

Turning the Chasm into Opportunities: **Li-ion Battery Materials Business Strategy**

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The EV market has entered a chasm due to a slowdown in uptake

Market situation in key countries



EV sales in 1H '24 fell short of forecast

EV sales : 400K, Q4 '23 → 340K, Q1 '24 → 400K, Q2 '24



'24 EV sales decline due to sunseting of subsidies

Countries that have terminated subsidies:
Sweden ('22-end) / UK (early '23) / Germany ('23-end)



Slowing rate of growth due to economic slump and declining subsidies ('23~)

Global EV sales (Unit : 1K)



* Source : SNE Research(March '24)

While uncertainties persist, global policy likely to keep China in check



November US presidential election

A Trump win will impact the market with shifting EV promotion policies

Tariff hikes on Chinese EVs



25%



100%



10%



MAX. 46%



Far-right advances in EU election

Election results could complicate climate policies, including the Green Deal

Growing need to fortify Korea–Australia cooperation to build IRA-compliant battery materials supply chain

POSCO Group's strategy to address the market chasm

Strategy 1



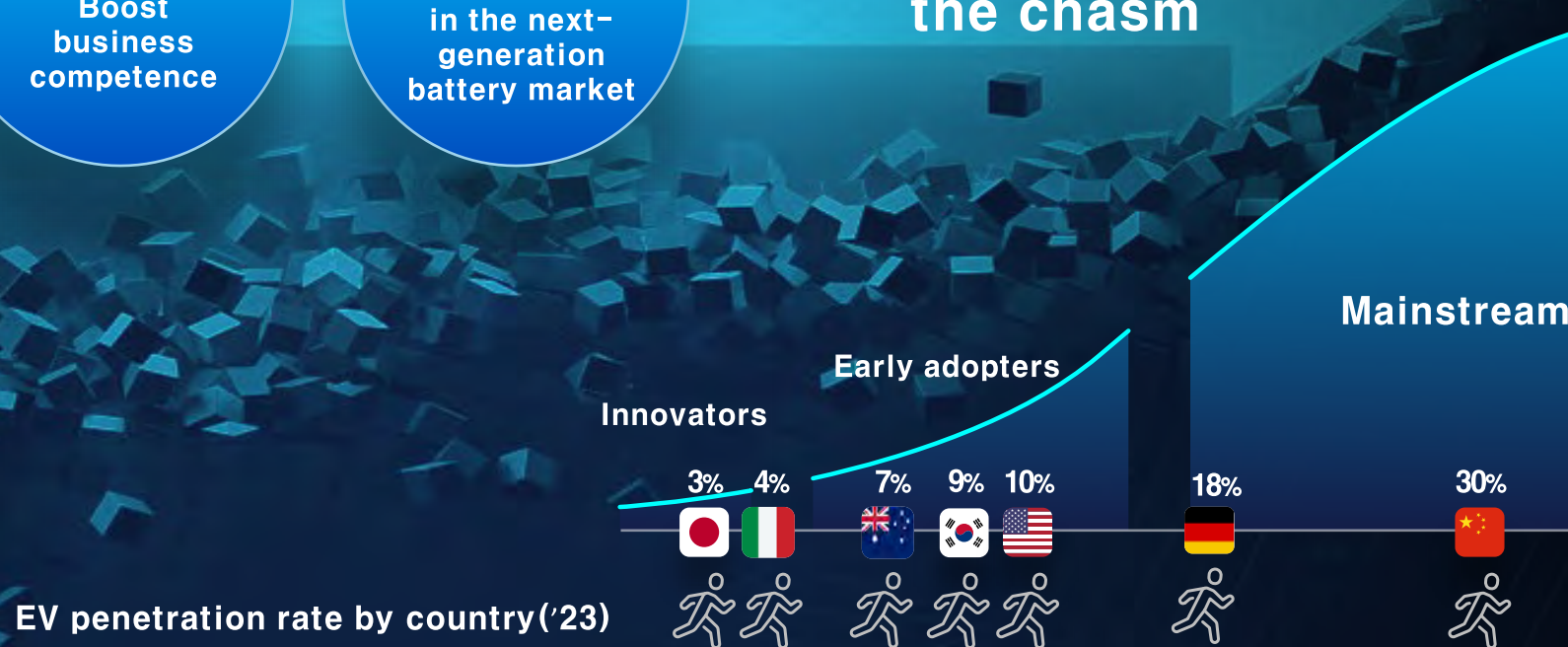
Strategy 2



Strategy 3



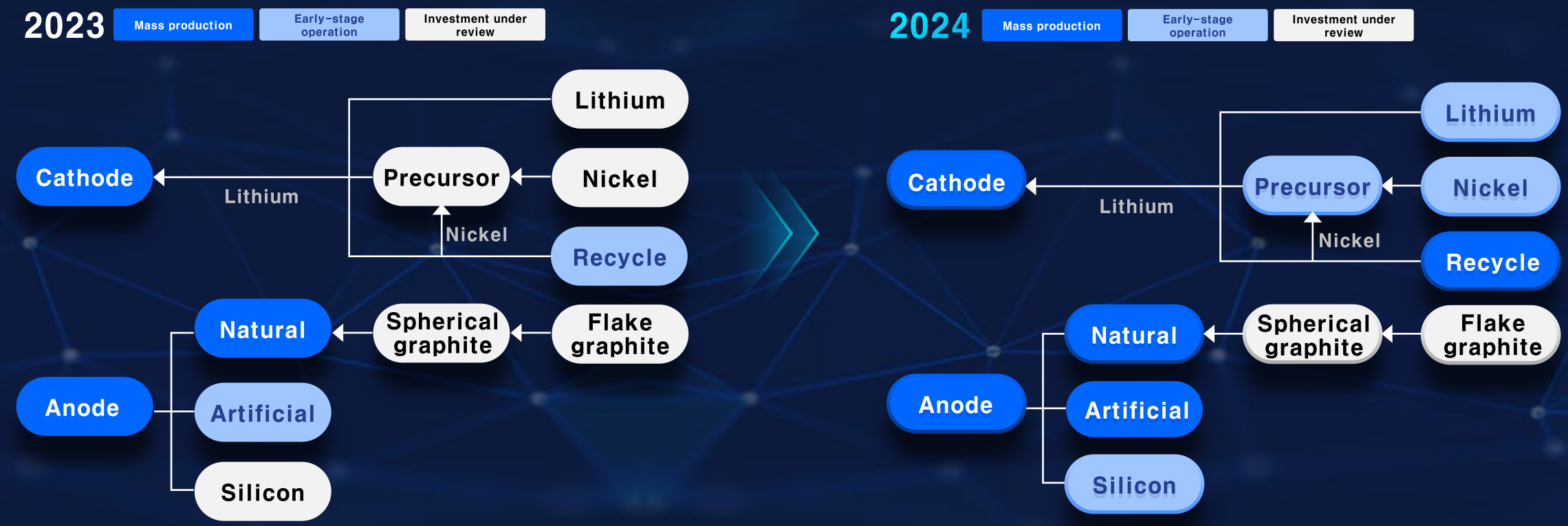
Break through the chasm



From raw to active materials, most projects come on line in '24

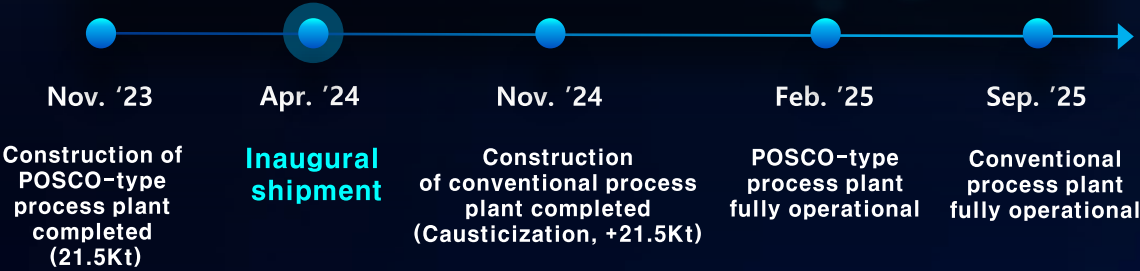
Global #1 steelmaker knowhow is shared across the group to enhance efficiency

POSCO Group's battery materials value chain

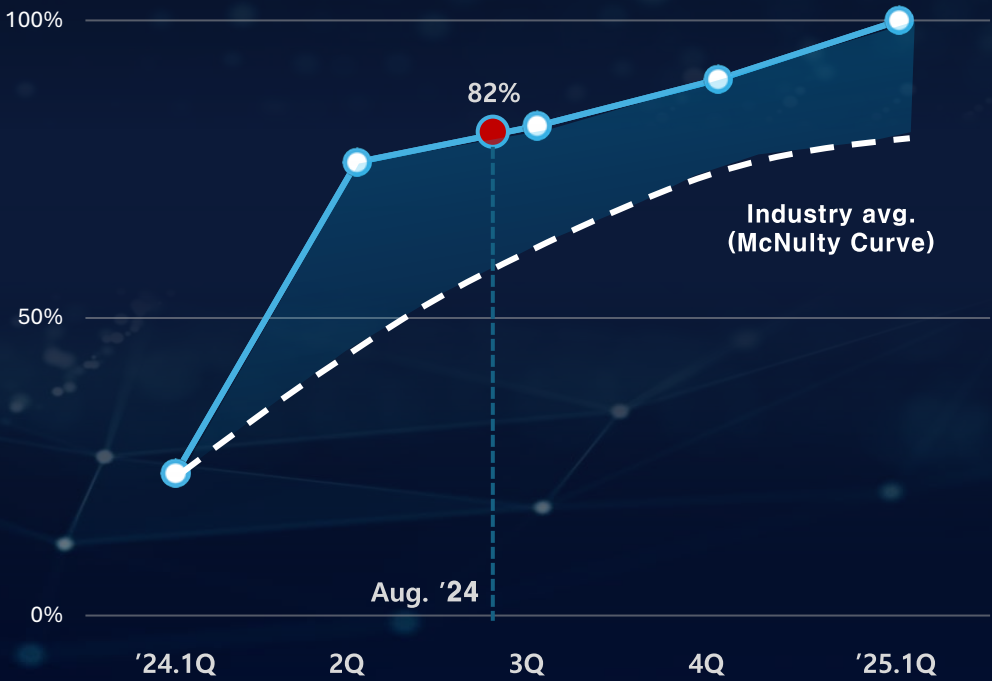


[Hard Rock] Using Australian spodumene, commercial production and product certifications have commenced

P-PLS (hard rock lithium)



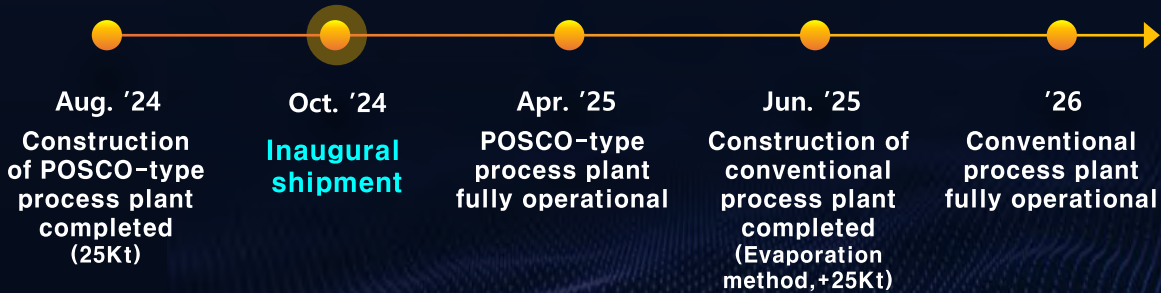
POSCO-type plant operation rate (%) (tallied at quarter-end)



※ Product certification has commenced:
P-Future M (May '24~), Major Korean cell makers (Jun. '24~)

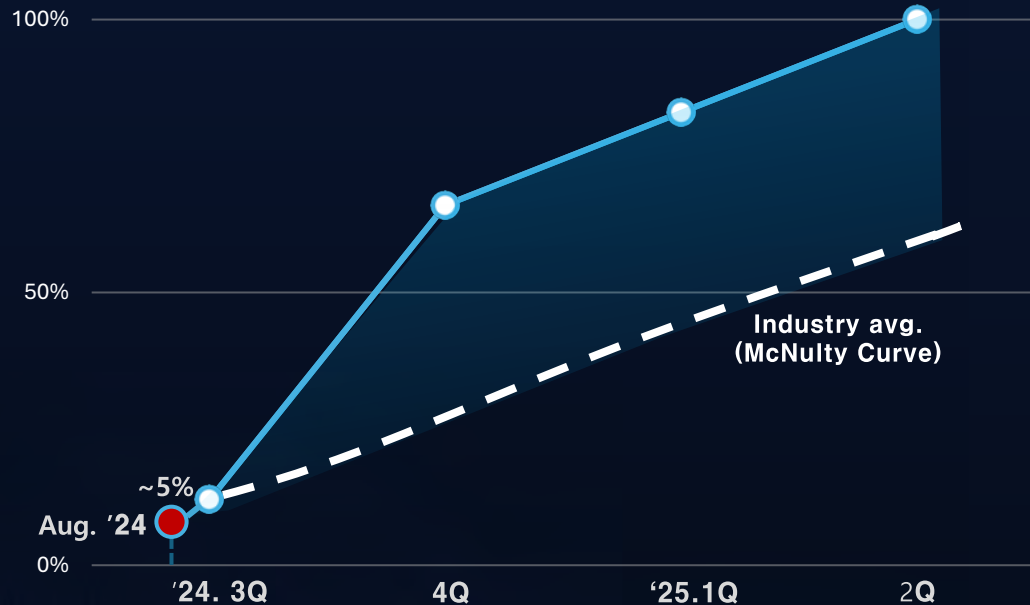
[Brine] Applying P-PLS operational experience to enhance ramp-up efficiency

P-Argentina (brine lithium)



POSCO-type plant operation rate (%)

(tallied at quarter-end)



※ Product certification has commenced:
P-Future M (Sep. '24~), global cathode producers (Nov. '24~)

Use the chasm to our advantage by acquiring prominent assets and expanding business



Hard Rock

Australia: Increase capacity in partnership with miners, e.g. Pilbara Minerals
Explore new mines in Canada, Brazil and across Africa



Brine

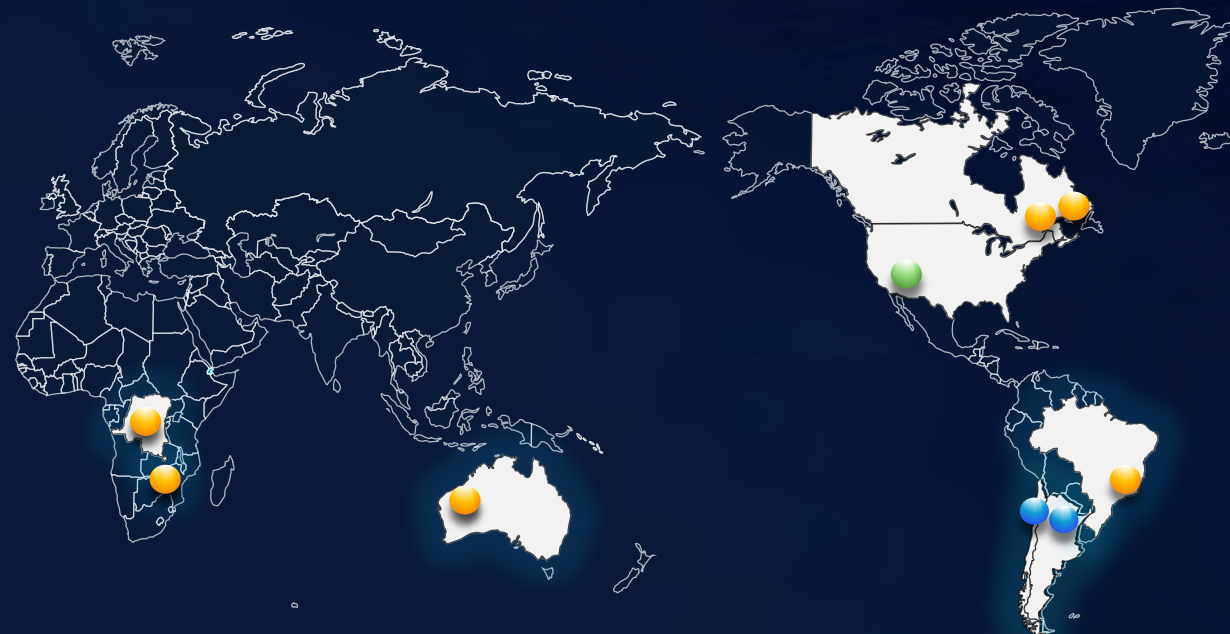
Phase 3 brine project expansion in Argentina
Acquire additional JV brine assets in Chile



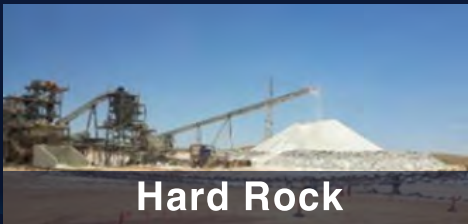
Geothermal Brine

Acquire new lithium resources in North America

Diversify raw materials sourcing



Differentiated technology and diverse lithium resources to stimulate business expansion



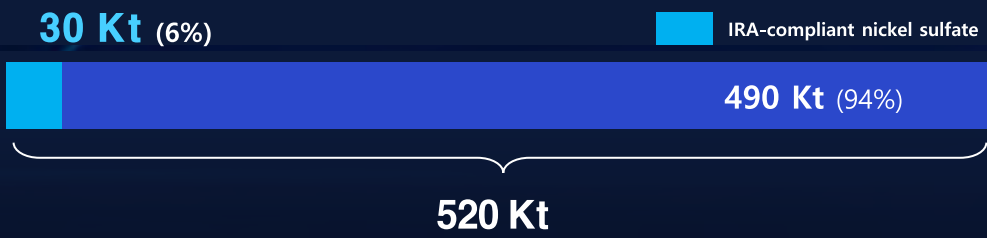
	Mechanism	Advantages	Operations
POSCO-type Process (BPED*)	Electrochemical reaction	Sustainable and proprietary Waste generation and freshwater use cut by 50% and 40%, respectively	P-PLS (Plant 1) P-Argentina (Phase 1)
Conventional Process (Causticization, evaporation method)	Chemical reaction	Commercially proven technology	P-PLS (Plant 2) P-Argentina (Phase 2)
DLE (Direct Lithium Extraction)	Adsorption	Suitable for low-grade Li resources	For new acquisition salt lakes Geothermal brine under consideration

* Bi-polar Electro-Dialysis

Building IRA-compliant nickel production system and developing technologies that mitigate carbon and cost profiles

IRA-compliant nickel production

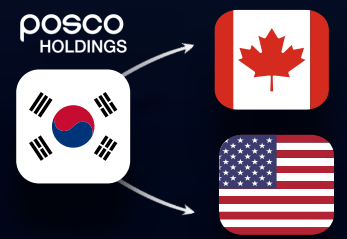
- In '23, a mere 6% of the global nickel supply was IRA-compliant
 - Australian ore meets IRA standards



- In-house supply of +20K tons of IRA compliant nickel

Smelter SNNC, Matte
Jan. '24 : construction completed

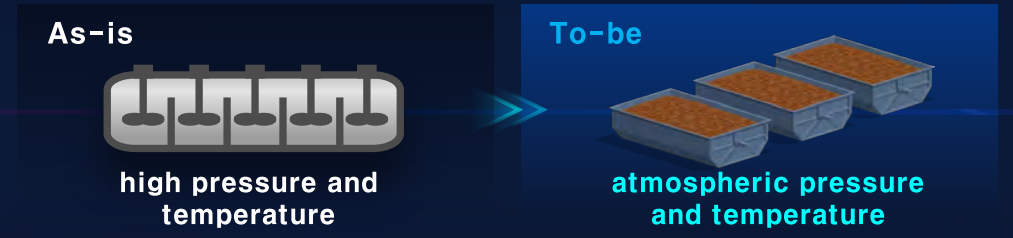
Refinery POSCO, Nickel Sulfate
Q3 '24: Initial batch production



Low-carbon / cost cutting technologies

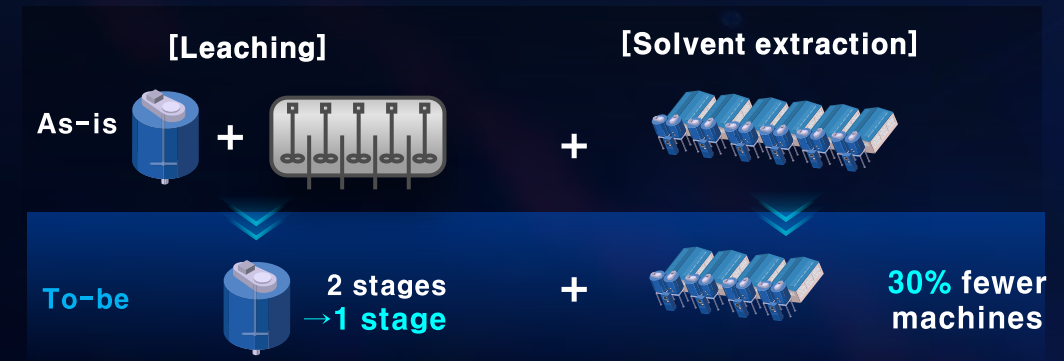
Leaching

- AAL* allows easier tailings treatment and lower CO₂ emissions
- * AAL: Atmospheric Acid Leaching



Refining

- Process configuration is optimized and streamlined to reduce cost

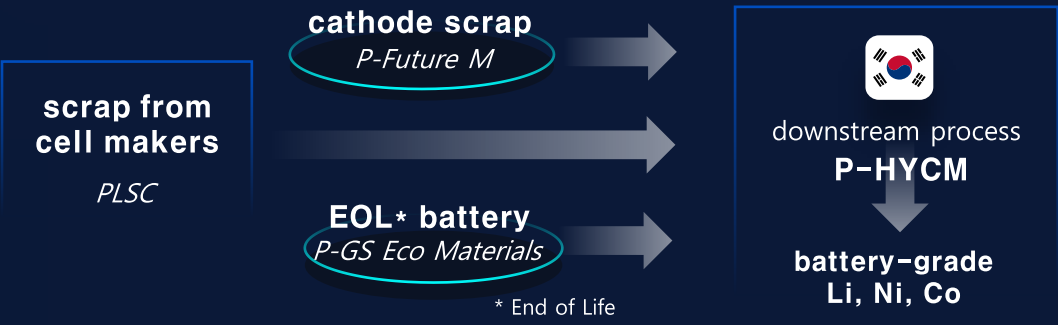


Leverage recycling operation to diversify sourcing and to enter European / North American markets

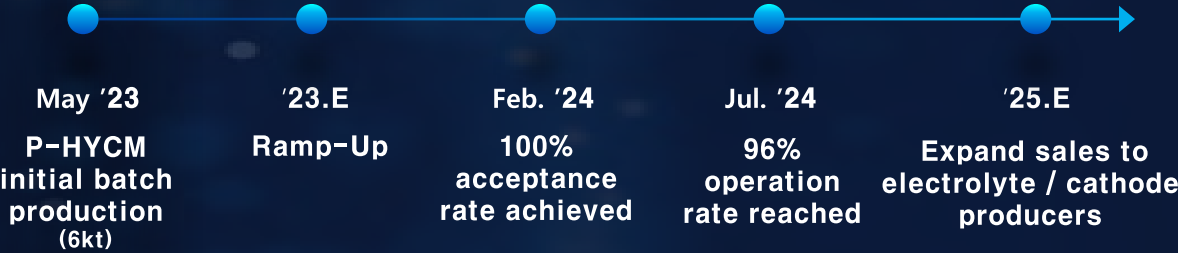
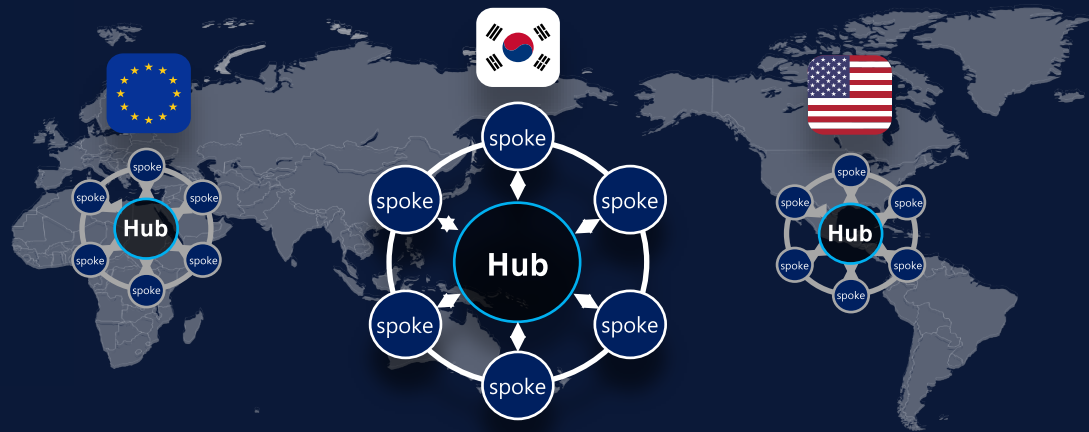
P-HYCM



Diverse sources of raw materials



Build regional spoke and hub network



Diversify cathode customer base and product portfolio

Cooperate with global OEMs and cell makers

- Establish stable customer base



Build a broad product portfolio

- Serve all car segments from entry to premium level



Be first to market cost-competitive mid-Ni products

Two-track LFP strategy : 1) Exclusive technology; 2) JV with global partners

Full anode line-up to offer IRA-compliant products



Natural Graphite

- Offtake for Australian and African flake graphite
- Construction of spherical graphite / acid treatment facilities in Korea completed ('26)



Artificial Graphite

- Achieve maximum productivity ('24)
- Enter countries with low electricity costs ('26)



Silicon

- Develop low-cost SiOX
- [P-Silicon Solution] SiOX capacity of 550 tpa
[P-Future M] Si-C production by '26

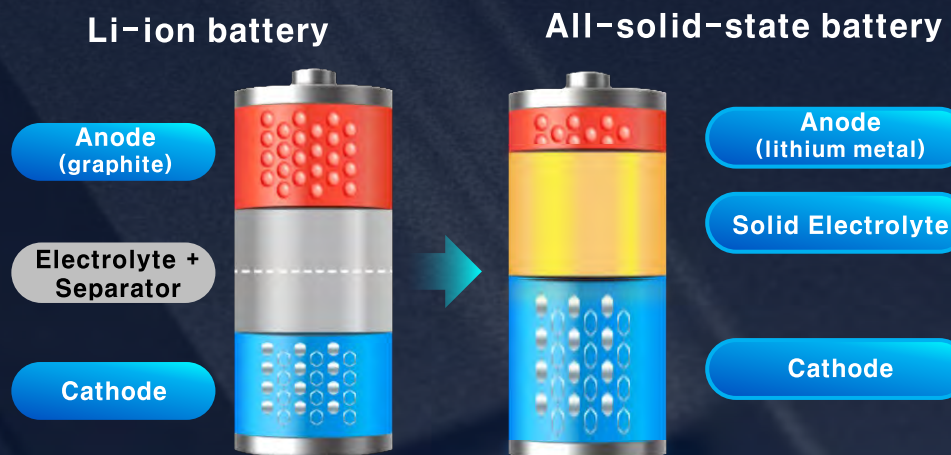
※ Equity ownership : P-Silicon Solution (100% owned by POSCO Holdings)

The world's unique
source of non-FEOC,
IRA-compliant
anodes

All-solid-state battery market likely to take off from '27

Market Outlook

- Commercialization of all-solid-state batteries in '27
 - Market share in '32 expected to range between 1.8~3.6%



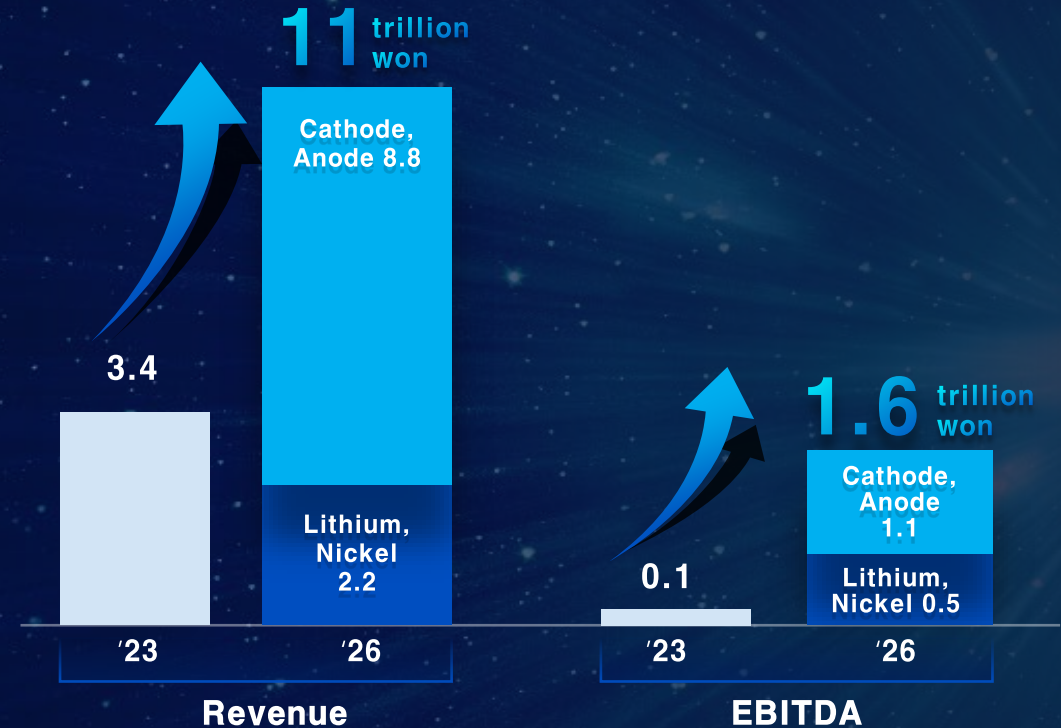
Group-wide Product Development

- POSCO Holdings (demo plant)
 - **Wide-width* manufacturing technology** modeled on steel electroplating *width:100→600mm
- P-JK Solid Solution (in operation)
 - Produces **cost competitive sulfide-based materials** (scale-up by '26)
- POSCO Holdings (demo plant)
 - **Homogeneous protective coating** prevents interfacial side reactions

Offer full range of key materials for all-solid-state battery to gain global leverage

POSCO Group's strategy to stay competitive

- 01. Build competencies across the full value chain
- 02. Acquire quality assets (salt lakes, mines)
- 03. Get a head start in the next-generation battery market



※ Based on simple summation, before offsetting inter-affiliate transactions
 ※ Recycling revenues and EBITDA are included in figures pertaining to lithium & nickel
 ※ For '26 projections, U\$ 16,100/ton lithium price, U\$ 17,375/ton nickel price and exchange rate of USD/KRW=1,192 were applied.
 - Price estimates were made by POSRI using data from WoodMac and Fastmarkets, among other indices.

I. Strengthen **collaboration with Pilbara Minerals**

- Review collaboration to expand P-PLS and Pilbara Minerals' production capacity

II. New equity investments in **Australian lithium mines**

- Take advantage of the market chasm to invest in quality lithium assets

III. Establish **IRA-compliant graphite** supply chain

- Explore options to invest in natural graphite in collaboration with Australian miners

IV. Produce battery-grade **nickel sulfate using Australian ore**

- Establish in-house nickel processing facility that uses IRA-compliant Australian nickel sulfide

An aerial photograph of a modern city skyline, likely Sydney, Australia, featuring prominent skyscrapers like the Sydney Tower and various corporate buildings. The foreground shows a large body of water with a bridge and some greenery. The sky is blue with scattered white clouds.

Australia and POSCO Group are
ideal partners
to address the market chasm and
to collaborate as **global leaders**
in the battery materials supply chain.

Thank you for your attention.