Iondrive Limited | ABN 30 107 424 519

### **Updated Corporate Presentation**

**londrive Limited (ASX: ION) ("Iondrive" or "the Company")** is pleased to provide the attached updated corporate presentation.

Authorised for release by the Board of Iondrive Limited.

#### **Further Information**

Ebbe Dommisse CEO 08 8368 8888 info@iondrive.com.au Aiden Bradley
Investor and Media Relations
+61 (0) 414 348 666
aiden@nwrcommunications.com.au

#### **About Iondrive**

londrive is developing an innovative metal extraction process using Deep Eutectic Solvent technology (DES). Its initial business case is focussed on battery recycling where the proprietary method is designed to efficiently recover critical metals, including nickel, cobalt, lithium, and manganese, from black mass in a closed-loop, environmentally friendly process. Unlike conventional hydrometallurgical and pyrometallurgical approaches, londrive's DES technology operates at lower temperatures, eliminates the need for aggressive acids, and offers a tuneable chemistry that can selectively extract individual metals. Whilst progressing the battery recycling application for its DES technology, londrive is actively seeking to expand the commercialisation opportunities into other markets, including mineral processing and Urban mining of electronic waste.



**June 2025** 



### 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 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.

#### 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.

An investor must not act on the basis of any matter contained in this Presentation but must make its own assessment of the Company and conduct its own investigations and analysis. Before making an investment in the Company, a prospective investor should consider whether such an investment is appropriate to their particular investment objectives and financial situation and seek appropriate advice, including legal, taxation and financial advice appropriate to their jurisdiction and circumstances.

#### **United States and Other jurisdictions**

The Company's securities have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the Securities Act), or under the securities laws of any state or other jurisdiction of the United States. Accordingly, the Company's securities may not be offered or sold, directly or indirectly, within the United States or to, or for the account of benefit of, U.S. Persons (as defined in Regulation S under the Securities Act as amended). This Presentation may not be distributed within the United States or to any person in the United States This Presentation may only be accessed in other jurisdictions where it is legal to do so.

### **TECHNOLOGY COMMERCIALISATION**

## **Silondrive**

# Clean Tech for the Circular Economy



**EXECUTION HUB** 



SCALABLE,



Deep Eutectic Solvent platform with strong IP position



Modular and tuneable for multiple recovery applications



Technology Partnerships



Prioritising applications with existing demand and regulation

Lean, outcomesfocused team with clear commercial roadmap



MARKET
OPPORTUNITY &
DEMAND





Advancing development in emerging, high-growth sectors







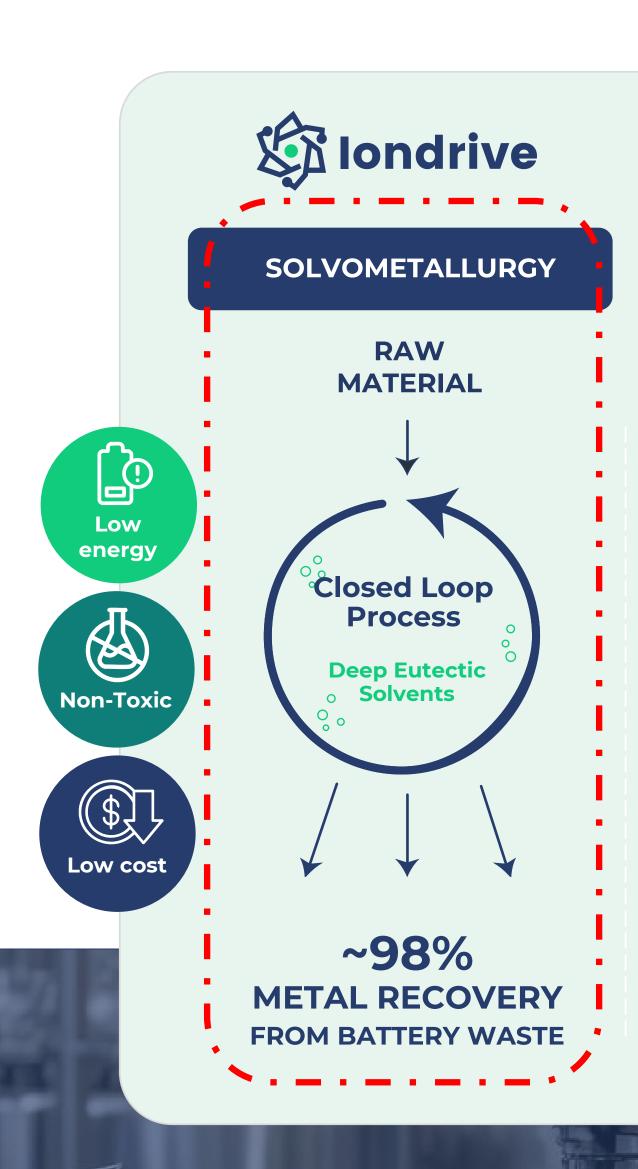


### **URBAN MINING**

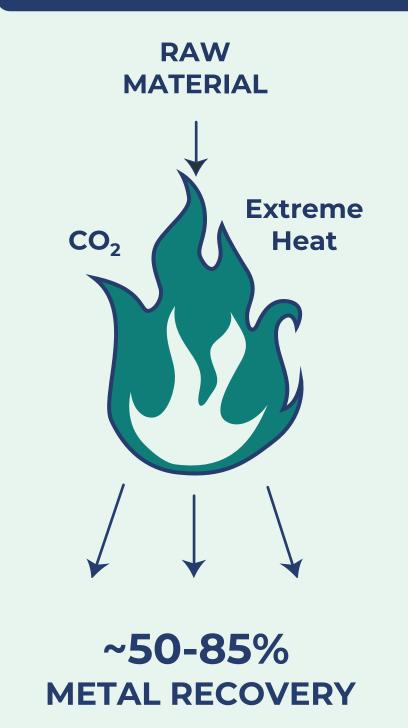
### High efficiency, low environmental impact

Traditional metal recycling relies on energy-intensive, toxic processes with high waste and low efficiency in separating the critical minerals.

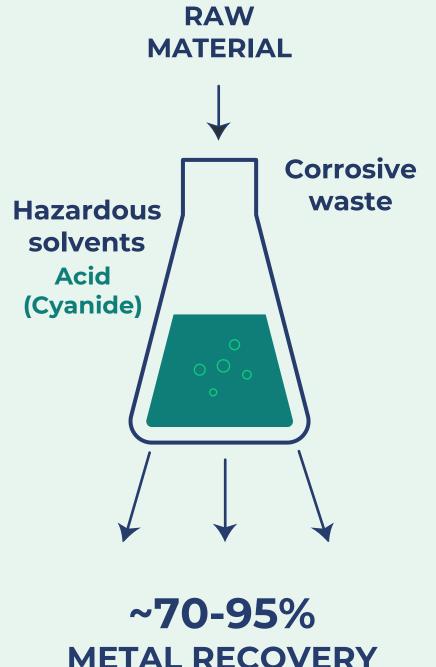
ION's innovative technology uses eco-friendly solvents in a closed-loop system, minimising environmental impact while achieving very high recovery rates, ideal for sustainablefocused markets.



### **PYROMETALLURGY**



### **HYDROMETALLURGY**



**METAL RECOVERY** 

### **DEEP EUTECTIC SOLVENTS**

# A Tuneable approach to sustainable metal extraction

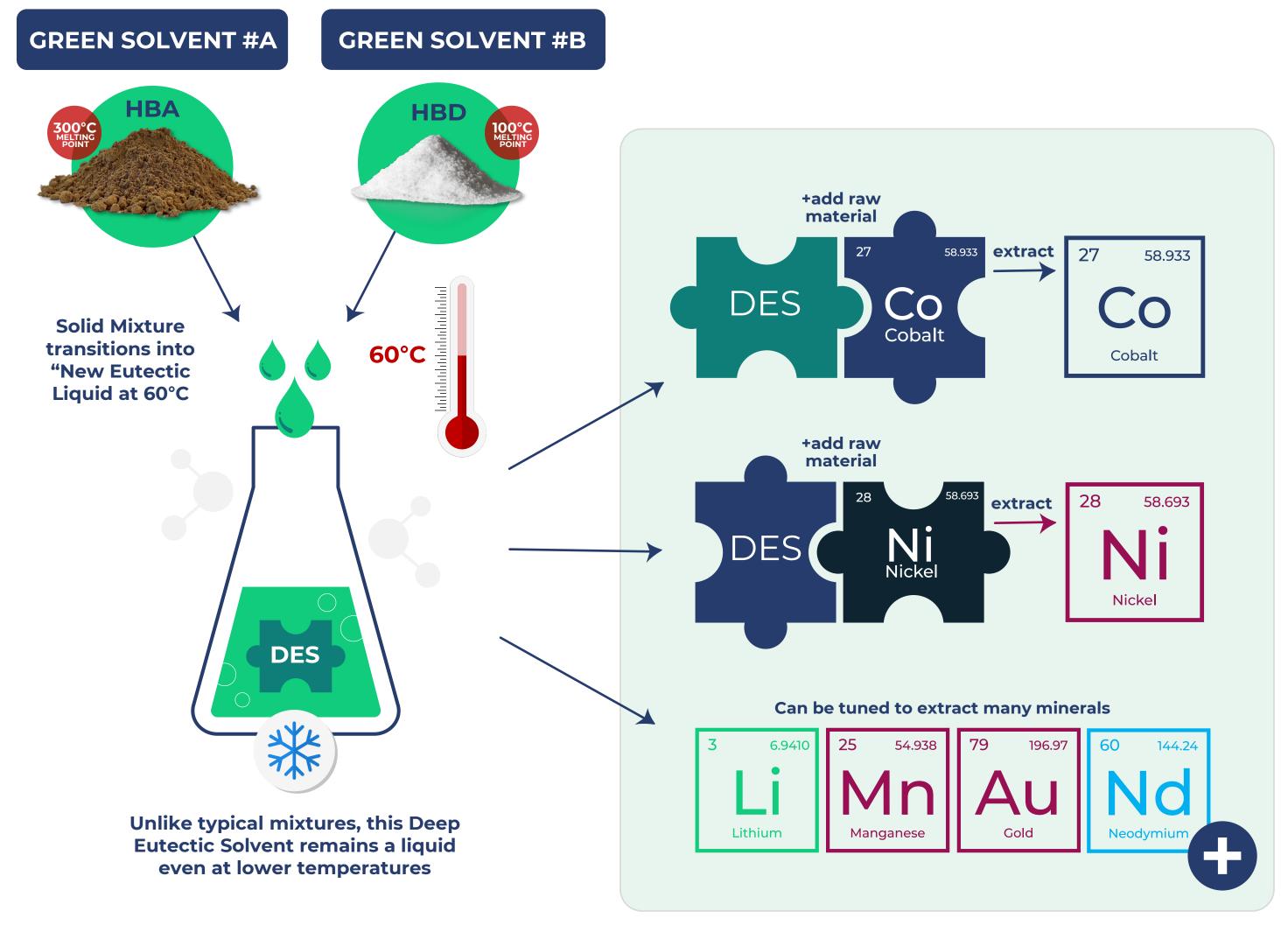
#### What are DES?

- Deep Eutectic Solvents (DES) are green solvents formed by mixing a hydrogen bond donor (HBD) and a hydrogen bond acceptor (HBA).
- Interacting through hydrogen bonding to create a eutectic mixture with a lower melting point than its individual components
- DES are typically low toxicity, biodegradable, and reusable.

### How they work:

- Dissolve metals via complex hydrogen bonding interactions.
- Tailored chemistry enables selective extraction of specific metals, depending on the chosen HBD/HBA pair
- DES solvents can be re-used to extract more minerals unlike acids which are consumed





### ADVANCED EXTRACTION. MINIMAL FOOTPRINT.

## **Signature**

# One Green Platform. Massive Extraction Potential.

Iondrive's DES platform enables clean, efficient recovery of critical metals from battery waste, eWaste, and mining.

**eWaste** 

Market ~US\$91B CAGR: 3.6%



**Battery** Recycling

Market~US\$13.9B CAGR ~17–19%



Mixed Hydroxide
Precipitate (from mining)

Sulphate Market (Nickel + Cobalt): ~US\$12B | CAGR: 12%



### **DUAL-TRACK STRATEGY FOR MARKET ENTRY**



### Minimal Viable Product (MVP) Path: eWaste & MHP

Real markets. Real customers. Real problems.

Faster to market with capital requirements.

Strong customer integration and early sales potential.

We're building lean, fit-for-purpose MVPs to address urgent needs in large, accessible markets.



### Technology Readiness Level (TRL) Path: Battery Recycling

Massive opportunity — projected to reach ~US\$14B with 17–19% CAGR.

But the market is still forming — and needs certified, scalable solutions.

We're going deeper on tech validation (TRL 6/7) to ensure investor confidence and position for global scale.



### **Why It Matters**

We're matching our approach to each market:

MVP for speed and traction where the market is ready.



# eWaste Is a Global Crisis — and Opportunity

### Global market upside

eWaste contained ~US\$91B in recoverable metals in 2022, with only 22% recycled.

## High-grade feedstock

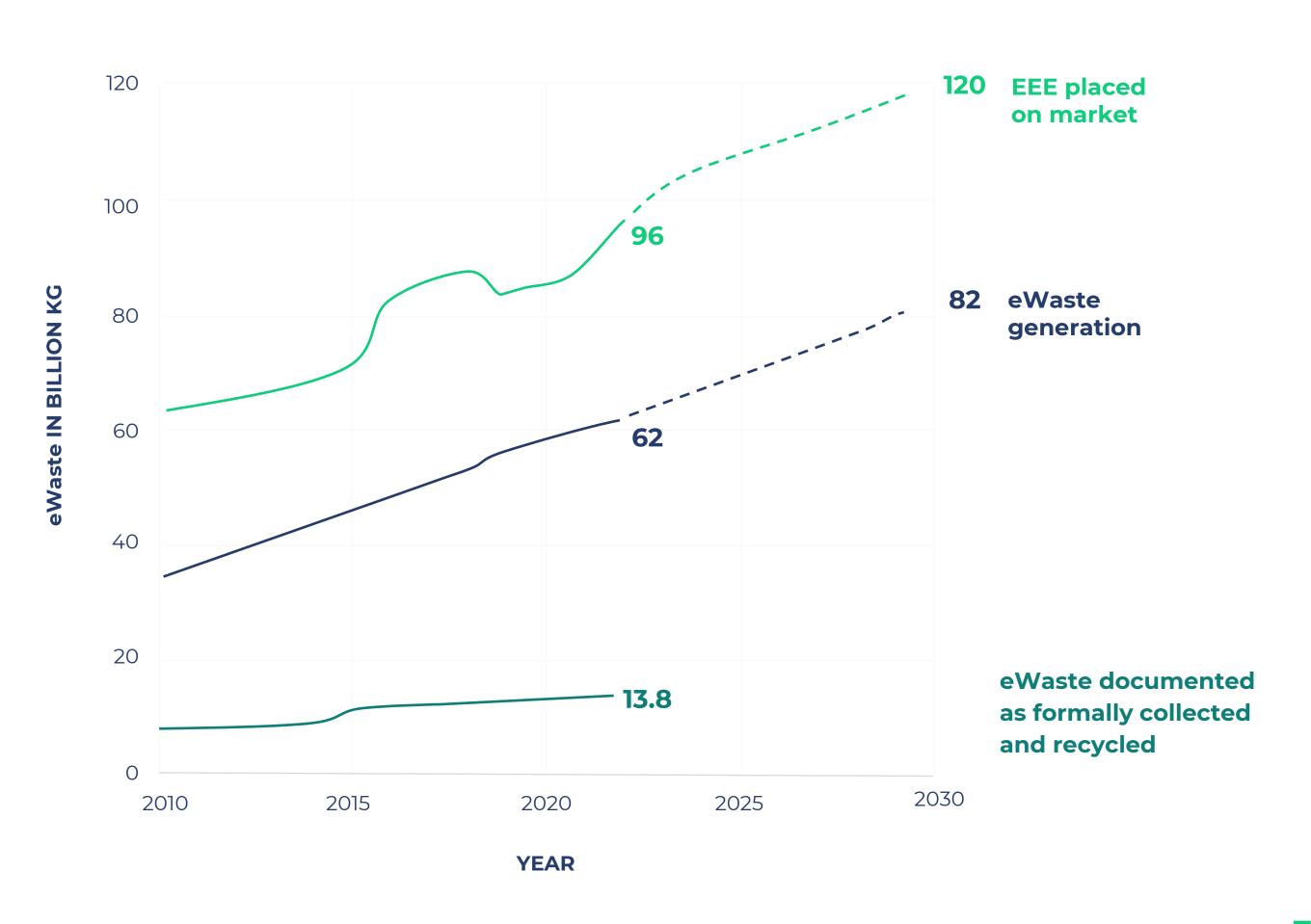
Printed Circuit Boards
(PCBs) offer rich yields of
copper, gold, silver, and
palladium — ideal for
recovery.

### **DES** advantage

Tuneable, closed-loop chemistry makes DES well suited for complex materials like PCBs.

## Government funded project underway

Testing at University of Adelaide backed by SA Government grant.

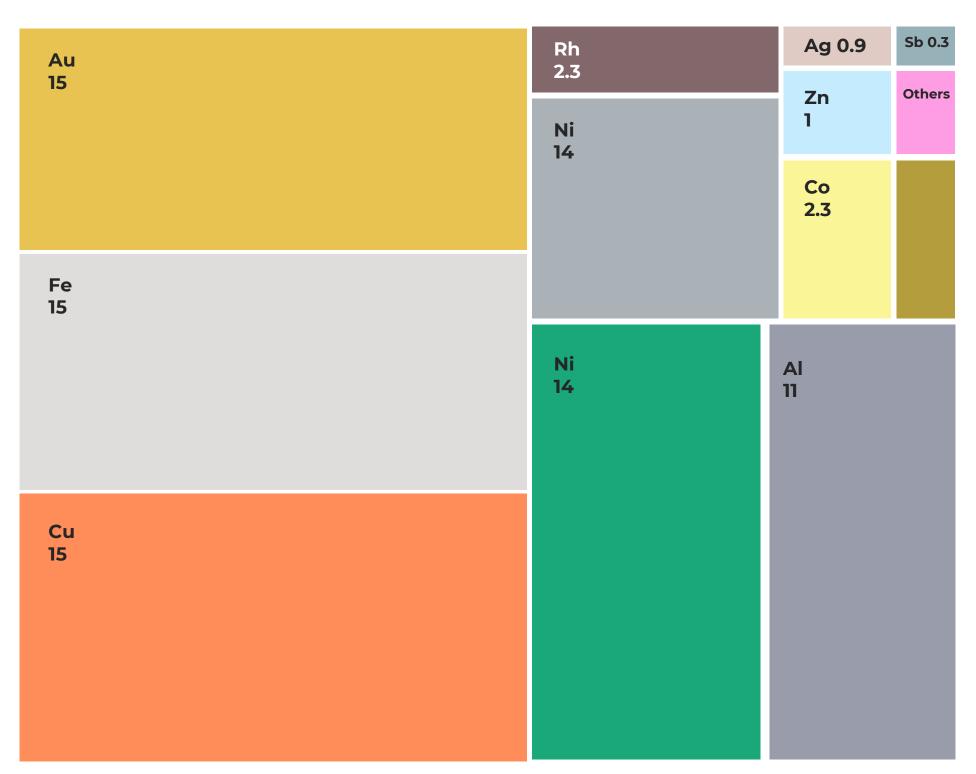




# The \$91 Billion Opportunity in eWaste Metals

### **Economic Value of Metals from eWaste**

(Before Management) in USD billion (2022)



## **Estimated Metal Value** per tonne of PCBs

METAL	CONTENT RANGE	PRICE PER G (USD)	ESTIMATED VALUE RANGE (USD)
Gold	165–370 g	\$70.00	11,550–25,900
Silver	800–3,600 g	\$0.88	704–3,168
Copper	200,000–500,000 g	\$0.01	1,800–4,500
Palladium	50-110 g	\$30.00	1,500–3,300
Total revenue pe	~\$15K – 36K		

Printed circuit boards are among the highest-value components in eWaste. With up to \$36,000 of recoverable metals per tonne, they represent a key focus for londrive's closed-loop extraction technology.

Sources: https://cen.acs.org/environment/recycling/Electronic-waste-gold-mine-waiting/102/i23?utm

## Growth catalysts (3-9 months)



COMMERCIAL

Independent 3rd party modelling (NPVs IRRs)

**Economic** Modelling



Continuing expansion of Technology and Industry Partners in the EU

> Strategic Collaborations

Largest industry partner in \$15m ARC Training Centre

Applications for Grants in AUS and EU

- AUS: IGP (\$3.5m)
- 3 European Grants (\$8m)

**Non-Dilutive Funding** 

Formalising consortium partners and establish ION-EU across the value chain

**EU Consortium:** 

Pursuing a similar strategy to EU, exploring opportunities across the value chain

**North America** 







**Pilot Plant** 

Hot commissioning + start-up of semicontinuous pilot plant



### **DES Application** Areas

Mixed Hydroxide Precipitate (MHP) from various sources including nickel mining

Trials underway



Project 1kg/hr continuous integrated process

Detailed engineering & design being finalised



### **DES Application Areas**

Urban mining

Trials underway for potential recovery of Au, Pd, Cu, Ga and Ge from eWaste



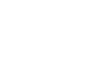
### **Expanding Technology**

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

TECHNOLOGY







### 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 Cofounder 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 Dommisse
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

## Capital structure

## **Similar** Iondrive

### **CORPORATE STRUCTURE:**

Ordinary Shares	1182.8m		
Share Price (6 June 2025)	AUD\$0.025		
Market capitalisation	AUD\$29.6m		
Cash*	AUD\$7.0m*		
Enterprise Value (EV)	~AUD\$22.6m		

### **OPTIONS/PERFORMANCE RIGHTS:**

Various incl Directors, employees & consultants	78,780,000
Performance Options (Exec LTI)	30,625,000
Performance Rights (Exec LTI)	30,625,000

#### • As at 31 March 2025, being the most recent quarterly report lodged with the ASX.

## **SUPPORTIVE STRATEGIC SHAREHOLDERS (>5%) -** per most recent substantial holder notices

Regal Funds Management	~5.2%
Terra Capital	~8.0%
Strata Investment Holdings Plc	~12.2%
Ilwella Pty Ltd	~10.9%

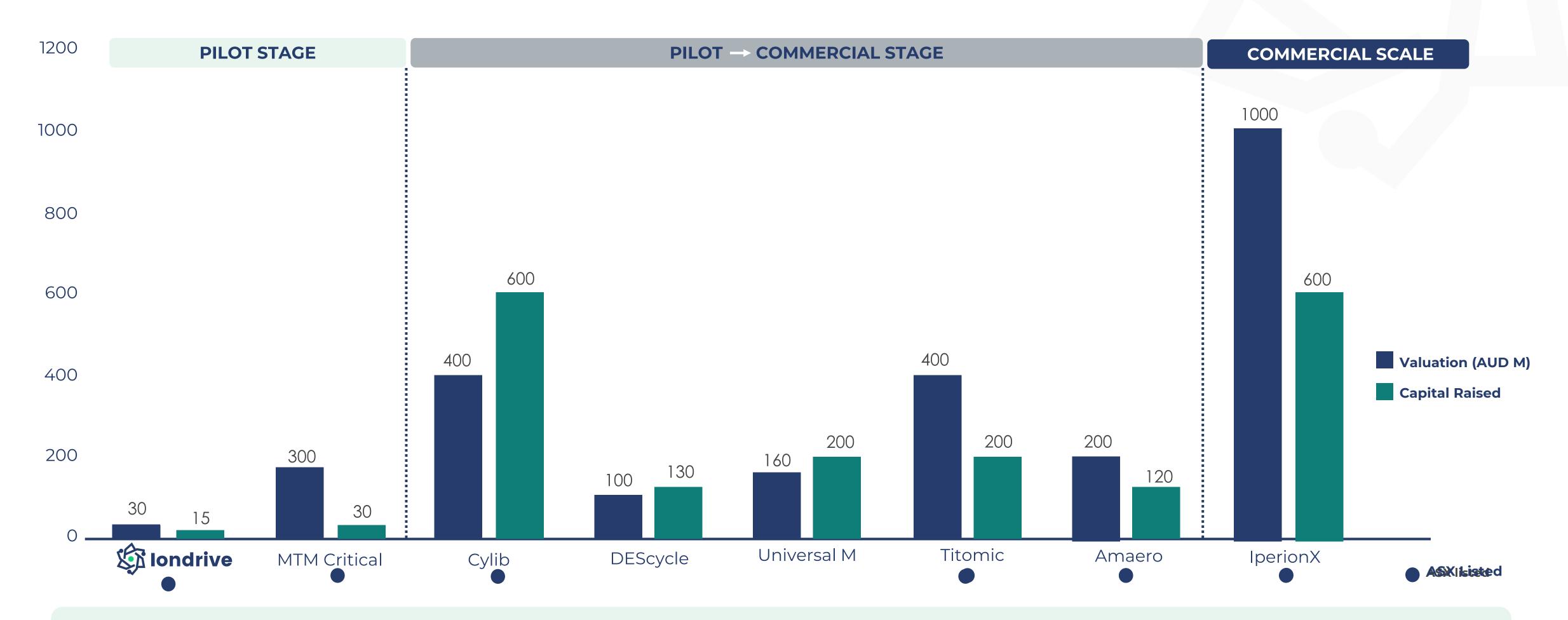
### **ION SHARE PRICE GRAPH 6 MONTHS**





## VALUATION UPLIFT ALONG THE COMERCIALISATION PATH Market backs scalable industrial technologies





This chart compares battery recycling and advanced materials companies — both private (Grey) and ASX listed (light blue) — by their estimated valuation (Y-axis), development stage (X-axis), and capital scale or market impact



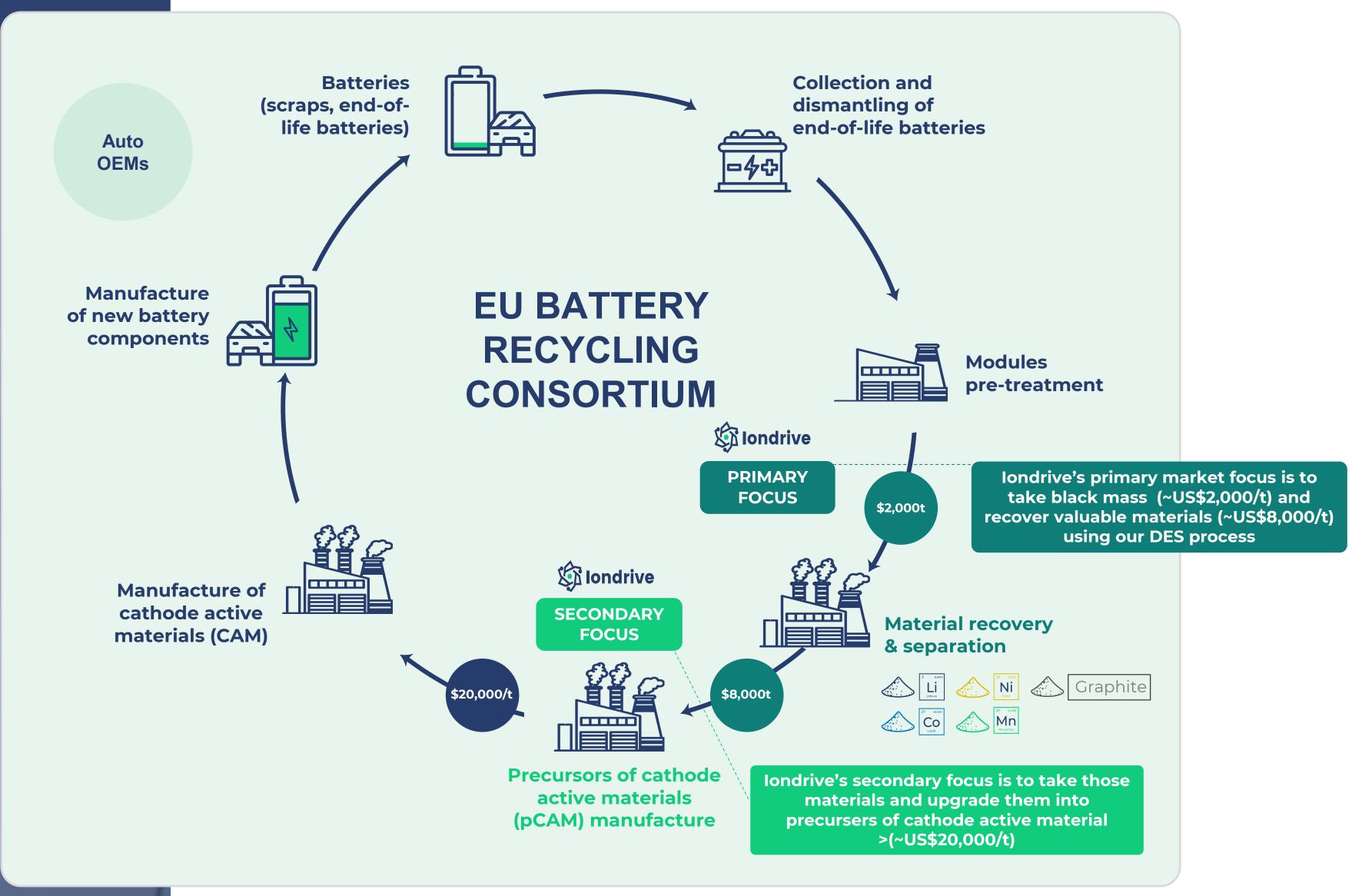
Breakthrough Technology for a Huge Battery Recycling Market Opportunity

### **BATTERY RECYCLING**



## Business model

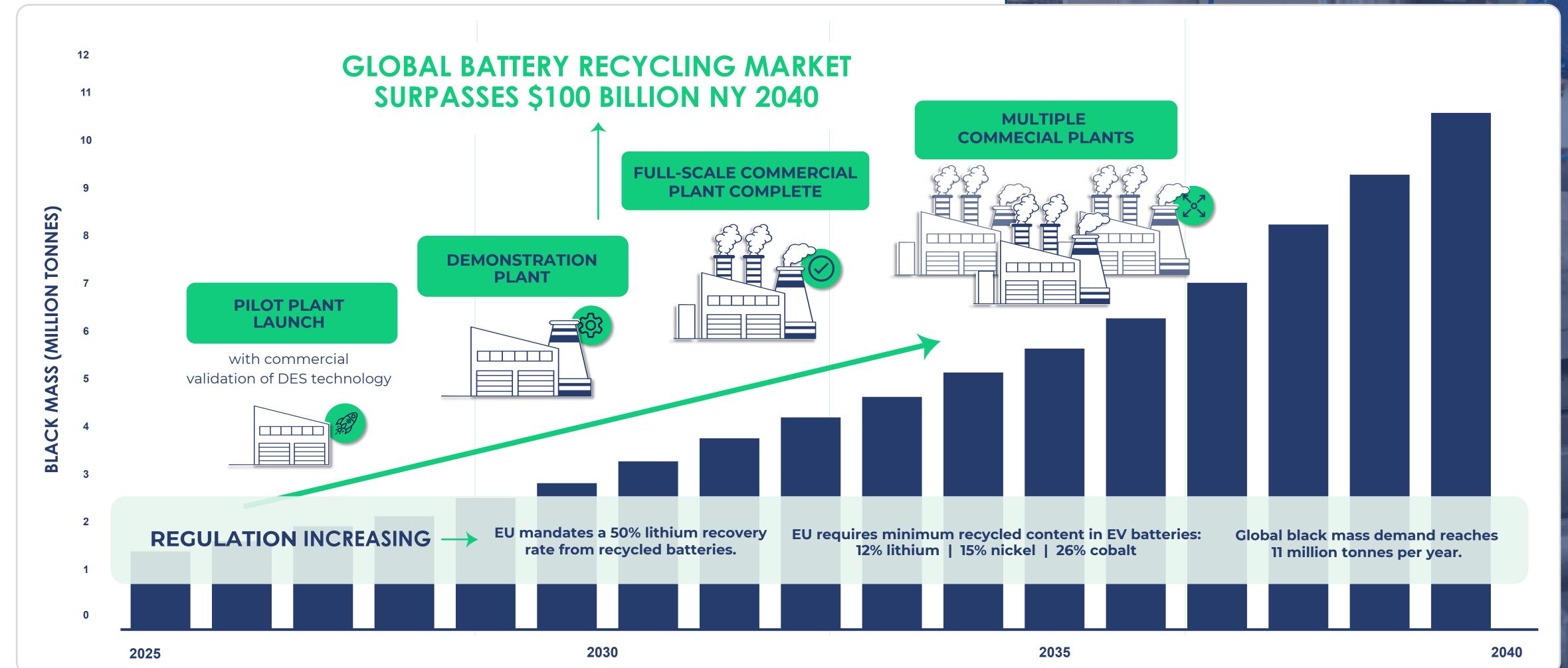
londrive intends to generate value uplift by initially processing black mass (battery waste) into reusable critical minerals and upgrading them into high-value cathode precursors. This approach bridges battery recycling and advanced material production, adding economic and market value.



### **EV BATTERY RECYCLING**

# Commercialisation activities align with EV metal market demand

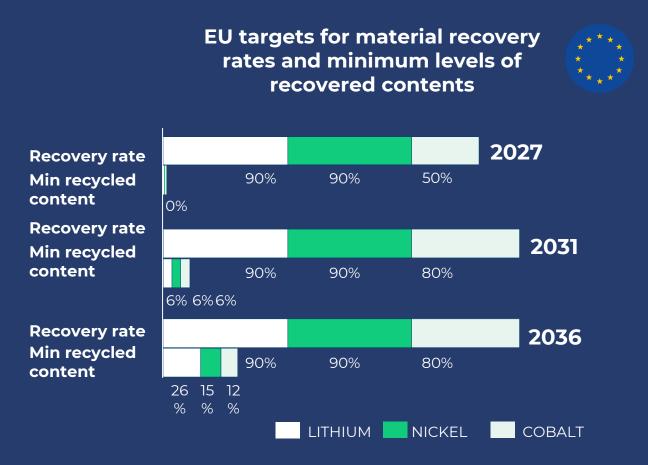


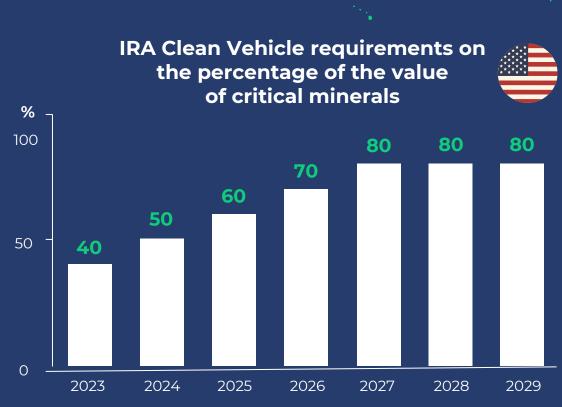


Source: Rho Motion Market Study 2024

### **MARKET DRIVING FORCES**

## Battery Recycling





BATTERY PASSPORT
General Battery & Manufacturer

General Battery & Manufacturer Materials & Composition Carbon Footprint Resource efficiency

ALMOST ALL BLACK MASS PRODUCED IN

**WESTERN COUNTRIES** 

**IS SENT TO CHINA** 

FOR PROCESSING.

Condrive

Circularity & Resource efficiency Supply Chain Due Diligence Performance & Durability



**EU bans black mass exports**, now classified as hazardous.



EV batteries must meet minimum recycled content by law.



OEMs mandated to manage end-of-life batteries via 'battery passports.



### 2030 deadline:

Regulatory requirements align with rising black mass supply.



Current recycling methods struggle with high costs, waste, and energy use.

\*CRMA: Critical Raw Materials Act

Source: Rho Motion Market Study 2024

## **Signature**

## Driving Urgent Battery Recycling Solution

### **EV growth** accelerating

Black mass supply to reach 11.3M tonnes by 2040.

## Recycling demand outpacing capacity

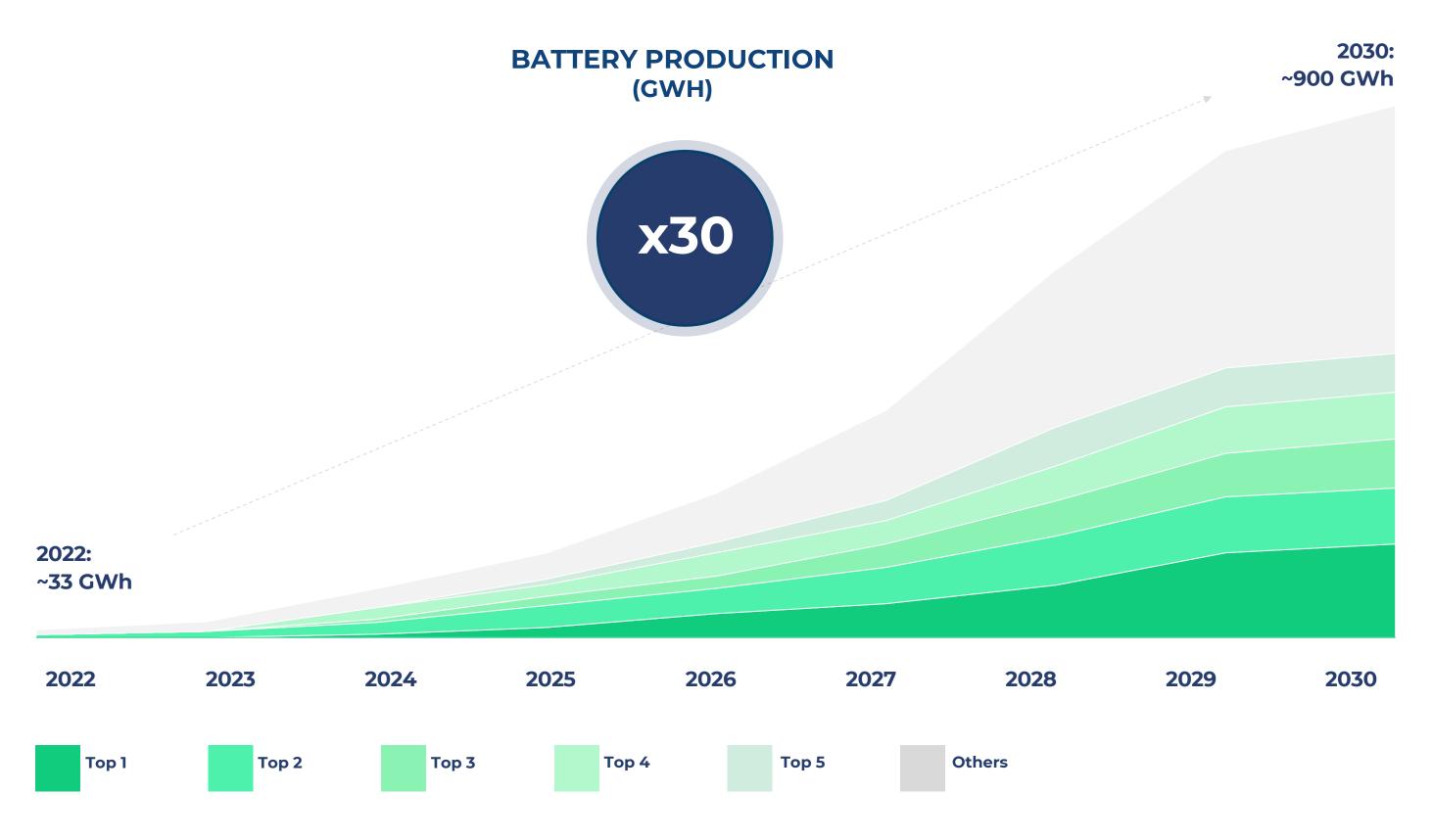
Black mass growth
+25% CAGR, but EU
lacks hydromet
capacity (74% deficit).

## Regulations pushing localised recycling

EU & US policies drive sovereign supply chains.

## Current methods are costly & unsustainable

Need for cleaner, scalable solutions



Source: Joint study between Strategy & and PEM of RWTH Aachen University, August 2023

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



## Pre-Feasibility Study (PFS) Confirms Exceptional Recovery Rates and Market Viability

## Technology Validated, Economics Confirmed

Economic and technical results driving commercialisation



## **Economically Robust**& Profitable

Independent modelling confirms a AUD249m NPV and 17% IRR, highlighting the project's strong profitability.



### 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

**S**Iondrive

## Illustrative plant economic indicators



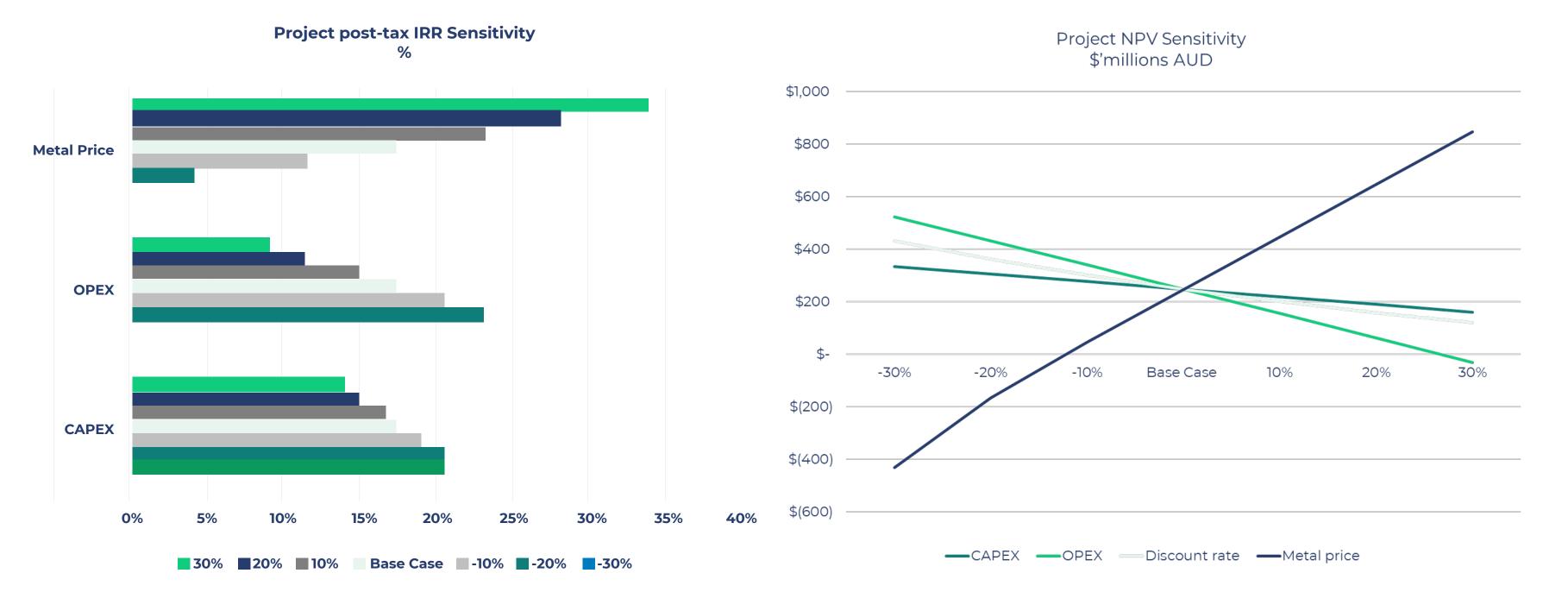












<sup>1.</sup> Company aspirations that should not be read as forward-looking statements.

<sup>2.</sup> No assurance that actual outcomes will not differ materially from these amounts

<sup>3.</sup> pkt/pa references plant throughput in kilotonnes for first year only as CAPEX does not reoccur year on year

<sup>4.</sup> Assumptions for Economic Modelling presented in Appendices



## Assumptions

#### Appendix 1: Key Assumptions of the Economic Evaluation of the PFS londrive Battery Recycling Plant Configuration

Duning His			_	
Project life		years	2	
Construction period	1			
Operations period	years	20		
Discount rate (real)	%	10		
Total CAPEX*	AUDm	370m		
Terminal Value	AUD	20%		
Payback	years	5.8		
NPV10	AUD	249m		
IRR	%	17.4%		
FX	EUR:AUD 1.66			
	USD:AUD	1.57		

<sup>\*</sup>both Pretreatment and DES plants incl. 10% Owners Costs

#### **Notes:**

- l. Location-specific electricity pricing sourced by Wood from third-party market references.
- 2. Other variables based on Wood data base and business judgement.
- 3. No Government funding, tax incentives or debt funding upside benefit included.
- 4. Assumes that the londrive Plant demonstrates that the londrive process technology is effective at producing recovered battery metals consistently and reliably with recoveries similar to bench scale test results
- 5. Economics are for a standalone plant; no royalties or licence fees are included in the economic assessment.

### **Appendix 2: Battery-grade Price Forecasting (Benchmark Minerals International)**

Product Sales price Yea Li Carbonate \$	ar 1 Year 2 Y 15,308 \$	ear 3 Year 4 Y 5 19,233 \$	ear 5 Year 6 Ye 5 29,830 \$	ear 7 Year 8 45,530	Year 9 Yea \$ 39,250	ar- 10 21 \$	34,540	\$ 32,970	\$	32,970	\$
32,970 \$ 32,970 Ni Hydroxide \$	13,782	5 14,112 \$ 14,333	\$ 14,733		414 \$	,	18,016	\$ 18,416	\$	,	16,302
Co Oxide \$ 29,779 \$ 81,909	\$ 33,284	\$ 37,495	\$ 43,724	\$ 48,	,820 \$	53,537	\$ 58,172	\$	62,050	\$	65,564
Mn Hydroxide \$ \$ 1806	1,413 \$ 1,884	\$ 2,434	\$ 2,826	\$ 2,5	591 \$	2,355	\$ 2,041	\$	1,806	\$	1,806

### **Appendix 3: Battery-grade Materials Annual Production**

Production TPA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10- 21
Li Carbonate	-	4,793	4,793	4,793	4,793	4,793	4,793	4,793	4,793	4,793
Ni Hydroxide	-	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556
Co Oxide	-	2,603	2,603	2,603	2,603	2,603	2,603	2,603	2,603	2,603
Mn Hydroxide	-	2,335	2,335	2,335	2,335	2,335	2,335	2,335	2,335	2,335

### References:

Wood study: ASX 15th July 2024

PFS: ASX 1st November 2024

PEM Aachen University Benchmarking Study:

ASX 1st November 2024

Rho Motion Report: ASX 25th March 2024

BMI Report: ASX 19th February 2025

Model Answer Economic Modelling: ASX 19th February 2025





**CONTACT US** 

Dr Ebbe Dommisse, CEO

info@iondrive.com.au

Lewis Utting, Commercial Director

info@iondrive.com.au

Ray Ridge, CFO & Co-Sec

info@iondrive.com.au

ASX: ION iondrive.com.au