

Iondrive completes \$6M placement to advance battery recycling pilot plant & presentation

Highlights

- \$6 million Placement completed via the issue of 435,714,286 new Iondrive shares at \$0.014 per share, representing a 16.7% premium to the last traded price
- Welcoming institutional investor Terra Capital, alongside major cornerstone shareholders, Strata Investment Holdings Plc and Ilwella Pty Ltd
- Strong participation by the Board and Management, including incoming Director Hugo Schumann and Commercial Director Lewis Utting
- The funds will be used to build and operate a Pilot Plant for the Deep Eutectic Solvent (DES) based battery recycling technology, progressing industry collaborations in the EU and US, and for general working capital
- Iondrive's exclusively licensed technology extracts critical minerals from end-of-life lithium-ion batteries in a unique environmentally sustainable process

Iondrive Limited (ASX: ION) ("Iondrive" or the "Company") is pleased to announce it has received firm commitments from sophisticated and professional investors to raise up to \$6,100,000 (before costs) through a placement of up to a total of **435,714,286** fully paid ordinary shares (Shares) at \$0.014 each (Placement).

Iondrive Limited CEO Ebbe Dommissé commented:

"We are thrilled to complete our capital raise, a key step in commercialising our battery recycling technology. Institutional and cornerstone investor participation highlights confidence in Iondrive. We thank our existing shareholders and warmly welcome new investors."

Inline with the Company's issuance capacity 144,341,161 Shares will be issued, with 73,490,411 under ASX Listing Rule 7.1 and 70,850,750 under ASX Listing Rule 7.1A. The remaining 291,373,125 Shares are subject to shareholder approval at a General Meeting anticipated to be held mid-February 2025. The Company will make a further announcement in relation to the General Meeting.

Joint lead managers Taylor Collison and Prenzler Group successfully secured participation from institutional investors Terra Capital and another major institution. Iondrive's cornerstone shareholders, Strata Investment Holdings Plc and Ilwella Pty Ltd, also participated, alongside new shareholders, including incoming director Hugo Schumann and Commercial Director Lewis Utting. Both existing and incoming management, along with Non-Executive Directors, participated in the placement, contributing a total of \$380,000. The

participation of Non-Executive Directors is subject to shareholder approval, which will be sought at the General Meeting anticipated for mid-February 2025.

Proceeds of the Placement will be used to fund the construction and operation of a Pilot Plant for the Company's Li-ion battery recycling technology. The funds will also support broader commercialisation efforts such as the industry collaborations in key target markets of the EU and US, as well as providing for general working capital which may include exercising the Company's option to acquire the technology from the University of Adelaide for \$1 million, rather than exclusively licence.

The Company will issue 30 million unlisted options to one of the brokers to the placement as part payment for services received. The options are subject to shareholder approval at the General Meeting to be held mid-February 2025.

Battery Recycling Project

Iondrive is currently addressing the inefficiencies, hazards, and high costs associated with traditional lithium-ion battery recycling methods. The Company's novel Deep Eutectic Solvent (DES) battery recycling process separates critical components such as lithium, nickel, cobalt, and manganese from battery black mass. This approach is cleaner, greener, and more cost-effective, with a significantly smaller environmental footprint, avoiding high temperatures and corrosive acids.

Prefeasibility Study (PFS) Completion

The PFS comprised several activities, utilising expert consultants, aimed at reducing the technical and economic risks of commercialising Iondrive's new battery recycling technology.

The final consultant's reports were announced on 1 November 2024. Collectively, the PFS findings suggest the high metal recoveries are scalable, a commercial-scale plant is highly cost competitive. The Company now has a high level of confidence, and the Pilot Plant construction planned to be completed in the 2025 calendar year. A continuous, fully integrated closed-loop pilot plant process is an important next step in the commercialisation of the Company's battery recycling technology.

Investor Presentation

A copy of the investor presentation is attached to this announcement.

Authorised for release by the Chair of the Board of Iondrive Limited.

Further Information

Ebbe Dommissie
CEO
08 8368 8888
info@iondrive.com.au

Aiden Bradley
Investor and Media Relations
+61 (0) 414 348 666
aiden@nwrcommunications.com.au

Iondrive Limited: Company Profile

Iondrive, listed on the Australian Securities Exchange (ASX: ION), is a pioneering company in battery recycling technology. Its patented Deep Eutectic Solvent based Battery Recycling process uses an environmentally friendly solvent to safely and efficiently extract critical components from used lithium-ion batteries, offering a superior alternative to conventional methods.

Iondrive also holds exclusive global licenses from the University of Adelaide for advanced battery technologies, including a high-performance lithium-ion battery and a cost-effective, water-based battery with extended cycle life.

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INVESTOR PRESENTATION:

Cleaner, Greener, Cheaper Battery Recycling

November 2024

Disclaimer

Forward looking statements

This document contains certain forward-looking statements that involve risks and uncertainties. Although we believe that the expectations reflected in the forward-looking statements are reasonable at this time, we can give no assurance that these expectations will prove to be correct. Given these uncertainties, readers are cautioned not to place undue reliance on any forward-looking statements. Actual results could differ materially from those anticipated in these forward-looking statements due to many important factors, risks and uncertainties including those risks detailed from time to time in the Company's announcements to the ASX including, without limitation, risks associated with: 1) the exploration business, such as regulatory matters and the tenure of exploration and mining leases, the results of present and future exploration activities, the impact of fluctuating commodity prices, foreign exchange rates on the business and the ability of the Company to realise value through sale or joint venture of its exploration assets; and 2) the battery technology business, such as the risk that the technologies are not commercially viable, provisional patents may not result in successfully granted national patents, others may independently develop similar or improved technologies or design around patents or patent applications, or that granted patents will provide meaningful protection or competitive advantages. All reasonable efforts have been made to provide accurate information, but the Company does not undertake any obligation to release publicly any revisions to any "forward-looking statement" to reflect events or circumstances after the date of this presentation, except as may be required under applicable laws. Recipients should make their own enquiries in relation to any investment decisions from a licensed investment advisor.

ASX Announcements

The Company recommends that this presentation is read in conjunction with its relevant ASX Announcements – in particular the announcement of 1 November 2024

Not an offer of securities

This Presentation is not a prospectus, product disclosure statement or other offering document under Australian law (and will not be lodged with ASIC) or any other law. This Presentation does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any shares nor does it constitute financial product or investment advice nor take into account your investment objectives, taxation situation, financial situation or needs.

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Executive Summary

- **Massive Market Opportunity:** Positioned to address a \$100B battery recycling market driven by 11M tpa black mass demand by 2040¹, EV growth and regulatory tailwinds. Black Mass processing deficit in EU ~75% (exported to Asia).
- **Cleaner, Greener, Cheaper recycling:** Iondrive's Deep Eutectic Solvent (DES) process avoids incineration and toxic acids used in current methods, offering reduced environmental impact and waste generation.
- **Proven Technology:** DES achieves >95% recovery rates for lithium, nickel, cobalt, and manganese while using non-toxic, biodegradable solvents in a closed-loop process.
- **Strong Pre-Feasibility Study Results:** Technical Feasibility and Commercial Viability – benchmark study showing 36% lower Capex than competitor, with competitive Opex and confirmed scalability with independent 3rd party validation*.
- **Early-Mover Advantage:** Aligns with EU regulations requiring recycled critical minerals by 2030.
- **Clear Path to Commercialisation:** Pilot plant planned for 2025 coupled with strategic partnerships accelerating de-risking and market entry foothold in Europe with PEM Consortium.
- **Supportive, High Quality Shareholder Base:** Strong financial position with cornerstone support from Strata and Ilwella, institutional investment and insiders.

¹Rho Motion Report ASX Announcement: <https://wcsecure.weblink.com.au/pdf/ION/02788305.pdf>

Battery Recycling with a Cleaner, Greener, Cheaper Solution

Our Vision

- To revolutionize battery recycling with cleaner, greener, and cost-effective solutions (attractive for EU).

The Challenge:

- EV growth is creating millions of tons of end-of-life batteries, while +80% of black mass processing occurs in Asia.

Our Solution

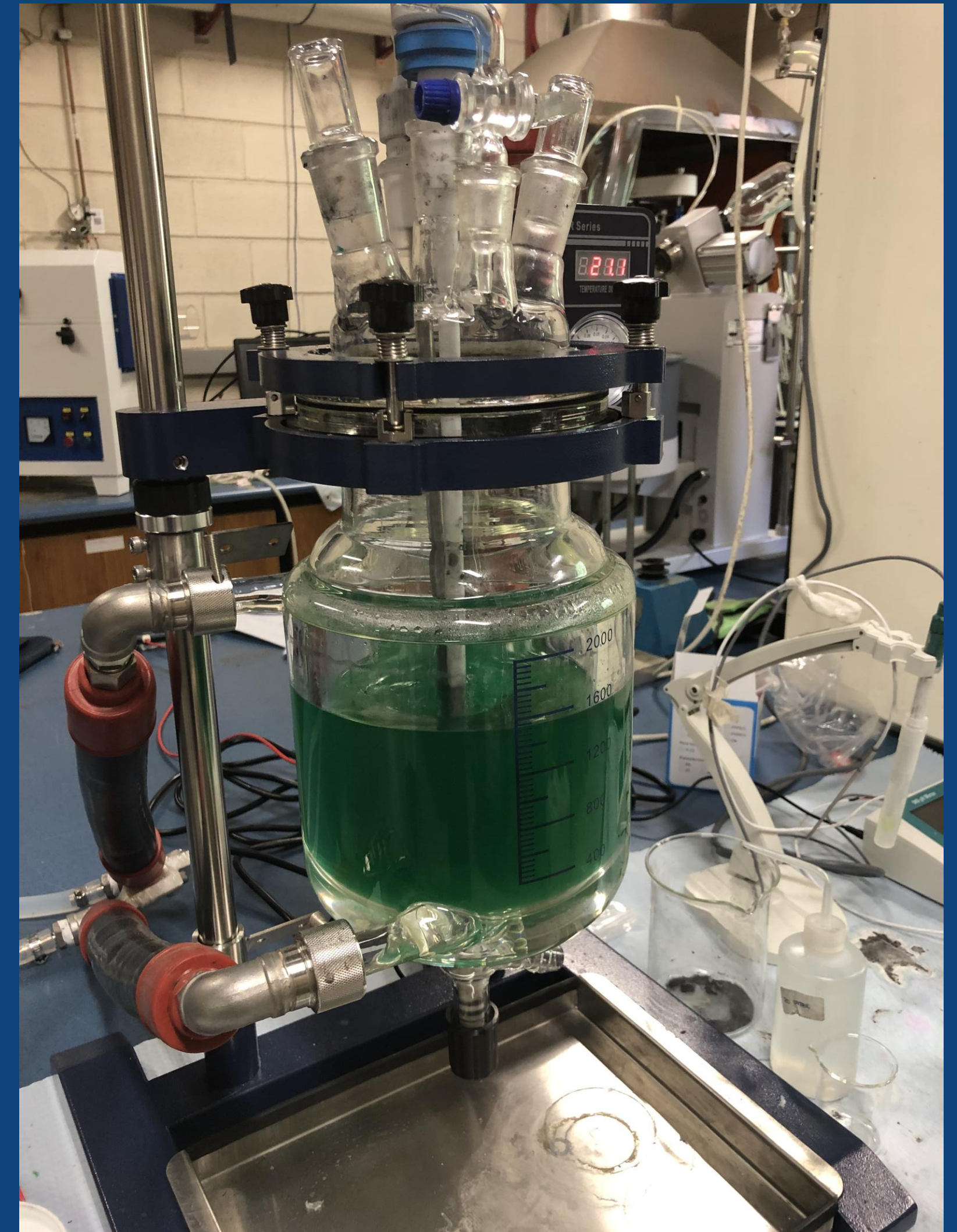
- Using DES technology, we recover high-grade Li, Ni, Co, and Mn with minimal waste in a closed-loop system.

Our Goal

- To accelerate commercialisation of DES technology to maximise market share in a consolidating market. Dual track approach with pilot plant in EU and bus dev in USA.

Why It Matters

- Strong push by EU and USA to reduce reliance on China and develop sovereign battery recycling and EV manufacturing capabilities.

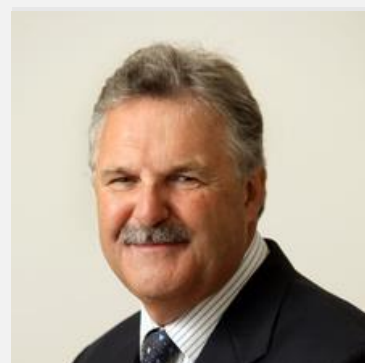


Iondrive Team



Michael McNeilly
Chair - BA Econ

- Chief Executive Officer of Strata Investments Holdings Plc. (~19% shareholding of ION).
- Extensive experience in listed companies and is currently NED of ASX-listed Cobre Limited.
- Sits on several private company Boards within the Strata Investments Tiger Group.
- Past Board appointments include MOD Resources Limited (up to acquisition by Sandfire in November 2019), Metal Capital Limited, Greatland Gold Plc and Connemara Mining Plc.



Dr Jack Hamilton
NED - PhD (Chem Eng)

- Highly accomplished senior executive and board director
- Significant leadership roles incl. Director of NorthWest Shelf Ventures for Woodside, overseeing Australia's largest resource project.
- NED roles include commercialisation of start-ups notably Calix Ltd and Anteo Diagnostix Ltd



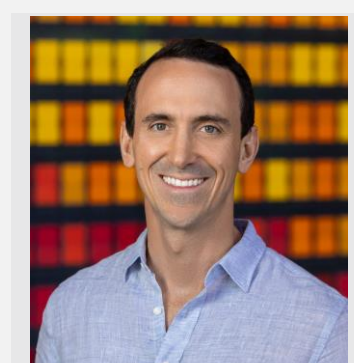
Andrew Sissian
NED - CPA, MAcc, BCom (Finance)

- Seasoned corporate and capital markets executive and CPA.
- CEO of leading international technology company Procon Telematics, teams in India, US, AU/NZ.
- Extensive listed experience, including directly as a Co-founder and NED of Cobre Limited, (ASX: CBE).
- Previous institutional banking and equity roles with NAB in Australia and Shanghai and Wilsons Advisory.



Adam Slater
NED - BA

- Three decades of invaluable experience in the commodities industry.
- Led the development of the commodity division at CWT Limited, a company listed on the SGX, from 2007 to 2018. Pivotal to the growth in the CWT commodities division, which accounted for over 80% of Group revenues (S\$12 Billion out of S\$14 Billion) and in excess of 50% of the Group's profits.
- Current primary focus towards venture capital, contributing his expertise to multiple company boards and advisory committees.



Hugo Schumann
NED - CFA, MBA (INSEAD), SEP (Stanford)

- Former CEO of the Silver Division at Hindustan Zinc Limited, a leading global silver producer.
- Previously CFO at Jetti Resources, scaling an innovative copper extraction technology.
- Currently establishing a private equity business focused on critical metals recycling in the US.
- Extensive experience identifying and scaling technologies for metal extraction and processing.



Dr. Ebbe Dommissie
CEO
B.Eng (Chem) MSc PhD MBA
GAICD

- Seasoned professional with over 25 years of commercialising technologies, execution, and manufacturing.
- Previously served as the COO at Circa Group, an Australian startup that commercialised a biochemical process from lab-scale to commercial scale.
- Prior, as GM of Pact Group, an ASX-listed manufacturer, responsible for establishing a world-class plant in Indonesia.



Ray Ridge
CFO & Company Secretary
BA(Acc), CA, GIA(cert)

- A senior financial and commercial professional with over 30 years experience across a diverse range of industries.
- CFO and capital markets experience with four other ASX listed companies, with two in technology commercialization.
- Previous roles include National GM Commercial in a large global engineering firm (now WSP Global) and CFO of the agricultural products division of Elders Limited.



Lewis Utting
Commercial Director
BAppSc, GAICD

- Former Managing Director and CEO of ASX listed SciDev Ltd, driving rapid growth and shareholder returns.
- Previously BASF Global Business Development and R&D manager for Mining
- 20 years experience in business management servicing chemical, mining, water treatment, and oil & gas industries.
- Expertise in technology commercialization, capital markets, and strategic partnerships



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Breakthrough Technology for a Huge Market Opportunity

Surging EV Demand Drives Urgent Battery Recycling Solutions



Electrification increases significantly

By 2030, around 40% of light vehicles globally will be based on a BEV platform and over 70% BEV share is expected in 2040. From 2030 to 2040 global battery demand will nearly double to up to 6.5TWh.



Gigafactory ramp-up in Europe

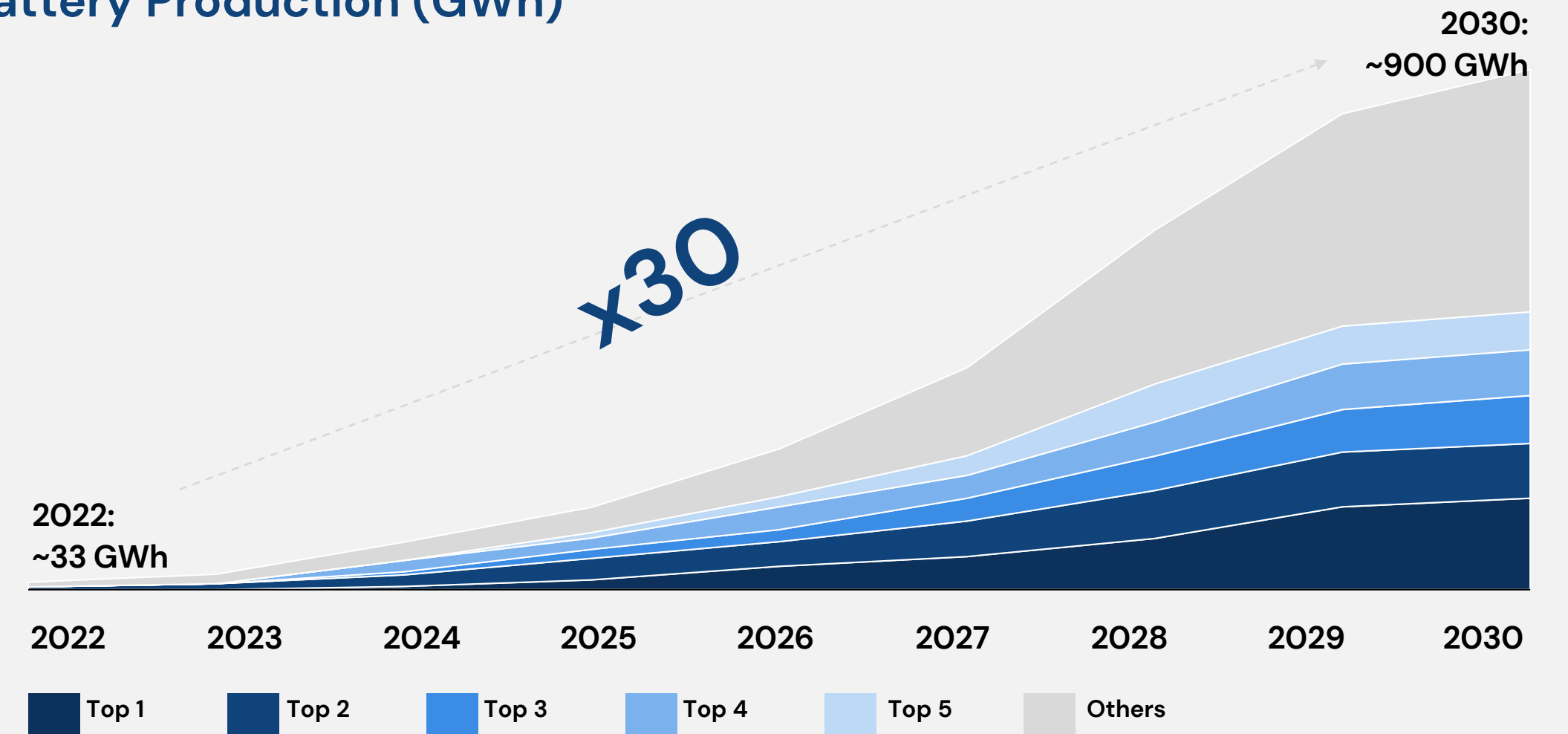
Following the EU electrification market dynamics, battery manufacturing ramps up significantly all over Europe. By 2030, nearly 1TWh in EU gigafactory supply is expected



End-of-life batteries take major role in recycling

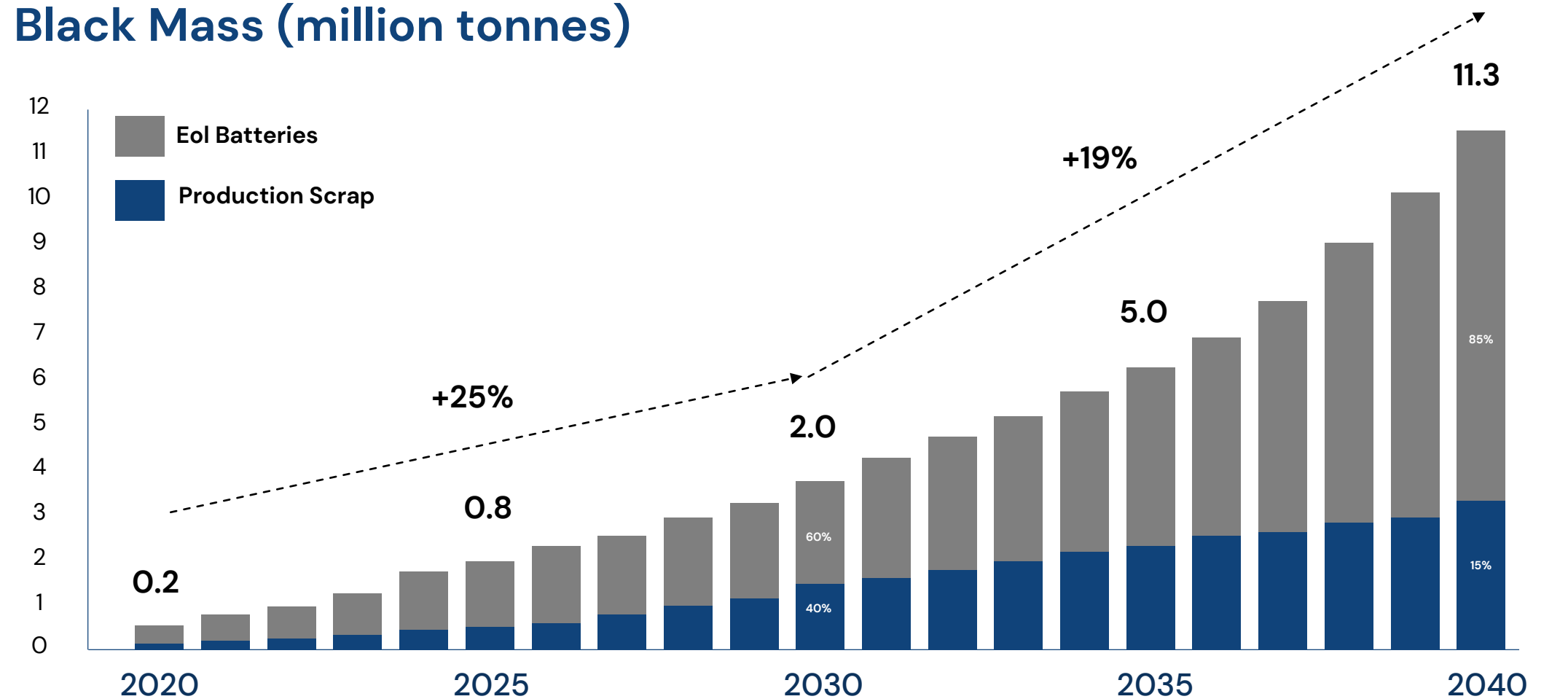
Driven initially by gigafactory scrap, the market runs from 2030 onwards, with vehicles from the first wave of electrification reaching end-of-life. By 2040, the volume of end-of-life batteries is projected to generate 11 million tonnes of black mass annually, representing a \$100B recoverable value.

Battery Production (GWh)



Adjusted forecast based on announced GWh capacity compared to current project start-up status, based on desktop research and expert estimates.

Black Mass (million tonnes)




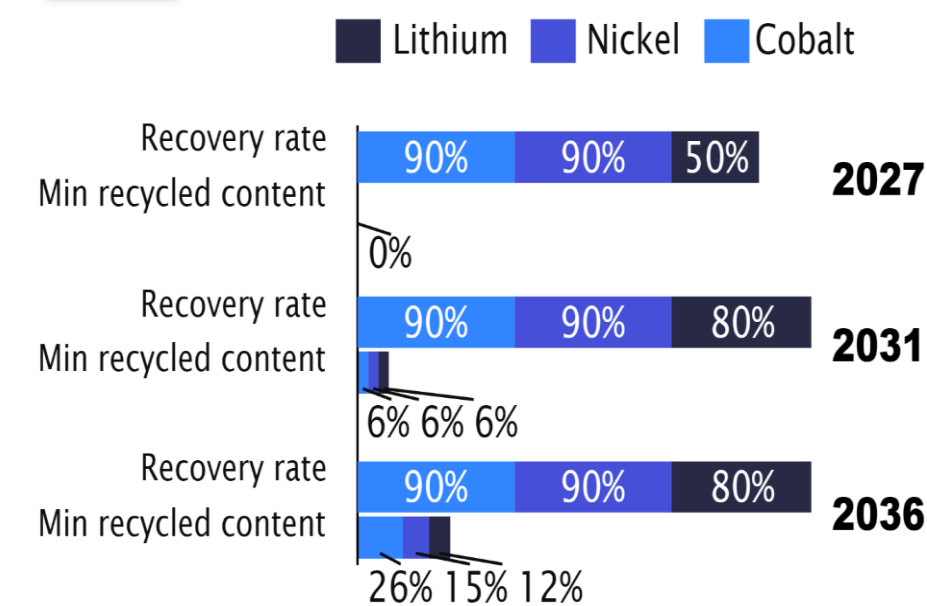
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Battery Recycling Driving Forces

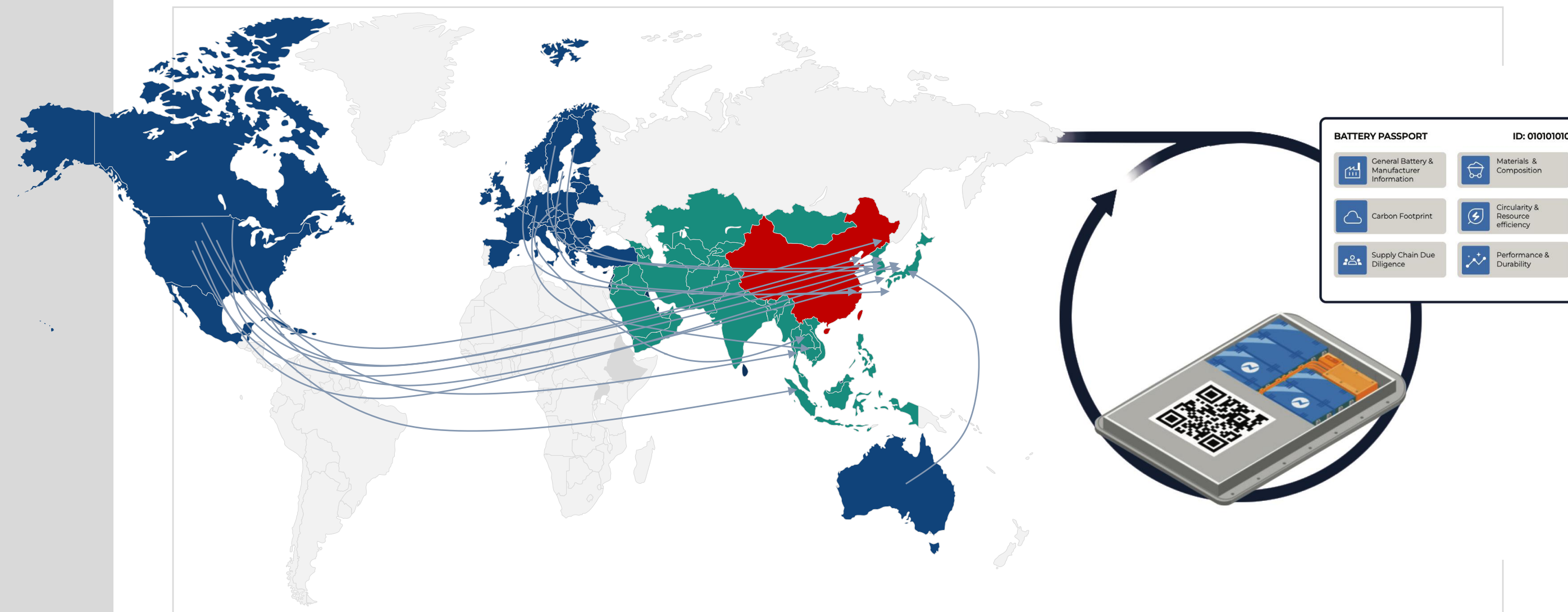
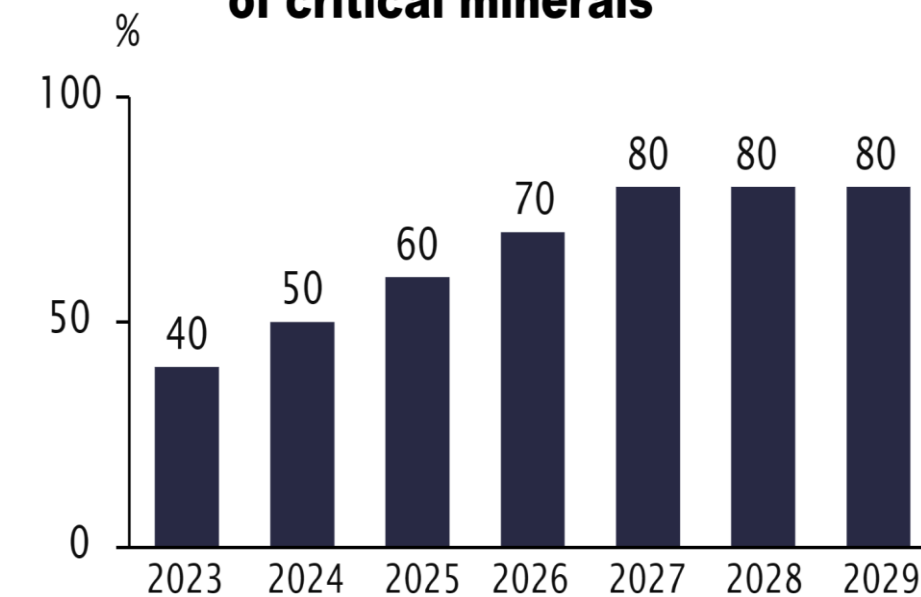
Legislation in Europe and Inflation Reduction Act (IRA) are aimed at securing sovereign energy transition capabilities (i.e. market share from China) and securing supply of critical minerals while capturing economic value

- USA & EU drive for sovereign energy transition capabilities requiring critical minerals, in light of increasing geopolitical tensions (**CRMA***)
- EU now classifies black mass (shredded batteries ready for recycling) as hazardous material, and planning on banning exports
- EU legislation to require new EV batteries to include a minimum threshold of recycled critical minerals
- EU requiring OEMs to be responsible for battery end-of-life management via “battery passports”
- Culminates in a 2030 intersection of regulatory deadlines and growth in available black mass volume
- Incumbent recycling methods are challenged to meet these new demands - incineration, use of toxic acids, energy-intensive

 EU targets for material recovery rates and minimum levels of recovered contents



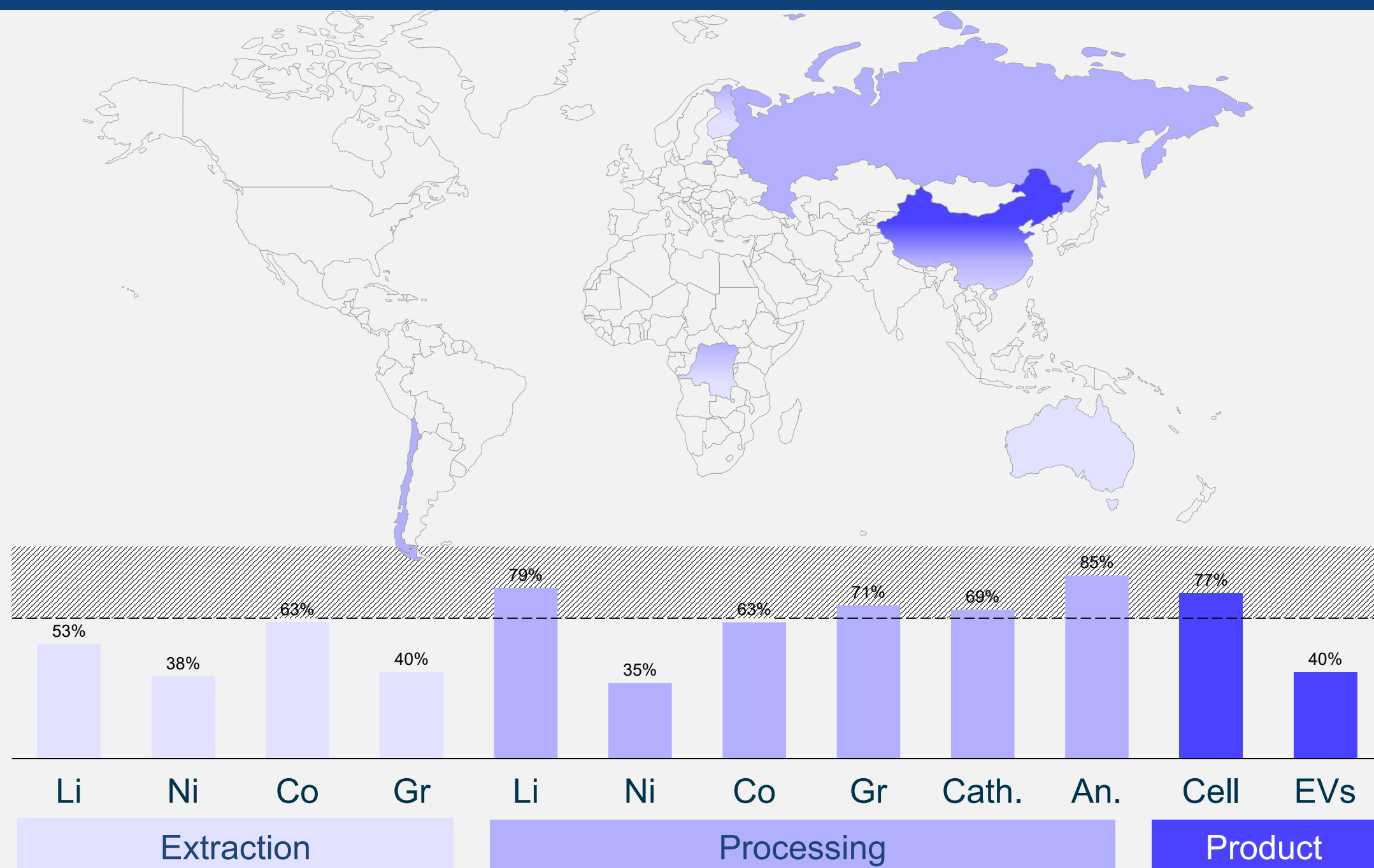
 IRA Clean Vehicle requirements on the percentage of the value of critical minerals



*CRMA: Critical Raw Materials Act

European battery supply chains rely heavily on China and lack recycling capacity

EU Import dependencies from single countries according to CRMA*



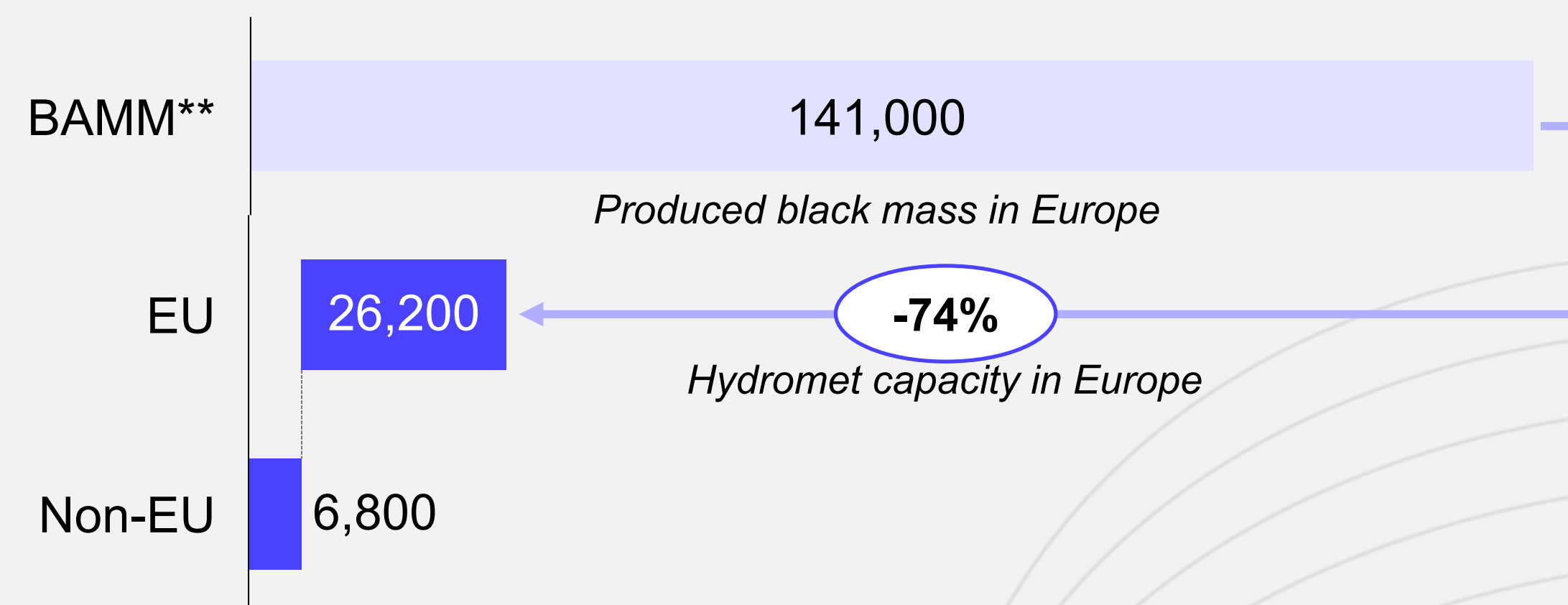
The European supply of EV-materials & components is subject to strong single country dependencies

*CRMA: Critical raw materials act

**BAMM: Battery Active Material Mixture (Black Mass)

Recycling capacity

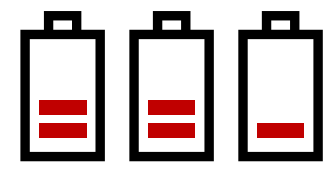
Comparison of hydromet capacity and produced black mass in Europe in 2024 (tpa)



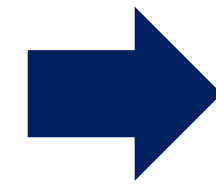
There is an undercapacity of battery recycling hydrometallurgical plants in Europe

End-of-Life LiB recycling

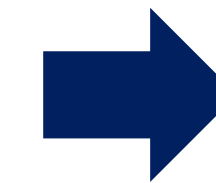
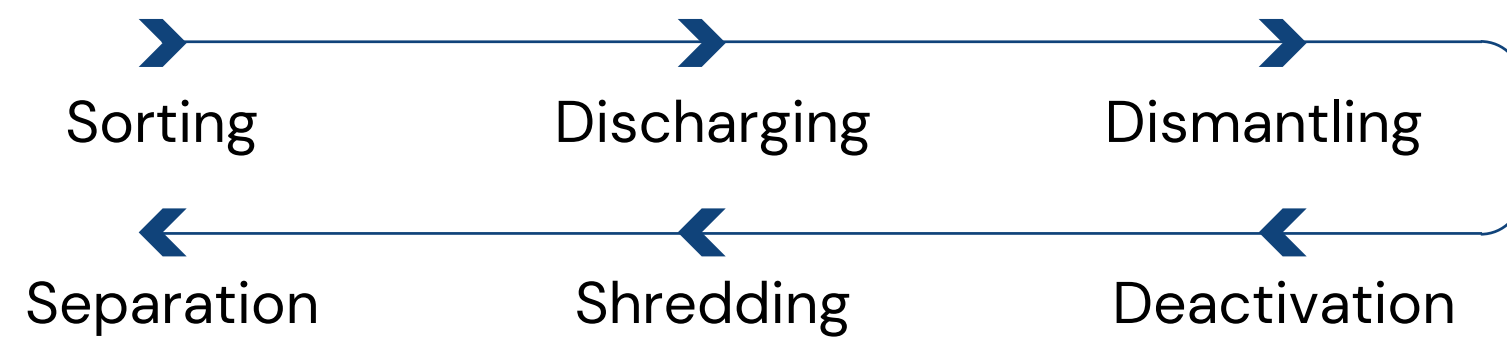
1. Collection



End-of-life lithium-ion batteries



2. Pretreatment



- Ferrous metals
- Non-ferrous metals
- Plastics

Black Mass

3. Metal Recovery



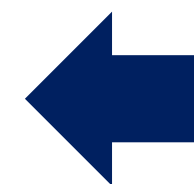
Pyrometallurgy



Hydrometallurgy



ION's DES Process



Construction Sector

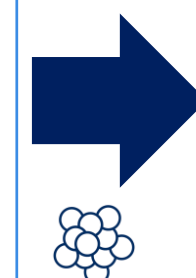
Slags

Alloys

4. Refining



Hydrometallurgy



Metal concentrates for battery grade materials (or metal industry)

Metal industry (non-functional (open loop) recycling)

5. Battery Grade Materials

pCAM → CAM

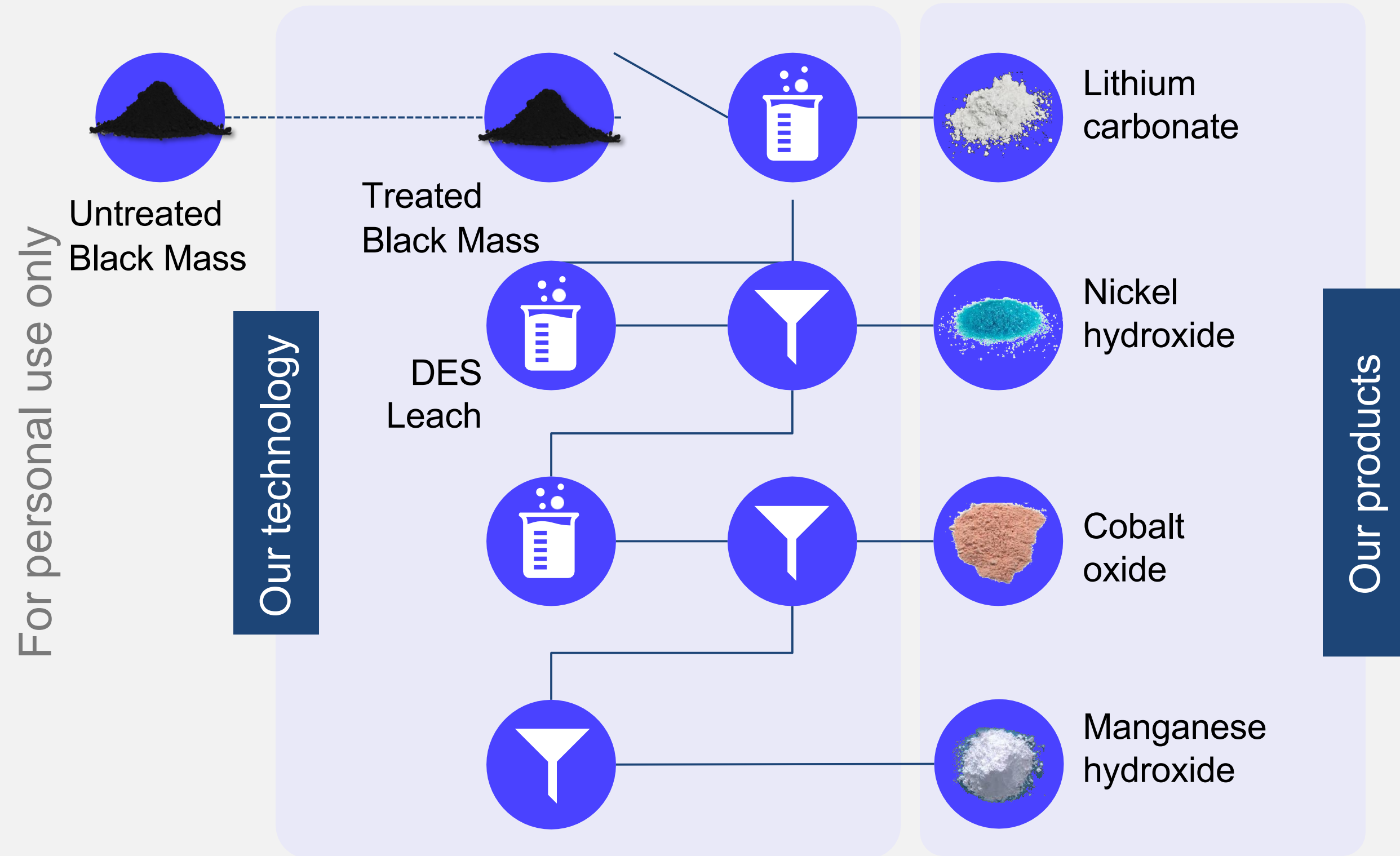


(closed loop recycling)

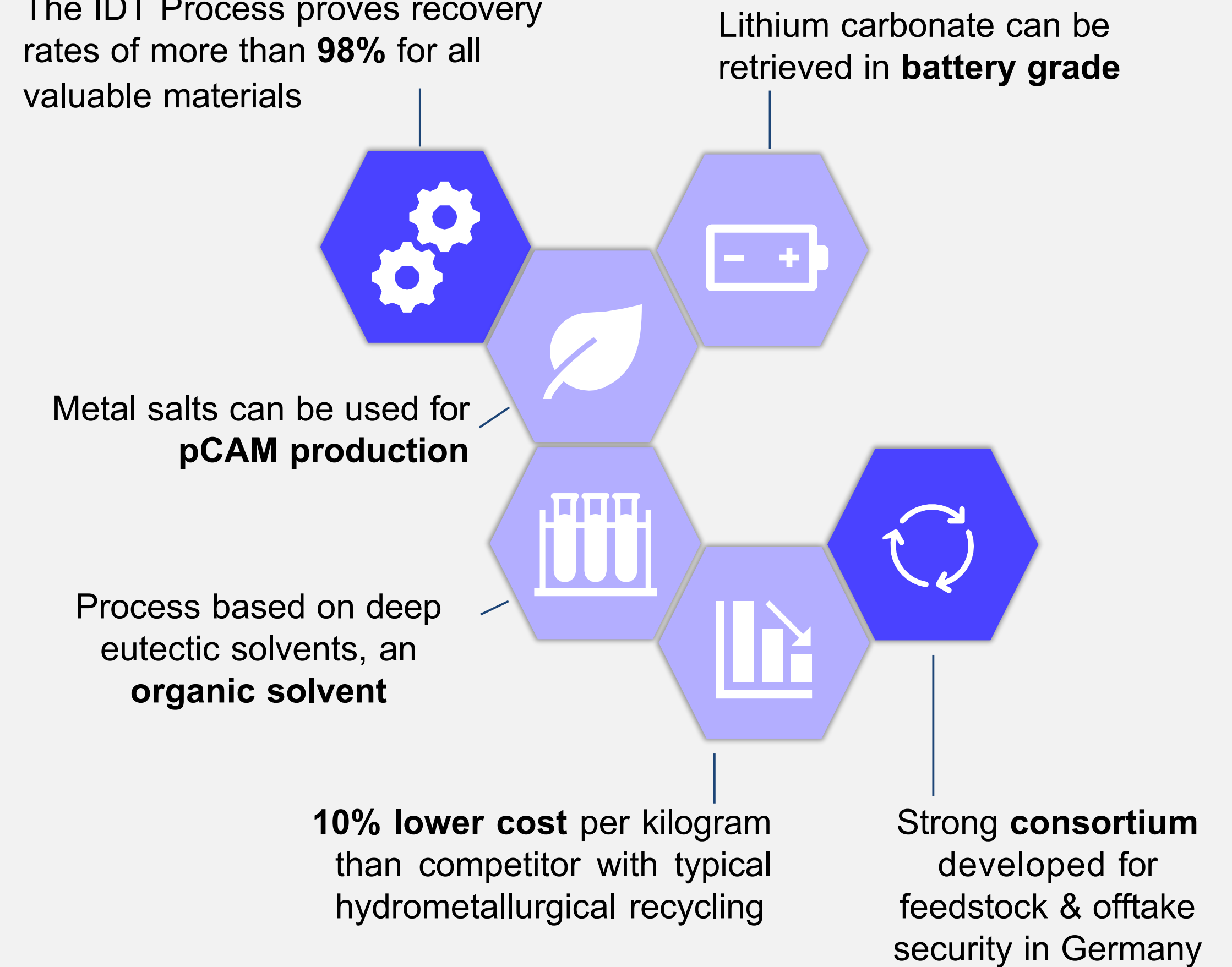
6. Battery Production



Iondrive's Recycling Solution

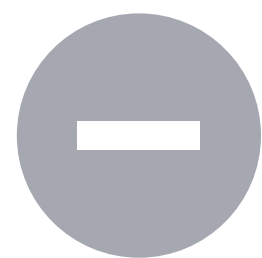


The IDT Process proves recovery rates of more than **98%** for all valuable materials



Iondrive's DES-leaching technology enables high recovery rates and minimal environmental impact

Disrupting the Battery Recycling Industry with Cleaner, Greener Technology



Incumbent Recycling Technology

- Requires incineration (pyrometallurgy) or toxic acids/bases (hydrometallurgy) to extract valuable materials
- Significant, costly toxic waste treatment (e.g. Na_2SO_4) is needed to prevent environmental impact
- Energy-intensive processes are unattractive for ESG considerations, and erodes profitability and incentive to reclaim recyclable materials
- Minimal ability to selectively separate critical minerals, requiring more intensive post-processing
- Unappealing process for EU and USA markets due to high cost, environmental footprint and safety concerns



ION Innovative Recycling Technology

- Uses Deep Eutectic Solvents (DES) in conjunction with **benign organic solvents**
- Non-toxic solvents in a **closed-loop process** with a small environmental footprint creating attractive opportunities in green energy transition
- All solvents are **recycled**, consuming only a negligible volume enhancing the economics of the process
- High degree of separation of valuable critical minerals (**selectivity**) with very high recovery rates (95%+)
- ION expects strong appeal to the growing market for recycled battery materials in ESG-sensitive markets in EU and USA due to **eco-friendly**, safe, efficient process






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Project Feasibility Study (PFS) Confirms Exceptional Recovery Rates and Market Viability








PFS De-risking Activities

 Complete
  In Progress
  Pending






Iondrive completed its Pre-feasibility Study in **October 2024**. The PFS is a **Techno-Economic Evaluation** focusing on technological, commercial, and executional de-risking strategies. These de-risking activities ensure a strong foundation for successfully executing the commercialisation pathway for our recycling technology.

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Technology

-  Process Technology Review (**Lycopodium**)
-  Large-scale bench trials and 3rd party validation trials (**IMO**)
-  High-level process engineering design of 10,000 tpa black mass plant (**Wood**)
-  Value Engineering + Solvent Recovery (**Koch Modular**)
-  Cost estimation – Capex/Opex (**Wood**)

Commercial

-  Market Research Study (**Rho Motion**)
-  Economic Modelling
-  Benchmarking 10,000 tpa plant (**PEM**)
-  Cost driver deltas
-  Competitor Analysis (**PEM**)

Execution

-  ISO-56,000 Innovation Management System
-  Stage-gate project execution model
-  People / Team


Strategic Partnerships


-  Strategic industry partnerships in EU
-  Technology partnerships - equipment & engineering
-  MOUs & LOIs for consortium participation
-  Explore supply and off-take agreements* (Consortia)

Key PFS Findings

★★★★ **High Recovery Rates:**
 Verified high recoveries across critical minerals (Li, Ni, Co, Mn)

\$ **Cost-Advantages:**
 36% lower Capex than benchmark and competitive Opex

 **Eco-Friendly:**
 Minimal solvent loss (<2%), low toxic waste & less energy intensive

 **Scalable & Viable:**
 Proven scalability and Technical Feasibility;
 Concept engineering study for 10,000 tpa plant completed

 **Strong Market Position:**
 Early-mover advantage aligned with EU regulations and green initiatives.
 Industry partnerships consolidated with PEM Consortium participation



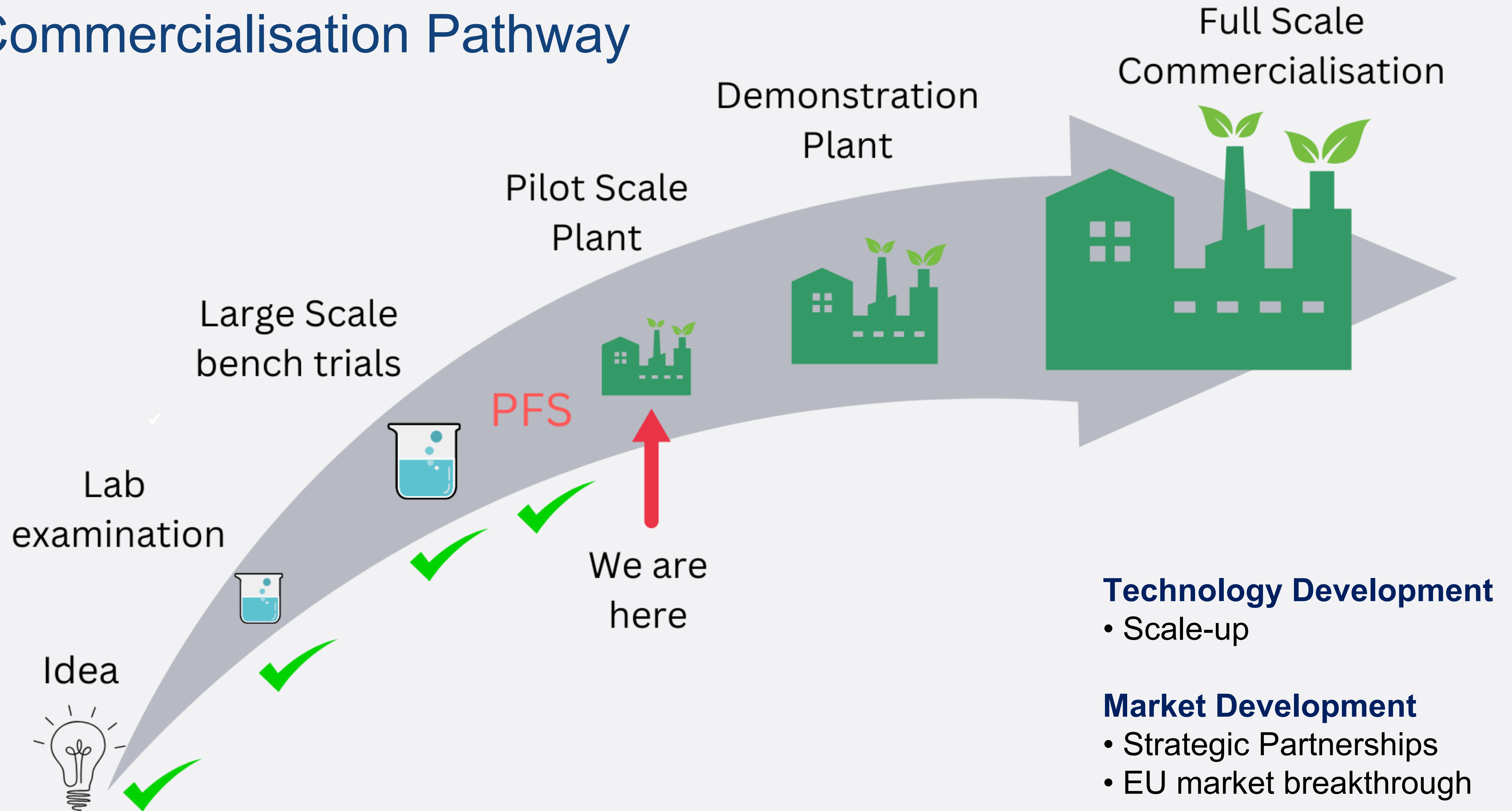
The successful PFS paves the way to pilot plant and commercialisation

Commercialisation Pathway



Commercialisation Pathway

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Pilot Plant

Timeline

6-month construction in FY2025

Planned 2-year operation

- Commence design and construction of a DES battery recycling Pilot Plant 2025
 - ◆ A major de-risking step on commercialisation pathway
 - ◆ Stage 1: Semi-continuous scale-up work commencing Q1 2025;
 - ◆ Stage 2: Continuous, fully integrated, closed-loop system representative of a large-scale commercial operation Q3/Q4 2025
 - ◆ Test vehicle for process development & optimisation

- Funding subject to financing together with non-dilutive grants and rebates:
 - ◆ \$1M pa Grant awarded to UoA for ARC Battery Recycling Training Centre (ION contribution of \$200k pa, largest industry participant)
 - ◆ Matched IGP grant application to be submitted in December, outcome known from February 2024, other AU non-dilutive options being explored.
 - ◆ EU Grant applications to co-fund PEM Consortium and pilot plant
 - ◆ Other eligible expenditure claimable under the 43.5% R&D tax rebate¹



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¹Refer ASX announcement 15 August 2023

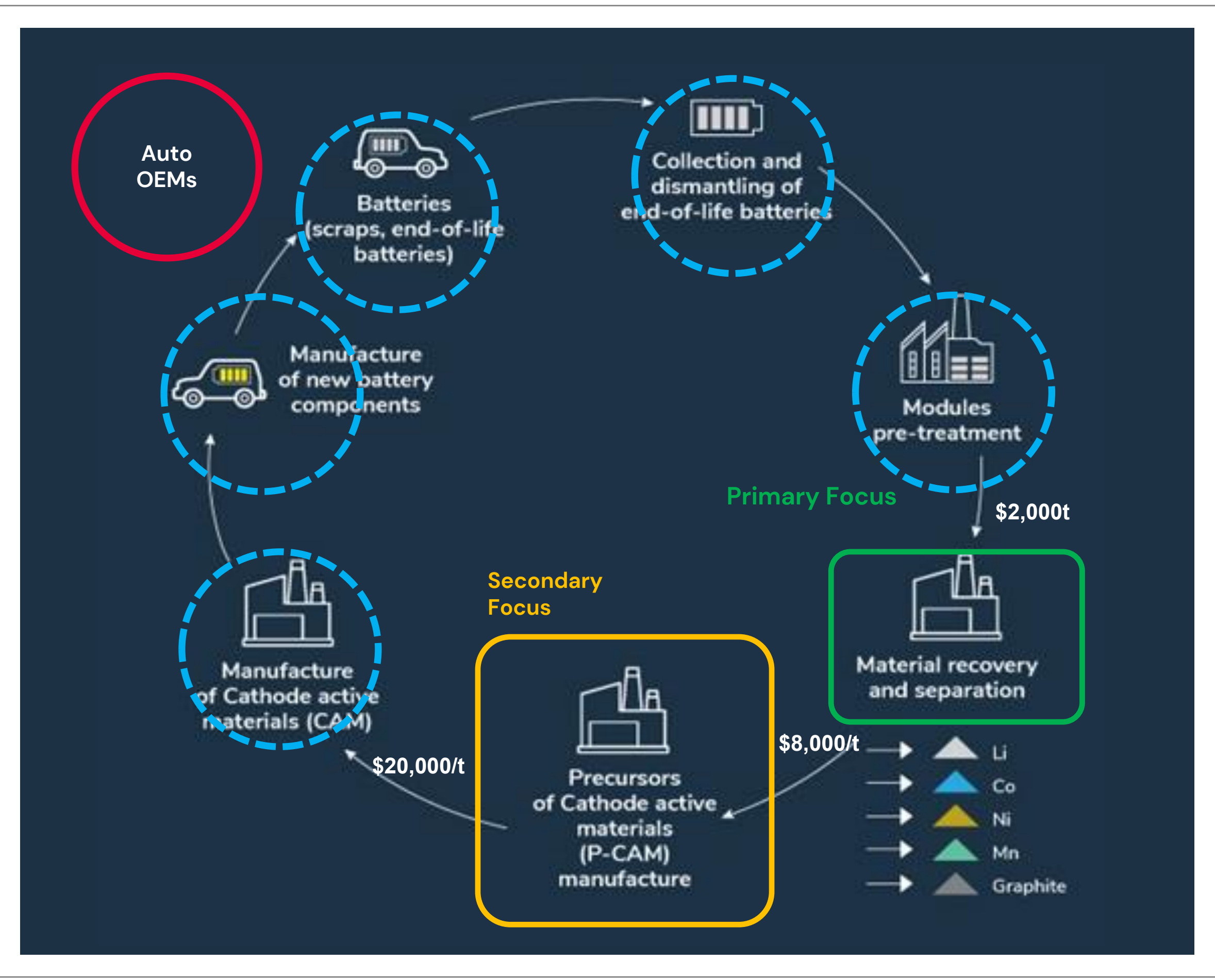
Business Model & Strategic Partnerships

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londrive's primary market focus is to take black mass (~\$2,000/t) and recover valuable materials (~\$8,000/t) from black mass using our DES process

londrive's secondary focus is to take those materials and upgrade them into precursors of cathode active material >(~\$20,000/t)

We are establishing strategic partnerships in key areas of the value chain to scale up, streamline our processes, and achieve commercial production



EU Consortium

Technology Partnerships

EU Industry Partnerships

AUS Industry Partnerships



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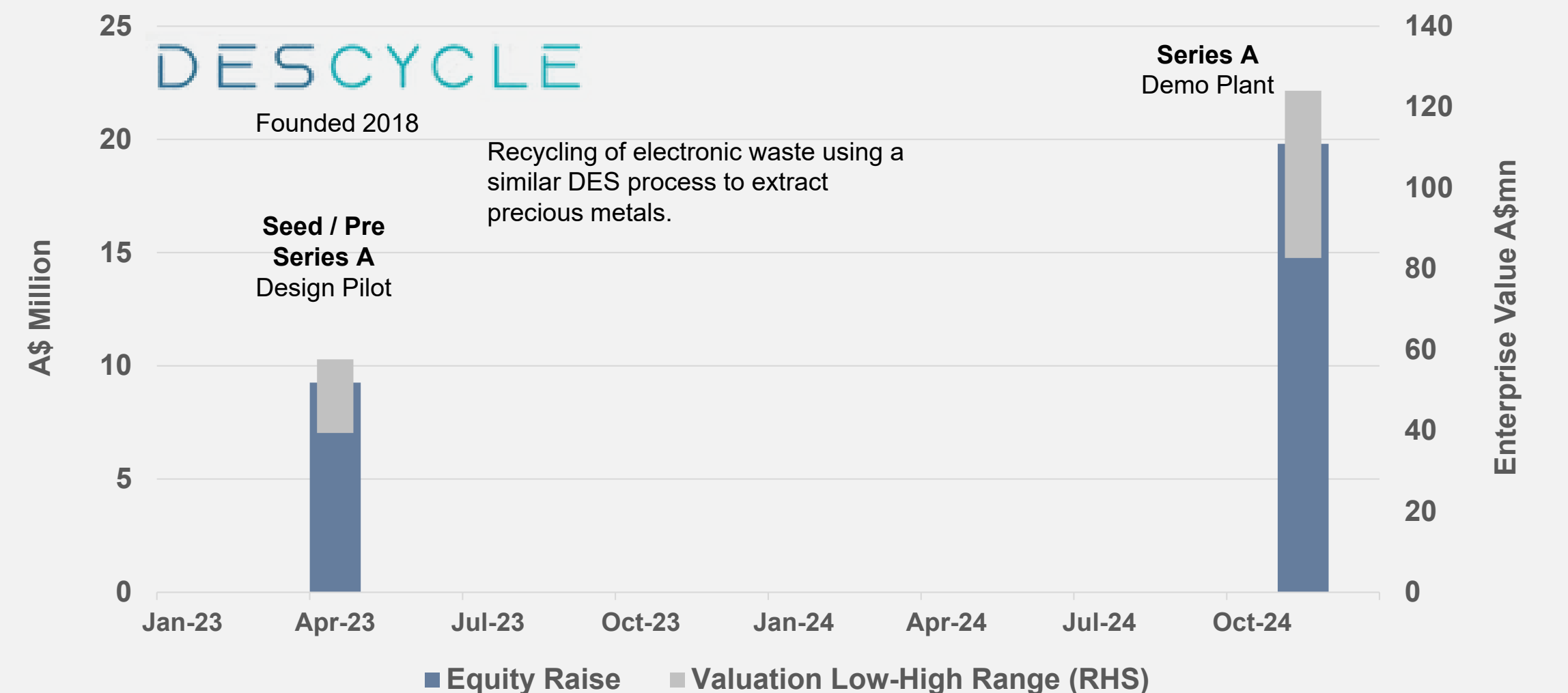
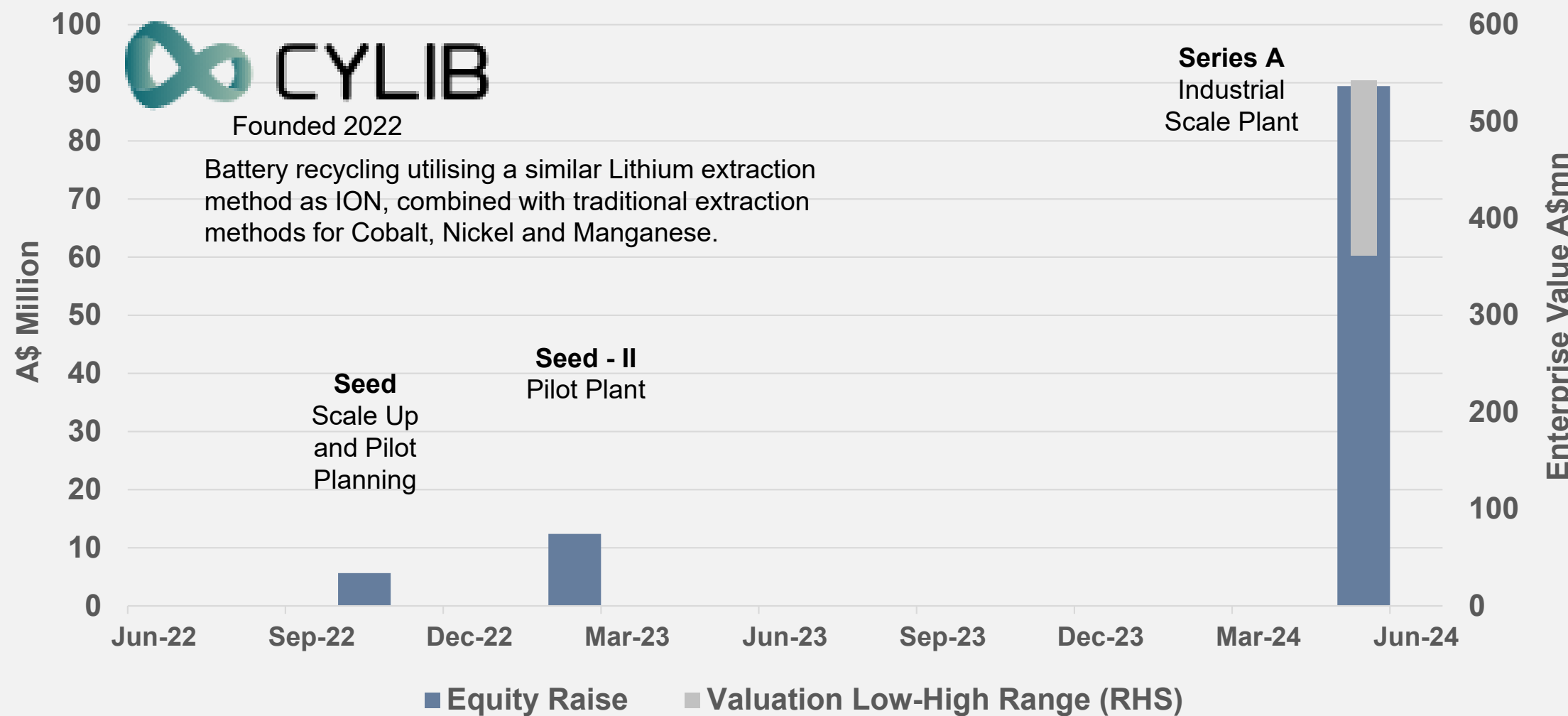
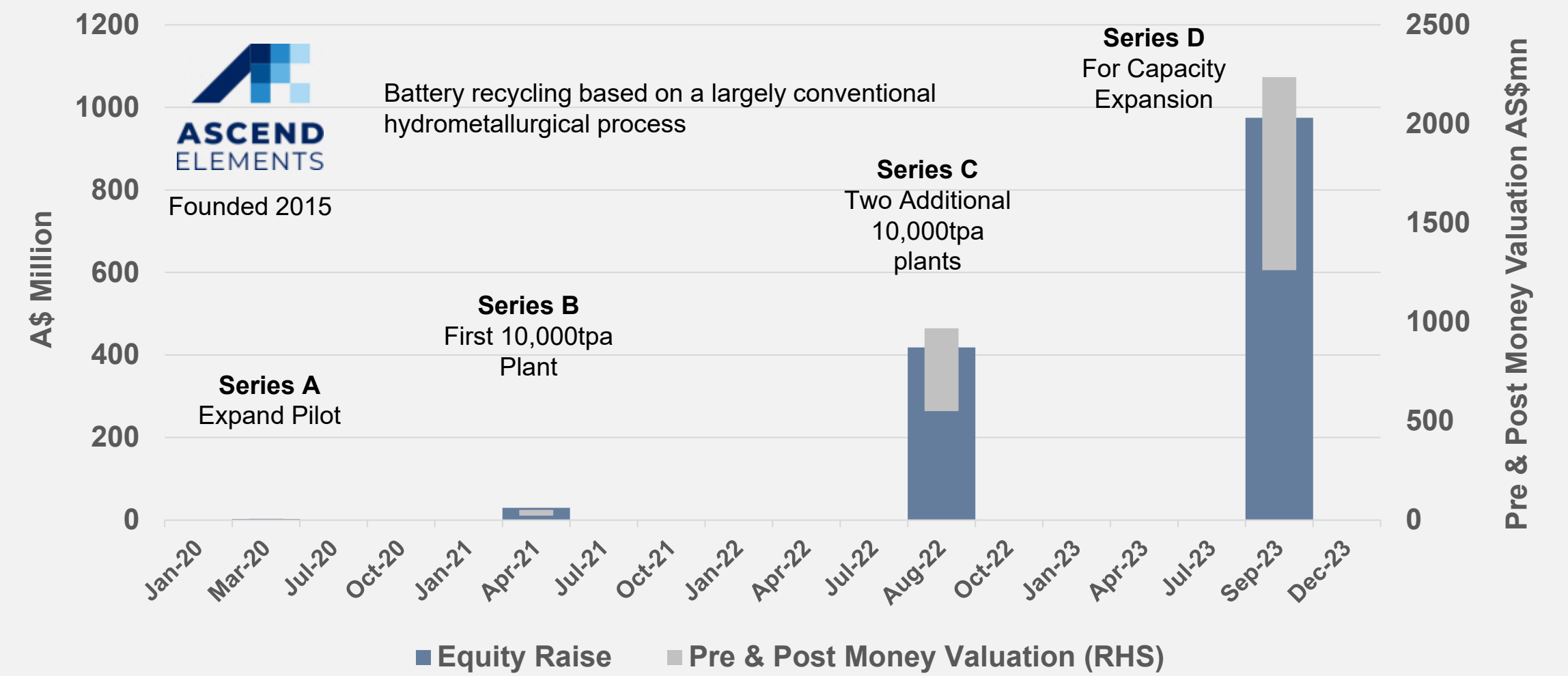
Investment Opportunity

Capital and Valuation Support for Breakthrough Technologies

Breakthrough technologies that have the potential to revolutionise Metal and Battery Recycling are attracting strong capital support and rapidly increasing valuations

These peer comparisons are considered appropriate as they all originated metal extraction technologies developed at the World's leading Battery research institutions – examples shown including Argonne National Labs, University of Leicester, RWTH Aachen University. Additionally, they each are following a similar commercialisation path from research to Pilot plant, demonstration plant and commercial scale plant (10,000tpa). These companies are led by World Class commercialisation teams and supported by investor and technology partnerships and ecosystems.

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Sources: Ascend Elements Equity and Valuation data from S&P Capital IQ. <https://ascendelements.com/>

Sources: cylib Equity and Valuation data from dealroom.co. <https://www.cylib.de/>

Sources: DEScycle Equity and Valuation data from dealroom.co. <https://www.descycle.com/>

Sources: Investing.com for Exchange Rates to AUD at date of transactions

Capital Structure

CORPORATE STRUCTURE:

Ordinary Shares	708.5m
Share Price (VWAP 26 Nov, 15 days traded)	AUD\$0.013
Market capitalisation	AUD\$9.2m
Cash (30 Sept 2024) + Debtors/ RDTI claim (Received Oct 24)	AUD\$3.1m
Enterprise Value (EV)	~AUD\$6.1m

OPTIONS/PERFORMANCE RIGHTS:

ESOP incl. Directors various dates & prices	76,405,000
Options ex \$0.027 30 Dec 2024	63,000,000
Performance Rights (LTI)	30,625,000

SUPPORTIVE STRATEGIC SHAREHOLDERS - MAJOR SHAREHOLDERS (>5%)

Strata Investment Holdings Plc	~18.8%
Ilwella Pty Ltd	~15.0%

ION SHARE PRICE GRAPH 12 MONTHS



Upcoming Catalysts



Economic Modelling

Independent 3'd party modelling (NPVs IRRs)



Pilot Plant: Project 1kg/hr continuous integrated process



Strategic Collaborations: Continuing expansion of Technology Partners and Industry Partners EU and USA



EU Consortium: Formalising consortium partners and establish ION-EU

USA: Pursuing a similar strategy

Non-Dilutive Funding: Applications for Funding Grants in AUS and EU

- IGP
- ARC Training Centre
- EU Grants



Ongoing Testwork: Progressing scale-up testing in preparation of Pilot Plant + expanding pipeline of recycling technologies

- Black Mass pretreatment + Solvent ratios optimisation
- Solvent recovery pilot plant
- LFP recycling and Direct Recycling

