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How to go greener? For city fleets, no easy call

David Iaconangelo, E&E News reporter

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Electric vehicles are one long-term option to reduce emissions from heavy-duty fleet vehicles, but fleet managers are considering other solutions too. AEMoreira042281/Wikimedia Commons

For officials who manage municipal fleets, there's no single playbook for cleaning up emissions.

Electric versions of heavy-duty vehicles, like buses and trash trucks, are raising the curiosity of city fleet managers, since they slink — not roar — through streets with zero effect on local air quality.

Even if some officials are staking long-term goals to reduce emissions on the ascent of electrics, though, transportation experts and consultants say other technologies could account for a share of a decarbonized market well into the future.

"My sense has been that electric motors are what most people perceive to be the future means of powering all types of vehicles," said Paul Lauria, president at Maryland-based Mercury Associates, which has done feasibility studies for cities throughout the country.

But "I think the jury's still out" on whether electric powertrains will come to represent a universal standard for cleaning up heavy-duty fleets, he added.

At the hour of procurement, fleet managers often face tough choices about how to cut emissions while anticipating technological advances and falling costs for zero-emissions options.

The battle of the bridge fuels

Some cities are opting to shift from diesel to cleaner-burning fossil fuels like propane, especially in Texas and other conservative states where those fuels inspire less trepidation from the public.

In New York, the city's procurement strategy is being contested by a small coalition of environmentalists — not because the city wants to keep using fossil fuels but because it's aiming to wash its hands of any association.

The city plans to gradually electrify its fleets and replace diesel with renewable diesel, a "drop-in" fuel made of vegetable oils or fats that wouldn't require investments in unfamiliar types of trucks or buses. Officials announced their first 900,000-gallon purchase in May.

The coalition's leader, a New York-focused group called Energy Vision, has pressed officials to stop buying new diesel trucks and buses, which it says endanger the city's emissions goals. And it's electric-skeptical.

"Just from an economic standpoint and operations standpoint, we don't see that electrification is a fully commercial option," said Matt Tomich, the group's president.

Instead, it says, the city should undertake investments in renewable natural gas, a fuel processed out of biogas captured at landfills and wastewater treatment plants, then injected into natural gas pipelines.

The option can beat out renewable diesel on carbon and NOx emissions, contends Energy Vision.

And if the city decided to expand projects across its wastewater treatment plants, install new refueling stations and buy special engines that cut nitrogen oxide and particulate emissions to almost zero, New York could make progress on its emissions goals without having to wait for cheaper and better electric vehicles, it argues.

City procurement officials aren't interested in building out new infrastructure, if it isn't for electrics.

"We have found that renewable diesel is the better approach at this point and one that could result in a complete replacement of diesel fossil fuel, potentially by 2022," said Jacqueline Gold, director of communications at the Department of Citywide Administrative Services, in an email.

Daylight for electrics

For light-duty cars, electrics or plug-in hybrids might be expensive, but buyers more than recoup costs over the car's life cycle.

That's true for electric buses and trucks, too, but public agencies can't take advantage, since their procurement costs belong to a different budget than operating costs.

"You can't pay for one with the other. That puts electric drive at a real disadvantage," said Ray Minjares, clean air program lead at the International Council on Clean Transportation.

EV manufacturers are coming up with workarounds, though. This week, BYD Co. announced a joint venture with a San Francisco investor that will allow cities to lease — not buy — some \$200 million worth of buses, or about 300 in total, according to Bobby Hill, BYD's vice president of sales.

Fleet agencies will be able to use operating capital to make the payments over an extended period.

"There's no down payment," said Hill.

Other financing options include leasing the battery — as Park City, Utah, has for six Proterra buses — and entering into joint procurement deals with multiple cities in order to bring down prices, as an April report from Bloomberg New Energy Finance noted. And New York has agreements with Proterra to rent several e-buses over a short-term period, to test out their performance.

Those new budgeting practices are just one part of what agencies will have to relearn as they transition to new sources of fuel, said Minjares.

Fleet operators will need to know how to deal with shortages in parts and staffs, and sudden changes in fuel prices, while first responders will need to know how to respond to accidents involving different types of powertrains.

Cities that aren't preparing now for changes in technology will eventually find themselves struggling to implement them, he said.

"There's a whole kind of ecosystem that has to be adapted, and it has to begin before the technology shift actually happens," Minjares said.