TRAFIK ANALYS

Short-Term Forecasts for the Vehicle Fleet, 2020–2023

The forecasts for 2020−2023 are heavily impacted by the ongoing COVID-19 pandemic. The number of new registrations is expected to decrease dramatically in 2020, with normal levels expected to resume no earlier than 2023.

The trend towards electrification of the vehicle fleet observed in recent years will likely intensify, and the proportion of newly registered electric vehicles is expected to increase each year.

About the short-term forecasts

The short-term forecasts are based on a method that addresses the development of the in-service vehicle fleet, taking into account vehicles that are not in use, or are deregistered or newly registered. The method takes into account historical trends, forecasts from other organizations concerning various external factors, and Transport Analysis' own assessments of developments in the near future. The method is described in detail in PM 2020:2, *Short-term forecasts for the Swedish vehicle fleet – methods and assumptions*.

The number of new registrations is decreasing dramatically

The prognoses this year are encumbered by significantly higher uncertainty than before, due to the COVID-19 pandemic and the uncertain economic situation. The forecasts for new registrations of cars and light lorries are based in part on forecasts from the National Institute of Economic Research (KI). KI's update at the end of April 2020 presented two scenarios: a base and an alternative scenario. Transport Analysis has chosen to supplement them with an intermediate scenario, which is also the forecast we have chosen to report, and the one on which we base our further forecasts[1] see Figure 1 and Figure 2. However, the reader should be aware that all parts of the forecasts are affected by the particular scenario in which the development process falls.
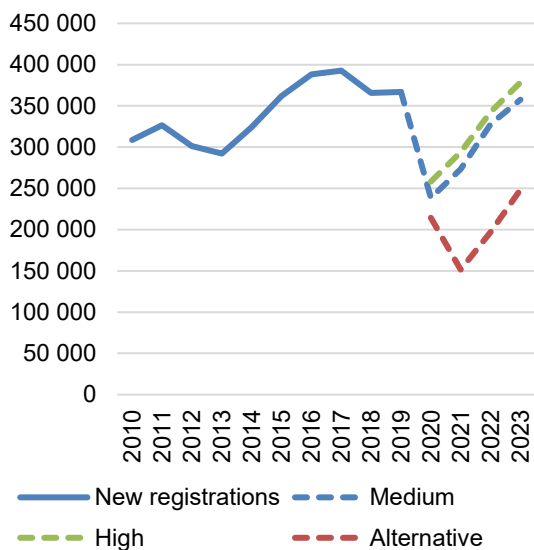

Figure 1. New car registrations, 2010–2023.

Overall, the number of new registrations is expected to decrease dramatically over 2020 for both passenger cars and light and heavy lorries. The forecasts of the number of new registrations are based on a relatively deep crisis in 2020 and slow recovery over the ensuing years. New passenger car registrations are expected to rebound more

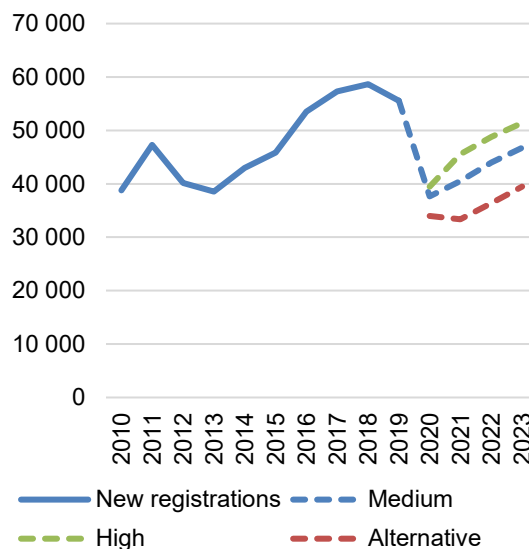quickly than new registrations of light and heavy lorries. (Figure 3).

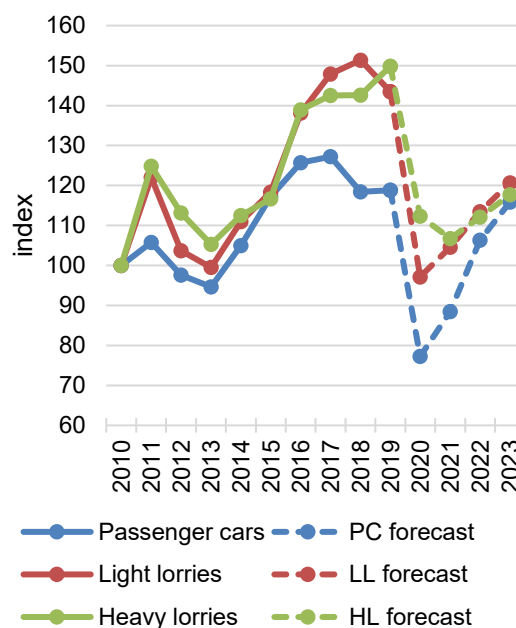**Figure 2. New light lorries registrations, 2010–2023.**

Figure 3. Change in new registrations, 2010–2023 (index 2010 = 100).

The estimated number of new bus registrations is 1,400 per year over the forecast period.

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[1] The method and scenarios are described in PM 2020:2, *Short-term forecasts for the Swedish vehicle fleet – methods and assumptions*.

Continued electrification

Requirements calling for reduced vehicular CO_2 emissions and the goal of a fossil-independent vehicle fleet have resulted in a transition towards a higher proportion of electrified vehicles.

The share of new registrations accounted for by electric passenger cars is expected to increase dramatically from 2020 to 2023. Contributing factors include the bonus–malus system and a greater range of available models.

Our forecast for 2020 is that the share of electric passenger cars would account for 25 % of the total number of new passenger car registrations. The dramatic rise compared with 2019 would be attributable to a growing offering of plug-in hybrids. For 2023, the share of electric passenger cars is expected to account for 31 % of new passenger car registrations (see Figure 4).
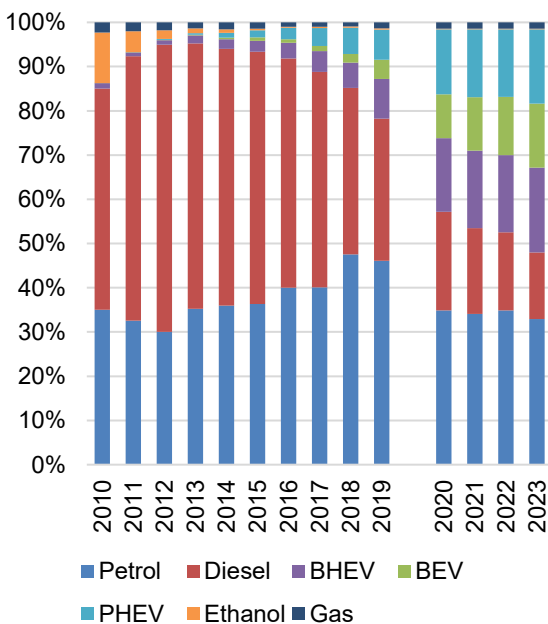

Figure 4. New registrations of passenger cars by fuel type, 2010–2023.

The increase in the share of electric vehicles among new registrations is not happening as quickly for in-service vehicles. Sweden's passenger car fleet is large, and the transition process takes time. By 2023 we believe that the share of electric vehicles in service will have reached just over 400,000, corresponding to an 8 % share of the passenger cars in service.

Diesel is currently the dominant fuel type for light lorries, and we believe that it will remain so over the next few years. However, given the coming EU emission requirements for vehicle makers, we will see growth primarily in electrified vehicles. The bonus–malus system also covers light lorries and, in the long run, is expected to guide us towards greater energy efficiency among newly registered light lorries. We consider that 9 % of newly registered light lorries will be electric in 2023 (see Figure 5). The share of electric light lorries in service is expected to be 2.5 % in 2023.
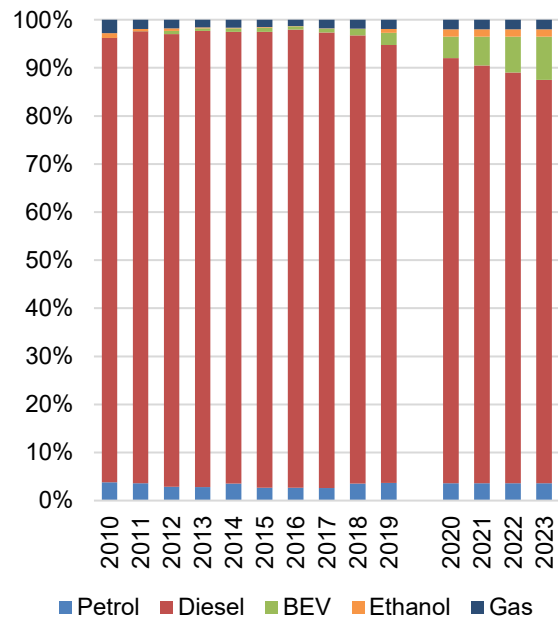

Figure 5. New registrations of light lorries by fuel type, 2010–2023.

In the case of heavy lorries, we do not consider that any electrification will occur before 2023, although we do expect relatively rapid electrification for buses.

The development process for buses is driven largely by the requirements imposed by the public transport authorities in connection with their transport procurements. This makes it difficult to predict the number of new registrations or the breakdown by fuel type, as these will depend on the region making the procurement. Nevertheless, we have assumed 250 new registrations of electric buses annually over the forecast period, i.e., 1,000 electric buses in 2023. This equals an 8 % share of the buses in service in 2023.

CO₂ emissions decrease

As of 1 September 2018, CO_2 emissions from passenger cars will be reported as per the Worldwide Harmonized Light Vehicles Test Procedure (WLTP). We believe that the average CO_2 emissions will not decrease per fuel type, but that they will decrease in total as a result of a redistribution of fuel types among the newly registered passenger cars, i.e., from 145 g CO_2/km in 2019 to 114 g CO_2/km in 2023 (see Figure 6).
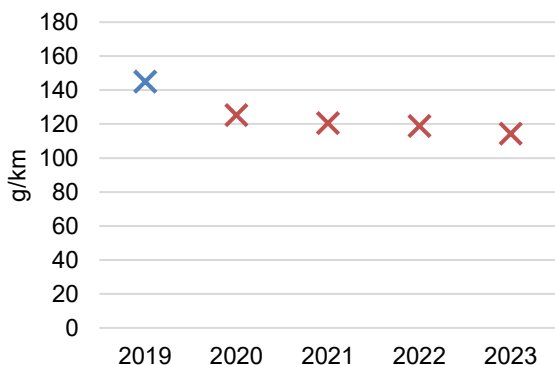

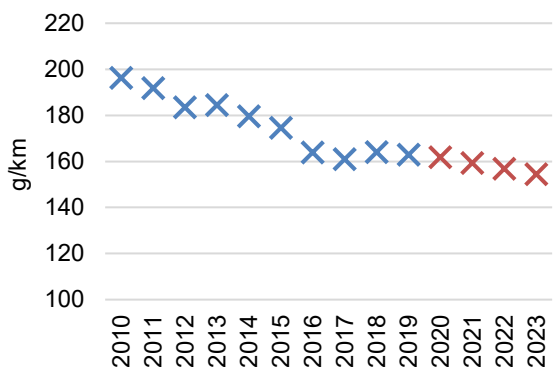**Figure 6. Average CO_2 emissions (WLTP) for new passenger car registrations, 2019–2023.**

Figure 7. Average CO_2 emissions (NEDC) for newly registered light lorries, 2010–2023.

The transition to WLTP was made as of 1 September 2019 in the case of light lorries, so we have insufficient data to forecast CO_2 emissions as per WLTP, but rather need to report based on NEDC (New European Driving Cycle) for one more year for light lorries. Just as is the case for passenger cars, we assume that no changes in CO_2 emissions will occur for the respective fuel types. The average emissions per light lorry are instead expected to decrease due to a predicted redistribution of fuel types among new registrations, i.e., from 163 g CO_2/km in 2019 to 154 g CO_2/km in 2023 (see Figure 7).

The vehicle fleet is ageing

The COVID-19 pandemic and the ensuing crisis will likely mean that the vehicle fleet will not trend younger at the same rate as in recent years. New registrations are likely to decline drastically, and we also believe that deregistration will decrease, i.e., people will be keeping their current vehicles longer than under normal circumstances. The share of passenger cars in service that are three years old or less will fall from 18 % in 2019 to 15 % in 2023, and from 24 to 18 % in the case of light lorries. We also consider that one of the initial effects of the crisis will be that the share of vehicles not in use will increase while we await better times and greater economic activity.

Why short-term forecasts?

The evolution of the vehicle fleet will affect the conditions surrounding both future transport policy and the fulfilment of our transport policy objectives in a number of ways. The government's aim is in part for Sweden to have a fossil-free vehicle fleet in the long term.

The government requires a documentary basis in its efforts to create effective policy instruments for the transport sector. In its budgeting work, the government also needs forecasts of how the Swedish vehicle fleet may be expected to evolve over the next few years.

More information

You can find the collected tables with statistics and forecasts along with the Method PM at
www.trafa.se/etiketter/prognoser-for-fordonsflottan/

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