. However in many cases it may not be practicable to change vehicle class and therefore the objective is to encourage consumers to reflect upon their vehicle purchase and choose the most efficient vehicle within that vehicle class. The CO₂ emissions bands proposed in Options 3 and 4 of the Department of Finance VRT proposal have a very wide range and so with this system there would be no incentive to purchase a vehicle with CO₂ emissions of 146g/km over one with 190g/km of the same engine size. In recent years, as some manufacturers have implemented more fuel efficiency-related technological improvements than others, the fuel efficiency range within a vehicle class has grown. For example, in the subcompact petrol vehicle size class (Ford Focus, Volkswagen Golf etc. size), CO₂ emissions range from approximately 140g/km to over 200g/km, measured with the standard driving test cycle. Consumers should be encouraged to purchase the best in class and reward manufacturers that have better fuel efficiencies. Otherwise the main objective of the CO₂-differentiated vehicle tax is not achieved.

Comhar SDC recommendations

Comhar SDC considers that a CO₂-differentiated vehicle tax must have the objective to send a clear message to consumers regarding the important parameters when choosing a vehicle and provide an incentive to act upon this message. We do not believe that it is useful to continue to base VRT or motor tax rates on engine sizes. As already discussed above, inconsistencies arise in such cases, where higher CO₂ emissions with smaller engine sizes may be favoured over lower CO₂ emissions and larger engines. In fact, there does not appear to be any real environmental advantage associated with inclusion of engine size as a parameter for the purpose of estimating motor taxes.

Arguments have been made in the past to include engine size in vehicle tax systems since there are other environmental costs as well as CO₂ emissions associated with passenger cars such as health and accident costs, road congestion, building costs, and noise. While there may be reasons for not basing the motor tax solely on CO₂ emissions, those given above do not clarify why engine size should continue to be included in the system. As modern engines become more technologically advanced there are many indications that the relationship between engine size, fuel consumption, and other environmental parameters will become more complex.

Engines may be smaller yet more powerful and fuel consuming.⁴ The environmental performance and impact on society will depend more on the fuel technology and design of the vehicle rather than the engine size metric.

All vehicles are certified by manufacturer and the national certifying body that they have met the emissions standards for the relevant year of manufacture. Therefore in terms of air pollutant emissions, all vehicles sold of a given fuel type have been certified to pass the latest air quality emissions standards and should produce approximately the same emissions per kilometre driven regardless of engine size. If the objective is to provide incentives for consumers to purchase vehicles with more advanced emissions after-treatment technology (post Euro 4), then this will need to be explicitly given as a parameter in the tax regime. For example, diesel particulate filters (DPF) could be encouraged – there is currently no vehicle available in Ireland for sale with a DPF due to the lack of incentives in the Irish market although they are widely available in many countries such as Germany, Austria and France. Alternatively vehicles sold with more advanced emissions after-treatment technology than required by regulation, for example the proposed Euro 5 standards could be incentivised in tandem with CO₂-differentiated taxes. Therefore Comhar SDC recommends that vehicle taxes be based on CO₂-differentiated taxes, without engine sizes, yet include a factor for future vehicles that takes account of the vehicle Euro standard applied and provides an incentive for advanced emissions after-treatment technologies. There should be sufficient CO₂-differentiation to encourage consumers to purchase the most efficient vehicle within a vehicle segment class. In this regard, we wonder whether it might not be practical to align the Irish motor tax CO₂ emissions bands with those already in use to estimate vehicle excise duty in the UK, with an additional band to split their wide middle band, i.e. replace band C 120-150g/km with two bands of 121-135g/km and 136-150g/km. These values make sense given the longer-term target of the EU strategy to reduce the CO₂ emissions of new cars to 120g/km.

It may be difficult to predict exact revenue from future vehicle taxes, with or without CO₂-differentiation, since they are a function of the quantity and type of vehicles sold in the future. However, an estimate may be made based on the fleet profile from 2005⁵. In any case a certain amount of uncertainty will exist in estimations of future tax revenues regardless of the tax system used. Sustainable Energy Ireland has kept records for the past five years on the numbers of vehicles sold in each CO₂ emissions band. Table 1 below gives an example of motor tax rates that could be applied based on CO₂ emissions bands only. A further discount factor could be applied to these rates for vehicles with advanced emissions after-treatment technology.

In the estimation below it is assumed that there is an elasticity of CO₂ emissions intensity of the fleet with respect to vehicle taxes -0.11⁶. This means that a change (increase) in vehicle taxes of 10% will cause consumers to change their purchasing behaviour to reduce CO₂ emissions intensity of the fleet by 1.1%.

The results presented in Table 1 show the reduction of CO₂ emissions achieved through restructuring of the motor tax system, based on the current vehicle fleet in Ireland. It is clear that there are significant gains that can be made by restructuring the vehicle tax system to a CO₂ emissions basis. This measure is designed to be revenue neutral – i.e. the revenue to the Exchequer remains the same as before.

⁴ See for example the new Volkswagen Golf GT, which has a petrol direct injection engine of 1.4L, can produce 170bhp, and consumes 7.3L/100km over the standard driving test cycle.

⁵ The latest to which the author has access.

⁶ Johansson & Schipper (1997) 'Measuring long run fuel demand of cars', *Journal of Transport Economics and Policy*, 31:277-292.

Table 1: Proposal to restructure motor tax rates and CO₂ emissions saved¹.

CO ₂ emissions bands	No. of vehicles (2005)	Current motor tax (€) ²	New rate (€)	Current revenue (€)	New revenue (€)	Change in CO ₂ emissions (kt/annum)
0-100g/km	0	50/0	0	0	0	0
101-120g/km	0	100/166	50	870931	514250	0.04
121-135g/km	196273	155/299	100	31864983	19627300	25.8
136-150g/km	308107	263/403	200	84883426	61621400	9.8
151-165g/km	583666	294/510	400	190476404	233466400	-47.0
166-185g/km	319296	390/564	500	140508162	159648000	-17.5
186-225g/km	217134	519/906	900	118401457	195420600	-56.7
226-400g/km	37006	1206/1073	1500	42842576	55509000	-6.5
Total	1,661482			710230617	725806950	-92.0

Notes:

1. Vehicle emissions and number data from Fergal O'Leary (EPSSU, Sustainable Energy Ireland) are gratefully acknowledged.
2. Values given for petrol and diesel, respectively. It can be seen that when the current motor tax rate is allocated according to CO₂ emissions bands that there is a variation in some cases between petrol and diesel values. This is mainly because diesel vehicles tend to produce lower CO₂ emissions for the same engine size.

In conclusion, Comhar SDC welcomes the initiative of the DEHLG to incorporate CO₂ emissions differentiation into the motor tax system. We find that there is no necessity to continue to retain engine capacity as a parameter to estimate motor tax rates. Table 1 above provides an example of new motor tax rates that could be applied as a function of CO₂ emissions alone or in tandem with a discount for vehicles containing advanced emissions after-treatment technology.

Regardless of motor tax rates chosen, it is important that a clear message be sent to consumers regarding the significance of the fuel economy of vehicles. To this end it is extremely important that the same CO₂-differentiated classification be used for the purposes of VRT, motor taxes and vehicle labelling. In addition, a communications programme should be considered with the Department of Finance to raise awareness of the fuel efficiency and the fiscal and environmental benefits associated with choosing low CO₂-emitting vehicles for consumers.

Annex

UK excise duty rates based on CO₂ emissions bands

Vehicles registered on or after 1st March 2001		Diesel Car TC 49		Petrol Car TC 48		Alternative Fuel Car TC 59	
Bands	CO ₂ Emission Figure (g/km) *	12 months rate £	6 months rate £	12 months rate £	6 months rate £	12 months rate £	6 months rate £
Band A	Up to 100	0.00	-	0.00	-	0.00	-
Band B	101 to 120	50.00	-	40.00	-	30.00	-
Band C	121 - 150	110.00	60.50	100.00	55.00	90.00	49.50
Band D	151 - 165	135.00	74.25	125.00	68.75	115.00	63.25
Band E	166 - 185	160.00	88.00	150.00	82.50	140.00	77.00
Band F	186 - 225	195.00	107.25	190.00	104.55	180.00	99.00
Private Vehicles registered on or after 23rd March 2006							
Band G	226+	215.00	118.25	210.00	115.50	200.00	110.00