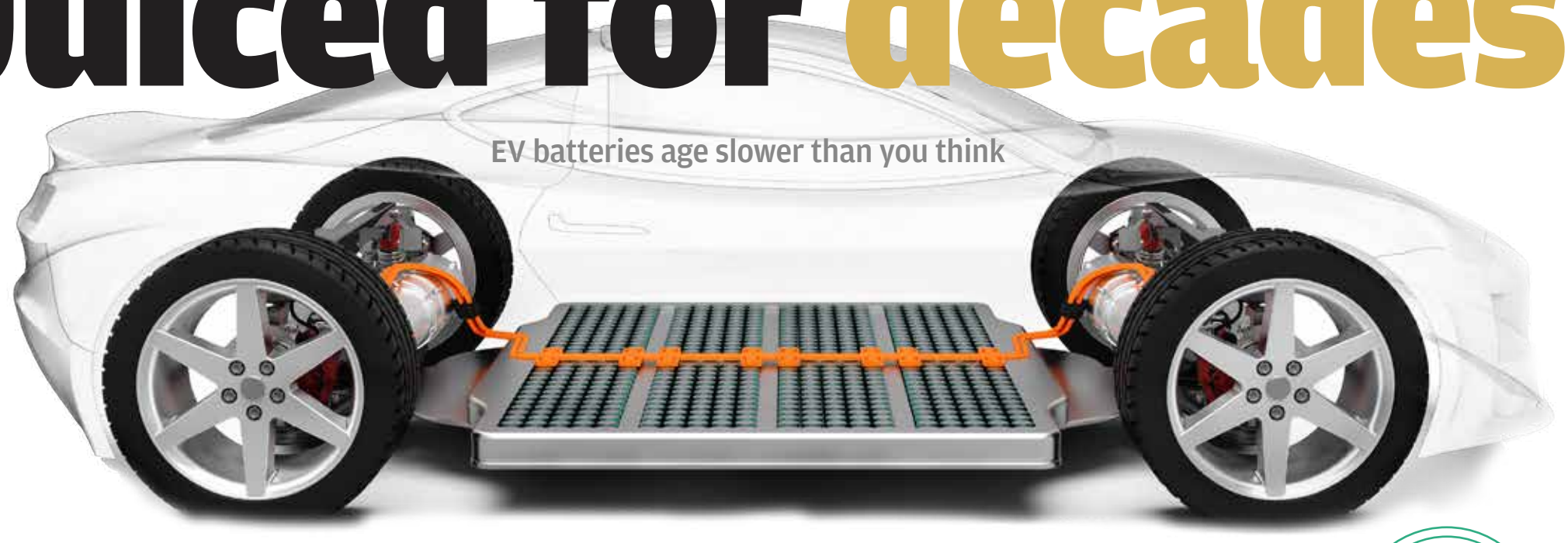
THE DAILY tribune

autobuzz

Juiced for decades



EV batteries age slower than you think

New data shows 20-year lifespan with minimal degradation

TDT | agencies

There is ongoing discourse surrounding the longevity and degradation behaviour of lithium-ion batteries in electric vehicles (EVs), with misconceptions often suggesting they deteriorate significantly within a few years. However, recent large-scale telemetry studies provide data-driven clarity on actual degradation trends.

According to Geotab, which analysed performance data from over 10,000 EVs across multiple OEMs, most EV batteries exhibit an average degradation rate of ~1.8% per annum. This implies that after 20 years, under normal operating conditions, a battery may retain approximately 64% of its original usable capacity, assuming no catastrophic failures.

This estimated 20-year lifespan notably exceeds the average vehicle ownership period in North America (~14 years), indicating that battery longevity is unlikely to be a limiting factor in the usable life of most EVs.

Failure Rates and Architecture

While concerns about high-voltage battery pack failures are valid, empirical evidence shows that modern EVs (post-2013 models) demonstrate a battery failure incidence below 0.5%, largely due to robust battery management systems (BMS) and cell-level fault tolerance.

Thermal Degradation and Climate Sensitivity

Battery degradation is strongly influenced by ambient temperature profiles. Elevated temperatures accelerate electrolyte decomposition and SEI (solid electrolyte interphase) growth, especially during charging. That said, contemporary EVs integrate active thermal management systems, including liquid cooling loops and heat pumps, which maintain pack temperatures within optimal operating ranges (typically 20–40°C).

Users in hot climates are still advised to avoid prolonged exposure to direct sunlight, especially during DC fast charging, as thermal buildup can increase degradation rates. Fast charging introduces higher current densities, elevating cell temperatures and potentially causing lithium plating during high SOC charging.

SOC Range and Chemistries

Battery life can also be optimised by managing depth-of-discharge (DoD):

- For nickel-rich chemistries such as NMC (nickel-manganese-cobalt) or NCA (nickel-cobalt-aluminium), maintaining an SOC between 20%–80% is beneficial. These chemistries are more sensitive to high voltages and full charge conditions.
- LFP (lithium iron phosphate) chemistries are more thermally stable and tolerant of full cycles, but recent findings suggest that persistent charging to 100% may still marginally reduce cycle life, especially under elevated temperatures or high C-rates.

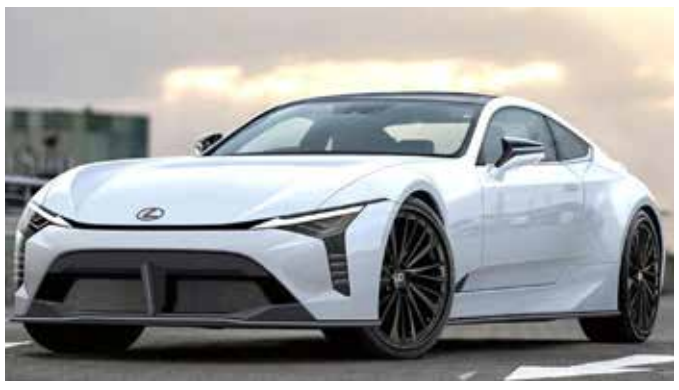
Conclusion

In real-world usage, modern EV battery packs are engineered to outlast the vehicles themselves, provided appropriate thermal and charging practices are followed. The convergence of better cell chemistries, thermal management, and BMS algorithms ensures degradation remains within predictable bounds, making battery replacement a non-issue for the majority of end-users over typical vehicle lifespans.

YOU KNOW WHAT

Electric vehicles can recover energy while braking – a feature called regenerative braking. Instead of wasting energy as heat like traditional brakes, EVs convert it back into electricity and store it in the battery. In city driving, this can boost energy efficiency and extend range significantly – by up to 30% in some models!

Toyota Supra's next chapter could include a Lexus sibling



TDT | agencies

The Toyota Supra has long been a favourite among sports car enthusiasts around the globe. As the current-generation GR Supra approaches the end of its seven-year production run, Toyota has confirmed that a next-gen model is already in development. But fresh reports from Japan suggest the story might come with a twist — in the form of a Lexus counterpart.

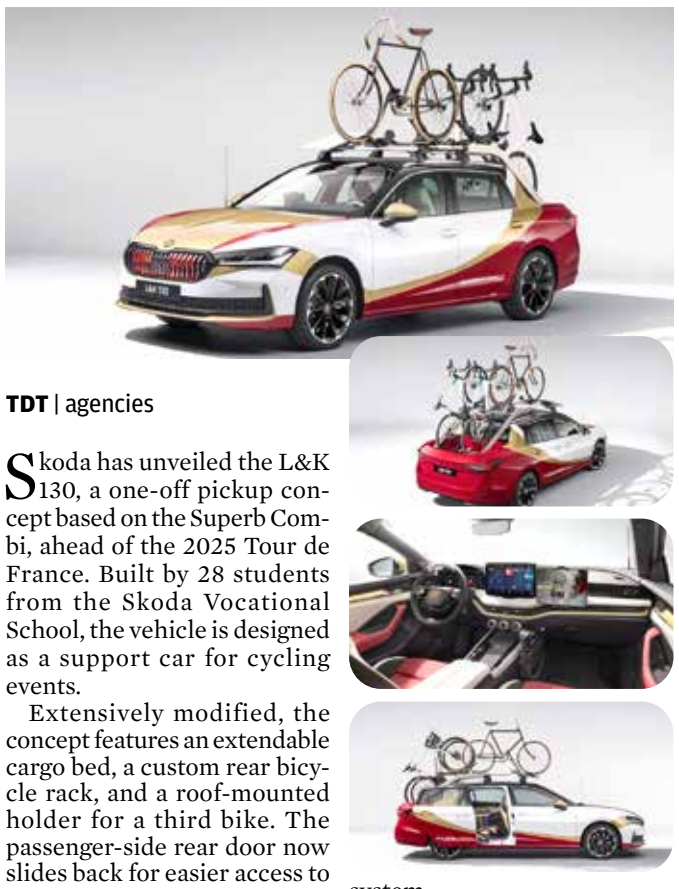
According to Japanese publication BestCar, Lexus may be planning its own version of the new Supra, potentially serving as a replacement for both the discontinued RC and the ageing LC models. While the upcoming GR Supra will stick to a traditional two-seat sports car layout, the Lexus variant is expected to adopt a 2+2 seating configuration, offering a more grand touring character. A convertible version is reportedly under consideration as well.

To distinguish itself further, the Lexus model is likely to feature a more luxurious interior, in keeping with the brand's premium positioning.

Both cars are expected to be powered by a new 2.0-litre turbocharged four-cylinder engine paired with a self-charging hybrid system. Power will be sent to the rear wheels via either an 8-speed or 10-speed automatic transmission, with a lightweight carbon fibre propeller shaft ensuring strength and efficiency.

The next-generation Supra is anticipated to debut sometime in 2026 or 2027, with the Lexus version likely to follow shortly after.

Skoda reveals L&K 130 pickup concept for Tour de France



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Skoda has unveiled the L&K 130, a one-off pickup concept based on the Superb Combi, ahead of the 2025 Tour de France. Built by 28 students from the Skoda Vocational School, the vehicle is designed as a support car for cycling events.

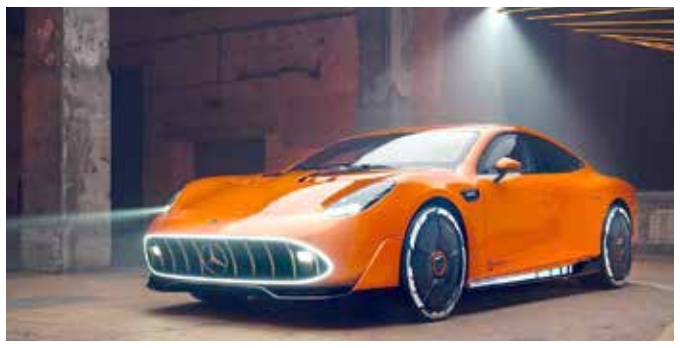
Extensively modified, the concept features an extendable cargo bed, a custom rear bicycle rack, and a roof-mounted holder for a third bike. The passenger-side rear door now slides back for easier access to the cargo area.

The L&K 130 sports a bold red, black, and gold livery, a backlit grille, 19-inch Supernova alloys, and Laurin & Klement badging. Inside, it continues the colour theme, with "130 years" embroidery, an extra display, a large cool box, and an integrated radio system.

Power comes from a 1.5-litre turbo-petrol engine with a plug-in hybrid system, producing 201 BHP and offering over 100 km of electric range via a 25.7 kWh battery.

The L&K 130 will be showcased during the 112th Tour de France, starting July 5, 2025.

Mercedes-AMG unveils Concept GT XX



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Mercedes-AMG has revealed the Concept GT XX, its first fully electric concept car and a preview of the brand's upcoming series-production EV. The four-door model is the first to be built on the new AMG.EA skateboard platform, specifically engineered for high-performance electric vehicles.

At its core, the GT XX features three axial flux electric motors and a bespoke high-performance battery. The drivetrain technology comes from YASA, a British electric motor specialist and wholly owned subsidiary of Mercedes-Benz. The setup includes two High-Performance Electric Drive Units (HP.EDUs) — one at the front and a more powerful one at the rear.

The rear HP.EDU houses two axial flux motors, each with a planetary gearbox and water-cooled inverter, all compactly packaged in a single casing. These components are oil-cooled for efficiency, and the hydraulic pump control unit is also integrated. The front motor acts as a booster, engaging only when additional traction or power is needed. It can be disconnected via a Disconnect Unit (DCU) to reduce energy loss during cruising. Combined, the system delivers over 1,341 BHP, with rear-wheel drive as the default.

Inspired by Formula 1 and the AMG One Hypercar, the GT XX's battery features an 800V architecture and supports ultra-fast DC charging. AMG claims charging speeds of up to 850 kW, enabling 400 km of range to be added in just five minutes — sustained across a wide portion of the charging curve.

The Concept GT XX signals Mercedes-AMG's next step in high-performance electrification, blending cutting-edge battery tech with motorsport-grade drive systems.