Unwrapping the package: A review of the European Commission's CO_2 standards proposal

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INTRODUCTION

On December 16, the European Commission released a draft amendment to the EU carbon dioxide (CO_2) standards for light-duty vehicles[1] as part of a larger regulatory package focused on supporting the automotive industry.[2] The CO_2 standards are essential to achieving the EU's target of reducing net greenhouse gas (GHG) emissions by at least 55% by 2030 compared with 1990 levels. This is the minimum CO_2 reduction needed to put the EU on a path to climate neutrality by 2050, as required by the European Climate Law.[3] To achieve this goal, the current version of the CO_2 regulation requires that from 2035 onwards, only cars and vans with zero tailpipe CO_2 emissions can be registered in the EU.

First introduced in 2009, the EU CO_2 standards for cars and vans led to a 42% reduction in CO_2 emissions from cars, encouraged technological progress by European manufacturers, and helped drive the transition to electric vehicles, which reached a 20% market share as of October 2025.[4] Over the same period, the profitability of European car manufacturers almost tripled.[5]

1 Regulation (EU) 2019/631, OJ L 111/13, https://eur-lex.europa.eu/eli/reg/2019/631/oj/eng.

2 "Automotive Package," European Commission, accessed December 18, 2025, https://transport.ec.europa.eu/transport-themes/action-plan-future-automotive-sector/automotive-package_en.

3 Regulation (EU) 2021/1119, OJ L 243/1, https://eur-lex.europa.eu/eli/reg/2021/1119/oj/eng.

4 The International Council on Clean Transportation (ICCT), *Public Comments on the European Commission Proposal to Introduce a 3-Year "Averaging" Provision for the CO_2 Standards Regulation for New Cars and Vans* (2025), https://theicct.org/wp-content/uploads/2025/03/PublicComments-Averaging-final-27March.pdf.

5 Jeroen Merk et al., "Manufactured Crisis," *Somo*, June 26, 2025, https://www.somo.nl/manufactured-crisis/#:~:text=EU%20car%20manufacturers%20enhanced%20their,profit%20after%20covering%20all%20expenses.

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This policy brief reviews the proposed changes to the EU CO_2 standards for cars and vans, including revisions to the interim CO_2 targets, credits for low-carbon fuels and steel, and super credits for small and affordable battery electric vehicles. It concludes with a discussion of the opportunities and risks of the proposal for Europe's automotive industry and climate targets.

WHAT THE EUROPEAN COMMISSION PROPOSES

Table 1 provides an overview of the changes proposed by the European Commission, which are described in more detail below.

Table 1

Major proposed changes to the EU CO_2 standards for light-duty vehicles

Provision	Current regulation	Proposed amendment
CO_2 target for 2030–2034	Manufacturers must comply with the target in each year	For 2030–2032, only the average emissions of the three years must be below the target
	By 2030, car emissions must decrease by 55% and van emissions by 50% compared with a 2021 baseline	The target for vans is weakened to a 40% reduction compared with a 2021 baseline, resulting in a CO_2 target value of 109 g CO_2/km
CO_2 target from 2035 onwards	For cars and vans, a 100% CO_2 reduction is required compared to a 2021 baseline	The target for cars and vans is weakened to a 90% reduction compared with a 2021 baseline, resulting in CO_2 target values of 11 g CO_2/km for cars and 18 g CO_2/km for vans
	All vehicles registered from 2035 onwards are required to be zero-emission	No restriction on the powertrain type for vehicles registered
	Compliance is assessed solely on tailpipe CO_2 emissions	Tailpipe CO_2 emissions of vehicles registered after 2035 need to be offset by using renewable fuels and green steel
Credits for small electric vehicles	No credits	Battery electric vehicles produced in the EU with a maximum length of 4.2 m registered until 2034 are counted as 1.3 vehicles when calculating a manufacturer's CO_2 performance

TURNING AWAY FROM THE 2035 100% CO_2 REDUCTION TARGET

The changes proposed by the European Commission represent a paradigm change in efforts to reduce road transport CO_2 emissions. Instead of requiring zero tailpipe CO_2 emissions of new vehicles by 2035, the proposal foresees only a 90% CO_2 reduction for cars and vans compared with 2021 levels (see Figure 1 and Figure 2). This allows vehicles of any kind of powertrain, including conventional combustion engine vehicles, to be registered beyond 2034. New cars and vans registered from 2035 onwards can have average CO_2 emissions of 11 g/km and 18 g/km, respectively, provided these emissions are offset by credits for the use of low-carbon steel and renewable fuels (discussed below). The proposal does not set a new target date for a 100% CO_2 reduction.

Figure 1

Current and proposed EU CO_2 targets for cars

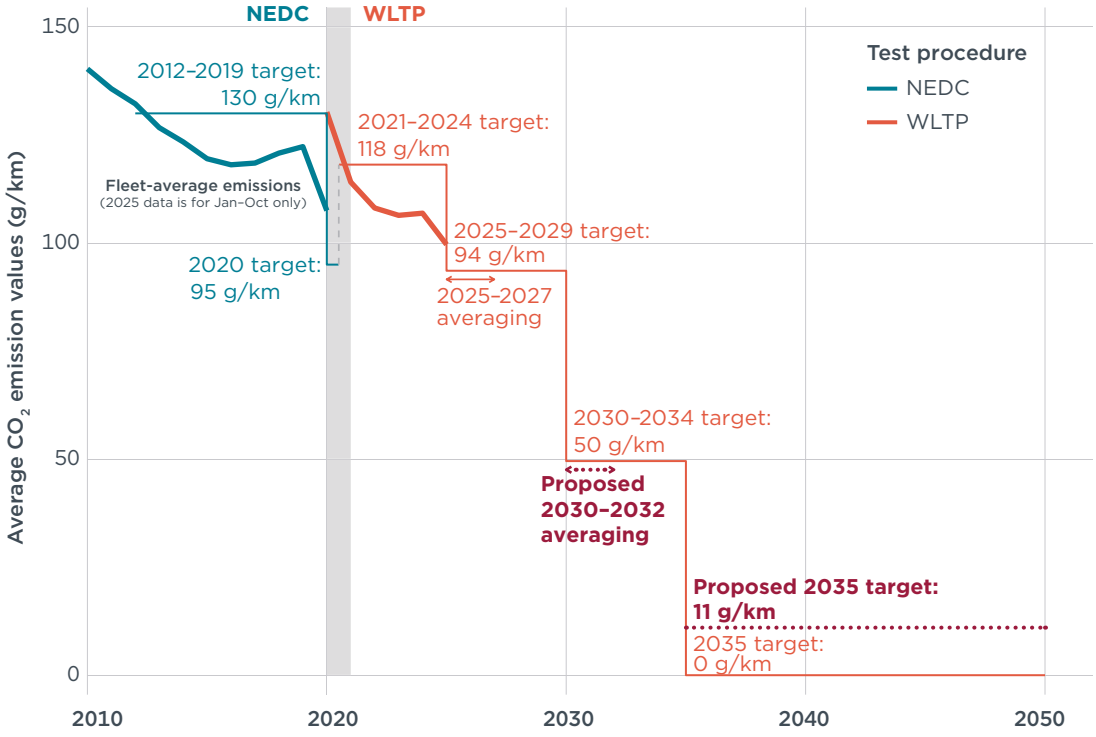

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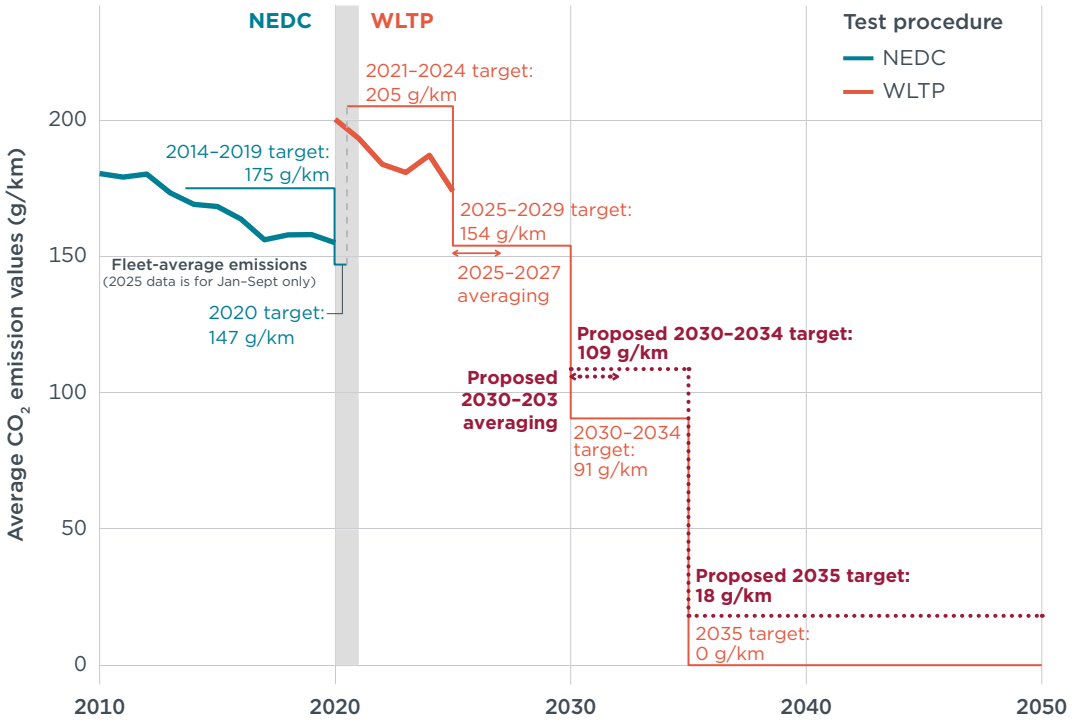
Figure 2

Current and proposed EU CO_2 targets for vans



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With the Commission's proposal to also allow plug-in hybrid vehicles (PHEVs) after 2034, it is important that PHEVs' type-approval CO_2 emission values become more representative of real-world driving. On average, PHEVs are driven much less in electric mode than anticipated, resulting in much higher fuel consumption and CO_2 emissions during operation than official values indicate: while the real-world CO_2 emissions of combustion engine and hybrid vehicles are about 1.2 times higher than official values, those of PHEVs are more than 4.5 times higher, and the discrepancy is rapidly growing.[6] The correction of the utility factor, a parameter that indicates the expected electric drive share of PHEVs, is essential to not undermine the emission reductions intended by the CO_2 standards. This correction is expected in 2027.

WEAKENING OF THE 2030 INTERMEDIATE CO_2 TARGETS

En route to 100% tailpipe emission-free vehicles by 2035, the current standards set interim targets for 2030–2034, requiring CO_2 emissions reductions of 55% for cars and 50% for vans relative to a 2021 baseline. In its proposal, the European Commission weakens the 2030–2034 target for vans by requiring only a 40% reduction, which is equivalent to a target of 109 g CO_2/km instead 91 g CO_2/km under the current standards. This means that manufacturers can meet the new target from 2030 onwards with a lower share of zero-emission vans.

In addition to setting a less stringent CO_2 target for vans, the draft amendment introduces an averaging provision for 2030–2032 for both cars and vans. Under this provision, manufacturers are not required to meet the CO_2 target in each calendar year; instead, only the average emissions of the three years must be below the target. This provision mirrors the averaging mechanism adopted earlier this year for the 2025–2027 period.

These changes would weaken the CO_2 targets for both cars and vans, allowing manufacturers to postpone their CO_2 reduction efforts and resulting in additional CO_2 emissions. They would also further delay the uptake of zero-emission vehicles, putting the European automotive industry at risk of losing ground on electric vehicle technology. Considering that manufacturers have previously postponed reductions in fleet CO_2 emissions to the year when more stringent CO_2 targets came into effect, a delay in CO_2 reductions and electric vehicle uptake could result in similar actions in 2035.[7]

OFFSETTING CO_2 EMISSIONS AFTER 2034 THROUGH CREDITS FOR LOW-CARBON FUELS AND STEEL

The Commission's proposal aims to counterbalance the excess tailpipe CO_2 emissions resulting from relaxing the 2035 target through a credit system. Specifically, the remaining CO_2 emissions of up to 11 g/km for cars and 18 g/km for vans could be offset by credits generated from using renewable fuels and low-carbon steel for vehicle production. From 2035 onwards, manufacturers will not face any penalty as long as their fleet-average CO_2 emissions do not exceed these credits. For example, if a manufacturer has 10 g CO_2/km of credits, they may sell combustion cars post-2035 that bring their average CO_2 emissions up to this level and not have to pay penalties.

Alternative fuels can provide relief up to 3.3 g CO_2/km for cars and 5.4 g CO_2/km for vans. The Commission's proposal provides both car and van manufacturers with fuel credits, measured in grams of CO_2 per km, based on the share of renewable fuels (i.e., biofuels, biogas, and e-fuels) in the European fuel supply.

6 Patrick Plötz and Till Gnann, *Real-World Fuel Consumption and Potential Future Regulation of Plug-In Hybrid Electric Vehicles in Europe – An Empirical Analysis of about one Million Vehicles* (Potsdam Institute for Climate Impact Research, 2025), https://doi.org/10.48485/pik.2025.23.

7 ICCT, *Public Comments*.

These fuel credits can only amount to 3% of manufacturers' reference emissions in 2021. Only biofuels or biogas produced from feedstocks listed in Annex IX of the Renewable Energy Directive (RED)[8] or e-fuels qualifying as Renewable Fuels of Non-Biological Origin in the RED may count. The credits from the quantities of biofuels and biogas produced from feedstock listed in Part B of Annex IX can only amount to 1% of the reference emissions, while e-fuels and biofuels from feedstocks in Part A of Annex IX (i.e., advanced biofuels) can amount to the full 3%. The reference emissions level for cars is 110 g CO_2/km, so all car manufacturers can earn a maximum amount of fuel credits worth 3.3 g CO_2/km.[9]

The amount of alternative fuel required to achieve this 3% will not be difficult to achieve. We calculate that in 2035, 230 PJ of advanced biofuels will be needed for all manufacturers to achieve this 3% reduction. The European Commission database detailing the share of renewable energy in transport reports that, in 2024, eligible biofuels already reached 327 PJ, although this may include fuels going to non-road transport sectors.[10]

The effectiveness of low-carbon steel credits will depend on how low-carbon steel is defined. To compensate for part of the residual CO_2 emissions of their newly registered vehicles, the Commission's proposal would allow manufacturers to obtain credits after 2035 for using low-carbon steel made in the EU in their vehicles. The use of low-carbon steel credits is limited to up to 8 g CO_2/km for cars and up to 13 g CO_2/km for vans.

The proposal foresees that the number of credits issued will depend on the emissions intensity savings of the low-carbon steel compared with a baseline emissions intensity, and on the quantity of low-carbon steel used. This could lead to manufacturers gaining credits for large quantities of steel with low emissions savings instead of using steel with very high emissions savings in smaller quantities. This would not result in the intended uptake of low-carbon steel, nor provide steel manufacturers with a market incentive to invest in primary green steel production.

There is also an issue of double counting emissions savings in the context of CO_2 standards and other regulations in the EU, such as the European Emissions Trading System (ETS). Since emissions from the steel industry are already covered under the EU ETS, with a full phase-out of free allowances by 2034, the compensation of residual tailpipe emissions from cars and vans through steel credits could represent a double counting of emissions savings with no additional benefit.

The definition of the baseline emissions intensity value and a clear definition of what constitutes low-carbon steel will be crucial to establishing a crediting system that yields high emissions savings. Setting this baseline and defining the methodology for calculating the emissions of low-carbon steel used by manufacturers will be done through a delegated act to be developed after the regulation is adopted.

The role of recycled steel in meeting the crediting criteria remains unclear. Steel scrap is generated at the steel plant and during the manufacturing of vehicles (pre-consumer scrap) and when scrapping end-of-life products (post-consumer scrap). Most pre-

8 Directive (EU) 2018/2001, OJ L 328/82, https://eur-lex.europa.eu/eli/dir/2018/2001/oj/eng.

9 These fuel credits are calculated by assessing the total amount of Annex IX biofuels or biogas and e-fuels put into the European fuel supply two years prior to a certain year—that is, for the year 2035, they will consider the fuels sold in 2033—and then calculating the total GHG savings of these fuels compared with fossil fuels using the GHG emission intensity listed in the RED. This GHG saving is then divided by the expected lifetime mileage driven by all new cars sold that specific year.

10 Eurostat, *Short Assessment of Renewable Energy Sources (SHARES)*, database, accessed December 18, 2025, https://ec.europa.eu/eurostat/web/energy/database/additional-data#Short%20assessment%20of%20renewable%20energy%20sources%20.

consumer scrap is already recycled; therefore, if scrap is included in the low-carbon steel credits, it should be limited to post-consumer scrap, to provide incentives for using this harder-to-recycle steel and thereby generate additional CO_2 emissions reductions compared to the status quo. However, recycled steel is addressed in other EU regulatory measures, such as the Circularity Requirements and End-of-Life Vehicles Regulation.[11] Including recycled steel within the material credits could thus result in double counting of emissions savings.

SUPPORTING THE UPTAKE OF SMALL BATTERY ELECTRIC VEHICLES THROUGH SUPER CREDITS

To spur production of small affordable electric vehicles, the Commission has proposed a new super credit scheme. Under the proposal, each small battery electric car, defined as cars with a length of not more than 4.2 meters, produced in the European Union counts as 1.3 vehicles when determining a manufacturer's average CO_2 performance. In other words, selling these vehicles would allow manufacturers to sell more or higher polluting combustion engine vehicles, resulting in higher average emissions when considering the uncorrected (actual) CO_2 emissions. The mechanism would apply once the regulation enters into force until 2034 and no more credits would be granted from 2035 onwards.

The proposed super credit scheme could foster domestic manufacturing of small battery electric vehicles, and the excess CO_2 emissions from the additional or higher emitting combustion engine vehicles could be outweighed by a faster transition of the market to zero-emission vehicles. However, to avoid providing super credits for higher-priced and larger vehicles, it is important to carefully define the criteria for vehicle eligibility. The proposed limit of 4.2 meters would restrict the credits mostly to vehicle models of the mini and small segment. However, many high-volume and rather expensive vehicle models of the medium segment, like the VW Golf, VW ID.3, Mini, and Audi Q2, are only a few centimeters longer. Future electric vehicle models or facelifts of existing models could be designed to meet the 4.2 meter criteria to be eligible for super credits, which would undermine the intended purpose of the provision. Furthermore, some sport vehicles like the Audi TT or Mercedes SLC are currently below this length threshold. To ensure that only small, low-cost battery electric vehicles benefit from the credits, additional criteria like maximum weight, minimum number of passenger seats, maximum width, maximum wheel dimensions, maximum motor power, and maximum energy consumption could be defined.

THE CHANGES COULD LEAD TO HIGH EXCESS CO_2 EMISSIONS IF COMPENSATION MEASURES ARE TOO WEAK

We estimated the effect of the Commission's proposal on the development of the battery electric vehicle market and on the tailpipe CO_2 emissions of cars using the ICCT Roadmap model.

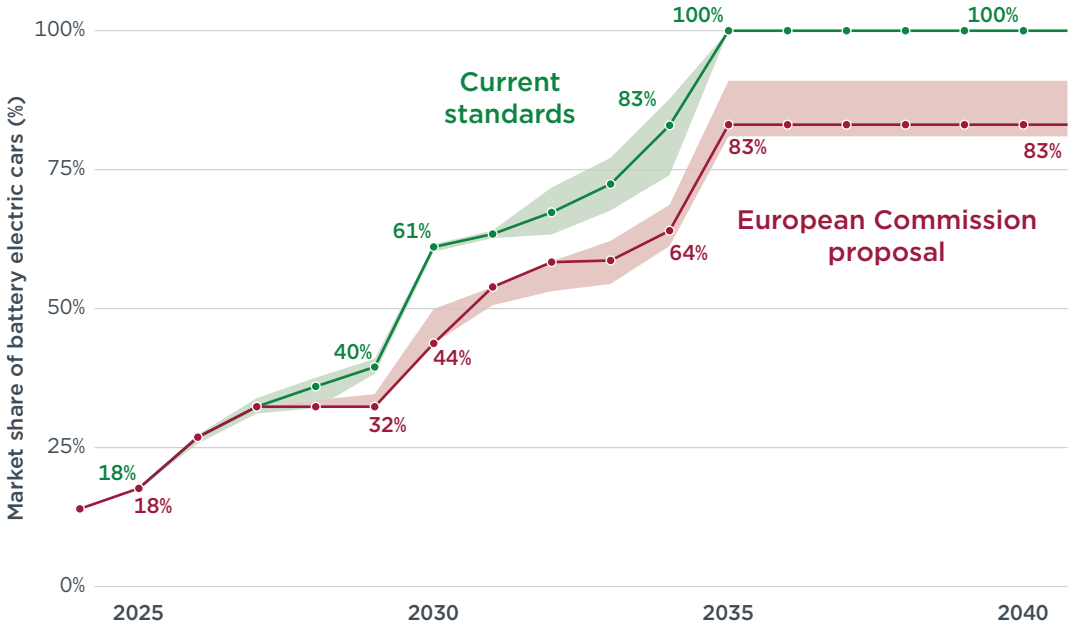
Due to the weakened 2030 and 2035 targets and the flexibilities that allow manufacturers to meet their CO_2 targets with fewer zero-emission vehicles, the market share of battery electric vehicles is projected to develop substantially slower under the proposed provisions than under the current regulation (see Figure 3). Our modeling

11 European Commission, Proposal for a Regulation of the European Parliament and of the Council on Circularity Requirements for Vehicle Design and on Management of End-of-Life Vehicles, Amending Regulations (EU) 2018/858 and 2019/1020 and Repealing Directives 2000/53/EC and 2005/64/EC, COM/2023/451 final (July 13, 2023), https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023PC0451.

indicates that by 2030, the share of electric vehicles could fall by 17 percentage points, from 61 to 44%. By 2035, the share would only reach about 83% under the proposed regulation instead of the 100% foreseen by the current standards. Given that the proposal does not establish a new target year for 100% zero-emission vehicles, the fleet composition could stabilize after 2035 with a share of electric vehicles that, depending on the distribution of PHEVs and ICEVs in the fleet, could range between 80% and 90%. This would translate to between 1.3 and 2.6 million fewer electric vehicles sold each year in which the target is kept at 90% relative to the current regulation.

Figure 3

Impact of the revision on the market share of battery electric cars



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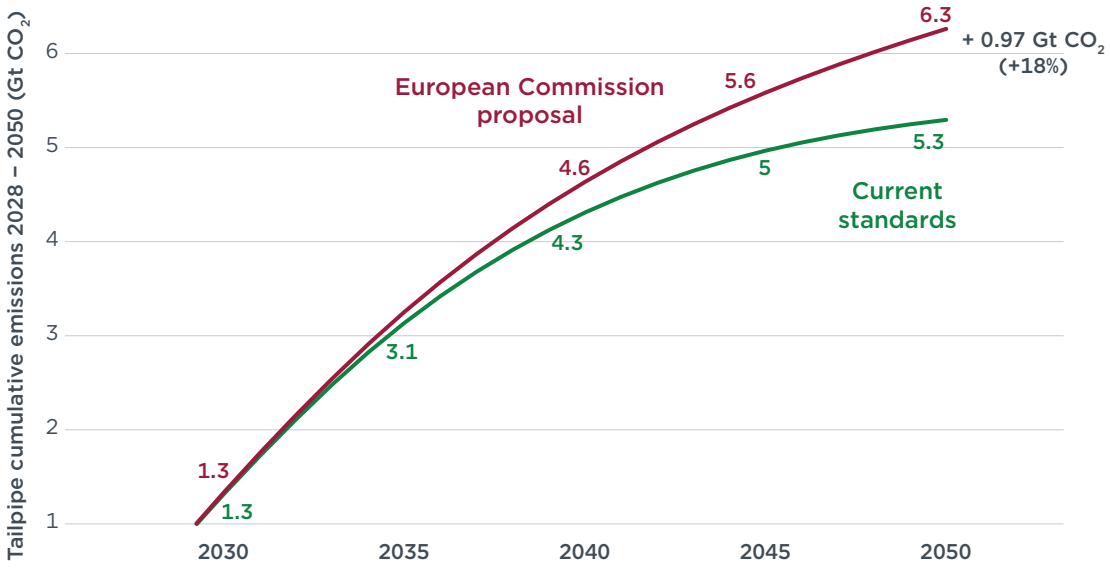
The strongly reduced uptake of battery electric vehicles and the lack of a phase-out target would result in substantially increased total tailpipe CO_2 emissions, as shown in Figure 4. Compared to the total projected car CO_2 emissions of 5.3 gigatons over 2028–2050 under the current regulation, emissions would rise by about 1 gigaton to 6.3 gigatons—an increase of more than 18%. This is equivalent to 1.4 times the annual GHG emissions of Germany.

Figure 4

Impact of the revision on the cumulative tailpipe emissions of cars between 2028 and 2050



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SUMMARY

The European Commission's proposed amendment to the EU CO_2 standards for cars and vans attempts to bridge the gap between accelerating the uptake of zero-emission vehicles and extending the use of inefficient combustion engine technologies. The resulting proposal could help spur uptake of smaller battery electric vehicles and the use of low-carbon steel, but also poses massive risks for the attainment of the EU's climate ambitions.

The proposal substantially lowers the ambition of CO_2 reductions for cars and vans, basically allowing the registration of combustion engine vehicles indefinitely. Among other implications, the registration of combustion engine vehicles after 2034 would lead to substantial pollutant emissions which were not accounted for when Euro 7 pollutant emission standards were developed, thus requiring an adjustment of the Euro 7 limits for cars and vans.

To partially compensate for the excess CO_2 resulting from this paradigm change—which we estimate at about one gigaton through 2050—the proposal foresees that CO_2 emissions from 2035 onwards will be offset by the use of low-carbon steel and fuels. Moreover, in an effort to counteract the decline in electric vehicle uptake that could result from the changes in CO_2 targets, the proposal intends to promote small affordable electric cars.[12]

Nevertheless, the proposed changes to the EU CO_2 standards for cars and vans carry a strong risk of substantial excess CO_2 emissions, and the associated uncertainty could delay or divert investments in charging infrastructure and electric vehicle technology development. As a result, instead of keeping pace with manufacturers in other regions, European automakers could fall behind in the zero-emission transition. For consumers,

12 In a related effort, as part of the Automotive Package, the Commission published a proposal to introduce binding electrification targets for corporate fleets. That proposal also includes a revision of fuel and energy consumption labeling at the point of sale, defining an EU-wide harmonized label for both cars and vans to inform consumers about expected CO_2 emissions and energy consumption when purchasing a new or second-hand vehicle. See European Commission, "Automotive Package."

the proposal further increases uncertainty and could lead to higher mobility costs, especially for purchasers of secondhand vehicles.

It is therefore essential that the proposed mechanisms to offset the additional CO_2 emissions and to accelerate the uptake of small affordable electric vehicles are robust and unambiguous to avoid windfall credits. By addressing the gaps and questions in the current proposal, the EU can keep its climate ambitions on track while supporting affordable electric mobility—but stumble on the details and the proposal could pave the way for excess emissions and forfeited leadership in the global race to zero.

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