

Short-term forecast for the vehicle fleet in Sweden 2021-2024

The vehicles forecast for the period 2021–2024 are strongly affected by assumptions concerning the ongoing coronavirus pandemic. The number of newly registered vehicles is expected to increase as compared with 2020, and to reach previous levels in 2023 at the earliest.

The trend in electric vehicles that has been observed in recent years will likely intensify and the proportion of plug-in electric vehicles among newly registered vehicles is expected to increase every year.

About the short-term forecast

Our short-term forecast is based upon a method that follows developments in the total number and types of vehicles on the roads with consideration to those registered as being off the roads, de-registered and newly registered vehicles. The methodology builds on historical developments, other organisations' prognoses of various relevant external factors, and Transport Analysis' own assessment of expected developments in the near future. We describe our methodology in PM 2021:7, "*Korttidsprognoser för den svenska fordonsflottan – metoder och antaganden*" (Short-term forecast for vehicles on the roads in Sweden - methodology and assumptions.).

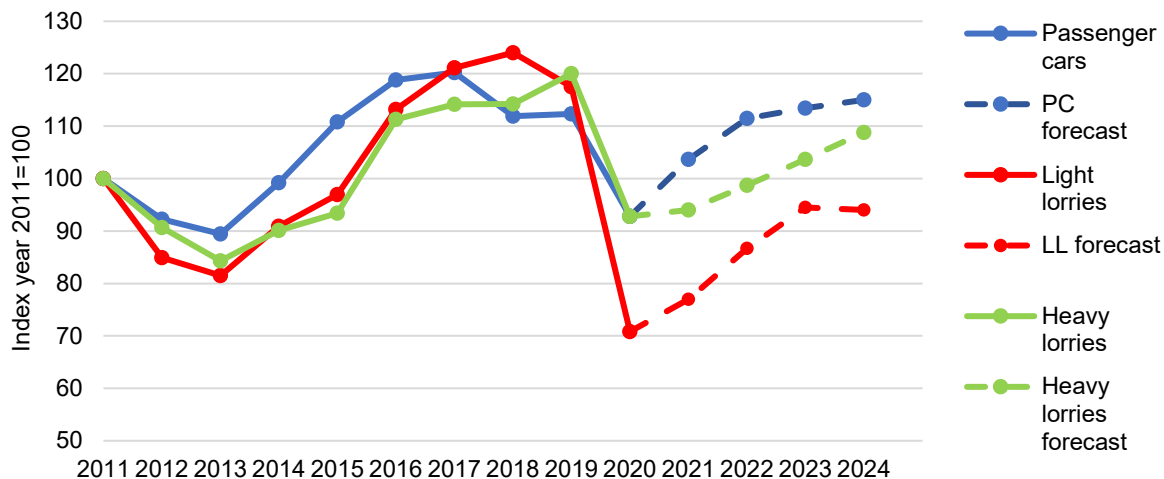


Figure 1. Change in number of newly registered vehicles, 2011–2024 (index 2011=100). Note that the scale of the Y-axis does not start at 0. 100 equates with 326,600 passenger cars, 47,000 light lorries, and 6,775 heavy lorries. For more details, see tables in report PM 2021:7.

Number of newly registered vehicles increasing again

This year's forecast reflects the recovery following the economic decline during 2020. The forecast for newly registered passenger cars, as well as light and heavy lorries indicate a recovery during the coming two years. In 2023, they are expected to reach the same levels as prior to 2020.

The forecasts are, however, subject to a great deal of uncertainty as regards the ongoing coronavirus pandemic and related restrictions. The forecasts are largely based upon economic forecasts published by the Swedish National Institute of Economic Research (Konjunkturinstitutet) at the end of March 2021.¹

Overall, the number of newly registered vehicles is predicted to increase during 2021 as compared with the preceding year. New registrations of passenger cars are expected to recover more quickly than that of light and heavy lorries (Figure 1).

The number of newly registered buses is predicted to reach 1,400 per year during the prognosis period.

Continued electrification

The transition to a greater proportion of electric vehicles is part of the response to demands for reductions in carbon dioxide emissions from vehicles and the objective of reducing greenhouse gas emissions from the transport sector.

Plug-in electric passenger cars made up 31 per cent of newly registered passenger cars during 2020, a considerable increase compared with 2019. The proportion of newly registered vehicles that are plug-in electric passenger cars is expected to increase during the coming years, although not at the same rate as in 2020. The bonus malus system and the increased number of car models on the market are contributing factors.

We predict that 38 per cent of newly registered passenger cars in 2021 will be plug-in electrics. In 2024, they are expected to constitute up to 55 per cent of all newly registered passenger cars and the majority of these are expected to be plug-in hybrid electrics (Figure 2).

¹ We describe our methodology in PM 2021:7, "Korttidsprognoser för den svenska fordonsflottan – metoder och antaganden" (Short-term prognoses for

vehicles on the roads in Sweden - methodology and assumptions).

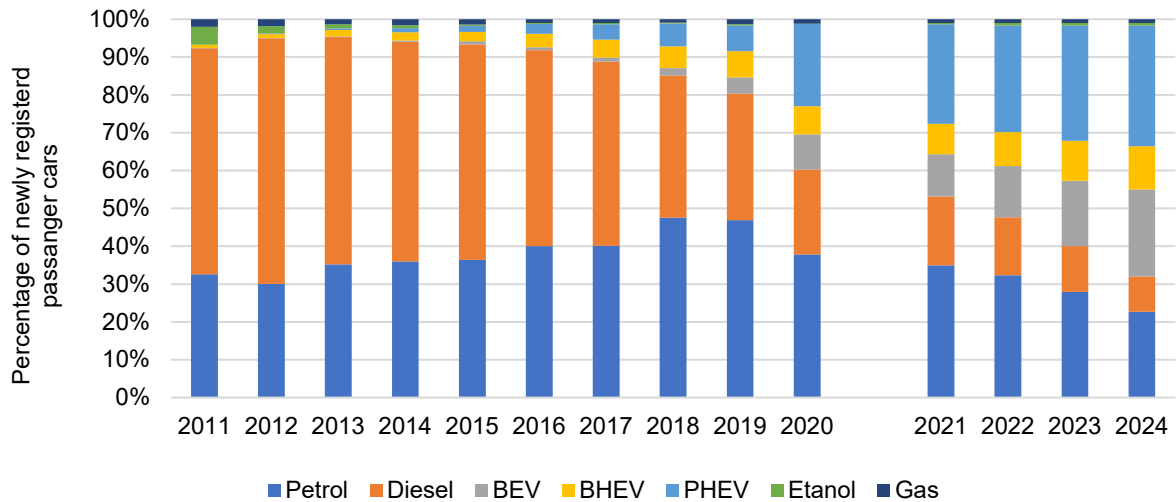


Figure 2. Newly registered passenger cars per fuel type, 2011–2024.

The percentage of newly registered vehicles that are plug-in electric vehicles is not increasing at an equal rate across all vehicle types. There are a large number of vehicles registered in Sweden; therefore, the transition will take time. Some of the vehicles that are de-registered are exported. By 2024, our assessment is that the percentage of plug-in vehicles on the roads will have reached 785,000, equalling roughly 15 per cent of all passenger cars in use.

Today, diesel is the predominant fuel used in light goods vehicles and, according to our assessment, so will continue to be the case during the coming years. However, we expect to see growth in all categories of electrical vehicles as a result of the EU's emissions

requirements on vehicle manufacturers. Ethanol may also increase in prevalence.

The bonus malus system also covers light lorries, and this is expected to lead to an increase in the energy efficiency of newly registered light lorries. Our assessment is that 12 per cent of all newly registered light goods vehicles will be electric in 2024.

The percentage of plug-in light goods vehicles on the roads is expected to reach 3.5 per cent in 2024.

Electric heavy lorries are starting to come on the market, although there are still only a few models available. By 2024, we expect up to 150 electric heavy lorries to be newly registered annually. The bus sector, on the other hand, is expected to be electrified even faster.

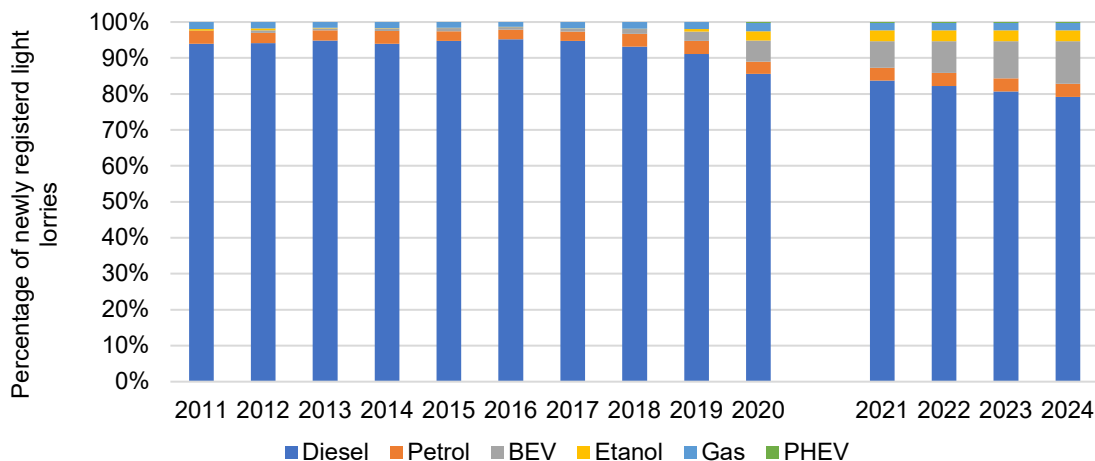


Figure 3. Newly registered light goods vehicles per fuel type, 2011–2024.

Developments in the bus sector are largely influenced by regional transport authorities and the specifications in their public procurements.

It is, therefore, difficult to predict numbers for new registrations and distribution of the various fuel types, as they depend upon which regional authority is tendering a procurement a given year. Despite this, we have assumed new registrations of around 250 electric buses per year during the forecast period, totalling 1,000 new buses by 2023. This amounts to 8 per cent of all buses in use in 2024.

CO2 emissions are decreasing

Starting 1 September 2018, emissions from passenger cars have been classified in accordance with the WLTP test cycle. We predict that average CO2 emissions will not decrease per fuel type, but that they will decrease in total due to ongoing changes in the distributions of the various fuel types. For passenger cars, our forecast is a decrease from 113 g CO₂/km in 2020 to 79 g CO₂/km in 2024 (Figure 4).

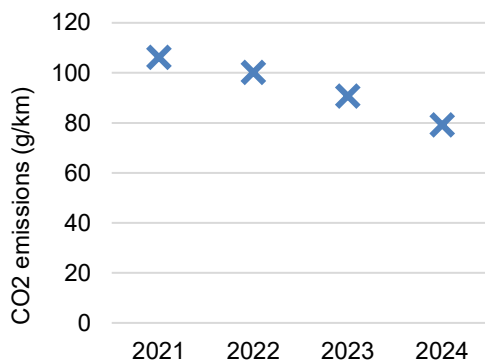


Figure 4. Average CO₂ emissions (WLTP) for newly registered passenger cars, 2021–2024.

WLTP has been used for light lorries since 1 September 2019. As with passenger cars, we do not assume any changes in carbon dioxide emissions for the various fuel types. Instead, we expect the average emissions per light lorries to decrease due to a shift in the distribution of the various fuels in newly registered vehicles, from 185 g CO₂/km in 2020 to 176 g CO₂/km in 2024 (Figure 5).

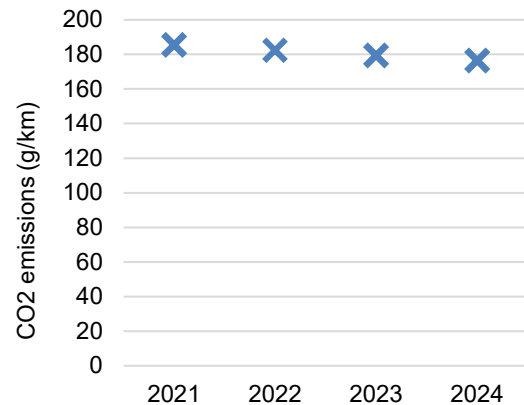


Figure 5. Average CO₂ emissions (WLTP) for newly registered light lorries, 2021–2024.

Why short-term forecast?

Developments in the types and number of vehicles on the roads affect future transport policy in many ways, as well as the potential for reaching the government's transport policy objectives.

The government has a need for analyses and other material in order to develop effective policy instruments.

Vehicles forecast for the coming years are also important for preparing the state budget.

Short-term forecast includes figures for passenger cars, light and heavy lorries for the current year as well as the three coming years.

For more information

Tables with statistics and forecast as well as our methodology report can be accessed here:

www.trafa.se/etiketter/prognoser-for-fordonsflottan

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