Phasing out of the sale of new, non-zero emission heavy goods vehicles

Consultation response

September 2021

Excellent proposals to end of the sale of diesel trucks should be moved forward quickly

Transport and Environment (T&E) welcomes the proposals in the consultation on when to phase out the sale of new, non-zero emission heavy goods vehicles). Specifically:

1. We are in favour of an end to diesel trucks smaller than 26 tonnes by 2035
2. We are in favour of an end to diesel trucks between 26 and 44 tonnes by 2037
3. We support at least a 2 tonne increase in the weight allowance of ZE trucks
4. We oppose a 1 tonne additional weight allowance for low carbon trucks.

The proposals move forward in the right direction and should be taken forward with urgency.

1. Introduction

This paper has been prepared by Transport and Environment (T&E) in response to the Consultation on when to phase out the sale of new, non-zero emission heavy goods vehicles from the UK Department for Transport (DfT).

T&E is Europe's foremost sustainable transport NGO, a federation of almost 60 national organisations campaigning for greener transport. T&E has been closely involved in developing the EU truck CO2 regulations and developing the VECTO CO2 modelling tool and has a detailed understanding of policies to reduce vehicle CO2 emissions.

T&E is pleased with many of the proposals within the consultation and complementary Green Paper and Delivery Plan mainly relating to cars and vans that have many important precedents for trucks. We believe in combination these provide a good basis for achieving the shift to electric trucks as planned.

The transition to zero emission trucks is probably at present about 7 years behind that for cars taking into account the availability of models and charging. However, the anticipated fall in battery prices and importance of total costs of ownership in purchase choices means that the shift to zero emission trucks may happen even faster than for cars. To facilitate this change policy will need to be nimble but the potential for rapid transition and prize in terms of cuts in emissions significant.

2. Phasing out sales of non-zero emission HGVs (Question 1)

T&E UK welcomes the proposal to phase out the sale of non-zero emission HGVs as an important step in decarbonising transport. The UK commitment to achieve Net Zero by 2050 requires that tailpipe emissions from vehicles are eliminated by 2050. With a share of aviation emissions highly likely to require offsetting through negative emissions solutions there is no headspace for residual CO2 emissions from vehicles in 2050.

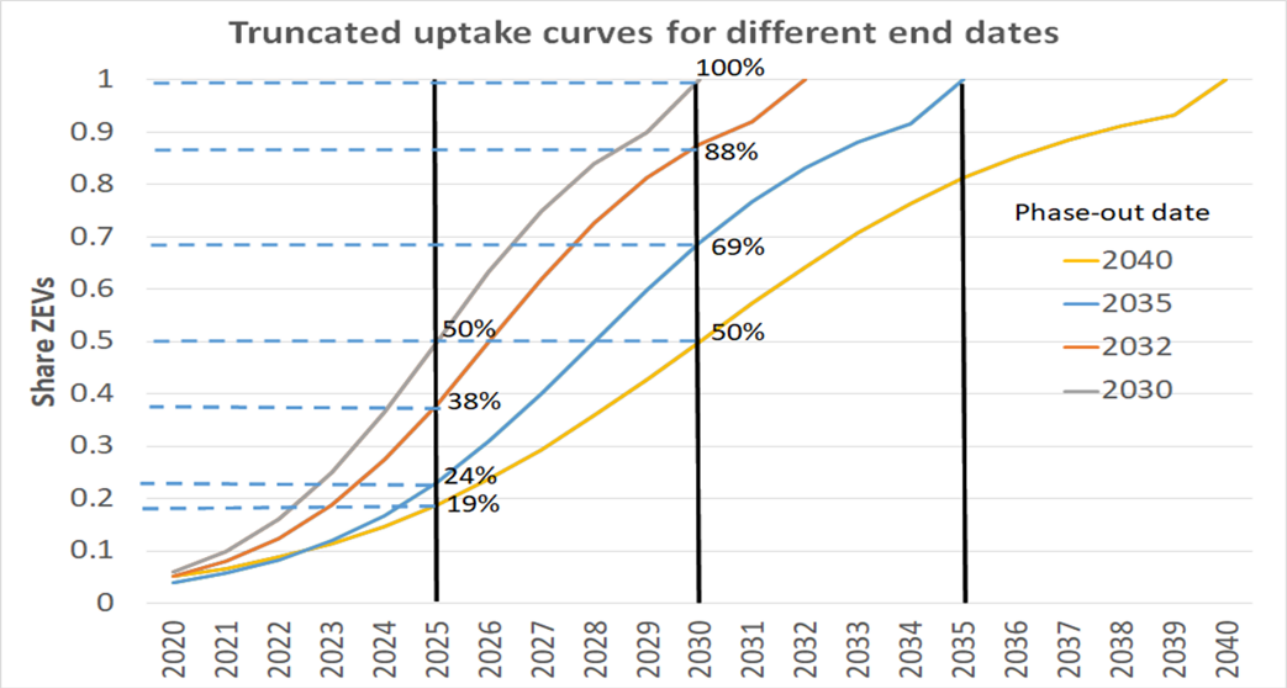
There is no credible alternative to a rapid shift to ZEVs. Biofuels will play a role in reducing emissions from the legacy diesel fleet until these are scrapped. However, to power the entire truck fleet with 100% biofuels would require significantly increasing supplies that could not be sourced sustainably. Biomethane similarly cannot be produced in sufficient volumes to power the entire UK truck fleet. Similarly, synthetic fuels are not a credible option for trucks. Not only is the fuel far too expensive, it will require enormous renewable energy demands to manufacture these fuels. In the absence of a credible alternative to shifting to ZE trucks (either battery, using a catenary system or hydrogen) setting a phase out target for new vehicle sales is essential to be able to meet climate goals. Give the lack of credible alternatives a phase out date for zero emission trucks is a key component of future policy.

2. Phase out sales of new diesel trucks below 26 tonnes by 2035 is supported - but sales of trucks over 40 tonnes should end by 2037 (Questions 2 to

T&E supports an end to the sale of new diesel trucks below 26 tonnes by 2035 but believes the end date for sales of trucks over 26 tonnes should be 2037. The sale of new diesel trucks must end in good time to enable a smooth phase out by 2050. A quarter of UK trucks in use today are more than 10 years old[1] - a 2040 phase out date is therefore too late to achieve net zero targets. By bringing forward the end date for sales of all diesel trucks to 2037, only about 15% of diesel trucks will remain in use in 2050. Use of these vehicles will still need to be curtailed before the end of their natural life by limiting the lifetime of the Type Approval. By bringing forward the phase out date the potential disruption to UK distribution can be minimised as there will be fewer trucks that need to be removed from the road in 2050.

[1] vehicles.stats@dft.gov.uk Veh051

Whilst it is not a question in this consultation, of key importance is the trajectory of the uptake of zero emission trucks. For >26 tonne trucks sales of zero emission trucks will still need to approach around 50% of the market by 2030 and 80% by 2035. For <26 tonne trucks the market share will need to be around 70% in 2030 to achieve 100% by 2035.



Accordingly T&E supports the simple 26 tonne division for the two proposed phase out dates as against a more complex system in which different subcategories of trucks are required to achieve different dates.

T&E sees no insurmountable barriers to the shift to sales of only zero emission trucks by the proposed phase out date. A T&E study published in 2020 showed phasing out diesel trucks by the proposed dates is the only credible pathway to lower emissions from trucks to zero emissions by 2050 and this is possible if a start is made in the early 2020s. Efficiency measures such as improved fuel efficiency of trucks, modal shift to rail and optimised logistics supply chains would only lower freight tank-to-wheel emission by 29% by 2030 and 20% by 2050 against 1990 level - entirely inadequate to meet climate targets.

Advances in technology mean that battery-powered heavy trucks will soon be cheaper to own and run than their diesel equivalents according to two new studies by the Stockholm Environment Institute (SEI) and T&E. T&E's study, which focuses on long-haul trucking in Germany found that contrary to common perception, battery electric trucks are NOT too expensive or lacking the range to realistically decarbonise road freight, the SEI's report shows that if electric trucks can be fast-charged in the same way as passenger cars, the required range is dramatically reduced and electrification becomes far more realistic.

ACEA the European truck manufacturers association has already committed to make new trucks fossil free by 2040. Whilst T&E acknowledges this does not amount to a commitment to 100% zero emission trucks it is a strong signal a pathway to zero emission technologies exists. A strong policy signal to end the

Uk sale of diesel trucks between 2035 and 2037 will provide a stimulus to the market to invest in zero emission solutions.

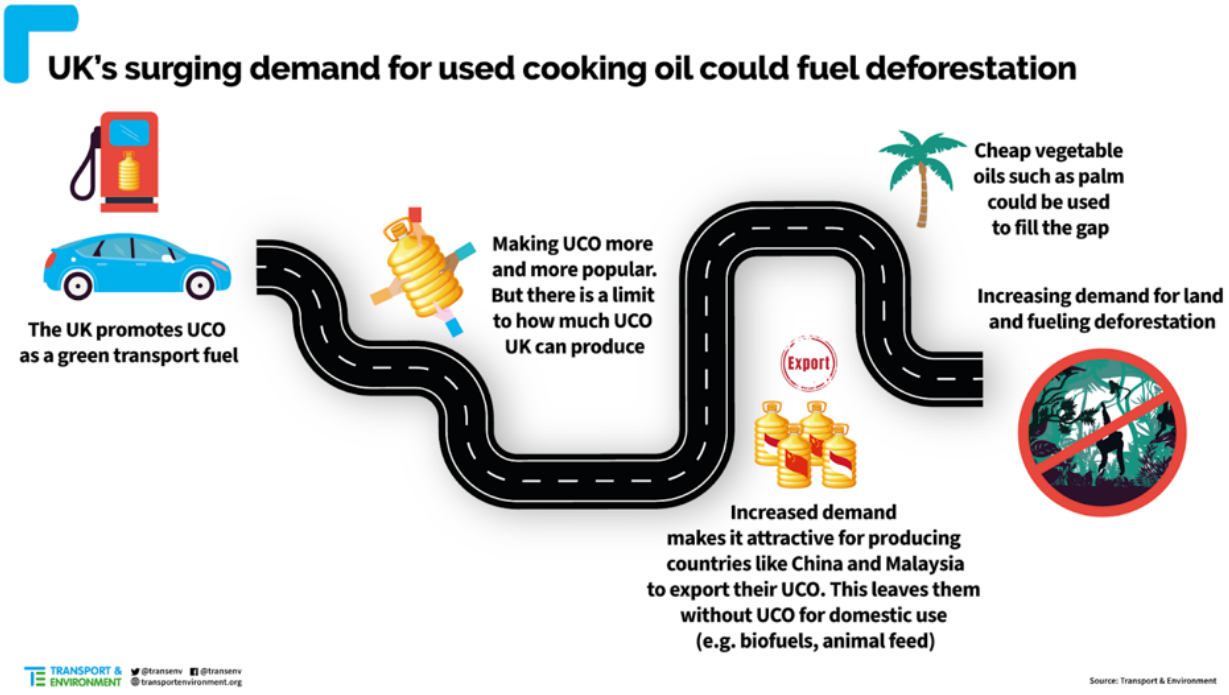
The use of net-zero fuels (Question 10)

T&E strongly opposes extending the phase out dates to all nonzero emission HGVs, particularly those using low or zero carbon fuels.

Biofuels

Biofuel supplies cannot be scaled to deliver sufficient sustainable biofuels for a 100% biofuel blend fuel to power the entire UK truck fleet. It is estimated, 6 million tonnes (5,100 million litres) of diesel are used by HGVs each year in the UK. In 2019, in total 1,662 million litres of biodiesel was supplied. Total current biodiesel supplies could therefore only meet a third of the fuel needs of trucks assuming no biofuels were used in cars and other transport applications.

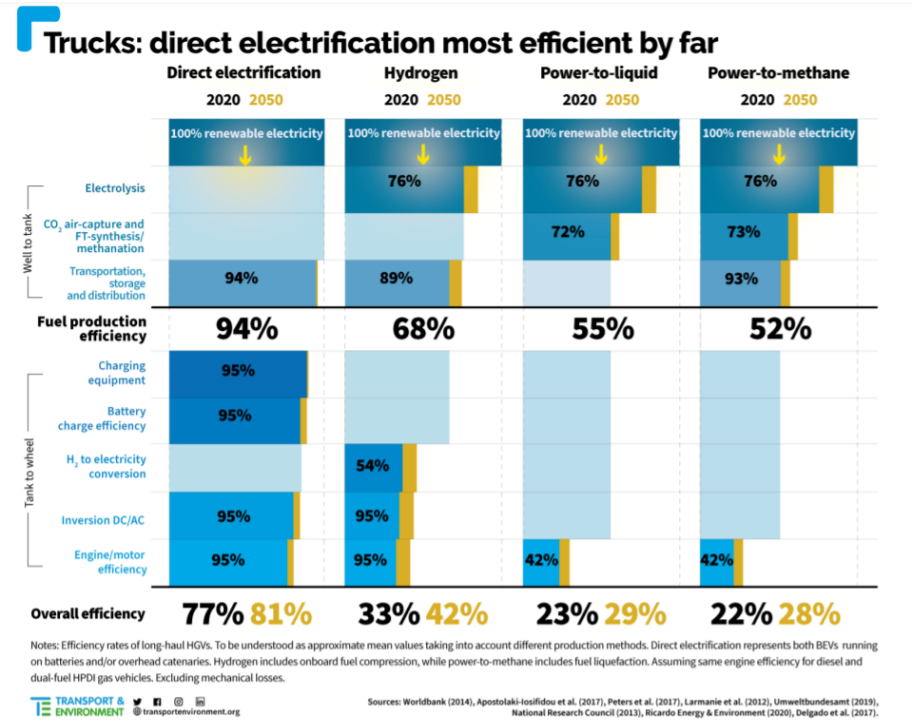
Furthermore, around 80% of biodiesel in the UK originates from used cooking oil (UCO) and there are increasing concerns about the sustainability of this feedstock. Current demand for UCO in the UK is already 15 times more than can be supplied from UK sources and as a result huge quantities are imported. In 2020, nearly half of the UCO supplied to the UK was from China (244m tonnes) while more came from Malaysia (49m tonnes) alone than was supplied by UK households and businesses. Many Countries exporting UCO to the UK also use the "waste" for animal feed. As a result the UCO that was used for feed in these countries is simply being replaced by cheap virgin vegetable oil like palm oil as illustrated below offsetting all the benefits.



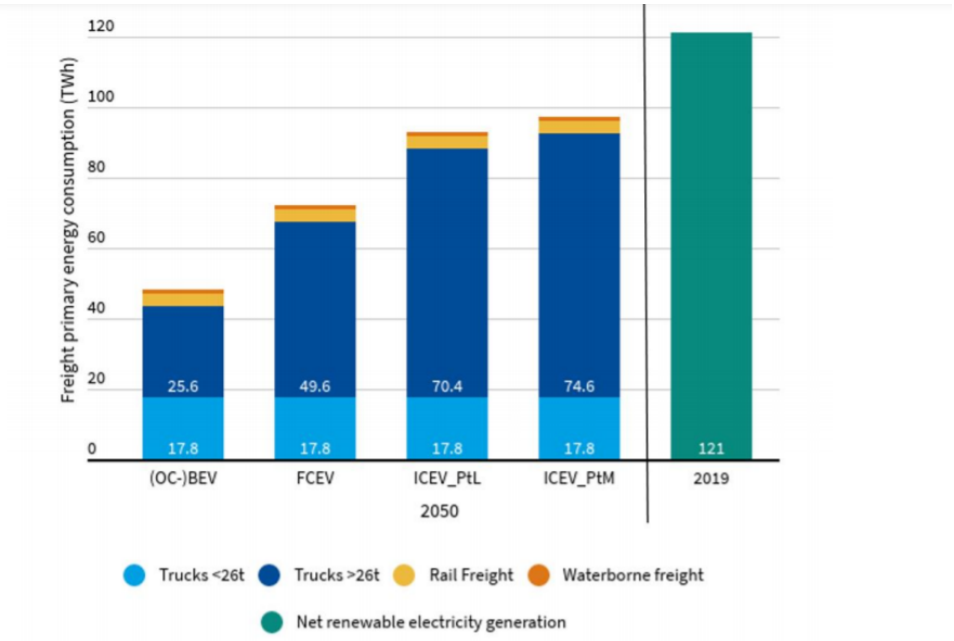
85% of biomethane used in the UK is also imported and UK supplies could only meet a fraction of UK truck demand. Furthermore there are already concerns anaerobic digestion is diverting unsold food into feedstock as opposed to this being provided for foodbanks. Biofuels will ultimately also be needed for Sustainable Aviation Fuels and perpetuating their long term use in trucks is therefore a waste of a precious limited resource that should be directed to where alternative solutions are less available.

Synthetic fuels

Some industry bodies continue to advocate for synthetic fuels in trucks - but their analysis fails to recognise the enormous renewable energy demands of manufacturing these fuels. Overall the efficiency of using synthetic fuels is just 23% currently and only expected to rise to 29% by 2050. In contrast, direct use of electricity (either through a battery or catenary system) is 77% efficient today. As a consequence the primary energy required to power the UK truck fleet using synthetic fuels is double that of using the electricity directly. Synthetic fuels will also be needed in aviation.



Conversion efficiencies of different powertrain technologies



Notes: Battery electrification for trucks below 26 tonnes is assumed across all pathways

Sources: T&E calculations and BEIS (2020).

2050 primary energy consumption compared to the 2019 net renewable electricity generation in the UK

Source T&E 2020

Including zero emission fuels will simply weaken the demand for genuine zero emission trucks which will in turn will slow down the development and sales of these vehicles that is essential to reduce costs. The outcome will be a most expensive and less efficient freight distribution in the UK.

In the absence of a credible alternative to shifting to ZE trucks (either battery, using a catenary system or hydrogen) setting a phase out target for new vehicle sales is essential to be able to meet climate goals.

Changes to vehicles weights (Questions 11 - 13)

T&E supports the proposal that maximum permissible weights for certain zero emission vehicles should increase by up to 2 tonnes (without exceeding 44 tonnes). Such a weight addition helps to compensate for the additional weight of the battery and therefore reduces any commercial disadvantage arising from the shift to zero emission trucks. T&E would support overcompensating zero emission trucks to provide an additional weight allowance to enhance the incentive of shifting to this technology.

T&E is not in favour of increasing weights limits by up to a maximum of 1 tonne for certain alternatively fuelled HGVs particularly natural gas trucks. Biofuel powered HGVs do not require the additional weight allowance and natural gas powered trucks do not always operate on biomethane and as such are not always low carbon. T&E advises incentives are limited to zero emission trucks only.

Further information

Greg Archer
UK Director
Transport & Environment
greg,archer@transportenvironment.org
Mobile: +44(0)7970 371224