

At the centre of global policy and media debate is the current diesel emissions testing scandal but Europe's push towards diesel has been of growing concern long before the scandal, given diesel's negative impacts on air pollution and issues related to imbalances in Europe's fuel market. Given that 75% of the world's diesel cars are on European roads, diesel emissions are extremely problematic for Europe and require policy attention. Now is the time to refocus debate on the need for cleaner fuels in Europe's transport fuel mix.

The rapid dieselisation of European transport has been created by policy

Since the mid-1990's European governments encouraged diesel use as a climate solution because diesel engines emit less CO₂ per km than petrol engines. Diesel fuel use in Europe has constantly increased in the past 25 years and now represents 70% of Europe's road transport fuel use. Over the same period, petrol use in Europe decreased to only 30% share of the fuel market. The ratio of diesel to petrol use is now 2.5:1.

Taxation is to blame for Europe's rapid diesel expansion

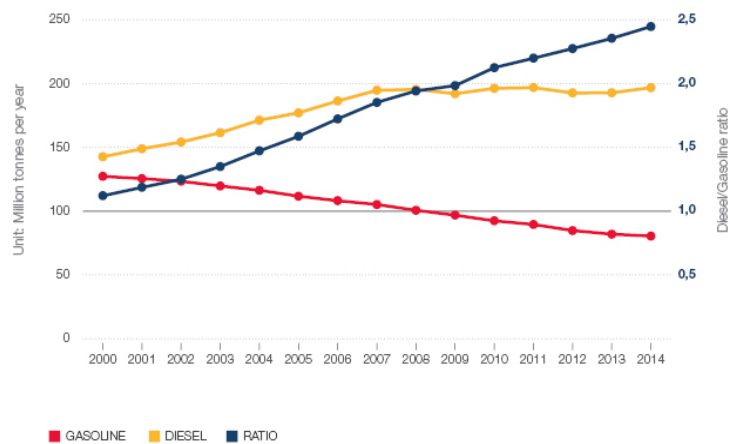
In many ways Europe's diesel emissions problem is a self-inflicted one, because in all EU Member States, except the UK, diesel fuel is taxed less than petrol because of national tax policies guided by Europe's Energy Taxation Directive. In 33 out of 34 OECD countries diesel is taxed lower than petrol. This preferential tax treatment is also true for diesel vehicles, where in many Europe member states road and car tax is linked to CO₂ emissions. In the UK, for example, diesel cars with the lowest CO₂ emissions were not subject to road tax at all. As a result of this preferential tax treatment, consumer demand for diesel vehicles has boomed. Renewable ethanol, despite its 60% GHG savings on average, is the highest taxed of all Europe's transport fuels.

Emissions from diesel engines are worse for air pollution than petrol

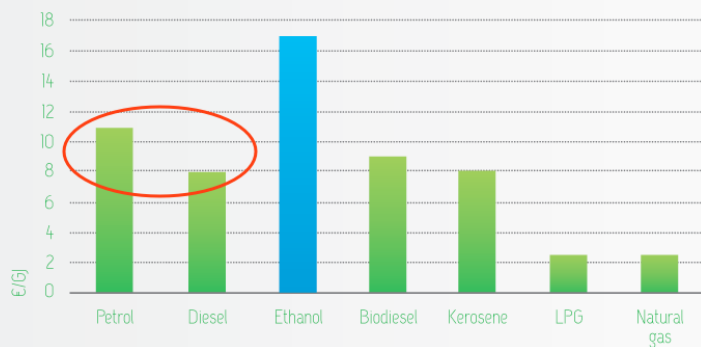
In Europe, the increasing levels of air pollution in major cities is a growing public concern given its impacts on human health. The European Environment Agency (EEA) recently [said](#) that transport is one of the main contributors to poor air quality in cities due mainly to the promotion of diesel vehicles and increased traffic volumes. In a recent [report](#) the World Health Organisation (WHO) concludes that diesel vehicles emissions are more harmful for air pollution than petrol vehicles because there has been no significant decline in nitrogen oxides emissions from diesel since the 1990s. The EEA [says](#) that diesel cars generally emit more particulate matter and nitrogen oxides than petrol cars, both damaging emissions

ROAD FUEL DEMAND IN THE EU

Source: Wood Mackenzie



Taxation of transport fuels (by energy content)



Source: DG TAXUD, European Commission

for human health. According to [research](#) published by the UK Department for Energy and Climate Change, diesel fumes contribute to lung disease, heart attacks, asthma and other respiratory problems. The health impacts of diesel emissions are corroborated the WHO which [officially](#) classified diesel emissions as a carcinogenic, linked to lung cancer. An OECD [report](#) concludes that the high environmental and human costs of diesel emission's mean that "there is no public policy case for applying preferential tax treatment to diesel", a call supported by the WHO.

Dieselisation undermines Europe's energy security

The trend of increasing diesel use and decreasing petrol use has led to an imbalanced fuel market in Europe that relies heavily on diesel imports, mainly from Russia. Declining petrol demand has also meant that Europe has an increasing surplus of petrol because it produces more petrol than it needs. Typically this excess petrol is exported to

markets such as the US or Africa but these export opportunities are in decline. This has left Europe with a large surplus of petrol that it is having difficulty selling to its traditional export markets. Reduced petrol demand and reduced export opportunities are having negative financial consequences for Europe's petrol refiners. If petrol refiners are forced to divest or shut down refiners then Europe's diesel dependency will increase even further if Europe has less petrol supply. Europe should focus on rebalancing its fuel market by expanding its petrol market and thereby reducing its diesel imports needs.

"There is no environmental justification for taxing diesel less than petrol. Air pollution is destroying our health and the planet. Phasing out tax incentives on diesel would be a step towards reducing the costs to both and in fighting climate change,"

Angel Gurría, OECD Secretary-General

Petrol-ethanol blends: better for the climate and air quality

Petrol is cleaner fuel and less damaging to the environment and human health than diesel so a shift towards more petrol is the way forward. But there will still be a need to reduce the GHG emissions from petrol. Blending petrol with higher levels of ethanol, such as E20 fuel blend, can significantly reduce petrol's GHG emissions and improve petrol-engine performance. Ethanol mixed with petrol leads to a strong decrease in petrol's particulates, carbon monoxide (CO), and hydrocarbons (HC) emissions, making it more beneficial to air quality in comparison to diesel. Adding ethanol to petrol at higher levels, such as 85% volume (E85 for flex fuel) leads to a sharp decrease in petrol's NOx emissions. Ethanol can even be used at very high levels to reduce NOx emissions from diesel engines (e.g. ED95 for buses). Ethanol's air quality benefits can be strengthened further through vehicle optimisation to ensure that petrol engines fully capitalise on ethanol's potential to reduce harmful pollutants.

Addressing dieselization: the way forward

Europe needs to substitute its diesel use with a better type of petrol and the first step to doing so is for national governments to ensure that diesel and petrol are taxed the same. To do this Europe should introduce energy taxation based on the energy content and carbon footprint of fuels, not on volume as is currently the case. Such a taxation regime would create a level playing field in the level of taxes applied to petrol and diesel and also between biofuels and fossil fuels. It would help improve air quality, rebalance the fuels market in favour of more petrol use and reduce Europe's diesel import dependency.

European policy makers should:

- Reduce or remove tax incentives for diesel vehicles and bring diesel fuel taxation more in line with petrol taxation;
- Introduce measures to tax fuels based on the energy content and carbon footprint of the fuel;
- Ensure that all petrol in Europe is sold with a minimum 10% vol of ethanol, rising to 20% in the future;
- Incentivise the use of higher ethanol blends, such E85 or ED95.