

23-April-2026

Responses from Professor of Chemistry, University of Sydney, Thomas Maschmeyer

First up, the whole argument is a furphy as current top use of nickel is in **stainless steel ~70%**, followed by **batteries ~15%** and non-ferrous alloys with ~9% for extreme heat environments (power plants, oil refineries, etc.) and ~4% for special alloy steels (e.g. military armour) – **so 85% of nickel use is NOT IN BATTERIES**, but supports directly or indirectly every Australian household in other ways.

Mordor Intelligence

www.mordorintelligence.com

Nickel Market Size, Share, Growth, Trends & Report 2031 - Mordor Intelligence

- 5.1 By Application. 5.1.1 Stainless Steel. 5.1.2 Casting. 5.1.3 Alloys. 5.1.4 Batteries. 5.1.5 Plating. - 5.2 By End-user Industry. 5.2.1 Automotive and ...

-

AZoMining

www.azomining.com

Nickel Mining Market: Key Trends, Challenges and Outlook - AZoMining

This trend intensified in 2025, with final year-end data indicating a surplus of 198,000 tons. Global production in 2025 reached approximately 3.74 million ...

-

EBC Financial Group

www.ebc.com

One Country, 60% of Global Nickel, and a 30% Cut: The Shockwave Hitting Defense, EVs & Global Economy

More than 65% of nickel consumed in the U.S. goes to stainless steel and advanced alloys, with the defense sector relying on nickel superalloys for jet ...

-

As at April last year, to the best of your knowledge, what proportion of EV vehicles arriving to Australia were still using nickel batteries?

As of April 2025 (last year), approximately **58%** of the battery demand for electric vehicles (EVs) arriving in Australia was still accounted for by **nickel-based chemistries**, specifically Nickel Manganese Cobalt (NMC) and Nickel Cobalt Aluminum (NCA).

While nickel batteries remained the dominant technology in terms of total battery capacity (GWh), the market was in the middle of a massive structural shift toward **Lithium Iron Phosphate (LFP)** batteries.

Key Data & Market Trends (April 2025)

- **Nickel-Cobalt Share:** Market analysis for 2025 indicated that nickel-based chemistries held a **58.23%** share of the Australian battery demand. These batteries were primarily found in premium, long-range, and high-performance models (such as the Tesla Model Y Long Range, Volvo EX30, and various European luxury EVs).
- **The LFP Surge:** By early 2025, LFP batteries had already become the "workhorse" of the Australian mass market. Because LFP batteries are typically smaller (approx. 50–60 kWh) compared to high-nickel packs (75–100+ kWh), LFP actually represented a larger proportion of **vehicle units** sold—roughly **55–60% of all new EVs**—even though they accounted for less than half of the total "GWh demand."
- **Top Sellers:** The two most popular EVs in Australia at the time—the **Tesla Model Y (Rear-Wheel Drive)** and the **BYD Sealion 7** (which surged in early 2025)—both utilize LFP batteries. The dominance of these models was the primary driver in reducing nickel's total market share.
-

Why Nickel Was "Still" Used

Despite the rise of LFP, nickel remained critical for specific segments in the Australian market:

- **Range Requirements:** For Australia's vast distances, manufacturers still preferred NMC/NCA for "Long Range" variants due to their higher energy density.
- **Performance:** Performance-oriented models (like the Tesla Performance grades or Kia EV6 GT) continued to rely on nickel for its superior power discharge capabilities.

- **Legacy Manufacturers:** Many European brands arriving in early 2025 were still working through product cycles that utilized NMC batteries before transitioning their entry-level models to LFP.

In short, while nickel was "still" in the majority by total energy capacity as of last April, it had already lost the "numbers game" to LFP in the budget and standard-range segments that make up the bulk of Australian EV arrivals. This is a key point, yes, it is used, but will become less and less prevalent.

Mordor Intelligence

www.mordorintelligence.com

Australia Electric Vehicle Market Size, Growth & Share Analysis 2031 - Mordor Intelligence

By battery chemistry, nickel-cobalt chemistries accounted for 58.23% of battery demand in 2025; meanwhile, lithium iron phosphate cells are projected to rise ...

Discovery Alert

discoveryalert.com.au

Competing Battery Technologies Reshaping the EV Industry in 2025 - Discovery Alert

NMC (Nickel Manganese Cobalt) batteries continue to command the premium EV segment with energy densities reaching 250-300 Wh/kg, making them the preferred ...

-

Australian Resources & Investment

www.australianresourcesandinvestment.com.au

Battery boom sparks global market shake - Australian Resources & Investment

Lithium iron phosphate (LFP) batteries grew the fastest, up 43 per cent in 2025, thanks to strong EV sales in China and global storage demand. LFP now holds 60 ...

-

Drive-Electric

www.drive-electric.com.au

LFP vs. NMC: A Guide to the EV Battery Chemistry Battle - Drive-Electric

NMC (Nickel Manganese Cobalt): The Pros: Its key advantage is superior energy density. It packs more power into a smaller space, making it the essential choice ...

For those vehicles which still do use nickel batteries, do we know whether any of that nickel was sourced from the Morowali plant in Indonesia?

Because approximately **90% of the EVs sold in Australia are manufactured in China**, the Australian market is more exposed to Indonesian nickel than almost any other Western market as China is a major user of Nickel from that plant.

It has been demonstrated that this plant has operational issues and a questionable environmental impact (all addressable through investment in better mining techniques like those used in Australia).

Ironically, while Australia is one of the world's largest producers of **high-grade "clean" nickel** (mined with higher ESG standards in WA), much of our domestic nickel was being sold to Europe or the US, while the EVs we *imported* were using the cheaper, more carbon-intensive nickel from Indonesia.

Summary: As of last April, if you were looking at an EV in Australia with a nickel-based battery (NMC/NCA), there was a very high probability that at least some of its nickel content originated from the Indonesian Morowali complex, given its dominance in the Chinese battery supply chain.

Australian Institute of International Affairs

www.internationalaffairs.org.au

Indonesia's Nickel Gamble: From Resource Protectionism to EV Ambitions - Australian Institute of International Affairs

With investment comes innovation. Morowali's high-pressure acid leach (HPAL) facilities, which can extract battery-grade nickel, are being constructed more ...

-

Mining Technology

www.mining-technology.com

Tesla signs \$5bn nickel products supply contracts with Indonesian firms

US-based Tesla has reached contracts, valued at nearly \$5bn, to purchase battery materials from Indonesian nickel processing companies, reported Reuters citing ...

-
Business and Human Rights Centre

www.business-humanrights.org

Indonesia: Tesla's nickel transactions with Chinese companies leave trails of pollution and environmental suffering - Business and Human Rights Centre

[...] Another threat is related to the government's plan to allow the disposal of tailings waste into the Morowali deep sea through the Deep Sea Tailings ...

The journalist, in a question to Chris Bowen, says: ‘... the batteries in most of these vehicles here today coming out of China are using dirty nickel from Indonesia’. Is this correct?

Yes, that would be correct, but the point is that there is a substantial and pervasive change in the cathode material (which contains the nickel) of batteries due to the move towards iron phosphate, so it is a diminishing issue over time.

As an aside the Australian start-up Gelion Technologies (www.gelion.com now listed as Gelion plc in the UK and which I founded) can replace the nickel chemistry completely with a new material made from just carbon and sulfur (a waste product from the petrochemical industry), so nickel will play an ever more diminishing role in batteries – even though for the moment due to production investments already made in terms, it will keep playing a role for some time. Personally, I believe our technology will take over a very large share – our partner TDK (Japan’s largest electronic company) is one of the tier-1 companies helping us to globalise this technology option (lots of press releases, videos, explainers, etc. on the website, if interested).

As per my opening statement, the whole argument is a furphy as current top use of nickel is in stainless steel ~70%, followed by batteries ~15% and non-ferrous alloys with ~9% for extreme heat environments (power plants, oil refineries, etc.) and ~4% for special alloy steels (e.g. military armour) – so 85% of nickel use is NOT IN BATTERIES, but supports directly or indirectly every Australian household in other ways.

Do you have a broader comment about the importance of journalists to accurately report on these matters?

It is critical that the public is properly informed with fact-based reporting. The resources to do this are readily available from the sector, via trade publications from the mining industry, reports from financial analysts, reports from the Academy of Science or the Academy of Technological Science and Engineering (I am Fellow of both) or any number of academics or the CSIRO.

These sources are too distinct in their readership for there to be a 'conspiracy', e.g. financial or insurance market analysts chasing a buck (rightfully so) and CSIRO scientists looking at the environmental impact of some mining activity are a different crowd, but in term of risk analysis one can expect them to come to similar conclusions when they evaluate the some project. Their recommended actions based on these analyses might differ, but that is where the public can make up its own mind – just not about the facts, there is only one set – “alternative facts” belong in the dustbin of history.

Free, true and independent journalism is a critical part of the foundation of our democracy and our way of life – without it we will end up living under a degraded system of governance – of which there are many examples around the world – we do not need to run the experiment, we know the outcome, and I know which I prefer.