

MARKET MONITOR

EUROPEAN PASSENGER CAR AND LIGHT COMMERCIAL VEHICLE REGISTRATIONS: JANUARY-DECEMBER 2021



By the end of 2021, there had been about 10 million new passenger cars newly registered across Europe. This is 2% less than in 2020. However, this trend was not evenly seen across the individual manufacturer (pool). The Tesla-Honda-JRL pool had new car registrations that were 20% higher than in the previous year, and Hyundai and Kia had similar growth, each with +18%. On the other end of the spectrum, Ford (-18%), Mercedes-Benz (-13%), and the Renault-Nissan-Mitsubishi pool (-12%) counted significantly fewer new registrations in 2021 than in 2020. The share of battery-electric and plug-in hybrid vehicles kept increasing throughout 2021, especially towards the end of the year. In December, 18% of new registrations were battery-electric, and another 11% were plug-in hybrids. On average, for the entire year of 2021, 10% of new cars were battery-electric and 9% plug-in hybrids. This is an increase from 6% battery-electric and 5% plug-in hybrid new cars in 2020. The Tesla-Honda-JRL pool had the highest share of battery-electric cars in 2021 (57%), followed by Hyundai (14%), Kia (12%), and Mercedes-Benz (12%). At the bottom of the list was the Mazda-Subaru-Suzuki-Toyota pool (1%).

All manufacturers were likely able to comply with their specific 2021 CO₂ target. On average, over-compliance was at least 4 g/km. As manufacturers likely deployed more “eco-innovation” technologies than estimated here based on their 2020 performance, over-compliance may be even more pronounced. Furthermore, actual average vehicle mass will also have an effect on CO₂ targets and may further increase manufacturer over-compliance. A key element for ensuring compliance for some manufacturers was to form a pool with other manufacturers. The most striking example is Tesla, which joined forces with Honda and JRL to ensure compliance for the latter two companies. In addition, FCA joined the Stellantis CO₂ targets pool towards the end of 2021.

Table 1. New passenger car registrations, by manufacturer pool.

New car registrations				
	Dec 2021	Dec 2020	2021	2020
VW Group	193,145	-30%	2,493,164	-4%
Stellantis	162,557	-24%	2,158,081	-2%
Renault-Nissan-Mitsubishi	125,370	-16%	1,264,211	-12%
Mazda-Subaru-Suzuki-Toyota	69,646	-22%	942,233	9%
BMW Group	54,319	-23%	670,321	2%
Mercedes-Benz	49,907	-27%	559,826	-13%
Hyundai	37,013	-6%	433,679	18%
Tesla-Honda-JLR	32,072	-3%	232,775	20%
Ford	32,008	-35%	432,764	-18%
Kia	30,676	11%	408,189	18%
Volvo	24,832	-20%	247,443	2%
Other	6,824	74%	59,164	61%
ALL	818,369	-22%	9,901,850	-2%

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

Share of plug-in hybrid and battery electric cars						
	Dec 2021		2021		2020	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Tesla-Honda-JLR	78%	5%	57%	6%	40%	3%
Kia	23%	11%	12%	12%	9%	9%
Renault-Nissan-Mitsubishi	22%	5%	11%	4%	8%	3%
Volvo	22%	44%	11%	38%	6%	31%
Hyundai	21%	6%	14%	6%	14%	1%
BMW Group	20%	20%	9%	19%	5%	13%
VW Group	18%	9%	11%	9%	7%	5%
AVERAGE	18%	11%	10%	9%	6%	5%
Mercedes-Benz	14%	28%	12%	24%	6%	16%
Ford	10%	15%	5%	10%	0%	4%
Stellantis	10%	8%	7%	5%	3%	2%
Other	9%	31%	7%	14%	4%	1%
Mazda-Subaru-Suzuki-Toyota	1%	4%	1%	2%	1%	1%

Table 3. New passenger car fleet average CO₂ emission level, by manufacturer pool.

	Target gap	New car fleet average CO ₂ (in g/km)								
		Dec 2021		2021		Compliance credits		Status 2021	Target 2021	Target gap
		WLTP	NEDC	WLTP	NEDC	EC	SC	WLTP	WLTP	WLTP
Tesla-Honda-JLR	-54%	31	26	65	54	0.0	0.0	65	143	-78
Volvo	-23%	77	64	102	85	0.0	0.0	102	132	-30
BMW Group	-6%	98	84	116	99	0.2	0.0	116	124	-8
Mercedes-Benz	-5%	105	94	116	103	0.0	0.0	116	122	-6
Kia	-4%	91	78	105	91	0.0	0.0	105	110	-5
Ford	-4%	110	89	120	97	0.2	5.7	115	120	-5
AVERAGE	-3%	101	84	115	95	0.0	0.6	114	118	-4
Hyundai	-2%	96	83	107	92	0.0	0.0	107	110	-3
Renault-Nissan-Mitsubishi	0%	94	80	110	94	0.0	0.0	110	111	-1
VW Group	0%	110	92	119	99	0.0	0.0	119	120	-1
Stellantis	0%	109	86	119	93	0.0	0.3	118	118	0
Mazda-Subaru-Suzuki-Toyota	0%	117	93	119	95	0.0	2.6	116	116	0

Notes: EC = eco-innovations, SC = super-credits; all CO₂ values are estimates, see methodology section.

In 2021, the registration share of plug-in hybrid and battery electric vehicles was the highest in Norway (86%). Iceland (58%), Sweden (45%), Denmark (35%), Finland (31%), the Netherlands (29%), Germany (26%), Luxembourg (20%), and Austria (20%) also had electric vehicle registration shares above the European average of 19%.

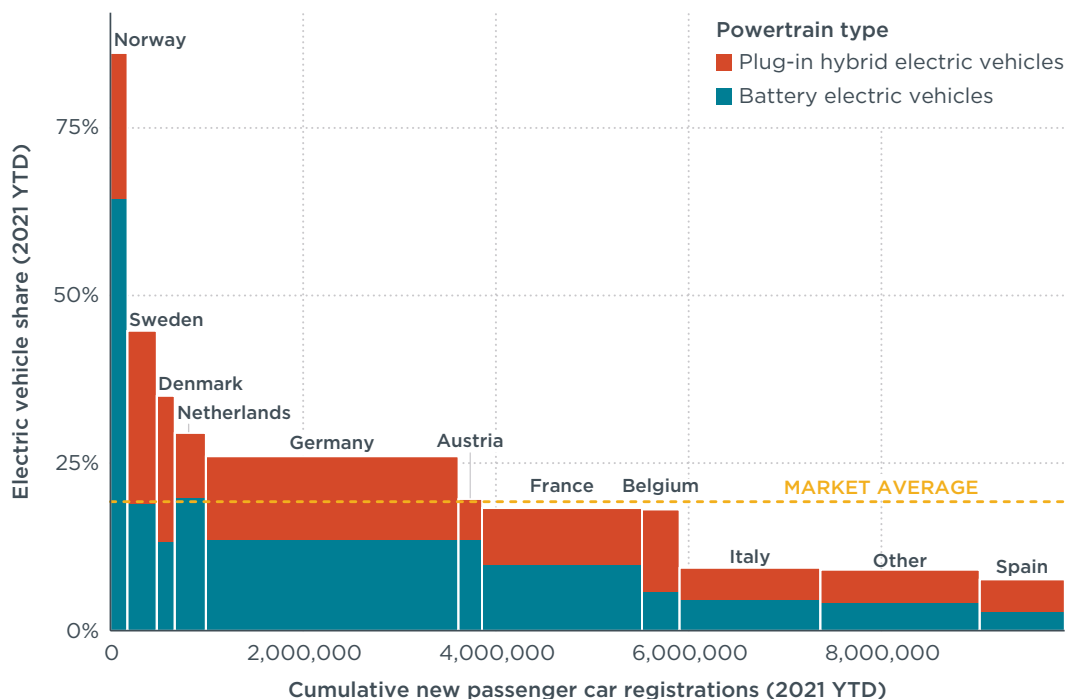


Figure 1. Share of electric vehicles, by country, including information on market size (cumulative car registrations).

Table 4. New passenger car registrations, by country.

New car registrations				
	Dec 2021	Dec 2020	2021	2020
Germany	227,630	-27%	2,622,132	-10%
France	158,117	-15%	1,659,003	1%
Italy	87,362	-27%	1,462,141	6%
Spain	87,350	-21%	883,158	-1%
Poland	36,168	-30%	446,418	4%
Netherlands	35,708	-16%	322,857	-9%
Sweden	27,644	-20%	303,294	3%
Belgium	20,538	-32%	390,269	-11%
Austria	17,979	-25%	244,585	-3%
Czechia	16,208	-20%	206,875	2%
Other	103,665	-14%	1,361,118	5%
ALL	818,369	-22%	9,901,850	-2%

Table 5. Share of plug-in hybrid and battery electric passenger cars, by country (EU only).

Share of plug-in hybrid and battery electric cars						
	Dec 2021		2021		2020	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Netherlands	59%	6%	20%	10%	20%	4%
Sweden	36%	24%	19%	26%	10%	23%
Other	27%	15%	15%	11%	9%	7%
Germany	21%	14%	14%	12%	7%	7%
Austria	19%	6%	14%	6%	6%	3%
AVERAGE	18%	11%	10%	9%	6%	5%
France	15%	10%	10%	8%	7%	5%
Belgium	13%	14%	6%	12%	3%	7%
Italy	7%	7%	5%	5%	2%	2%
Spain	4%	6%	3%	5%	2%	3%
Poland	4%	2%	2%	2%	1%	1%
Czechia	2%	2%	1%	2%	2%	1%

For light commercial vehicles (vans), new registrations in 2021 were about 10% higher than in 2020. On average, 3% of new vans were battery electric vehicles, compared to 2% in 2020. The Renault-Nissan-Mitsubishi pool was the manufacturer pool with the highest share of electric vans (5%), and Germany was the country with the highest share (5%). Using 2020 average vehicle mass and eco-innovation credits as proxy for 2021, van manufacturers are expected to have missed their 2021 CO₂ target by about 6 g/km. Stellantis would have been the only manufacturer group close to compliance while the Renault-Nissan-Mitsubishi pool would have missed their target by about 12 g/km. Official data, including actual data on average vehicle mass and eco-innovation credits, will become available from the European Environmental Agency in mid-2022.

Table 6. New van registrations, by manufacturer pool.

New vans registrations				
	Dec 2021	Dec 2020	2021	2020
Stellantis	43,722	-10%	534,543	10%
Renault-Nissan-Mitsubishi	29,637	-5%	325,066	13%
Volkswagen-Ford-SAIC	23,747	-28%	367,038	1%
Mercedes-Benz	14,849	-2%	152,666	-3%
Other	16,181	20%	174,010	44%
ALL	128,136	-10%	1,553,323	10%

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

Share of plug-in hybrid and battery electric vans						
	Dec 2021		2021		2020	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Renault-Nissan-Mitsubishi	7%	0%	5%	0%	5%	0%
Mercedes-Benz	6%	0%	4%	0%	2%	0%
Other	5%	0%	4%	0%	2%	0%
AVERAGE	5%	0%	3%	0%	2%	0%
Stellantis	4%	0%	2%	0%	1%	0%
Volkswagen-Ford-SAIC	2%	1%	2%	0%	2%	0%

Table 8. New vans fleet average CO₂ emission level, by manufacturer pool.

	Target gap	New vans fleet average CO ₂ (in g/km)							
		Dec 2021		2021		Credits	Status 2021	Target 2021	Target gap
		WLTP	NEDC	WLTP	NEDC	EC	WLTP	WLTP	WLTP
Stellantis	1%	171	126	183	135	0.0	183	182	1
AVERAGE	3%	186	145	194	151	0.0	194	188	6
Volkswagen-Ford-SAIC	3%	201	166	199	164	0.0	199	193	6
Mercedes-Benz	4%	228	189	225	186	0.0	225	215	10
Renault-Nissan-Mitsubishi	6%	176	135	191	147	0.0	191	179	12

Table 9. New van registrations, by country (EU only).

New vans registrations				
	Dec 2021	Dec 2020	2021	2020
France	38,554	-11%	430,690	7%
Germany	21,001	-13%	264,572	-1%
Italy	15,743	-10%	171,842	14%
Spain	9,617	-17%	129,264	12%
Other	43,221	-5%	556,955	16%
ALL	128,136	-10%	1,553,323	10%

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

Share of plug-in hybrid and battery electric vans						
	Dec 2021		2021		2020	
	BEV	PHEV	BEV	PHEV	BEV	PHEV
Germany	7%	0%	5%	0%	3%	0%
Other	5%	0%	3%	0%	2%	0%
AVERAGE	5%	0%	3%	0%	2%	0%
Spain	4%	0%	2%	0%	1%	0%
France	4%	0%	3%	0%	2%	0%
Italy	3%	0%	2%	0%	1%	0%

At the end of December 2021, there were close to 360,000 publicly accessible electric vehicle charging points in Europe. This represents a 46% increase from the 246,000 that were already installed by end of 2020. Europe-wide, there were about 1.9 22 kW-equivalent, or “normal”, publicly accessible charging points installed per thousand passenger cars on the road at the end of 2021. The number of charging points per thousand passenger cars varies widely between countries, with countries such as Norway (20), Netherlands (8.3), and Iceland (7.6) leading and markets such as Poland (0.3) and Greece (0.2) at the bottom of the spectrum.

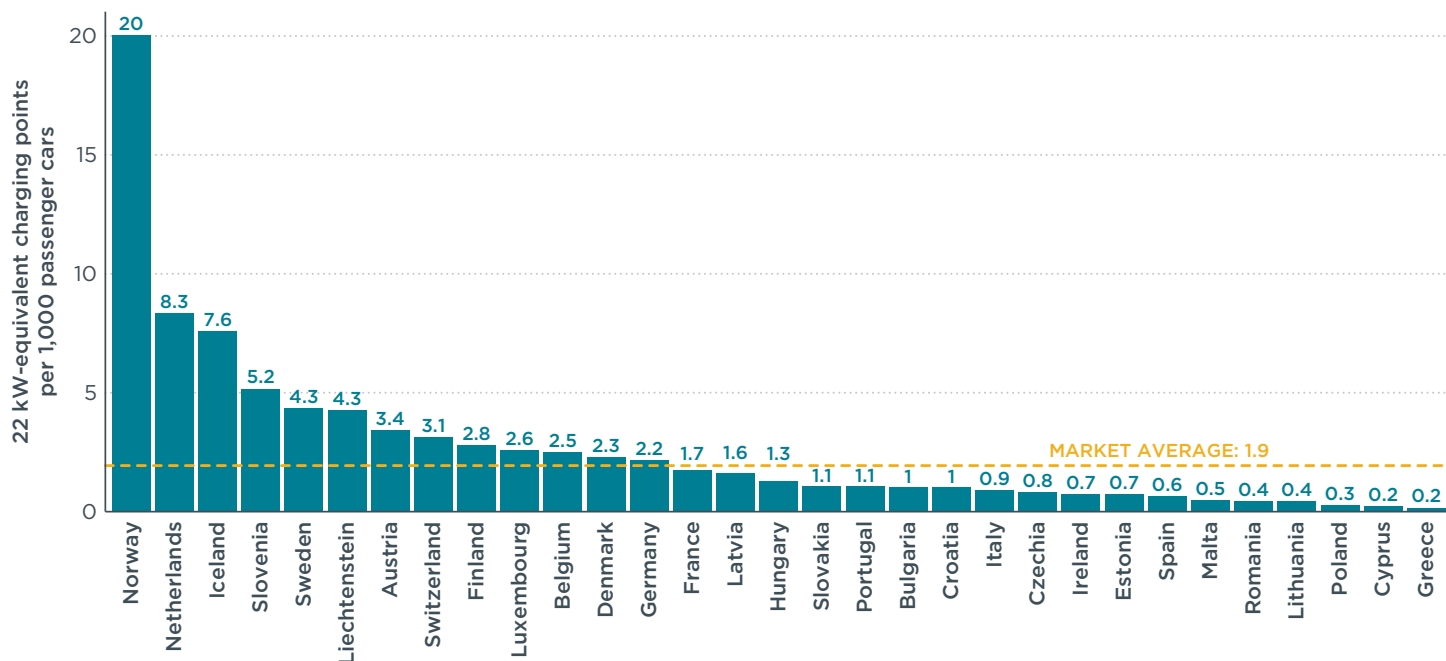


Figure 2. 22 kW-equivalent publicly accessible charging points installed per thousand passenger cars on the road for every EU and EFTA country by the end of 2021.

Focusing on Germany as the spotlight of the month, the share of new battery-electric and plug-in hybrid passenger cars reached a level of about 36% by the end of 2021. The electric vehicle share increased in particular throughout the second half of the year, especially for battery-electric vehicles, whereas the portion of plug-in hybrids kept decreasing. Overall, throughout the entire year, 14% of new cars in Germany were battery-electric and 12% were plug-in hybrids.

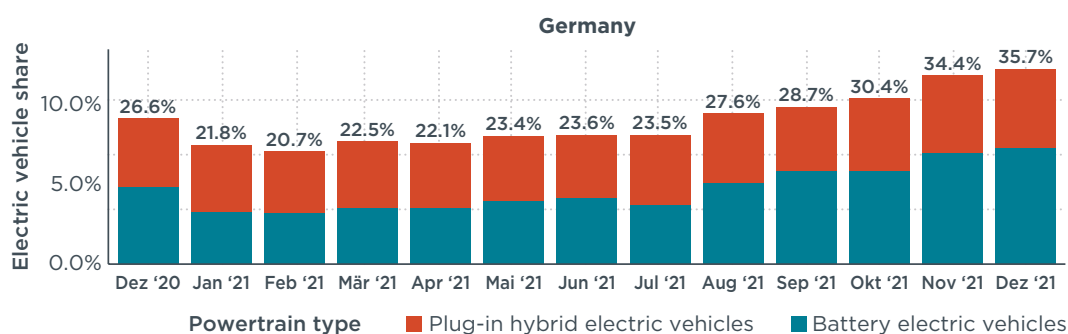


Figure 3. Share of new battery-electric and plug-in hybrid passenger cars in Germany (spotlight of the month).

In December 2021, Germany had around 62,600 publicly accessible electric vehicle charging points, a 40% increase from the 44,500 installed by the end of 2020. In Germany, 15% of charging points are direct current (DC) fast charging points, representing slightly above 9,300 units. This share is above the European average of 11% DC fast charging points. The total power capacity of publicly accessible charging points installed in Germany is equivalent to about 2 kW per electric passenger car and van on the road.

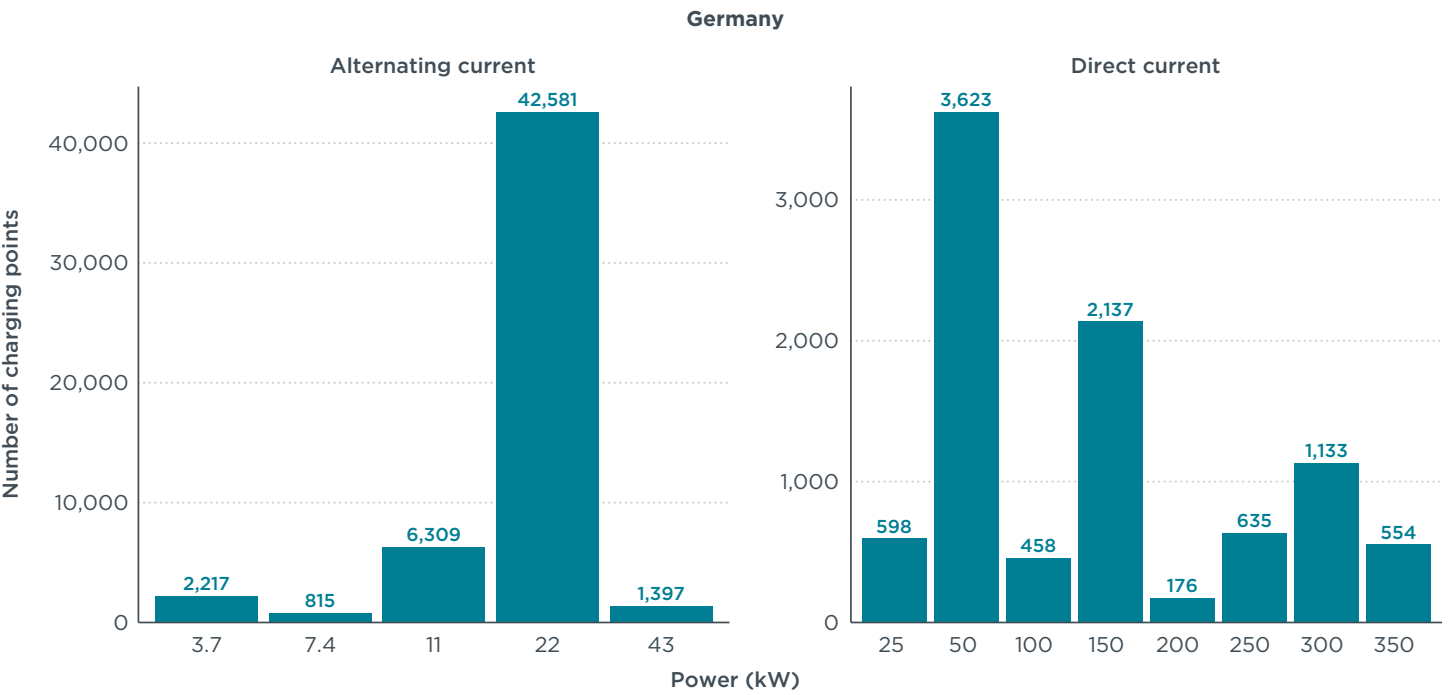


Figure 4. Number of publicly accessible alternating current normal (left) and direct current fast (right) charging points in Germany at the end of 2021.

DEFINITIONS, DATA SOURCES, METHODOLOGY, AND ASSUMPTIONS

Manufacturer pools: Automakers are allowed to form pools to jointly comply with CO₂ targets. For this factsheet, the definition of pools according to the European Commission, “M1 pooling list”, version of 20 December 2021 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), Volvo (Volvo) and VW Group (Audi, Porsche, SEAT, Škoda, VW). For light commercial vehicles, the “N1 pooling list”, version 20 December 2021, applies: Mercedes-Benz (Mercedes-Benz), Renault-Nissan-Mitsubishi (Dacia, Mitsubishi, Nissan, Renault), Stellantis (Alfa Romeo, Citroën, Fiat, Opel, Peugeot), Volkswagen-Ford-SAIC (BYD, Ford, MAN, SAIC, Polaris, Streetscooter, Volkswagen).

Abbreviations: CO₂ = carbon dioxide emissions; g/km = grams per kilometer; YTD = year to date.

Technical scope: This factsheet focuses on new **passenger car** and **light commercial vehicle** registrations.

Geographic scope: The European CO₂ 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 registrations and shares of electric vehicles in this factsheet cover all of these countries, with the exception of Bulgaria, Liechtenstein, and Malta. Data for CO₂ emission levels additionally omit Hungary, Lithuania, Poland (until April 2020), Portugal, 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: AAA DATA (France), Dataforce (all other markets), Eco-Movement (charging points).

Results may change over time: Registrations and/or CO₂ data may be retrospectively updated by some of the national type approval authorities. Historical values are regularly updated to reflect all latest data available.

Test procedures: For the conversion of CO₂ values from the New European Drive Cycle (NEDC) to the Worldwide harmonized Light vehicles Test Procedure (WLTP), manufacturer-specific factors based on 2020 market data are applied.¹

Flexible compliance mechanisms: To facilitate meeting their CO₂ targets, manufacturers can make use of a number of compliance mechanisms: (1) Manufacturers can reduce their CO₂ level by up to 7 g/km by deploying **eco-innovation** technologies. As a conservative estimate, we apply the 2020 level of eco-innovation CO₂ emission reductions per manufacturer², (2) New passenger cars with less than 50 g/km CO₂/km (NEDC) are counted 1.67 times in 2021 (**super-credit**). The impact of super-credits for complying with the CO₂ targets is capped at 7.5 g/km per manufacturer for the years 2020-2022 together.

Mass-based targets: For each manufacturer pool, a specific **2021 CO₂ target value** applies, depending on the average mass of the new cars registered. For this factsheet, we assume the average mass per manufacturer pool to remain constant with respect to the market situation in 2020.³

Charging point: As defined in the Alternative Fuel Infrastructure regulation proposal, 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.”

1 Applying the methodology outlined in: Jan Dornoff, Uwe Tietge, and Peter Mock, *On the way to “real-world” CO₂ values: The European passenger car market in its first year after introducing the WLTP*, (ICCT: Washington, DC, 2020), <https://theicct.org/publications/way-real-world-co2-values-european-passenger-car-market-its-first-year-after>.

2 Applying the methodology outlined in: Uwe Tietge, Peter Mock, and Jan Dornoff, *Overview and evaluation of eco-innovations in European passenger car CO₂ standards*, (ICCT: Washington, DC, 2018), <https://theicct.org/publications/eco-innovations-european-passenger-car-co2-standards>.

3 Uwe Tietge, Peter Mock, Sonsoles Díaz, and Jan Dornoff, *CO₂ emissions from new passenger cars in Europe: Car manufacturers’ performance in 2020*, (ICCT: Washington, DC, 2021), <https://theicct.org/publications/eu-co2-pvs-performance-2020-aug21>.

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