



LeasePlan

What's next?

Busting 7 myths about the 2020 CO₂ thresholds

How it impacts OEMs
and fleet managers

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Introduction

New rules and regulations for passenger cars emissions

Vehicle manufacturers must ensure a maximum CO₂ threshold of 95 g/km or risk billions in fines

To limit the effects of global warming, the European Union (EU) is keen to reduce CO₂ emissions from transport, and especially from passenger cars and light commercial vehicles (LCVs). From the start of 2021, vehicle manufacturers (OEMs) must ensure that the CO₂ emissions of all new vehicles sold are below new EU thresholds or risk paying billions in fines. In fact, the new target is already being phased in this year to ease the transition. This white paper examines seven myths surrounding the tightening of the rules and regulations for passenger car emissions, and offers some practical advice for fleet managers looking to renew their fleet in 2020.



The 7 myths about the 2020 CO₂ thresholds

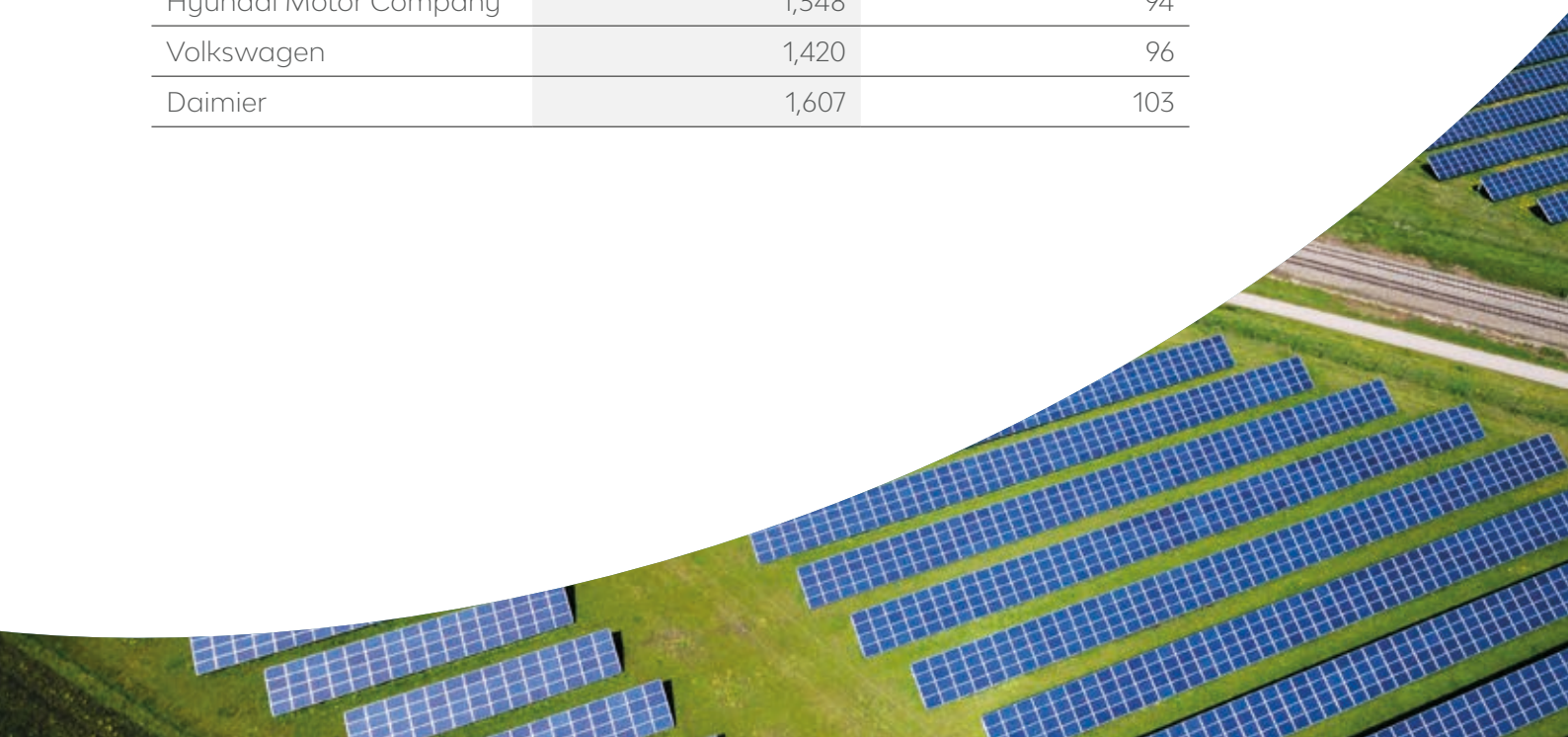
The 7 myths about the 2020 CO₂ thresholds

Myth 1: The CO₂ threshold of 95 g/km applies to all OEMs

The new EU emission threshold has indeed been set at 95 g of carbon dioxide per kilometre (g/km), but this threshold is the general industry average. The actual threshold per OEM depends on the average vehicle weight (mass) of all the vehicles sold by that OEM. For example, the average vehicle weight of all vehicles sold by Daimler is higher than that of Toyota, as shown in Table 1, which means that a higher average CO₂ threshold applies for Daimler than for Toyota. A major drawback of this weight-based CO₂ threshold is that it does not incentivise OEMs to build lighter cars, even though a lighter car generally emits less CO₂.

Table 1: CO₂ emissions from new passenger cars in the EU: car manufacturers' performance in 2017ⁱ

Manufacturer group	Average mass (kg)	CO ₂ values (g/km, NEDC)
		2020/21 target
Toyota	1,359	94
PSA	1,273	91
Renault-Nissan	1,310	93
Average	1,390	95
FCA	1,259	91
Ford	1,393	95
BMW	1,570	101
Hyundai Motor Company	1,348	94
Volkswagen	1,420	96
Daimler	1,607	103



The 7 myths about the 2020 CO₂ thresholds**Myth 2: WLTP is used to determine a vehicle's emissions**

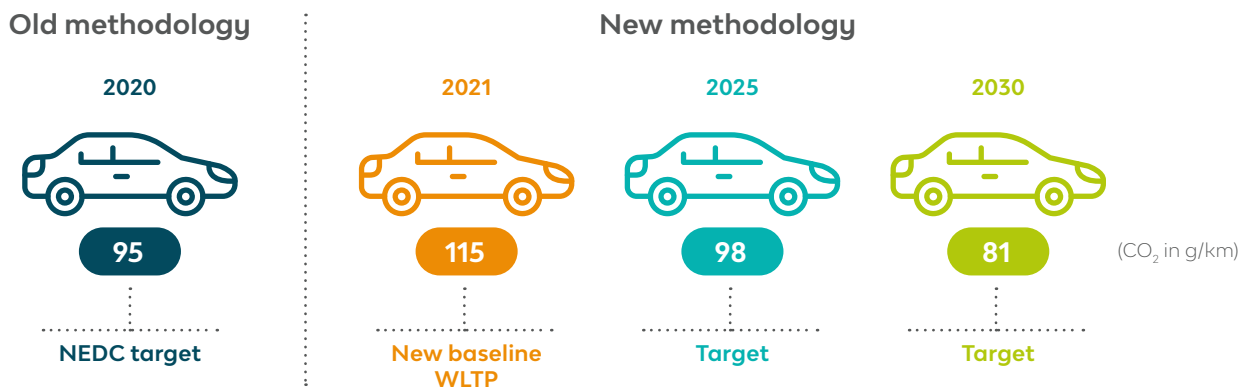
The Worldwide Harmonised Light Vehicles Test Procedure (WLTP) is an improved measuring standard that is used to determine a vehicle's CO₂ emission level, among other things. It has replaced the New European Driving Cycle (NEDC), which was introduced back in 1996. Studies showed that actual emissions could be up to 40% higher than the levels established by NEDC testing, so the WLTP was developed to close this gap.

Although the WLTP methodology was agreed upon in 2012 and came into effect for passenger cars in September 2018, it is not used in relation to the 2020/2021 OEM thresholds because the EU's CO₂ target of 95 g/km was set with NEDC averages in mind. Therefore, a calculation tool has been developed to convert the WLTP figures back into so-called 'NEDC correlated' (NEDC2) values. Use of the NEDC will cease in 2021.

However, the EU will still need to use the NEDC baseline to ensure a fair calculation of each OEM's future targets (-15% in 2025 and -30% in 2030 compared with the 2021 thresholds). Therefore, further reductions will be calculated based on a ratio between the average NEDC and WLTP values. The current conversion ratio is about 1.21, meaning that a car emits approximately 21% more carbon dioxide under WLTP compared to NEDCⁱⁱ.

For example, Ford has a CO₂ threshold of 95 g/km for 2020, calculated in NEDC. After 2020, the ratio will be applied to WLTP to determine Ford's new CO₂ target: $95 \times 1.21 = 115$ g/km. In 2025, Ford's new CO₂ threshold will be $115 - 15\% = 98$ g/km, and for 2030 its target will be $115 - 30\% = 81$ g/km, as showed in the figure below.

Figure 1: New CO₂ target setting converted to WLTP (using Ford as an example)





The 7 myths about the 2020 CO₂ thresholds

Myth 3: This is the first time that CO₂ thresholds have been set for OEMs

The first threshold was actually set in 2015; the CO₂ target was 130 g/km across all OEMs. While that target was easily met by all OEMs, the new target represents a 35 g/km reduction (equivalent to 27%) in the space of just five years, which is much more challenging. One complicating factor for OEMs is the large-scale market uptake of relatively high-emitting SUVs. Last year, SUVs accounted for three out of every ten vehicles sold in the EUⁱⁱⁱ. A second complicating factor is the shift from diesel to petrol engines. While petrol cars emit less toxic NO_x than diesels, they actually emit more CO₂.

Myth 4: All vehicles are treated equally when measuring performance against the CO₂ target

Not all vehicles are treated equally when measuring each OEM's performance against their CO₂ target. The EU has introduced a system of 'super credits' in which ultralow carbon vehicles or 'ULCVs' (with a CO₂ level of below 50 g/km) will be counted at a factor of 2.0 in 2020, 1.67 in 2021 and 1.33 in 2022. They will not be treated equally until 2023 onwards. Therefore, selling plug-in hybrid (PHEVs) or battery-electric vehicles (BEVs) will be an important way for OEMs to offset high-carbon vehicles over the next few years.

Myth 5: Each OEM is assessed individually

OEMs can pool their average CO₂ emissions. For example, Fiat Chrysler Automobiles (FCA) has signed a deal with Tesla to pool the carbon impact of their vehicles. While FCA is roughly five times the size of Tesla in terms of vehicles sold (based on 2019 forecasts), Tesla's fleet is fully electric and thus has a super-credit factor of 2.0. Similarly, Mazda and Toyota have pooled their emissions to ensure they both comply with the thresholds.



The 7 myths about the 2020 CO₂ thresholds

Myth 6: The measured CO₂ level is always the definitive score for each vehicle

In addition to super credits, the EU has also introduced emission credits to boost eco-innovation that drives down CO₂ levels. If an OEM's innovation is approved as an eco-innovation by the special EU committee, the OEM could benefit from an exemption of up to 7 g/km per year. One example of an approved eco-innovation is BMW's coasting function which decouples the combustion engine from the drive-train to avoid deceleration caused by engine braking, result in less CO₂ being emitted. As a result, all BMW vehicles fitted with the coasting function can have up to 7 g/km 'deducted' from their CO₂ level.

Myth 7: The OEM's average CO₂ level is based on 100% of the OEM's vehicle sales

The 2020 target only takes 95% of the total sales into account, so OEMs are free to leave out the 5% of vehicles with the highest emissions. This will change from 2021 onwards, however, when the entire fleet will be considered when determining each OEM's average CO₂ level.

Impact on OEMs

Impact on OEMs

The number of new PHEV and BEV models on the market has jumped significantly

All these exceptions make it somewhat easier for OEMs to comply with their 2021 thresholds, but it will nevertheless still require considerable effort. Thanks to the super-credit scheme, selling more ULCVs will have the biggest effect in terms of reducing the average CO₂. Therefore, it should come as no surprise that the number of PHEV and BEV car models on the market has jumped from about 100 in 2019 to 176 in 2020^{iv}.



Impact on fleet managers

How fleet managers can prepare

Fleet managers should proactively monitor the market and engage with OEMs to review existing contracts

Fleet managers looking to renew their fleet in 2020 should keep the following aspects in mind:

- Take a country-by-country approach. Although the OEM thresholds are applicable across the EU, OEMs will not necessarily start pushing ULCVs in all markets. Over the years, there has been a direct correlation between demand for EVs and EV incentives. In the Netherlands, for instance, a favourable benefit-in-kind taxation in 2019 was largely responsible for the share of BEVs increasing from 4.3% in 2018 to 9.5% in 2019^v. OEMs are also aware of this and will focus their efforts on selling ULCVs in countries with the greatest demand. LeasePlan's annual EV Readiness Index^{vi} can help fleet managers to get a sense of EV market maturity in each EU country and hence the likelihood of OEMs pushing EVs there. If a country does not have favourable tax incentives for EVs, OEMs are less likely to offer attractive deals on their EVs models.
- Check the validity of agreed price conditions. OEMs regularly introduce new versions of car models and price changes are expected. Negotiated discounts on the older car model becomes void when it is discontinued. Now that OEMs are being so strongly encouraged to reduce their average CO₂ levels, it is logical that they will start to launch new lower-emission versions of their car models. Therefore, it is advisable to proactively monitor the market and contact the OEM as soon as a new model version is announced to ensure contract renewal discussions are started in time.



Impact on fleet managers

- Focus on total cost of ownership (TCO). The upfront costs of EVs are still higher than those of internal combustion engine (ICE) vehicles, but all aspects of the total cost of ownership should be included to arrive at a fair comparison of ICE vehicles and EVs. ICE vehicles tend to work out much more expensive over their entire lifetime, mainly due to:
 - Higher fuel costs. Petrol and diesel are much more expensive per kilometre than the cost of charging per kilometre.
 - Maintenance. An ICE vehicle has more moving parts compared to BEVs, which naturally leads to higher maintenance costs. A recent LeasePlan study comparing the TCO of EVs vs ICE vehicles^{vii} concluded that BEV maintenance is on average 23% lower. (Please note: since PHEV vehicles have an internal combustion engine, this argument only applies to BEVs).
 - Tax incentives and penalties. Almost all EU countries offer some kind of incentive for electric driving and penalty for ICE vehicles. Fleet managers should remember to take these incentives into account when deciding between ICE vehicles and EVs.

When ordering PHEVs and/or BEVs, please be aware that not all new car models are available immediately and lead times can be significant.



Conclusion

It's all about the right mix tailored towards your purpose

Include all relevant TCO aspects when deciding which vehicle types to onboard

The new CO₂ thresholds for OEMs will require them to adjust the balance between the number of ICEs and EVs they sell in order to achieve the necessary CO₂ average. It still remains to be seen exactly how this will unfold per OEM and per country. As a fleet manager, it is important to assess each OEM's offering per country, to proactively monitor the market for announcements of new versions of current models, and to include all relevant aspects of the TCO when deciding which vehicle types to onboard to your fleet. It's all about the right mix tailored towards your purpose for fleet.

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Contact

Written by an expert panel

Within LeasePlan, we have experienced consultants who are specialised in the complex dynamics of today's – and tomorrow's – mobility market. They can help you make the right decision for optimising your fleet. Ask your LeasePlan contact person for more information or support.

Our WLTP expert



David Wefers Bettink
International Fleet Consultancy

+31 20 709 3443
david.wefers.bettink@leaseplan.com

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^{viii}https://www.leaseplan.com/-/media/leaseplan-digital/ix/documents/leaseplan-white-paper_tco-of-evs.pdf