

Our Next Energy touts advancements in lithium iron phosphate battery technology

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Our Next Energy Inc. on Tuesday announced what it described as a "significant milestone" in its quest to advance lithium iron phosphate battery technology for electric vehicles.

The Novi-based energy storage technology startup said that its Aries II [battery pack](#), which uses an LFP chemistry and is slated to launch in 2025, is now within 6% of the leading benchmark nickel cobalt manganese [battery](#) in terms of range and mass. NCM is the most commonly used battery chemistry in electric vehicles today because it has higher [energy density](#), meaning it can deliver longer ranges on a single charge.

But ONE has built its business around LFP, a chemistry that is considered safer and more durable. Now, the company—led by automotive industry veteran Mujeeb Ijaz, who left Apple Inc. in 2020 to found ONE—says its in-development Aries II pack is close to achieving energy density parity with NCM batteries.

"LFP batteries have many advantages over NCM batteries, including cost and durability, while using safer and more abundant materials," Ijaz said in a statement. "The key shortfall has been range and energy density. By engineering a battery pack with similar density to NCM, ONE has made LFP a sustainable alternative."

ONE announced the advancement Tuesday during an Automotive Press Association event at the startup's Novi headquarters.

ONE's mission is to double the range of [electric vehicles](#), do it without nickel-cobalt chemistries to decrease the risk of battery fires, and to develop a sustainable supply chain.

"We would like to see the end of it being a tradeoff," Ijaz said. "We want it to be that you can deliver range, you can deliver it safely, and you can do it with abundant materials."

The conclusion on Aries II being close to energy density parity with leading NCM battery packs was based on benchmarking that ONE

conducted of 28 battery packs from across the industry, Ijaz said.

Additionally, the company said that its efforts have demonstrated a 20% to 30% energy density increase over "typical" LFP battery systems.

ONE leaders pointed to a few factors that enabled the advancements: LFP's "inherent stability," which they said allowed their engineering team to "minimize the restricted impact areas within a pack that NCM chemistry requires." Another was their ability to make lightweighting improvements to the pack design. These factors, they said, will allow the Aries II pack to deliver more than 350 miles of range to a typical passenger EV.

"When the team took on the challenge of achieving energy parity with NCM batteries, we looked at everything from improving cell chemistry to redesigning the inside of the pack," Chris Hughes, ONE's chief battery engineer, said in a statement. "Ultimately, it was the durability and safety of LFP that led to our novel pack and cell design that boosted Aries II's [energy](#) density."

Aries II is slated to go into production at ONE's Van Buren Township factory in late 2024. The facility, ONE Circle, is slated to have the capacity to produce enough battery cells to power 200,000 EVs annually by 2027 and to employ more than 2,100 people.

ONE has commercial and utility sector customers; it's working on products, including Aries II, to supply customers in the passenger EV market. One of its under-development products is the Gemini battery, which will target more than 600 miles of range on a single charge and combine two cell chemistries in a single pack.

"We're now working with passenger-car automotive companies to introduce the Aries II and the Gemini products into the automotive

market," said Ijaz. Without going into further detail, he added that ONE already is discussing an expansion of its plant because of demand from the [automotive sector](#).

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