

ADDRESSING EUROPE'S FAILURE TO CLEAN UP THE TRANSPORT SECTOR

ANALYSIS : EUROPEAN COMMISSION | EUROPEAN COUNCIL | EUROPEAN PARLIAMANT | EUROPEAN COURT OF JUSTICE

Source: Bruegel based on EEA (2017). Note: 1990 = 100.

EXECUTIVE SUMMARY

Under the Paris Agreement, the European Union has committed to cut its greenhouse gas emissions to 40 percent below 1990 levels by 2030. Between 1990 and 2015, emissions decreased significantly in all sectors with the exception of transport, which has seen a 20 percent increase. Transport is thus becoming a key obstacle to EU decarbonisation and more aggressive policies are needed to decarbonise this sector. A particular focus should be decarbonisation of road transport because it is responsible for more than 70 percent of overall transport emissions. Decarbonising road transport would also improve air quality in cities, which remains a fundamental challenge for better public health in Europe.

CONCLUSIONS

So far, national and EU policies have failed to foster road transport decarbonisation. However, this trend can be reversed by adopting a new EU post-2020 strategy with three main components. First, the EU should foster political momentum and encourage countries

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The European Union has the long-term vision to reduce its greenhouse gas emissions by 80-95 percent by 2050 compared to 1990 (European Commission, 2011a). In this framework, it adopted in 2014 a binding 40 percent emissions reduction target to be achieved by 2030 compared to 1990 – a target that also represents the EU's international commitment to the Paris Agreement. Meeting these targets requires a profound transformation in all the EU's key greenhouse gas emitting sectors: electricity and heat generation (currently responsible for 27 percent of EU emissions), transport (26 percent), industry (19 percent) and buildings (12 percent)¹.

Between 1990 and 2015, greenhouse gas emissions from the main emitting sector – electricity and heat – decreased by 26 percent, partly as a result of the sector's transformation underpinned by rapid advances in renewable energy technologies and by decarbonisation policies.

In the same period, greenhouse gas emissions from industry decreased by 36 percent, from agriculture and waste by 32 percent and from buildings by 24 percent.

The only sector with rising emissions has been transport, with a 23 percent increase over the period.

Transport is therefore set to become the main obstacle to the achievement of the EU's decarbonisation goals, especially as transport activities are expected to grow in Europe, by 42 percent between 2010 and 2050 for passenger transport

and by 60 percent over the same period for freight transport (European Commission, 2017a). To meet the current 2050 target of reducing transport emissions by 60 percent compared to 1990 (European Commission, 2011b), stronger policies are already required. However, to achieve net-zero emissions by mid-century – as implied by the Paris Agreement – transport would actually have to be completely decarbonised shortly after 2050. This obligation cannot be met without much stronger policies. Under current policies, emissions from the transport sector are projected to exceed 1990 levels by 15 percent in 2050 (EEA, 2016).

Policy should primarily focus on road transport, which is responsible for 73 percent of the EU transport sector's emissions (Figure 1). Decarbonising road transport is also decisive to improve air quality in cities, which remains a fundamental challenge for public health

Figure 2: EU vehicle fleet by technology, 2015



Source: Bruegel based on ACEA (2017a).

Technological development in principle can enable a switch from fossil-fuelled vehicles to clean vehicles. Electric vehicles (EVs) combined with renewable electricity generation are seen as a promising approach to decarbonise a substantial fraction of road transportation. However, further technological breakthroughs to reduce the cost and increase the range of EVs might be needed if EVs are to replace a significant proportion of fossil-fuelled vehicles. EVs represent only 0.2 percent of the EU's total vehicle fleet (Figure 2). If EVs continue to penetrate the market at the current growth rate, it will take around 60 years for them to reach 50 percent of the current passenger car total fleet³.

In addition to EVs, other clean technologies might emerge in the future.

is will only happen based on major research and development investment in clean vehicles by the automotive industry.

One good news for Europe is that it is by far the world's largest investor in automotive R&D, with €54 billion spent in 2016 compared to €30 billion in Japan, €18 billion in the US and €5 billion in China (Figure 3).

However, in terms of the patenting activity resulting from this investment the European automotive industry still appears to be primarily focused on further developing internal combustion engines rather than on advancing hybrid, electric or hydrogen technologies (Figure

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A more structural approach to decarbonise road transport would be to replace the kilometres travelled by road vehicles. This entails promoting public transport, alternative transport modes such as walking and cycling, and more

A notable example of the variety of approaches that could be adopted by countries and cities in decarbonising transport is the introduction of bans on diesel and petrol cars. In 2017, France and the United Kingdom announced plans to ban the sales of diesel and petrol cars and vans by 2040 (Petro , 2017).

ese plans are mainly driven by a political commitment to reduce air pollution, and are based on the expectation that the already underway shift to clean vehicles will continue to gather pace over the coming years. ese plans are also meant to provide a strong signal to the EU automotive industry,

These measures should be promptly approved and implemented.

However, this set of rules might still not be sufficient to ensure road transport decarbonisation. In the past, the Council has resisted stricter car emission standards because of resistance from some countries, such as Germany (Carrington, 2013). Europe needs to overcome this political barrier, allowing some member states to move ahead in decarbonising road transport – and allowing cities in all EU countries to also move ahead, and to take advantage of incentives put in place by the EU. The EU therefore needs to develop a new post-2020 road transport strategy. This strategy should have three pillars:

4.1 Encourage EU countries to adopt ambitious plans to ban diesel and petrol vehicles by 2040 or, even better, by 2030.

More EU countries should follow the example of France and the United Kingdom, and adopt plans to ban diesel and petrol vehicles by 2040 or, even better, by 2030.

The more EU countries that make these commitments, the stronger the signal will be to the European automotive industry that it should invest more in the development of clean vehicles.

That is, these commitments should also be seen as a simple but effective tool to provide investment certainty to the European automotive industry, and to foster its focus on clean vehicles. Clear planning of these commitments would leave the automotive industry a window of 10-20 years to fully switch from the traditional internal combustion engine business model to the new clean vehicles and clean mobility.

vehicle can cost 64 percent less than running a diesel or petrol vehicle. In Germany, by contrast, the difference is only 25 percent (Lévay et al., 2017).

Given the importance of this policy tool in delivering decarbonisation, the EU should promote a new discussion among EU countries on the future of transport taxation, as is being done in the field of digital taxation (European Council, 2017).

4.3 EU Research and Innovation Funding

After 2020, the EU should improve its transport research and innovation funding. In particular, it should carefully allocate this money, targeting areas in which it can truly have leverage. EU transport research and innovation funding should become mission-oriented, or directed at solving specific problems, as more generally suggested by Mazzucato (2018).

The introduction of bans on diesel and petrol vehicles by countries and cities could lead to a quick take-up of already commercially-viable clean vehicles, such as EVs. Though necessary to foster road transport decarbonisation in the short-to-medium term, this should not prevent currently less-mature technologies from developing and demonstrating their longer-term potential to contribute to road transport decarbonisation.

To avoid this risk, the EU should focus its post-2020 transport-related research and innovation funding on early-phase technologies, such as hydrogen, solid-state batteries or electrofuels (liquid fuels produced from CO₂, water and electricity). This would be the most sensible way to invest the limited available resources (equivalent to 0.2 percent of the European automotive industry's total investment in research and innovation) in areas that otherwise might not find adequate private funding.

5 Conclusions

Cleaning up road transport is a fundamental prerequisite if the European economy is to be decarbonised, if air quality is to be improved and if – indirectly – the European automotive industry is to have a sustainable future.

Given the still-limited level of ambition at national level, Europe would greatly benefit from stronger EU action on road transport. For this reason, the EU should foster political momentum and promote the collective adoption of bans on diesel and petrol vehicles by 2030-40 by European countries and cities.

This will provide a strong signal to the European automotive industry that it should invest more in clean vehicles, thus contributing to the industry's long-term competitiveness and sustainability. This will also provide a signal to citizens to adopt more sustainable transport modes.

The EU can provide support to countries and cities in deploying

