EXPENSIVE U-TURN

Costs of the anti-climate policy pursued by the automotive and oil lobby

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Greenpeace e.V. Hongkongstraße 10, 20457 Hamburg, T 040 30618-0 **Press office** T +49 (0)40 30618-340, F +49 (0)40 30618-340, presse@greenpeace.de, greenpeace.de **Political representation Berlin** Marienstraße 19–20, 10117 Berlin, T +49 (0)30 308899-0
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The most important findings:

- If the combustion engine lobby succeeds in repealing the EU-wide ban on combustion engines set for 2035, large quantities of expensive e-fuels will be needed to compensate for the additional CO_2 emissions. As a result, fuel prices in Europe will rise. This will make owning a diesel or petrol car up to € 285 more expensive on average per year.

- Between 2035 and 2050, the additional expenses for the extra e-fuels needed will add up to between € 1,382 and € 4,554 per owner of a combustion engine car, and up to € 835 billion across the EU. More than a quarter of the total fuel consumption of passenger cars between 2035 and 2050 would have to be covered by additional e-fuels.

- If the necessary quantities of e-fuels for the passenger car fleet are - as might be expected - not available, the demand for fossil fuels and thus the price in emissions trading for the building and transport sectors (ETS2) will rise. Petrol and diesel car owners will thus pay at the pump for the failures of the automotive industry all the same.

- If the greenhouse gases resulting from the weakened CO_2 fleet limits are not compensated for elsewhere, society faces climate damage costs of more than € 1.2 trillion, for example due to more frequent extreme weather events.

How we calculated

To calculate the additional costs of e-fuels compared to conventional fuels, we used figures from the Frontier Economics publication "Scenarios for the market ramp-up of e-fuels in road transport."[1] As a fossil fuel reference, we used the European average prices for gasoline and diesel without taxes in 2024 from the EU Commission's "Weekly Oil Bulletin."[2] From these, we deducted the rates used by Frontier Economics for "transport and distribution costs and margins" of € 0.19/l for gasoline and € 0.24/l for diesel. This results in production costs of € 0.59/l for gasoline and € 0.58/l for diesel. As there is currently no uniform EU CO_2 pricing for fuels, we have used the price of € 48/ton of CO_2 targeted by the EU in ETS2 for 2030. For VAT, we have used a European average of 21.8 percent.[3]

We have not considered the developments of crude oil prices and CO_2 pricing over time. These depend on a variety of parameters. The price of oil could fall in the coming decades, which would further increase the difference to e-fuel prices. On the other hand, the CO_2 price could rise, which would in turn reduce the gap.

The calculation of the required amount of e-fuels is based on the "high weakening" scenario from Transport & Environment (T&E). In June, the organization quantified the avoidable additional emissions resulting from some of the VDA proposals ("10-Punkte-Plan"). The calculation took into account the VDA's demand for lowering the reduction target for CO_2 emissions from 100 to 90 percent in 2035, the classification of certain plug-in hybrids as zero-emission vehicles, and the introduction of a carbon correction factor for fuels. T&E estimates that these weakenings of the regulation will result in additional emissions of 1.4 gigatons of CO_2 between 2035 and 2050. Since the VDA proposal includes further measures to weaken CO_2 emission standards that were not included in the T&E calculation, this figure can be considered conservative.

For the present calculation of the additional costs, we have determined the amount of additional e-fuels that would be necessary to compensate for the additional emissions that incur for the years 2035 to 2050[4]. In doing so, we assumed a 90 percent reduction in greenhouse gases from e-fuels compared to the combustion of fossil fuels. The required quantities of e-fuels can be calculated on an annual basis using the additional emissions generated each year and the CO_2 emissions corresponding to the burning of one liter of gasoline (2.37 kg) or diesel (2.65 kg).

The ratio of e-gasoline to e-diesel and the share of e-fuels in total fuel demand are based on the number of gasoline and diesel vehicles within the vehicle fleet per year, the average fuel consumption per drive type, and the average annual mileage. For the latter, we have used the value published by the European Automobile Manufacturers' Association (ACEA) in the current edition of "Vehicles on European Roads" and extrapolated it unchanged into the future, regardless of the drive type.[5]

We have taken the average fuel consumption per drive type from the real average consumption figures collected by the EU.[6] These have been recorded and collected by on-board fuel consumption meters in new cars since 2021. For the future, we have assumed a 0.05 percent reduction in average consumption in the

1 https://www.uniti.de/fileadmin/user_upload/Szenarien_f%C3%BCr_den_Markthochlauf_von_E-Fuels_im_Stra%C3%9Fenverkehr_-_Update_Januar_2025.pdf

2 https://energy.ec.europa.eu/data-and-analysis/weekly-oil-bulletin_en

3 https://taxfoundation.org/data/all/eu/value-added-tax-vat-rates-europe/

4 https://www.transportenvironment.org/te-deutschland/articles/vda-maximalforderungen-sind-durchschaubarer-versuch-ein-spaeteres-aufweichen-der-eu-flottengrenzwerte-vorzubereiten

5 https://www.acea.auto/files/ACEA_Report_-_Vehicles_on_European_roads_2025.pdf

6 https://climate-energy.eea.europa.eu/topics/transport/real-world-emissions/data

vehicle fleet (not new registrations) per year for gasoline and diesel vehicles, and a 0.2 percent reduction for plug-in hybrids. While the reduction for diesel and gasoline vehicles is rather optimistic given historical trends, the assumed reduction for plug-in hybrids could also be higher if new models with greater electric range are driven less frequently in combustion mode in the future.

We have developed the passenger car fleet in use based on figures from Eurostat[7], the European Alternative Fuels Observatory[8], and again ACEA, assuming annual new registrations in a way that the figures quoted by T&E for new registrations in 2035 (44 % BEV, 44 % PHEV, 11 % ICE) are achieved. We took the initial level of new registrations per drive type from the European Environment Agency's (EEA) monitoring of CO_2 emissions from new passenger cars for 2024[9]. We also differentiated between gasoline and diesel vehicles and extrapolated the ratio of registrations into the future. For the period from 2025 to 2034, we assumed a linear change in new registrations towards the T&E figures, and for the period from 2035 to 2050, we made no changes to the composition of new registrations.

7 https://ec.europa.eu/eurostat/databrowser/view/road_eqs_carmot/default/table?lang=en&category=road.road_eqs

8 https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/european-union-eu27/vehicles-and-fleet

9 https://co2cars.apps.eea.europa.eu