Battery-powered pickups? California's next clean air rule targets gas-powered trucks, big rigs

By Mackenzie Hawkins
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Gas-powered work trucks — from the delivery vans bringing packages to your doorstep to the big rigs that roar along highways — may soon be fewer in number on California roads.

California's air pollution agency this week is poised to pass a rule that would require truck manufacturers to cut their production of gas-powered vehicles by more than half over the next 15 years and instead sell battery- and hydrogen-powered machines.

It's working on another regulation that would go even further, requiring large organizations like corporations and government agencies to mix more electric trucks in their fleets.

"This regulation is indeed revolutionary," said Daniel Sperling, a California Air Resources Board member and professor at University of California, Davis. "It really does put the whole truck industry on a very different trajectory than it is now."

The proposed regulations, developed despite opposition from truckers worried about the cost of new vehicles and fuel companies, are coming together while the Air Resources Board is in court battling the Trump administration over state's power to set its own pollution rules. That fight turns on mileage standards the air board developed with support from the Obama administration for passenger cars.

President Donald Trump has been pushing for a national rule that would raise fuel standards more slowly than California's plan. California and 22 other states are suing the Trump administration to protect the more aggressive fuel economy rule.

That court fight matters because California will need the federal government's approval to enforce its proposed trucking rules. Sperling calls the disagreement a source "of uncertainty about the future"

The truck proposals have enthusiastic support from environmental advocacy groups, which pushed the Air Resources Board to toughen its emissions reduction targets. They characterized the proposed rule as a step toward goals the state set in a 2016 law that commits California to reducing greenhouse gas emissions to 40% below 1990 levels by 2030.

"[The new rule's] passage is a crucial step in transforming California's transportation system to zero-emissions," a coalition of groups including the Sierra Club, Union of Concerned Scientists and Earth Justice said in a joint letter.

Heavy-duty trucks make up a small portion of California's on-road fleet — according to the Union of Concerned Scientists, 10% — but account for a quarter of the state's diesel pollution according to the air board. Vehicle sources at large account for half of greenhouse gas emissions and over 95 percent of diesel pollution.

Building a market for manufacturers

The truck regulation would require manufacturers to produce zero-emissions vehicles beginning in 2024 with steeper production targets as time passes. The rule would also requires large entities, including corporations and governmental agencies, to issue a one-time fleet report next year.

That report would inform the air board's development of a companion regulation — likely up for a 2021 vote — that would compel large entities to purchase electric vehicles and report on their fleet compositions.

Purchasing obligations, Sperling says, will reduce uncertainty for manufacturers by guaranteeing buyers.

Fuel representatives say the air board's rule is too much, too fast. They want the state to expand its definition of clean trucks — which recognizes only hydrogen and electric technology — to include other renewable energy alternatives.

“The proposed rule package sends the wrong signal to the market, discouraging competition from other technologies that could have a more significant impact on emissions in the nearer term,” wrote the Western States Petroleum, the lobbying group for oil and gas companies, in a letter to the air board.

But truck manufacturers like Ford and General Motors in public comments expressed their commitment to an all-electric future, although they asked for accommodations to comply with the rule.

“GM has a vision for a future with zero crashes, zero emissions and zero congestion. We at GM believe that climate change is real, and we take the challenges it presents seriously,” wrote Barbara Kiss, a GM executive in a December letter to the air board.

The big brand car manufacturers have competition in the zero emission market. Manufacturers Rivian, Tesla and Nikola are planning to produce electric trucks, Sperling noted — and, as reported in the Wall Street Journal, they’ve drawn major corporate interest.

Truckers worry about cost

The main fight behind the scenes as the Air Resources Board developed the regulation centered on how quickly it would apply to heavy pickup trucks and delivery vans. In an earlier draft, manufacturers would not have had to meet sales requirements on pickups until 2027.

Environmental groups, including the Sierra Club, urged the air board to move faster. They prevailed, and vehicle manufacturers will be obliged to sell more zero-emission pickups starting in 2024.

By 2035, the rule would require zero-emission trucks to account for 55% of medium-duty sales — including pickups — beginning with a 5% requirement in 2024. For heavy-duty vehicles, that number starts at 9% in four years and will grow to 75% over the next fifteen years.

This will more than double reductions in greenhouse gas emissions by 2040 as compared to the original proposal, the air board said, removing more than 17 million metric tons of carbon dioxide from the atmosphere. That figure, according to the Environmental Defense Fund, equals about 4 million passenger vehicles’ worth of pollution.

The Western States Petroleum Association in a December letter urged California to establish technology-neutral regulations that encourage development of alternate technologies like lower-emission diesel and renewable diesel. The National Biodiesel Board similarly argued that companies should be able to use electric hybrid models, biodiesel and renewable gas to achieve clean fleets.

Without those options, the air board’s targets are “extremely aggressive,” according to the Manufacturers of Emission Controls Association. Trillium, an alternative fuel company, called the state’s goals “nearly impossible.”

That problem is compounded by the high cost of zero-emission vehicles — and that of the air board’s proposed incentives to offset those costs, which can more than double total expenditures, said the California Trucking Association.

In its economic analysis, the air board acknowledged that zero-emission vehicles are more expensive upfront but underscored that a transition to clean trucks will provide savings in the long run — on the order of $4.9 billion from 2020 through 2040, mostly due to fuel costs.

As for manufacturers that can’t meet sales targets, car companies would earn 75% credit for producing near-zero emission vehicles, such as hybrid electric models.

A plan to install electric truck charging stations up and down the West Coast

By Rob Nikolewski, The San Diego Union-Tribune
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Most of the attention on adopting electric vehicles is focused on passenger cars. California, for example, has set a goal to have at least 5 million zero-emission vehicles on the state's highways by 2030.

But the called-for transition also includes trucks and big rigs and with that in mind, a coalition of electric utilities on the West Coast just released a study recommending the establishment of a network of

charging stations for freight haulers and delivery trucks along Interstate 5 – from San Diego in the south to Washington's border with Canada in the north.

In addition to 27 sites along the 1,300-mile I-5 corridor, the proposed road map would also include 41 charging locations on adjoining highways in California, Oregon and Washington.

Called the West Coast Transit Corridor Initiative, the plan proposes a phased approach that envisions installing 27 charging sites in 50-mile intervals for medium-duty electric vehicles such as delivery vans by 2025. Then, 14 of those 27 sites would expand to accommodate charging infrastructure for big rigs by 2030.

Given that the number of electric-powered trucks currently on the road is negligible, the plan is as ambitious as it is innovative.

"The purpose of the study is to really identify what we need now and get ahead of the curve so you can start the electric planning and get that in place to really support the major electrification that these (installations) will take," said Bill Boyce, manager of electric transportation at the Sacramento Municipal Utility District, one of the power companies taking part in the initiative.

If all of the components of the plan were put into place, the price would come to around $850 million over about 10 years, said Katie Sloan, director of eMobility and Building Electrification at Southern California Edison.

That's a hefty price tag but proponents say the initiative would be a good investment.

"The really beneficial thing about transportation electrification is once you get mass adoption of electric vehicles, it helps you to use the grid more efficiently and rates can come down for all customers," Sloan said. "So we see investment in EV infrastructure as a win-win-win. It's good for jobs and the economy. It's good for the environment and it can help lower overall costs for customers."

But who would pay?

Sloan said funding would come from an "all-in approach" that would include utility customers and partnerships between automakers and governments on the federal, state and local levels.

California has set a goal of deriving 100% of its electricity from carbon-free sources by 2045. According to a separate study conducted by Edison, reaching the target would result in 900,000 medium-duty and 170,000 heavy-duty vehicles on the state's roads. It would also lead to about 26 million passenger zero-emission passenger cars.

As a reference point, as of late February, there were just over 700,000 zero-emission vehicles in California.

The proposed network of truck charging sites spaced every 50 miles figures to be sufficient. Medium-duty electric trucks are projected to have an average range of 90-120 miles in the next five years and heavy-duty electric trucks on the road in the next 10 years are expected to have a range of between 230 and 325 miles.

Most utilities in California, Oregon and Washington have enough capacity in urban areas along I-5 to support interconnections but the study acknowledges capacity constraints in rural areas will be a challenge.

"I think it's going to take a mobilization at a pretty significant scale," said Eric Seilo, senior manager of eMobility Strategy and New Program Development at Southern California Edison. "But with that right mobilization and motivation, these time frames are doable."

Although heavy-duty trucks make up only 5% of vehicles on U.S. roads, they account for 23% of all transportation greenhouse gas emissions.

In California, the transportation sector accounts for nearly 80% of the state's air pollution and more than 40% of all greenhouse gas emissions. Studies have shown that people living near truck traffic corridors – heavy with diesel particulates – have higher rates of asthma, lung and heart disease and bronchitis. People in poorer communities are more likely to live in those areas.

"Electric trucking provides part of the solution, with benefits like cleaner air and reduced greenhouse gas emissions in those communities," Will Einstein of Washington's Puget Sound Energy said during a conference call unveiling the road map.

Of the 27 proposed sites on I-5, 16 are in California, six in Washington and five in Oregon. Among the adjoining freeways included in the road map is Interstate 8, running from San Diego to the Arizona border.

Utilities across the West Coast have planned or already implemented programs to boost the transition from internal combustion engine vehicles to EVs.

San Diego Gas & Electric – one of the power companies that commissioned the I-5 study – last year received approval from the California Public Utilities Commission on a $107 million project to build 3,000 charging stations for medium and heavy-duty vehicles.
It's estimated to add $4.57 per year on the bills of average residential customers who use 500 kilowatt-hours per month, starting in 2022. That works out to about 38 cents more per month.