



ALL-ELECTRIC MEDIUM-DUTY TRUCKS COMING TO SMUD THIS SUMMER

**THE NEW CLASS 5 TRUCKS NUDGE THE
UTILITY CLOSER TO ITS GOAL OF ZERO CARBON EMISSIONS BY 2030.**

By Sean M. Lyden | Photos courtesy of Sacramento Municipal Utility District and Zeus Electric Chassis Inc.



FLEET FACTS: SACRAMENTO MUNICIPAL UTILITY DISTRICT

Description: The nation's sixth-largest, community-owned, not-for-profit electric service

Headquarters: Sacramento, California

Service area: 900 square miles

Total accounts served: 644,723

Employees: 2,179

Power from non-carbon-emitting resources: Over 60%

Fleet size: 917 total on-road, off-road and trailer assets

All-electric or hybrid vehicles:
About 120 units

Sacramento Municipal Utility District expects to take delivery of five new all-electric medium-duty trucks this summer that will offer an estimated range of 100 to 150 miles.

The vehicles will be built on the Z-19 model — a 19,500-pound-GVWR chassis — by Zeus Electric Chassis Inc. (<https://zeuselectricchassis.com>), a startup based in White Bear Lake, Minnesota.

This purchase is part of SMUD's goal of removing all carbon emissions from its entire power supply and fleet by 2030. As of press time, the utility had electrified 120 vehicles, or about 13% of its fleet of more than 900 units.

UFP recently spoke with Casey Fallon, director of purchasing, warehouse and fleet at SMUD, to give us a behind-the-scenes look into the factors he and his team considered when designing and ordering these vehicles. Here's an edited version of the highlights from our conversation.

UFP: HOW DID YOU DECIDE WHICH FLEET APPLICATIONS TO ELECTRIFY WITH THE ZEUS TRUCKS?

Casey Fallon: We considered any Ford F-550 in our fleet scheduled to be replaced. So, when we were writing the specification, we didn't make



Casey Fallon

concessions because it's an electric vehicle. But we had to dial in the vehicle's daily usage and whether it had a prescribed route and a planned amount of driving instead of it being a response vehicle or a 24-hour vehicle.

So, our spec [for the Zeus trucks] changed very little from our conventional diesel engine trucks with similar usage.

WHAT IS THE INCREMENTAL COST YOU FACTOR INTO YOUR NUMBERS WHEN YOU PLAN YOUR ELECTRIFICATION BUDGET?

We spend about \$10 million per year on our capital investment for replacements and some new vehicles, not including inflation. If you make the numbers simple over 10 years, that's \$100 million. So, when we initially did this plan over 10 years, we looked at the status quo as \$100 million.

Then we looked at all of the different equipment that we would replace. We made our best estimate based on what was available from the market and worked with some of our friends in [research and development] and finance and treasury to come up with numbers for equivalent zero-emissions vehicles over 10 years.

We came up with \$200 million. So, over 10 years, we're looking at two times [the status-quo budget]. But a few things help reduce that number.

Over the 10-year period, we estimate around \$20 million to \$40 million >>





**SMUD'S NEW ALL-ELECTRIC MEDIUM-DUTY TRUCKS WILL BE BUILT ON THE Z-19 MODEL
— A 19,500-POUND-GVWR CHASSIS — BY ZEUS ELECTRIC CHASSIS INC.,
A STARTUP BASED IN WHITE BEAR LAKE, MINNESOTA.**

in offsets from grant funding, and a fuel expense reduction of around \$9 million to \$10 million. There's also a maintenance cost reduction of another \$4 million.

So, the number we came up with was roughly an increase of \$50 million on top of the original \$100 million to align our fleet with SMUD's 2030 zero-carbon plan.

When I presented this plan publicly, I said that this [budget] is based on what we know now. As we refresh our plan year over year, we expect that number to come down as the technology improves, we get additional financial offsets, and we continue to optimize. But this is a conservative estimate over a 10-year period.

HOW WILL THE MAINTENANCE AND REPAIRS BE HANDLED FOR THE ZEUS TRUCKS?

We're still working that out. We'll leverage Zeus during the warranty period. But we're still discussing whether we'll do maintenance and repairs

in-house or through a dealer network after the warranty period. It's still up in the air. We'd prefer to do the work on everything else in our fleet because we're a full-service maintenance shop.

WHEN DO YOU EXPECT THE VEHICLES TO BE DELIVERED?

One of the five trucks will be at the Advanced Clean Transportation Expo in Long Beach in May. Then we'll have a staggered delivery schedule until about the end of July.

We're kind of relaxed with the schedule because Zeus is a startup, and these trucks are all new. We also have a pretty significant period where we will be doing our own road testing. And we may even work with a third party to do some road testing before we turn them over to operations.

HOW LONG WILL THE ROAD TESTING OCCUR?

We're thinking 90 days, just to be sure we run the vehicles through their

paces and get them out on the road.

We'll put the trucks in safe conditions and take our time to get to know them. There may be some things to work out regarding the programming of the technology on the vehicle. So, we want to take our time.

WHAT TYPE OF TRAINING DO YOU PLAN TO PROVIDE TO THE OPERATORS?

We're thinking about training in a couple of ways. One is that we're thinking about the change management aspect. You're switching the operator from a gas or diesel vehicle to electric. There's a need for education to build awareness and familiarization with the new technology.

So, we're taking a change management approach where we want to get everybody on board to become aware of what's changing and what the technology is. That's the big boulder to move initially.

Regarding training, when switching somebody from an internal combustion engine to an electric vehicle, range anxiety will likely be an issue. But we've been putting a lot of numbers together to show that, hey, on average, you're not driving past this vehicle's maximum range for a day.

The operators have been used to a Ford for the last 10 years, and now you're putting them into this unknown variable for them. But I don't think it will be too much of a change for them.

And the operation of the onboard equipment — the liftgates, dump bed and all that — will be very similar to what they're already familiar with.

WHAT IS THE BACKSTORY BEHIND SMUD'S FLEET ELECTRIFICATION INITIATIVE?

We're located in the capital city of California. So, we have an incredibly ambitious goal for the entire utility overall — zero emissions by 2030.

When we put our fleet electrification strategy together for our executive team and our new CEO [Paul Lau], we brought it to them and said, "We think we can get 50% of the way by 2030."

We remember that conversation because there's a great quote from our CEO. He said to us, "I like your thinking and your strategy, but we've got to go big or go home."

It was time for us to go all-in and align with the 2030 plan.

So, what we had to do from there was challenge our initial assumptions and really figure out how to accelerate and get to that 100% goal by 2030.

We know it's still a tall order, a very ambitious goal. But we're going to give it our best shot.

Over the next three to five years, we'll be focused on what's available from the market. And then, beyond that, things are not really clear. But we're banking on the idea that the technology will accelerate rapidly, including hydrogen fuel cells for our heavy-duty vehicles in the later years of the plan.

So, we're going to do our best and hang on for the ride and see where all this goes. ■

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