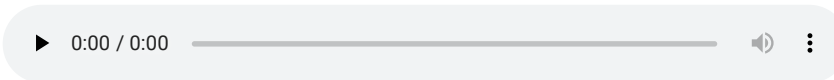


How Our Next Energy (ONE) is Extending Range & Eliminating Range Anxiety – CEO Mujeeb Ijaz

By Lynn Walford - February 16, 2022

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 Reading Time: 4 minutes

Our Next Energy (ONE) Inc. increased and nearly doubled the range of a Tesla Model S with a ONE Gemini 001 battery pack. CEO and Founder, Mujeeb Ijaz, reveals to Auto Futures how optimised battery systems can extend range and end EV range anxiety in the future.

In January, ONE was in the headlines driving a Tesla Model S 752 miles around Michigan in winter temperatures that ranged from 25 to 35 degrees Fahrenheit (-3.889 to 1.66 Celsius).

“During the historic run, I was following in the chase vehicle. I had to stop and fuel up at a gas station while the Tesla Model S with the Gemini 001 battery pack never stopped for recharging,” says Ijaz.

The Tesla Model S originally had a 103kWh battery pack. It was retrofitted with a Gemini 001, a 203.7kWh battery pack. The architecture creates a higher energy density with a higher range at a lower cost.

Later, ONE tested the Gemini-powered Model S on a dynamometer at a similar speed and achieved a range of 882 miles indoors, which is about a 15% increase, reports Ijaz.

“For EVs to excel and sell, we have to eliminate the range barrier. The range has to be longer for high speed, trailer towing, and weather conditions,” he says.

Gemini is a dual battery system with a high-capacity Lithium Iron Phosphate battery pack augmented with range extension chemistry batteries. The company calls it their “high energy density Gemini range extender cell product.”

The company achieves the range because the range-extender batteries are not needed all the time. Therefore, it is possible to have a high-energy-density battery for the range extension which also has zero emissions and doubles the amount of energy, he notes.

The battery packs are built with prismatic metal cans. Not only was the range doubled, but it fits in the same space in the Tesla S battery pack. The Gemini batteries will go into production in 2025 with a prototype expected in 2023, says Ijaz.



How an EV Driver Since 1990 Sees EV Adoption Challenges

While a student at Virginia Tech, Ijaz participated in the solar-powered 1990 GM Sunrayce USA that eventually became The American Solar Challenge. He worked on energy systems at Ford and A123 Batteries. Then he left to become a Senior Energy Designer at Apple. He founded Our Next Energy in 2020.

"I wanted to return to Michigan where I spent twenty-two years," says Ijaz, who notes that Michigan is the nerve centre of the automotive infrastructure and ecosystem.

His first electric vehicle was the Ford Electric Ranger. He drove the Chevy Volt plug-in hybrid, followed by a BMW i3 with a range extender. The Volt and i3 helped him to understand the power of range-extending technology. He then drove a Tesla Model S, Model 3 and Model Y.

"My background in system engineering. It's not only about optimising the components— but what happens for the whole system and what's good for the whole system—to create a better architecture for the entire use of the battery systems and doubling the range. The customer doesn't care about the chemistry and how it's done. The customer cares about the range."

"Since the Michigan drive, the response has been favourable about what needs extended-range electric vehicles can satisfy. Over a thousand articles were written about our historic run. There has been outreach and discussions from OEMs," he adds.



What is in The Future of ONE?

The first commercial battery pack coming ONE is named Aries. It uses Lithium Iron Phosphate, with no cobalt or nickel materials that can be hazardous, in short supply and expensive. It has a range of 350 miles per charge. The Aries battery design is for delivery vehicles, trucks, and buses – Class 3 and up but not Class 8 vehicles, says Ijaz.

Aries will be going to production in late 2022.

Last year in November, the company announced it has closed a \$25 million Series A capital. The funding was lead by Breakthrough Energy Ventures and joined by Assembly Ventures, BMW i Ventures, Flex and Volta Energy Technologies.

ONE is growing very quickly. In the last three months, the number of employees has doubled. In the next nine months it will probably double again, he says.

On the 1st of February, the company announced that Dr Steven Kaye will serve as Chief Technology Officer. He will lead the development of a new research and development facility based in the Bay Area of California.

“What is most important to me, and the company, is to not only extend the range of electric vehicles but to give real-world range estimates.”

“We need to pay attention to real-world range, not adjusted range. We need to improve electric vehicle real-world range. We can then get to the point where the consumer decides that my electric car is my only car. Then the range anxiety of the full market will be eliminated,” concludes Ijaz.

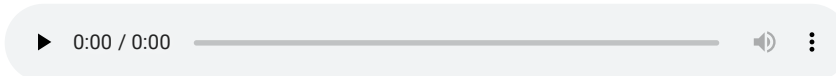
Lynn Walford

NEXT STORY

Anglo-Korean Battery Company Eurocell to Build New European Gigafactory

By Tom Fogden - February 16, 2022

 Listen to this article



 Reading Time: 2 minutes

Eurocell, an Anglo-Korean battery company, is set to build a new European gigafactory in Western Europe.

The new gigafactory is set to produce the company's "production-ready" batteries within the next year, "far faster" than other gigafactories, according to Eurocell. Full capacity, however, will not be reached until 2025.

Eurocell has received a £600 million investment over two phases and is planning to European energy storage, automotive, and e-mobility applications.

However, the company is remaining tight-lipped over where the factory will actually be located. At the moment, all Eurocell will tell us is that the site will be located in either the UK, the Netherlands, or Spain. It is actively looking at sites but the final choice is "heavily dependent on gaining the right level of central government support and investment."

Eurocell's batteries, which were developed in Korea, have a considerable technological advantage – apparently lasting more than ten times longer than conventional lithium-ion cells and come with no end-of-life issues. The company also reckons its cells have a wide range of operating temperatures, making them more suitable to areas with extreme weather and without access to an existing grid network.

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“Eurocell in the UK is a new company, led by a highly experienced UK team and backed by our South Korean partner with decades of experience in electrochemistry, making batteries at mass scale and building the Gigafactories to produce them,” says Recardo Bruins, CEO Eurocell EMEA.

“Now we are planning to rapidly expand in Europe, supplying the energy storage and automotive industries with our market-leading technologies that last longer, perform better and are 100% safe. These products can be on the market in months, not years.”

Eurocell is planning to build its gigafactory in two phases. The first will begin in early 2023, when battery cell manufacturing will begin “at scale” for existing customers. At the same time, a bespoke facility will be constructed on the same site and promises to be capable of producing more than 40 million cells annually by 2025.

European battery plants are becoming a hot topic at the moment, with **Britishvolt** planning to scale up operations in the coming years, as well. Eurocell, meanwhile, is hoping that its plan to create “hundreds” of direct and indirect jobs, as well as transferring vital skills from its Korean battery experts will be a boost for Europe’s net-zero ambitions.

Tom Fogden