

Zero-emission bus and truck market in the United States and Canada: A 2020 update

The heavy-duty vehicle¹ industry is moving towards a combustion-free future, but the market for zero-emission buses and trucks is still in its early stages. This fact sheet provides an overview of the 2020 market for new zero-emission commercial vehicles in the United States and Canada. The information provided is an update to the 2019 data presented in a study conducted in collaboration with the Environment Defense Fund and Propulsion Québec.²

China continues to dominate global sales of zero-emission buses and trucks

- » In 2020, 91.6% of total zero-emission commercial vehicle sales occurred in China. Since 2010, China has accounted for 97.7% and 99.2% of zero-emission bus and truck sales, respectively.
- » Driven by the market in China, global zero-emission bus sales peaked in 2016 at roughly 146,000 units, but 2020 sales of about 62,000 units represent a 57% reduction. Zero-emission truck sales of nearly 7,000 units in 2020 represent a 90% decrease from peak sales in 2017 of about 71,000 units.
- » In 2020, the United States and Canada accounted for 1.2% of global zero-emission bus sales and 1.7% of zero-emission truck sales.

¹ We use the terms “heavy-duty vehicle” and “commercial vehicle” interchangeably to refer to any on-road bus or truck with a gross vehicle weight rating of over 8,500 pounds.

² The data for the zero-emission commercial vehicle market for this fact sheet and the 2020 study are sourced from EV-Volumes.com.

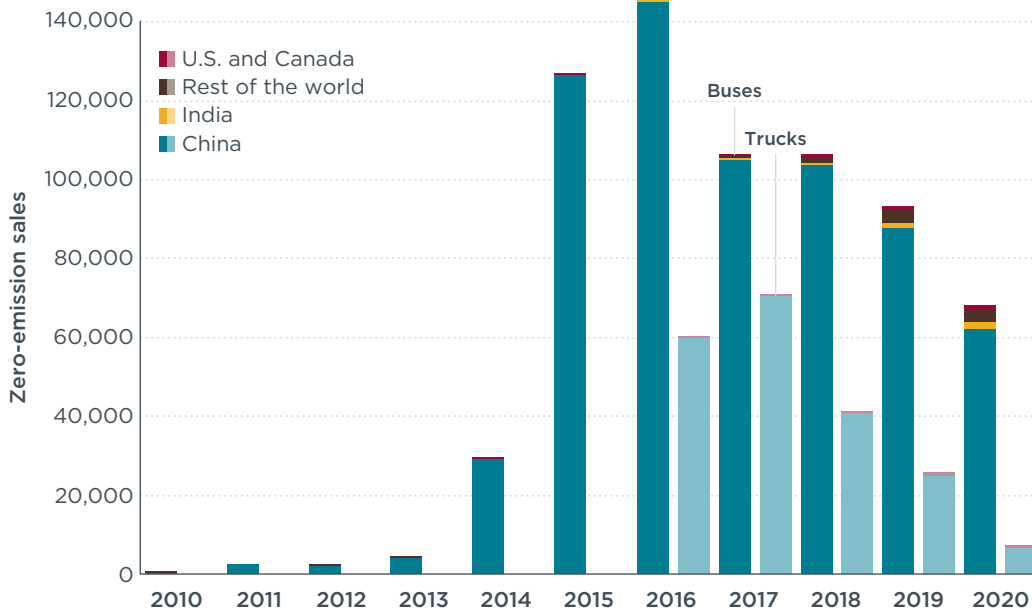


Figure 1. Global sales of zero-emission buses and trucks, shown annually from 2010–2020.

Global zero-emission commercial vehicle sales dropped by 37%, on average, between 2019 and 2020

- » Global vehicle sales in 2020 were certainly impacted by the COVID-19 pandemic. Between 2019 and 2020, zero-emission bus sales dropped by 27% and zero-emission truck sales saw a more significant reduction of 72%.
- » Annual zero-emission bus sales were down by 28% in China in 2020 but increased in the United States, India, and the rest of the world.
- » Zero-emission truck sales contracted worldwide in 2020, driven by a 73% dip in the Chinese market, but losses were recorded across global markets.
- » In the United States and Canada, the commercial vehicle market overall contracted by 18% compared to 2019. Despite this, the subset of zero-emission commercial vehicle sales grew by 8% on average.

Zero-emission sales from 2019 to 2020

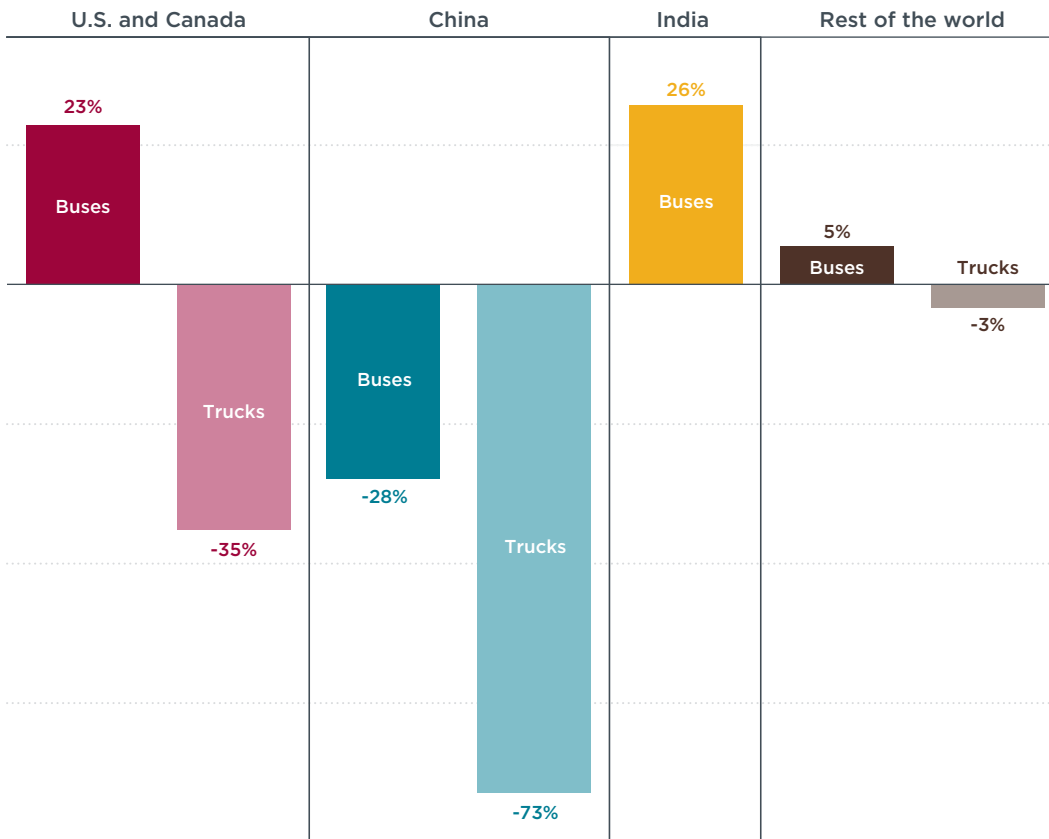


Figure 2. Change in zero-emission bus and truck sales in major vehicle markets from 2019 to 2020.

Zero-emission commercial vehicle sales in the United States and Canada have grown more than 10-fold since 2015, with several legacy manufacturers and zero-emission vehicle startups active in the bus and truck markets.

- » In 2020, buses made up 87% of zero-emission commercial vehicle sales in the United States and Canada, with transit and urban buses representing 54% of these bus sales and school buses making up the remainder.
- » Proterra is the early leader in the zero-emission transit bus market, accounting for 41% of 2020 sales in the United States and Canada. Including Proterra, the four largest electric transit bus manufacturers represented 99% of the zero-emission transit bus market in 2020.
- » Lion Electric and Blue Bird are the leading electric school bus makers and combined represented about 85% of the zero-emission school bus market in 2020.
- » Daimler has dominated the nascent zero-emission truck market, representing 69% of sales in 2020. Mitsubishi Fuso, a subsidiary of Daimler, has made up 33% of cumulative zero-emission truck sales in the United States and Canada to date and 63% in 2020 alone. However, Mitsubishi Fuso announced in May 2020 that it would no longer offer products in the North American market.³

³ Alan Adler, "Mitsubishi Fuso ending truck sales in US and Canada," *FreightWaves*, (May 28, 2020), <https://www.freightwaves.com/news/mitsubishi-fuso-ending-truck-sales-in-us-and-canada>

» Battery-electric technology was the dominant zero-emission option, accounting for all but 10 of the 422 zero-emission transit buses sold in 2020 and all of the zero-emission school buses and trucks sold.

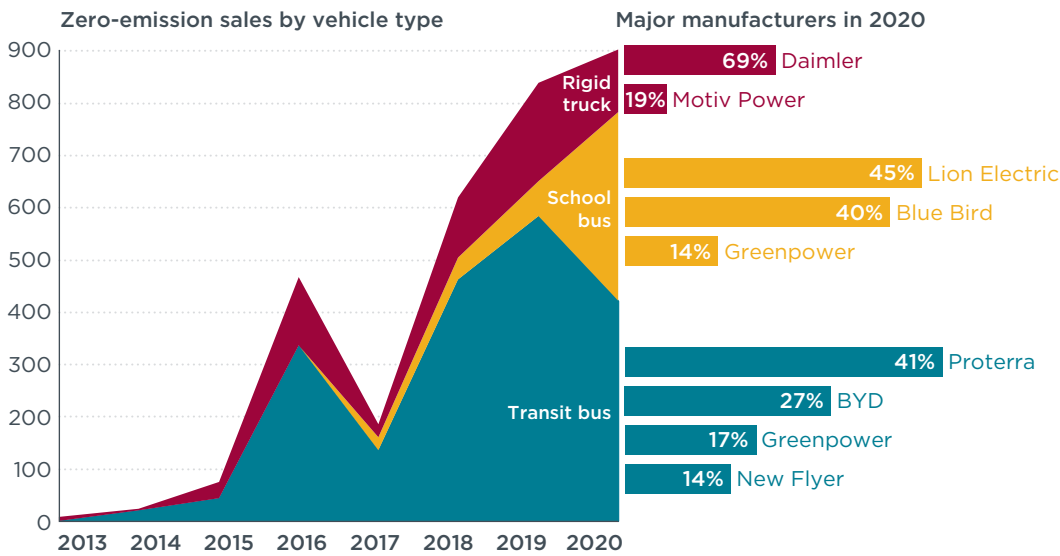


Figure 3. Zero-emission bus and truck sales in the United States and Canada by vehicle type, with 2020 sales shown for major manufacturers. Data labels show the relative market share per vehicle segment while the length of the bars is proportional to absolute sales across all segments.

Most zero-emission buses and trucks sold in the United States and Canada are made in North America.

- » The United States and Canada each captured a roughly equivalent share of zero-emission bus manufacturing in 2020. About 86% of the zero-emission buses sold in the United States and Canada were also made in one of these two countries. Manufacturers in China accounted for nearly all of the remaining 14% of zero-emission bus production.
- » For trucks, the majority (63%) of production occurred in Japan, driven entirely by Mitsubishi Fuso, which announced in May 2020 that it would stop selling in North America when its inventory was exhausted. Almost all of the remaining zero-emission trucks—made by Freightliner, Motiv, and Peterbilt—were manufactured in the United States.

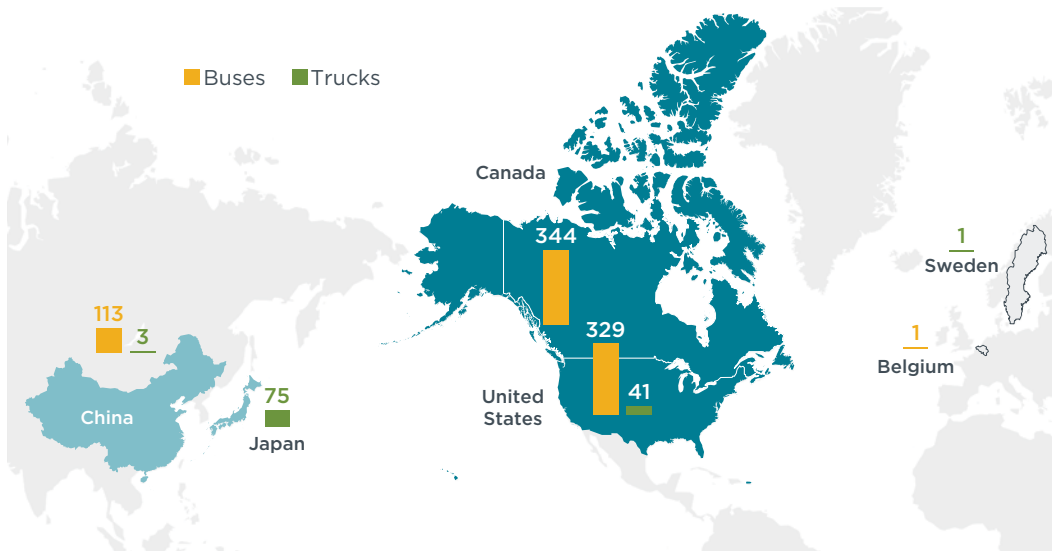


Figure 4. Manufacturing country of origin for zero-emission heavy-duty vehicles sold in the U.S. and Canada in 2020.

To date, 42% of zero-emission commercial vehicles sold in the United States and Canada have gone to fleets in California.

- » Of roughly 2,600 zero-emission heavy-duty vehicles (HDVs) on the road in the United States and Canada, nearly 1,100 are in California, primarily based in the San Francisco Bay area and the greater Los Angeles area.
- » In the United States, 45 states and the District of Columbia have at least one zero-emission HDV in operation. Of these, 31 have more than 10 zero-emission HDVs.
- » Just over half of all zero-emission buses in Canada are deployed in Toronto, and there have yet to be any zero-emission trucks sold in Canada.

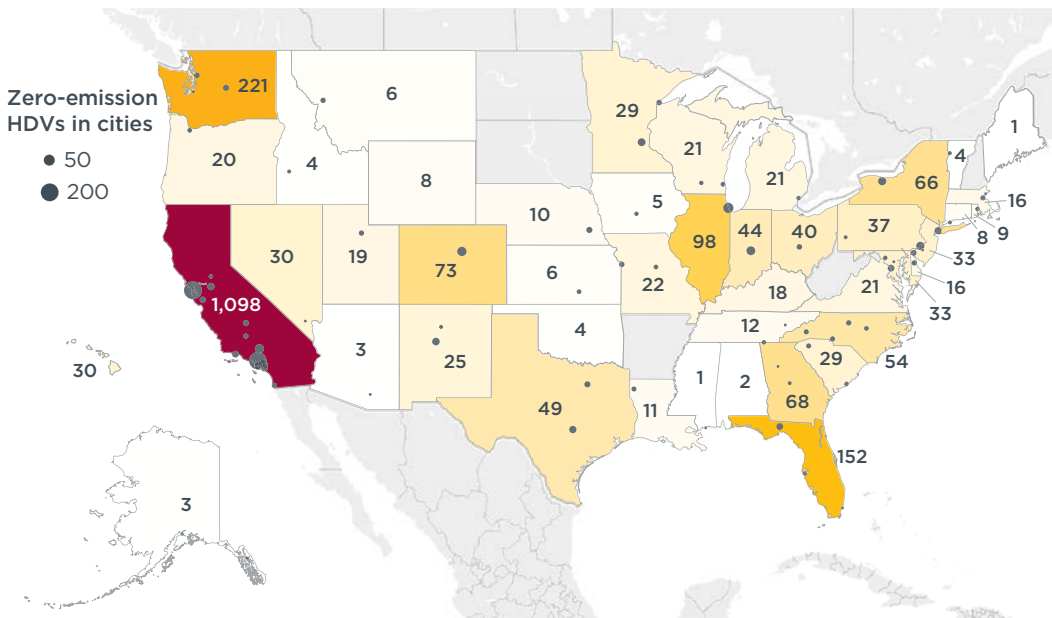


Figure 5. Zero-emission heavy-duty vehicle sales in 2020 by U.S. state. City-level data shown where available.

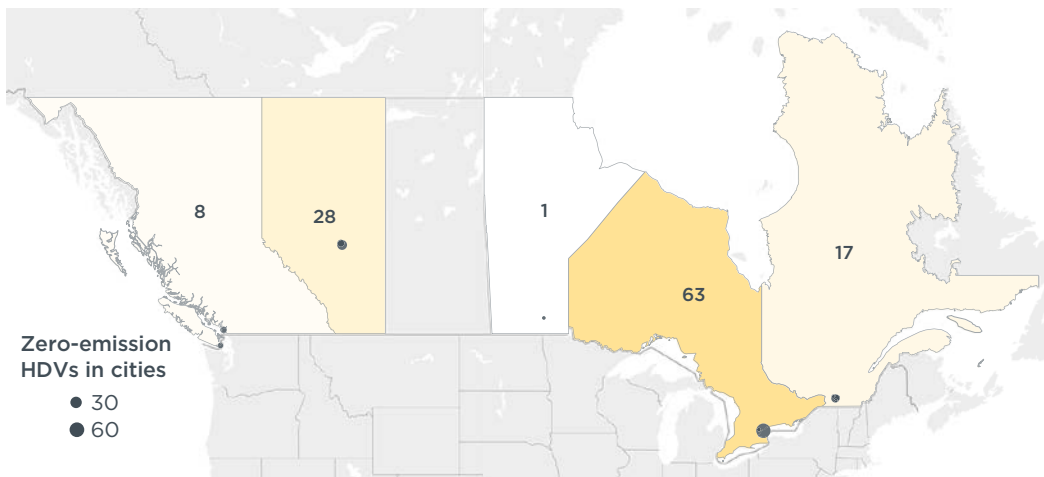


Figure 6. Zero-emission heavy-duty vehicle sales in 2020 by Canadian province. City-level data shown where available.

Several manufacturer and supplier announcements signal an expanding market and increasing availability of battery-electric and hydrogen fuel cell commercial vehicles in North America in the coming years. In addition, a growing suite of regulatory programs and incentive policies at the federal, state and provincial, and local levels are accelerating the transition to electric drive technology for heavy-duty vehicles. With the market for zero-emission buses and trucks evolving rapidly, we will continue to follow future developments closely and aim to publish market updates on an annual basis.

RELATED PUBLICATION DETAILS

Title: Race to zero: How manufacturers are positioned for zero-emission commercial trucks and buses in North America

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