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EUROPEAN MARKET MONITOR QUARTERLY

CAR AND VAN MARKET AND CHARGING INFRASTRUCTURE DEVELOPMENT: JANUARY–SEPTEMBER 2023

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THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

EUROPEAN PASSENGER CAR AND VAN REGISTRATIONS

At just over 2.5 million, new car registrations in Europe increased 14% in the third quarter of 2023 compared to the same period the previous year. The Tesla-Honda-JLR group stood out in the third quarter, with registrations 50% higher than the same period in 2022, followed by Volvo (+30%) and BMW (+20%). Meanwhile, registrations of Stellantis (+3%), Hyundai (-1%) and Ford (-2%) vehicles have stagnated. The average market share of battery electric vehicles (BEVs) in 2023 to date was about 15%, with a market share of 17% in the third quarter, four percentage points higher than the 2022 average. Both Ford (4%) and the Mazda-Subaru-Suzuki-Toyota pool (3%) continued to lag in shares of BEV registrations. The average plug-in hybrid vehicle (PHEV) share remained below 2022 levels in the third quarter of 2023 by about two percentage points. All manufacturers are on track to meet their specific CO_2 emissions targets for 2023, with an estimated average over-compliance of about 14 g CO_2/km.

Table 1. New passenger car registrations by manufacturer pool.

New car registrations				
	Q3/2023	vs. Q3/2022	2023 YTD	vs. 2022
Volkswagen	664,125	16%	2,090,880	21%
Stellantis	442,784	3%	1,458,818	4%
Renault-Nissan-Mitsubishi	309,797	15%	1,034,175	19%
Mazda-Subaru-Suzuki-Toyota	257,643	18%	794,885	19%
BMW	171,647	20%	529,098	15%
Mercedes-Benz	147,895	10%	462,000	14%
Kia	112,719	8%	340,216	5%
Hyundai	106,482	-1%	325,415	1%
Tesla-Honda-JLR	96,430	50%	298,511	72%
Ford	94,519	-2%	314,574	2%
Volvo	53,657	30%	179,758	21%
Other	75,170	83%	212,573	93%
ALL	**2,532,868**	**14%**	**8,040,903**	**16%**

Table 2. Share of plug-in hybrid and battery electric passenger cars by manufacturer pool.

Share of plug-in hybrid and battery electric cars						
	Q3/2023		2023 YTD		2022	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Tesla-Honda-JLR	**74%**	8%	**76%**	7%	**66%**	5%
Other	**44%**	7%	**35%**	13%	**28%**	23%
Volvo	**33%**	32%	**33%**	33%	**29%**	33%
Mercedes-Benz	**21%**	19%	**17%**	18%	**14%**	22%
BMW	**20%**	16%	**17%**	16%	**15%**	19%
Hyundai	**18%**	5%	**15%**	5%	**16%**	8%
AVERAGE	**17%**	**8%**	**15%**	**8%**	**13%**	**10%**
Kia	**16%**	11%	**13%**	10%	**13%**	14%
Stellantis	**15%**	7%	**12%**	7%	**11%**	8%
Volkswagen	**14%**	6%	**12%**	5%	**12%**	7%
Renault-Nissan-Mitsubishi	**12%**	1%	**11%**	1%	**13%**	4%
Ford	**5%**	12%	**4%**	11%	**5%**	12%
Mazda-Subaru-Suzuki-Toyota	**3%**	5%	**3%**	4%	**1%**	4%

Table 3. New passenger car fleet average CO_2 emission level by manufacturer pool.

	Target gap	New car fleet average CO_2 (in g/km)					
		Q3/2023	2023 YTD	Compliance credits	Status 2023	Target 2023	Target gap
		WLTP	WLTP	eco-innovations	WLTP	WLTP	WLTP
Tesla-Honda-JLR	-78%	33	31	0.3	30	137	-107
Volvo	-52%	66	64	0.4	64	134	-70
BMW	-18%	101	107	1.4	105	128	-23
Mercedes-Benz	-12%	104	112	0.6	112	127	-15
Stellantis	-12%	102	107	1.7	105	120	-15
AVERAGE	**-11%**	**105**	**108**	**1.2**	**107**	**121**	**-14**
Kia	-9%	98	103	0.4	103	112	-9
Mazda-Subaru-Suzuki-Toyota	-7%	111	112	0.8	111	119	-8
Hyundai	-7%	103	106	0.6	106	113	-7
Ford	-3%	118	121	2	119	124	-5
Volkswagen	-3%	117	121	1.4	120	123	-3
Renault-Nissan-Mitsubishi	-1%	109	111	1.7	109	111	-2

Note: All CO_2 values are estimates. See methodology section.

In the first three quarters of 2023, BEV and PHEV market shares averaged 23% in Europe. Norway (90%), Sweden (59%), Iceland (54%), and Finland (53%) all had shares above 50%. Other countries with above average BEV and PHEV market shares were the Netherlands (43%), Denmark (43%), Belgium (38%), and Luxembourg (31%). The largest increase in BEV sales shares occurred in Belgium, where it was up 12 percentage points in the third quarter of 2023 compared to the end of 2022. In Germany, new BEV sales reached 23% in the third quarter. This increase of 6 percentage points over the same period in 2022 can largely be attributed to a rush to purchase BEVs ahead of the phase out of subsidies for companies in August. In Germany, the sales share of PHEVs remained at 6% in the third quarter, down from 14% at the end of 2022, following the phase-out of incentives in December. PHEV registration shares were the highest in Belgium (23%) and Sweden (20%) in the third quarter.

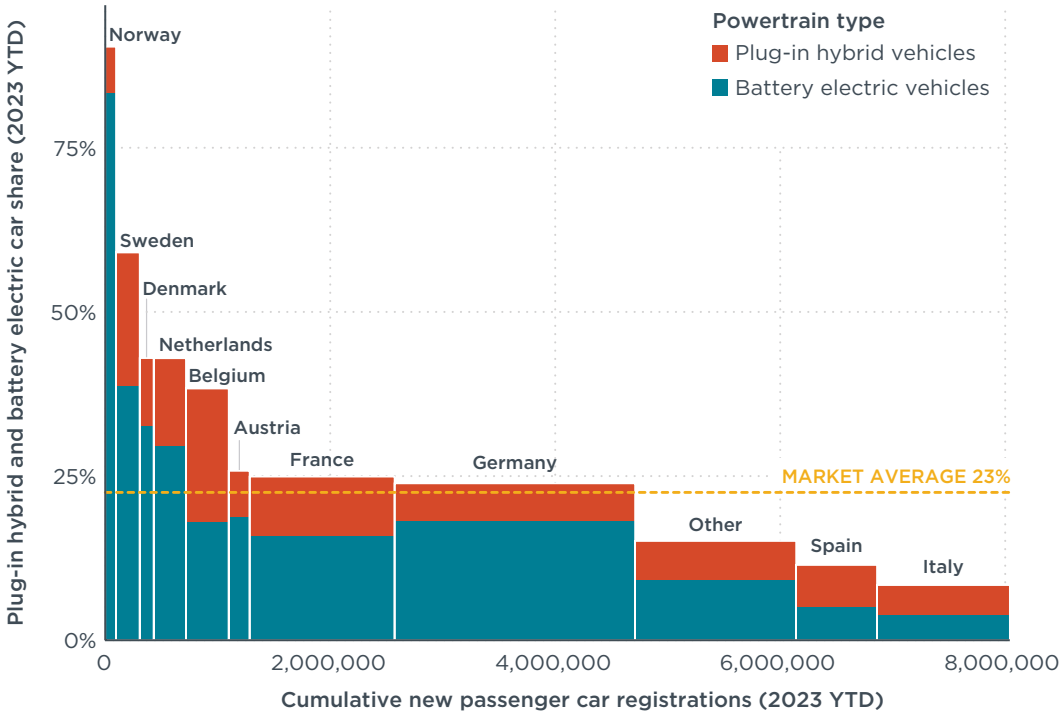

Figure 1. Share of plug-in hybrid and battery electric vehicles by country, including information on market size (cumulative car registrations).

Table 4. New passenger car registrations by country.

New car registrations				
	Q3/2023	vs. Q3/2022	2023 YTD	vs. 2022
Germany	741,196	18%	2,138,066	14%
France	398,848	17%	1,288,624	16%
Italy	336,517	15%	1,180,600	20%
Spain	208,059	5%	718,765	17%
Poland	111,873	7%	350,846	11%
Belgium	111,721	28%	379,827	32%
Netherlands	86,201	21%	286,783	28%
Sweden	69,430	14%	210,594	2%
Austria	57,113	3%	185,980	11%
Czechia	52,016	16%	167,564	16%
Other	359,894	6%	1,133,254	14%
ALL	**2,532,868**	**14%**	**8,040,903**	**16%**

Table 5. Share of plug-in hybrid and battery electric passenger cars by country.

Share of plug-in hybrid and battery electric cars						
	Q3/2023		2023 YTD		2022	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Sweden	**41%**	20%	**39%**	20%	**33%**	23%
Netherlands	**31%**	13%	**30%**	13%	**23%**	11%
Germany	**23%**	6%	**18%**	6%	**18%**	14%
Belgium	**22%**	23%	**18%**	20%	**10%**	16%
Other	**22%**	9%	**21%**	8%	**20%**	8%
Austria	**20%**	7%	**19%**	7%	**16%**	6%
AVERAGE	**17%**	**8%**	**15%**	**8%**	**13%**	**10%**
France	**17%**	10%	**16%**	9%	**13%**	8%
Spain	**5%**	7%	**5%**	6%	**4%**	6%
Italy	**4%**	4%	**4%**	5%	**4%**	5%
Poland	**3%**	3%	**3%**	3%	**3%**	2%
Czechia	**3%**	3%	**3%**	2%	**2%**	2%

There were around 350,000 new van registrations in the third quarter of 2023, a 21% increase compared to the same period the previous year. Volkswagen (+30%) and Stellantis (+23%) had the largest gains compared to the same period in 2023. On average, battery electric vans represented 8% of new van registrations in the third quarter of 2023, up from 5% in the third quarter of 2022. Mercedes Benz (11%) and Stellantis (9%) both had above-average BEV market shares. In Germany, the market share of battery electric vans grew from 8% in the third quarter of 2022 to 13% in third quarter of 2023. All manufacturers are on track to meet their CO_2 targets for 2023, with average overcompliance of 2 g/km.

Table 6. New van registrations by manufacturer pool.

New van registrations				
	Q3/2023	vs. Q3/2022	2023 YTD	vs. 2022
Stellantis	111,778	29%	343,359	11%
Renault-Nissan-Mitsubishi	64,156	18%	202,102	15%
Ford	46,212	6%	146,966	13%
Volkswagen	43,644	30%	130,586	32%
Mercedes-Benz	35,235	2%	112,185	11%
Other	48,139	29%	144,141	11%
ALL	**349,164**	**21%**	**1,079,339**	**14%**

Table 7. Share of plug-in hybrid and battery electric vans by manufacturer pool.

Share of plug-in hybrid and battery electric vans						
	Q3/2023		2023 YTD		2022	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Mercedes-Benz	**11%**	0%	**8%**	0%	**5%**	0%
Other	**10%**	0%	**9%**	0%	**9%**	0%
Stellantis	**9%**	0%	**9%**	0%	**7%**	0%
AVERAGE	**8%**	**0%**	**7%**	**0%**	**5%**	**0%**
Volkswagen	**7%**	0%	**6%**	0%	**3%**	0%
Renault-Nissan-Mitsubishi	**6%**	0%	**6%**	0%	**5%**	0%
Ford	4%	0%	**3%**	0%	**1%**	1%

Table 8. New van fleet average CO_2 emission level by manufacturer pool.

	Target gap	New van fleet average CO_2 (in g/km)					
		Q3/2023	2023 YTD	Credits	Status 2023	Target 2023	Target gap
		WLTP	WLTP	eco-innovations	WLTP	WLTP	WLTP
Stellantis	-17%	163	162	0.3	161	194	-33
AVERAGE	**-12%**	**178**	**180**	**0.6**	**179**	**203**	**-24**
Mercedes-Benz	-10%	189	203	0.6	202	225	-23
Renault-Nissan-Mitsubishi	-10%	183	185	1	184	205	-21
Volkswagen	-10%	186	182	1.2	181	201	-20
Ford	-7%	195	198	0	198	212	-14

Table 9. New van registrations by country.

	New van registrations			
	Q3/2023	vs. Q3/2022	2023 YTD	vs. 2022
France	83,704	14%	272,063	6%
Germany	66,430	25%	192,014	18%
Italy	43,040	37%	132,964	18%
Spain	30,618	23%	97,827	29%
Other	125,372	17%	384,471	14%
ALL	**349,164**	**21%**	**1,079,339**	**14%**

Table 10. Share of plug-in hybrid and battery electric vans by country.

	Share of plug-in hybrid and battery electric vans					
	Q3/2023		2023 YTD		2022	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Germany	**13%**	0%	**9%**	0%	**8%**	0%
Other	**10%**	0%	**9%**	0%	**6%**	0%
AVERAGE	**8%**	**0%**	**7%**	**0%**	**5%**	**0%**
France	**6%**	0%	**7%**	0%	**5%**	0%
Spain	**4%**	0%	**4%**	0%	**3%**	0%
Italy	**3%**	0%	**4%**	1%	**3%**	0%

CHARGING INFRASTRUCTURE DEVELOPMENT

Over 650,000 public charging points were installed in Europe at the end of September 2023. For alternating current (AC) charging, this represents an increase of around 8% compared to the end of June 2023, and 42% compared to September 2022. Direct current (DC) charging points showed even greater growth, increasing 11% since mid-year and 74% since the same time in the previous year. Approximately 85% of Europe's public charging points supply AC, while the remaining 15% supply DC. In addition to a considerable increase in BEV registrations, Belgium also recorded the largest growth in terms of AC chargers compared to the end of September 2022 (+107%), while France (+168%), Belgium (161%), and Denmark (+126%) had the highest increase in DC charging points in the same period. In terms of overall charging capacity, there were, on average, about 3.8 22 kW-equivalent publicly accessible charging points installed per thousand passenger cars and vans on the road at the end of September 2023, up from 3.5 at the end of June. With nearly 30 22-kW equivalent publicly accessible charging points per thousand passenger cars, Norway continues to lead Europe in charging infrastructure development, followed by Iceland (15), the Netherlands (13), Denmark (11), and Sweden (10). Italy (1.8) and Spain (1.5) remain well below the European average.

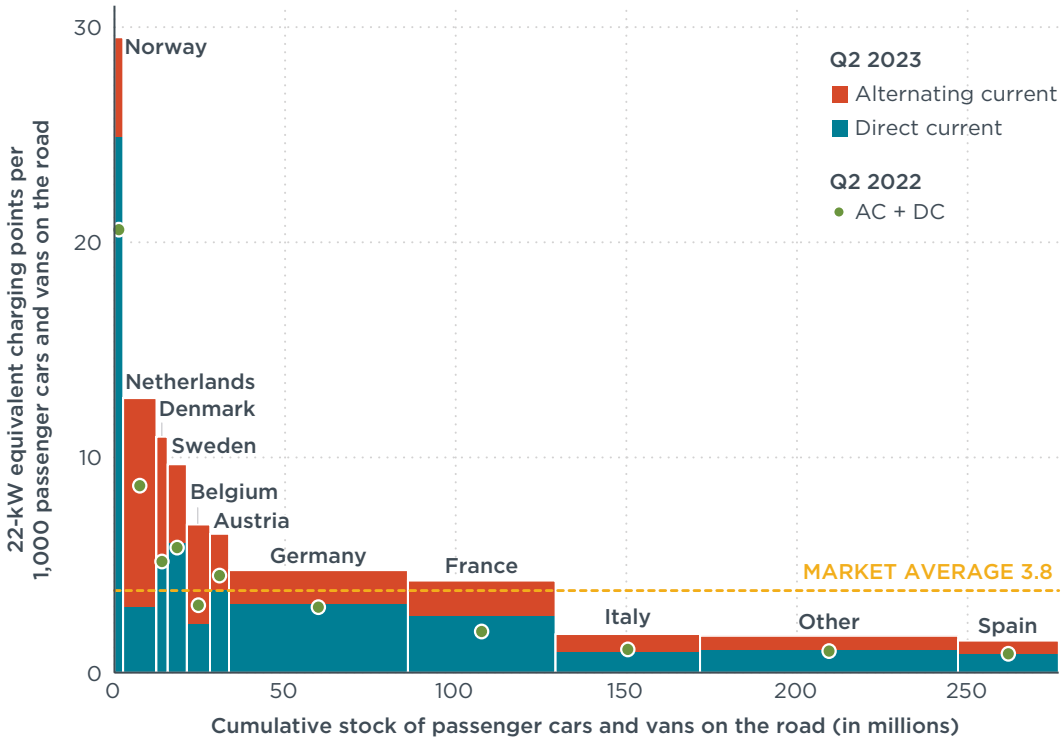

Figure 2. 22 kW-equivalent publicly accessible charging points installed per thousand passenger cars and vans, by type of power output and country by the end of September 2023. The width of the bars provides information on 2022 passenger car and van stock size. 22 kW-equivalent is used to account for different power outputs while allowing for comparison among countries.

Table 11. Number of publicly accessible charging points installed, by country and type of power output.

Number of charging points installed				
	Q3/2023		vs. Q3/2022	
	AC	DC	AC	DC
Netherlands	143,719	4,171	45%	40%
Germany	87,192	22,008	28%	62%
France	84,712	18,211	47%	168%
Italy	40,207	7,353	31%	87%
Belgium	37,174	2,208	107%	161%
Sweden	29,763	4,735	48%	60%
Spain	23,901	6,348	58%	54%
Norway	19,584	9,438	10%	30%
Austria	21,627	3,591	17%	41%
Denmark	17,977	2,024	74%	126%
Other	54,270	18,000	45%	74%
Total	**560,126**	**98,087**	**42%**	**74%**

DEFINITIONS, DATA SOURCES, METHODOLOGY, AND ASSUMPTIONS

Manufacturer pools: Automakers are allowed to form pools to jointly comply with CO_2 targets. For this factsheet, the definition of pools according to the European Commission, "M1 pooling list", version of 13 January 2023 applies (main brands listed here): BMW Group (BMW, Mini), Ford (Ford), Hyundai (Hyundai), Kia (Kia), Mazda-Subaru-Suzuki-Toyota (Lexus, Mazda, Subaru, Suzuki, Toyota), Mercedes-Benz (Mercedes-Benz, Smart), Renault-Nissan-Mitsubishi (Dacia, Mitsubishi, Nissan, Renault), Stellantis (Alfa Romeo, Citroën, Fiat, Jeep, Lancia, Opel, Peugeot), Tesla-Honda-JLR (Honda, Jaguar, Land Rover, Tesla), Volkswagen (Audi, Cupra, Porsche, SEAT, Škoda, VW), and Volvo (Volvo). For light commercial vehicles, the "N1 pooling list", version 12 January 2023, applies: Ford (Ford), Mercedes-Benz (Mercedes-Benz, Mitsubishi Fuso), Renault-Nissan-Mitsubishi (Mitsubishi, Nissan, Renault), Stellantis (Citroën, Fiat, Opel, Peugeot), Volkswagen (MAN, Volkswagen).

Abbreviations: AC = alternating current; **CO_2** = carbon dioxide emissions; **DC** = direct current; **g/km** = grams per kilometer; **YTD** = year to date.

Technical scope: This factsheet focuses on new **passenger car** and **light commercial vehicle** registrations. **Electric vehicles** here include battery electric (BEV), plug-in hybrid electric (PHEV), and fuel cell vehicles.

Geographic scope: The European CO_2 regulation for vehicle manufacturers applies to all countries of the European Economic Area (EEA). This includes the 27 Member States of the European Union, plus Iceland, Liechtenstein, and Norway. Data for new car and van registrations and shares of electric vehicles in this factsheet cover all of these countries, with the exception of Bulgaria, Liechtenstein, and Malta. Data for CO_2 emission levels additionally omit Hungary, Lithuania (until January 2021), Poland (until April 2020), and Romania (together less than 10% of the total market). Charging infrastructure data are presented for the 27 EU members plus the 4 EFTA countries (Iceland, Liechtenstein, Norway, Switzerland).

Data sources: Dataforce (new vehicle registrations), Eco-Movement (charging points).

Results may change over time: Registrations and/or CO_2 data may be retrospectively updated by some of the national type approval authorities. Similarly, charging infrastructure data may also be retrospectively updated by Eco-Movement. Historical values are regularly updated to reflect all latest data available.

Test procedures: CO_2 values are provided according to the Worldwide harmonized Light vehicles Test Procedure (**WLTP**).

Flexible compliance mechanisms: To facilitate meeting their CO_2 targets, manufacturers can make use of a number of compliance mechanisms. Manufacturers can reduce their CO_2 level by up to 7 g/km by deploying **eco-innovation** technologies. To incentivize eco-innovations, CO_2 savings from eco-innovations per passenger car and light commercial vehicle are amplified by multipliers in the years 2021, 2022 and 2023. For 2023, the multiplier is set to 1.5. As a conservative estimate, we apply the 2022 level of eco-innovation CO_2 emission reductions per manufacturer. For more on the methodology used see: Uwe Tietge, Peter Mock, and Jan Dornoff, *Overview and evaluation of eco-innovations in European passenger car CO_2 standards*, (ICCT: Washington, DC, 2018), https://theicct.org/publications/eco-innovations-european-passenger-car-co2-standards.

Mass-based targets: For each manufacturer pool, a specific **2023 CO_2 target value** applies, depending on the average mass of the new vehicles registered. For this factsheet, we assume the average mass per manufacturer pool to remain constant with respect to the market situation in 2022.

Charging point: As defined in the Alternative Fuel Infrastructure regulation, a charging point "means a fixed or mobile interface that allows for the transfer of electricity to an electric vehicle, which, whilst it may have one or several connectors to accommodate different connector types, is capable of recharging only one electric vehicle at a time, and excludes devices with a power output less than or equal to 3.7 kW the primary purpose of which is not recharging electric vehicles."

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