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TRENDS OF NEW PASSENGER CARS IN CHINA

CO_2 EMISSIONS AND TECHNOLOGIES, 2022–2023

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ACKNOWLEDGMENTS

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1. INTRODUCTION

The 2022/2023 edition of this report offers a statistical and infographic overview of the latest trends in the Chinese passenger car market. As with the previous report, this edition covers vehicle specifications, carbon dioxide (CO_2) emission rates, and associated emission control technologies that reflect recent regulatory changes.[1] Notably, this edition also expands the focus on zero-emission vehicles. We highlight the significant growth of electric vehicles and their substantial influence on the overall emission trends in the Chinese passenger car market.

This report is organized as follows. Chapter 2 explores market trends for newly registered passenger cars, mainly in terms of sales. Chapter 3 examines the CO_2 emission trends of the new passenger car fleet and performance at the segment level, as well as fuel-saving and CO_2 emissions reduction technologies. Chapter 4 looks at the change in new electric vehicles' characteristics and indicators for battery performance. Finally, Chapter 5 gives a brief analysis of how the physical parameters of passenger cars have changed in recent years.

1 Yuntian Zhang, Hui He, and Zhinan Chen, *Trends of New Passenger Cars in China: Air Pollutant and CO2 Emissions and Technologies, 2012–2021* (International Council on Clean Transportation, 2023), https://theicct.org/publication/pv-china-trends-report-jan23/.

2. MARKET TRENDS

Here we cover trends in new passenger cars sold from 2012 to 2023 by powertrain technology, vehicle segment, and manufacturer. We also present the annual top-selling vehicle models and analyze powertrain technologies by segment.

From 2021 to 2023, the market saw modest growth. Approximately 21 million new passenger cars were sold in 2023 after a slight dip in 2022. However, there was a significant surge in sales of battery electric vehicles (BEVs) and plug-in hybrid vehicles (PHEVs), from 14% of sales of new passenger cars in 2021 to nearly 35% in 2023. This is an effect of policy packages promoting electric vehicles at the national and regional levels.[2] In particular, annual registrations of new PHEVs increased more than fourfold from 2021 to 2023 **(Figure 2-1)**.

Sport utility vehicles (SUVs) continue to reign as the dominant segment in the market with 47% of passenger car sales in 2023.[3] SUVs and C-class sedans have grown most rapidly over the past decade. In contrast, mini and small cars saw a steady decline in market share through 2020, then recorded a temporary growth in sales in 2021 before declining again. This showcases a shift in the Chinese passenger car market toward more powerful vehicles and vehicles with more spacious interiors **(Figure 2-2** and **Figure 2-3)**.[4]

In 2023, electric vehicle models featured prominently in the top-selling model list, occupying six out of the 10 most popular spots. Additionally, it marked the first time an electric car model clinched the top spot in new passenger car sales in China **(Figure 2-4)**.

In contrast to 2021, when—as indicated in our last trend report—electronic technologies were concentrated primarily in the A00 and SUV classes, there has been rapid penetration of electric vehicles across all car segments. Notably, the SUV segment experienced the biggest surge in the share of BEVs and PHEVs from 2022 to 2023, rising from 10% to approximately 34% **(Figure 2-5)**.

2 For more details, see ICCT publications on electric vehicle policies and trends in China: https://theicct.org/insight-analysis/publications/?_region=china&_sector=light-vehicles

3 See the Annex for information on the classification of vehicle segments.

4 Though SUVs in China come in various sizes and can be further categorized into subsegments such as compact SUVs, midsize SUVs, and full-size SUVs, they are often more powerful and have larger interior space than their sedan/hatchback counterparts.

Figure 2-1
Passenger car sales by fuel type and the share of new energy vehicles (NEVs) in the market

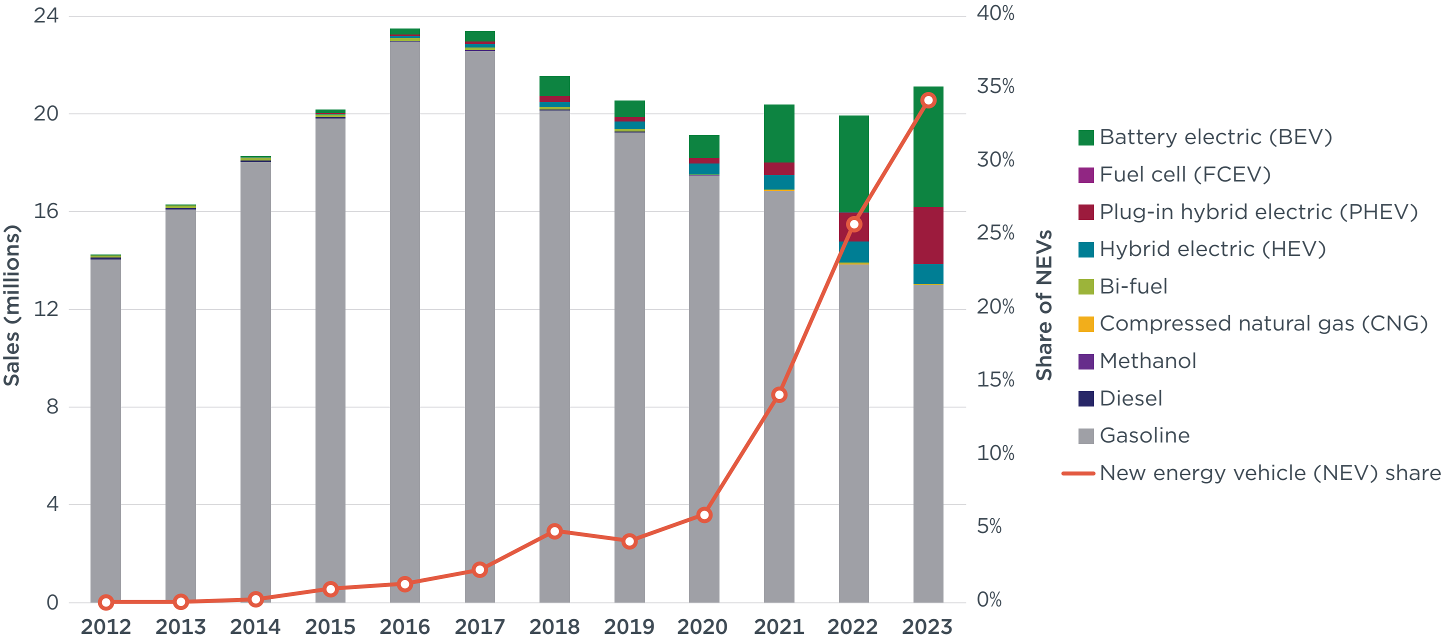

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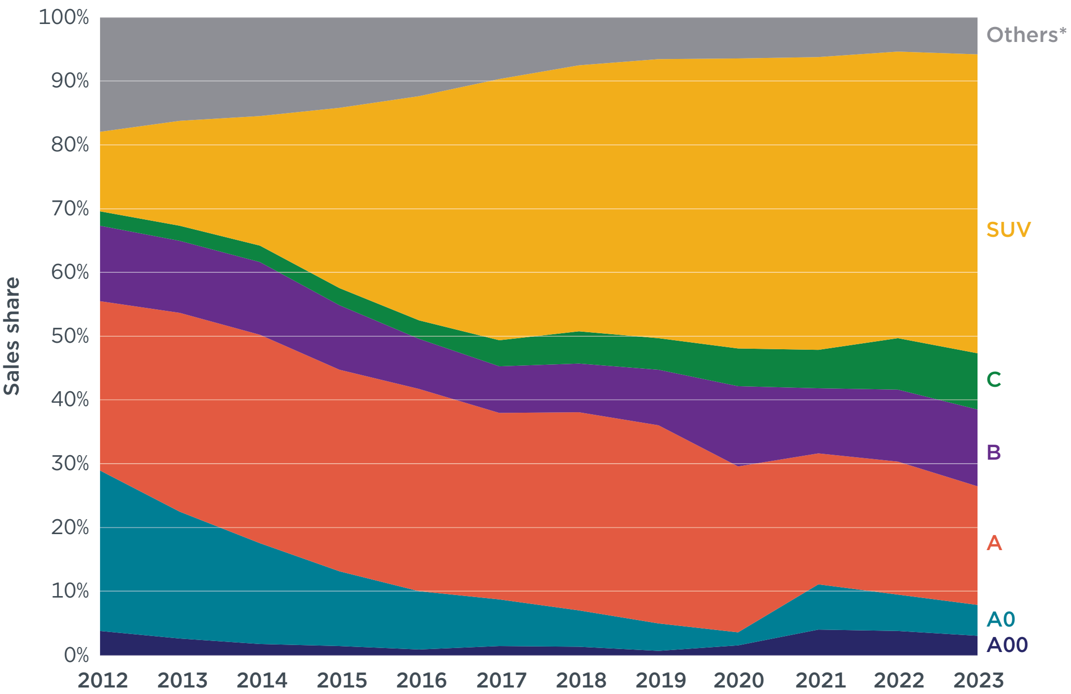
Figure 2-2
Passenger car sales share by segment



*The "Others" segment includes multipurpose vehicles (MPVs), crossover vehicles, minibuses, and sports cars.

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Figure 2-3

Passenger car sales by segment normalized to 2012 levels (2012 = 100%)

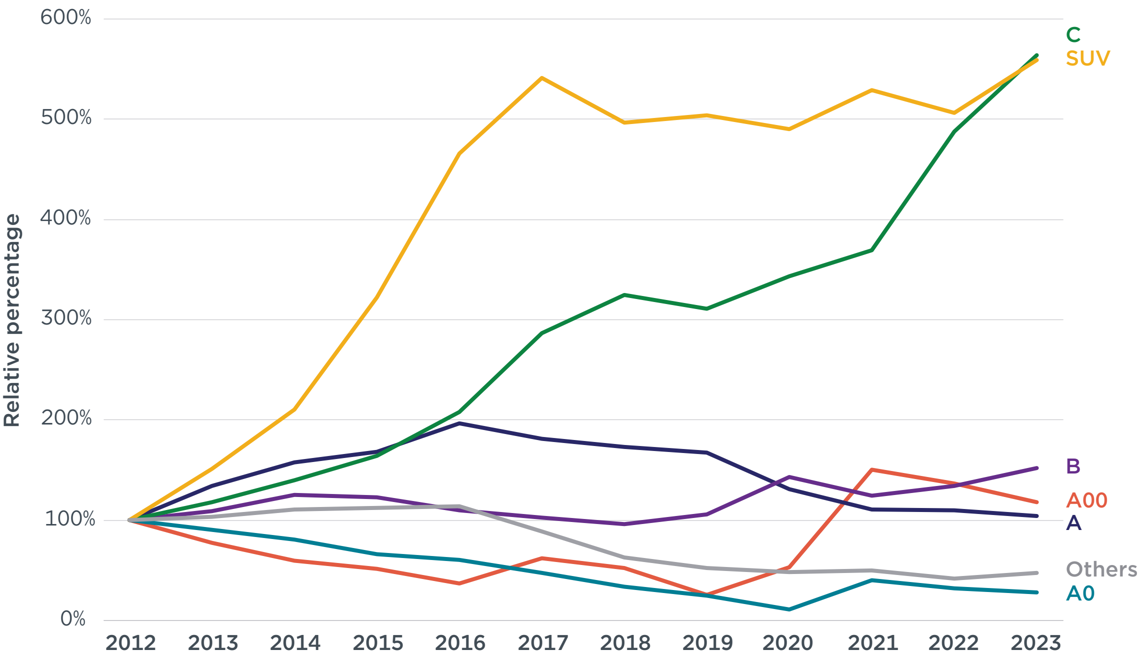

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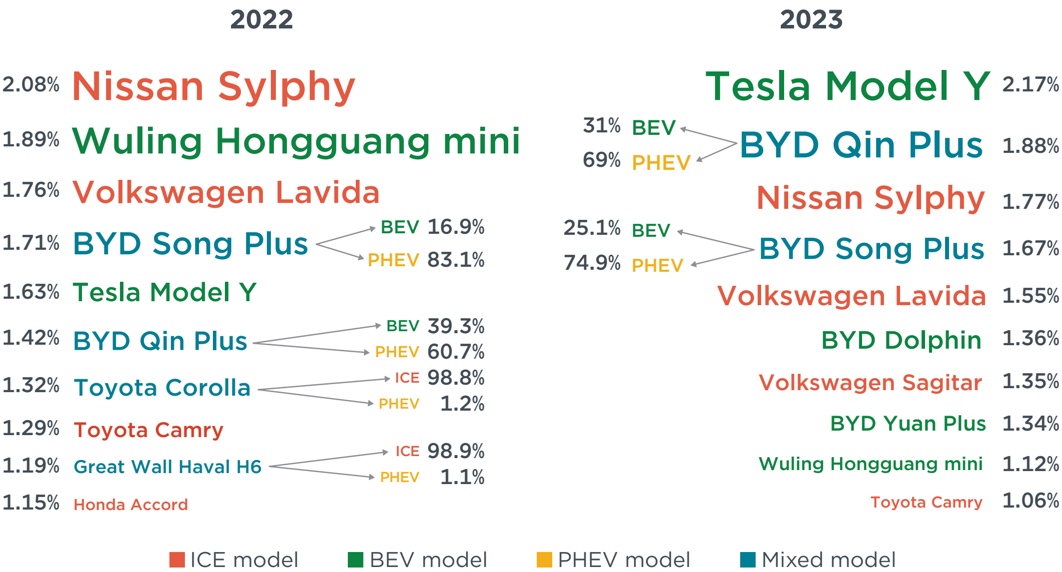
Figure 2-4

Top-selling passenger car model series in 2022 and 2023 by market share



Note: A car model series refers to the manufacturer's definition of a line of vehicles with similar marketing names. A series might include more than one model or edition with different power types; for example, the BYD Qin Plus has both a BEV and a PHEV version.

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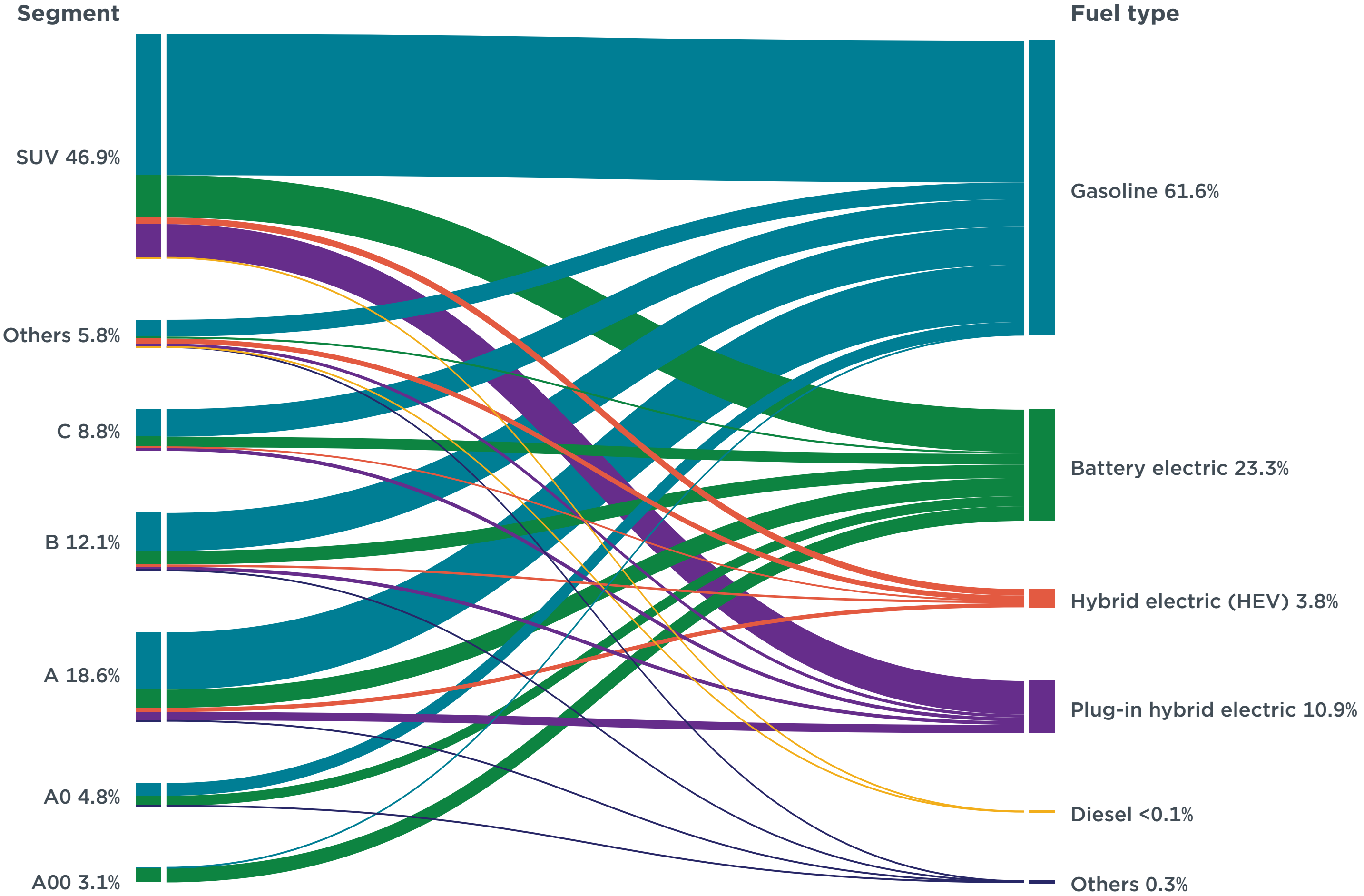
Figure 2-5

Market share of passenger cars by segment and fuel type in 2023



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3. CO_2 EMISSION RATES AND CONTROL TECHNOLOGIES

The type-approval CO_2 emission rate of the new passenger car fleet, normalized to the Worldwide harmonized Light-duty Test Cycle (WLTC) decreased by 58% between 2012 and 2023.[5] Between 2022 and 2023, the emission rate fell by an annual average of 14%, largely attributable to the swift adoption of electric vehicles. The CO_2 emission rate of internal combustion engine (ICE) cars was at a plateau between 2019 to 2021 but then fell in 2022 and 2023 by an annual average of 1.9%. By 2023, the CO_2 emission rate was 85% of the 2012 level, as shown in Figure 3-1. Echoing our previous trend report, achievements in reducing CO_2 emissions were not halted by increases in vehicle power, weight, and, for ICE vehicles, engine displacement **(Figure 3-1)**.

As with the ICE fleet overall, emissions declined for gasoline cars in 2022 and 2023, as shown in Figure 3-2. The CO_2 emission rate for gasoline cars decreased 3.1% from 163.7 g/km in 2021 to 158.6 g/km in 2023, equal to an annual drop of 1.6%. The trend for diesel-fueled vehicles is less positive. Diesel cars made up a tiny fraction, just 0.07%, of the passenger car fleet, but average CO_2 emissions grew from 208.5 g/km in 2021 to 227.9 g/km in 2023, an increase of 9.3%. This continued an incremental climb in emissions ongoing since 2016. Emissions of hybrid electric vehicles (HEVs, which are non-plug-in hybrids) decreased 7.7% from 128.2 g/km in 2021 to 118.4 g/km in 2022, but then increased slightly in 2023, leading to a 5.7% decrease in total from 2021 to 2023. PHEVs experienced a major drop in CO_2 emissions in recent years: The average emissions decreased by 66.3%, from 105.6 g/km in 2020 (when our dataset for PHEVs begins) to 35.6 g/km in 2022, or approximately 41.9% annually. Emission reductions were not significant for PHEVs in 2023 **(Figure 3-2)**.

The segment-level analysis **(Figure 3-3)** reflects the fleet's swift electrification and improving fuel efficiency, with most segments recording notably lower CO_2 emissions since 2021. SUVs, the most popular segment, went from an emission rate of 157.5 g/km in 2021 to 115.4 g/km in 2023, a reduction of 26.7% the first year and 14.4% the second year. The emission rate had not been improving for the A0 segment before 2021, but then emissions fell 45.2% from 139.9 g/km in 2021 to 76.6 g/km in 2023, an average reduction of 26% for each of the 2 years. Thus, the A0 segment appears to be following a similar path as the one forged by the A00 segment, which became almost fully electric in 2021 **(Figure 3-3** and **Figure 3-5)**. On the ICE side **(Figure 3-4)**, CO_2 emission rates declined moderately for most segments since 2021. The SUV segment, with a decrease in average emissions by 4.4% from 171.7 g/km in 2021 to 164.2 g/km in 2023, closed its gap with the C segment in type-approval CO_2 performance. The A segment reduced its average CO_2 emissions from 144.2 g/km in 2021 to 133.4 g/km in 2023, or 7.5% in 2 years. This fuel consumption rate in 2023 is lower than for vehicles in the physically smaller A0 segment. This could reflect the A0 shift toward electric vehicles and a lack of motivation by manufacturers to further improve the efficiency of the remaining A0 ICE models.

The electrification rate by segment in Figure 3-5 partly explains the CO_2 emissions in Figure 3-3 and Figure 3-4. The vanguard segments of electrification—A00 became 100% electrified in 2021, while A0 was 44.2% electrified in 2023—have made faster progress in CO_2 emissions reduction. Other segments are also following the trend. In 2023, the share of electric vehicles was 34% for the SUV and C segments, 29% for the B and A segments, and 19% for the others category. Nevertheless, the pace of electrification has slowed in the C and A segments since 2022. The penetration rate of electric SUVs is roughly equal to the 35% NEV share of the entire fleet **(Figure 3-5)**.

5 The CO_2 emission rate results in this report are universally type-approval results. See Annex 6.3 for test cycle details.

The adoption of technologies conducive to lower CO_2 emissions for ICE cars has continued to grow. The market penetration of turbochargers and superchargers increased from 62% in 2021 to 68% in 2023. Gasoline direct injection—along with dual port injection, which combines direct and port injection technology—increased from 68% in 2021 to 79%. Regarding transmissions, automatic transmission and continuously variable transmission continue to dominate the ICE fleet, moving from 80% penetration in 2021 to 94% in 2023 **(Figure 3-6)**.

Figure 3-1

Passenger car characteristics and CO_2 emission rates normalized to 2012 levels (2012 = 100%)

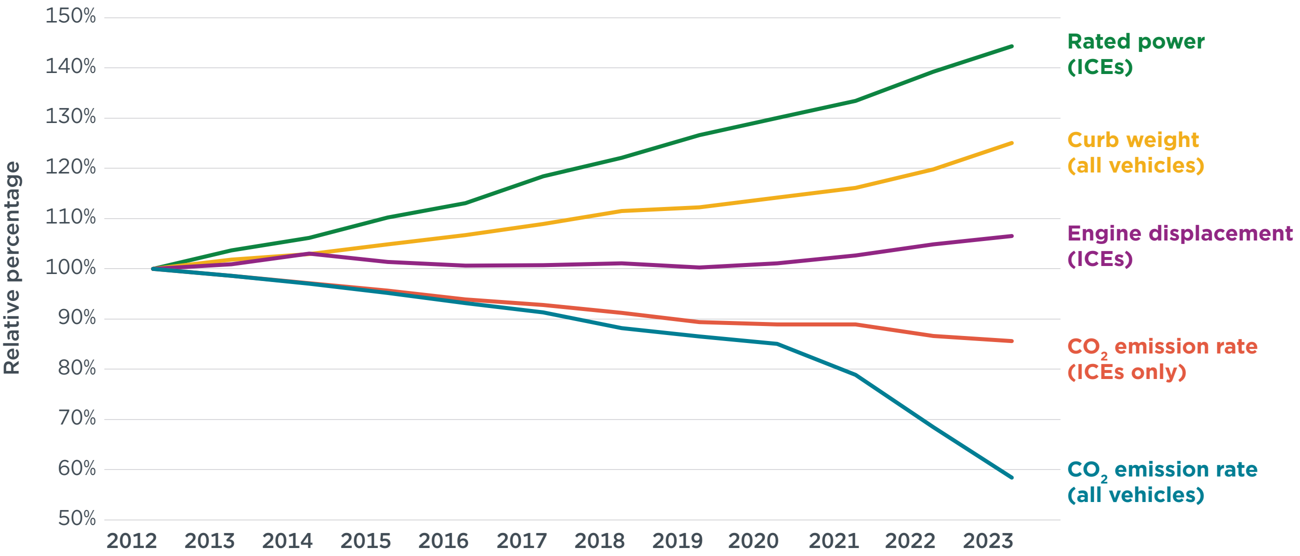

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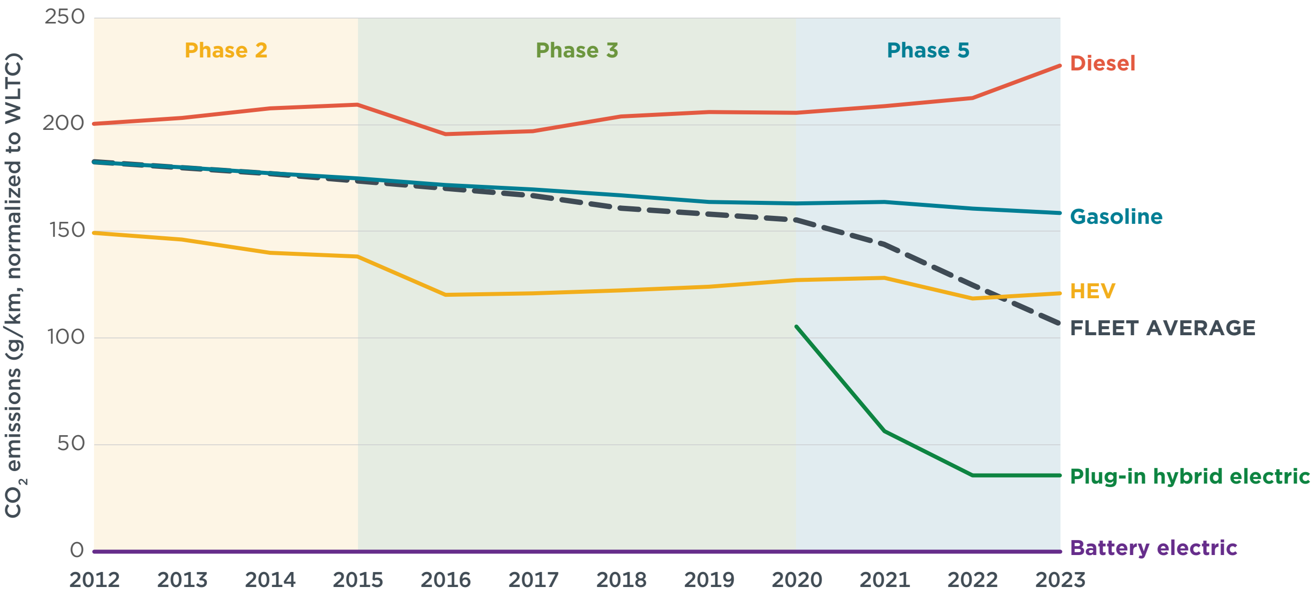
Figure 3-2

Fleet-average CO_2 emission rates of passenger cars by fuel type and fuel consumption regulation phase



Note: China's passenger car fuel consumption regulations (National standards GB-19578 series and GB-27999 series together) were enacted by the Ministry of Industry and Information Technology. The regulations, first introduced in 2004, have progressed to the current Phase 5 with both per-model and corporate average fuel consumption requirements.

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Figure 3-3

Fleet-average CO_2 emission rates of passenger cars by vehicle segment (ICE and NEV combined)

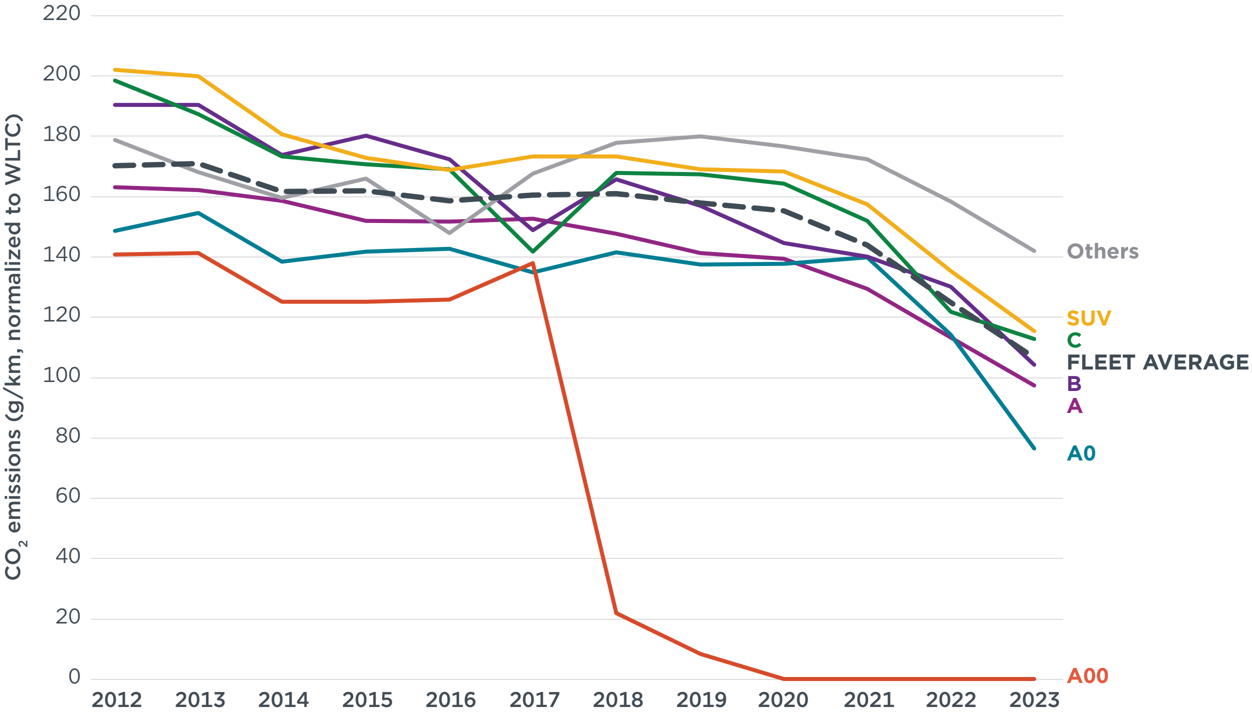

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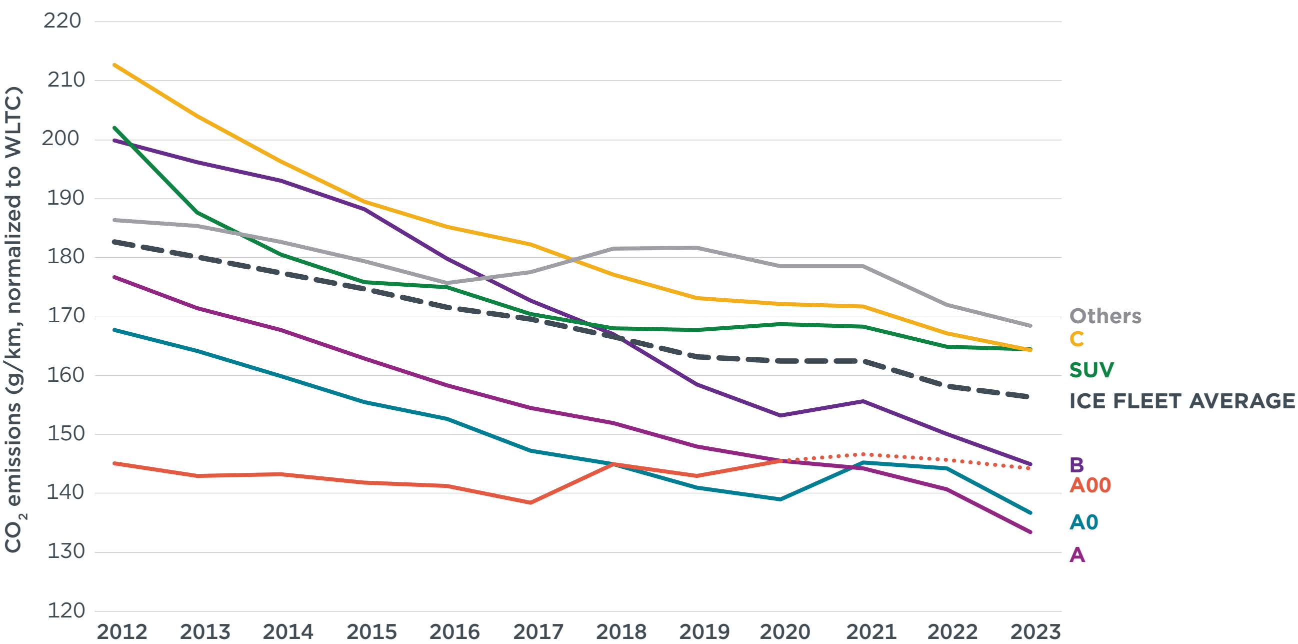
Figure 3-4

Fleet-average CO_2 emission rates by passenger car segment (ICE only)



Note: The A00 class achieved nearly full electrification in 2021. Emissions data collected for this class since then represent very few cars (fewer than 100). Therefore, a dotted line is used to represent Segment A00 between 2020 and 2023.

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Figure 3-5

Market penetration of electric vehicles by passenger car segment

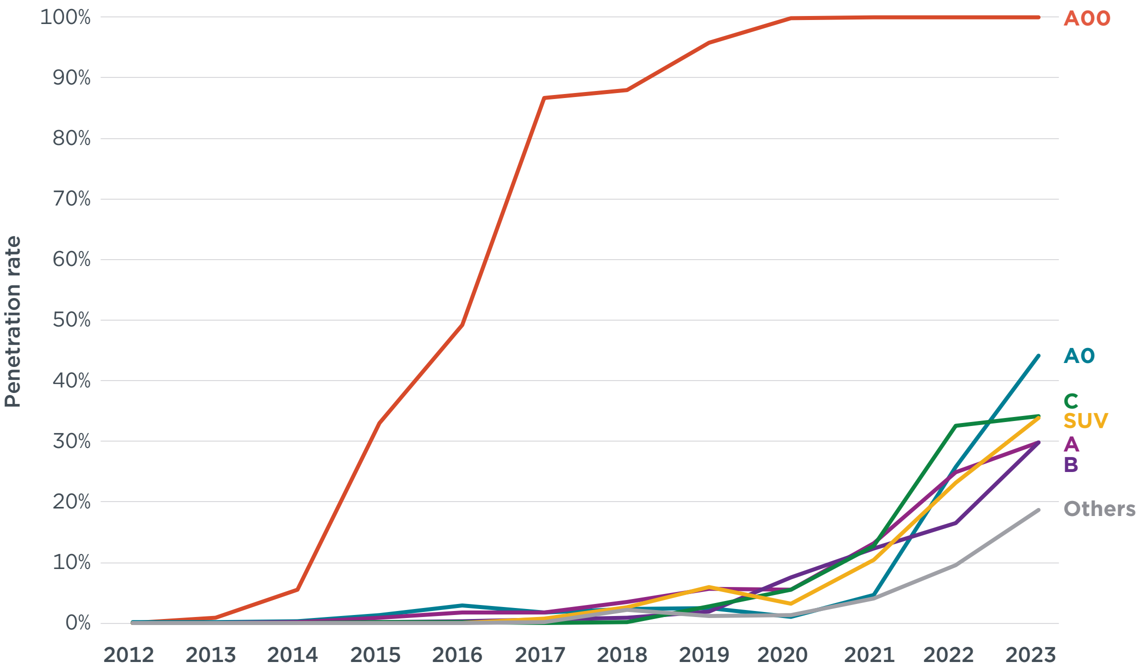

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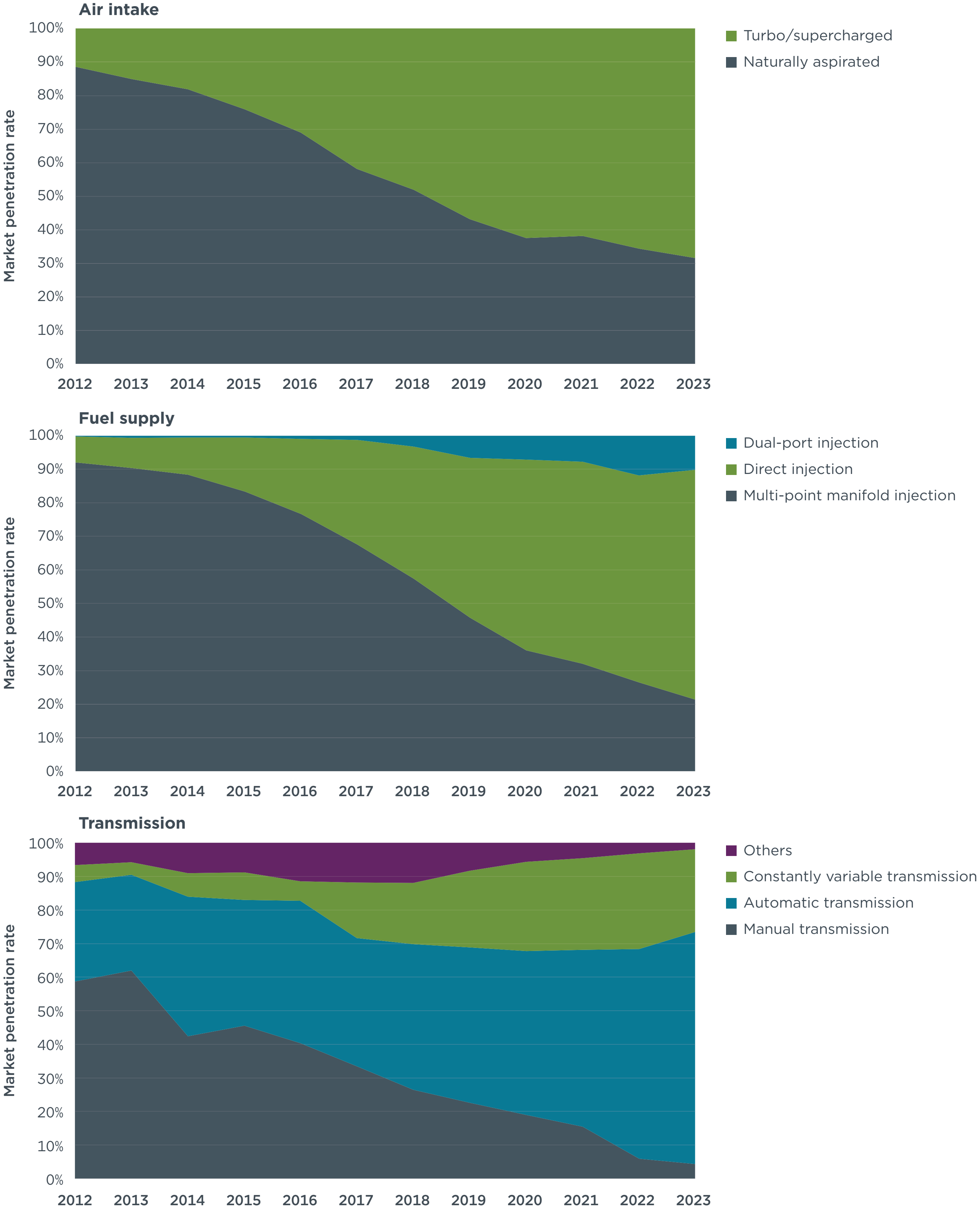
Figure 3-6

Market penetration of air intake, fuel supply, and transmission technologies among ICE passenger cars



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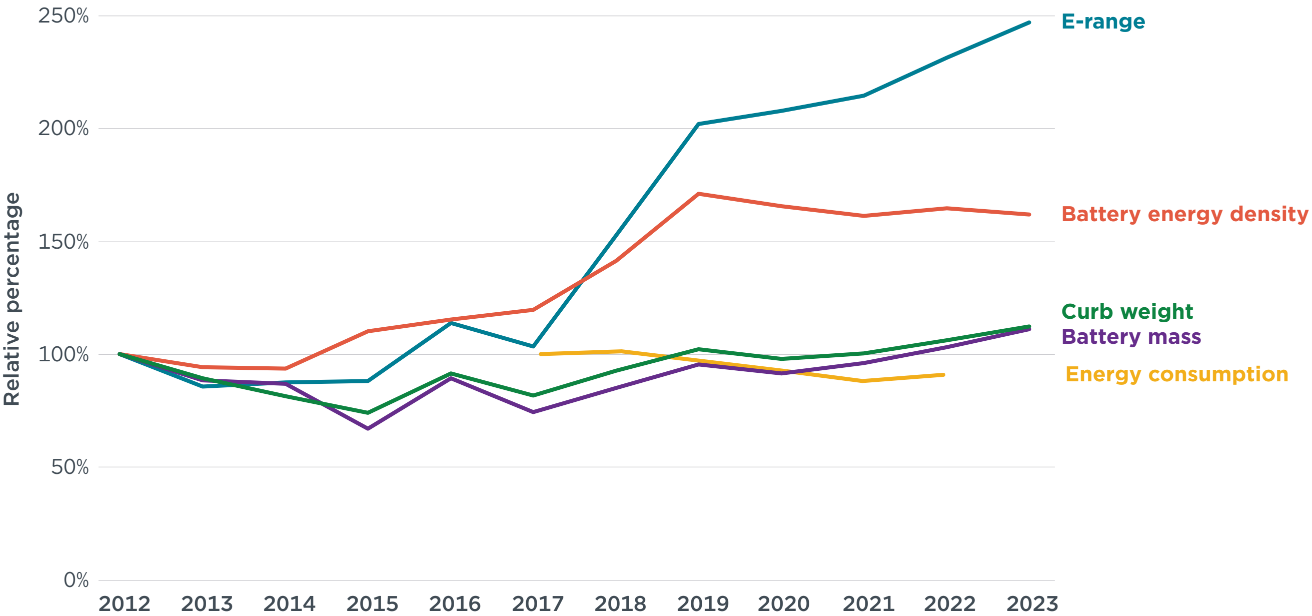
4. EFFICIENCY PERFORMANCE OF NEVS

Thanks to the central subsidy and NEV credit policies in the 2010s, key efficiency metrics for NEVs such as electric range and electric energy consumption have shown continuous improvement since 2015.[6] For BEVs, curb weight in 2023 was 111% of the curb weight in 2012, which is in line with the increase in battery mass. This indicates that the change in vehicle weight was mainly driven by increased battery mass. Continuously advancing battery technology also led to a surge in electric drive range between 2017 and 2019 **(Figure 4-1** and **Figure 4-2)**. However, the sales-weighted electric drive range for BEVs grew at a slower rate after 2019 as subsidies were phased out. PHEVs were less affected by the policy change, as consumer demand for longer-range PHEVs spurred bigger increases in electric drive range **(Figure 4-4)**. This preference in the market also fueled the rapid growth of range-extended electric vehicles (REEVs), which are currently classified as PHEVs, and was propelled by NEV start-ups such as Li Auto, Leapmotor, and AITO **(Figure 4-3)**.

Figure 4-1

Fleet-average vehicle and battery performance indicators of new battery electric passenger cars sold between 2012 and 2023



Note: Energy consumption data are available only from 2017–2022.

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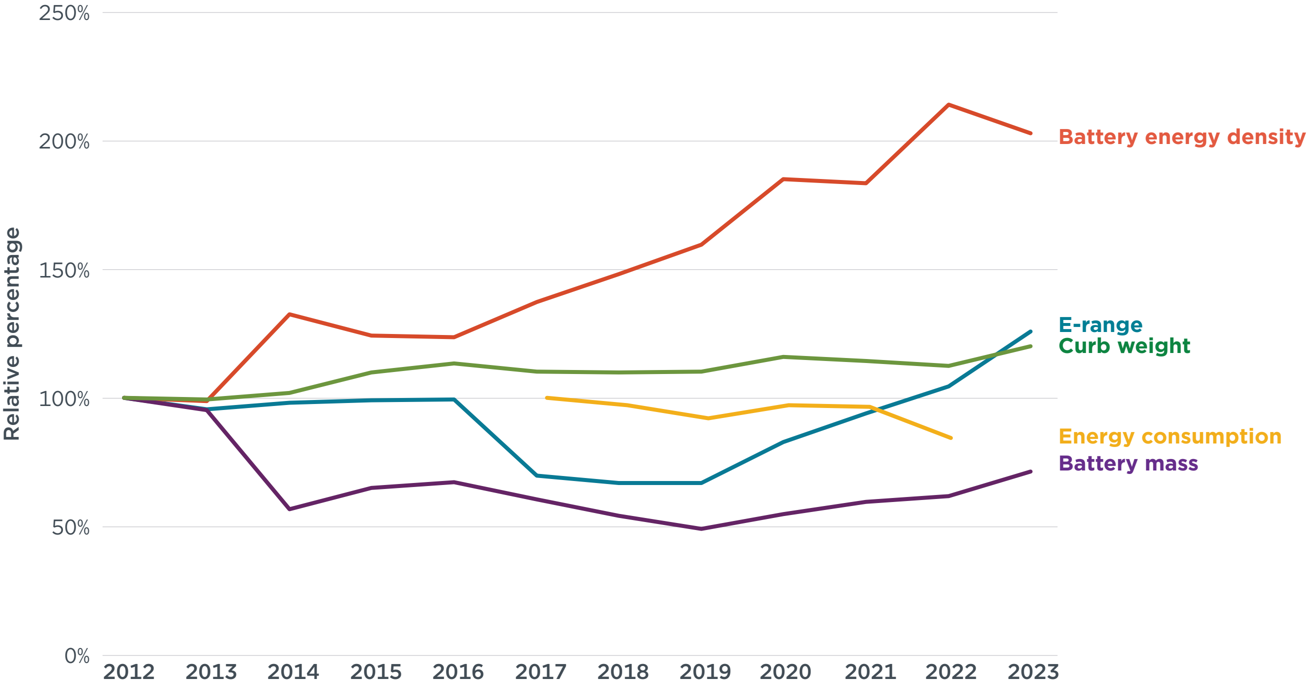
6 See Annex 6.3 for test cycle details.

Figure 4-2

Fleet-average vehicle and battery performance indicators of new plug-in hybrid electric passenger cars sold between 2012 and 2023



Note: Energy consumption data are available only from 2017–2022.

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Figure 4-3

Sales of new energy passenger cars by technology and share of range-extended electric vehicle (REEV) sales by manufacturer

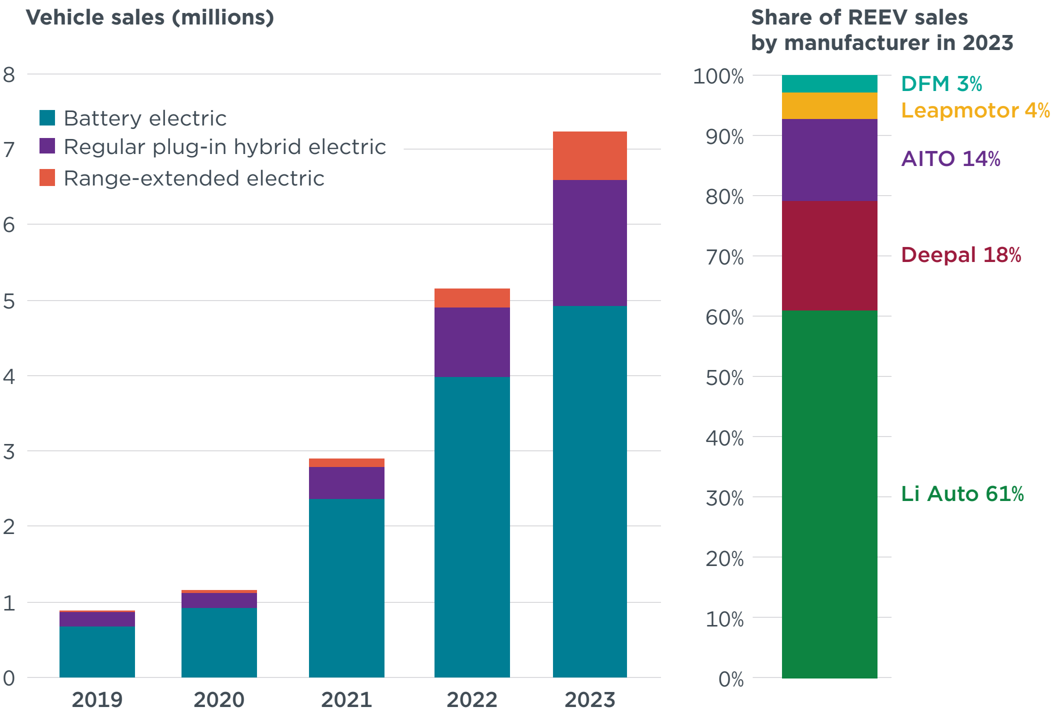

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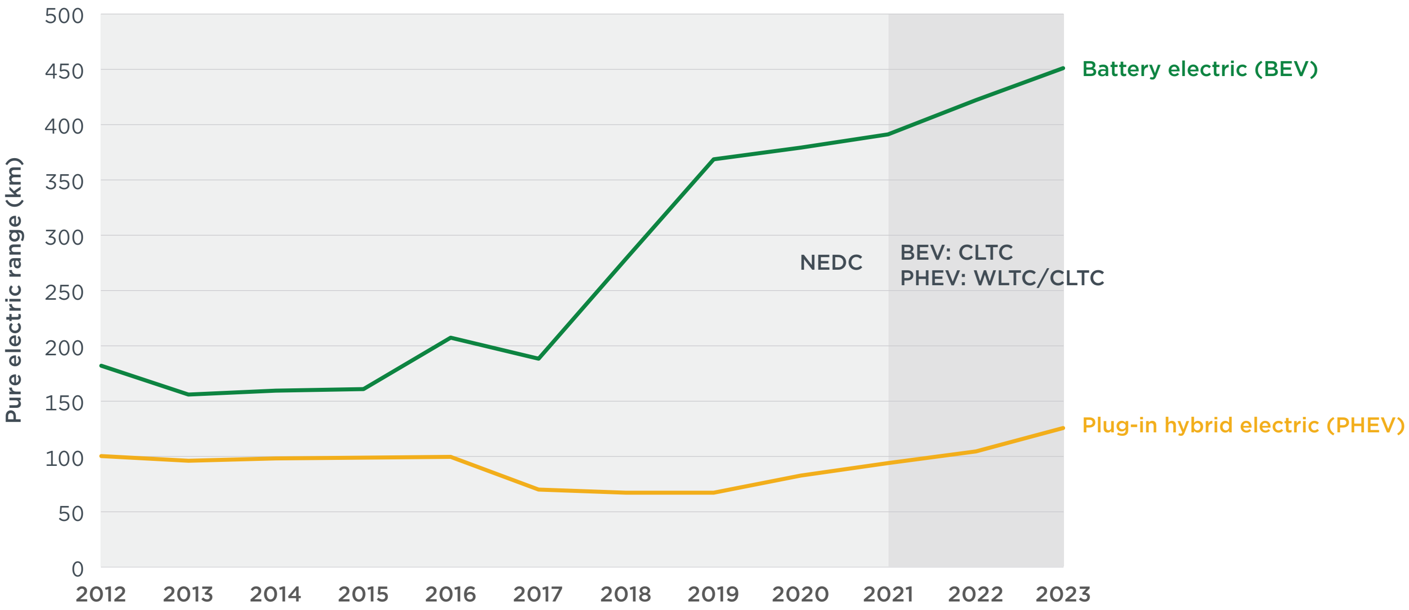
Figure 4-4

Sales-weighted average electric range of new energy passenger cars



Note: For the years 2012–2021, electric range was calculated using the New European Driving Cycle (NEDC) and converted to the Worldwide harmonized Light-duty Test Cycle (WLTC). Starting in 2022, WLTC and China Light-duty vehicle Test Cycle (CLTC) data were used directly. See Annex 6.3 for more information.

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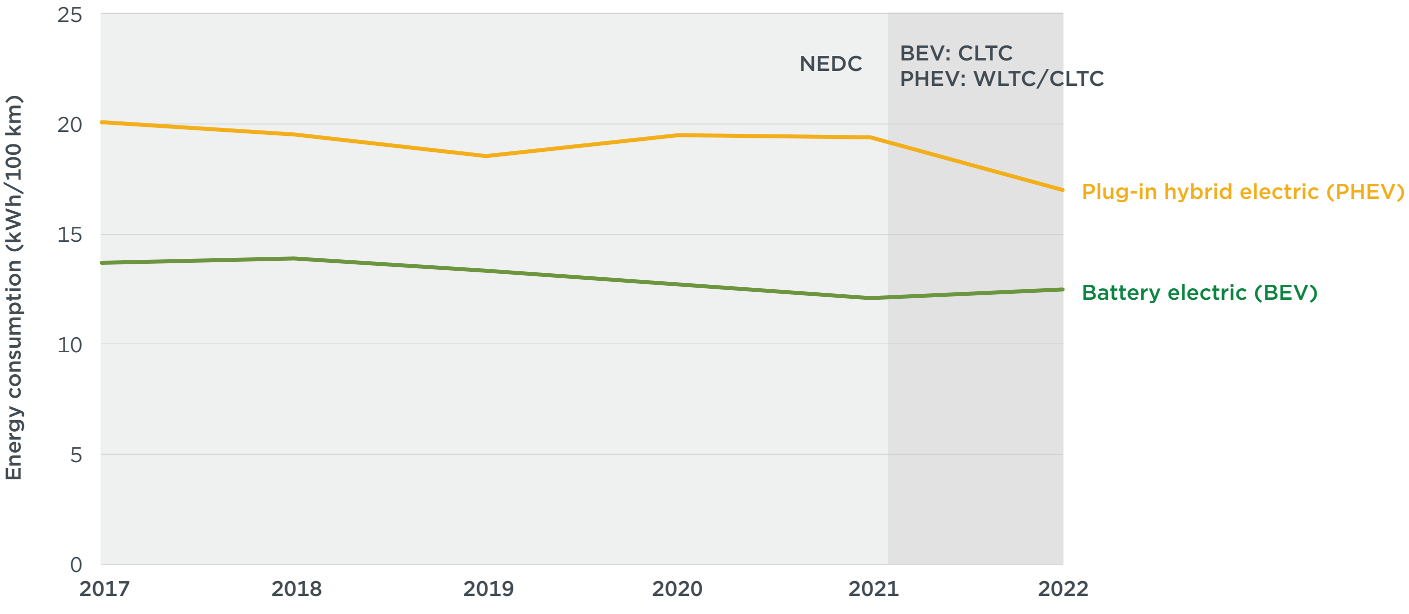
Figure 4-5

Sales-weighted average energy consumption of new energy passenger cars



Note: For the years 2012–2021, energy consumption was calculated using the New European Driving Cycle (NEDC) and converted to the Worldwide harmonized Light-duty Test Cycle (WLTC). Starting in 2022, WLTC and China Light-duty vehicle Test Cycle (CLTC) data were used directly. See Annex 6.3 for more information.

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5. VEHICLE CHARACTERISTICS

This section examines the key characteristics of new passenger cars in China including horsepower, vehicle mass, engine displacement, and footprint. This section also analyzes the historical trends of these metrics across segments.

The overall horsepower of passenger cars increased slightly in most segments. The SUV segment demonstrated steady growth in average horsepower, rising by 17.9% from 117 kW in 2012 to 137 kW in 2023, surpassing the average horsepower of Class B vehicles in 2023 **(Figure 5-1a)**. This represents an average annual increase of 1.4%. Unlike most other segments with steady or increasing power, the B segment showed a downward trend, from 139.7 kW in 2021 to 135.4 kW in 2023, an annual decrease of 1.5%. For the ICE-only fleet, average horsepower increased by 4% each year between 2021 and 2023, slightly faster than in earlier years **(Figure 5-1b)**.

Overall curb weight of the entire fleet increased at an annual rate of 2.1% since 2012 for a total increase of 25.1% from 1,295 kg in 2012 to 1,620 kg in 2023. Curb weights increased across nearly all segments, but especially in SUVs, which grew from 1,616 kg in 2021 to 1,748 kg in 2023, a 4% annual increase) and the "Others" segment, which increased from 1,592 kg in 2021 to 1,892 kg in 2023, an 8% annual increase **(Figure 5-2a)**. Changes in curb weight demonstrated a steeper uptrend in recent years than previously. Together with the growing portion of luxury segments, the explosive sales growth of BEVs and PHEVs contributed to this phenomenon, primarily due to the additional weight of their batteries.

In the ICE-only fleet, changes in curb weight were comparatively marginal. The fleet-average weight of ICE cars increased 1.8% annually from 1,497 kg in 2021 to 1,552 kg in 2023, primarily due to the booming SUV segment and heavier multipurpose vehicles and crossover vehicles in the "Others" segment **(Figure 5-2b)**. The B and C segments did not increase much in weight.

Although the trend of diminishing differences in average ICE engine displacement across segments remained, the ICE fleet-level average saw a slight increase in recent years, from 1,663 cc in 2021 to 1,725 cc in 2023, an annual increase of 1.8%. Again, this was mainly driven by the more powerful engines of SUVs and vehicles in the Others segment **(Figure 5-3)**.

Our analysis of average footprint includes electric vehicles in 2022 and 2023 (owing to improved data completeness), and we find that most segments (A, B, C, and SUV) maintained or expanded interior space compared with the ICE fleet **(Figure 5-4a** and **Figure 5-4b)**. SUVs, the segment with the biggest volume of new cars, increased their average footprint 1.5% from 4.39 m^2 to 4.46 m^2. This suggests that the vehicle fleet, with a large number of NEVs, continues to provide larger interior space and stronger carrying capacity. For A0s and A00s, the extensive electrification brings down the average footprint, mostly because the small (compared with ICE models) electric models developed in early years were usually more downsized and structurally simplified to target specific customer groups; this is exemplified by models like the Wuling Hongguang Mini. These smaller segments are also notably expanding their vehicle sizes.

Figure 5-1a

Sales-weighted average horsepower of all passenger cars by segment

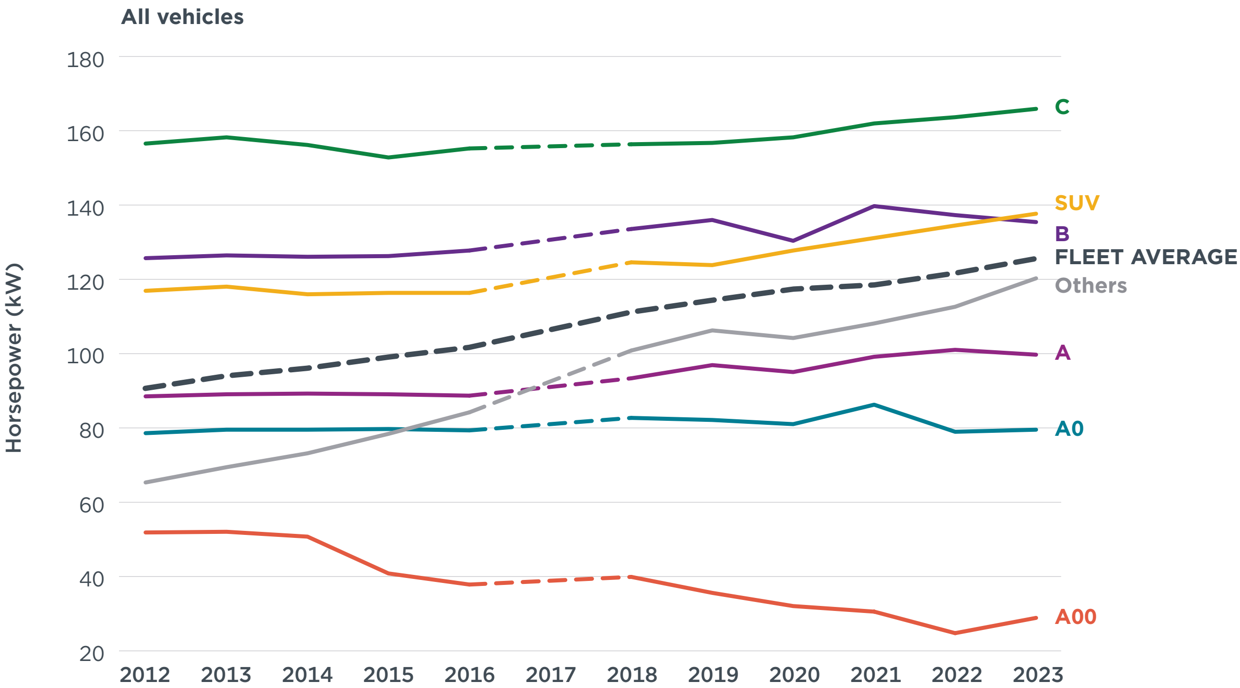
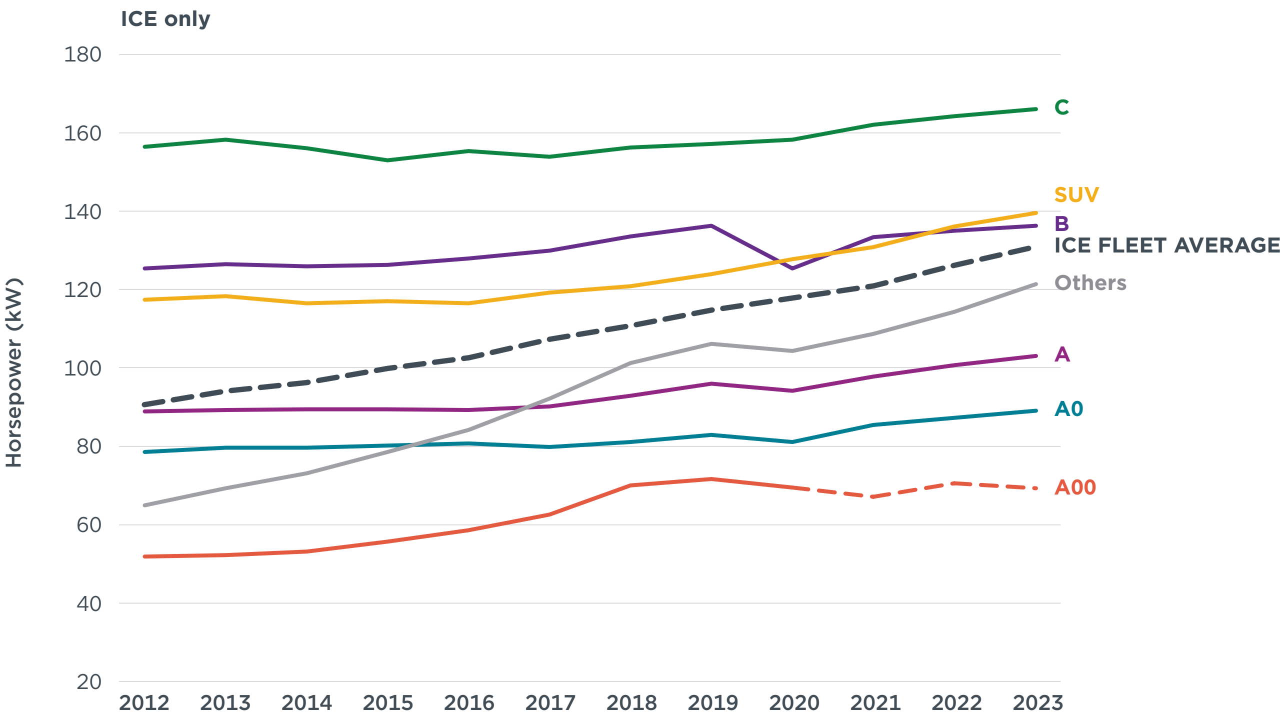


Figure 5-1b

Sales-weighted average horsepower of ICE passenger cars by segment



Note: Horsepower data for NEVs are unavailable for 2017. Therefore, Figure 5-1a uses dotted lines between 2016 and 2018 for all vehicles to simulate the possible trend. In Figure 5-1b, a dotted line is used for the A00 segment between 2020 and 2023; the A00 segment achieved nearly full electrification in 2021, and thus data since then represent very few ICE cars (fewer than 100).

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Figure 5-2a

Sales-weighted average curb weight of all passenger cars by segment

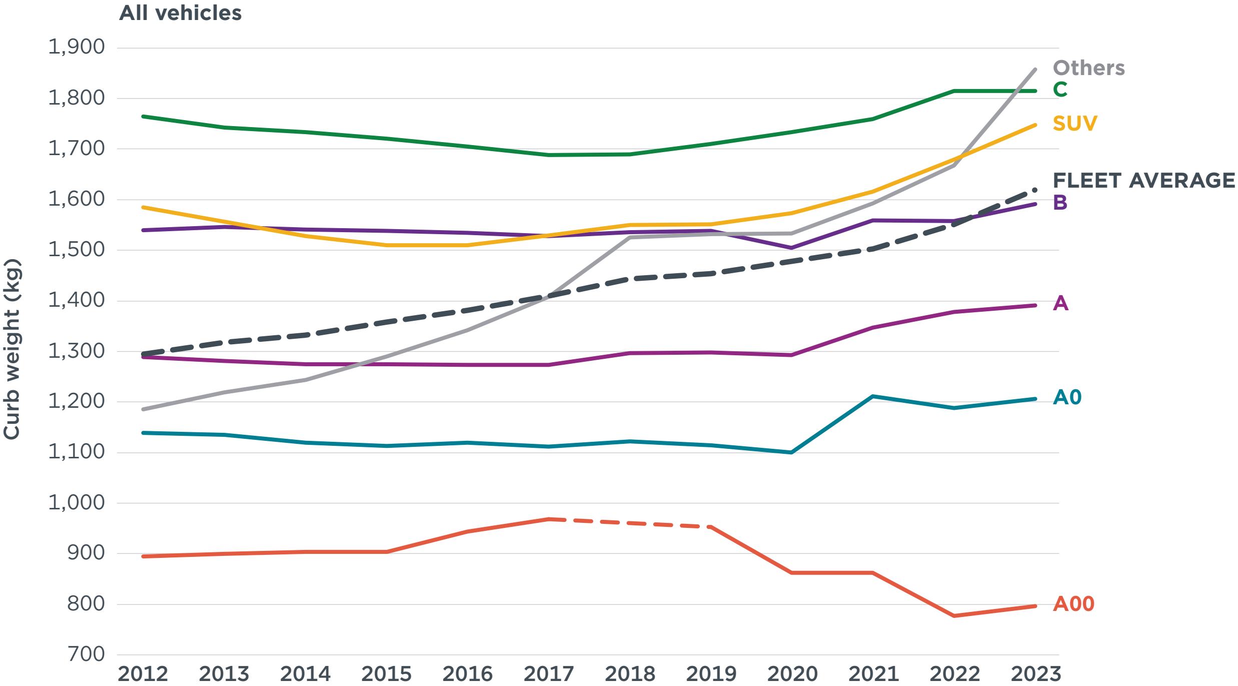
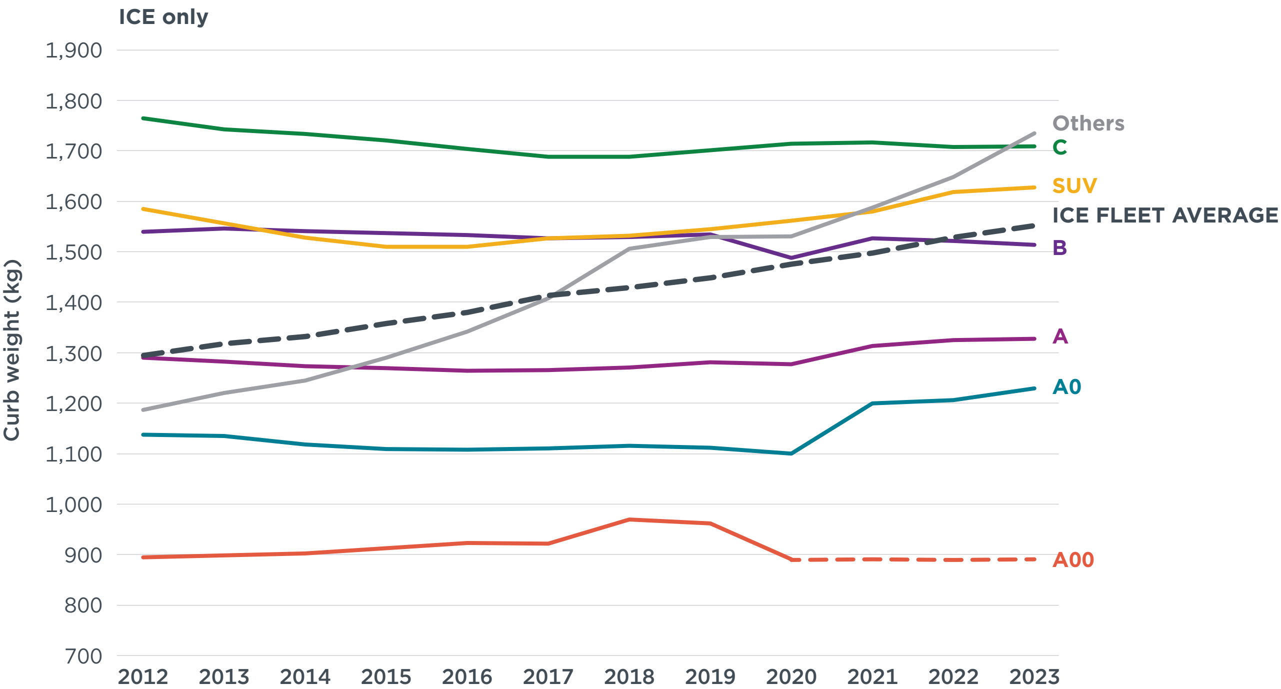


Figure 5-2b

Sales-weighted average curb weight of ICE passenger cars by segment



'*Note:* Curb weight data is unavailable for the A00 segment for 2018. Therefore, Figure 5-2a uses dotted lines between 2017 to 2019 to simulate a possible trend for this segment. In Figure 5-2b, a dotted line is used for the A00 segment between 2020 and 2023; the A00 segment essentially achieved full electrification in 2021, so data since then represents very few ICE cars (fewer than 100).

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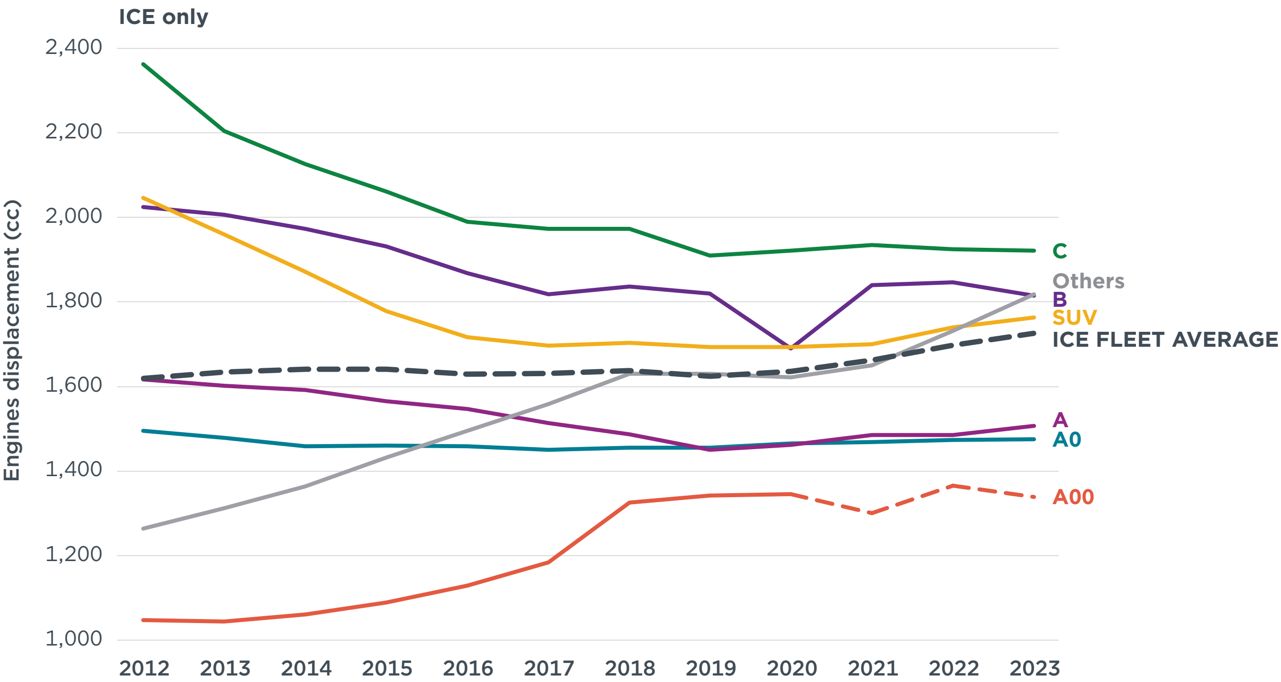
Figure 5-3

Sales-weighted average engine displacement of ICE passenger cars by segment



Note: The A00 class essentially achieved full electrification in 2021, so data since then represents very few ICE cars (fewer than 100). Therefore, this chart uses a dotted line for this segment between 2020 and 2023.

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Figure 5-4a

Sales-weighted average footprint of ICE passenger cars by segment

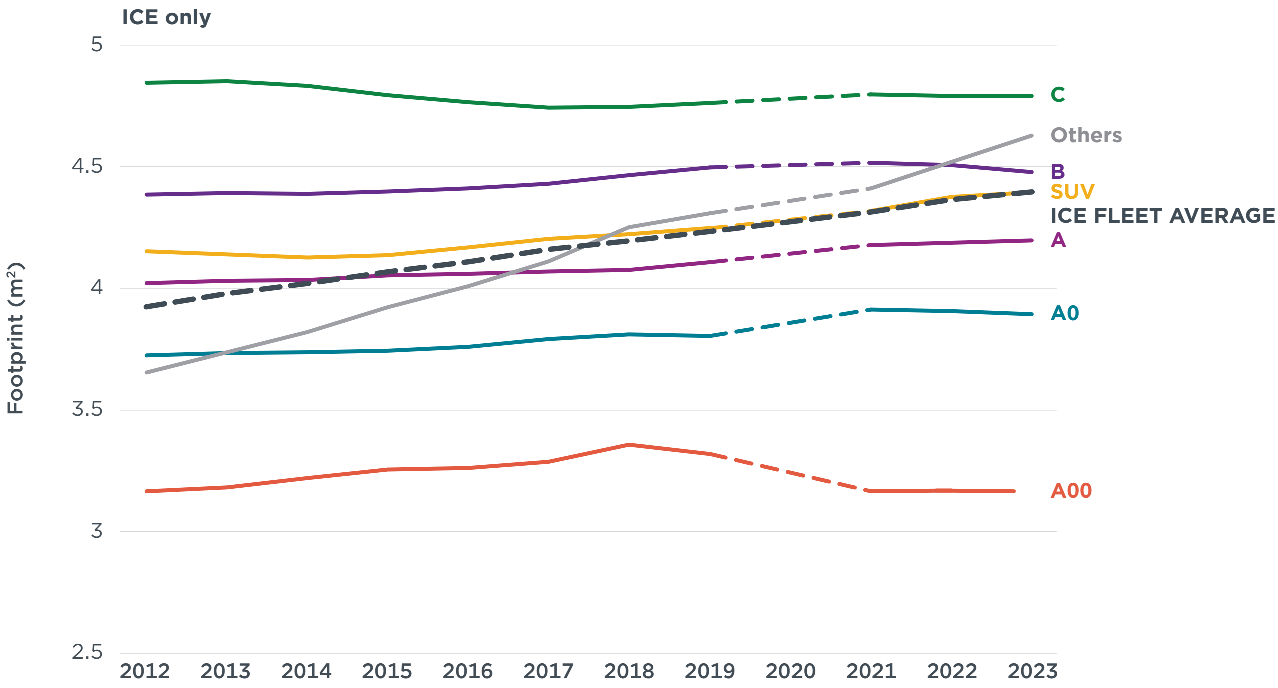
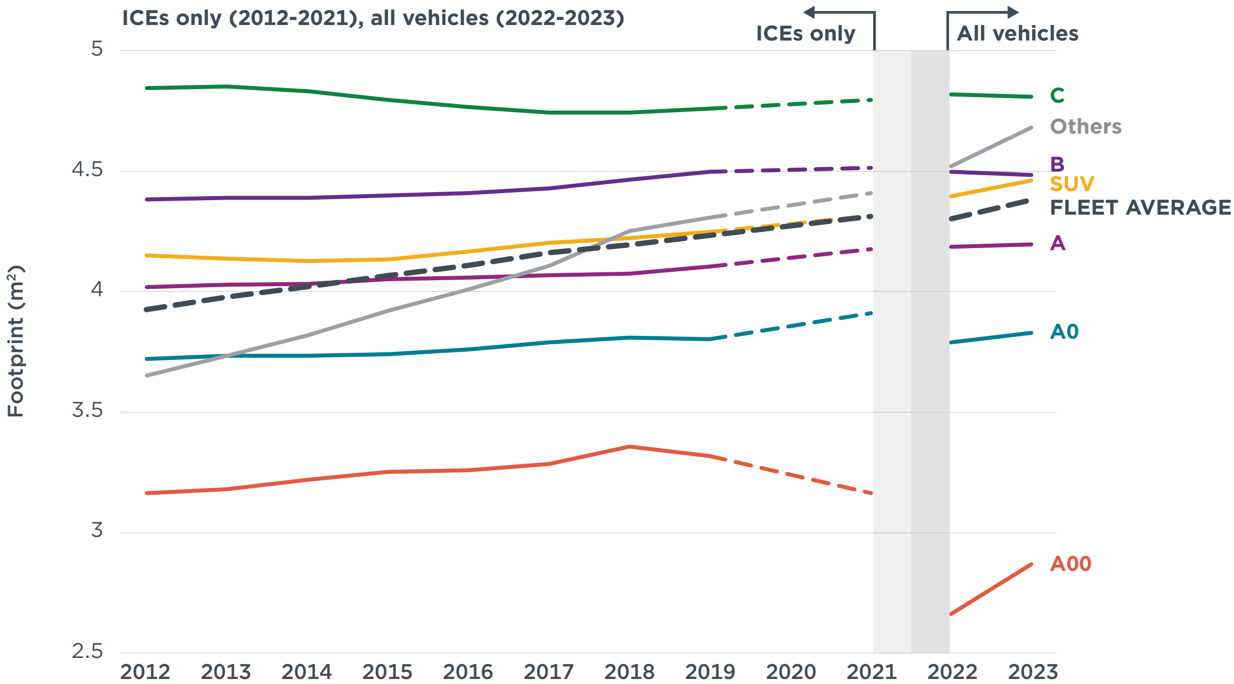


Figure 5-4b

Sales-weighted average footprint of ICE passenger cars (2012–2021) and all passenger cars (2022–2023) by segment



Note: Footprint data for 2020 are not shown because of limited data availability. To simulate a possible trend, dotted lines connect the 2019 and 2021 data points in Figure 5-4a and 5-4b. Fleet-level footprint data for all vehicles are only available since 2022.

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6. ANNEX

6.1. DATA SOURCES AND AVAILABILITY

This report used several independent datasets and analyses from the China Automotive Technology and Research Center (CATARC Co. Ltd), ZEDATA, Gasgoo Data, and China EV100. All data were further treated by the ICCT for consistency and quality control. The following tables detail the percentage of valid data by vehicle information/parameter and year.

Table 6-1

Data effective fill rate (all cars, fleet level)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Fuel type	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Segment	100.00%	99.97%	99.98%	99.96%	99.94%	100.00%	96.57%	98.20%	98.86%	99.43%	100.00%	100.00%
Model	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.67%	100.00%	100.00%	100.00%
Curb weight	99.35%	99.37%	99.98%	99.95%	99.99%	99.96%	100.00%	100.00%	99.94%	100.00%	100.00%	100.00%
Horsepower*	99.26%	94.27%	96.39%	97.25%	98.05%	92.99%	99.89%	99.19%	99.91%	99.94%	99.91%	100.00%
Engine displacement*	99.90%	99.77%	99.65%	99.41%	99.23%	99.99%	100.00%	100.00%	99.94%	100.00%	87.97%	100.00%
Wheel base	99.24%	99.09%	99.47%	99.29%	99.06%	97.00%	100.00%	99.98%	100.00%	100.00%	100.00%	100.00%
Wheel track*	99.17%	99.06%	99.45%	99.27%	99.04%	97.00%	90.79%	86.93%	0.00%	74.35%	99.60%	100.00%
Footprint*	99.17%	99.06%	99.45%	99.27%	99.04%	97.00%	90.79%	86.93%	0.00%	74.35%	99.60%	100.00%
Transmission type*	99.54%	99.48%	99.54%	99.33%	99.07%	97.00%	90.79%	100.00%	96.58%	73.52%	100.00%	100.00%
Fuel supply*	95.69%	96.82%	98.20%	98.41%	98.51%	97.00%	90.79%	86.93%	81.56%	72.93%	100.00%	100.00%
Intake*	96.27%	97.22%	98.35%	98.51%	98.56%	97.00%	90.79%	86.93%	81.43%	72.93%	100.00%	100.00%
Number of seats*	99.89%	99.73%	99.60%	99.35%	99.07%	97.00%	90.79%	90.76%	97.10%	99.01%	100.00%	0.00%
Fuel consumption*	89.20%	92.84%	95.89%	96.73%	97.07%	95.74%	96.47%	96.80%	99.12%	97.16%	95.97%	97.48%
CO_2 emissions*	89.20%	92.84%	95.89%	96.73%	97.07%	95.74%	96.47%	96.80%	99.12%	97.16%	95.97%	97.48%

*Parameters with an asterisk next to their name have effective fill rates lower than 95% at the fleet level (ICE+NEV) for one or more years. Their fill rates are further examined at the ICE-only level in Table 6-2. At the fleet level, some low fill rates are due to the parameter itself, which might be applicable to ICE cars only; in other instances of low fill rates, we removed the analysis of that parameter for certain years or analyzed the parameter only at the ICE level.

Table 6-2

Data effective fill rate (ICE only, fleet level)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Horsepower	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.96%	100.00%	99.95%	100.00%
Engine displacement	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.93%	100.00%	95.01%	100.00%
Wheel track	100.00%	100.00%	100.00%	99.93%	99.97%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%
Footprint	100.00%	100.00%	100.00%	99.93%	99.97%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%
Transmission type	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	98.88%	100.00%	100.00%
Fuel supply	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	97.65%	98.09%	100.00%	100.00%
Intake	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	97.49%	98.09%	100.00%	100.00%
Number of seats	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	89.95%	90.07%	98.00%	99.52%	100.00%	100.00%
Fuel consumption	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	98.99%	96.28%	100.00%	100.00%
CO_2 emissions	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	98.99%	96.28%	100.00%	100.00%

6.2. NEV FUEL CONSUMPTION AND CO_2 EMISSIONS

In calculating fuel consumption and CO_2 emissions in this report, the electricity consumption of NEVs was not converted into an equivalent gasoline/diesel consumption. Instead, the electricity consumption and CO_2 emissions of the electric mode of NEVs were treated as zero, in accordance with the statistical methods used in the current evaluation criteria and indicators for passenger vehicle fuel consumption.

6.3. USE AND CONVERSION OF DATA ACROSS DIFFERENT TEST CYCLES

In Chapter 3, the results for CO_2 emissions and fuel consumption in earlier years were converted from the New European Drive Cycle (NEDC) results to the newer Worldwide harmonized Light-duty Test Cycle (WLTC), which is more aligned with real-world emissions. For 2022 and 2023, however, WLTC data at the individual vehicle model level was used directly. This difference may lead to minor discrepancies due to the simulated and approximate nature of the conversion tool, which may yield slightly different results compared to those obtained directly from laboratory measurements.

The NEDC–WLTC conversion tool used in this report was developed by the ICCT. This tool was created through simulation of CO_2 emissions and fuel consumption of passenger vehicles with various technical configurations under different test cycles, followed by analysis of relationships among the simulated results across test cycles in different regression models. For further methodological details, refer to the ICCT report on test cycle conversion factors: https://theicct.org/publication/development-of-test-cycle-conversion-factors-among-worldwide-light-duty-vehicle-co2-emission-standards/.

In Chapter 4, the performance parameters of electric vehicles from 2021 and earlier are directly presented as measured under the NEDC cycle. Starting in 2022, BEVs use data measured under the China Light-duty vehicle Test Cycle (CLTC) directly, while PHEVs utilize data measured under either the WLTC or CLTC. The current database does not allow for distinguishing the specific test cycle at PHEV-model level from 2022 onward. Additionally, a reliable conversion tool from CLTC to other test cycles is lacking. Thus, unlike in Chapter 3, results unified under a single test cycle through conversions are not provided for each year.

6.4. VEHICLE SEGMENTS

This report divides passenger cars into the following classes/segments: A00 (minicar), A0 (small), A (compact), B (medium), C (large and luxury), SUV, and Others. The SUV class includes sport utility cars that come in various sizes, from compact to luxury, that were all originally labeled and marketed as SUVs. The Others class/segment includes multipurpose vehicles (MPVs), crossover vehicles, minibuses, and sports cars.

For the 2012–2021 data, the segmentation generally follows the raw segment label of each car model in the original dataset, which adheres to a combination of traditional industrial segmentation principles based on vehicle wheelbase and consumer-oriented segmentation methods based on marketing. The 2022–2023 data mostly use a comprehensive segmentation method that synthesizes the raw results from the segment label and segments based on wheelbase and the number of seats. For the segment-related NEV analyses in Chapters 3 and 4, the segmentation adheres to the market's original classification from the data.

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