



Drive-Electric

EV BRIEFING

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01 BATTERY

EV Batteries: What Replacement Really Costs

02 ADVICE

What Summer Heat Actually Does To Your EV

FEATURE 01 - BATTERY

EV Battery Replacement: What It Actually Costs, And Why Most Owners Never Get There

The fear that an EV battery will die young and cost you the price of a small car to replace is one of the most persistent myths in electric motoring. Here's what the real data says about cost, warranty cover and how fast batteries actually degrade.

THE NUMBER THAT ACTUALLY MATTERS: JUST 2%

The fear is understandable, nobody wants to be stuck with a car that needs a battery costing as much as the car itself. But the real-world data doesn't support it. EV data firm Recurrent Auto tracked electric vehicles built between 2017 and 2022, the generation most likely to be approaching real wear by now, and found that just 2% have needed a battery replacement. Modern battery management software and active cooling do most of the work here, protecting the pack far more effectively than the raw chemistry alone ever could.

The degradation that does happen is modest. Geotab's 2026 study, analysing over 22,700 vehicles across 21 models, found average battery capacity loss of 2.3% per year, meaning a typical battery still holds about 81.6% of its original capacity after eight years. That's comfortably within, or better than, the 70-80% capacity most manufacturers already guarantee at that point.

WHAT A REAL REPLACEMENT ACTUALLY COSTS

When a battery does need replacing out of warranty, the numbers are real but have been falling fast. A documented 2022 invoice for a Tesla Model 3 RWD, a 60kWh lithium iron phosphate (LFP) pack, came to just over \$14,000 excluding installation. Battery pack prices have dropped substantially since: BloombergNEF's global data shows average pack costs falling from around \$255/kWh (Australian-dollar equivalent) in 2022 to about \$176/kWh in 2024, with China-made packs now closer to \$148/kWh. Applying those falling costs to Australian-market EVs puts a realistic 2025 replacement anywhere from around \$6,600 for a small 40kWh pack, Nissan Leaf-sized, up to close to \$19,000 for a large 114kWh pack, Audi SQ8 e-tron-sized. Goldman Sachs projects pack prices could fall as low as roughly \$60/kWh (AU equivalent) by 2030, which the NRMA notes would put a full replacement at around 15% of a car's value, down from historically closer to half.

BATTERY REPLACEMENT REALITY CHECK

Real invoice example (Tesla Model 3 RWD, 60kWh LFP)	\$14,000 excl. install
EVs (2017-2022) that have needed a replacement	Just 2%
Typical manufacturer battery warranty	8 years / 160,000km

Capacity most brands guarantee at warranty end	70-80%
Real-world average degradation (Geotab, 22,700 vehicles)	2.3% per year
Projected replacement cost by 2030	As low as ~15% of the car's value

WHAT YOUR WARRANTY ACTUALLY COVERS

Most mainstream brands sold in Australia back the high-voltage battery itself for 8 years or 160,000km, whichever comes first, separate from the broader vehicle warranty, and guarantee at least 70-80% capacity retention over that period. Tesla covers the Model 3 and Model Y for 8 years/160,000km on rear-wheel-drive variants, extending to 192,000km on Long Range and Performance models. BYD and Hyundai both sit at the same 8-year/160,000km standard across their EV ranges.

Kia's Niro, EV6 and EV9 are covered for 7 years/160,000km, marginally short of the usual benchmark. MG has gone further than any mainstream rival, backing its EV range for 10 years/250,000km, though vehicles used commercially, rideshare or delivery work, drop to the standard 7-year/160,000km term. If you're buying secondhand, it's worth checking directly whether the remaining warranty transfers to a new owner, most do, but terms vary by brand.

WHAT ACTUALLY SPEEDS UP DEGRADATION, AND WHAT DOESN'T

Geotab's research points to one factor above all others: how often, and how fast, you DC fast charge. Vehicles that relied heavily on charging above 100kW degraded at around 3.0% per year, roughly double the 1.5% seen in vehicles charged mostly at home or on standard AC. Hot climates add a modest 0.4% per year on top, real, but nowhere near as significant as charging habits.

The long-standing advice to only ever charge to 80% and never let the battery drop below 20% turns out to matter far less than commonly believed. Geotab found it only meaningfully accelerates degradation when a vehicle spends more than 80% of its total time parked at those extremes for prolonged periods. For ordinary daily driving, charging to 100% occasionally or running the battery low now and then makes little measurable difference.

"I think it's easily going to be 15 years in most cases. I think people will probably keep the batteries in their cars for a long time and really extract as much utility as they can."

JB Straubel, Tesla co-founder and former CTO, CERAWeek interview with Daniel Yergin

WHY IT MATTERS

Most drivers will trade in or sell the car long before the battery becomes the limiting factor. Knowing the real numbers means you can buy or run an EV with a clear head, rather than an inherited fear from ten-year-old headlines about early Nissan Leafs.

THE FEAR IS BIGGER THAN THE REALITY

Actual battery failure requiring full replacement is rare, just 2% across 2017-2022 EVs, and that figure is expected to keep falling as chemistry and battery management systems improve further.

If you do ever need one, budget realistically, costs have already dropped sharply since the early horror stories, and are forecast to keep falling through the decade.

Protect your battery through charging habits, not charge percentage, go easy on high-power DC fast charging where you can, and don't stress over the old 20-80% rule for everyday use.

ALSO WORTH KNOWING

Shopping secondhand? An EV battery health check, offered by the NRMA and several independent EV specialists, gives you an actual state-of-health reading before you buy, real data rather than a guess based on the odometer.

FEATURE 02 - ADVICE

What Summer Heat Actually Does To Your EV, And What Doesn't Matter At All

With another Australian summer on the way, here's what genuinely costs you range in the heat, what's a total non-issue, and the one habit that makes the biggest difference on a 40-degree day.

THE MYTH: HEAT KILLS RANGE THE WAY COLD DOES

Cold weather is a genuine range hit, your heater is a resistance element pulling real power, and the battery itself works harder below its ideal temperature. Heat is a different story. Research from EV data firm Recurrent, analysing readings from thousands of vehicles, found range loss of roughly 2.8% at 26°C and around 5% at 32°C, with the dip not really starting until about 29°C. Polestar Australia's Matt McCroarey put it plainly: with the air conditioning all the way up on a hot day, expect range degradation of around 1-2km, not the double-digit losses many drivers fear.

On genuinely extreme days, above 38-40°C, with the air conditioning working hard the whole drive, the hit is more noticeable, commonly cited around 10-15% in Australian conditions, occasionally more in very limited data sets. That's real, but it's still nowhere near what a cold snap does to the same car, and a Sydney or Perth heatwave won't strand you the way some drivers assume.

THE REAL CULPRIT: COOLING DOWN A HOT CAR, NOT DRIVING WITH IT ON

The energy-hungry part of summer air conditioning isn't cruising along the highway with it running, it's the first few minutes after you get in. Recurrent's research found it can take 3-5kW to bring a 35°C cabin down to a comfortable temperature, compared with roughly 1kW to simply maintain 21°C once you're there. That's a five-fold difference for the same amount of comfort.

The fix is simple and free if your car is still plugged in: use the app to pre-cool the cabin before you leave, while it's still drawing from the wall rather than the battery. Most EVs support this as standard. Park in shade or use a sunshade where you can, and you'll barely notice the difference between a 26°C day and a 36°C one once you're actually driving.

SUMMER EV CHEAT SHEET

Range loss at 26°C	~2.8%
Range loss at 32°C, AC on	~5%
Range loss on 40°C+ days (AC-driven)	~10-15%
Battery's optimal operating range	15°C to 35°C
Energy to pre-cool a hot cabin	3-5kW (vs ~1kW to maintain)
Verdict on heat vs cold	Cold costs you more range than heat does

BATTERY HEALTH IN SUMMER: WHAT ACTUALLY MATTERS

Lithium-ion batteries are happiest between about 15°C and 35°C. Modern thermal management systems handle short excursions outside that range without drama, but two habits are worth adopting over summer regardless of what car you drive: avoid DC fast charging immediately after a long, hard highway run on a hot day, the pack is already warm and will often throttle its charging speed to protect itself, and avoid leaving the car sitting at 100% charge in direct sun for days at a time if you can help it. Neither will meaningfully shorten a modern battery's life on its own, but both are easy wins.

If your car uses an LFP battery, and a growing number of mainstream EVs now do, you can worry about this even less. LFP chemistry is inherently more heat-tolerant and degrades more slowly under full top-ups and fast charging than the nickel-based chemistry common in older or more performance-focused EVs.

YOUR REAL SUMMER RISK IS THE CHRISTMAS CHARGER QUEUE

Charging providers are already warning of substantial wait times at busy interstate sites over the Christmas and New Year period, when everyone with an EV decides to drive the same coastal routes at once. That's the genuine planning problem this summer, not your battery's tolerance for heat. Book ahead where a network allows it, use a trip-planning app that accounts for queue times rather than just charger locations, and avoid arriving at a popular stop already close to empty.

One more habit worth adopting: check your tyre pressures against the car's cold-inflation spec more often in summer. Hot bitumen and long highway stints naturally raise pressure, which can mask under-inflation from a quick glance, and under-inflated tyres are a genuine, measurable drag on range, more so than anything your air conditioner is doing.

WHY IT MATTERS

Most of the range anxiety around Australian summers is aimed at the wrong culprit. Understanding what actually costs you kilometres means you can stop worrying about the drive and start planning around the one thing that genuinely will slow you down these holidays: charger queues.

RELAX ABOUT THE HEAT, PLAN AROUND THE TRAFFIC

The heat itself is a minor issue, typically a few per cent of range on a hot day, and nowhere near the hit a cold snap delivers. Don't let it change your summer plans.

Pre-cool while you're still plugged in, it's the single habit that makes the biggest measurable difference, and it costs you nothing but a few minutes before you leave the house.

Plan around the queues, not the temperature, the Christmas and New Year charging crunch on popular routes is the real risk to a smooth summer road trip.

ALSO WORTH KNOWING

If your car has an LFP battery, the same chemistry covered in our battery replacement piece opposite, you have even less to worry about in the heat: LFP packs are inherently more heat-tolerant than the alternative chemistry.

QUICK HITS

MARKET

EVs outsell petrol and diesel in Australia for the first time

August 2026 VFACTS data shows EVs hit a record 24.9% market share, 27,078 vehicles, up 169.4% year-on-year, outselling every other fuel type combined for the first time on record.

EVENT

Everything Electric Sydney draws a record crowd

Over 37,000 visitors and 12 brands launching new EVs, including Cadillac, Chery, GWM, Hyundai and Zeekr, made this the biggest line-up the Sydney show has hosted.

BRANDS

Lepas L6 EV lands in October

The budget-focused newcomer is reported at a 440km WLTP range with 30-80% DC charging in around 22 minutes, aimed squarely at value-conscious buyers.

BRANDS

Cadillac launches the MY27 Lyriq-V in Australia

The performance flagship marks Cadillac's highest-profile local EV push yet, debuting alongside the brand's broader Australian relaunch.

MARKET

Electrified vehicles now over half the new-car market

EVs, hybrids and PHEVs together made up 51.7% of August's new-vehicle deliveries, the first time all three power sources have combined to top half the monthly total.

BRANDS

iCAUR V25 leads a wave of new-brand debuts

The V25 headlined a run of first public viewings in Sydney, alongside newcomers Forthing and IM, as more Chinese brands stake a claim in the local market.

BRANDS

Mercedes-Benz GLC EQ due in October

The German brand's electric take on its best-selling GLC mid-size SUV is expected to arrive locally next month.

BRANDS

Hyundai's Staria Load goes electric

A battery-electric version of Hyundai's Staria Load van debuted locally, widening the brand's EV range beyond passenger cars.

"Second-time buyers don't want ever-longer range, they want a car that fits how they actually live. That's not where this is heading."

Jeffrey Guyton, President and CEO, Mazda North America, Green Car Reports interview