

## Following Tesla's Lead – The Battery Show Charges up The Industry And Surges Into The Future

By Lynn Walford - November 16, 2020



**🕒 Reading Time: 6 minutes**

The Battery Show & EV Tech Digital Days, streamed from 10-12 November, were charged with discussions about the Covid-19 pandemic, the incoming Biden administration and the future technology of batteries for transport.

There were 54 technical panels with scientists and industry insiders who are imagining a new and amazing electrified future for passenger vehicles, cargo and long-haul trucks.

### State of the Battery Economy Post-Covid, Pre-Biden to Solid-State

Jim Greenberger, Executive Director, NAATBatt International, started off the show with some predictions for funding. He expects after the election that U.S. President-Elect Biden to allocate \$400 billion for clean energy plans. Biden will also help build 50,000 EV charging stations with an emphasis on electric buses for cities with populations over 100,000. Greenberger says to get it done there will need to supply chain resilience and support to buy American.

Biden plans to position America to be the global leader in the manufacture of electric vehicles. That vision is helping to fuel electrification.

“We’re sensing a new generation and a new industrial revolution coming,” says Oliver Gross, Technical Fellow, FCA.

The megatrends currently due to the pandemic are more people are working at home and people planning on commuting less says, Gross. However, another megatrend is that users are more connected to information with information on demand.

“FCA is redefining the vehicle road trip as a person wrapped in an environment connected to information,” adds Gross.

Although it may seem that people are commuting less and they'd want shorter range electric vehicles however Gross points out that a car is a major investment and people want to do everything to be ready for short and long trips.

The pandemic has not changed the course of luxury automaker Lucid Motors. "Our vision of EV adoption is a long term vision. The pandemic hasn't changed it," says James Hawkins, PhD, Senior Manager Battery Group, Lucid Motors.

He notes that the Lucid Air is the first vehicle to have 500 miles (804 km) on a single charge and built-in vehicle-to-grid capabilities. Lucid developed the batteries used for formula e-racing enabling an entire car race on a single charge.

Mark Kaufman, Global Director of Electrification, Ford Motor Company, outlined Ford's electrification plans starting with the Mustang Mach-e, then the electric E-transit van [announced on Thursday link to assets release] and forthcoming electric Ford F-150 truck.

Ford started its electric line-up with the Mustang Mach-e with a 300 mile (482 km) range to meet the needs of young consumers.

"Millennials are twice as likely to buy a BEV and need to have space for five adults and gear," says Kaufman.

The Mustang Mach-e can go from 0-60 mph (96.56 kph) in 3 seconds and still maintain the strong front muscle design with a coupe-like back. Ford Technology is designed to make EV charging on the road easier.

"FordPass is the largest charging network with 13,500 public charging stations. The Mustang Mach-e can get 61 miles(98km) in a ten-minute charge. The trip planner shows charger availability and predicts when charging will be needed on the route," says Kaufman.

Venkat Anandan, Group Leader, Advanced Battery Technology, Ford Motor Company, spoke about the advantages and problems of solid-state batteries.

Lithium-ion battery limitations are energy density and thermal safety. Solid-state batteries replace the liquid electrolyte with a solid electrolyte and have higher volumetric density. A problem with solid-state batteries can be dendrites.

"Solid-state batteries perform better at higher temperatures creating the opportunity for more fast charging," says Anandan.



## The Electrification of Trucks & Buses

The trucking industry is getting ready for electrification. Rob Ferber, Chief Technology Officer at Xos Trucks talked about how companies like UPS are ready for electrification.

“Most cargo trucks have single or double shifts with fixed routes and eight hours downtime in under 200 miles(321 km) a day. We make the economic case for electric cargo trucks,” says Ferber, who notes all Xos cargo trucks come with all levels of charging up to and including DC Level 3 fast charging.

While Leslie Kilgore, Vice President of Engineering & Technology Daimler Trucks North America, sees electrification working well for school buses where there are also fixed routes with downtime for charging. She notes that, where charging infrastructure is lacking, is for long haul trucking across the country.



## Volvo Trucks Lights the Way for Commercial Trucking in SoCal

A virtual trade show is not complete without a few technical glitches. Brett Pope Director of Electric Vehicles, Volvo Trucks North America showed some videos of the \$91 Million Volvo Lights (Low Impact Green Heavy Transport Solutions) project with 15 partners in Southern California. Volvo VNR Electric

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will travel to and from Los Angeles ports to distribution centres in the Inland Empire. 150 KW chargers have already been installed to support the trucks.

Pope said that the Volvo VNR Electric trucks can haul loads with an 80 mile (50 km) -175 (109 km) mile range. Volvo makes the drivetrains and transmissions. Southern California is working as the testing ground for when the trucks will be sold nationally.

Volvo Trucks is researching fuel cell battery-electric trucks too. Just when Pope was going to divulge more technical details of the VNR Electric Trucks his image froze and the sound went silent.



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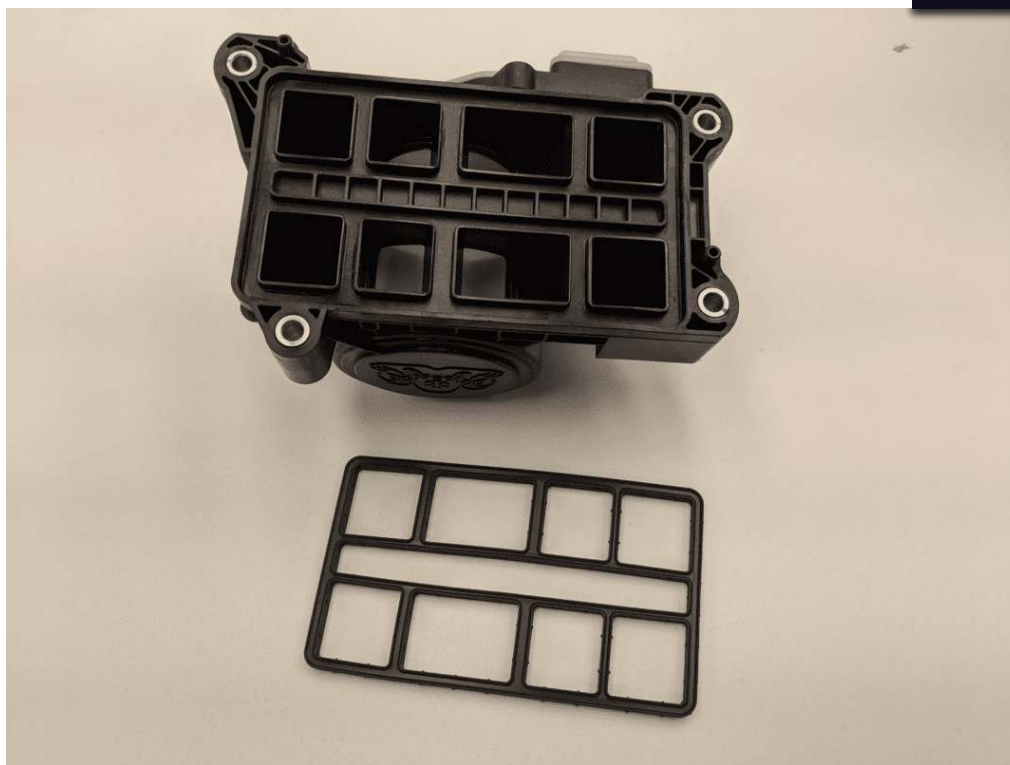
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The EV world wouldn't exist as it today without the examples of the Tesla Motor Company. The Tesla Model Y has been dismantled and analysed by Munro & Associates.

Cory Steuben, President of Munro & Associates, showed the brilliant design aspects of the Tesla Model Y Octovalve as it relates to the heating and cooling system of all the components of the vehicle – the batteries, ADAS, electronic computer boards and cabin climate control. The Octovalve is an eight-port, 5-position rotary valve that quarterbackes the ethylene glycol through the Tesla Model Y thermal system.

“Compared with other electric vehicles we tested, the Tesla Y is the best for reliability, world-class packing efficiency and integration of parts,” says Steuben, “There is a preponderance of evidence that Tesla is ahead of competitors by at least three to seven years.”



## Tesla Puts Pressure on Battery Makers

All in all the electric battery business is holding its own even during the pandemic, accelerated by Tesla Motors and Elon Musk.

“2020 was supposed to be a 20-25% growth year for lithium-ion batteries, due to Covid-19 and losing two months of production in most areas of the world instead it is at 2-3%,” says Michael Sanders, Senior Advisor, Avicenne Energy US.

He says it is an amazing time to see how the next generation battery will develop. There is significant progress in increasing energy density of today's lithium-ion batteries, production efficiencies in manufacturing larger cells, Hi-Silicon anodes entering production and solid-state batteries for consumer applications. Tesla Battery Day put pressure on the industry to develop faster.

“My overall takeaway for The Battery Show is that innovation is happening in all technologies, manufacturing and recycling to assist growing this industry even faster,” says Sanders.

Greenberger, says “The Battery Show is one of the top information gathering events in the battery industry each year. I was honoured to be a member of this year's Leaders Panel. This next year is going to be an important and consequential one for the North American battery industry. It's always great to get a preview of what is coming at The Battery Show.”

This business is among the fastest-growing sectors in the world, says Jenny McCall, Event Director, The Battery Show & EV Tech Digital Days.

McCall is pleased with the results and looks forward to next year, “We're very happy we were able to provide a virtual event to bring the community together to discuss important challenges and opportunities throughout the industry today and inspire tomorrow's innovation. Digital Days was successful in keeping the community connected until we meet in person.”

The next edition will be held in the city of Novi in Michigan, September 14–16, 2021.

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