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# Companies Are Balking at the High Costs of Running Electric Trucks

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Executives at truck leasing company [Ryder System](#) spent years listening to some of their biggest customers say they wanted to switch to battery-electric big rigs.

Now that the heavy-duty trucks are available, the company says, few customers want to pay for them.

“The economics just don’t work for most companies,” said Robert Sanchez, the chief executive of Ryder, which manages 250,000 trucks and vans for tens of thousands of retailers and manufacturers.

Ryder’s experience illustrates the challenges facing state and federal governments as they try to push truckers out of heavily polluting diesel rigs and into zero-emissions vehicles. It suggests that truck makers will need to make significant advances in battery weight, range and charging times if battery-electric trucks are to seriously challenge diesel rigs in a highly competitive freight sector that runs on thin margins.

“Quite frankly, demand has not been as strong as what we would like,” said Rakesh Aneja, head of eMobility at Daimler Truck North

America, which released its Freightliner eCascadia battery-electric semi truck in 2022.

Aneja said Freightliner eCascadia orders this year are about level with 2023's orders. That is despite an increasing push from governments, regulators and from companies themselves to lower truck pollution.

Battery-electric trucks cost about three times as much to purchase as a diesel rig. There are federal and state programs to help offset the purchase costs, but operating costs and other issues present big hurdles.

Truckers say battery-electric truck operations are too difficult to set up and too expensive and inefficient to run. It can take years [to install on-site charging facilities](#) for trucks that can travel less than half as far as diesel rigs between refueling and that require at least [several hours to recharge](#).

Ryder launched a dedicated service a year ago to help companies set up and run battery-powered fleets, including installation of charging equipment and maintenance of the vehicles.

Ryder says that so far it has sold just 60 vehicles through the program and that most of those are light-duty trucks. It says three companies are running battery-electric heavy-duty trucks, but those five vehicles are only being used in yards to shuttle trailers between parking spots and loading docks.

Sanchez said that unlike passenger-vehicle owners who might buy an electric car on principle, companies will only switch to battery technology when it can compete with diesel on the cost of running the vehicle.

## Heavier costs

Ryder, using load and route data from 13,000 vehicles it operates on behalf of customers, recently analyzed the annual operating expenses of battery-electric commercial trucks and found sharply higher costs compared with traditional, diesel-powered rigs.

The analysis assumed the [infrastructure to provide fast charging](#) was already in place and focused on expenses such as buying the vehicle, maintenance, labor and fuel.

The company found that light-duty, battery-electric vans raise annual operating costs by several percentage points. As trucks get heavier the cost difference becomes more pronounced, according to Ryder's analysis, with annual costs of operating battery-electric big rigs about twice as expensive as diesel trucks.

"What surprised us was the magnitude of the gap," Sanchez said.

The costs differ from state to state because of differences in average wages, fuel and power prices.

The Ryder analysis found that converting a typical mixed fleet of 25 commercial vehicles, including about 10 heavy-duty trucks, from diesel to battery power in California would raise a fleet's annual operating costs 56%, or \$3.4 million a year. The same transition in Georgia would raise annual operating costs 67%, or \$3.7 million.

In all, Ryder said, the higher operating costs would add 0.5% to 1% to inflation. "Even if it was in one state, you're going to be pushing the cost of transportation within that state up," Sanchez said.

Proponents of battery-electric trucks say they are more cost-

efficient than diesel trucks over time because they have fewer moving parts than an internal combustion engine and require less maintenance and repair. Some trucking companies say battery-electric trucks haven't been on the road long enough to test those assertions.

## **Saving on fuel**

The battery-electric trucks also save on fuel costs in many parts of the country, with savings varying based on the cost of diesel in a state and on the time of day when the vehicle is charged because of shifting costs for electricity.

Because battery-electric trucks are heavier than diesel trucks and require several hours to recharge, companies need more vehicles and drivers to haul the same volume of freight as a diesel truck.

The Ryder analysis estimated that a company would need nearly two battery-electric big rigs and more than two drivers to equal the output of a single heavy-duty diesel truck.

Other operating issues are also cropping up as the big rigs get on the roads.

Penske Truck Leasing, which is running pilot programs with battery-electric trucks, has found that because battery-electric rigs are heavier than diesel trucks their tires wear out faster. The company has also found some maintenance costs are more expensive than diesel trucks because parts are rarer and so more expensive.

Paul Rosa, senior vice president of procurement and fleet planning at Penske Truck Leasing, said there is still great interest in zero-emissions vehicles. But while a few years ago customers were

pushing to transition to battery-electric trucks “right away,” now they are looking to slow down.

Trucking executives expect that technological advances, such as smaller, lighter batteries that provide greater range between charges, eventually will bring down costs. In the meantime, some state and federal governments are enacting regulations that push truckers into the vehicles.

The U.S. Environmental Protection Agency recently released a rule effectively mandating that manufacturers sell more battery-electric trucks by the end of the decade. California has introduced several regulations that push truckers and fleets into zero-emissions vehicles.

Local and national trade groups oppose the rules and regulations.

“Considering that 96% of U.S. trucking companies operate 10 or fewer trucks, these mandates are simply cost-prohibitive for most truckers,” the American Trucking Associations said earlier this month.

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