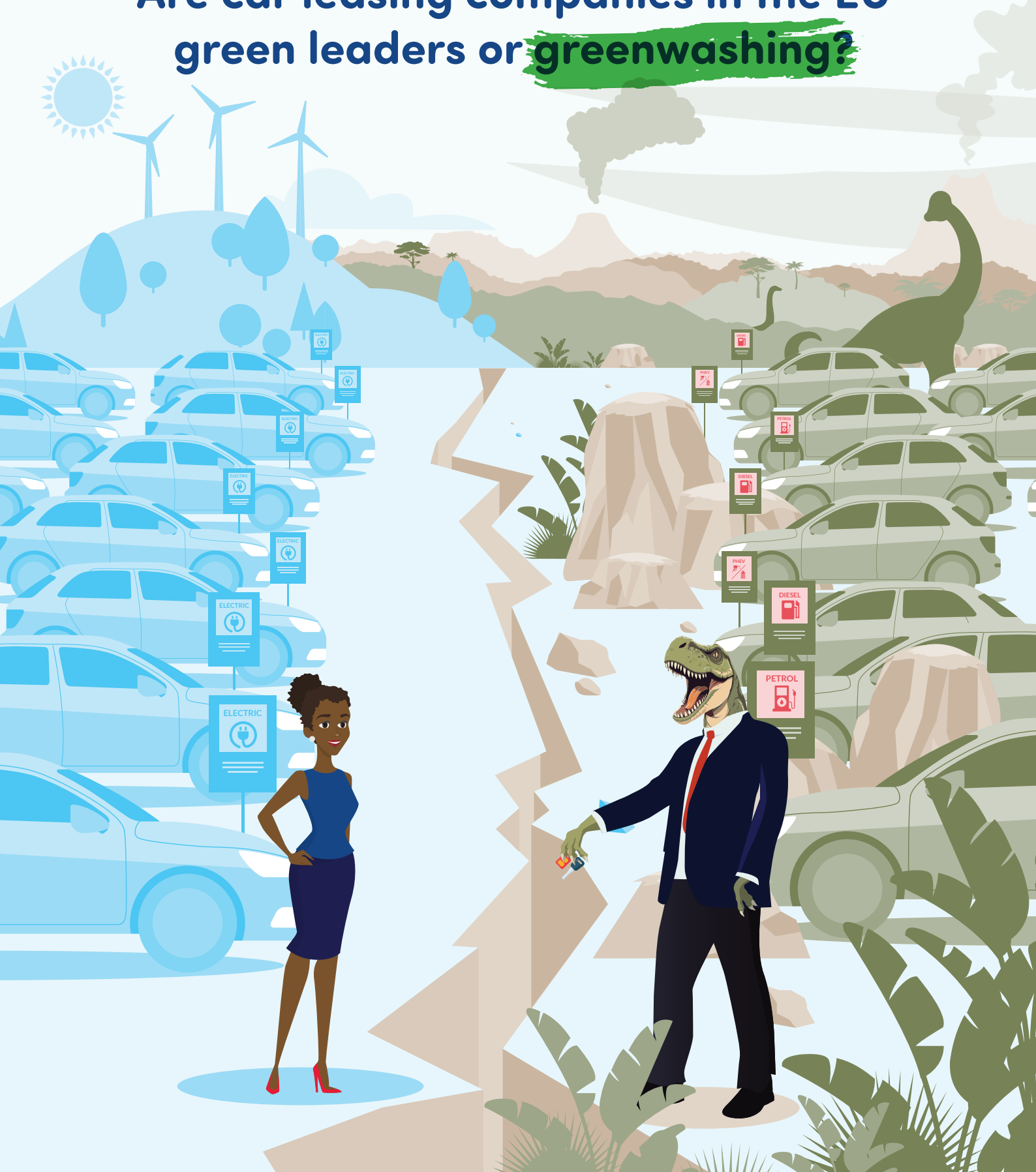


# Stuck in the fossil age

Are car leasing companies in the EU  
green leaders or **greenwashing?**



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October 2023

## Summary

Today half of all new cars in the EU are leased, not bought. Leasing companies, owned by banks or carmakers, are the secret giants of the automotive world. Combined, the top seven leasing companies register 30% of new cars in the EU and hold a fleet with an estimated 9.3 million cars. This incredible size provides leasing companies with great influence on the cars we drive and the pace of the transition to zero-emission mobility.

The leasing sector claims that they are using their influence to drive the transition to electric vehicles, but is this really the case? This T&E briefing is a first-of-its-kind analysis, assessing the green leadership claims of the seven largest largest companies (with significant operational leasing) and the sector overall. In our analysis - focusing on the EU market - we assess green leadership using seven criteria:

### Seven criteria to assess green leadership of car leasing companies

	 Data disclosure on environmental performance	 Phase-out date for leasing fossil fuel cars	 Target for future uptake of battery electric cars	 Uptake of battery electric cars VS current market	 Share of plug-in hybrids VS current market	 Average car CO <sub>2</sub> emissions VS current market	 Share of large cars VS current market
	 No disclosure	 No end date	 No target	 Mixed performance	 Mixed performance	 Higher than the market	 Higher than the market
	 Insufficient disclosure	 No end date	 BEV target	 Mixed performance	 Higher than the market	 Higher than the market	 Higher than the market
	 Insufficient disclosure	 No end date	 No target	 Below market	 Below market	 In line with the market	 Below market
	 Insufficient disclosure	 No end date	 Weak target	 Mixed performance	 Higher than the market	 Higher than the market	 Higher than the market
	 Insufficient disclosure	 No end date	 No target	 Below market	 Higher than the market	 In line with the market	 Below market
	 No disclosure	 No end date	 No target	 Below market	 Higher than the market	 Higher than the market	 Higher than the market
	 Insufficient disclosure	 No end date	 No target	 Below market	 Mixed performance	 Higher than the market	 Higher than the market

Note: Criterion 3 based on EU CO<sub>2</sub> standards and carmaker production plans (LMC Automotive). Criteria 4-7 based on company disclosures for H1 2023 or vehicle registers in Italy (Dataforce) and France (NGC-Data) where data has not been disclosed.



## The top seven leasing giants are not green leaders

Our assessment reveals that leasing companies are not the climate champions they claim to be. In the majority of cases they fail to meet the green leadership criteria:

- All leasing companies refused to share data on their battery electric vehicle (BEV) uptake in the EU and none have committed to a phase out date for fossil fueled cars.
- In terms of electromobility ambition, **ALD | LeasePlan** is the only leasing company that has set a BEV target ahead of carmaker production plans. **Arval** has a weak target far below carmaker production plans and the other leasing companies have failed to set BEV targets.
- **Alphabet** and **Mobilize FS** are electromobility laggards: their BEV uptake is far behind the market and have failed to set any BEV target.
- **Volkswagen FS** - the largest leasing company - refuses transparency and has failed to set any BEV target.

## Six out of seven companies are greenwashing

Moreover, our investigation reveals that all leasing companies – with the exception of ALD | LeasePlan – are making green leadership claims that are not backed up by evidence. In other words, leasing companies are greenwashing.

CLAIM	REALITY
 <p>VOLKSWAGEN FINANCIAL SERVICES THE KEY TO MOBILITY</p> <p><i>We are "driving the transition to zero-emission mobility."</i></p>	<p>VWFS is driving clients towards high-emission vehicles. They have much higher CO<sub>2</sub> emissions compared to the rest of the market in France (111 vs 99g CO<sub>2</sub>/km) and Italy (126 vs 120g CO<sub>2</sub>/km) in H1 2023. In France, their uptake of battery electric vehicles (BEV) is behind the market (11% vs 15%).</p>
 <p>MOBILIZE FINANCIAL SERVICES</p> <p><i>We have "the aim of reaching the ambitious target of a Zero CO<sub>2</sub> in line with Renault Group Sustainability Strategy."</i></p>	<p>With its low BEV uptake, Mobilize F.S. is holding the Renault Group back. Mobilize F.S. reports an EV uptake (battery electric and plug-in hybrid vehicles (PHEV)) of 5.5% in Europe (H1 2023). Even if every EV was a BEV, this uptake is still well behind the Renault Group (9.4%) and European market (14.3%).</p>



### The leasing sector is not driving the transition

We see the same trend when analysing the performance of the sector overall. Contrary to their claims to be “driving the transition to sustainable mobility”, the sector is firmly in the passenger seat. In seven of the eleven EU markets with available data, the sector is lagging the market in terms of BEV uptake. Across these EU markets, the leasing sector is simply in line with the non-leasing market (10.4% vs 10.5%) and even behind private households (11.2%).

### Leasing companies can make or break the decarbonisation of the transport sector

The leasing sector and companies should change course and become the green leaders they claim to be. This means increase transparency, commit to a phase out date for fossil fueled cars by 2028 at the very latest, set ambitious interim targets for BEV uptake and start advocating for policy reforms that accelerate corporate car electrification (e.g. tax reforms).

By doing so, leasing companies can make a sizable contribution to the fight against climate change and the decarbonisation of the transport sector. Our analysis shows that if the top seven

leasing companies commit to 100% battery electric by 2028 (new registrations), it would bring an additional 11.9 million BEVs (+45%) onto the market. This translates to a savings of 73 million tonnes of CO<sub>2</sub> emissions and 181 million barrels of oil over the same time period.

The steps towards real green leadership are clear. What remains unclear is whether the major leasing companies will take these steps or remain rooted in the fossil age.

# 1. Introduction: the secret giants of the auto world

Purchasing a car outright is no longer the norm in Europe. Today, most new cars are acquired through a leasing company that either owns the car and leases it at a monthly rate (i.e. service or operational leasing) or sells the car on loan through a monthly payment plan (i.e. financial leasing). The rapidly growing leasing sector now commands a 50% market share for new car purchases<sup>1</sup> and is forecasted to reach nearly 70% in 2030.<sup>2</sup>

Leasing companies are the new giants in the car world. Yet while much is known about car companies – with their names, logos, and reputations considered household knowledge – the same cannot be said for car leasing companies. A deeper understanding of this sector is particularly important now during this transformational period in which the European car market must phase-out combustion engines by 2035. As the main car buyer, the leasing sector has a critical role in determining the success of this transition to electromobility. Fortunately the sector claims to support – and even lead – this transition.

But are car leasing companies really green leaders? Or is this simply another case of corporate greenwashing? This briefing seeks to answer these questions through a first-of-its-kind assessment of green claims and reality. Section 1 presents an overview of the sector, its role, and sets out the framework for this assessment. Section 2 uses the latest market data to assess the leasing sector as a whole and Section 3 continues this assessment for individual car leasing companies. Section 4 considers the implications of green leadership in the leasing sector in terms of emission savings, production, and feasibility and Section 5 offers conclusions from this assessment.

## 1.1. Leasing companies are extremely big and extremely profitable

While there are over 1,200 leasing companies in the EU,<sup>3</sup> a small number of leasing companies that operate across the European continent dominate the sector in terms of car volumes. This report analyses the seven largest leasing giants with significant operational leasing: Volkswagen Financial Services, Mobilize Financial Services, ALD | LeasePlan,<sup>4</sup> Arval, Leasys, Alphabet, Athlon. These seven companies oversee a fleet of 13.4 million cars globally of which an estimated 9.3 million are in the EU (see Table 1).

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<sup>1</sup> Leaseurope, personal communication, 20 September 2023.

<sup>2</sup> 69% according to Autovista (2023). Remarketing Expert Track. FleetEurope. ([link](#))

<sup>3</sup> Leaseurope members minus UK, Norway, Turkey, Switzerland.

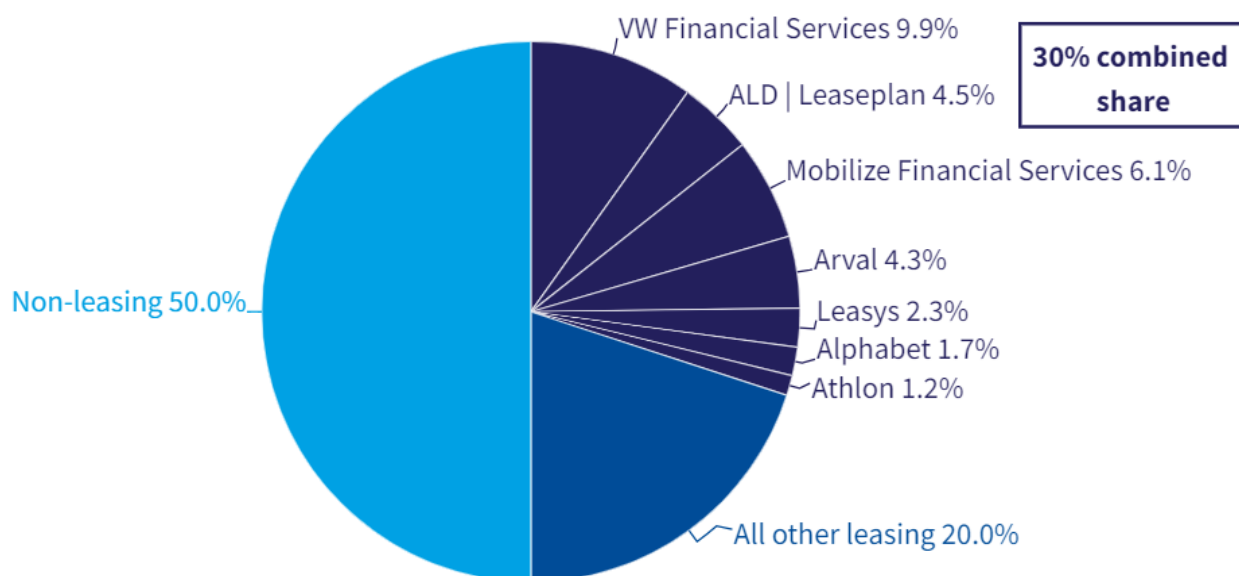
<sup>4</sup> Rebranded as 'Ayvens' on 16 October 2023. In this document we still refer to the name ALD | LeasePlan. The rollout of the new brand will happen in 2024.

**Table 1: The estimated EU fleets of the seven largest leasing companies (2022)**

Leasing company	Ownership	Fleet	New vehicles	Earnings (€ million)	Profits (€ million)	Profit margin
<b>Volkswagen FS</b>	Volkswagen Group	2,741,000	913,000	26,848	3,241	12%
<b>ALD   LeasePlan</b>	Société Générale Group (majority)	1,449,000	414,000	6,718	1,750	25%
<b>Mobilize FS</b>	Renault	1,989,000	568,000	1,705	584	34%
<b>Arval</b>	BNP Paribas	1,397,000	399,000	2,121	1,062	50%
<b>Leasys</b>	Stellantis/Crédit Agricole	751,000	215,000	-	-	-
<b>Alphabet</b>	BMW	559,000	160,000	-	-	-
<b>Athlon</b>	Mercedes-Benz	384,000	110,000	-	-	-

Source: T&E calculation. Sources and methodology detailed in Annex A.

Based on the leasing period of three to four years,<sup>5</sup> this fleet size is equivalent to 2.8 million annual registrations representing 60% of the EU leasing market and 30% of all new car registrations in the EU.



**Figure 1: Share of new car registrations in Europe**

Source: T&E calculations based on Leasing company reports on fleet size, Leaseurope on the share of the leasing sector, ACEA on the number of new registrations, and an assumption of 3.5 year leasing period.

<sup>5</sup> This assumption is confirmed by Arval's average contract length of 3.5 years ([link](#)) and the 3.5 ratio between Alphabet's fleet and registrations ([link](#)).



This growth of the largest leasing companies has been achieved not just by attracting customers, but also through consolidation. The first months of 2023 were an active period in the sector that saw ALD, the largest multi-brand leasing company, acquire LeasePlan, the second largest multi-brand leasing company, for €4.8 billion. Leasys and Free2Move, two more of the largest leasing companies also merged to become the fifth largest leasing company.

In terms of corporate ownership, there are three models present in the major leasing companies. Some companies (VW Financial Services and Mobilize Financial Services) are owned by carmakers and function as ‘captive leasing companies’ – used by the carmakers as a channel to promote and distribute their cars. Some companies (Alphabet, Athlon, part of Leasys) are owned by carmakers but are ‘multi-brand’ and lease cars from multiple carmakers. And some companies (ALD | LeasePlan, Arval, part of Leasys) are multi-brand companies that are majority-owned by banks.

These leasing companies are not only large, but they are extremely profitable. While some companies do not disclose their financials, for every company where financial data is available the results are astounding. Profits are in the hundreds of millions and have recently crossed into the billions for ALD | LeasePlan and Arval. These profits are made on both the leasing services provided, the sale of used cars (reported as €2,850 per car<sup>6</sup>), and other business ventures. The profit margins of 12%-50% for the largest European leasing companies (and reported as 48% for the whole leasing sector<sup>7</sup>) are extremely high compared to other sectors of the economy.<sup>8</sup> The profit margins of European carmakers have increased in recent years but in most cases are around 10 times lower (2%-17%).<sup>9</sup>

## 1.2. Leasing companies shape the car market

The tremendous size of car leasing companies is clear, and yet even these figures understate their true impact on the car market. This is due to the nature of car leasing and the rapid turnover of cars in the fleets of leasing companies.

A typical car lease covers a period of three or four years - compared to ten to fifteen years for private households - before it expires. What happens to the car at the end of the lease depends on the specifics of the contract, but if the car is not re-leased or purchased by the user then it is sold onto the used car market. This short ownership period means that leasing companies act as a critical entry

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<sup>6</sup> ALD (2023). Annual financial information: ALD report full year 2022 results. ([link](#)) FleetEurope (2022). ALD reports record €1.2-billion half-yearly income. FleetEurope. ([link](#))

<sup>7</sup> Leaseurope reports profitability of 48% across a sample of its members. Leaseurope (2023). Leaseurope Index Q1 2023. ([link](#))

<sup>8</sup> For example, a 2020 survey of European service sectors showed profit margins between 0% and 4%. Statista (2020). European service sector: financial insight ([link](#))

<sup>9</sup> Transport & Environment (2023). Small and profitable. ([link](#))

point for new cars. Year after year, there is a continuous flow with new cars entering the market through the leasing sector and then exiting onto the used car market.

Leasing companies therefore act as a filter through which half of new cars will pass. This filtering effect can shape the car market in different ways. Based on the statements of leasing companies detailed in the following sections, it would seem that leasing companies are using this tremendous market power to drive the transition to electromobility. But is this really the case? Or just another example of corporate greenwashing?

### 1.3. Our framework for assessing green leadership claims


To assess whether the claims of the leasing sector and major leasing companies are green leadership or simply greenwashing, this briefing compiles the latest data on new registrations by leasing companies and applies four criteria of green leadership (see Table 2). These are:







- Current uptake of battery electric vehicles (BEVs);
- Use of plug-in hybrid electric vehicles instead of battery electric vehicles (PHEV share of EVs);
- Average vehicle CO<sub>2</sub> emissions (all vehicles);
- Size of cars (all vehicles).

Three additional criteria are included in our analysis of the top seven leasing companies:

- Data disclosure on environmental performance;
- Target to phase-out fossil fuel vehicles;
- Target for the uptake of zero-emission vehicles (ZEVs).

**Table 2: Framework to assess the green leadership claims of European car leasing companies**

Green leadership criteria	Measurement	Explanation
<p><b>Disclosure of data on environmental performance</b></p> 	<p>If there is publicly available data on the other six green leadership criteria. This data must cover new registrations, separate BEVs and PHEVs, and be available by market (e.g. each country of operation in the EU).</p>	<p>Without disclosure, green leadership claims cannot be verified and are prone to greenwashing abuse. The three attributes of disclosure (new registrations, EV type, and market) are necessary for comparison between companies and so that performance is not influenced by factors outside green leadership such as the length of fleet turnover, the uptake of PHEVs, or main markets of operation.</p>

<p><b>Target to phase-out fossil fuel vehicles</b></p> 	<p>If there is a phase-out date for polluting vehicles that is more ambitious than the EU's CO<sub>2</sub> standards and European carmaker production plans.</p>	<p>An ambitious phase-out date indicates future green performance and sends a signal to carmakers about demand from the leasing sector. Many governments,<sup>10</sup> carmakers,<sup>11</sup> and corporate fleets<sup>12</sup> have phase-out dates of 2030 or earlier.</p>
<p><b>Target for the uptake of zero-emission vehicles (ZEVs)</b></p> 	<p>If there is a target for the uptake of zero-emission vehicles that is more ambitious than the EU's CO<sub>2</sub> standards and European carmaker production plans.</p>	<p>An ambitious ZEV target indicates future green performance and sends a signal to carmakers about demand from the leasing sector.</p>
<p><b>Current uptake of battery electric vehicles (BEV)</b></p> 	<p>If the BEV share of new registrations is higher than the overall market.</p>	<p>To test if the leasing sector is transitioning faster than the rest of the market. Other types of zero-emission vehicles form a negligible share of the market and are sometimes reported as BEVs.<sup>13</sup></p>
<p><b>Use of plug-in hybrids instead of full electric vehicles</b></p> 	<p>If the PHEV share of EV registrations is lower than the overall market.</p>	<p>Plug-in hybrid vehicles have high real world emissions (see Info Box 1), undermining their purported CO<sub>2</sub> savings and displacing demand for battery electric vehicles.</p>
<p><b>Average car CO<sub>2</sub> emissions</b></p> 	<p>If the average CO<sub>2</sub> emissions from new registrations is lower than the overall market.</p>	<p>For combustion vehicles, this is the most direct measure of current emissions.</p>
<p><b>Use of smaller vehicles</b></p> 	<p>If the share of small cars (segments A and B) in new registrations is higher than the overall market and/or if the share of large cars (segments D and E) is lower.</p>	<p>Larger vehicles are correlated with higher emissions, embedded emissions, and safety risks for other road users.</p>

<sup>10</sup> International Council on Clean Transportation (2021). Update on government targets for phasing out new sales of internal combustion engine passenger cars. ([link](#))

<sup>11</sup> Transport & Environment (n.d.). The race to electrify. ([link](#))

<sup>12</sup> The Climate Group (n.d.). EV100 members. ([link](#))

<sup>13</sup> Less than 0.0001% of new registrations. T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

The focus of the four measures is on new registrations. This is because the objective is to measure current performance and a focus on new registrations covers purchases made in the last year. Furthermore, employing a uniform time period allows for comparability between different leasing companies and to the rest of the car market despite the different holding periods of vehicles (e.g. a fleet of older vehicles will inevitably have few BEVs).

### **INFO BOX 1: Plug-in hybrids are not zero-emission cars**

PHEVs are typically advertised with test-cycle emissions in the range of 30-60g CO<sub>2</sub>/km, but analysis of charging behaviour and real-world world emissions has revealed emissions three to five times as high.<sup>14</sup> The result is that real-world CO<sub>2</sub> emissions from PHEVs, particularly PHEV corporate cars, are more comparable to an ICE car.

There are several factors leading to high PHEV emissions:

- There is a fundamental design problem of PHEVs where the small e-motor is ineffective when accelerating at pace and the ICE is often activated in real world use. Many models also lack fast charging capabilities, requiring long charging times even for the smaller PHEV battery and leading PHEV users to often drive with an empty battery.
- Testing has shown that PHEVs are being driven with greater acceleration and on longer trips before charging than under test-cycle conditions. This driving behaviour is particularly problematic for the corporate fleet as the cars are driven further and charged less.
- PHEVs tend to be larger and heavier than the average ICE car.
- All cars powered by an ICE — PHEVs included — continue to demonstrate a gap between test-cycle and real-world performance despite improvements in testing procedures.

While best practices such as daily charging can mitigate these factors, modelling has revealed that even with daily charging real-world emissions from the corporate fleet would still be twice as high compared to the WLTP values due to the high mileage and average trip length of those cars.<sup>15</sup> The conclusion is that PHEVs cannot be considered a zero-emission car.

The scope of this assessment is limited along several dimensions (see Table 3). This is both necessary in terms of feasibility of data collection but also beneficial in terms of providing clarity and relevance of the results.

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<sup>14</sup> ICCT (2022). Real-world usage of plug-in hybrid vehicles in Europe: A 2022 update on fuel consumption, electric driving, and CO<sub>2</sub> emissions. ICCT. ([link](#))

<sup>15</sup> Institut für angewandte Ökologie, Transport & Environment, Institut für Energie- und Umweltforschung Heidelberg. (2020). Plug-in hybrid electric cars: Market development, technical analysis and CO<sub>2</sub> emission scenarios for Germany. ([link](#))

**Table 3: Scope of the assessment**

<b>Dimension</b>	<b>Scope</b>	<b>Explanation</b>
<b>Green leadership</b>	Climate change	This briefing is about climate greenwashing. There may be other environmental issues and cases of greenwashing but this would require a separate assessment. Bringing up other environmental issues (recycling, tree planting) is a greenwashing tactic.
<b>Time period</b>	New registrations during the first half of 2023 for most comparisons, full year 2022 where necessary	The objective of this briefing is to assess the most recent data to form relevant and timely conclusions.
<b>Vehicles</b>	Passenger cars	Passenger cars represent the majority of CO2 emissions from road transport and the majority of leasing company fleets. The removal of light commercial vehicles is also important for comparability between companies.
<b>Geography</b>	European Union	The EU is the relevant policy space in terms of existing legislation (e.g. car CO <sub>2</sub> standards, Alternative Fuel Infrastructure Regulation, Energy Performance of Buildings Directive) and future legislation (e.g. greening fleets initiative, Euro 7 standards).
<b>Leasing companies</b>	Whole sector and seven of the largest companies	These seven companies were selected for assessment as they are expected to be the largest companies.
<b>Types of leasing</b>	Both service leasing and financial leasing (where data is available)	Service leasing and financial leasing are both relevant to the electromobility transition. Leasing companies include both leasing types when they make statements about their fleet size and green leadership.

The following sections first apply this framework to the leasing sector as a whole (section 2) and the largest leasing companies (section 3).

## 2. Is the leasing sector really a green leader?

With environmental issues commanding greater public focus, businesses across the economy have responded by highlighting their green leadership. The European leasing sector is no exception here, with leasing companies increasingly vocal about their role in the transition to electromobility and a zero-emission transport system.

But corporate environmentalism has also attracted criticism for greenwashing, where the actions of companies do not support their green claims. Is this also the case in the leasing sector? This section reviews the performance of the EU leasing sector to test whether it is really a green leader or just greenwashing.

### 2.1. Green leadership claims

Based on their statements, it is clear that the leasing sector – and the individual companies that compose it – view themselves as green leaders. They are not just following the transition to electromobility passively, but rather they claim to be *driving* the transition. As Leaseurope, the umbrella body representing the European leasing sector, explains: “Lessors and automotive rental firms are driving the transition to sustainable mobility and reducing transport emissions by purchasing the cleanest fit-for-purpose new vehicles.”<sup>16</sup> The major leasing companies echo this view of the sector. According to Leasys, “long-term rental will be a ‘driving force’ in the transition towards electrification.”<sup>17</sup>

This positioning of the leasing sector in the driving seat of electromobility is not evidenced. When challenged on electromobility (e.g. the conservative assumptions overpricing BEV contracts), the response of the sector is that “Leasing companies are already the largest acquirers of EVs in Europe” and that “We buy about half of all new vehicles and a significantly higher percentage of EVs.”<sup>18</sup>

But these statements do not evidence green leadership. First, as leasing companies acquire half of new vehicles it is unsurprising that they are the largest acquirers of EVs in Europe. The same statement could be said for petrol, diesel, and all other fuel types. It simply confirms that the sector is large, not that it is green. Second, despite responding to research about overpricing BEVs, the response from Leaseurope is about EVs, which combines BEVs and PHEVs together. In their new 2023 Annual Review, Leaseurope reports the sector’s BEV uptake as 14% – exactly in line with the European market and thus firmly in the passenger seat.<sup>19</sup> More evidence is required, particularly for the EU market.

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<sup>16</sup> Leaseurope (2021). Ambitious plans for electric vehicles in Europe. ([link](#))

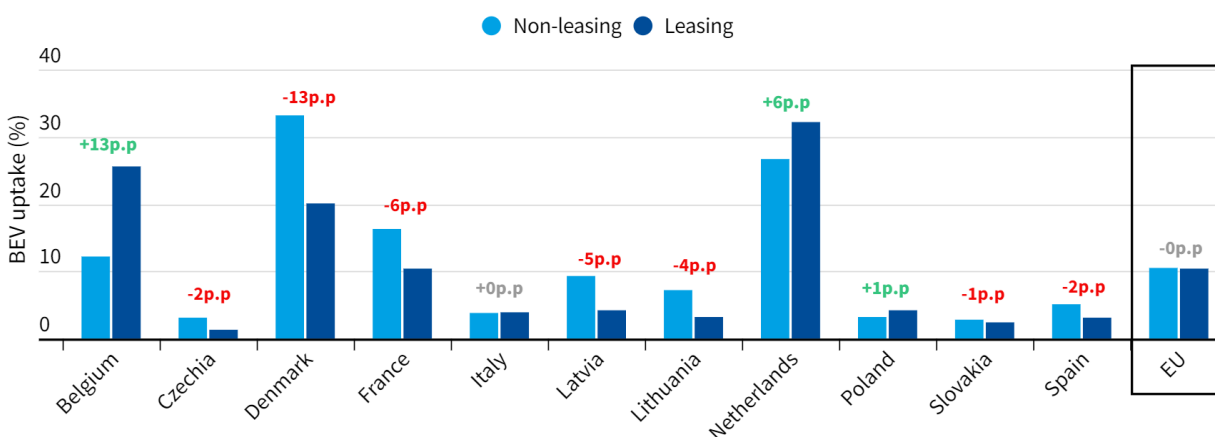
<sup>17</sup> Leasys (2023). Leasys, a new European mobility player. ([link](#))

<sup>18</sup> Fleet Europe (2023). Leasing industry hits back at EV overcharging claims. ([link](#))

<sup>19</sup> EU + EFTA + UK in ACEA (2023). Fuel types of new cars: battery electric 12.1%, hybrid 22.6% and petrol 36.4% market share full-year 2022. ([link](#))

## 2.2. Current uptake of battery electric vehicles: The leasing sector is not leading the market

In terms of battery electric vehicles, data for the first half of 2023 reveals that the leasing sector - contrary to their public statements - is not leading the rest of the market. For the eleven EU countries where car registrations are recorded by keeper of the vehicle, BEV uptake in the leasing sector is below the rest of the market in seven countries, above in three countries, and in line with the market in one country (see Figure 1). Combining the figures for all eleven EU countries results in a BEV uptake in the leasing sector that is just in line with the rest of the market: 10.4% leasing compared to 10.5% in non-leasing channels.



**Figure 1: Uptake of battery electric vehicles in the leasing sector and all other channels**

Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

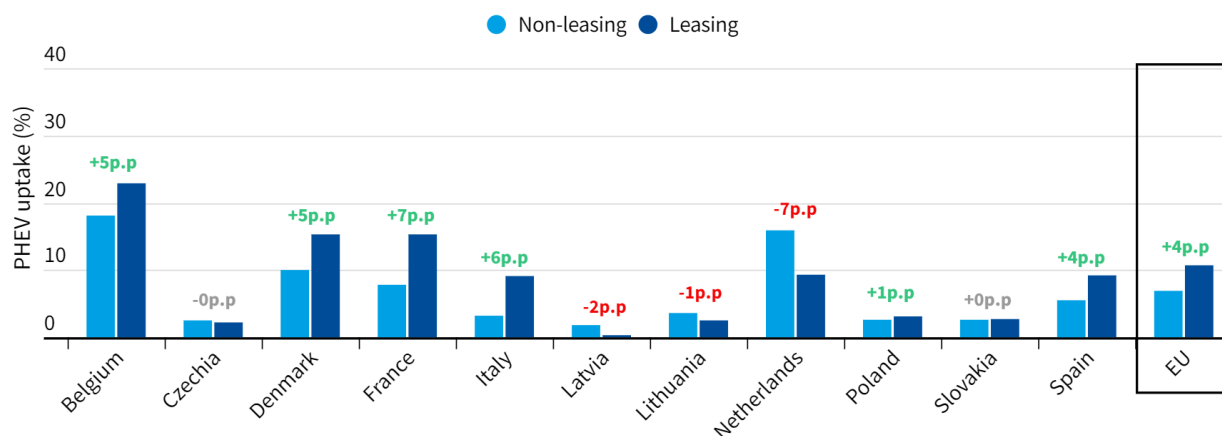
Notes: Numbers indicate the absolute difference (in percentage points) between the leasing and non-leasing channels. Data is recorded by the 'keeper' of the vehicle, which covers operational but not financial leasing.

Alarmingly, these results are not merely the result of a specific date range. Using the full year 2022 registrations yields an even worse result, with the BEV uptake in the leasing sector above the market in eight of the eleven EU countries and uptake for the EU of 7.0% compared to 9.0% in the rest of the market.

This comparison to the rest of the market incorporates many different channels. Analysing these channels separately shows that while the 10.4% BEV uptake in the leasing sector is above of the specialised rent-a-car (4.6%) and dealers and manufacturers (10.0%), it is below both true fleets (13.2%) and private households (11.2%).

### 2.3. Use of plug-in hybrids instead of full electric vehicles: The leasing sector has a higher PHEV share than the market

While the leasing sector is not leading the rest of the market on BEVs, it is on PHEVs – and by a significant margin. Combining the numbers for all eleven EU countries results in a PHEV uptake in the leasing sector of 10.7% compared to 6.9% in non-leasing channels (see Figure 2) – an additional 4 percentage points which is 55% higher. Compared to each non-leasing channel separately, the leasing sector has a higher PHEV uptake than private households (3.9%), rent-a-car (6.9%), and dealers and manufacturers (10.5%) but not true fleets (13.9%).



**Figure 2: Uptake of plug-in hybrid electric vehicles in the leasing sector and all other channels**

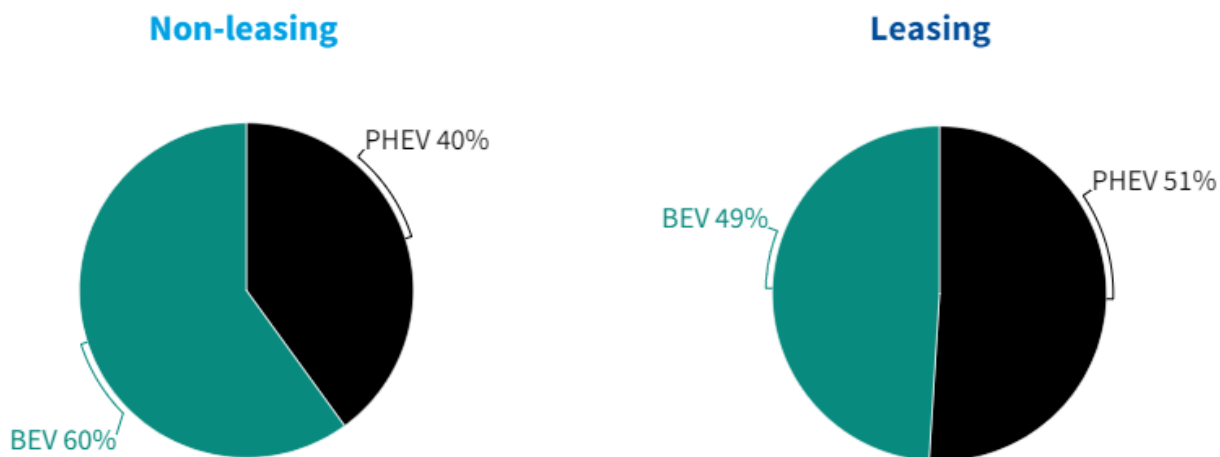
Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

Notes: Numbers indicate the absolute difference (in percentage points) between the leasing and non-leasing channels. Data is recorded by the ‘keeper’ of the vehicle, which covers operational but not financial leasing.

But this high uptake of PHEVs is not green leadership; it is the opposite. PHEVs have high real-world emissions (see Info Box 1) and displace demand for electric vehicles from zero-emission BEVs.

As the leasing sector has a higher uptake of PHEVs than the rest of the market but is in line with the market on BEVs, the leasing sector is therefore more oriented towards PHEVs (51%) than the rest of the market (40%) and especially private households (26%). While the ratio of BEVs for each PHEV registered in the leasing channel is only 1:1 compared to 1.5:1 in non-leasing channels and nearly 3:1 for private households (see Figure 3). This strong orientation towards PHEVs may explain why the leasing sector often refers to its “EV share” (see Section 2.1) rather than reporting on BEV and PHEV uptake separately.





**Figure 3: Composition of EV uptake in the leasing sector and all other channels**

Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

Notes: Data is recorded by the 'keeper' of the vehicle, which covers operational but not financial leasing.

As with BEV uptake (Section 2.2), these results are not merely the result of a specific date range. The full year 2022 registrations result in a PHEV share of 60% for the leasing sector and 42% for all other channels – an even greater disparity.

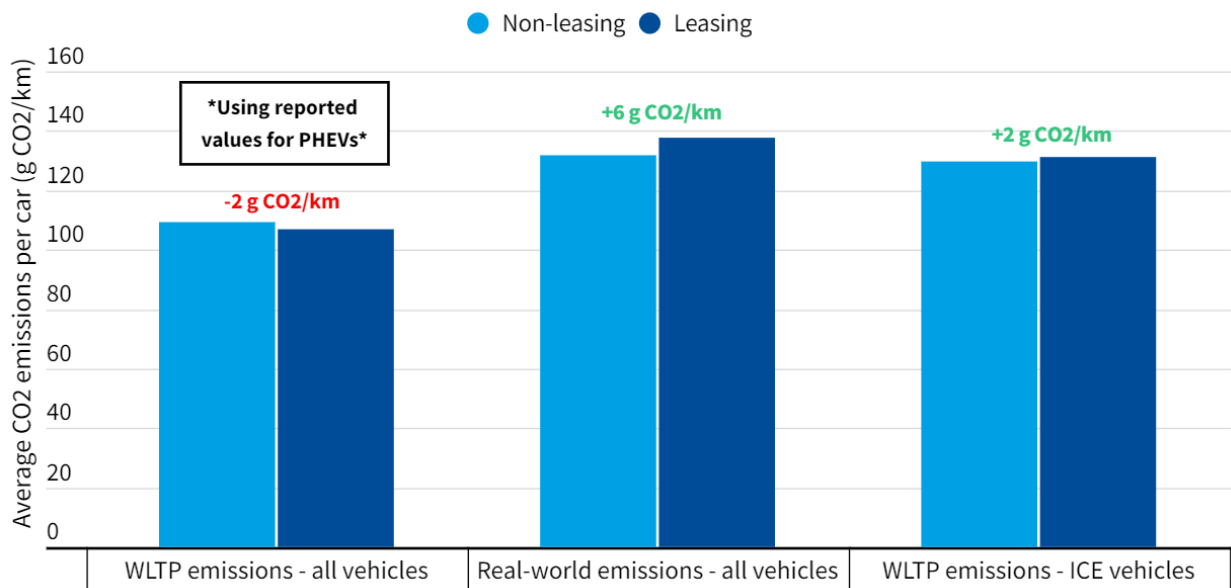
## 2.4. Average vehicle CO<sub>2</sub> emissions: The leasing sector has higher car CO<sub>2</sub> emissions than the market when PHEVs are accounted for

Given the high uptake of PHEVs in the leasing sector and the divergence between reported and real-world emissions for these vehicles, the consideration of PHEVs also has a significant impact on the comparison of average CO<sub>2</sub> emissions. Using the reported WLTP CO<sub>2</sub> emissions of all fuel types registered, the leasing sector has average CO<sub>2</sub> emissions per car that are lower than non-leasing channels (106.9 versus 109.3 g CO<sub>2</sub>/km). This result is largely due to the fact that the WLTP emissions of PHEVs - which are 11% of all new registrations in the leasing sector - are much lower than their real-world emissions (see Info Box 1).

If estimates for the real-world emissions of cars are used (for all fuel types),<sup>20</sup> then the result reverses with the leasing sector recording higher average CO<sub>2</sub> emissions per car (137.7 versus 131.8 g CO<sub>2</sub>/km). Finally, if PHEVs and BEVs are removed to only focus on the CO<sub>2</sub> emissions of internal combustion

<sup>20</sup> Applying factors of 1.36 to ICE emissions for private registrations and 1.42 for corporate registrations and 2.9 to PHEV emissions for private registrations and 4.875 for corporate registrations. Figures are based on ICCT (2022). Real-world usage of plug-in hybrid electric vehicles: A 2022 update. Page 11, Table 3. ([link](#)) and ICCT (2019). From laboratory to road: A 2018 update. Page 41, Table 26. ([link](#))

engine (ICE) vehicles, again, the leasing sector has higher average CO<sub>2</sub> emissions per car (131.2 versus 129.7 g CO<sub>2</sub>/km).



**Figure 4: Comparison of average CO<sub>2</sub> emissions per car by three measurements**

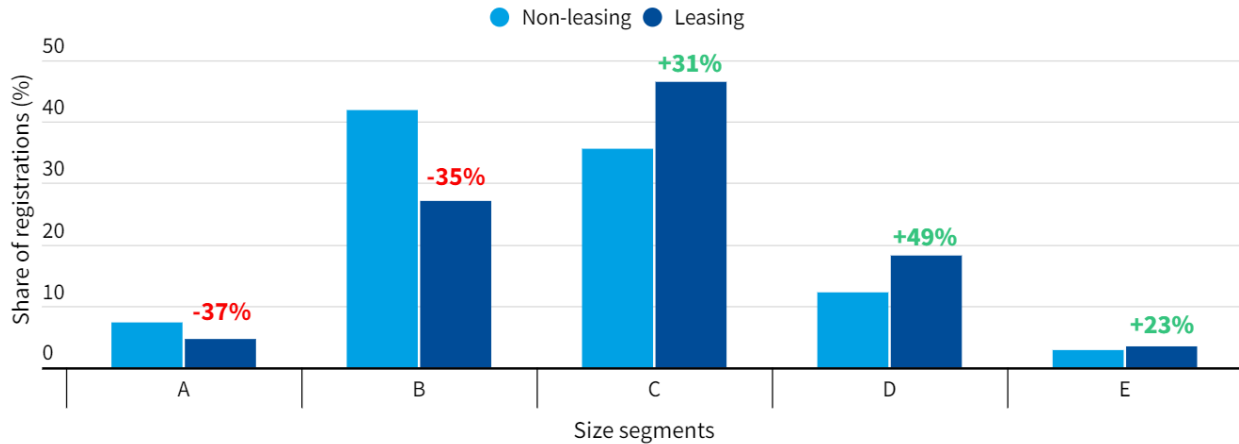
Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

Notes: Data is recorded by the 'keeper' of the vehicle, which covers operational but not financial leasing.

When PHEVs are accounted for, either by using estimated real-world emissions or excluding them and focusing on emissions from other ICE vehicles, then the CO<sub>2</sub> emissions of cars in the leasing sector are higher than those in non-leasing channels. Part of the explanation for this result lies in the fact that cars in the leasing channel tend to be larger and heavier and thus – all else equal – also more polluting.

## 2.5. Use of smaller cars: The leasing sector registers larger cars than the market

Beyond vehicle powertrain, there are environmental issues related to the size of the vehicles registered. While half of the cars in the non-leasing channels are in the small segments (A&B: 49%), only one-third of leased cars are in the small segments (32%). Instead, the leasing segment has a higher share of medium (C: 46% vs 36%) and large (D&E: 22% vs 15%) cars (see Figure 5).



**Figure 5: Composition of EV uptake in the leasing sector and all other channels**

Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

Notes: Numbers indicate the percentage difference (in relative terms) between the leasing and non-leasing channels. Data is recorded by the ‘keeper’ of the vehicle, which covers operational but not financial leasing.

Based on registration data, it is clear that the leasing sector specialises in larger and more resource-demanding vehicles. As an illustration, among the ten most common registrations in the leasing channel, six are in the C segment (three B segment, one A segment), whereas in the non-leasing channel only one is in the C segment (eight B segment, one A segment) (Table 4).

**Table 4: The ten most commonly registered cars to the leasing and non-leasing channels**

	Top model - non-leasing	Segment	Top model - leasing	Segment
1	Dacia Sandero	B - Small car	Skoda Octavia	C - Compact car
2	Peugeot 208	B - Small car	Peugeot 3008	C - Compact SUV
3	Renault Clio	B - Small car	Renault Clio	B - Small car
4	Toyota Yaris Cross	B - Small SUV	Toyota Corolla	C - Compact car
5	Renault Captur	B - Small SUV	VW Tiguan	C - Compact SUV
6	Dacia Duster	C - Compact SUV	Peugeot 208	B - Small car
7	Peugeot 2008	B - Small SUV	Fiat Panda	A - Mini car
8	Citroen C3	B - Small car	Peugeot 2008	B - Small SUV
9	Fiat Panda	A - Mini car	Peugeot 308	C - Compact car
10	Toyota Yaris	B - Small car	VW Golf	C - Compact car

Source: T&E calculations based on Dataforce (2023). New passenger car registrations H1 2023.

## 2.6. Summary

The actual performance of the leasing sector in the EU stands in sharp contrast to claims of green leadership. Beneath the surface of the sector's EV uptake, the sector is only leading the rest of the market on PHEVs, which have high real-world emissions. Considering full electric vehicles, the leasing sector is only leading in three of the eleven countries where data is available.

When PHEVs are accounted for, the leasing sector's CO<sub>2</sub> emissions are higher than the rest of the market, as are the leasing sector's emissions for ICE cars. In addition to focusing on PHEVs, the leasing sector is also focused on larger cars that are more resource intensive.

### 3. Are the largest leasing companies really green leaders?

This section extends the green leadership framework from the leasing sector as a whole to each of the top seven leasing companies. It may be the case that behind the sector's overall performance there are some leasing companies that are green leaders and others that are simply greenwashers.

#### 3.1. Assessing the green leadership of the top seven leasing companies

To assess green leadership, the same framework is applied (Table 2) including the three criteria related to data disclosure and ambitious target setting. However this assessment is hampered by poor data disclosure on environmental performance – a form of greenwashing itself. Despite green leadership claims, even the most basic data disclosure is patchy to nonexistent. Only one of the seven companies has reported its BEV uptake of new registrations.<sup>21</sup>

As such, the seven leasing companies were contacted to submit data on BEV, PHEV, and EV uptake.<sup>22</sup> Only two leasing companies (Arval and Leasys) responded to this request with data disclosure. Additional data was sourced from national vehicle registers which record information on vehicle make, model, fuel type, emissions, and other characteristics. In France, the national vehicle register records both the keeper and owner of the vehicle (thus covering both operational and financial leasing) and in Italy, the national vehicle register records the keeper of the vehicle (thus covering operational leasing). This information for two large car markets allows for a partial assessment of green leadership in light of the poor data disclosure by leasing companies.

Taken together, the compilation of sources to assess green leadership includes:

- Data disclosure from leasing companies in annual reports or public statements.
- Data disclosure from leasing companies in response to our request.
- French data on H1 2023 registrations (January-May) provided by NGC Data.
- Italian data on H1 2023 registrations (January-June) provided by Dataforce.
- For comparison, the carmaker production plans from LMC Automotive's Global Hybrid & Electric Vehicle Forecast.<sup>23</sup>

These data sources are considered reliable. The NGC data was confirmed by leasing companies in a previous T&E report<sup>24</sup> and the Dataforce data is cited by leasing companies themselves.<sup>25</sup>

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<sup>21</sup> ALD Automotive (2023). LinkedIn post September 2023. ([link](#))

<sup>22</sup> Leasing companies were contacted in August 2023 with reminders in September 2023.

<sup>23</sup> As detailed in Transport & Environment (2022). From boom to brake: Is the e-mobility transition stalling? ([link](#))

<sup>24</sup> Transport & Environment (2023). Electric vehicles: Leasing giants lag behind in France. ([link](#))

<sup>25</sup> Leasys (2022). Leasys is once again leader in long-term rental in Italy. ([link](#))

Is



Multi-brand leasing company majority-owned by Société Générale bank.



Formed from the merger of the two largest multi-brand leasing companies in Europe.



Profits are increasing year-on-year and stand at €3.1 billion (an estimated 1.7 billion in the EU).

# a green leader?



## What they say

*"The future of mobility is electric. As the first mover in the powertrain transition, we [ALD] will continue to lead the market in the shift to low emission vehicles."*

*"Our EV strategy is bold and ambitious, going beyond what the market currently forecasts for 2030. Instead of just following trends, we want to lead the way and make the transition to EVs as smooth as possible for our clients."*

## What they do



Good data disclosure?

ALD | LeasePlan publishes data on new registrations by EV type for its operations, **but refuses to share data for EU markets.**



End to fossil fuel cars?

ALD | LeasePlan has **no phase-out date for polluting cars.**



BEV ambition?

ALD | LeasePlan's target of 40% BEV uptake in 2026 is **higher than the uptake for the EU's car CO<sub>2</sub> standards (23%) and carmaker production plans (37%).** Their 2026 target also includes a commitment to reduce the PHEV share of EV registrations to 20%.



Higher BEV uptake?

ALD | LeasePlan reports a BEV uptake of 19.3% in H1 2023, which is higher than the European market (14.3%). This is confirmed in Italy (4.3% vs 3.8%) but not in France (11.9% vs 15.0%), generating a **mixed performance on BEV uptake.**



Lower PHEV share of EVs?

ALD | LeasePlan reports a 41% share of PHEVs in its EV leases in H1 2023, which is **higher than the European market (34%).** This is confirmed in France (59% vs 36%) and Italy (70% vs 55%).



Lower CO<sub>2</sub> emissions?

ALD | LeasePlan has **higher CO<sub>2</sub> emissions than the market** when PHEV are accounted for in France (128 vs 118g CO<sub>2</sub>/km) and Italy (150 vs 143g CO<sub>2</sub>/km). This same finding holds for ICE cars in France (134 vs 129g CO<sub>2</sub>/km) and Italy (133 vs 130g CO<sub>2</sub>/km).



Lower share of large cars?

ALD | LeasePlan has a **higher share of large segments than the market** in France (23% vs 13%) and Italy (17% vs 11%).

## Conclusion

ALD | LeasePlan is not a green leader. While the company has mixed performance on battery electric vehicles (BEVs) and good ambition for 2026, there is no phase-out date for polluting cars. Moreover, the company leases large cars with higher CO<sub>2</sub> emissions than the rest of the market.

## What they should do



**Target** a 2028 phase-out date for polluting vehicles.



**Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.



**Improve** their performance by orienting away from large vehicles and PHEVs.

# Is **MOBILIZE** FINANCIAL SERVICES a green leader?



Captive leasing company fully owned by the Renault Group.



Third largest EU leasing company with an estimated global fleet of 2.3 million cars (an estimated 2.0 million in the EU).



Large profits stand at €0.7 billion (an estimated €0.6 billion in the EU).



## What they say

“2022 is the year in which we will work towards defining a global green strategy with the aim of reaching the ambitious target of a Zero CO<sub>2</sub> in line with Renault Group Sustainability Strategy.”

“The number of electric vehicle financing contracts is maintained in 2022 (82,179 files vs. 82,153 in 2021) demonstrating Mobilize Financial Services’ ability to support the Alliance’s customers towards more sustainable mobility.”

## What they do

<p>Good data disclosure?</p>	<p>Mobilize F.S. publishes data on new registrations of BEVs (not PHEVs) across its operations, but <b>refuses to share data for the EU</b>.</p>
<p>End to fossil fuel cars?</p>	<p>Mobilize F.S. has <b>no phase-out date for polluting cars</b>.</p>
<p>BEV ambition?</p>	<p>Mobilize F.S. has <b>no BEV target</b>. This contrasts with the 2030 100% ZEV target of parent company Renault Group.</p>
<p>Higher BEV uptake?</p>	<p>Mobilize F.S. reports an EV uptake of 5.5% in H1 2023, which, even if all EVs were BEVs, is well behind the Renault Alliance (9.4%) and the whole European market (14.3%). This is confirmed in France (14.0% vs 15.0%) but not in Italy (7.1% vs 3.8%).</p>
<p>Lower PHEV share of EVs?</p>	<p>Mobilize F.S. has a <b>much lower PHEV share of EVs than the market</b> and France (2% vs 36%) and Italy (1% vs 55%)</p>
<p>Lower CO<sub>2</sub> emissions?</p>	<p>Mobilize F.S. is <b>in line with the market</b> for average CO<sub>2</sub> emissions of its leases in France (103 vs 99g CO<sub>2</sub>/km WLTP) and Italy (119 vs 120g CO<sub>2</sub>/km WLTP).</p>
<p>Lower share of large cars?</p>	<p>Mobilize F.S. has a <b>much lower share of large segments than the market</b> in France (2% vs 13%) and Italy (1% vs 11%).</p>

## Conclusion

Mobilize F.S. is not a green leader. The company has not set any target for the transition to zero-emission mobility and is lagging behind the market in the uptake of zero-emission vehicles.

## What they should do

- Target** a 2028 phase-out date for polluting vehicles with intermediate BEV targets.
- Disclose** the number of PHEVs and the average CO<sub>2</sub> emissions in their new registrations. Continue to disclose the number BEVs in their new registrations.
- Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.

# Is VOLKSWAGEN FINANCIAL SERVICES a green leader?



Captive leasing company fully owned by the Volkswagen Group.



Largest EU leasing company with a global fleet of 4.8 million cars (an estimated 2.7 million in the EU).



Massive profits stand at €5.7 billion (an estimated €3.2 billion in the EU).



## What they say

“We are driving the transition to zero-emission mobility.”

“We are evolving from a sales promoter to a promoter of sustainability or even promoter of sustainable mobility in the Volkswagen Group.”

“We are also systematically increasing sales of BEVs (battery electric vehicles) for the Volkswagen Group.”

## What they do



Good data disclosure?

VWFS **refuses to share any relevant data** (no data on new registrations, no data on the EU market, and no data by EV type).



End to fossil fuel cars?

VWFS has **no phase-out date for polluting cars**.



BEV ambition?

VWFS has **no target for the uptake of BEVs**.



Higher BEV uptake?

VWFS has **mixed performance on BEV uptake**. In Italy, BEV uptake is leading the market (6.2% vs 3.8%), whereas in France BEV uptake is lagging the market (11.0% vs 15.0%).



Lower PHEV share of EVs?

VWFS also has **mixed performance on the share of PHEVs in its EV leases**. In Italy, the PHEV share is lower than the market (36% vs 55%), whereas in France the PHEV share is higher than the market (41% vs 36%).



Lower CO<sub>2</sub> emissions?

VWFS has **higher average CO<sub>2</sub> emissions than the market** (even without accounting for PHEVs) in both France (111 vs 99g CO<sub>2</sub>/km) and Italy (126 vs 120g CO<sub>2</sub>/km).



Lower share of large cars?

VWFS has a **higher share of large segments than the market** in France (15% vs 13%) and Italy (18% vs 11%).

## Conclusion

VWFS is not a green leader, it is the quiet giant of the leasing sector. The company has not set any target for the transition to zero-emission mobility and does not disclose data on its environmental performance. Based on national registers, the company leases cars with higher CO<sub>2</sub> emissions than the market.

## What they should do



**Target** a 2028 phase-out date for polluting vehicles with intermediate BEV targets.



**Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.



**Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.





Is

# a green leader?



Main markets are France, Italy, UK, and Spain (62% share).



Profits are increasing year-on-year and stand at €1.2 billion (an estimated €1.1 billion in the EU).



Multi-brand leasing company fully owned by Bank BNP Paribas Group.



## What they say

“We remain committed to growing our share of EVs at twice the pace of the market”

“In terms of EV uptake, we are significantly ahead of the market in every country apart from Norway”

“Arval aims for the position of ‘European leader in sustainable mobility by 2025’”

“Arval aims to become a key leader in the energy transition and sustainability”

## Green leadership barometer

<p>Good data disclosure?</p>	<p>Arval has shared data with T&amp;E on new registrations by EV type for its European operations, but <b>will not share data on its operations in EU markets.</b></p>
<p>End to fossil fuel cars?</p>	<p>Arval has <b>no phase-out date for polluting cars.</b></p>
<p>BEV ambition?</p>	<p>Arval’s fleet target of 17.5% BEV uptake by 2025 is <b>above the EU’s car CO<sub>2</sub> standards (14.9%) but below European carmaker production plans (22.7%)</b> based on a three-four year turnover. Arval still targets 17.5% PHEVs in their fleet by 2025.</p>
<p>Higher BEV uptake?</p>	<p>Arval disclosed a BEV uptake of 15.6% in H1 2023, which is higher than the European market (14.3%). This is confirmed in Italy (4.1% vs 3.8%) but not in France (8.5% vs 15.0%), generating a <b>mixed performance on BEV uptake.</b></p>
<p>Lower PHEV share of EVs?</p>	<p>Arval disclosed a PHEV share of EVs of 66% in H1 2023 across its European fleet. Based on a three to four year ownership period, this is a <b>higher share of PHEVs than the European market (41%).</b> This is confirmed by registration data in France (63% vs 36%) and Italy (81% vs 55%).</p>
<p>Lower CO<sub>2</sub> emissions?</p>	<p>Arval has <b>higher CO<sub>2</sub> emissions than the market</b> when PHEV are accounted for in France (132 vs 118g CO<sub>2</sub>/km) and Italy (152 vs 143g CO<sub>2</sub>/km). This same finding holds for ICE cars in France (132 vs 129g CO<sub>2</sub>/km) and Italy (134 vs 130g CO<sub>2</sub>/km).</p>
<p>Lower share of large cars?</p>	<p>Arval has a <b>higher share of large segments than the market</b> in France (19% vs 13%) and Italy (22% vs 11%).</p>

## Conclusion

Arval is not a green leader, it is a PHEV leader. The company’s orientation towards plug-in hybrids masks their low uptake of battery electric vehicles and weak target. Moreover, the company leases large cars with higher CO<sub>2</sub> emissions than the rest of the market.

## What they should do

- Target** a 2028 phase-out date for polluting vehicles and review their weak 2025 target.
- Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.
- Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.



Is

a green leader?



Main markets are Netherlands, Germany, Belgium, France, and Italy.



Multi-brand leasing company fully owned by Mercedes-Benz Group AG.



### What they say

“Our goal is to be an inspiring frontrunner in sustainable mobility and take action on the climate crisis.”

“Pioneer in E-Mobility: Athlon is the expert in environmentally friendly transport. We have been building up experience and expertise with electric vehicles since introducing them to the leasing market in 2008.”

“Athlon actively contributes to the EU goals by accelerating the transition to a flexible, electric and safe fleet.”




### What they do

 <b>Good data disclosure?</b>	Athlon publishes its uptake of EV types in its fleet, but <b>refuses to share data for new registrations and for the EU market.</b>
 <b>End to fossil fuel cars?</b>	Athlon has <b>no phase-out date for polluting cars.</b>
 <b>BEV ambition?</b>	Athlon’s target of 50% EV uptake in their fleet by 2025 has <b>no BEV sub-target and no target for new registrations.</b>
 <b>Higher BEV uptake?</b>	Athlon reports a BEV uptake of 9.2% in 2022 across its European fleet, which is higher than the European market (8.7%) based on a three-four year turnover. However data on new registrations reveals that Athlon has <b>lower BEV uptake than the market</b> in France (7.7% vs 15.0%) and Italy (2.8% vs 3.8%).
 <b>Lower PHEV share of EVs?</b>	Athlon reports a PHEV share of EVs of 50% in 2022 across its European fleet, which is <b>higher than the European market</b> (43%) based on a three-four year turnover. This is confirmed in the H1 2023 registrations in France (72% vs 36%) but not Italy (52% vs 55%).
 <b>Lower CO<sub>2</sub> emissions?</b>	Athlon has <b>higher CO<sub>2</sub> emissions than the market</b> when PHEV are accounted for in France (132 vs 118g CO <sub>2</sub> /km) and Italy (154 vs 143g CO <sub>2</sub> /km). This same finding holds for ICE cars in France (131 vs 129g CO <sub>2</sub> /km) and Italy (135 vs 130g CO <sub>2</sub> /km).
 <b>Lower share of large cars?</b>	Athlon has a <b>higher share of large segments than the market</b> in France (20% vs 13%) and Italy (34% vs 11%). Athlon also has the lowest share of small cars of all major leasing companies in both countries.

### Conclusion

Athlon is not a green leader. Despite calling itself a pioneer, the company has now settled. The company has not set any target for the transition to zero-emission mobility and is lagging behind the market in the uptake of zero-emission vehicles. Moreover, the company leases cars with higher CO<sub>2</sub> emissions than the market when plug-in hybrids are accounted for.

### What they should do

-  **Target** a 2028 phase-out date for polluting vehicles and intermediate BEV targets.
-  **Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.
-  **Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.

# Is ALPHABET a green leader?



Main markets are Germany and the UK (42% share).



Multi-brand leasing company fully owned by BMW Group.



## What they say

"We **exceeded our ambition** of increasing the electrified vehicle share of new business by 31% last year"

"We expect 2023 to be another year of solid growth, particularly for fully electric vehicles."

"Our clear goal is to **outpace the current market growth, i.e. to grow faster in electric vehicles than in the segment itself.** Our customers are actively transitioning towards electrification of their fleets, and in some markets up to 40% of vehicle orders are electrified, predominantly pure electric vehicles."

## What they do



Good data disclosure?

Alphabet publishes its EV uptake in new registrations across its operations, but **refuses to share data for EV type and for the EU market.**



End to fossil fuel cars?

Alphabet has **no phase-out date for polluting cars.**



BEV ambition?

Alphabet has **no target for the uptake of battery electric vehicles (BEVs).**



Higher BEV uptake?

Alphabet reports that in 2022 their BEV uptake in Germany is around 12%, which is much lower than the market in Germany (17.8%). The same result is found in France (7.8% vs 15.0%) and Italy (2.5% vs 3.8%) where Alphabet **lags well behind the market and other leasing companies.**



Lower PHEV share of EVs?

Alphabet reports that in 2022 their PHEV share in Germany is around 50%, which is **higher than the market** in Germany (43%). The same result is found in France (69% vs 38%) and Italy (74% vs 55%).



Lower CO<sub>2</sub> emissions?

Alphabet has **higher average CO<sub>2</sub> emissions than the market** (even without accounting for PHEVs) in France (103 vs 99g CO<sub>2</sub>/km) and Italy (128 vs 120g CO<sub>2</sub>/km).



Lower share of large cars?

**Alphabet's share of large segments is twice as high as the market** in France (24% vs 13%) and Italy (25 vs 11%).

## Conclusion

Alphabet is not a green leader, it is the slowest mover on electromobility. The company has not set a target for the transition to zero-emission mobility and is lagging behind the market and other leasing companies in the uptake of zero-emission vehicles. Moreover, the company leases large cars with higher CO<sub>2</sub> emissions.

## What they should do



**Target** a 2028 phase-out date for polluting vehicles and intermediate BEV targets.



**Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.



**Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.

# Is LEASYS a green leader?



Largest leasing company in Italy in 2022.



Formed from the merger of the two largest multi-brand leasing companies in Europe.



Captive leasing company owned equally by Stellantis and Crédit Agricole Consumer Finance.



## What they say

“As a sector leader, Leasys’ aim is to lead the transition to electric mobility and help create the conditions to encourage and accelerate its success.”

“FCA Bank and its Leasys subsidiary confirm their role as the masterminds of Italy’s electric and sustainable mobility revolution, with a significant plan of investments in infrastructures, fleet and services.”

“Leasys’s objective is to have 60% of its fleet made up of hybrid or electric vehicles by 2021.”

## What they do

 Good data disclosure?	Leasys has shared data with T&E on new registrations by EV type for its European operations, but <b>will not share data on its operations in EU markets or data that includes Free2Move.</b>
 End to fossil fuel cars?	Leasys has <b>no phase-out date for polluting cars.</b>
 BEV ambition?	Leasys’s target of 50% EV uptake by 2025 has no BEV sub-target, but based on their current PHEV share, a 24% BEV uptake is <b>only slightly higher than the EU CO<sub>2</sub> standards trajectory (23%) and below European carmaker production plans (30%)</b> . This target also contrasts with the 2030 100% ZEV target of parent company Stellantis.
 Higher BEV uptake?	Leasys disclosed a BEV uptake of 9% in H1 2023, which is much lower than the European market (14.3%). This is confirmed in Italy where Leasys has a <b>BEV uptake behind the market and all other major leasing companies (2.3% vs 3.8%)</b> .
 Lower PHEV share of EVs?	Leasys disclosed a <b>higher PHEV share of EVs than the European market</b> in H1 2023 (44% vs 34%). This is confirmed in Italy (65% vs 55%).
 Lower CO <sub>2</sub> emissions?	Leasys disclosed higher CO <sub>2</sub> emissions than the European market in H1 2023 (112 vs 109g CO <sub>2</sub> /km). In Italy its emissions are <b>in line with the market (119 vs 120g CO<sub>2</sub>/km)</b> .
 Lower share of large cars?	Leasys has a <b>lower share of large segments than the market</b> in Italy (7% vs 11%).

## Conclusion

Leasys is not a green leader as the number one leasing brand in Italy is also the number one laggard. Leasys has a lower level of BEV uptake than all other leasing companies and a weak target for the transition to zero-emission mobility.

## What they should do

- Target** a 2028 phase-out date for polluting vehicles and intermediate BEV targets.
- Disclose** the number of BEVs, PHEVs, and the average CO<sub>2</sub> emissions in their new registrations.
- Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles.

### 3.2. Cases of greenwashing

These company profiles reveal that not only is the green performance of leasing companies poor, there is widespread greenwashing with egregious examples for six of the seven companies (Table 5).

**Table 5: Cases of greenwashing by European leasing companies**

Claim	Reality
<b>VWFS</b> claims to be “driving the transition to zero-emission mobility.” <sup>26</sup>	VWFS is driving clients towards high-emission vehicles. They have much higher CO <sub>2</sub> emissions in H1 2023 compared to the rest of the market in France (111 vs 99g CO <sub>2</sub> /km) and Italy (126 vs 120g CO <sub>2</sub> /km) in H1 2023. VWFS is also lagging the French market in terms of BEV uptake (11% vs 15%).
<b>ALD   LeasePlan</b> claims their “EV strategy is bold and ambitious, going beyond what the market currently forecasts for 2030.” <sup>27</sup>	ALD   LeasePlan has no 2030 target. Its new “PowerUP 2026” target of 40% BEV for 2026 is higher than the EU’s car CO <sub>2</sub> standards (23%) and above carmaker production plans (37%).
<b>Mobilize F.S.</b> claims “the aim of reaching the ambitious target of a Zero CO <sub>2</sub> in line with Renault Group Sustainability Strategy.” <sup>28</sup>	Mobilize F.S. is holding the Renault Group back with its low BEV uptake. Mobilize F.S. reports an EV uptake of 5.5% in Europe for H1 2023, which even if every EV is a BEV is well behind the Renault Alliance (9.4%) and European market (14.3%).
<b>Arval</b> claims to be “committed to growing our share of EVs at twice the pace of the market.” <sup>29</sup>	Arval’s share of EVs is not twice the market rate (36.4% vs 21.7% in H1 2023) and its EVs are mostly PHEVs (57%). In France, Arval’s largest market, the company’s BEV uptake is lagging well behind the market (8.5% vs 15.0%).
<b>Leasys</b> claims its “aim is to lead the transition to electric mobility.” <sup>30</sup>	Leasys has a BEV uptake of only 2.3% in its main market of Italy (H1 2023), lagging behind the market (3.8%) and all other major leasing companies. Its 2022 performance, prior to the merger with Free2Move, was even worse (1.0%).
<b>Alphabet</b> claims that its “clear goal is to outpace the current market growth, i.e. to grow faster in electric vehicles than in the segment itself.” <sup>31</sup>	Alphabet’s BEV uptake is lagging behind the market in all markets analysed. This includes their reported 2022 uptake in Germany (12% vs 17.8%) and in their H1 2023 registrations in France (7.8% vs 15.0%) and Italy (2.5% vs 3.8%).
<b>Athlon</b> claims its “goal is to be an inspiring frontrunner in sustainable mobility and take action on the climate crisis.” <sup>32</sup>	Athlon trails behind the market with a BEV uptake of only 7.7% in France (vs. 15.0%) – the lowest of the major leasing companies – and 2.8% in Italy (vs. 3.8%) in H1 2023.

<sup>26</sup> Volkswagen Financial Services (2023). MOBILITY20230 - A part of the Volkswagen Group strategy ([link](#))

<sup>27</sup> ALD Automotive (2023). Sparking a Sustainable Future: Annie Pin's Vision on World EV Day. ([link](#))

<sup>28</sup> Mobilize Financial Services (2022). Sustainability Manifesto. ([link](#))

<sup>29</sup> Fleet Europe (2020). “Arval committed to grow EV share at twice market pace”. ([link](#))

<sup>30</sup> Leasys (2021). Report and consolidated financial statements: December 21 2021. ([link](#))

<sup>31</sup> Fleet People (2023). Markus Deusing, CEO of Alphabet. ([link](#))

<sup>32</sup> Athlon (n.d.) Sustainability & CSR at Athlon. ([link](#))

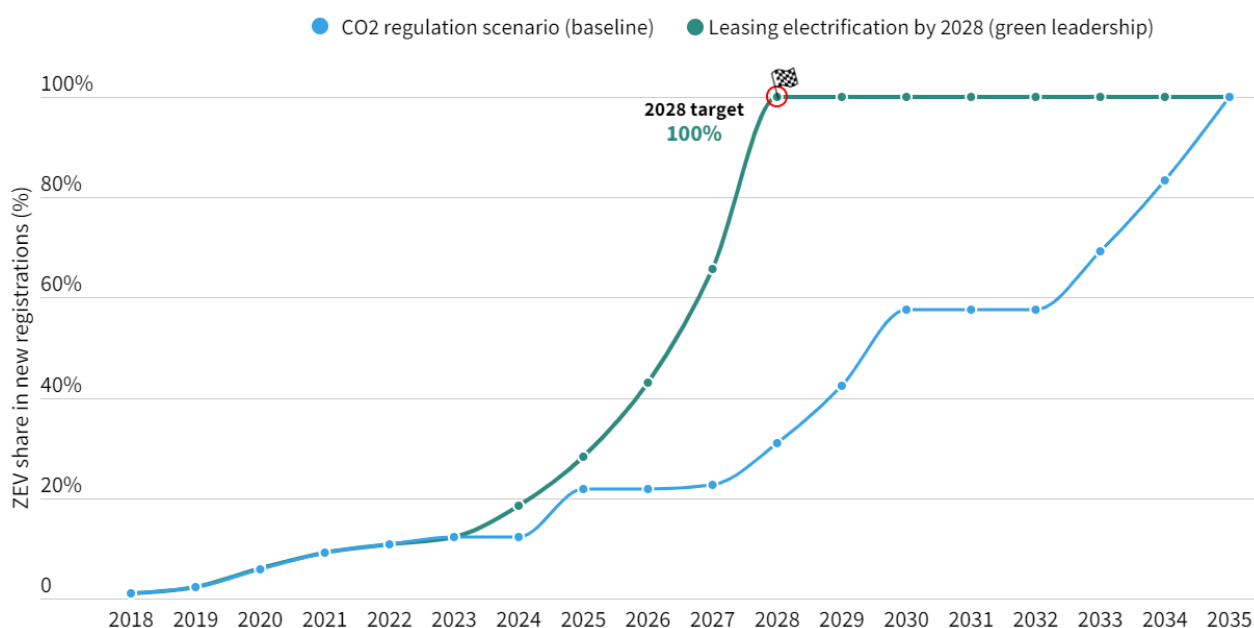
## 4. What if the leasing sector became a leader?

If leasing companies really did act in accordance with their statements and became green leaders, mobility in the EU could look very different. In this section, we model the impact of green leadership by focusing on pathways of BEV uptake (which in turn determine average CO<sub>2</sub> emissions, particularly as the BEV share grows).

### 4.1. Modelling the impact of real green leadership in the leasing

Here we model a ‘green leadership scenario’ with a phase-out of polluting vehicles from new registrations of the top 7 leasing companies (i.e. 100% ZEV) by 2028 and the rest of the sector by 2030. This scenario is compared to the level of BEV uptake required to meet EU’s car CO<sub>2</sub> standards: 23% in 2025 and 58% in 2030.

To reach this phase-out date an exponential growth rate is used which leads to higher changes in future years, which aligns with expectations about planning decisions (Figure 6).



**Figure 6: The baseline uptake of ZEVs compared to 2030 and 2028 green leadership ambitions**

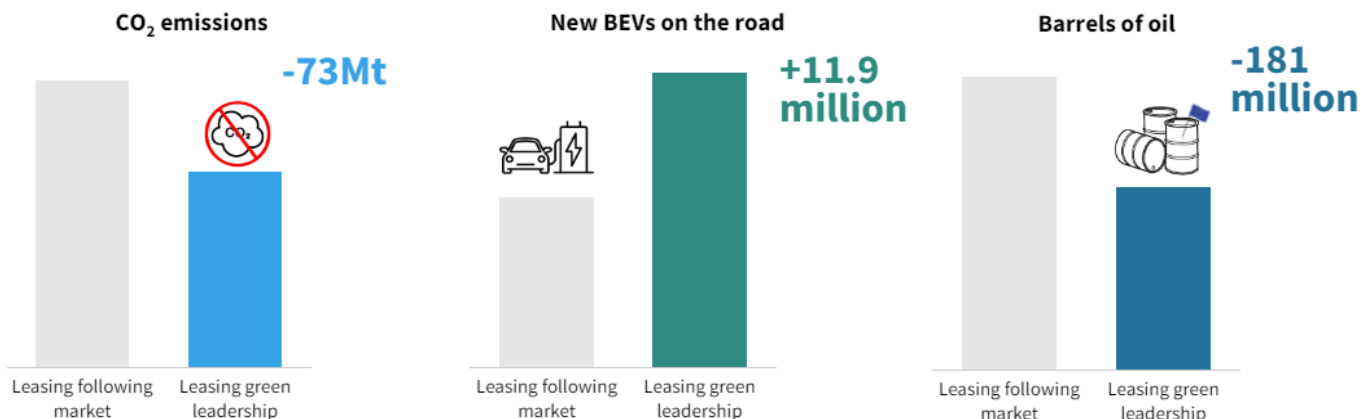
Source: T&E calculations.

Another change over this time period is that the size of the leasing sector and its share of new registrations is expected to grow, reaching 69% in 2030.<sup>33</sup> Other key inputs and modelling assumptions

<sup>33</sup> Autovista (2023). Remarketing Expert Track. FleetEurope. ([link](#))

used in the modelling including fleet size, baseline ZEV uptake, the number of kilometres driven, the CO<sub>2</sub> emissions per kilometre, and the additionality of ZEVs are described in Annex B.

The modelled results show that for the 2028 green leadership scenario, 11.9 million additional BEVs will be on the road compared to the baseline market development by 2030 (+45% more in comparison with the baseline scenario). This displacement of polluting cars by BEVs translates to a savings of 73 million tonnes of CO<sub>2</sub> emissions and 181 million barrels of oil over the same time period (Figure 7).



**Figure 7: Results of green leadership ambitions in terms of BEVs, oil savings, and CO<sub>2</sub> savings**

Source: T&E calculations.

Notes: Cumulative results to 2030

## 4.2. Why 100% full electric in 2028 is feasible

There are two common objections when leasing companies are challenged on their green leadership: first, that there is not enough BEV production to achieve high ambition, and second, that the leasing companies are just the ‘middleman’ and should not determine vehicle choice for their clients. Neither of these objections withstand scrutiny.

On BEV availability, there are at least four reasons why this line of argumentation should be left behind. The first is that production bottlenecks related to microchips and critical raw materials are already receding. The disruptions made headline news throughout 2021 and 2022, but less well known is the 2023 recovery.<sup>34</sup>

<sup>34</sup> ACEA (2023). New car registrations: +21% in August; battery electric exceeds 20% share for the first time. ([link](#))

Secondly, just based on the public announcements by European carmakers, production will exceed the EU's CO2 standards, reaching 30% of the market in 2025, 54% in 2028, and 77% in 2030.<sup>35</sup> Carmakers like Stellantis, Volvo, Mercedes, Ford, and Renault Group have already announced they will be 100% BEV in 2030.<sup>36</sup> If all of the top seven leasing companies went 100% BEV in 2028 it would still only reach 65% of carmaker production plans, clearly showing that supply is not a hard constraint. There is no reason why leasing companies should lag behind carmakers, nor for leasing companies like Mobilize FS, Leasys, and VWFS to be less ambitious than their associated carmaker; on the contrary, they should lead.

Third, even the level of ambition in carmaker production plans can be increased as these plans are not set in stone and respond to demand that carmaker's anticipate in the market. If leasing companies announced clear and ambitious targets, this would indicate a higher demand for BEVs, causing carmakers to increase their production plans. This feedback cycle between supply and demand can repeat through multiple iterations as more and more leasing companies show real green leadership and carmakers respond by increasing the ambition in their production plans.

And fourth, while the previous three points have dealt with supply at the market level, this does not constrain the choices at the level of an individual leasing company. Sales of BEVs in the EU are now in the millions of vehicles<sup>37</sup> meaning there is no constraint on the sector and certainly no constraint on any individual company to pursue green ambitions.

The objection that leasing companies are 'just a middleman' also misunderstands the role of leasing companies in the market. First, leasing companies have a significant influence over vehicle choice from their advertising, to their partnerships, to their consulting, to their pricing. And this is implicitly acknowledged by leasing companies already. Five of the seven companies profiled in this report already have targets that refer to their future drivetrain composition, so these companies *do not* approach the market with complete neutrality. The issue is that the targets are weak and include PHEVs, but the fact that targets can direct the actions of leasing companies is already implied.

Secondly, the size of leasing companies gives them tremendous market power to take an active role in their vehicle offers. Again, this point is acknowledged by leasing companies. ALD commented after their recent acquisition of LeasePlan that "greater scale will give the new ALD more pricing power with car manufacturers."<sup>38</sup> Arval has similarly explained to its investors that "as Arval orders 380,000 cars

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<sup>35</sup> Transport & Environment (2022). From boom to brake: Is the e-mobility transition stalling? ([link](#))

<sup>36</sup> Transport & Environment (n.d.). The race to electrify. ([link](#))

<sup>37</sup> ACEA (2023). New car registrations: +21% in August; battery electric exceeds 20% share for the first time. ([link](#))

<sup>38</sup> Gregory, A. (2022) ALD wants to take on the captives after successful rights issue. GlobalCapital. ([link](#))



per year, it has a significant purchasing power”.<sup>39</sup> This market power is further enhanced by the record profits that the sector is posting (see Section 1.1).

And third, just as the ambitions of leasing companies are lagging behind carmakers, the same is true for leading corporate fleets. Major corporate fleets including AstraZeneca, Coca-Cola, IKEA, Uber and Unilever are even calling on the European Commission to introduce a regulation to make all new corporate cars fully electric by 2030, which shows that there is a clear demand.<sup>40</sup>

Whether it is compared to carmakers on the supply side or corporate fleets on the demand side, there is simply no reason for leasing companies as the powerful intermediary to be the laggards in the electromobility transition.

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<sup>39</sup> Arval (2022). Arval investor presentation. ([link](#))

<sup>40</sup> Open letter regarding the European Commission Greening Corporate Fleets Initiative: Accelerate the electrification of fleets in Europe ([link](#)).

## 5. Conclusions and recommendations

This report is the first time that the green leadership claims of European leasing companies are assessed. Given the sheer scale of these companies and the prominence of their green claims about ‘driving the transition to zero-emission mobility’, this scrutiny is well overdue.

Based on our four-criteria framework for green leadership in the leasing sector, the results for the EU market revealed that:

1. Whereas green leadership implies BEV uptake that is much higher than the market, the 10.4% **BEV uptake in the leasing sector is just in line with non-leasing channels** (10.5%).
2. Whereas green leadership implies a low PHEV share of EVs, the 51% **PHEV share in the leasing channel is higher than non-leasing channels** (40%).
3. Whereas green leadership implies low average CO<sub>2</sub> emissions per car, when PHEVs are accounted for, the 137.7g CO<sub>2</sub>/km **real-world emissions are higher than non-leasing channels** (131.8 g CO<sub>2</sub>/km). Similarly the 131.2g CO<sub>2</sub>/km emissions of ICE vehicles is also higher than the non-leasing channels (129.7 g CO<sub>2</sub>/km).
4. Whereas green leadership implies smaller cars, the 46% share of medium (C segment) cars and 22% share of large (D and E segments) cars is a **higher share of medium and large cars than non-leasing channels** (36% and 15% respectively).

For the top seven leasing companies that represent 62% of the sector, the same framework was applied with three additional criteria for data disclosure and ambitious target-setting. The results revealed that:

1. **Data disclosure is poor.** All seven of the leasing companies failed to provide data on their new registrations in the EU market by EV type. There is no question that this data is available, but they chose not to disclose it. Without this data, green claims are just claims and cannot be verified. At the extreme, some of the largest leasing companies do not report any data on environmental performance (VWFS, Leasys). Without data disclosure, comparisons were made based on national registers available in France and Italy.
2. **Phase-out dates are non-existent.** All seven of the leasing companies have failed to set a phase-out date for polluting vehicles. This is in contrast to several carmakers and fleets with 2030 phase-out dates – including carmakers that own some of these leasing companies.
3. **BEV ambition is low.** Some of the leasing companies have no targets at all (VWFS, Alphabet, Mobilize F.S.) and some leasing companies have targets below European carmaker production

plans (Arval, Leasys). ALD | LeasePlan is the only leasing company that has a BEV target above European carmaker production plans.

- 4. BEV uptake is generally low.** All seven of the leasing companies have a lower BEV uptake than the market in France and three of the leasing companies (Leasys, Alphabet, Athlon) also have a lower uptake than the market in Italy. ALD | LeasePlan and Arval disclosed a higher BEV share across their European operations than the market (while Mobilize F.S. disclosed a lower share), however these companies did not disclose the equivalent EU figures upon request.
- 5. The PHEV share of EVs is high.** Six of the seven leasing companies have a higher PHEV share than the market in France and four of these leasing companies (ALD | LeasePlan, Arval, Leasys, Alphabet) also have a higher PHEV share than the market in Italy. Reported data by leasing companies based on their own scope does not change these findings.
- 6. Average car CO<sub>2</sub> emissions of new registrations are high.** Six of the seven leasing companies have a higher average real-world car CO<sub>2</sub> emissions (i.e. accounting for PHEVs) than the market in France and Italy. Five of the seven leasing companies have higher average car CO<sub>2</sub> emissions for ICE vehicles (i.e. excluding PHEVs and BEVs) than the market in France and Italy.
- 7. Leased cars are in larger segments.** Five of seven leasing companies have a higher share of cars in large segments (D&E) than the market in France and Italy.

Considering both the sector and brand results, the conclusion is that rather than one or two major leasing companies pulling down the environmental performance, poor environmental performance in the leasing sector is systemic. Unlike the other main actors in vehicle procurement (e.g. leading carmakers, leading fleets), there are no obvious green leaders among the top leasing companies that are distinguishing themselves from their peers or even outperforming market trends.

This weak environmental performance by leasing companies stands in sharp contrast to their claims of green leadership – also ubiquitous across the companies. A central conclusion of this research is that the green leadership claims of the leasing sector and nearly all major brands are simply greenwashing. Some of the greenwashing cases detailed in this report (Table 5) are clearcut and egregious. There may also be a broader greenwashing trend for some of the owners of leasing companies (banks and carmakers) as they have been accused of greenwashing for other parts of their operations.<sup>41</sup>

Based on these results, several recommendations for leasing companies emerge:

- **Target** a 2028 phase-out date for polluting vehicles with intermediate BEV targets;

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<sup>41</sup> E.g. recent lawsuits against BNP Paribas ([link](#)) and VW Group ([link](#)).

- **Disclose** the number of BEVs, PHEVs, and the size and average CO<sub>2</sub> emissions of new registrations in each market;
- **Improve** their performance by leading the market in the uptake of efficient and zero-emission vehicles;
- **Advocate** for policy changes that incentivise and enable the transition to electromobility.

For the leasing sector to truly take the position of the green leader progress will need to be made on each one of these recommendations. While policy advocacy is frequently overlooked as a corporate action, the effects can be powerful. In the UK, where benefit-in-kind taxation heavily favours BEVs, the leasing sector has a BEV uptake of 40.9% in H1 2023 compared to 10.0% in the non-leasing channels.<sup>42</sup> Leasing companies should be advocates of similar changes in other markets.

The steps towards real green leadership are clear. What remains unclear is whether the major leasing companies will take these steps or remain rooted in the fossil age.

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<sup>42</sup> BVRLA (2023). Leasing Outlook. ([link](#))

## Further information

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## Annex A: Sources and methodology notes for Table 1

Leasing company	Ownership	Fleet	New vehicles	Earnings	Profits (€ million)	Profit margin
Volkswagen FS	Volkswagen Group	A, C, D	A, C, D	B, C, D	B, C, D	E
ALD   LeasePlan	Société Générale Group (majority)	F, D	F, D, G	H+I, J, D	H+I, J, D	E
Mobilize FS	Renault	K, G	K	L, K	L, K	E
Arval	BNP Paribas	M, N, D	M, N, D, G	O, N, D	O, N, D	E
Leasys	Stellantis/Crédit Agricole	P, Q, D	P, Q, D, G	-	-	-
Alphabet	BMW	R, S, D	R, S, D, G	-	-	-
Athlon	Mercedes-Benz	T, U, D	T, U, D, G	-	-	-

A - Volkswagen Financial Services (2023). Volkswagen Financial Services close financial year 2022 with very good result. ([link](#))

B - Volkswagen Group (2023). Results of Operations. ([link](#))

C - Converted to Europe based on the “Europe/Other Markets region” of “customer financing/leasing” as reported in Volkswagen (2022). Group Management Report: Volkswagen Group Financial Services. ([link](#))

D - Converted from Europe to EU by removing UK leases as reported in FleetNews (2022). FN50 Listing. ([link](#))

E - Calculated as profits/earnings.

F - European passenger car fleet of 1.9 million confirmed by ALD, Personal communication, 5 October 2023.

G - Conversion between fleet and new registrations based on 3.5 years.

H - ALD (2023). Annual financial information: ALD reports full year 2022 results. ([link](#))

I - LeasePlan (2023). LeasePlan Annual Report 2022. ([link](#))

J - Converted to Europe based on F and ALD | LeasePlan (2023). Half-yearly financial information: ALD | LeasePlan reports first half 2023 results. ([link](#))

K - Mobilize Financial Services (2023). Annual Report 2022, page 9. ([link](#))

L - Mobilize Financial Services (2023). Business Report 2022. ([link](#))

M - Arval (2023). Arval: 2023 Half-Year Results. ([link](#))

N - Converted to Europe based on value by region in Arval (2023). Consolidated Financial Statements: Year ended 31 December 2022, page 44. ([link](#))

O - Arval (2023). Arval: 2022 Full-year Results ([link](#))

P - Leasys (2023). Leasys: A new European mobility player. ([link](#))

Q - No operations outside of Europe, see Q page 177.

R - Alphabet (2023). Alphabet reports further rise in demand for sustainable fleets. ([link](#))

S - 1% was deducted for the unknown share of Alphabet operations in China, see Alphabet (n.d.) About Alphabet. ([link](#))

T - Athlon (2023). Sustainability & CSR Impact Report 2022. ([link](#))

U - No operations outside of Europe, see U page 8.

## Annex B: Methodology for calculating CO<sub>2</sub> saving potential of faster electrification by leasing companies

For the impact on the emissions, ZEV sales and oil consumption of a faster electrification of leasing companies in Europe, an ad-hoc model has been developed for the purpose of this project (sharing the main assumptions and parameters of the T&E's EUTRMmodel<sup>43</sup>).

### EUTRM, T&E's car fleet emission mode

EUTRM makes use of the most recently available data such as the 2021 car fleet composition<sup>44</sup> and the latest car activity forecast from the European Commission (EC)<sup>45</sup> to model the turnover of the whole car fleet on EU27 roads. It is based on historical data on fleet behaviour (e.g. fuel consumption, emissions, car retirement age, mileage changes depending on car age) and scenario inputs (e.g. car activity, electric cars sales share), the model's outputs include the fleet composition and the associated CO<sub>2</sub> emissions until 2050.

### Fleet size modelling

The EUTRM tool has been used to model the forecast of new passenger car registrations in EU-27 (see previous point). This forecast follows the latest LMC automotive data and is in line with the expectation that car activity will grow in line with the European Commission's expectation that passenger transport activity will continue growing in the future.

The EU27 car fleets CO<sub>2</sub> emissions are predominantly determined by the following parameters:

- **Transport demand** (number of kilometres travelled in passenger-km): Overall transport demand impacts the number of kilometres driven by car, the higher the demand the higher the car fleet kilometres driven. A broad range of measures can be aimed at reducing the distance travelled, for instance by providing a better distribution of services within cities and avoiding urban sprawl.
- **Modal split** (split in distance travelled between car and other transport modes): Car activity can be reduced by shifting transport demand from car to active mobility and public transport.
- **Zero-emission vehicles (ZEVs) uptake** (percentage of ZEV in the fleet): Resulting from the sales of new ZEVs, the uptake of ZEV in the overall car fleet defines the percentage of car activity with zero tailpipe emissions<sup>46</sup>.

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<sup>43</sup> T&E (n.d.) Transport emissions: modelling and analysis. ([link](#))

<sup>44</sup> ACEA (2023). Vehicles in use, Europe 2023 ([link](#))

<sup>45</sup> EC (2021). EU Reference Scenario 2020 ([link](#))

<sup>46</sup> Direct tailpipe emissions.

- **Energy consumption** (energy consumed per km): Energy consumption depends both on the specific characteristics of cars (e.g. size, weight, engine power) and their use in real world conditions such as driver behaviour and speed.
- **ICE lifespan**: The shorter the lifetime of ICE cars, the faster the transition toward cleaner, lower emission solutions.

### **ZEV uptake**

Under the baseline scenario, T&E modelled the minimum sale of new ZEVs required to meet the standards set in the car CO2 Regulation. The methodology was described in the T&E 2022 car CO2 report.<sup>47</sup> The new scenario includes the latest development on the zero and low emission vehicle benchmark agreed in the final regulatory text as well as update of the 2021 reference parameters.

Under the scenario for cars affected by the faster electrification, the sales of new leasing ZEVs required to the final target (2030 - 100% ZEV) have been applied. An exponential growth has been applied between these two key points, as the delivery of new ZEVs is expected to increase close to the target points.

### **Additionality effects on the private market**

In addition to the direct impact on the private leasing market, the increased uptake of ZEVs in the corporate market causes more ZEVs entering the private channel after four years through the second-hand market. This situation has a positive impact, as the electrification of the private market will be accelerated and therefore the demand for ICEs is lower, bringing emissions reductions and affordable second-hand ZEVs.

### **Affected new registrations**

Under the scenario of faster electrification for leasing companies, the new ZEV uptake curve has been applied to vehicle registrations under a leasing agreement for the top 7 and then for the whole sector. For the percentage of registrations under a leasing agreement, Autovista's forecasts<sup>48</sup> up to 2030 have been used. These data are provided on an aggregated basis for both corporate and private registrations. In order to be able to disaggregate these data and perform the calculations for the two channels separately, actual data from France and the Netherlands on the weight of corporate leasing in total leasing have been used.

### **Km driven**

For the use of the km driven in the model, a distinction has been made between corporate and private cars. Within the corporate channel, a further distinction has been made depending on the type of

<sup>47</sup> Transport & Environment (2022). From boom to brake: Is the e-mobility transition stalling? ([link](#))

<sup>48</sup> Autovista (2023). Remarketing Expert Track. FleetEurope. ([link](#))



registration (True fleets, Dealer & Manufacturer, Leasing & LTR and RAC). The distance in km used in the model is based on different sources,<sup>49</sup> with a distance of 12,000km for the private channel and 27,000km in the corporate channel (true fleets and leasing & LTR).

### **Survival curve and km driven curve**

The new fleet composition created with the faster leasing electrification is aged through the application of survival rates and adjusted for the fact that older vehicles are typically driven less than newer ones.

Historical survival rates for all vehicle types are estimated from TRACCS<sup>50</sup> and are adjusted for import and export activity. Using the estimated bilateral trade matrices the total amount of exports as a percentage of vehicle sales was estimated and then applied to discount the survival rates of vehicles. Likewise, the total amount of imports as a percentage of total vehicle stock was estimated and then applied to inflate the survival rate to account for the replacement of vehicles of varying ages. The average survival rates estimated from the five years of available TRACCS data are assumed to hold for all time periods.

Average annual distance travelled per vehicle (measured in km) was collected for all modes from TRACCS. Projections of average annual distance travelled per vehicle for LDVs are calculated based on vehicles per capita (VPC). The higher the number of vehicles per capita the smaller the average annual distance travelled per vehicle. The initial distance driven is differentiated by corporate and private cars, assuming that true corporate fleets, corporate rental cars and leased corporate cars are driven 2.25 times more km than private.

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<sup>49</sup> Dataforce (2022), Element Energy & BEUC (2021), Ricardo-AEA (2014)

<sup>50</sup> TRACCS (2013) is a transport database by EMISIA S.A. Available at this [link](#)