Executive Summary

Tackling air pollution from diesel cars through tax: options for the UK

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EUROPEAN EXPERT PLATFORM ON ENVIRONMENTAL TAXATION AND GREEN FISCAL REFORM

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• Air pollution in the UK is a 'public health emergency'

Each year an estimated **40,000-52,500 premature deaths** result from outdoor air pollution in the UK. The House of Commons Environment, Food and Rural Affairs Committee (EFRAC) recognises this as a 'public health emergency', costing the economy up to £54 billion a year. A primary component of air pollution is nitrogen oxides (NO_x) from various sources, but particularly from road transport, with diesel cars a significant contributor.

The UK's car fleet experienced significant 'dieselisation' over the past 20 years, with **diesel cars now making up half of all new cars sold across the UK**. This was prompted in large part by policy seeking to take advantage of the lower CO_2 emissions once produced by diesel cars compared to their petrol equivalents. However, **diesel cars emit significantly higher levels of other air pollutants than petrol cars** (including NO_x), and CO_2 emissions from diesel and petrol cars are now approximately equal.

• Existing and proposed measures to tackle air pollution from diesel cars are insufficient at both the EU and UK level

Since 1992, successive European Emission ('Euro') Standards have sought to tackle the emission of air pollutants from cars. **Since 1996/97, diesel cars have been permitted to emit more NO_x than petrol cars**. A more problematic issue, as brought sharply into public focus since the Volkswagen 'Dieselgate' scandal in September 2015, is **the lack of practical achievement of these standards by diesel cars**. On average, **new diesel cars emit NO_x at 5-6 times the regulated level** in 'real-world' driving conditions. To tackle this, from September 2019, all new diesel cars sold in the EU must be subject to 'Real Driving Emission' (RDE) testing. However, 'conformity factors' will **initially allow cars to continue to emit NO_x at over twice the regulated limit**, reducing to 1.5 times in 2021. This means that NO_x emissions from new diesel cars sold between September 2014 (when 'Euro 6' regulations entered into force) and January 2021, may produce **additional costs to society of €12 billion in the UK** over the cars' lifetimes, compared to petrol equivalents.

For the purposes of air quality regulation, the UK is divided into 43 areas, **38 of which are currently in breach of NO_2 emission limits set by the EU Air Quality Directive**. In January 2016 the annual limit for London was breached within one week. Plans published by the UK Government in late 2015 to address this issue mean that **37 of these 38 areas would remain non-compliant until 2020, with London remaining so until 2025**. The initial deadline for compliance was 2010. As a result, the environmental law firm ClientEarth filed papers in March 2016 to pursue a Judicial Review to order the Government to draw up more rigorous plans. Regardless of the outcome of the case, **this public health emergency warrants further action to reduce NO_x emissions from diesel cars**.

• Tax instruments can complement existing measures

Tax instruments hold a number of benefits to complement the existing policy landscape. They may induce changes in consumer preferences through altering the economics to favour the purchase, ownership and use of cars or other modes of transport with lower NO_x emissions. Compared to regulatory approaches, taxes are often more flexible, better able to account for nuances in the objective/s, easier to implement, and simpler to adjust over time in response to new developments. They also generate a revenue stream, which may further promote the objective of the tax.

This report proposes the introduction in the UK of a graded **national supplementary NO_x Registration Tax** for new diesel cars, with the rate levied approximately proportional to real-world NO_x emissions of the vehicle, and the average additional damage such emissions cause over its life (against a chosen comparator – see table below). Real-world NO_x emissions may be determined either through existing data, or through mechanisms to encourage manufacturers to submit their vehicles for testing.

Four different options are presented in the table below. The adoption of Option 4, which is technologically-neutral and takes differences in average distances driven by diesel and petrol cars into account, would see new diesel cars charged between £170 and £4,950, applied at the point of registration or purchase. The upper band, at just under £5,000, reflects NO_x emissions around 17 - 20 times higher than a petrol equivalent. The **average diesel car currently sold would be charged £1,100 - £1,700,** depending on the Option chosen.

		OPTION 1	OPTION 2	OPTION 3	OPTION 4
		Equal average annual mileage		Actual average annual mileage	
Grade	NO_x emissions (mg/km)	Above Diesel Euro 6 Value (80mg/km)	Above Petrol Euro 6 Value (60mg/km)	Above Diesel Euro 6 Value (80mg/km)	Above Petrol Euro 6 Value (60mg/km)
A*	<60	-	-	-	-
A	60-80	-	£40	-	£170
B	80-120	£80	£150	£100	£320
C	120-180	£270	£340	£360	£580
D	180-250	£510	£560	£690	£910
E	250-500	£1,120	£1,200	£1,520	£1,740
F	500-750	£2,070	£2,150	£2,800	£3,020
G	750-1000	£3,020	£3,100	£4,090	£4,310
H	>1000	£3,490	£3,570	£4,730	£4,950

This supplementary levy can **be introduced and work alongside the reform of the CO_2-based Vehicle Excise Duty in April 2017**. Conformity factors with Real Driving Emissions testing means that from September 2019, only diesel cars that fall into Grades A*-C may be sold. From January 2021, this reduces to Grades A*-B. It may be preferable to redefine the remaining Grades further over time, to maintain a sufficient signal as the market begins to concentrate into these higher bands.

The proposed supplementary NO_x Registration Tax does not impact emissions from diesel cars already on the road, nor does it act to focus abatement efforts in densely populated urban areas, where the damage to human health and environment is greatest. This may be addressed through **the parallel introduction of city-level NOx-related road pricing**, options for which are also detailed in this report. In London, this could mean the **inclusion of diesel cars sold after September 2014 in the proposed Ultra Low Emission Zone (ULEZ) charge** (the inclusion of diesel cars sold before this date is already planned). **In other cities, the proposed Clean Air Zone charges can include all diesel cars** (existing proposals for Birmingham, Leeds, Southampton, Derby and Nottingham do not cover any cars). **Reform to company car taxation and 'benefit in kind' rules for diesel cars** are also proposed.

• The tax revenue generated may be used to reduce air pollution further, and contribute to other environmental and public health objectives

Using the revenue generated from these instruments to **increase investment in low- and ultra-low-emission public transport, along with active transport (walking and cycling) infrastructure, particularly in cities, should be a priority**. Such transport investment not only reduces NO_x emissions, it also serves other environmental and public health objectives (e.g. reducing greenhouse gas emissions and obesity), yielding further social and economic benefits. Other options, such as **low-emission car clubs** and **infrastructure to accelerate the deployment of low-emission cars**, may also be appropriate.