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Bryan Hansel, CEO
Smith Electric Vehicles

Kansas City
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There's a growing conviction among corporate leaders to reduce dependence on fossil fuels. Smith Electric Vehicles is responding. Bryan Hansel, CEO of Smith's U.S. operations, talks about his own introduction to the electric truck.

"I got a phone call from the chairman of Smith in the UK, saying he felt it was time for the U.S. to have EV delivery trucks. I had no idea what he was talking about.

"But, because I came from a product development background, I was quickly able to validate that this was known technology. It wasn't a science experiment; it wasn't R&D. This was a viable product.

"I talked to some of the key fleets here in the U.S. and asked if there was an interest in electric trucks. Was there an opportunity, a demand? Turns out there was a huge demand for some kind of alternative energy solution for transportation.

"From the eyes of a fleet operator, they're buying an asset that they're expecting to last for 10 years. There's certainly an ongoing fear of the cost of operating a diesel vehicle, knowing that fossil fuels are going up in price. And there's a fear of legislation continuing to get more aggressive on emissions. Then there's about a thousand pounds of additional equipment you have to put on a diesel truck, and that reduces its payload. So there are a lot of things that are making diesels less competitive, and the general fear is that they may not be able to stay on the road.

"The medium duty truck market is looking at alternatives, and hybrids don't really go far enough. When we approach [companies] with electrification, it kind of checks every box. It's zero emissions, so it's never coming off the road for legislative reasons. Operationally, it's a fraction of the cost. It uses a stable energy source, so there's not much volatility in the ongoing price. You have a predictable cost going forward.

Ten years is about the expected life span of a diesel truck. Hansel compares diesel trucks to EVs.

"The general consensus is that electric trucks will last longer. For example, Smith built milk floats in the UK—which is a specifically engineered electric commercial truck to deliver dairy to your doorstep. There's still a fleet of 1,600 Smith milk floats in one fleet alone that range between 20 and 30 years old. They've been on the road that long. They just never wear out.

"What tends to drive a vehicle to end-of-life is the cost of maintaining that vehicle's engine, right? A combustion engine is a wear component. It is going to wear out. And, at some point, the cost of maintenance will exceed the value of the truck, so you're better off buying a new one.

"But in ours, there are no wear components. Your drive train isn't going to wear out. So you're going to get more life out of these vehicles than you're going to get out of a traditional one, because the reasoning behind getting rid of a vehicle today doesn't exist in our truck.

Smith introduced a huge advancement to the country in the form of EVs. Future success depends on the company's ability to ramp up production.

"There are two key things [that will] drive the future of this thing. One is just getting the product to an operational scale where you get the general value with volume.

"The other is the battery. If you look at the cost of building a battery, it's a highly automated opportunity, and efficiency comes from that automation. But you need to have scale to justify automation. There's a tremendous amount of capacity coming on line for batteries, and through that, we're seeing costs coming down very substantially. We anticipate that trend to continue.

"If you look at the breadth of what we do, we approach manufacturing differently. We have a multi-stage assembly line as you'd envision in a lot of manufacturing environments, but we have two-person teams that start at the beginning of the line and build the entire product. This gives our employees perspective. They say, 'Wait a minute. Why are we doing it this way? Couldn't we do it smarter or different?' That drives improvement, and it's naturally built into the system.

"One of the beauties of being where we are is being able to get the work force we've been able to get. We do have to train them, because nobody's built an electric truck before. But we're also trying to put them in an environment where they have a lot of responsibility and do a broad range of things throughout the production process.

"Of our 100 employees, almost 20% are engineering-based. And we have two major areas of engineering focus. One is manufacturing improvement to drive efficiency. The other is devoted to next generation technology, what we call portfolio expansion.

"A lot of people come to us through the local universities, saying this is really the area they want to be in, whether they come out of automotive technology or electrical engineering. We've hired some great graduate students who have spent their time in college working on electric vehicles or motor controls or high voltage. A lot of them have Masters degrees or secondary graduate degrees, and they fix trucks every day. And they love it, because this is an area they want to be part of. This is the future of transportation. They say, 'If I'm going to start my career, this is where I want to start it.' It's been tremendous to be able to hire them into our company.

"We're recruiting in the region from all the leading engineering schools. Missouri S&T (Missouri University of Science and Technology) just did the hydrogen fuel cell vehicle. In their work at the college, these people have actually built electric vehicles and been part of the process. They come to us with a reasonable amount of basic understanding.

"We jointly submitted and got a DOE grant [with S&T]. They're using some of the funding to develop a graduate study program for electric vehicles. They're starting to advance some education around EVs that we helped build."

We've also worked with the local community colleges. They've helped us do some initial candidate screening and testing. They had done a lot of that for Harley Davidson (in Kansas City), and we've been able to leverage that infrastructure to find great candidates. They've also come in and helped with our certifications and standard operating procedures. The state of Missouri has been very supportive with grants to help fund some of those efforts.

A big part of Hansel's job is educating corporations about EVs.

"The biggest issue has been a lack of awareness that EVs actually exist! Everyone thinks they're conceptual. The fact that they're in production is a surprise to many. A lot of people say, 'that's futuristic, but I know it's coming.' And to think that it's actually available in production today is something that we've got to introduce and educate people about.

"There's a growing commitment by fleets around the country that they have to move into alternative energy. Large fleets are a key component of that for big companies, because you're talking about tens of thousands of vehicles and heavy consumption of fossil fuels. It's clearly on the radar of sustainability groups. It's just a matter of sitting them down and walking them through the economics. Then they start to see the value—it actually does make sense.

"It's very news worthy for these corporations—so much more than any other alternative energy. If a large fleet buys a hybrid, it doesn't really get news anymore. If you do compression/natural gas, it's still fossil fuel. It's cleaner, but the news crews aren't going to show up. I can assure you, though, that anything that happens with EV trucks is newsworthy. Everybody wants to talk about it. People really view this as being an end game, and that's the way our clients have framed it.

"Keeping up with the demand is our biggest single challenge. A big effort of ours in the last year and a half has been getting a supply chain up and going. Because there's so much automotive presence here, we've been able to put 90% of our supply chain into the local market. If you think about all the traditional things—harnesses and brackets and fasteners, everything you would traditionally put into a vehicle—we have a local supply chain to tap into, which has been tremendous.

"As you look at the key components, like motors and motor controllers and batteries, that's where we've had to push forward and start to develop the next generation product so we can put it into the mainstream supply chain. Previously a lot of EV supply chain was in boutique companies that happened to be the only ones doing it. Our effort has been moving it into tier I suppliers. And I think we're becoming very successful in that.

"We'll always need electric motors, and that is something we're having to build internationally. If you look at core motor controls from high voltage systems, again, those are currently being built internationally. We're trying to localize those. That's really some of the magic sauce in this whole thing.

Smith Electric Vehicles is changing the way America thinks, both from a corporate and a consumer standpoint.

"There's an underlying pressure for companies to do the right thing, and that is driving initial interest. When they show up at the table, it's because they know they need to do something.

"Historically, you think about business and how they make decisions, it's been very accounting-focused—profit and loss. But there's a growing awareness that other things are relevant. In the UK, food and groceries have a carbon footprint, and buyers are looking and saying, 'I want to buy local.' People have perceptions of brands that drive behavior. We have customers today who tell us they are winning contracts and growing their businesses because of their commitment to buying our vehicles."

Hansel says a Missouri location helps.

"We're on the state line, and we seriously considered both Kansas and Missouri, as well as other markets. Missouri clearly did come forth the strongest. Quite honestly, we had personal attention from the governor saying, 'this is important.'

"There is a strong vision within the state. The economic development efforts are strong, too. But the physicality of the options we were given—as well as the work force and supply chain that we were able to tap into—was tremendous. And Missouri just happened to be right in the center of the country, which logistically worked for us. When we get done with a product, we have to ship it. If we were polarized on a coast, it would be very expensive to ship in the other direction. For all those reasons, it really made a lot of sense to locate here.

"I happen to have been born and raised in the Midwest. I believe in the work ethic, and it's certainly represented in the people we've been able to attract.

"For a whole host of reasons, Kansas City is just a great place. It's a great place to raise a family and a great place to grow a business. People here have passion for their work, and we happen to be in an industry that attracts those people. We're in a neat place right now."