

New zealand battery performance

It's no secret that Toyota has been slow off the mark with regard to its electric vehicle (EV) offering, so what better way to eclipse its rivals with new battery technology that will see its future models reach up to 1000km on a single charge.

At the launch of its new BEV Factory, the Japanese carmaker revealed an "advanced battery technology" rollout plan, outlining three new liquid electrolyte batteries with improved performance, as well as a new solid-state design.

Takero Kato, president of Toyota's BEV Factory, said that the new batteries will be found in the brand's next-generation of electric cars that are set to hit the market in 2026.

The first of these will be a lithium-ion battery called "Performance"; which is said to increase the cruising range of Toyota's EVs to over 800km, while recharging from 10 to 80 per cent is said to take 20 minutes or less.

Next up is the "Popularisation"; lithium iron phosphate battery which will be less expensive and have a 20 per cent increased cruising range over the bZ4X's unit.

Toyota says the "High-Performance"; unit will see a further 10 per cent reduction in cost compared to the "Performance"; battery and will still be able to recharge in 20 minutes or less. However, it's expected to launch a little later than the previous two, between 2027 and 2028.

Also under development is a new lithium-ion solid-state battery that also affords a range of up to 1000km, but will be able to recharge from 10 to 80 per cent in 10 minutes instead of 20. It'll also have a much smaller design which is good for minimising weight.

That's all well and good but it's worth mentioning that one problem has always plagued solid-state batteries and that's their shorter lifespan. However, Toyota says it has made a few technological advancements recently that solve this problem, but we won't get to see the final result until 2027 to 2028.

That growth only looks likely to increase, accelerated by the Climate Change Commission's advice to the Government and the Clean Car Discount, which from 1 July 2021 will provide a discount of up to \$8,625 on new and used EV and plug-in hybrid imports.

Despite the growth in popularity of electric vehicles, there are still questions around how long the batteries last and what happens to those batteries when they reach the end of their useable life in a vehicle.

EECA estimates that an EV battery should last 10-20 years before it no longer provides useful range. Battery disposal is a little more complicated. There are ingredients like lithium, nickel, and cobalt involved - materials that need to be handled carefully and shouldn't just be thrown away.

The good news is that plans are underway for a scheme that will enable EV batteries to be repurposed and recycled. That work is being led by the Battery Industry Group (B.I.G.), a collaboration of more than 170 members across sectors such as energy, waste, batteries, transport, and academia. Some of its members include Vector, AA, Drive Electric, and WasteMINZ. EECA sits on the B.I.G. Governance Group and has provided funding to support their work.

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