3.
WHAT COULD BE DONE?

3.1 A SHIFT IN ROAD USAGE

To ensure that London's air pollution reaches legal limits in the coming years, policymakers will need to effect a fundamental shift in road usage across the capital. This policy effort needs to focus on driving a move away from diesel vehicles – which are at the heart of the air pollution problem (see chapter 1) – towards petrol and, ultimately only, hybrid and electric alternatives.

As part of this project, IPPR have commissioned new modelling from King's College London's Environmental Research Group, using their London Air Quality Toolkit, which attempts to understand the scale of the transformation in road usage required to clean up London's air.

Previous modelling of potential measures to achieve compliance with legal limits in London has proved unsuccessful. The general conclusion is that they have not gone far enough to tackle the problem caused by diesel vehicles. With this in mind, King's College London have conducted new modelling of a more ambitious policy scenario.

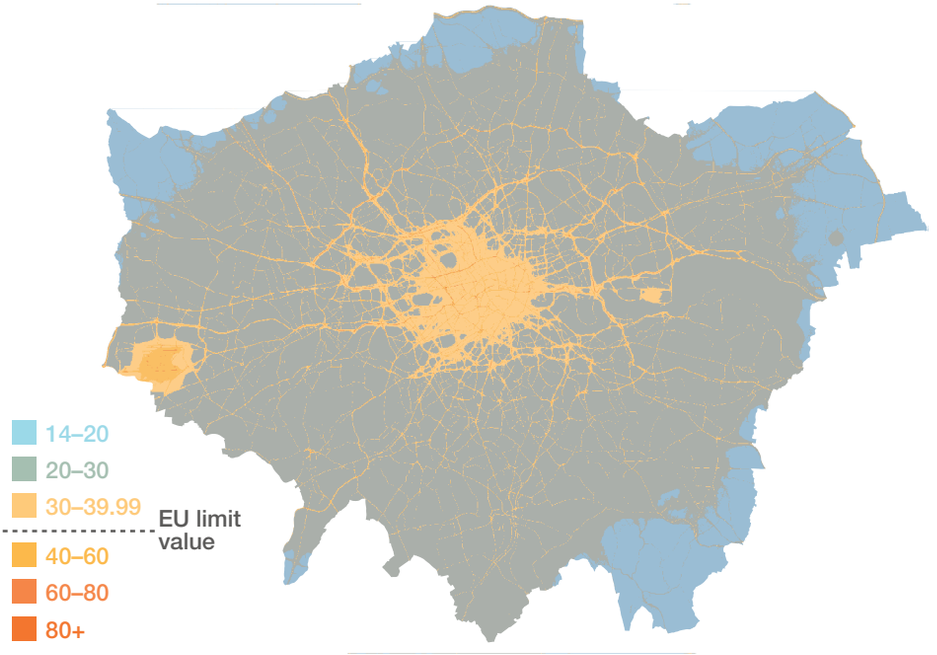
This modelling illustrates the impact on pollution levels if the capital were to return to the lowest recorded level of diesel car ownership in the UK, at around 10 per cent of the car fleet (as it was in 1995), from its current position of 57 per cent of cars. (The other assumptions included in this modelling are set out in the annex to this report.)

The results from this modelling are set out in figures 3.1 and 3.2 below. These show annual mean (background) levels of NO_2 concentrations across the capital (the background colour) as well as, in figure 3.2, areas of London where the hourly exceedance limit is breached (purple dots).

The modelling makes clear that a reduction in the percentage of diesel cars to 1995 levels would have a significant impact both on background levels of air pollution and on the number of areas where hourly exceedance limits would be breached. However, this reduction in diesel use alone would not allow London to reach legal compliance before 2025. The inescapable conclusion is that as long as some diesel cars (along with diesel buses, taxis, vans and lorries) remain on London's roads, the capital will remain in breach of UK law.

FIGURE 3.1

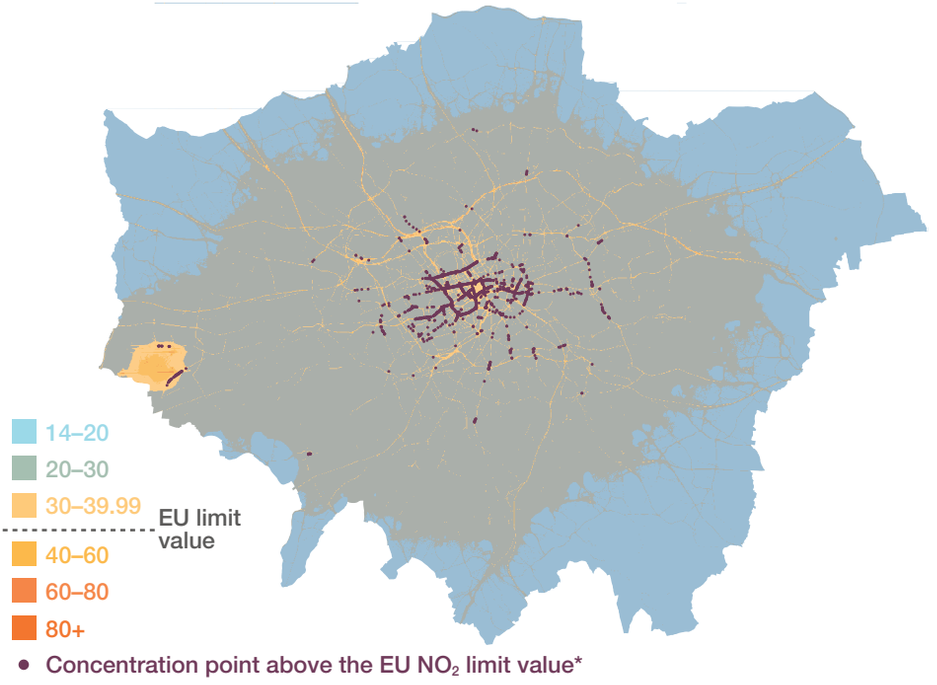
Base case: annual mean concentration levels of NO_2 in 2025 ($\mu g\ m^{-3}$) under existing policies



Sources: adapted from Howard 2015; data from GLA 2010

FIGURE 3.2

New modelling: annual mean concentration levels of NO_2 in 2025 ($\mu g\ m^{-3}$) under new policies to reduce the number of diesels



Source: Courtesy of King's College London; data from GLA 2010
*Note: excludes points on roads and railways, and within Heathrow airport site.

3.2 POLICY IMPLICATIONS

The implications of this are significant. Policymakers will have to show even more ambition if they wish to meet legal limits on air pollution. This will ultimately mean the phasing out of diesel cars in the capital entirely, as well as a range of complementary policies to address pollution from buses, taxis, lorries and vans.

This would be a substantial achievement given current levels of diesel car ownership in the capital (see table 3.1). It took 20 years to get from 1995 levels of diesel ownership, at 10 per cent of London's car fleet, to where we find ourselves today – 57 per cent. Our modelling assumes a reversal of this trend across the capital in just eight years, between now and 2025.

TABLE 3.1

Share of petrol vs diesel cars on London's roads with and without new policy interventions

	Petrol	Diesel	Other
Current	42%	57%	1%
2025 (forecast – no policy change)	46%	54%	-
2025 (modelled)	90%	10%	-

Source: 'Current share' provided by TfL in correspondence with IPPR, January 2016; 'no policy change' scenario from Howard 2015.

However, such a shift is not impossible. There are a range of policy levers available to policymakers to attempt to achieve legal compliance, including the ultimate phasing out of diesel cars. Stronger policy is likely to be needed at all three levels of government – European, national and local. The following sections set out a menu of available policies.

European policy

The car industry as a whole is regulated at the EU level. This will continue to be true even if the UK leaves the European Union, since the cars sold in the UK will remain the same as those sold in the EU single market. This means EU policy will remain a significant driver of local air pollution levels, helping to determine the proportions of diesel, petrol, hybrid and electric vehicles. It does this in two main ways.

1. Through laws on the emissions standards, which all new cars are expected to achieve, and the testing regime under which these standards are set.
2. Through the Ambient Air Quality and National Emissions Ceilings Directives, which set limits on local pollution concentration levels and national emission levels with which member states have to comply.

The former requires car producers directly to reduce emissions, while the latter puts pressure on member states to introduce policies to reduce air pollution – such as through vehicle tax rates and local clean air zones – which in turn helps drive manufactures to produce cleaner cars that are compliant with these policies. The EU will be able to use at least the first of these levers to drive further progress in air pollution in London even if the UK leaves the EU. Its ability to use the second lever is highly uncertain.

For emissions standards for car producers, action could be taken to toughen the testing regime and enforce greater conformity with the existing standards, combating the failures of the laboratory test and the infractions of producers described in chapter 1. In this regard, the EU is currently planning to introduce a new on-road 'real driving emissions' (RDE) test by 2017. However, the EU has so far agreed to introduce it in stages, thus allowing any cars with less than a conformity factor of 2.1 times – that is, those whose emissions differ from laboratory tests by a factor of 2.1 – to be sold from 2019 onwards, falling to 1.5 times the standard from 2021 onwards. These dates could be brought forward, encouraging car manufacturers to either deliver on their promise of 'clean diesel' or shift production (and sales) towards alternative petrol, electric or hybrid alternatives.

At the same time, the EU could adopt tighter emissions standards for ambient air quality. This could be achieved by going beyond WHO guidelines on safe concentrations of NO_2 and by matching WHO guidelines on PM emission concentrations.

National policy

National policymakers could also make a range of policy decisions that would help address London's air pollution crisis. As discussed earlier in this paper, the shift towards diesel cars since 1995 was partially driven by reform of vehicle tax policy to tackle climate change by reducing carbon emissions. In particular, vehicle excise duty (VED) was linked to CO_2 emissions, meaning that diesel cars became cheaper to buy and run than petrol cars.

The government could take a step in the right direction by progressively reforming the VED regime to disincentivise diesel cars relative to petrol ones. Behavioural modelling would be needed to establish the size of the differential required, but to achieve a significant decline in diesel sales and use it would likely have to be substantial. If the government decided it was not willing to go far enough in terms of reforming VED in order to reach compliance in places with acute air quality problems such as London, it could devolve VED rates to places like London so that they could go further and faster.

Tax policies could contribute to the reduction in diesels on the road. But the process of cleaning up the car fleet could be accelerated by the reintroduction of a national 'scrappage' scheme, providing owners of older diesel cars with a cash incentive to scrap their vehicles. This was last tried in 2009/10 for vehicles older than 10 years old as a way of stimulating economic growth in the wake of the financial crash. A similar scheme could be set up now with a more specific environmental objective of taking older and more polluting diesel cars off the road. Such schemes are expensive and involve some 'deadweight' (giving financial support to car owners who were anyway planning to sell their vehicles), but experience from 2009/10 suggests they are effective in bringing forward sales decisions.

Local policy

Finally, the shift away from diesel will require action at the local level. Indeed, because of the scale of the problem in London, local policy is likely to have to go further and faster than elsewhere. This will become

even more important if strong action is not taken at the EU or national level. Thus far, the UK government has not made the reduction of air pollution a priority and has been accused of obstructing moves to tighten regulation at the EU level (Boffey 2016).

This means that the mayor of London is likely to need to introduce a radical package of measures if he is to make a significant impact on air pollution in the next few years. IPPR will publish a report in the autumn that will set out a possible policy package in more detail, alongside more extensive and detailed modelling by King's College London.

However, in the interim, some potential policy measures can be identified.

- The introduction of an expanded ULEZ across the whole of inner London (bounded by the north and south circular roads), potentially by 2019. The key variables that will need to be determined are the standards which will be applied to different vehicles, the charges and fines to be levied, and the timetable under which the standards may be increased in the future. Any move to penalise large numbers of diesel vehicles in the short term may impact negatively on poorer households; those who have recently bought a non-compliant car; and small businesses (vans in particular may require a discount or exemption from regulation in the short term as there are very few non-diesel vans available to purchase). There is a clear need for TfL to conduct a full socioeconomic impact assessment, and the speed of introduction is likely to be a determining factor in public acceptance. However, in the longer term the ULEZ could be used to completely phase out diesel cars by including Euro 6 in the regulation and increasing the charge associated with non-compliance.
- The tightening of standards for vans, HGVs, buses and coaches within the low emissions zone. At the moment this regulation requires vans to meet Euro 3 and other vehicles to meet Euro 4. This could be progressively tightened over time, so that ultimately all vehicles will have to meet Euro 6 standards. For buses and taxis, where the technologies are available and the mayor has more regulatory control, the ultimate objective could be the phasing out of diesel vehicles altogether. It may also be possible to work with the business sector to help reduce freight transport, particularly at peak hours.
- The introduction of new policies to promote alternative forms of transport including the expansion of car sharing schemes across London, acceleration of the electric vehicle charging network, further investment in new walkways and cycle super-highways, and significant investment in the public transport network.