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Indonesia EV Battery Landscape 2026

Production, Demand Absorption, Usage, Impact, Regulators, Industry Players,
Technology, Energy Storage, Home Solar Safety, and Global Competition

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Data as of September 2026

2026 snapshot in four numbers



101,171

BEV units sold
(wholesale) Jan–Aug
2026, $\pm 2\times$ last year



± 17 GWh

operational cell capacity:
HLI 10 + CATIB phase 1
6.9



26.8%

electrified vehicle share
(BEV+HEV+PHEV), H1

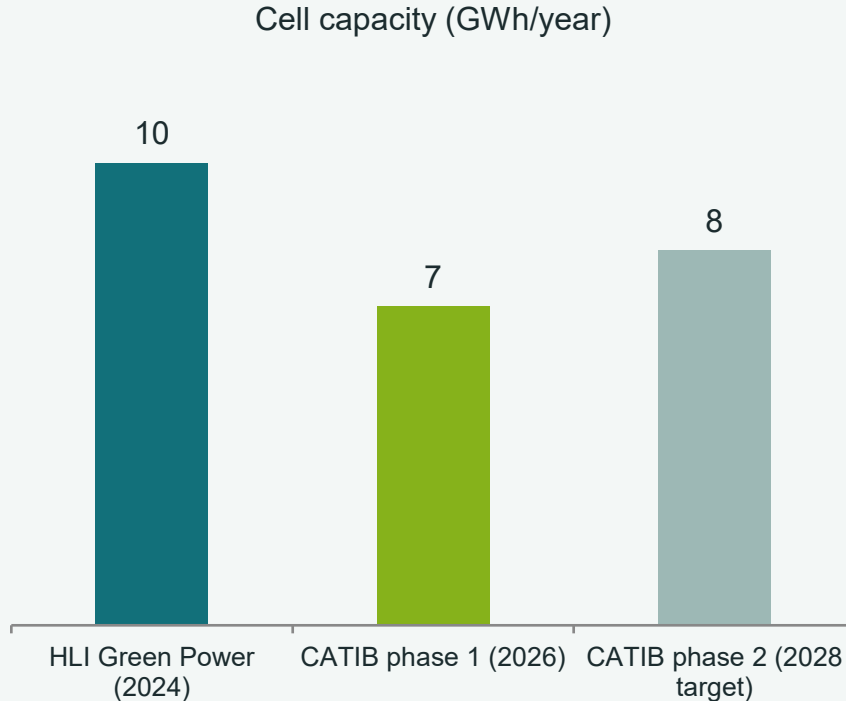


± 260 mt

2026 RKAB nickel ore
quota, down from 379
mt (2025)

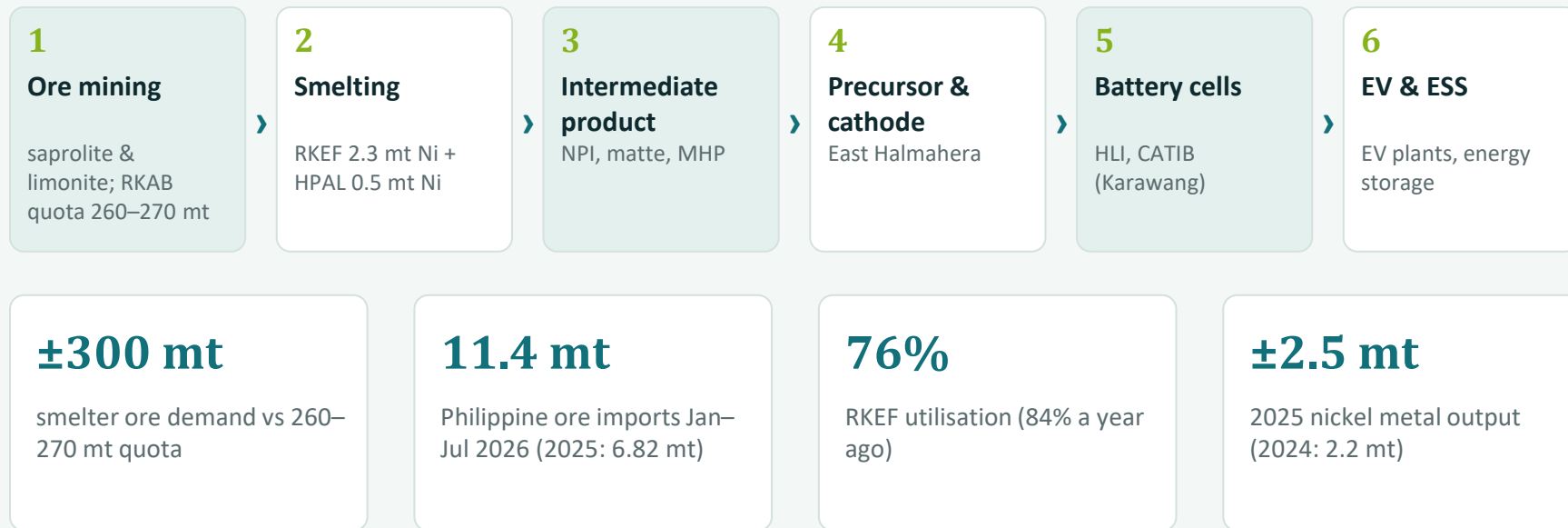
Indonesia is shifting from a nickel supplier to a battery cell producer, but domestic demand, policy certainty, and ore supply remain the deciding factors.

Production: battery cell capacity



- HLI Green Power (Hyundai–LGES): 10 GWh/year since July 2024, NMC cells, mostly for export
- CATIB (IBC 30% – CBL 70%): phase 1 (6.9 GWh) coming online in stages from August 2026; investment ±Rp7 T, ±3,000 workers
- Phase 2 (8.1 GWh) targeted for 2028: total 15 GWh, equivalent to ±250,000 EVs
- Recycling in East Halmahera (20,000 tonnes of metal/year) targeted for 2031

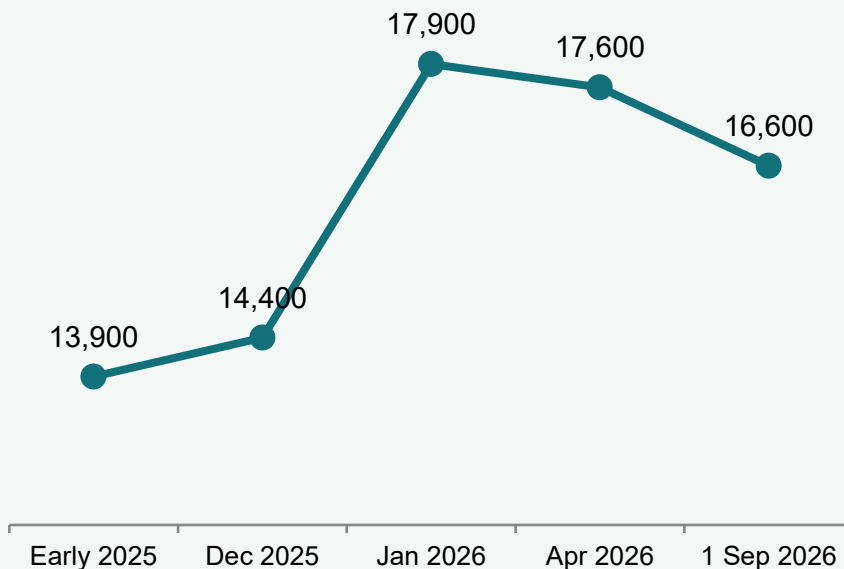
Indonesia's nickel supply chain



The RKAB revision is seen as selective: it only closes the gap in smelter demand. Approvals were reported to start 20 August 2026, with no total addition announced. Other risks: Morowali water shortages (El Niño) and sulfuric acid supply for HPAL.

Global nickel supply chain

LME nickel price (US\$/tonne, indicative)



- Indonesia supplies ± 60 – 65% of world output; prices slid for two years until Australian and New Caledonian mines shut down
- ING forecast: surplus of 209,000 t (2025) and 261,000 t (2026); INSG projects a small deficit of $\pm 32,000$ t
- Stainless steel $>60\%$ of demand; battery demand growing more slowly due to LFP
- China dominates global refining (cathode); the Philippines is the main ore supplier to Indonesia and China
- LME stock 268,000 t (Aug): ore restrictions have yet to reach refined metal

Import dependency on lithium and graphite



The “nickel-centric” narrative has a gap

- Both NMC and LFP batteries still need lithium and graphite (anode material) — nickel does not replace either
- Indonesia has no commercial lithium or graphite mines; lithium is imported at scale from Australia and South America, graphite from China, Brazil, and Mozambique
- Lithium imports of $\pm 60,000$ tonnes/year (2023) for smelting in Morowali; a similar additional volume is planned
- Indonesia’s nickel advantage could be held back if the global lithium supply chain is disrupted

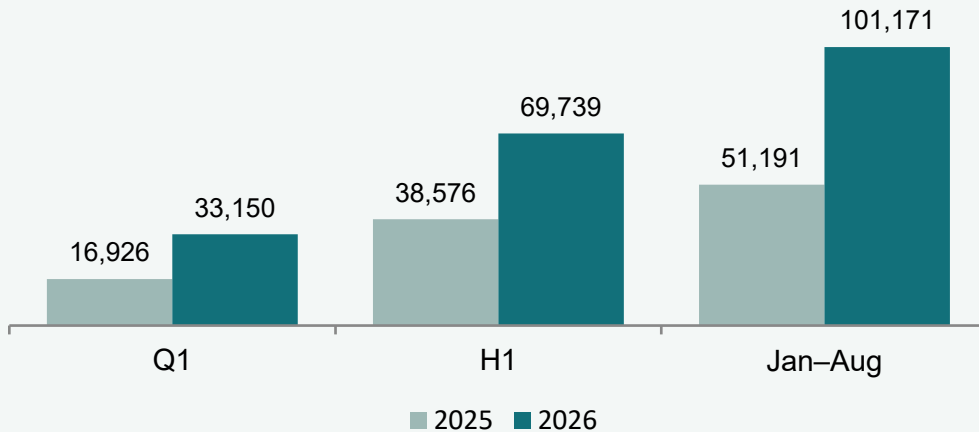


Steps already under way

- BTR New Energy anode plant in Kendal SEZ: phase I 80,000 t/year, heading to 160,000 t/year (the largest outside China)
- A lithium hydroxide plant by BTR is under construction, partly sourced from Australia
- IBC is drafting a self-sufficiency roadmap, including the option of acquiring lithium mines abroad
- $\pm 20\%$ of battery raw materials (graphite, manganese sulfate, cobalt sulfate) are still imported, beyond nickel

Demand absorption: domestic EV demand

Cumulative BEV sales (units)



+80.8%

BEV H1 2026 vs 2025 (69,739 vs 38,576 units)

103,931

total 2025 BEVs; Jan-Aug 2026 already at 101,171

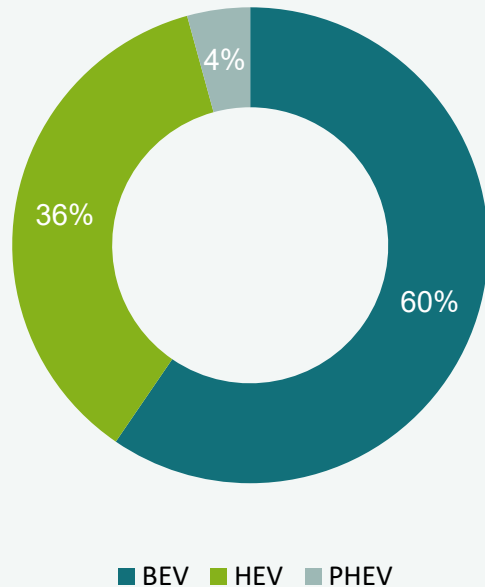
±98%

H1 cell output directed to export (2025), domestic uptake still limited

- Global export barriers: critical-mineral FTA requirements under the US IRA, and the EU's CBAM carbon tax on batteries made with captive-coal power
- Commercial-fleet potential: electrification of TransJakarta buses and mining haul trucks is starting to drive demand for large-capacity batteries

Usage: who is using EV batteries

Electrified vehicles H1 2026: 117,108 units



- June 2026: BYD (3.4k), Jaecoo (3.0k), Geely (1.9k), Wuling (1.3k) = 77% of BEVs
- Best sellers H1: Jaecoo J5 16,990, BYD Atto 1 10,116, Geely EX2 6,582 units
- LFP dominates Indonesia's EV market; NMC is more common in the premium segment
- CATIB batteries are designed for both EVs and energy storage systems (ESS)
- Government is preparing an Rp5 million/unit e-motorcycle subsidy (target: 100,000 units)

Impact: economy vs environment



Economic benefits

- Indonesia accounts for >50% of world nickel production
- Nickel smelters employ ± 1.9 million workers (as of Q3 2024)
- North Maluku and Morowali grew 27–28% during the smelter expansion era
- Quota cuts have pushed LME nickel prices to $\pm \text{US\$}17\text{--}18\text{k/tonne}$



Environmental & social costs

- Two tailings dams collapsed in Morowali (March 2025), killing 3 workers
- Smelters rely on captive coal power: ± 13 GW operating, +21 GW planned
- Deforestation, river and marine pollution in mining areas
- Smelter utilisation is expected to fall 25–30% due to ore restrictions

Impact on the ground: nature and communities



On nature

- Mud floods and sedimentation from upstream mining; the Sagea River and Weda Bay turned murky
- Raja Ampat: mining on small islands, a burst settling pond, and pollution (KLH findings, 2025)
- Nickel-industry emissions equal 22% of national energy and IPPU-sector emissions (2023), mostly from smelters and captive coal plants
- CELIOS projection: >3,800 premature deaths in 2025



On communities

- Southeast Sulawesi fishers now travel 5–15 miles out, up from 1–3 miles (Pomalaa, Tiworo, Kabaena)
- $\pm 94,000$ ha of mining permits overlap settlements and farmland; $\pm 70,000$ ha sit in disaster-prone zones
- Land conflicts and compensation disputes; the O'Hongana Manyawa indigenous community (Halmahera) opposes expansion
- Morowali is Indonesia's worst-hit district for respiratory infections (ISPA) — 51,800 cases as of Jan 2025, concentrated in Bahodopi; a 2023 furnace explosion killed 13 workers



Safety risk: thermal-runaway (fire) vulnerability in NMC batteries calls for strict global safety standards (UN 38.3 certification) to protect end consumers.

Environmental governance: what has been done

Aug 2024

ESDM–Kemenperin agreement: no new investment permits for RKEF smelters (moratorium)

Early 2025

Presidential Regulation 5/2025 on Forest-Area Enforcement becomes the basis for the PKH Task Force

Jun 2025

Raja Ampat: 4 of 5 mining permits revoked; PT Gag Nickel retained under strict Amdal and reclamation oversight

Jun 2025

GR 28/2025 (signed 5 June, widely reported in November) restricts new nickel-smelter industrial licences

Dec 2025

PKH Task Force fines 71 palm-oil and mining companies Rp38.9 T in total, including Weda Bay Nickel

2026

Ore quota cut to 260–270 mt; Feb: 4 North Maluku nickel miners fined (Weda Bay Rp4.32 T, rate Rp6.5 bn/ha); Weda Bay objects

Looking ahead: plans and governance gaps



Under way / planned

- Selective 2026 RKAB revision; smelter demand and Amdal compliance are factored in
- PKH Task Force is keeping civil, criminal, and even state-takeover options open if fines go unpaid
- Special oversight of PT Gag Nikel: Amdal, reclamation, coral reefs
- Battery recycling: a Halmahera Timur JV targeting 20,000 tonnes of metal/year by 2031



Gaps being flagged

- Administrative fines don't yet mean ecological restoration or criminal proceedings (Jatam, USBA)
- Smelter moratorium without a mining moratorium: 292 permits, ±866,000 ha (CELIOS)
- New Danantara smelters (Vale, GEM) are seen as at odds with the restrictions
- The 2025–2034 RUPTL allocates <10 GW of renewables for Sulawesi (potential >250 GW); nickel-sector emissions could rise 86% by 2045

Regulators and key policies



Ministry of Finance: PPN DTP (VAT-borne-by-government) incentive

40–100% (higher for nickel batteries), 100,000 cars + 100,000 motorcycles. Timeline slipped June→September; the regulation had not been issued as of the latest reports.



Ministry of Industry: local-content (TKDN) rules

New TKDN calculation method; a $\pm 40\%$ threshold is being discussed for incentives; fully-built imports (CBU) are reported to no longer be facilitated.



ESDM: ore quota (RKAB)

2026 nickel quota ± 260 million tonnes (2025: 379 million tonnes); revisions opened 1–31 July; HPAL plants risk ore shortfalls in Q3–Q4.



Local governments & legal basis

Presidential Regulation 55/2019 remains the foundation; EV vehicle and transfer tax breaks now depend on individual local policies.

EV incentives: how they've changed, 2023–2026

2023

- 10% PPN DTP for EVs with $\geq 40\%$ local content (PMK 38/2023, Apr–Dec)
- Rp7 million/unit e-motorcycle subsidy from March; 11,532 units disbursed

2024

- 10% PPN DTP extended (PMK 8/2024); 100% PPnBM DTP (luxury-tax relief, PMK 9/2024)
- CBU imports: 0% import duty and 0% PPnBM with a local-production commitment (from Feb)
- Rp7 million motorcycle subsidy: 62,541 units

2025

- 10% PPN DTP (PMK 12/2025) and 100% PPnBM DTP through Dec
- 0% CBU import duty in effect through 31 Dec; not extended
- Rp7 million motorcycle subsidy discontinued

2026

- 10% PPN DTP and CBU incentives expire; CBU taxes return to $\pm 77\%$ (50% duty + 15% PPnBM)
- New plan: 40–100% PPN DTP for cars (nickel > LFP) and Rp3 million for motorcycles
- Not yet in effect as of 23 Sep

EV incentives: status as of September 2026



Cars: 40–100% PPN DTP

100% for nickel (NMC) batteries, 40% for LFP; target 100,000 units. Effective date has slipped June → July → August → September.

Not yet issued

Motorcycles: Rp3 million/unit

Down from Rp5 million; 1 million units, Rp3 trillion budget, 2026 uptake estimated at ±100,000 units. Industry Minister (23 Sep): technical guidelines ready.

Awaiting regulation

Incentives for motorcycle makers

President (14 Aug): incentives for Indonesian firms producing 1 million e-motorcycles; Alva and Gesits named.

Announced

Fully-built EV imports (CBU)

0% import duty and 0% PPnBM ended 31 Dec 2025; makers must meet local-production commitments.

Ended

Regional vehicle & transfer tax

Local tax relief now depends on each regional government's policy (Ministry of Home Affairs rules).

Varies

Players: state-owned and private/foreign



State-owned / government

- Danantara: the investment holding steering downstreaming
- MIND ID and Antam: upstream nickel and consortium partners
- IBC: 30% partner in CATIB; 40% in the recycling JV
- MIND ID–IBC–CATL MoU: an integrated value chain, commercial by 2028



Private / foreign

- HLI Green Power (Hyundai–LG Energy Solution)
- CBL: CATL–Brunp–Lygend, 70% partner in CATIB
- Huayou: replacing LG in the Grand Package; recycling JV with HLI (Mar 2026)
- Eramet (Weda Bay Nickel), Harita, the IMIP/IWIP zones upstream in nickel

EV brands on the market: BYD, Jaecoo, Geely, Wuling, Hyundai. Most of the top sellers are Chinese.

Workforce readiness and technology transfer



The gap being flagged

- Gigafactories need thousands of chemical, metallurgical, and electrical-systems engineers — national certification capacity hasn't kept pace
- Local workforce skills are seen as mismatched with plant needs; foreign labour (TKA) is concentrated in mid-to-senior operational roles
- HPAL technology is reportedly still fully controlled by Chinese partners; local workers remain mostly in operational roles (a “technology enclave”)
- Chinese foreign-worker numbers peaked at 168,048 in 2023, the highest in six years



Efforts and demands

- Perhaps: reliance on foreign labour should be phased out; Indonesia's metallurgical talent is seen as competitive if knowledge transfer runs well
- Regional oversight is pushing local-hire targets of up to 60% at several smelters
- Presidential Decree 75/1995 requires foreign workers to carry out technology transfer, but enforcement has been inconsistent
- 2026 smelter EPC contracts are being asked to include a clear agenda for accelerating tech transfer to local workers

Technology: battery chemistry and upstream nickel



LFP vs NMC

LFP accounts for >50% of global EV battery demand in 2025 and is cheaper per kWh. In Indonesia, LFP dominates, but incentives favour NMC (nickel) to support downstreaming.



Upstream: RKEF & HPAL

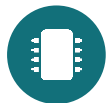
RKEF produces NPI/matte; HPAL produces cathode-grade feedstock. HPAL needs more ore, is sensitive to sulfur prices, and carries higher tailings risk.



What's next

- Sodium-ion (CATL) reportedly reaching mass production in early 2026 for ESS/light vehicles
- Recycling: HLI–Huayou (black mass); a Halmahera JV by 2031
- Cell-to-Pack (CTP): cells assembled straight into the pack without modules, cutting weight and space
- Battery swap (SPBKLU): the backbone for driving domestic e-motorcycle adoption

BMS and centralised data security



More than just hardware

- A Battery Management System (BMS) is the software that governs temperature, charging, and power distribution
- BMS stores and transmits usage-behaviour data, cell condition, and even vehicle location
- The architecture and IoT systems inside BMS units are today mostly controlled by foreign manufacturers (Chinese and Korean partners)
- Indonesia has no dedicated regulation governing BMS or battery data specifically



A sovereignty issue ahead

- Foreign control of BMS means data from the national EV ecosystem flows outside domestic control
- Integration with a national command centre (fleet, energy, and traffic monitoring) requires clear data control
- Parliament is pushing for State-of-Health (SoH) transparency standards; China already has national standard GB/T 47136-2026
- This issue aligns with the need for a battery passport to trace age, origin, and usage history

Second-life battery: a battery's second life

1. Active in an EV

Capacity 100–80%; full performance for vehicle use

2. Second life

Capacity drops to 70–80%; repurposed as ESS for solar panels, backup for towers/data centres, or remote charging points

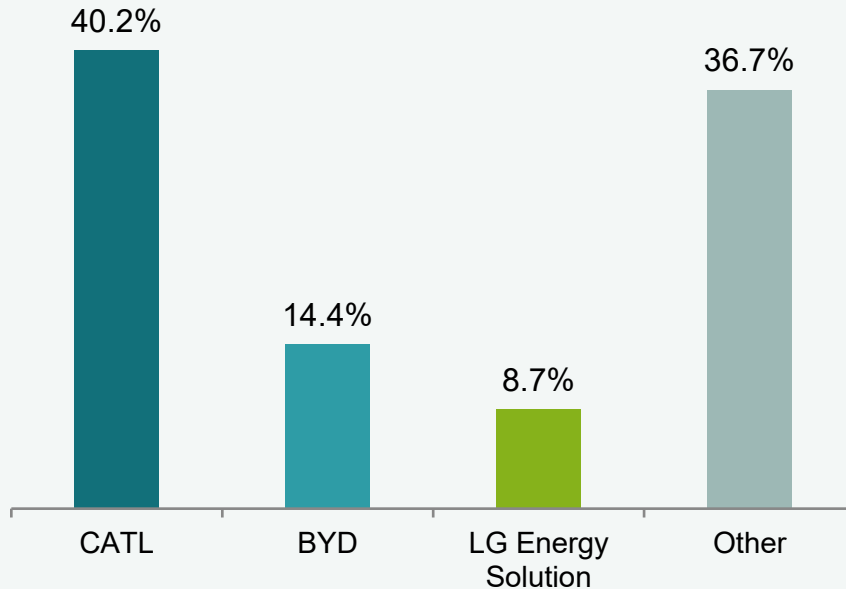
3. Recycling

Once second life ends, materials (lithium, nickel, cobalt, manganese) are extracted again

- IBC is targeting battery-recycling investment execution for 2029–2030, pending sufficient used-battery volume; governance is being prepared now
- IBC has proposed that used batteries no longer be classified as hazardous (B3) waste, but treated as an economically valuable resource
- Experts are pushing for Extended Producer Responsibility (EPR) and battery-passport regulation so it's clear who is responsible when a battery is replaced
- A Discover Sustainability study (May 2026) identified 12 barriers to Indonesia's second-life market: inconsistent battery design, immature business models, unclear regulation, and informal trading of used batteries
- Large-scale recycling facilities in Indonesia are still in an early organisational stage

Global competition: China's dominance

Global EV battery market share (%)



- Seven of the top 10 makers are Chinese, holding $\pm 72\%$ of the market combined
- Korean makers are under pressure from a $\pm 30\%$ drop in US EV sales
- Indonesia combines two tracks: CATL (LFP/NMC) and Hyundai–LG (NMC)
- India is also competing via its PLI scheme (targeting 50 GWh)
- Indonesia's edge: nickel feedstock; its weakness: technology and markets held by foreign partners



Thank You

Questions & Answers

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