COVID-19's impact on India's road transport business-as-usual emissions trajectory

Posted Monday, 2 August 2021, 14:48
Megha Kumar

The sixth in a blog series focused on our meta-study of India's road transport emissions analyses.

The COVID-19 pandemic has been quite difficult for India and has significantly affected the transport sector. Not only have new vehicle sales dropped, but so has travel demand, as a result of stay-at-home orders and lockdowns. Before COVID and under a pre-2019 economic slowdown scenario, ICCT's India Emissions Model expected vehicle sales to grow from around 26.2 million in 2018 to 27.2 million in 2019 and 28.2 million in 2020. From there we expected sales to reach over 40 million by 2030 and over 80 million by mid-century.

Instead, new vehicle sales slowed to 21.5 million in 2019 and further to 18.6 million in 2020—reductions of 18% and 14%, respectively. We know that post-COVID sales will also be different from what we had envisioned, but we don't know exactly how these depressed sales will change in the future. Nonetheless, it's clear that the 2020 dip in vehicle sales has the potential to leave a deep imprint on the energy use and emissions trajectory of the road transport sector. In the previous blog in this series, I urged researchers to aim higher in terms of thinking about the potential for reductions. With that in mind, I'd like to explore what different post-COVID futures would mean for emissions. (We'll explore how much further the emissions curve can be bent over with aggressive policy in the seventh and final blog.)

Data on travel demand reduction in India during the pandemic is hard to come by. As travel demand and energy consumption in the sector are directly correlated, though, we were able to estimate reduction in travel demand from road transport based on the yearly petroleum consumption of the country and historical data on end-use consumption of petroleum. As per these estimates, travel demand reduced by at least 11% in 2020 compared to 2019. This is only a rough estimate and the number could likely be higher. Regardless, it depicts how much impact COVID-19 has had on the transport sector.

In one future sales scenario, demand and sales could rebound quickly. The recovery could start in 2021 and new sales could return to the 2018 level by 2024. (We aren't focused on the 2019 sales number here because sales had dampened due to the economic slowdown.) We call this a "plausible or likely sales" scenario because of India's large, young population and fast-growing economy, both of which suggest the demand for automobiles is more likely to remain high.

Another possibility, though, is that new sales might remain depressed for almost a decade and only return to 2018 levels by 2028. We call this a "progressive or low-sales" scenario, and this could happen with greater use of public transport and vehicle ownership restraint measures are implemented. Such a scenario would almost certainly require the government to follow a green recovery path and make significantly higher investments in improving and expanding public transport and non-motorized transport

infrastructure while also imposing stringent vehicle use restraint measures, especially on vehicles with poor efficiency. Several of the strategies available are detailed in Table 1, and in such a scenario we expect central, state, and city governments to work aggressively and in tandem with each other to formulate complementary policies that strengthen decarbonization efforts.

Table 1. Actions available to different levels of government for realization of a progressive or low-sales scenario for new vehicle sales

Central	State	City
• Policies and investments for public transport improvement and expansion • Improving railway's freight capacity and competitiveness to promote mode shift from road to rail freight • Stringent fuel efficiency standards for all vehicle categories • Stringent emission standards for all vehicle categories* • Policies that support the adoption of electric vehicles (EVs) and other zero-emission vehicle technologies	• Policies encouraging deployment of clean vehicles like battery EVs • Policies and investments for public transport improvement and expansion • Measure to retire high-polluting vehicles*	• Urban planning - compact cities, transit-oriented development • Vehicle use and ownership restraint measures • Better parking and traffic management • Pedestrian and cycling friendly cities • EV-ready by-laws • Ultra/low emission zones that allow only non-polluting vehicles

** Not a decarbonization measure, but critical to lower road transport related air pollution levels*

Though we think it's likely that a progressive sales scenario could be a possibility only if deliberate action is taken to limit dependence on automobiles and/or if people demand clean air and climate action, it is not altogether improbable that sales may remain slow as a consequence of economic slowdown. This has happened elsewhere, including in Brazil and Indonesia. In such cases of economic slowdown, investments in public services tend to be among the first to suffer, including in public transport and urban planning, become that much more crucial.

It's important that we find large differences between the two scenarios. As shown in Figure 1, sales under the plausible or likely sales scenario are expected to cross the 30 million mark by 2028 and reach over 65 million by 2050. On the other hand, under the progressive or low-sales scenario, new sales would cross the 30 million mark only in 2032 and reach around 57 million by 2050. Under the pre-COVID and pre-2019 economic slowdown business-as-usual (BAU) trajectory, we would have reached 30 million vehicle sales by 2022.

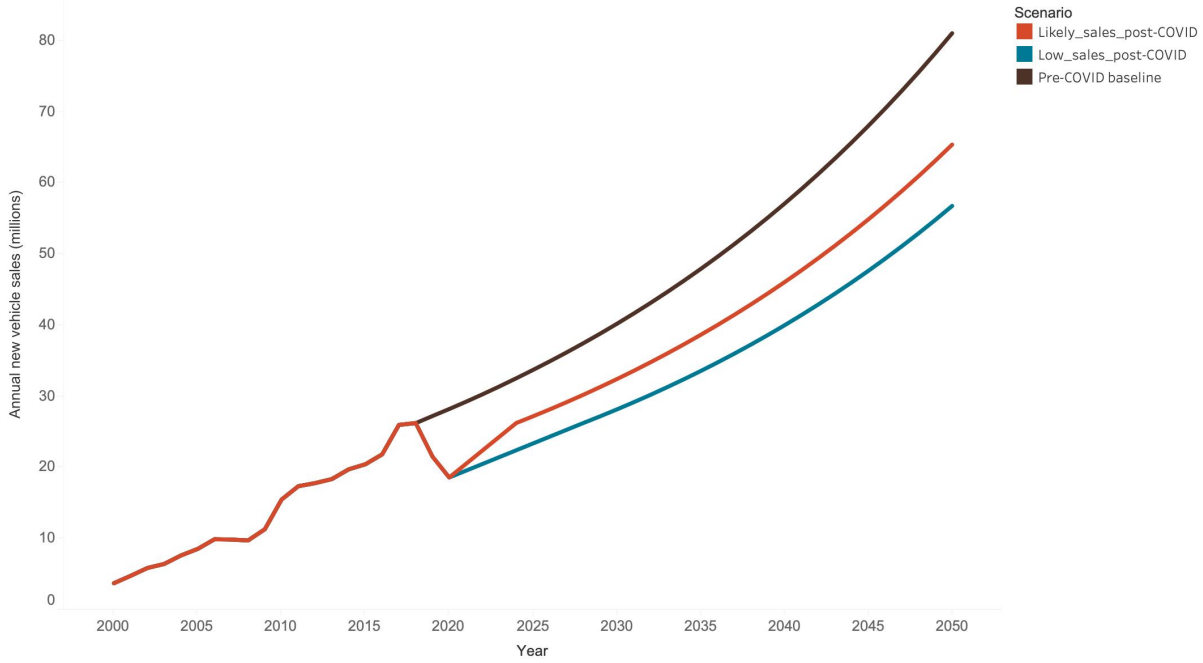

Figure 1. Vehicle sales under the pre-COVID BAU and different post-COVID scenarios.

In terms of the energy and emissions impact, the plausible and progressive sales trajectories also have very different impacts. As shown in Figure 2, the plausible or likely sales scenario would have 30% lower CO_2 emissions than the pre-COVID baseline trajectory. Under the progressive or the low-sales scenario, the reduction in CO_2 emissions would be more substantial, around 42% in 2050 compared to the pre-COVID baseline trajectory. The savings in oil and gas consumption would be in the similar range, 30% and 42%, respectively, in 2050 under the post-COVID likely sales and low-sales scenarios.

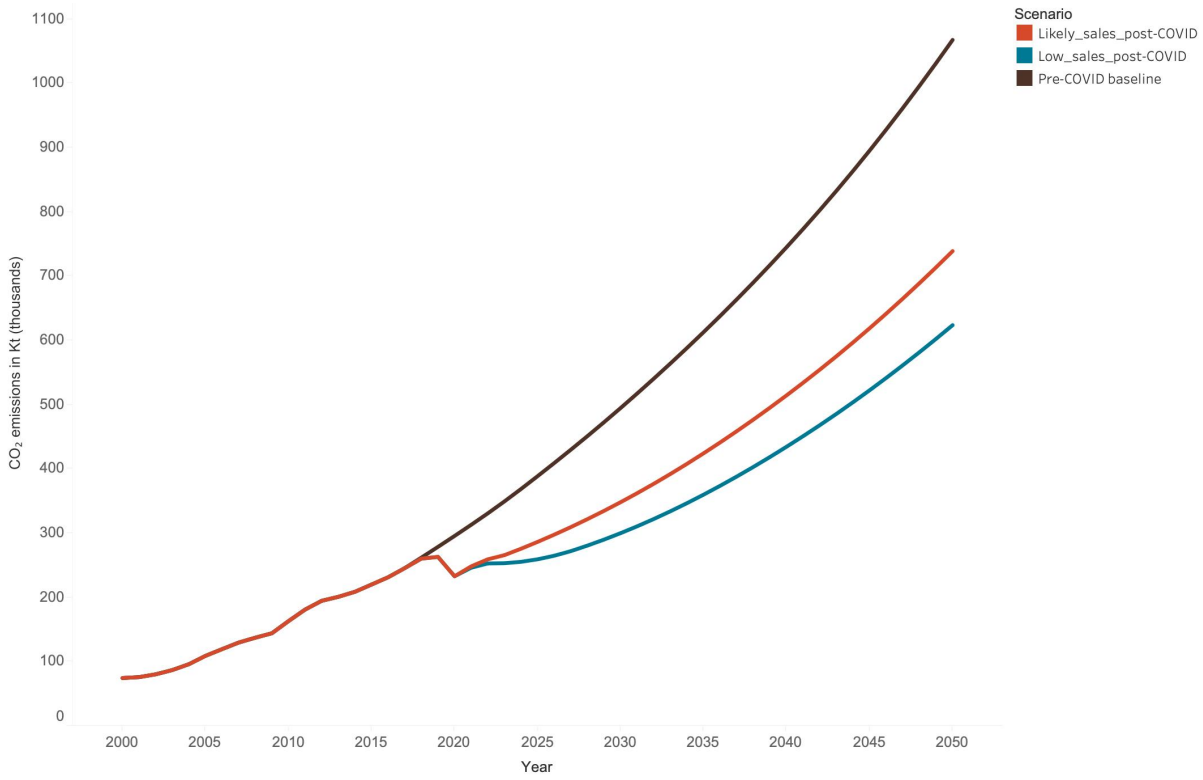

Figure 2. CO_2 emissions from the road transport sector under different pre- and post-COVID scenarios.

The pandemic lowered emissions from many different sectors by forcing behavioral changes that would have been hard to imagine before COVID-19. This has been a time of great turmoil and difficulty, but there is a way to also view it as an opportunity to re-envision our future. We could use this moment to push the boundaries with respect to what we can achieve, and if we are to make real strides in climate change mitigation, we must not let this opportunity slide from our hands.

This is part of NDC Transport Initiative for Asia (NDC-TIA). NDC-TIA is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports the initiative on the basis of a decision adopted by the German Bundestag. For more visit: https://www.ndctransportinitiativeforasia.org/.

TAGS: *Zero-emission vehicles*

Previous Post

FAME-II revisions spark hopes for a jump in electric two-wheeler sales in India

Next Post

Summing up: What's the potential for India to set a sectoral target for road transport CO2 emissions in its NDC?