

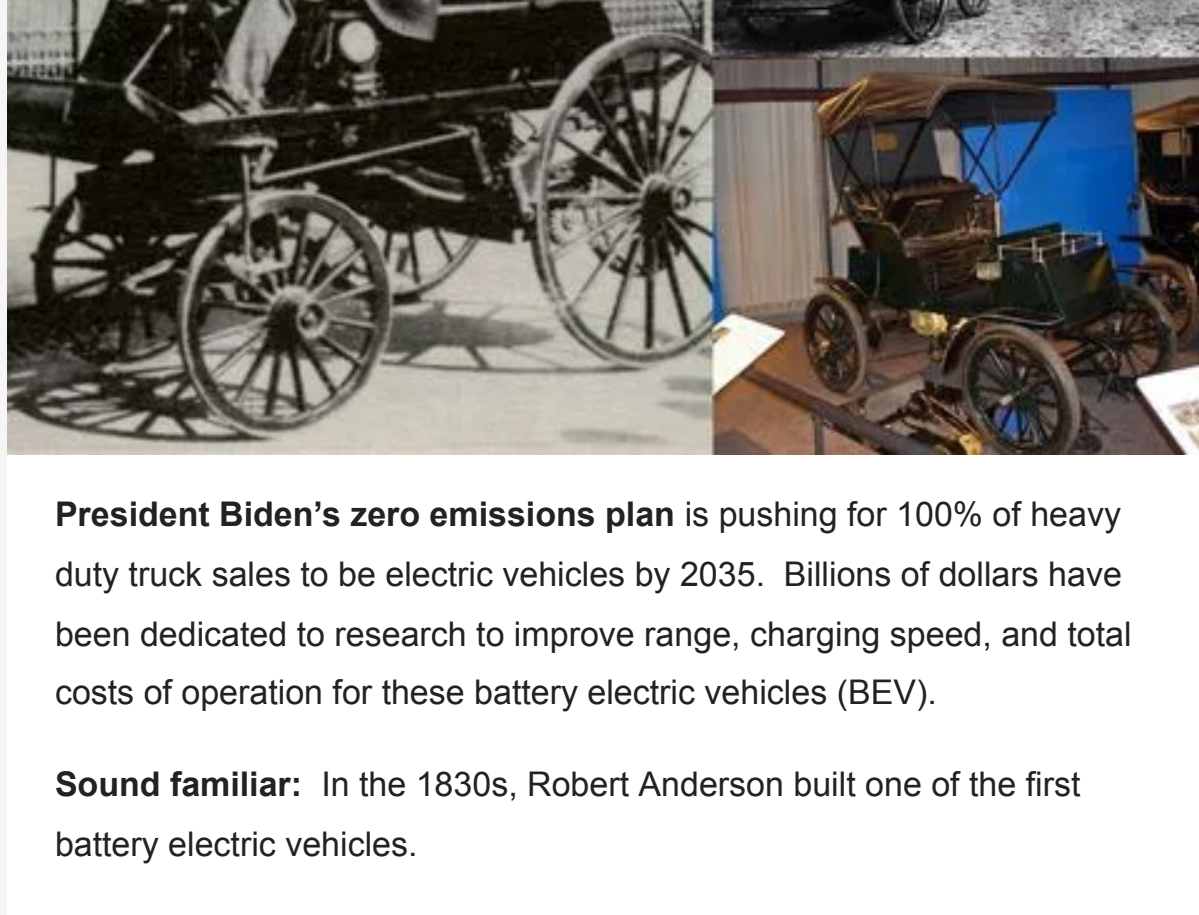
Trucker Reality

By OOFI • Jan 05, 2022

Smart Brevity® count: 3.5 mins... 927 words

Academics and regulators often claim to look at the BIG picture by examining the problems in trucking and freight movement from the 30,000 ft. level. The following information looks at the “realities of trucking” through the windshield, 6 ft. up from the pavement, from the driver’s seat.

1 Big thing: BEVs and Reality Checks



President Biden’s zero emissions plan is pushing for 100% of heavy duty truck sales to be electric vehicles by 2035. Billions of dollars have been dedicated to research to improve range, charging speed, and total costs of operation for these battery electric vehicles (BEV).

Sound familiar: In the 1830s, Robert Anderson built one of the first battery electric vehicles.

- One of his later electric vehicles was destroyed by railway workers who saw it as a “devil machine” and a threat to steam engines.

However: Henry Ford moved to mass produce internal combustion engine vehicles at a much cheaper cost.

- The first Model T cost was \$850 where most electric cars were \$1,750 and higher.

- By 1923, the Model T was under \$300 and the electric was \$3,000.

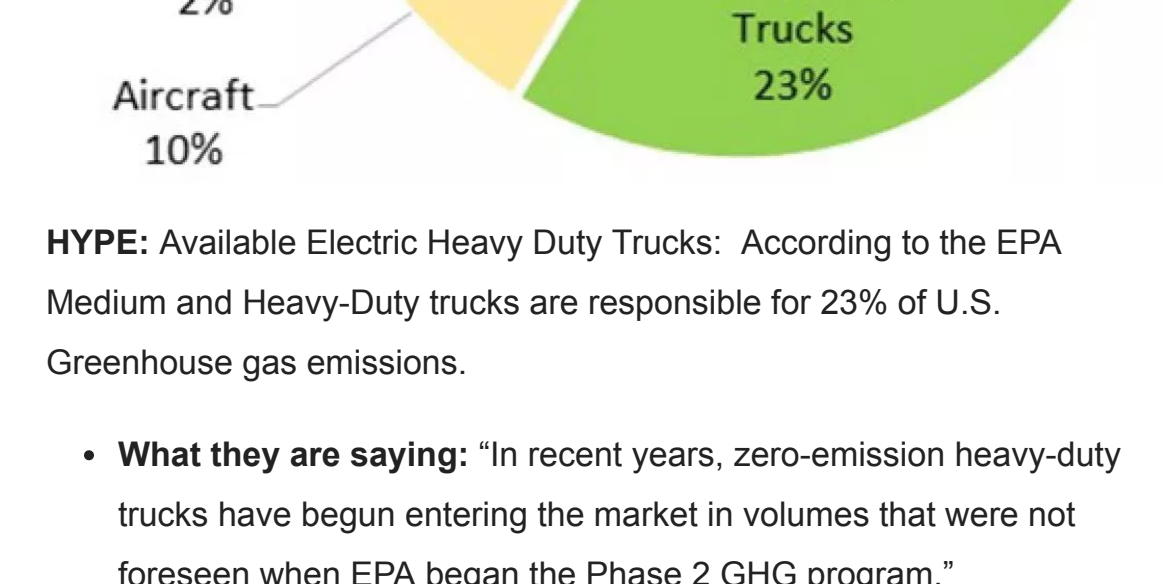
- **The big picture:** Electric vehicles were bought by the wealthy as a status symbol.

History often repeats itself: In 1997, 2000, and 2001, the U.S. Environmental Protection Agency (EPA) published rules establishing a series of new emission mandates for heavy-duty trucks to be phased in between model years 2004 and 2010.

- This resulted in a huge pre-buy and market disruption, resulting in engine manufacturers laying off workers. In addition, EPA projected a cumulative surcharge for these heavy-duty trucks at \$5,136.

- **The following** graph clearly indicates that EPA has historically underestimated the costs of their regulations on the trucking industry.

Hype vs. Reality: Costs



HYPE: Available Electric Heavy Duty Trucks: According to the EPA Medium and Heavy-Duty trucks are responsible for 23% of U.S. Greenhouse gas emissions.

- **What they are saying:** “In recent years, zero-emission heavy-duty trucks have begun entering the market in volumes that were not foreseen when EPA began the Phase 2 GHG program.”

Reality check: While Tesla and Nikola Motor have introduced Class 8 electric trucks, and are taking orders for them, few have been delivered.

- Toyota, in collaboration with Kenworth, is slated to test 10 trucks over the next two years.
- **Forecasts** sales for medium and heavy-duty trucks will remain at less than 4% until 2025 according to a senior consultant with IHIS Markit.

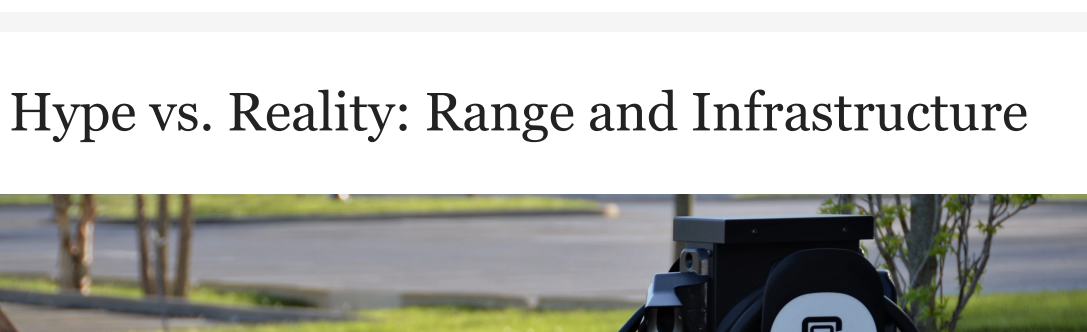
HYPE: The total cost of ownership (TCO) for an electric Heavy-duty truck will cost less over the long term than for a diesel powered heavy duty truck.

Reality check: The TCO of owning an electric truck is seldom used when comparing electric trucks to internal combustion trucks.

- **The initial cost** of purchasing an electric truck is about twice the amount of a traditional diesel truck. This large price difference has made many fleet owners wary about making the investment.
- It costs between \$5,000 and \$20,000 to reserve an electric Tesla Semi. Purchasing the limited founders series semi requires the full \$200,000 up front.

What they’re saying: An independent report by the Anderson Economic Group found that it costs more to power EVs than traditional gasoline or diesel vehicles due to the added costs associated with chargers, commercial charging, EV tax, and “deadhead” miles.

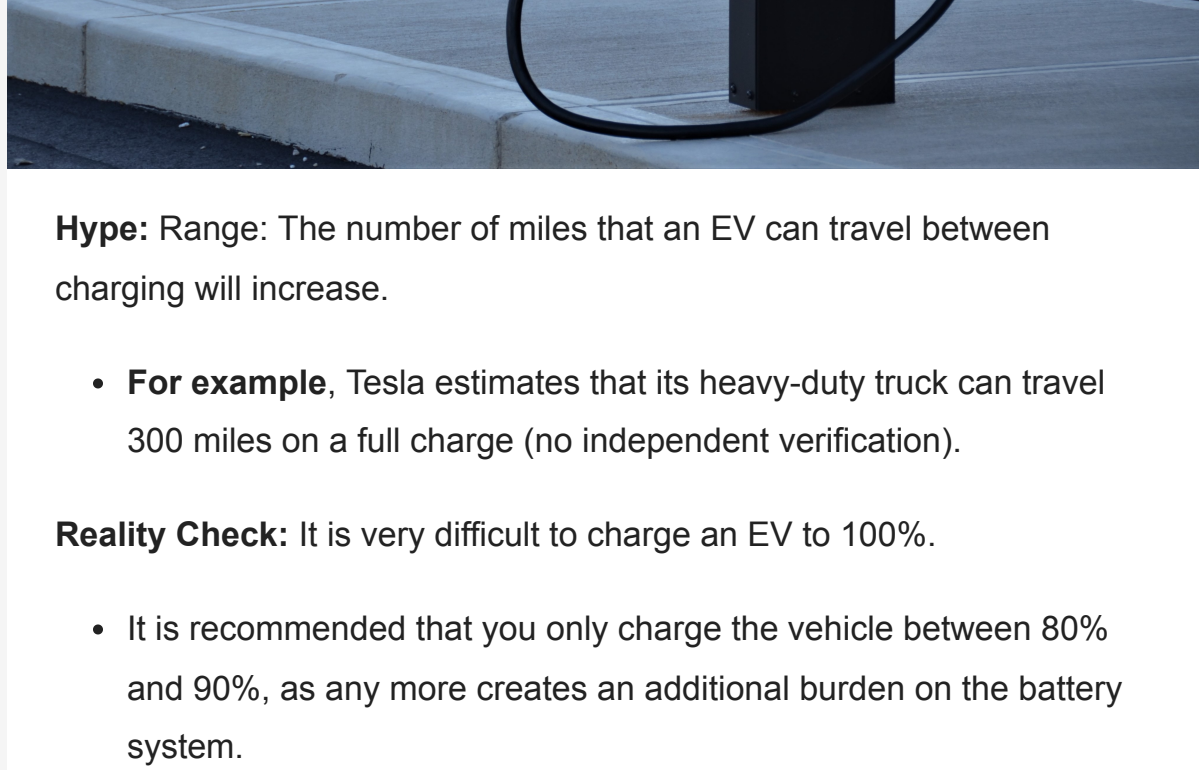
- **The following graph** depicts the per mile costs of various types of vehicles over a 10-year period starting with 2025. The research done by Argonne Research Lab compares the cost of BEVs with a traditional internal combustion engine tractor-sleeper.



TCO for class 8 sleeper cab comparison of ICEV and different BEV charging rates in MY 2025

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Hype vs. Reality: Range and Infrastructure



Hype: Range: The number of miles that an EV can travel between charging will increase.

- **For example,** Tesla estimates that its heavy-duty truck can travel 300 miles on a full charge (no independent verification).

Reality Check: It is very difficult to charge an EV to 100%.

- It is recommended that you only charge the vehicle between 80% and 90%, as any more creates an additional burden on the battery system.
- **If a company** advertises 300 miles on a full charge, then a driver will get considerably less on an 80% charge. Moreover, the EV’s range could be reduced by 40% in cold temperatures.

Hype: Charging stations: President Joe Biden lauded his recently passed \$1.2 trillion infrastructure package as a “once-in-a-generation” investment that would – among other things – create a national network of electric vehicle charging stations, helping him deliver on his pledge to get half of U.S. drivers to switch to electric vehicles by the year 2030.

- “We’re going to build out the first-ever national network of charging stations all across the country — over 500,000 of them.”

Reality Check: The final version of the infrastructure bill approved by Congress, includes half of Biden’s proposed budget for electric vehicle charging stations.

- **The International Council** on Clean Transportation says the United States would need 2.4 million electric vehicle charging stations by 2030 if 36% of new car sales were electric.

One last thing: The push for all things electric has been triggered by the concern over climate change.

- **Climate change** has prompted the push for the change from fossil fuels to more friendly environmental fuels like electricity.
- Climate change has help create more natural disasters and these disasters have created concerns that will only be exacerbated by reliance on electricity.

Where will trucks go to get power to bring essential supplies?

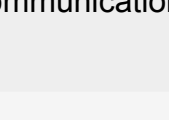
- 2021 Texas Outage Event – estimated people affected 11,760,000
- 2020 Hurricane Isaias – Four states 13,870,000 people effected
- 2020 Major Storm – Four states 9,310,000 people effected
- 2019 California wild fires – 3,460,000 people effected

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Feedback

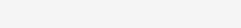
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