

Electric vehicles to take center stage at World Ag Expo

By David Castellon

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Electric cars are all over the news, from Tesla's electric truck to General Motors relaunching its once notoriously gas-guzzling Hummer as an all-electric vehicle.

Yet the general public rarely hears about electric farm vehicles. That will change during next week's World Ag Expo in Tulare.

At least three all-electric tractors will be on display at the world's largest agricultural trade show, as well two electric forklifts, most showing at the Expo for the first time.

Not that electric vehicles in farming and food handling are new. Such vehicles have been around a couple of decades or more, but advances in batteries — much of it developed by the auto industry — are allowing for vehicles that can be used by farmers and food processors that operate for a full work day without having to replace cumbersome, heavy batteries halfway through.

So having even a few EV vehicle makers at the Expo is a "tipping point" for the industry, said Stephen Heckerroth, founder and CEO of Solectrac in Mendocino County, which is introducing its EV tractor, eUtility, at the Expo that runs Tuesday through Thursday.

"I've been building tractors since 1992 — electric tractors," Heckerroth said.

He said those first tractors he made for other businesses had lead-acid batteries that weren't as long lasting and required more maintenance than the lithium iron phosphate batteries he's using now, which provide 5-8 hours of run time.

In addition, like other types of lithium batteries, his doesn't burn fuel, so it doesn't send greenhouse gasses, particulates or other pollutants into the air.

One of the new EV tractors, by Fremont-based Monarch Tractor, was named one of the top-10 new products being introduced at this year's Ag Expo.

Dean Case, a communications consultant for Monarch, described the company as a startup that branched off last year from Motivo Engineering, LLC in Gardena, which designed an electric tractor for developing countries and showed it at the Expo in 2018 and 2019 and will do so again this year.

Though a compact-class tractor — generally equal to diesel tractors in the 30-40 horsepower range — the Monarch tractor can spend six to eight hours tilling a field and doing other tasks without the need to recharge, though it couldn't pull some of the heaviest farm gear, the likes of which would need to be attached to a 100-horsepower diesel tractor.

Though not in production yet, plans are for it to have autonomous capabilities to follow routes programmed into an onboard computer that can be included in tractor orders.

The EV farm vehicle makers noted that their machines are much quieter than those with diesel engines, which usually are so loud that operators have to use ear protection to avoid hearing damage.

Another advantage claimed by the EV makers is lower maintenance costs, with Heckerroth noting that Solectrac's tractor has an engine with just one moving part, "compared to a diesel engine with 300 to 400 moving parts that have to be lubricated, so that eliminates a lot of maintenance."

As for why more EV vehicles haven't been seen at the Ag Expo in the past, despite the growth of the electric car market, Heckerroth said a lot of farmers are conservative and accustomed to using diesel vehicles.

On top of that, he said, "the manufacturers of diesel tractors have strong, powerful lobbies, and they are very big companies, and with those lobbies they have been able to keep the electric tractors not totally out of the market, but they've done everything they could to do that."

Case said the ag industry appears ready for EV tractors, at least based on farmers' reactions to his company's models and to the Motivo model during the last two Ag Expos.

“We wouldn’t go into production unless we thought there was a market for it.”

In some cases, the new technology is helping farmers save in other ways, said Aimee Quemuel, a spokeswoman for XL Lifts in Ventura, which will display two all-electric forklifts at the Expo, one with an 8,000-pound lifting capacity and the other with a 36,000-pound capacity.

She said most farmers and places where farm goods are packed, stored or processed have diesel, propane or electric forklifts, or a combination, as different types are needed for outdoor use or indoor use, and diesel engines can’t emit exhaust around some foods.

Most electric forklifts also have been powered by lead-acid batteries with shorter charges and need more maintenance than the lithium-ion type her company now uses.

She said her company’s forklifts can be used in any conditions: outdoors — even in adverse weather conditions — in enclosed buildings and around all kinds of foods, Quemuel said.

“But now what is new ... you have lithium forklifts that are for indoor and outdoor use, and that’s what we are going to have at the Ag Expo,” she said. “So now ag companies can buy one forklift, take it from the field, bring into the packing plant or a building — whatever they are doing.”

One roadblock for EV tractor makers is the lack of an incentive program to offset the price, like the thousands of dollars in tax breaks available to buyers of EV and hybrid cars, but Heckerroth said he’s optimistic such incentives will come soon, and farmers will be more willing to give electric tractors a try.