Thursday, 13 November 2025

RESEARCH REPORT

CORPORATE CONNECT

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

BUY

12-Month Target*	$0.087
Price	$0.045
Implied Return	93%

*Implied Return (diluted shares)

Investment Summary

Iondrive's technology platform fits neatly as a solution in 3 markets, Li-ion battery recycling, e-waste material recovery and Mixed Hydroxide Precipitate (MHP) from mining, utilising its proprietary Deep Eutectic Solvent (DES) technology.

- Exclusive access to a single technology platform that deploys in different market verticals with FID on pilot plant completed and funding in place
- Proprietary, high-recovery and high-efficiency low carbon footprint tech
- Federal grant-based early-stage funding model
- Diversified key geographic markets to spread risk and take advantage of regulatory environments – EU, US, Australia
- 3 commercial opportunities being pursued under binding MOUs

Business Model

Iondrive (ION) is in the early commercialisation stages with its proprietary DES technology and can pursue multiple paths. ION has near term funding opportunities from grants and partnerships in three primary urban mining use-cases in 3 regions, EU/US/Aus. The current business model includes scaling up the DES technology from bench testing to a pilot plant via partnerships w/ Colt Recycling (US), Livium (AUS) and in the PEM battery recycling consortium (EU). We expect ION to pursue speed-to-market opportunities using a Capex-lite style model. Revenue streams include potential gate fees to take on source material for processing, metal sales after DES processing and/or upgrading and Licensing/JV fees to integrate into the value chain with end market customers.

Key Recent Activity drives interest

ION has announced several key achievements recently which has made this story more immediately interesting as it has increased the optionality, improved the external validation, and accelerated the timeline to potential revenues. This includes the binding MOU with Colt Recycling in the US for utilising the DES platform on permanent magnets to extract critical Rare Earth Elements, and with Livium in Australia to commercialise its DES on e-waste, Li-ion black mass and rare earth elements. Ion also received a $3.9m government grant to co-fund its DES pilot plant for battery recycling, following the formalisation of the PEM consortium's governance and structure.

Valuation Summary

We initiate with a Speculative Buy rating and a 12-month target price of $0.087 per share (diluted), representing ~93% upside. Our target price is based on our risk-weighted mid-case SOTP valuation, with highest chance of success assigned to the US e-waste opportunity. Further value comes from risked potential in EV battery recycling, e-waste/solar panel, and MHP markets. Our upside case is $0.13/sh and downside case is $0.04/sh. Given the early-stage nature, position sizing should reflect high execution risk; however, the multiple use cases for the technology, strategic relevance of critical-mineral and rare earth element recycling, and a supportive grant/ESG backdrop creates an attractive opportunity and justifies exposure in a small-cap or cleantech portfolio.

Krista Walter
+61 400 897 559
Krista.walter@corporateconnect.com.au

Company Data

ASX code	ION
ASX price	$.045
Shares on issue	1187.6m
Market capitalisation	$52.4m
Cash on hand	~$4.02m[1]
12-month price range	$0.01 – $.07
ASX turnover (shares Nov 2025)	~4.75m

[1] Cash = Latest 4C balance 30 Sept 2025

Key Personnel

Ebbe Dommisse	CEO
Ray Ridge	CFO & Comp Secretary
Lewis Utting	Commercial Director
Michael McNeilly	Non-Exec Chairman

Major Institutional Shareholders

Strata Investment holdings	12.2%
Ilwella Pty Ltd	10.9%
Terra Capital	8.0%
Regal Funds Management	5.2%

[2] Corporate Presentation June 2025

Upcoming Activity

CSIRO graphite R&D results	End CY25
LCA Study results	End CY25
Pilot Plant Completion – Battery Rec.	1Q CY26
First Results REE extraction w/ e-waste	2Q CY26

Upside / Downside impacts

Upside Case	pCAM Sales EU 8 US e-waste plants
Downside Case	Delayed ramp up of sales in US and EU No MHP sales

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

RESEARCH REPORT

CORPORATE CONNECT

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

Table of Contents

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

Company Overview

Iondrive Limited is formerly the ASX listed company, Southern Gold Limited, which was rebranded in 2023 to align with its strategic focus on downstream battery elements and the clean energy transition. In October 2022, Southern Gold Limited (SAU:ASX) executed a Strategic Partnership Agreement (SPA) with University of Adelaide to identify commercialisation-ready technologies developed by the University. Subsequently, in 2023, the company acquired 100% of the issued capital of battery technology company Iondrive Technologies Pty Ltd (IDT) through the issue of 60 million fully paid ordinary shares. The Company then changed its name to Iondrive Ltd and changed its ASX symbol to ION, which became effective in November 2023.

Iondrive Ltd. (ION) (ASX: ION, FSE: UH40) is a technology commercialisation company with exclusive access to the University of Adelaide's highly ranked chemical engineering research on battery technologies, including DES processes in metals extraction and purification. Specifically, ION secured three University of Adelaide technology license agreements comprising non-flammable lithium-ion batteries, a new lithium battery recycling process, and high-performing aqueous batteries. ION subsequently divested its mining exploration licenses and is in the process of divesting its Korean partnership in Lithium mining (with KoBold) to focus on its battery technology platform in the urban mining space.

ION has consolidated its IP into a solvometallurgical battery recycling technology platform which utilises a proprietary Deep Eutectic Solvent (DES) process which can be modified to apply to the differing input compositions from different waste streams in urban mining.

Deep Eutectic Solvents have been used for various applications for over a decade, including catalytic, separation and electrochemical processes, however they are a relatively recent application as solvents in urban mining areas, with significant R&D ongoing globally, which is indicative of a growing market. ION's DES utilises a lower temperature process and has a lower carbon footprint than traditional hydrometallurgical technologies, making it attractive for sustainability and cost.

Highlights

ION is positioned to solve a critical problem with a large market opportunity, with expected scale-up timed for the peaks for initial end-of-use recycling. This opportunity is supported by favourable regulations in key markets to shore up energy security and improve sustainability in key processes.

Key highlights:

- **Market opportunity** - ~$14B EV battery recycling market growing at 18% CAGR, ~$91B e-waste / solar panel market (CAGR ~18%), ~$12 MHP market growing at over 12% CAGR
- **Technology** – ION DES achieves >95% recovery rates for lithium, nickel, cobalt and manganese from feedstock and has further application in recovering rare earth elements and precious metals from e-waste. The process solves key problems of traditional processes with its high selectivity with high recoveries and minimal waste
- **Sustainable Solution** – ION DES process offers reduced environmental impact and waste generation via bypass of incineration and toxic acids used in pyrometallurgical and hydrometallurgical processes. DES uses non-toxic, biodegradable solvents in a closed-loop process.
- **Regulatory Support** – commercialisation timeline aligns with EU regulations requiring recycled critical minerals by 2030, and the push by the EU and USA to reduce reliance on China, the DRC, and Indonesia while developing sovereign battery recycling and EV manufacturing capabilities. The recent USA support for developing a domestic supply chain by promoting domestic processing and recycling of rare earth materials. A key initiative includes the US-Australia framework for critical minerals (2025).
- **Team** – experienced executive team tailored to key regional markets and verticals
- **Timing** – expected scale up aligns with the expected first peak in Australian solar panel recycling (10–15-year life cycle), and expected first peak in EV battery recycling (~ 10–20-year life cycle) and US policy support for e-waste recycling
- **Commercialisation Roadmap and optionality** – Pilot plant scheduled for completion by end Q1C62025 with key partnerships to supply feedstock for black mass extraction (EU Aachen University PEM consortium), REE extraction from waste magnets (US Colt Recycling partnership) pilot plant in CY2026, precious metal extraction from solar panel e-waste and additional urban mining (Australia Livium partnership).
- **Supportive shareholder base** - includes ownership by board and management, institutional investors and retail shareholders participating in equity rounds
- **Validation and funding** – government grants, R&D tax rebate, industry lead in the ARC Battery Recycling Training Centre, EU PEM consortium grant

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

Li-ion Battery Technology and DES

End-of-life Batteries and e-waste are becoming a serious problem for environmental, security of supply chain and resource scarcity reasons. Improper battery and urban waste disposal can lead to soil and water pollution, posing risks to human health and ecosystems. Effective battery and e-waste recycling programs are essential for reducing environmental impacts and conserving valuable and scarce resources. The recycling of batteries and e-waste can recover materials such as Lithium, Cobalt, Nickel, Manganese, Silver, Silicon, and rare earth elements, mitigating reliance on mined resources or sourcing recovered materials from mainly specific Asian sources. Current recycling methods tend to be energy-intensive processes with low material recovery rates. ION is currently focussed on its proprietary Deep Eutectic Solvent (DES) technology for use in the recycling circular economy. Deep Eutectic Solvents, formed by combining different hydrogen bond acceptors (HBAs) and donors (HBDs), both dissolve and recover metals from battery components and differing black mass (feedstock) compositions.

ION's DES technology has been tested and subjected to a pre-feasibility study to understand its commercial potential. Its DES has been shown to have high recovery rates across critical minerals (Li, Ni, Co, Mn) of >95% as oxides/hydroxides. The process has 36% lower Capex than benchmark[1] and also Opex that is at least as low as other methods. The process is also less energy intensive than other methods.

The process has been proven at a bench scale and is being scaled up to run in a pilot plant which is currently being constructed in Australia. A concept study for a 10,000 tpa plant was completed in 2024[2].

Business Model and Operations

Iondrive is currently pursuing the commercialisation of its proprietary DES technology for use in urban mining. ION has consolidated its IP into a single technology platform that can be deployed in different market verticals. The key domains it is pursuing at present are battery recycling and e-waste industries, as well as mixed hydroxide precipitate (MHP) from mining companies. Within these areas, the company is focused on extraction of critical minerals, rare earth elements, and precious metals. Key industries targeted include solar panel recycling, e-waste magnet recycling, and end of life EV battery recycling. Each of these areas are constrained by supply of the critical minerals, rare earth elements and precious metals which are primarily mined and thus subject to geopolitical and environmental concerns in addition to competition for supply. ION will fit into the circular, integrated urban-mining value chain after the collection & mechanical shredding with its solvometallurgical DES refining, extraction and upgrading that produces battery-grade metals and elements. ION has pursued partnerships in order to gain access to feedstock on which to test its technology. Securing feedstock is key to the scale up of the platform and successful commercialisation.

The company is involved in three partnerships, one in the EU with an EV battery recycling consortium which will give access to black mass feedstock and offtakes for products, one in the US with Colt Recycling to get access to e-waste magnet feedstock to test rare earth extraction and one with an Australian-based recycler, Livium to access e-waste including solar panels.

Iondrive Verticals

1. [1] Benchmarking done by independent 3rd party PEM Motion in Germany
2. [2] Concept study was performed by Wood, a Perth-based EPC contractor

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

As the company gets results from testing via these partnerships and scales up to commercial plants, it can pursue different business models for full-scale commercial operations. The company has several options for commercialising the technology, we expect that a combination of a “capital-lite” and a “Technology-first” licensing & tolling model will be used in consortiums and partnerships. ION intends to commercialise its patented process by both building/operating regional hubs (Australia, US, EU) and licensing technology to battery manufacturers, gigafactories and recyclers, earning fees and metal off takes.

ION can utilise grants, R&D tax rebates and equity capital to offset its costs until reaching commercial sales. Recently, ION has received a $3.9 m Australian Government Modern Manufacturing Initiative grant as part of the government’s Industry Growth Program to offset the pilot-plant capex and undertook recent $6 m and $2 m placements to extend the cash runway.

ION have three primary revenue pathways, via gate fees, metal sales and licensing/JVs. In the September 2025 Company presentation, ION outlines its updated focus.

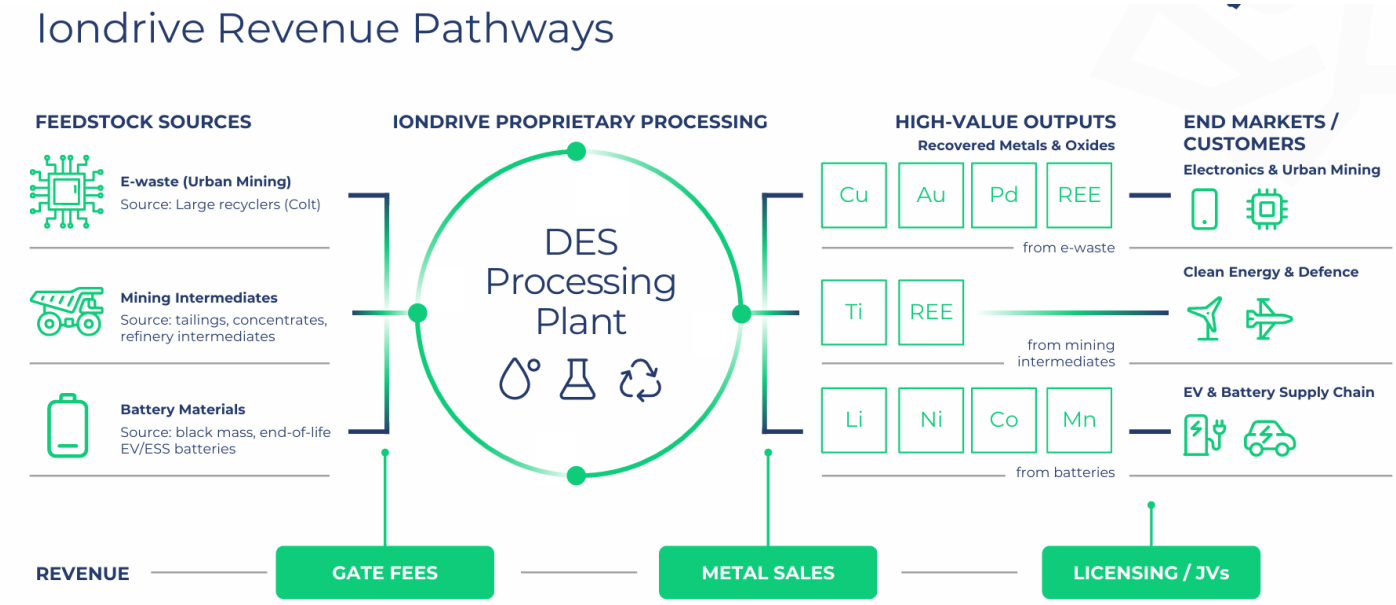


Figure 1: Iondrive Revenue Pathways (Source: Company Presentation Sept 2025)

ION’s initial primary market focus is the European EV battery recycling supply chain, with its part to take black mass (sourced for ~US$2,000/t) and recover valuable materials as metal salts (oxides and hydroxides) (~US$8,000/t) from black mass using its DES. ION’s secondary focus is to take those materials and upgrade them into precursers of cathode active material (pCAM) (sold for ~US$20,000/t). ION has established an entity in Europe, Iondrive EU GmbH, to support its expansion into that key market and to comply with local regulatory requirements as part of its operations there. ION’s recovery process results in immediately saleable products which sets them apart from other existing processes which produce chlorides, which then need further processing to metal salts.

ION announced in October 2025 that the Battery Recycling Consortium in Europe has committed to the next stage, which is the formal establishment of the consortium. The consortium is backed by a EUR2,068,000 grant from the Government of North Rhine-Westphalia (NRW). The participation enables ION to access black mass feedstock and services at no cost and provides non-dilutive funding covering 60% of European pilot costs. ION will focus on producing recycled metals from recycled batteries and further process those metals to pCAM material for downstream manufacturing of battery cells. The batteries produced from the recycled metals will be tested and validated by automotive OEMs.

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

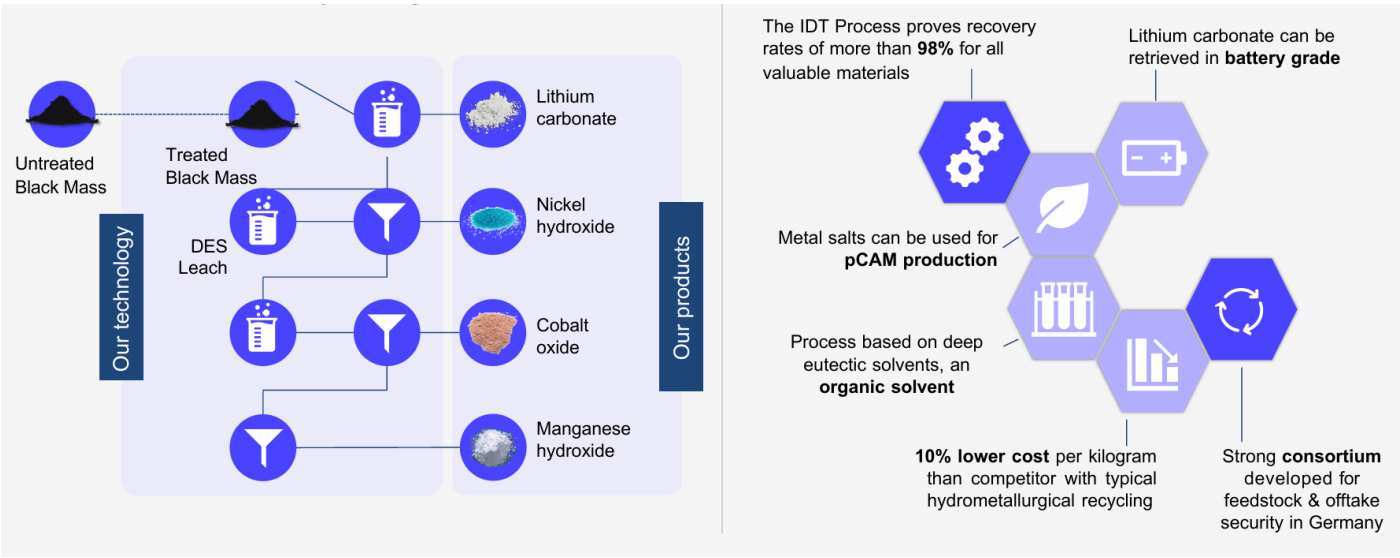


Figure 2: Iondrive's recycling solution (source: company presentation Nov 2024)

Iondrive Pilot Plant

ION is in the process of constructing its modular pilot plant at the University of Adelaide. The company has appointed Wave International as FEED and EPCM contractor for the development of the Pilot Plant. FID has been approved, and commissioning is expected to be completed by end 1QCY2026. Additionally, recent pre-pilot plant optimisation trials have demonstrated 100% recovery of lithium and aluminium from untreated black mass. The commissioning of the pilot plant will be a major milestone and position ION to be an early mover in commercialising DES for critical mineral recovery. Once running, the Pilot Plant will demonstrate the proprietary DES process at scale, on a continuous basis. The Pilot Plant is designed to process 10tpa of black mass and can be modified to process other urban mining feedstocks, including e-waste and solar panel waste. The data will quantify the recoveries, costs, and environmental footprint of the process which will enable further commercial discussions. The plant will run for 2 years and is mobile, so can be deployed to other worldwide locations. The plant is eligible to be reimbursed up to $3.9m under the Australian Government's Industry Growth Program for eligible construction and ancillary costs.

The plant is designed to be modular and mobile, and we expect will be designed as a series of shipping-style containers containing the necessary processing and measurement equipment as well as control and monitoring stations which can be integrated on site into existing brownfield recycling operations.

Management Team

We view the management team as critical to the success of a pre-revenue technology company. Previous success coupled with commercial and technological expertise, with connections to key markets, are essential aspects and a positive for successful scale-up of pre-commercial technologies. The ION management team and Board of Directors has been tailored to the company's clean technology and global commercialisation focus, with specific appointments enabling commercialisation goals in key markets as the company has evolved. We note significant depth of expertise in the management team, including:

ION appointed its current **CEO, Dr. Ebbe Dommisse** in Feb 2024 following his term as interim CEO for Iondrive Technologies. Dr. Dommisse has specific experience in commercialising early-stage disruptive innovations, e.g. biochemical based technology, and is a key asset in the Company's European Union consortium in end-of-life EV Battery Recycling and critical metals recovery.

Lewis Utting was appointed the Commercial Director for ION in November 2024. Mr Utting was previously a Managing Director and CEO of SciDev Ltd, an ASX-listed company that commercialised technologies in the water quality and water treatment industry. Mr. Utting was involved in the global scale-up of the technology.

The Board of Directors, including Hugo Schumann, Dr. Jack Hamilton, Michael McNeilly, Adam Slater, and Andrew Sissian and Commercial Advisor, Jeff Ritoe, all add specific experience, market connections and support for ION and its growth goals. Specific bio information on the Board and Management Team can be found from page 28 of this report.

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Partnerships and Government Support

ION has a number of partnerships and grants which contribute to further research and commercialisation initiatives. This is a critical step in the commercialisation pathway and is indicative of an external validation of its results to date. In establishing the company direction into battery recycling technologies, the first partnership was with the University of Adelaide and Prof. Shizhang Qiao and Prof. Zaiping Guo in the School of Chemical Engineering.

The University of Adelaide

Iondrive established a partnership with the University of Adelaide in November 2023. The original Strategic Partnership Agreement's (SPA) terms included that ION,

- Contribute at least $5m over three years to the University into battery R&D
- Hold exclusive rights to license and acquire the IP of 3 priority battery projects, including relevant patents
- Hold first right of refusal on any future unencumbered battery technologies developed by the University of Adelaide
- Develop 17 new projects in the field of battery recycling over the next five years (ARC Training Centre agreement)
- Develop new battery energy storage technologies over the next three years (ARC Laureate agreement)

ION has recently updated the SPA terms to extend and continue work with the research team at the University.

ION has also initiated a 2-year e-waste R&D project with the UoA to develop the DES technology platform for the recovery and valorisation of silver and silicon from end-of-life solar panels. ION will own the IP developed under the commercial research agreement.

MoU with TNO

In October 2024, ION signed a non-binding Memorandum of Understanding (MOU) with the Netherlands Organisation for Applied Scientific Research (TNO) to enhance the deployment of its DES technology in Northwestern Europe. TNO is known for its research in sustainable technologies, playing a crucial role in advancing the battery ecosystem in the Netherlands (source: Company announcement 9 Oct 2024). The agreement was focussed on validating ION's DES technology for the development of sustainable battery material supply chains and alignment with EU regulatory standards.

Collaboration with PEM RWTH Aachen University/PEM Motion

In August 2024, ION established a partnership with the Production Engineering of E-Mobility Components (PEM) department at RWTH Aachen University to integrate DES-based recycled materials into battery cell production and validate performance across the battery recycling value chain. This is a longer-term association which is aimed at the application and recovery of critical metals from black mass. A consortium has been created including automotive OEMs, battery manufacturers, material processors and recyclers to address the challenges in complying with the new battery recycling regulations in the EU which require a certain % of recycled materials in new batteries and restrict the amount of black mass being sent out of the EU. As part of this collaboration, ION established a local entity, Iondrive EU GmbH, to participate in the consortium. The consortium applied for a EUR2,068,000 grant over a three-year term in which ION would receive EUR650,000 of the grant and will match a funding commitment by contributing EUR130,000 in addition over the 3-year period. ION announced the consortium received the grant (ASX announcement 24 October 2025) and the signing of a Cooperation Agreement, which formalises the consortium's governance and structure. Additional Participants in the consortium include:

- **Accurec Recycling GmbH** – a German recycling company specialising in battery and electronic waste treatment. Accurec will contribute practical expertise in recycling processes including battery dismantling and mechanical processing to produce black mass to supply to ION
- **NEUMAN & ESSER Process Technology GmbH** – the company provides advanced process technology and equipment, including grinding, classification and separation systems widely used in industrial recycling. The company will contribute process engineering expertise and advanced process technology equipment.
- **Constantia Patz GmbH of Constantia Flexibles International GmbH** – a global packaging and materials group with expertise in lightweight, recyclable flexible packaging solutions. The company will bring knowledge of material design and recovery pathways to help products can be integrated into sustainable manufacturing chains.
- **PEM RWTH Aachen University** – will lead the consortium and receive pCAM material from ION and further process to CAM material in its existing pilot plant – to be used for battery cell manufacturing.
- Major European automotive OEMS – expected to join as associate members once initial milestones are achieved

This collaboration represents a key growth opportunity for ION, positioned in a rising market with strong regulatory support and a focus on sustainable and circular battery supply chains. ION exclusively retains any improvements to its DES technology gained through consortium activities. We view the formalisation of this consortium as a key milestone in ION's commercialisation roadmap.

ARC Battery Recycling Initiative

The Australian Research Council (ARC) Training Centre for Battery Recycling was created to provide industry-centric solutions for the problems associated with battery recycling. These problems include spent battery collection, transportation, storage, refining materials, and reuse. The Centre is led by Professor Shizhang Qiao, who also leads ION's R&D initiatives at the University of Adelaide. ION is the primary industry partner for the Center, with Dr. Ebbe Dommisse, Iondrive CEO, participating as a partner investigator. The Australian Research Council awarded a $5m grant to the University of Adelaide to establish the centre.

Binding MOU with Colt Recycling

In September 2025, ION executed a binding agreement with Colt Recycling LLC to supply materials for evaluation using ION's DES technology. In this agreement, Colt will provide mixed e-waste feedstock to ION, enabling the company to evaluate the recovery of REEs using its technology. This agreement enables ION to begin the analysis of its technology platform on recovering REE's from e-waste and entry into a new market, the USA, if successful. Colt Recycling is one of North America's largest e-waste recycling providers and is a subsidiary of Elemental Holding Group, a Fortune 500 global circular economy leader with operations in more than 20 countries. Colt currently processes ~40m pounds of e-waste annually. ION has completed the first phase of engineering on its technical design and has also commissioned techno-economic modelling by ProProcess Modular which has been finalised. The results are being used to prepare detailed economic scenarios to form the next phase of engineering work required for its pilot plant design.

Binding Term Sheet with Livium

In September 2025, ION executed a binding Term Sheet with Livium Limited (ASX:LIT) to commercialise its DES technology in Australia. LIT will provide EOL solar panels, Li-ion battery black mass, rare earths and other samples for evaluation. LIT will bring to the deal its national recycling network, which lays out a direct path for scaleup in Australia across battery, solar and e-waste markets. The two companies will work toward binding commercial agreements within 21 months. This is a significant new development which should provide test results, commercial opportunities, and revenue opportunities for the company and therefore significant activity news flow going forward. LIT is supplying processed solar panel feedstock for ION's e-waste project to recover silver and silicon.

CSIRO-backed graphite project

ION commenced a new CSIRO-backed R&D project in the 1HFY26 (ASX Announcement 29 Oct 2025) to upgrade recovered graphite from spent lithium-ion batteries into battery-grade anode material, opening a potential new market to the company and its DES platform. Graphite is typically destroyed in Li-ion battery recycling processes, however with graphite recovery added to its process it could add an additional revenue stream of high value anode-grade material (~$8,000/t). The project is scheduled for completion by Nov 2025, and if successful, will give ION exclusive global rights to the resulting IP on a royalty-free basis.

Competitive Landscape and Market Positioning

Many innovative metal and battery recycling technologies, including DES, are being developed worldwide. Universities as well as startups are involved in furthering these technologies. The typical commercialisation pathway is from research to pilot plant, demonstration plant and then commercial scale plant (10,000 tpa). Venture capital is funding multiple companies which can be used as comparables or peers to ION, the companies are also spin outs from Universities.

- Cylib (founded in 2022) – utilises a novel Li extraction method, combined with traditional extraction methods for Co, Ni and Mn
  - Cylib raised a series A in May 2024 to fund an industrial scale plant which valued the company at between ~$350m to $550m (Source: ION company reports)
- Ascend Elements (founded in 2015) – utilises a hydrometallurgical process in battery recycling
  - Has most recently raised a Series D round for Capacity expansion in Sep 2023 which valued the company at ~$1250m – 2250m
  - Prior capital raises funded the first 10000tpa plant in Apr 21 valuing the company at ~$100m and two additional 10,000 tpa plants in Aug 2022 valuing the company at ~A$500m-900m
- DEScycle (founded in 2018) – uses a similar DES process to extract precious metals from electronic waste
  - Raised a Seed round in April 2023 for a Design pilot valuing the company at ~$50m and raised a Series A round for a Demo plant in Nov 2024, valuing the company at ~$80-120m

A summary of additional ASX-listed peers in this space include: Metallium (ASX: MTM) and Locksley Resources (ASX:), which have mining operations but also are looking at new technologies for critical mineral production from e-waste. Locksley Resources is an explorer focused on critical minerals and REEs in the USA and copper and gold in Australia. As a comparator, Locksley Resources is also advancing a DES technology in collaboration with Rice University. The technology is currently at the laboratory-scale and is focussed on the extraction and recovery of antimony from stibnite ores and concentrates.

Metallium is utilising Flash Joule Heating which is used to improve the recovery of metals from ores and improve the efficiency of metal extraction from e-waste and scrap metals such as recycled batteries. The process creates significant heat in a material through the application of a direct current which results in metals forming volatile chlorides and rare earth oxides to convert to stable oxychlorides (Source: MTM company reports incl 15 Oct 25). The technology was developed at Rice University in Texas, USA and Metallium has secured a licensing agreement related to metal recovery from e-waste and ores.

Table 1: Global Peers (source: Refinitiv)

COMPANY	ASX Code	DESCRIPTION
Livium	LIT.AX	Livium Ltd., formerly Lithium Australia Limited, is an Australia-based company, which operates battery recycling, produces critical battery material lithium ferro phosphate (LFP), and develops processing technology to produce lithium ferro phosphate, and has developed a lithium extraction technology. Its Lithium Chemicals segment consists of research and development of a suite of extraction and refining technologies for the recovery of lithium chemicals from various materials, including spodumene, lithium micas and end of life lithium-ion batteries. Its Battery Materials segment provides research and development of advanced, battery materials, including lithium ferro phosphate and lithium manganese ferro phosphate. Its Battery Recycling segment offers research and development of processing technology for mixed-battery recycling, as well as the sale of recovered energy metals. The Company shreds and recycles all types of end-of-life batteries at its Melbourne facilities. LIV will be targeting the rare earths recycling market (announced 11 June 2025)
Primobius	SMS Group	Primobius (part of SMS Group GmbH) is commercializing Lithium-ion Battery (LiB) Recycling technology. It is providing recycling service as principal in Germany and commenced plant supply and licensing activities as technology partner to Mercedes-Benz. Primobius' technology focuses on recovering materials like cobalt, nickel, and rare earths from spent batteries. They are also working on a recycling project specifically for rare earth magnets.
Urban Mining Company	UMC (Private)	UMC specializes in the recycling of rare earth magnets, particularly neodymium-iron-boron (NdFeB) magnets, which are used in electric vehicles, wind turbines, and other high-tech applications. Their patented recycling process extracts rare earth materials from end-of-life products like motors and hard drives. Privately held.
REEcycle	Private	REEcycle has developed a patented method to recover rare earth elements from electronic waste, particularly from discarded permanent magnets. Their focus is on sustainable recovery of neodymium and dysprosium, which are essential in high-performance electronics and clean energy technologies. Founded in 2012 at the University of Houston. The company's chemist, Dr. Samarasekere, became interested in recycling rare earth elements after reading Department of Energy reports on critical materials for future energy.
Proterial Ltd		Proterial has been involved in the recycling of rare earth magnets used in motors and generators as part of its larger business. They focus on reducing the need for newly mined rare earths by developing efficient methods to recycle and reuse magnets.
Momentum Technologies	Private	Momentum Technologies has developed a process to recover rare earth elements from discarded electronics and lithium-ion batteries. They work on closed-loop recycling, where REEs can be recovered and reintroduced into the supply chain without the need for virgin mining. Founded in 2016, this company specializes in mining, including rare earth elements, urban mining, recycling, and e-waste
Geomega Resources	GMA.V	Geomega is working on a proprietary process called ISR (Innord Separation Technology) that recycles rare earth elements from mining tailings and waste streams. They aim to recover REEs in an environmentally sustainable way, focusing on magnetic materials used in motors, wind turbines, and electronic products.
Umicore	UMI.BR	Umicore is a global leader in materials technology and recycling. They have experience in recycling precious and rare metals, including rare earth elements used in automotive catalysts and electronic devices.

Li-Cycle Holdings (acquired by Glencore 8/8/25)	LICY.NYSE	Li-Cycle Holdings (formerly NYSE: LICY) was one of the top lithium-ion battery (LIB) recyclers in North America. It also just announced the start of its first main processing line in Germany, with a second line expected later this year. According to the company, "Each main line has the capacity to process up to 10,000 tonnes of lithium-ion battery material per year. With an additional 10,000 tonnes of ancillary capacity planned, the facility is expected to have a total capacity of 30,000 tonnes per year, making the Germany Spoke the largest Spoke in Li-Cycle's current portfolio and one of the largest facilities of its kind on the continent." In addition, the U.S. Department of Energy (DOE) announced a conditional commitment to Li-Cycle for a $375 million loan to the company. All in an effort to help finance the construction of its LIB resource recovery facility in North America, as noted by Energy.gov. Li-Cycle has been acquired by Glencore Plc in August 2025.
RecycLiCo Battery Materials	AMYZF.OTC	The company intends to take cathode scrap and turn it into a black mass. From here, it'll ultimately produce battery precursors.
Ganfeng Lithium	GNENY.OTC	Ganfeng Lithium (OTCMKTS: GNENY) is one of the largest lithium producers in the world and the largest in China. Its operations span throughout Africa, Australia, Argentina, Ireland, and Mexico giving it a vast, diversified network overall. It's a network that also includes battery recycling and a recycling project underway in Jiangxi province.
American Battery Technology	ABAT.NDQ	Have pioneered a closed-loop battery recycling process that separates and recovers critical materials from end-of-life batteries and purifies these battery metals to the same, or higher, quality specifications than conventional materials sourced from virgin mining operations. Their process is highly streamlined and efficient with potential to process materials within a very short residence time.
Redwood Materials		Recycling and refining lithium-ion batteries to produce anode and cathode battery components for domestic battery cell manufacturers
Ascend Elements		Processing lithium-ion batteries through hydro process recycling and direct recycling to produce cathode active materials

Industry Growth Opportunities and Markets

Urban mining is the process of recovering valuable materials, such as metals and rare earth elements, from waste generated in urban areas. It involves the extraction and recycling of resources from various types of waste including electronic waste (e-waste), construction materials and other refuse. Recycling of the materials back into the supply chain forms part of the circular economy and minimizes the impacts of traditional mining through an alternate source of supply.

The global urban mining market is growing through an increased demand for sustainable development, supported by environmental regulations, sustainable and responsible investors, and public interest as well as a need for the metals and resources extracted.

The longer term, larger market opportunity lies in the EV battery recycling market. ION's technology gives multiple opportunities in this market, from recovery of battery metals as salts from black mass, to upgrading of the battery metals to pCAM for closed loop recycling. The EV battery recycling sector is poised for exponential growth at ~18% CAGR (source: company reports), driven by surging EV adoption, regulatory mandates and technological innovation.

EV batteries are complex, with different and evolving chemistries and design. Producing EV batteries requires input of metals, which currently are primarily mined. The concentration for some of the critical metals needed are majority controlled by a few countries, including Indonesia and the DRC for nickel and cobalt respectively. Access to the battery metals has become a geopolitical concern, sparking regulations and investment in different regions to encourage alternatives.

As the market for Li-ion batteries and complex electronics grows, the need for a secure supply of battery metals, rare earth elements and precious metals also grows.

The global Li-ion battery market, from mining through to recycling, could grow by over 30% annually from 2022-2030, reaching a value of more than $400 billion (Battery 2030: Resilient, sustainable, and circular, Mckinsey.com acc. 25 Oct 25). Current global recycling capacity stands near 1.6m tpa, with China accounting for ~70% of global LIB recycling capacity. Europe and North America are rapidly scaling hydrometallurgical and mechanical recycling facilities to retain critical materials and recycling capabilities within the region rather than exporting and reimporting materials at the different stages.

e-waste, Permanent Magnets and Rare Earths Recovery

The rare earths market is growing, with market size in 2023 of $3.74 B and expected to grow to USD 8.14 B by 2032 (10.2% CAGR). Asia held the largest market share of ~86% of the rare earth market in 2023. Rare Earth recovery from e-waste recycling

is becoming increasingly important due to growing demand, limited natural deposits, and geopolitical risks associated with their extraction.

Colt Recycling is partnering with ION to test its Deep Eutectic Solvent (DES) technology to recover REEs from e-waste. This research aims to unlock significant value from e-waste streams, which are currently under-recycled, and to create new pathways for returning these critical materials to supply chains.

e-waste incl. Solar Panel recycling

E-waste is a large component of Urban Mining. With the use of electronics in consumer products, as well as industrial, there are a wide area of valuable metals and minerals that can be recovered with different processes. To date, ION has been focussed on magnets and batteries with its DES recovery technology and associated intellectual property. Recently, ION has launched a solar panel recycling initiative targeting the recovery of high-purity silver and silicon from end-of-life photovoltaic cells (ASX Announcement 10 Nov 2025).

In Australia, solar panels make up a significant part of the e-waste opportunities, with Silicon and Silver valuable minerals that could be recovered. As the life of solar panels are currently 25 years, with the other components needing replacing in 10-15 years, there is already a significant market opportunity for recycling. With silver representing nearly half the recoverable value of a solar panel, there is a potential A$1B market opportunity in recoverable materials including silver, silicon, aluminium and glass, as Australia's waste stream is forecast to surpass 100,000 tonnes annually by 2030 (Company Report 10 Nov 2025 ASX).

ION is currently doing R&D work on recycling end-of-life solar panels in partnership with the University of Adelaide and a commercial laboratory in the UK. The program focuses on separating and recovering high-purity silver and silicon from photovoltaic cells using ION DES. The program is aimed at solving a major technical challenge in the current recycling market, the separation step, enabling the recovered silicon to be purified to ultra-high grades.

ION is currently exploring the commercial potential of this market under two programs, Analysis with a commercial lab in the UK and via development work with the University of Adelaide. Feedstock for evaluation has been secured from commercial operators in Australia and Taiwan. With ION's recently signed partnership MoU with Livium, the Australian solar panel and e-waste recycling market will be further explored for commercial potential.

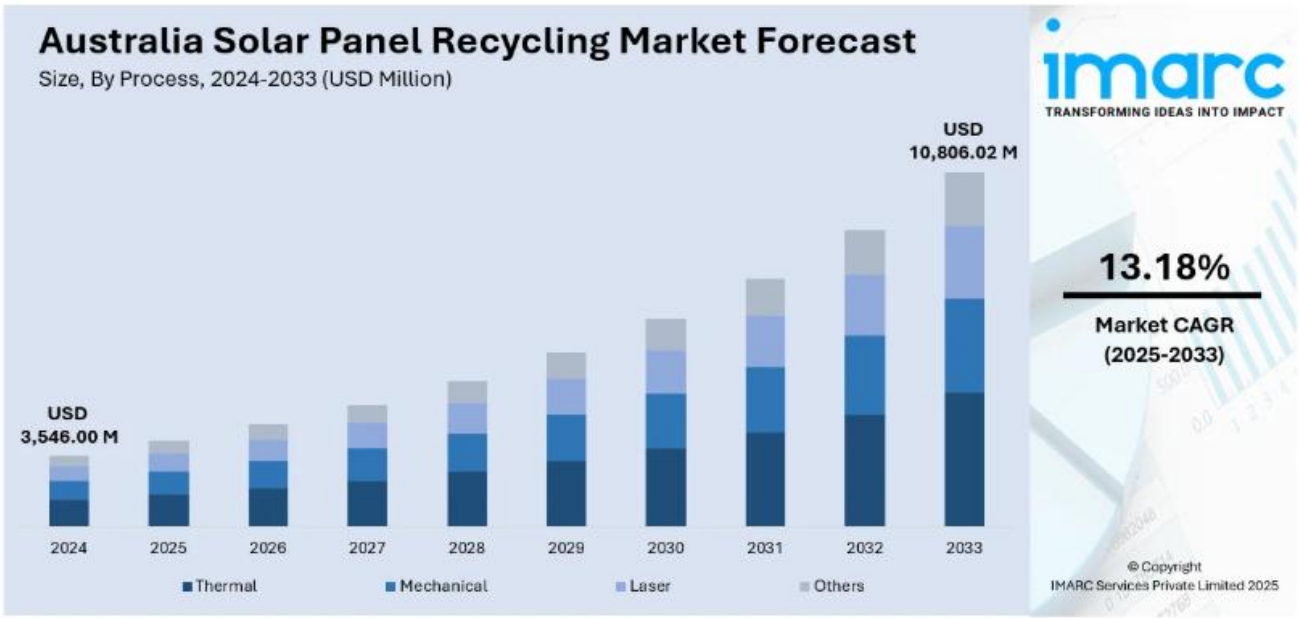


Figure 4: Australian solar panel recycling market forecast (Australia Solar Panel Recycling Market Size, IMARC)

Mixed Hydroxide Precipitate (MHP)

MHP is a critical intermediate product in the battery material supply chain, containing both nickel and cobalt hydroxides, that is produced by leaching ore from mining operations. The material serves as a key feedstock for high-nickel cathode active materials

essential to electric vehicle battery production. The strategic importance of MHP has grown significantly with the expansion of the global EV market and the push for batteries with higher energy density.

Key Characteristics:

- Composition - typically contains 35-40% nickel and 2-3% cobalt in hydroxide form
- Physical Properties: Fine powder with high moisture content (approximately 50-60%)
- Production Process: Precipitation from leach solution using magnesia or lime primarily from major mining operations in Indonesia, Philippines, Australia and China
- Value chain position: bridge between raw ore and battery precursor materials

MHP has gained significant importance as a feedstock for battery cathode materials, particularly as the industry shifts toward high-nickel formulations for greater energy density. Its dual nickel-cobalt content makes it particularly valuable for NMC (nickel manganese cobalt) and NCA (nickel cobalt aluminium) battery chemistries.

ION is evaluating its DES technology to convert MHP directly by first separating Ni and Co before converting them into battery grade materials, in a more cost effective and environmentally sustainable way as a potential feedstock for pCAM manufacturing.

The MHP from mining market is ~US$12B in size and growing at a CAGR of 12%, presenting a significant opportunity.

EV Battery recycling and metals recovery[3]

The longer term, larger market opportunity lies in the EV battery recycling market. Significantly, China has monopolised much of the supply chain for batteries (Source: China's hold on the lithium-ion battery supply chain, Journal of Power Sources Advances Vol 32, 4/25). Recycling of batteries across the full life cycle enables sovereign capabilities in critical minerals and the end use. A key driver of the battery recycling industry in the EU is the development of the recovery and re-use of critical materials within the region to maintain supply security.

ION's technology gives multiple opportunities in this market, from recovery of battery metals from black mass, to upgrading of the battery metals to hydroxides for closed loop recycling. The EV battery recycling sector is poised for exponential growth, driven by rising EV adoption, regulatory mandates and technological innovation. ION's opportunity in this market comes from its early participation in the PEM Consortium, which aims to utilise ION's battery recycling technology in its pilot plant as it looks to demonstrate a closed-loop circular economy in EV batteries.

Key attractions to the end of life (EOL) EV battery recycling opportunity include:

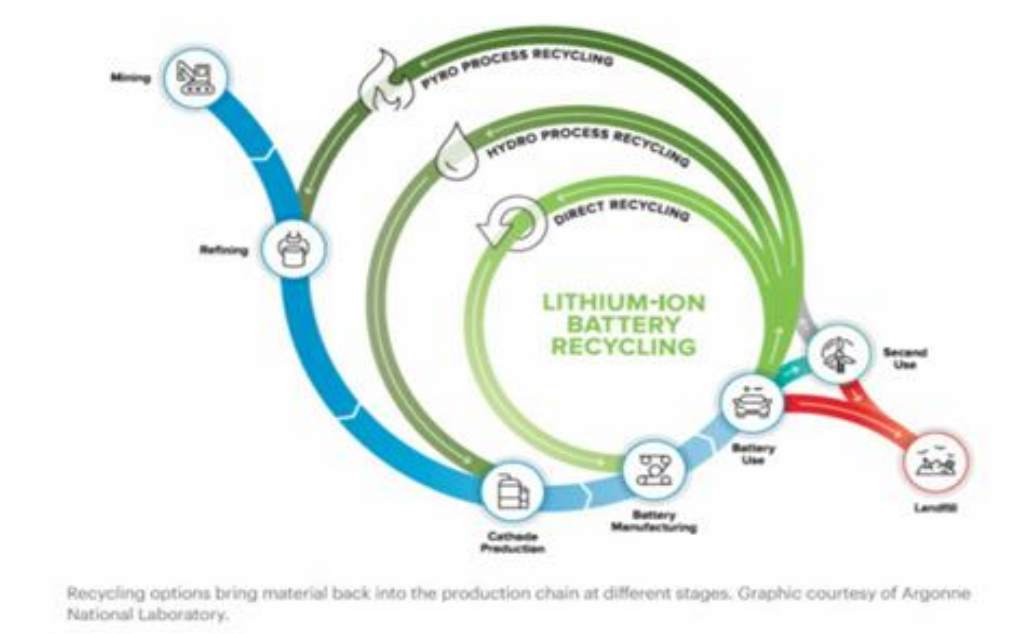
1. Increasing demand
2. Market growth
3. Technological advancements enabling higher recovery rates, lower greenhouse gas footprints and improving economics
4. Regulatory and Policy support
5. Environmental impact reduction via a circular economy

With the expected significant growth of the global Li-ion battery and complex electronics markets over the next two decades, regions are building capacity across the entire sustainable supply chain, from sourcing of critical minerals, precious metals and rare earth elements to recycling capability. Gaining access to feedstock, or black mass, becomes critical for recyclers to then supply the needed materials for new batteries and complex electronics.

Current global sustainable battery recycling capacity stands near 1.6m tpa, with China accounting for ~70% of global LIB recycling capacity. Europe and North America are rapidly scaling hydrometallurgical and mechanical recycling facilities to retain critical materials in the region.

There are three common methods in battery recycling, and a pre-processing step

1. Mechanical Recycling (pre-step),
2. Pyrometallurgical recycling,
3. Hydrometallurgical recycling, and
4. Direct Recycling



Recycling options bring material back into the production chain at different stages. Graphic courtesy of Argonne National Laboratory.

Figure 5: Lithium-Ion Battery Recycling lifecycle and methods (Source: WardsAuto EY Dec 2023)

The most common recycling method for Li-ion batteries is **mechanical recycling**, which is also considered a pre-processing step. This method involves disassembling and shredding battery packs to separate the various components and recover various components. Once disassembled the components are shredded into smaller pieces using mechanical shredders or crushers. This smaller size facilitates further processing and material recovery.

The shredded material undergoes size reduction processes such as grinding or milling to achieve uniform particle sizes. Sorting via sieving or magnetic separation is utilised to separate different components based on their size, density and magnetic properties.

Electrode materials containing Li, Co, Ni, and other metals are separated from binders and other components and then further processed and refined to improve purity levels for reuse in manufacturing new batteries or other applications.

Mechanical processing has several drawbacks:

- Recovered material purity may be lower than other methods
- Some electrolytes and binders may be difficult to separate from electrode materials
- Mechanical recycling processes require significant energy input impacting the overall environmental footprint

Pyrometallurgical recycling involves the use of high-temperature processes to decompose battery components and extract metals. This type of recycling normally involves several stages including disassembly of battery cells, then sorting and shredding. The shredded battery materials are subjected to high temperatures in a smelting furnace. The furnace melts the materials, allowing for the separation into different components based on their melting points. Metals including Li, Co, Ni, and Mn are recovered from the molten mass through techniques such as settling, flotation or chemical reactions. The metals then undergo further purification to achieve desired levels.

Pyrometallurgical recycling has several drawbacks:

- Utilises significant energy consumption to achieve the required high temperatures
- The process can generate greenhouse gases and hazardous fumes
- Overall material recovery rates can be lowered during the smelting process – particularly for Li

The third method is **hydrometallurgical recycling,** involving the use of aqueous solutions and chemical processes to selectively dissolve and recover metals from battery components. Shredded battery material is subjected to leaching, where it is immersed in an aqueous solution containing acids or other chemical reagents. Different leaching reagents are utilised depending on the metal to be recovered. Other agents are added to improve metal recovery efficiency and to enhance selectivity. After leaching, the resulting

slurry undergoes solid-liquid separation to recover metals and separate other residues. Metals dissolved in the leach solution are recovered through precipitation, solvent extraction or electrodeposition. The recovered metals may go through additional purification and refining to achieve desired levels.

Hydrometallurgical recycling has some disadvantages

- Reagents are consumed in the process and produce waste
- Significant amounts of wastewater are generated in treating the waste products
- The process is complex and therefore expensive
- The Residues contain hazardous materials and the need for treatment or other methods of safe disposal

Direct Recycling aims to recover valuable materials without preprocessing or dismantling steps. Direct recycling focuses on reusing intact battery components in a closed-loop system. Batteries that are suitable for reuse are reconditioned and prepared for reuse. Reconditioned batteries are repurposed for various applications such as energy storage systems, stationary power backup, or grid stabilization. Alternately, selective replacement of individual components may occur where individual components are degraded beyond reuse. Components that can't be reused go through traditional recycling methods to recover metals and materials.

State of the Art Recycling Methods

Many new approaches are being explored in Li-ion battery recycling to improve existing methods. They are at varying stages in the commercialisation process, including ION's proprietary solvometallurgical DES.

- Microwave-assisted hydrometallurgy
- Selective dissolution
- Ion exchange
- Membrane methods
- Electrochemical recycling techniques like electrodeposition, electrowinning, electrodialysis, electrochemical pumping method and electrochemical dissolution
- Supercritical fluid extraction
- Biotechnological approaches that use biomass, microorganisms, or enzymes
- DES methods across the battery recycling chain
  - Collection and sorting, discharge and dismantling, cathode separation, recovery of materials, purification and refining, proper treatment and disposal of by-products and waste, quality control and certification of recovered materials, and production of new electrodes

Within DES methods, ION has focused on the DES-assisted recycling of cathode active materials – Li, Co, Ni, and Mn. Key characteristics of this method include,

- DESs can be tailored for the composition of the cathode and the metals being recovered potentially leading to higher selectivity and recovery efficiency
- DESs are formulated from benign organic solvents, and in ION's case are also biodegradable
- DESs operate at lower temperature compared to traditional leaching methods, reducing energy consumption and operating costs
- DES-based leaching technology use closed-loop processes that recover and recycle the solvents (i.e. not reagents that are consumed in the process) and therefore produces less waste than conventional methods

ION is focussed on material recovery and separation as oxide and hydroxides (metal salts) with a secondary focus on upgrading to precursor (pCAM) to battery grade cathode materials, with demand expecting to increase significantly over the next ten years for this material (Figure 6).

3. [3](Source: Reshaping the future of battery waste: Deep eutectic solvents in Li-ion battery recycling - ScienceDirect)

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

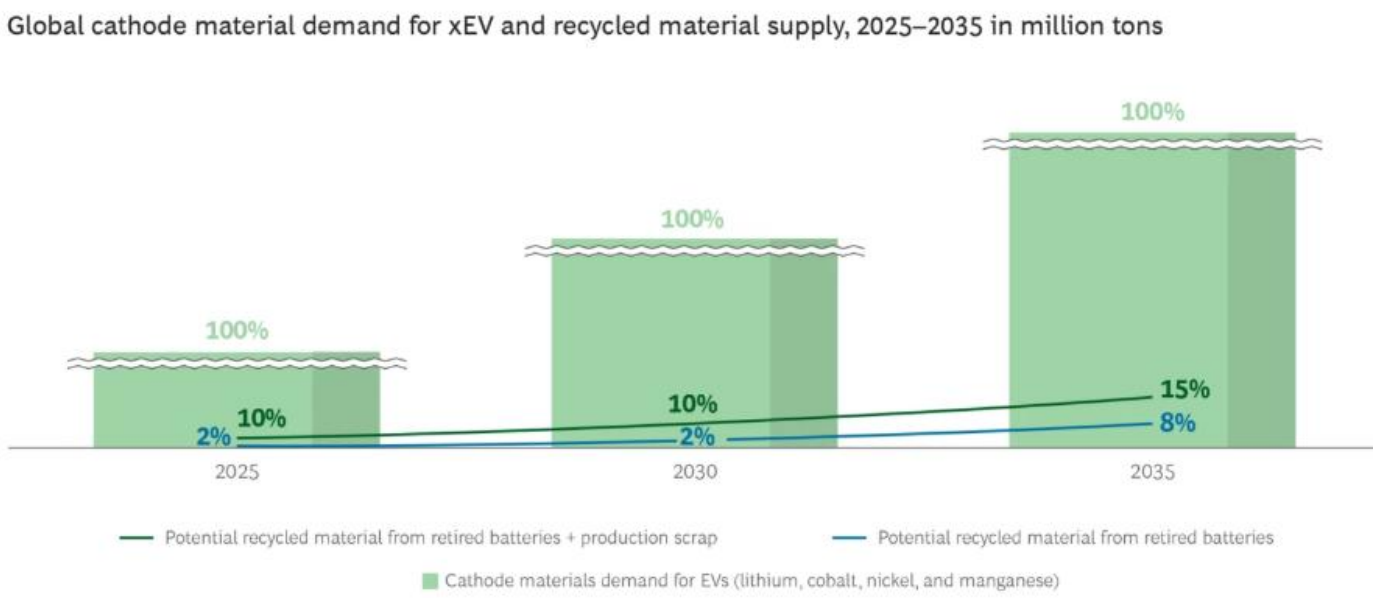


Figure 1 Recycled EV material supply and Cathode material demand is projected to increase in the Mid-2030's

Source: Striking Gold with EV Battery Recycling, BCG report, 2023

ION is positioned to take advantage of this situation, given its early positioning as the IP and technology provider for the two critical steps of recovery of Li, Co, Ni, and Mn from black mass into oxides and hydroxides, and the upgrading to precursors of battery-grade cathode materials (pCAM) as seen in Figure 8 illustrating the PEM consortium EV battery lifecycle. There is a value step difference between the two stages, with ION currently anticipating a basket value for the ION metal salts (ie. Li_2CO_3, $NiOH_2$, CoO, $MnOH_2$) of ~US$8,000/t increasing to ~US$20,000/t for the upgraded pCAM basket.

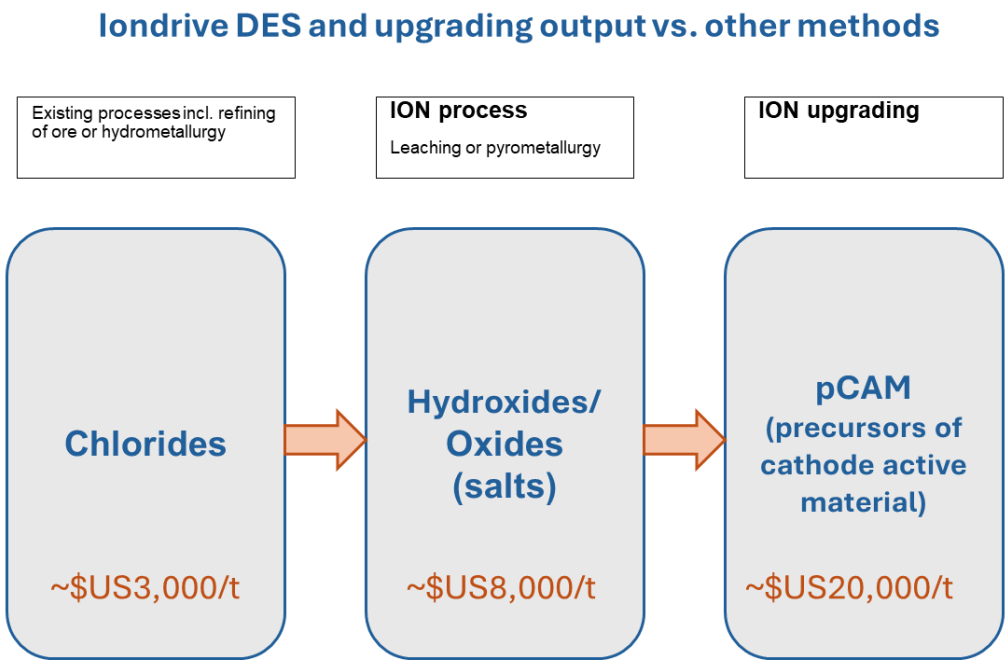


Figure 7: Battery recycling outputs **Source: Corporate Connect based on company reports**

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

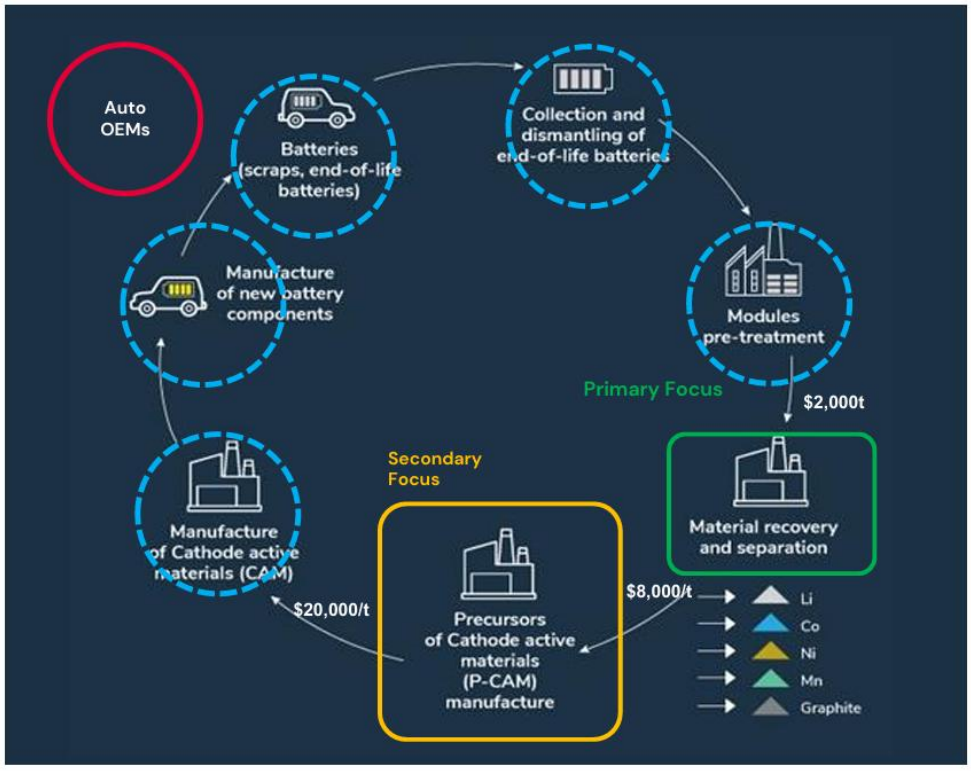


Figure 8: EU Consortium and ION parts of the circle (Green, Yellow) , Source: ION Investor Presentation Nov 2024

ION needs a supply of black mass as feedstock to its DES process, which is a complex market itself.

Black Mass Market

Black mass is a powdered material derived from lithium-ion batteries and scrap generated at battery manufacturing facilities. It contains metals including lithium, cobalt, manganese and nickel. Considered part of the circular economy as a part of the EV market lifecycle due to its capacity to be recycled into new batteries after recovering the metals and upgrading them to battery quality.

As of April 2025, the average market price for black mass was ~US$6.37/kg, an increase due to the rising prices of cobalt and nickel. Lithium prices are currently stable at a lower level than historical due to oversupply. This offsets the other prices, tending to keep black mass prices relatively stable. Other factors impacting black mass pricing are geopolitical factors such as export restrictions.

Black mass demand is expected to be 11M tpa by 2040, with a significant processing deficit in the EU of ~75%, the excess is currently exported to Asia for processing and then the EU must purchase back the more expensive extracted metals and new batteries.

Current battery and e-waste recyclers outside of China and Indonesia are primarily focussed on this initial recycling stage, during which depleted batteries undergo discharging, disassembly, and mechanical processing to produce a black mass. Less than half the existing recyclers can recover battery raw materials as of 2023 (Reshaping the future of battery waste: Deep eutectic solvents in Li-ion battery recycling - ScienceDirect). The EU is putting in place funding opportunities and regulations to support the industry and drive the growth of the recycling chain in Europe. ION will benefit from the drive to keep the full battery recycling chain within the EU, enabling the sourcing of black mass feedstock from European mechanical processors to the sale of the pCAM and CAM back to European battery manufacturers.

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

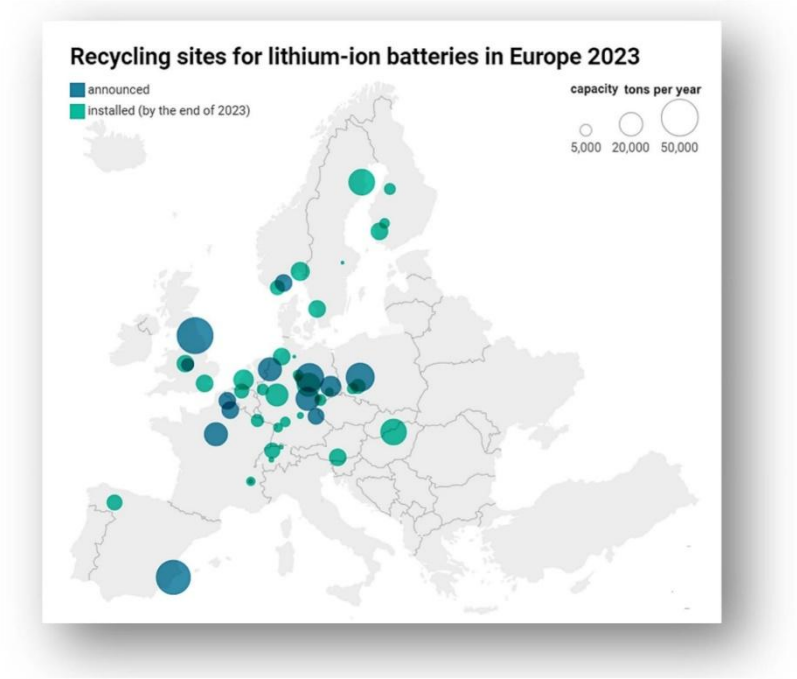


Figure 9: Existing and announced recycling sites for Li-ion batteries in Europe (as of May 2023) Source: Reshaping the future of battery waste: Deep eutectic solvents in Li-ion battery recycling - ScienceDirect

Overall, there are several factors that are driving the EV Battery recycling industry.

- **Technological**
  - there is a shift from high-temp pyrometallurgy to closed-loop hydrometallurgy (higher Li recovery, lower emissions)
  - Rising Ni & Co content/carbonate pricing is positive for recovery economics
  - Critical mineral lists in the US, EU and Australia are driving value-add upgrading such as ION's revenue-uplift from further processing of pCAM output to battery grade material
  - Further investment is supporting the commercialisation of new technologies, including DES

- **Demand-side**
  - Government EV mandates for increased use of EVs align with a wave of spent battery stock entering EOL from ~2026 onward
  - Consumer behaviour has shifted further toward ESG-conscious and recycled content in technology purchases
- **Macroeconomic**
  - Commodity price volatility improves recycling's relative economics and encourages off-take agreements
  - Energy costs are less exposed to price spikes with DES methods vs. high energy smelting

ION has measured its overall markets and identified key entry points into the growing market for metals via its key verticals of IP application, Battery Recycling, MHP, and e-waste.

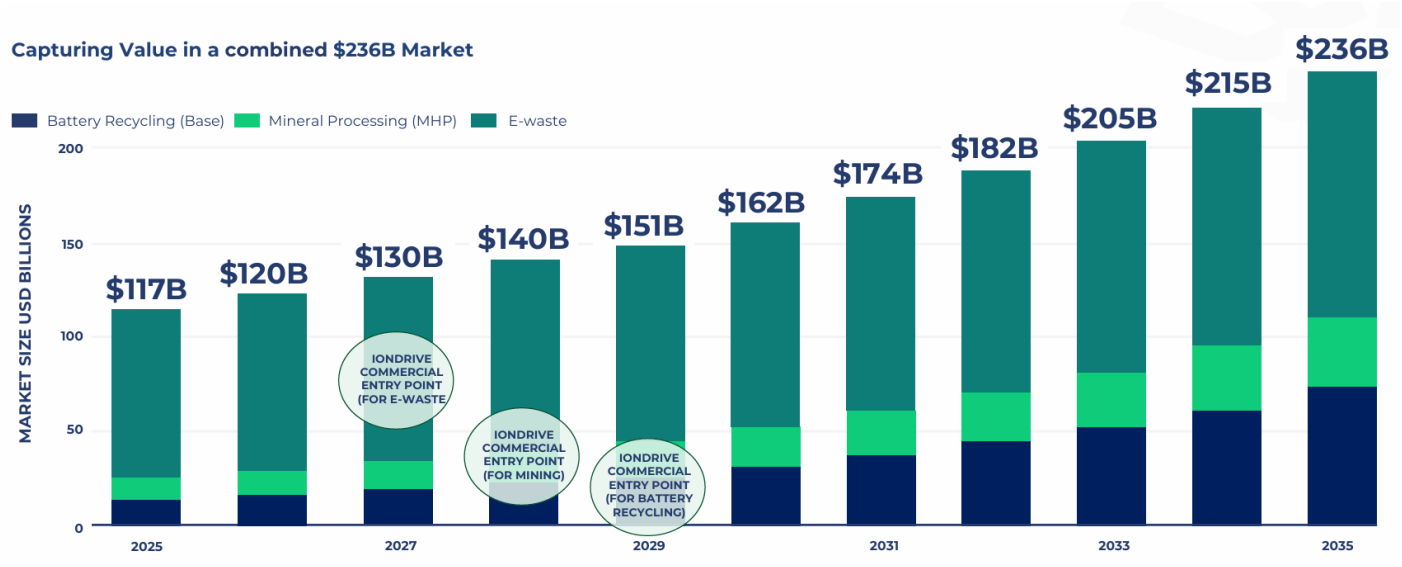


Figure 10: ION markets size forecast Source: Company presentation Sept 2025

Regulatory and Policy Landscape

Supportive policies are in force in each of the regions that ION is targeting. In particular, the EU is requiring new EV batteries to include a minimum threshold of recycled critical minerals, with a staged recycled content increase starting in 2027. The European Critical Raw Materials Act, adopted in April 2024, aims to secure and sustain the supply of essential raw materials for the EU. The act aims to reduce dependency on imports from single countries and enhance the EU's resilience against supply chain reductions. In addition, the EU Circular Economy Action Plan requires 65% recovery of Li by 2030, which aligns well with IONs planned commissioning of a plant with the PEM consortium.

In the USA market, there are new initiatives addressing the need for a local supply chain for critical minerals including REE's. A new US-Australia policy framework was signed in October 2025, which aims to accelerate the secure supply of critical minerals and rare earths by coordinating efforts to support mining and processing. The US is also supporting new mining and recycling initiatives to supply rare earth elements and critical minerals to its supply chain.

Table 2: Additional Regulations supporting ION key markets and initiatives

Australia	Year	Jurisdiction	Status
Critical Minerals Development Program	2022	National	In force
(Western Australia) Royalty relief for nickel	2024	State/Provincial	In force
Future Made in Australia Plan - Renewable Energy Superpower (Critical Minerals)	2024	National	In force
Australia NRFC investment commitment in rare earths project	2025	National	In force
Future Made in Australia Innovation Fund	2024	National	In force
(Western Australia) A Global Battery and Critical Minerals Hub	2022	State/Provincial	In force

European Union	Year	Jurisdiction	Status
Germany's Untied Loan Guarantees (UFK)	2020	National	In force
Organic provisions for the valorisation, promotion and protection of Made in Italy	2023	National	In force
Critical Materials for Magnets (Innovate UK) - Circular Critical Materials Supply Chains Programme	2023	National	In force

United States	Year	Jurisdiction	Status
Defense Production Act	2022	National	In Force
Memorandum on Presidential Determination Pursuant to Section 303 of the Defense Production Act of 1950, as amended	2023	National	In Force
Critical Minerals Security Act of 2024	2023	National	In Force
Joint Statement on the Minerals Security Partnership Announce Support for Mining, Processing and Recycling Projects	2023	National	In Force
DOE Funding for Critical Minerals Production Facility	2023	National	In Force
DOE Funding Opportunity to Build Up Domestic Supply Chain for Critical Minerals	2023	National	In Force
DOE funding to secure domestic supply chain of critical elements and minerals	2021	National	In Force
Review domestic supplies of batteries, key battery minerals and semiconductors	2022	National	In Force

MIXED	Year	Jurisdiction	Status
Australia - France Strategic Dialogue on Critical Minerals	2023	International	In force

Source: IEA

Investment Case

ION (ASX: ION) is transforming from a pure-play R&D story into a pre-commercial battery-recycling and urban-mining company with tangible funding, a de-risked flowsheet and a clear line-of-sight to potential first commercial revenues in CY-26 from its newly signed partnership agreements. ION's proprietary DES technology offers a significant competitive edge with over 95% metal recovery and a lower CO_2 footprint, with 98% solvent recovery, positioning it well for the growing demand in battery recycling and urban mining. Strategic partnerships and government grants provide financial backing and external validation. The diverse commercialisation opportunities and timeline offer nearer opportunities for de-risking and revenue streams.

With multiple near-term catalysts including graphite recovery from LI-ion batteries during recycling, pilot plant commissioning, first REE extraction results and European LCA study results, ION is poised for substantial growth and offers an attractive upside potential for investors.

What we like:

- ION has divested or is in process of divesting all non-core activities to focus on its DES platform technology
- ION has achieved the stated technology and commercial milestones on time
- ION technology has achieved key performance hurdles in the lead up to the pilot plant trials
- Appointed strong leadership team with sufficient executive support for its projects
- Exploring all commercialisation opportunities related to IP which give optionality on timeline, risk and markets
- Strong partnerships and government validation via grant funding and ARC leadership
- Geopolitical tailwinds and sustainability advantages, particularly in the US e-waste recycling REE market near term and EU EV battery recycling market in the medium term
- Supportive shareholders, including institutions
- Progressed through PFS and FEED to FID on its pilot plant- construction and commissioning completed by Q1 CY2026
- Strategic advantage with collaboration in Europe and key DES technology with lower carbon footprint
- Multiple revenue opportunities and pathways to commercialisation in diverse markets

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

SWOT

SWOT	
Strengths	**Weaknesses**
• Debt Free Balance Sheet • Equity and Grant inflows provide >1yr runway • Strong recovery efficiency and economic model • Gov't and strategic partner funding enable lower cost of capital and external validation	• High cash burn typical of a pre-revenue cleantech • Dilution overhang due to equity capital raise anticipation • Limited tangible assets to secure funding until pilot plant built • Lower visibility on quantitative screens leading to lower liquidity on market
Opportunities	**Threats**
• Multiple products and markets potential from its core IP • Regulatory tail winds in multiple regions • Sustainability and carbon savings alternate investment stream • Timing for end-of-life EV batteries and Solar panels to reach early peak in 3-5 years	• Global R&D focus on urban mining could lead to disruptive technologies • Intellectual Property trade secret leaves patent hole • Public equities markets reduced liquidity and valuation for pre-revenue companies • Changing regulatory environment in key market

Key Competitive Advantages

- Technology Moat: 5 patent families (2 granted, 3 pending) covering leach chemistry, solvent-extraction sequences and closed-loop reagent recycling.
- Regulatory Leverage in key markets
  - Critical Metals and Rare Earths recovery for regional Resources Security
  - Lower carbon footprint than existing methods
- Higher recovery than traditional methods leading to a lower cost of production in the supply chain
- First mover into significant partnerships in diversified markets including the EU and the US. Binding MoU with US e-waste company Colt Recycling to fast-track potential first revenues
- Pilot Plant to be running in CY26, giving a timing advantage in proving its technology with black mass feedstock already arranged

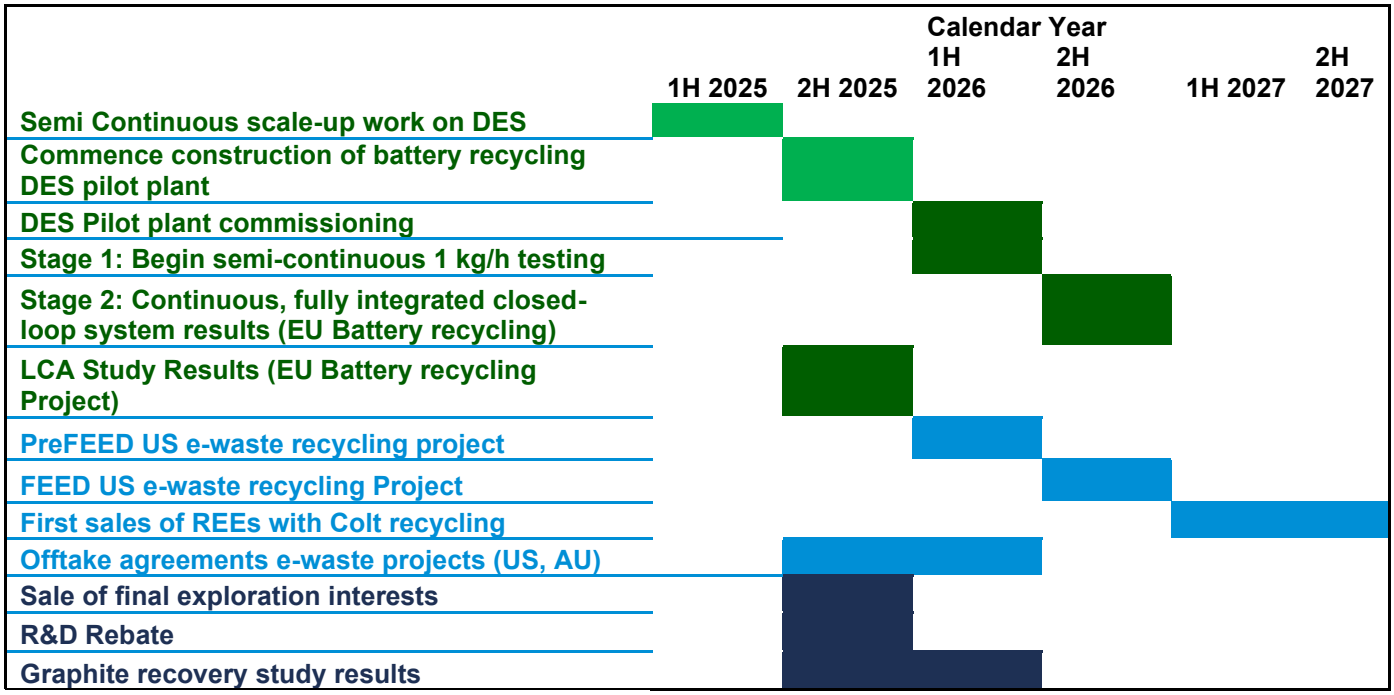
Catalysts and Expected Roadmap

- Graphite recovery R&D results expected to be announced ~4QCY25/1QCY26
- LCA study results by end 2025 - Life-cycle assessment study to benchmark life cycle impacts and costs of battery recycling processes. ION's DES-based recycling technology will be assessed against hydrometallurgical and pyrometallurgical methods. The study includes global players such as Primobius, Umicore and Fortum and we believe the results will have a strong impact on ION commercialisation opportunities
- DES Pilot Plant start-up Q1 CY2026
- Pre-FEED on the US e-waste recycling REE recovery project with Colt Recycling by end of Jan 2026
- FEED US e-waste recycling REE recovery project with Colt Recycling in May 2026
- 2H 2026 first product in e-Waste recycling with the US Colt partnership expected

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets



Source: Company reports, Corporate Connect estimates

KEY:

EV battery Recycling milestones	
US e-waste recycling project milestones	
Corporate & R&D	

Roadmap for Key Verticals and Commercialisation

- 3 horizons to commercialisation,
  - 0 to 2 years – e-waste REE project commercialisation
  - 2 to 5 years - mining intermediaries and collocated DES platform technologies and broadened e-waste applications such as solar panel recycling
  - 5+ year horizon – capital projects and EV battery recycling full-scale commercial projects

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

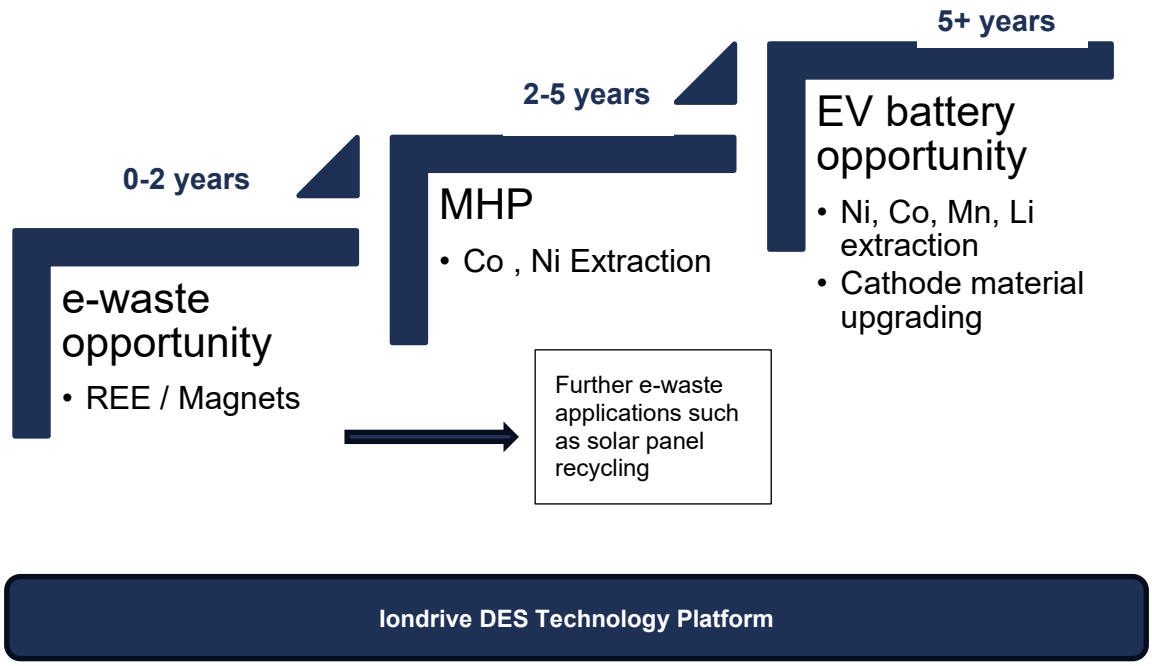


Figure 10: Commercialisation Time Horizons for Key Verticals (Source: Corporate Connect Estimates, Company Reports)

Financials

ION is a pre-revenue company and has established its current focus in FY24, therefore we are presenting FY24 and FY25 actuals and expect the forecasts to change significantly as the partnerships are further negotiated and the pilot plants are commissioned. Prior to sales of any DES outputs, we anticipate R&D tax rebates and grant money to contribute to revenue.

Historical Earnings and Forecasts

	2024a	2025a	2026f	2027f	2028f
Revenue (A$m)	0.879	1.712	3.7	7.3	11.7
EBITDA (A$m)	-3.85	-3.46	-6.4	-8.2	-1.1
Net Income (After Tax)	-6.12	-4.62	-6.5	-8.8	-3.5
EPS (diluted) (cps)	-1.24	-.51	-.41	-.55	-0.22

4. Actuals As of 30 June 2025 Quarterly Report

Capital Structure

ION has 1187.6 m total shares on issue as at 19 Sept 2025 with cash on hand of A$4.02m. Greater than 5% of its shareholders are strategic institutional holders. Board and management own ~4% of the shares on issue. ION raised ~$8m from investors in FY25.

Capital Structure As at 30 Jun 25

Date of issue	# of Shares	Price per share	Amt Raised AUD	Notes
Tranche 1 11 July 2024	118,571,320	$0.009	$1,067,142	Tranche 1 of the $2m placement
Tranche 2 on 29/7/24	103,650,902	$0.0090	$932,858.12	$2m placement announced on 3 June 2024
Tranche 1 10/12/24	144,341,161	$0.014	$2,020,776	Dec 24 ~$6m placement

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Tranche 2 1/02/2025	291,373,125	$0.014	$4,079,223.75	Dec 24 ~$6m raise
5/08/2025	4,799,001			Executive STI
StocksDigital 10/12/24	26,785,000	$0.014	-$374,990	Investor relations
31/12/24	11,829,545	$0.03	$319,318	Option exercise

Total Shares on Issue (m) **1182.8**

OPTIONS As at 30 June 2025

Date of Issue	Date of Expiry	Fair Value at Grant Date (A$)	Exercise Price (A$)	Number under option	Vested and Exercisable
9/09/2021	16/09/2025	0.02845	0.1	680,000	680,000
29/10/2021	31/10/2025	0.03259	0.12	3,700,000	3,700,000
22/02/2021	22/02/2027	0.01213	0.05	300,000	300,000
4/07/2023	3/07/2026	0.00402	0.04	7,000,000	7,000,000
24/07/2023	23/07/2026	0.00402	0.04	3,000,000	3,000,000
9/11/2023	9/11/2027	0.00532	0.025	6,000,000	6,000,000
22/01/2024	22/01/2028	0.00404	0.025	100,000	100,000
6/08/2024	6/08/2029	0.00424	0.012	30,625,000	5,625,000
3/12/2024	3/12/2028	0.0044	0.025	10,000,000	4,250,000
3/12/2024	3/12/2028	0.00499	0.025	6,000,000	
9/12/2024	9/12/2028	0.00442	0.025	9,000,000	9,000,000
27/02/2025	27/08/2026	0.01277	0.028	10,000,000	10,000,000
27/02/2025	27/02/2027	0.01126	0.042	10,000,000	10,000,000
27/02/2025	27/02/2028	0.01057	0.056	10,000,000	10,000,000
17/06/2025	3/03/2028	0.01138	0.025	10,000,000	1,666,666
				116,405,000	**71,321,666**

PERFORMANCE RIGHTS

Date of Issue	Date of Expiry	Fair Value at Grant Date (A$/pr)	Number Granted	Number Vested as at 12 August 2025
6/08/2024	12/02/2027	$0.01	30,625,000	**5,625,000**

Director & Mgmt Share and option ownership	Shares	Options	Performance rights
Michael McNeilly	2,911,111	6,600,000	
Jack Hamilton	5,873,015	3,000,000	
Adam Slater	6,244,444	3,000,000	
Andrew Sissian	4,206,349	3,000,000	
Hugo Schumann	1,500,000	6,000,000	
Ebbe Dommisse	5,664,597	24,500,000	24,500,000
Ray Ridge	10,594,185	6,725,000	6,125,000
Lewis Utting	7,142,856	10,000,000	
	44,136,557	**62,825,000**	**30,625,000**

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Valuation

Valuation and Target Price

We are initiating coverage of ION with a $138.5m or $0.087/share target price utilising a risked SOTP (sum-of-the-parts) model, taking a discounted cash flow approach. We attribute a 25% chance of success (CoS) to the EV battery recycling program, given its advanced progress toward the construction of the pilot plant and established consortium. We attribute a 30% chance of success to the e-waste recycling program recently announced with Colt Recycling, noting the near-term revenue opportunity and the favorable market conditions and a 10% CoS with Livium on the solar panel and e-waste recycling, given the very early stage of the agreement. We attribute a 10% chance of success to the MHP program utilising a top-down method as no partnerships have yet been announced in this area. We have assumed in the mid-case valuation that the EV battery metal sales are done at the intermediate metal salts step. For the high case, we assume that the sales are done at the battery grade pCAM level.

Valuations for ION cases [1]

	Discount rate	Value	Value per undiluted share	Value per diluted share
	%	A$m	A$/sh	A$/sh
Mid Case	11%	138.5	0.11	0.087
High Case	11%	212	0.17	0.13
Low Case	11%	77	0.06	0.044

Ordinary Shares on issue (million)	1,187.6	**Diluted shares on issue (incl options) (million)[1]**	1583.2

1. Corporate Connect estimates incl. equity issue for forecasted capital needs for diluted shares on issue

Mid Case

In the mid-case, the US market opportunity is the significant near-term contributor to the valuation. For the e-waste REE opportunity we assume that ION begins commercial sales from its pilot plant in FY27. We then assume it commissions 5 plants, starting with one in FY27, two in FY28 and two in FY29, with a 50% capacity in year 1 and 100% capacity in year 2. We assume capex of ~$7.5m AUD per plant. We assume a feedstock volume of 2,400 tpa in a full plant (1200 tpa pilot plant). We assume an REE grade of 0.05 and a recovery and yield efficiency of 85%. We use a price for a basket of REE of US$67kg. We use a terminal growth rate of 0%. We assume a 30% chance of success for this project. We do expect further plants in the success case, which is reflected in the High Case valuation.

For the EV battery recycling opportunity, we assume that ION successfully commissions its pilot plant and commissions a modular commercial plant in the EU. The EV battery metals project begins sales in 2030 at 50% capacity, ramping up to 100% capacity in year 2. The plant capacity is assumed to be 20,000 tpa, with an input black mass cost of US$2,000/t and a sale price of US$8,000/t (aggregate across Li, Co, Ni, Mn). We assume an AUD/USD at 0.67. We utilise a terminal growth rate of 7%. We assign a 25% chance of success to this case.

For the Solar Panel/e-waste recycling opportunity we assume that first sales begin in 2028 at 20% of full capacity, ramping up to 100% capacity by 2030 of 10k tpa. We assume a 95% recovery rate and a basket price of US$34.2/kg. We utilise a 10% chance of success and a terminal growth rate of 2%.

For the MHP opportunity we utilise a top-down approach to estimate the market size and penetration rate. We assume the market size for MHP was US$1,484m in 2023, growing at a CAGR of 6% to 2034. We assume that ION has first sales in FY28, with a 0.01% market share. We assume that ION reaches full commercial scale in 2031 and gains 1% of the market, after which it grows at 12% revenue growth per year. We assume a 10% chance of success with an 11% discount rate and a terminal growth rate of 2%.

We assume that ION will issue capital to fund its growth in the US market, and therefore we assume a raise of AUD20m at $0.06/sh and the issue of 333.33m shares which is reflected in the diluted A$/sh valuation and target price.

A 1% change in WACC (to 12%) results in a -13% change to the total valuation. A -1% change in WACC to 10% results in a +19% change to the total valuation.

Risked SOTP for mid-case

	A$m	A$/sh (diluted)	CoS
e-waste REE opportunity (risked)	76.11	0.05	30%
Solar Panel Recycling (risked)	17.16	0.01	10%
EV Battery Recycling (risked)	37.39	0.02	25%
MHP (risked)	6.48	0.00	10%
Investment (expl'n for sale)	0.35	0.00	
Subtotal	**137.49**	**0.087**	
Net Cash	5.0	0.00	
Corporate & Other	-4.0	0.00	
Valuation total	**138.5**	**0.087**	
Total Shares on issue (million)	1,187.6		
Total Diluted shares on issue (million)	1583.2		

Source: Corporate Connect Estimates – Diluted shares includes forecast equity capital raise

High Case

In our high case, we assume that ION commissions 8 plants (including pilot) at 2 per year from FY27 for the US REE project.

For the EU Battery Project, we assume the recovered metals are upgraded to cathode grade and sold as a basket at US$20,000 / t. As a result of adding the extra processing stage, the capex is increased to accommodate the extra module. We assume first sales in FY30 at 50% capacity. We assume a 2% terminal growth rate for the Solar project in AU. We hold all else the same as the mid-case.

Low Case

In the low case, we do not include value for the MHP opportunity nor the sale of investments. We assume the EU battery opportunity is delayed, with first revenues in 2031 at 25% capacity, ramping up at 25% additional capacity per year until 2033, when full capacity is achieved. Further assumptions include that the recovered metals are sold as hydroxides/oxides at US$8,000/t, a lower terminal growth rate of 3.5%, a lower volume per plant in the low case for the US e-waste recycling opportunity at 2000kgpa, and a slower ramp up of plant commissioning, with one each in 2027, 2028, 2029 and 2030. We assume a 0% terminal growth rate for the AU e-waste opportunity. In this case $25m equity capital is raised at $0.05/sh. We hold all else the same as the mid-case.

Scaling Scenario for the US e-waste recycling opportunity with Colt Recycling

Multi-plant rollout and Funding Pathways

Our base build-out is for **up to 5 modular plants** over the medium term (high case 8 plants). This reflects a strengthening **macro backdrop** for North America, and ally-aligned critical-minerals supply chains, accelerating **recycling mandates**, and growing **public–private capital** specifically earmarked for battery materials, REE/magnet recycling and circular-economy projects.

Capex framing: at an estimated **~A$7.5m per plant**, a full 6-site program (incl. pilot) implies **~A$45m aggregate capex** (ex-working capital/site infrastructure). We expect staged deployment prioritising the US jurisdiction and favorable regulatory environment.

Funding: How ION could finance additional plants

We see a realistic **blended capital stack** combining grants/loans, strategic equity, and commercial co-funding, de-risked by several policy and market developments **in the last month**:

a. **US–Australia government framework (policy + capital)**
   - The **US–Australia Critical Minerals Framework** (signed **20 Oct 2025**) targets supply-chain resilience with **coordinated project selection**, **permitting acceleration**, and **at least US$1bn from each country within six months** to eligible

projects in mining, separation and **processing/recycling**. This is a direct pathway for grant/loan support to modular plants in either country (or JV structures).

b. **Private mega-capital now writing cheques**

- **JPMorganChase** launched a **US$1.5T / 10-year Security & Resiliency Initiative**, including **up to US$10B** of **direct equity** alongside balance-sheet financing, explicitly naming **critical minerals** and allied processing as focus areas.
- JPMorgan has already made its **first equity investment** from this program: **US$75m into Perpetua Resources** (Idaho antimony/gold), alongside **Agnico Eagle's US$180m**, a clear signal that **downstream-relevant** critical-minerals projects in the US can attract institutional cornerstone capital. This precedent is directly relevant to ally-shored **recycling** capacity buildouts.

c. **Precedents for direct US Government participation**

- The **US DOE** has begun taking **equity stakes** and providing large-scale loans in critical-materials projects (e.g., **Lithium Americas**: DOE equity + first **US$435m** loan drawdown tied to Thacker Pass). Such structures could support DES-based recycling infrastructure that localises **battery-grade salts/pCAM** supply.
- The US is also **broadening strategic stakes** in North American projects (e.g., **Trilogy Metals**), reinforcing the policy shift from rhetoric to investment, a tailwind for co-located recycling capacity.

d. **Strategic/industrial co-funding**

- We expect **OEMs/recyclers/materials processors** to co-fund or pre-commit (offtake/gate-fee anchors) where plants de-risk feedstock logistics and recycled-content compliance (EU Battery Regulation; US/EU critical-minerals policies). Site-by-site SPVs/JVs can match public capital with strategic equity.

Potential Financing Blueprint (illustrative per plant)

- **Public capital (30–50%)**: grants or low-cost loans via **US DOE/EXIM**, **Australian programs**, or bilateral **US–Australia framework** pools.
- **Strategic/industrial (20–40%)**: JV equity from **recyclers, OEMs, magnet makers, e-waste aggregators** in return for offtake/access and tech licensing.
- **Institutional (10–30%)**: cornerstone placements from funds aligned to the **JPMorgan SRI** and similar "security & resiliency" mandates; project-level debt as plants ramp.

Why Now: macro tailwinds remain intact despite headline noise

- Even with near-term trade-talk volatility, the **structural, security-driven** shift to **ally-shored** critical-materials supply chains is accelerating, not reversing, under **fresh bilateral frameworks** and **visible private/public cheques** (JPMorgan → **Perpetua** recently). These are precisely the conditions under which **modular recycling** networks scale.

Comparable Partnerships

While M&A deals in the space tend to be private, there have been a small number of transactions that can be used to understand the market potential. In October 2024, Mercedes announced a A$30.7 m offer for Neometals JV company Primobius to build a hydrometallurgical "hub" to complete their new li-ion battery recycling plant in Germany. This deal highlights the potential for closed-loop recycling for auto manufacturers. Mercedes is also building a feeder plant, which shreds end of life batteries into their components, with an annual capacity of 2500 tpa for recovery of Li, Co, Ni, and Mn. These components will be recycled via the hub into 50,000 battery modules per year. The technology is expected to be scaled to 21,000 tpa.

In 2021, Li-Cycle and LG Chem/LG Energy Solutions formed a strategic partnership to advance Li-ion battery recycling. LG Chem and LG Energy Solution offered a US$50m strategic investment into Li-Cycle, while supplying battery manufacturing scrap and LI-ion batteries for recycling. Li-Cycle would recycle and supply 20,000 tonnes of Ni over 10 years, enough to power ~300,000 high-performing EVs. The intention was to cooperate on creating a closed loop ecosystem.

Key Risks to ION

There are a number of major risks associated with early-stage technologies and commercialisation. For each stage of scale-up there is a significant probability of delay or failure as processes are optimised. There are many different DES technologies being tested and scaled at present globally, none are yet accepted at full commercial scale.

- The science for DES as it applies to EV battery recycling is extremely complex, with different compositions of feedstock leading to different extraction techniques and compositions. Chemical supply-chains and R&D success are risks.
- There is significant competition in the space to achieve commercialisation, which leads to funding competition as well
- The cost of progressing the testing and scale-up for the DES into the different verticals is significant, with capital needed for pilot plant construction as well as operating expenses. We expect ION to fill much of the funding gap via a mix of grants, R&D rebates and equity capital
- There is scale up risk in the technology - Process performance may not meet bench results or may take longer to optimise. Results to date have been promising and external validation from partnerships adds confidence
- Feedstock availability & pricing – Competition for black-mass could tighten margins. ION has done deals to secure access to feedstock; however pricing has not yet been established
- Regulatory changes and permitting delays – the critical materials utilised in this process are subject to a number of new regulations, and any changes could have an impact on margins, timing and locations.
- Execution & key-person risk – The team at ION is a competitive advantage. If any of the key personnel leave, it may be difficult to replace them. There may be a significant delay while the transition occurs.
- Commodity price volatility – Payable metals pricing (Li, Ni, Co, Mn, REE, Ag) drives revenue. Forecasting commodity prices and exchange rates can have an impact on sales

Board of Directors and Key Management

Michael McNeilly

Non-Executive Chairman | BA (International Economics)

Michael McNeilly is CEO, and Director of AIM/ASX dual listed natural resources investing company Metal Tiger Plc (now ASX: SRT). Mr McNeilly has extensive experience in listed companies and is currently Non-Executive Director of ASX-listed Cobre Limited. He sits on several private company boards within the SRT group. Past board appointments include MOD Resources Ltd (up to acquisition by Sandfire in November 2019), Metal Capital Ltd (until November 2018), Greatland Gold Plc (until October 2017), Arkle Resources Plc (until November 2019). Mr McNeilly also has a deep understanding of the equity capital markets having worked at broking house Arden Partners Plc and Allenby Capital Ltd where he was part of their corporate finance teams during 2011-2015. Mr McNeilly studied Biology at Imperial College London and has a BA in International Economics at the American University of Paris. He is fluent in French.

Dr. Jack Hamilton

Non-Executive Director| PhD, B.Eng (Chem), FAICD, FAIE

Dr Hamilton is a highly experienced senior executive and board director with extensive expertise across technology, operations and manufacturing, project management, business development and commercial ventures. His career in the energy sector includes leading Australia's largest resource project as Director of Northwest Shelf Ventures for Woodside Energy Ltd. He has held senior positions both locally and internationally. Currently, Dr Hamilton serves as a Non-Executive Director of Hazer Group Ltd (ASX: HZR). His recent board experiences include roles as Chairman of AnteoTech (ASX: ADO) and Non-Executive Director of Calix Ltd (ASX: CXL). Dr. Hamilton holds a Bachelor of Engineering (Chemical) and a Doctor of Philosophy (Engineering) from the University of Melbourne. He is a Fellow of the Australian Institute of Energy (FAIE) and a Fellow of the Australian Institute of Company Directors (FAICD).

Adam Slater

Non-Executive Director | BA Arts.

Mr Slater is a seasoned professional with nearly three decades of experience in the commodities industry. From 2007 to 2018, he spearheaded the development of the commodity division at CWT Limited, an SGX-listed company, overseeing financial services, commodity brokerage, trading, and supply chain management. During this period, he served on the boards of all CWT Limited's commodity-related businesses, including chairing the board of MRI Trading. In 2019, Mr Slater shifted his focus to venture capital and private equity, taking on multiple board positions and advisory roles. He currently holds a non-executive role at Iondrive and is a member of Our Crowd’s Global Investor Advisory Council. As a founding LP in Genesis Alternative Ventures, he sits on the LP Boards for their Funds I and II. He previously served on the board of Elminda (now part of NASDAQ-listed WAVD) and recently joined the board of Iondrive Limited. A graduate of McGill University in East Asian Studies, Mr Slater is fluent in English, Hebrew, and Chinese.

Andrew Sissian

Non-executive Director | CPA, MAcc, BCom (Finance).

Mr Sissian is a seasoned corporate and capital markets executive and CPA. Mr Sissian is a co-founder and NED of Cobre Limited ASX.CBE and CEO of high growth IoT technology company Procon Telematics. Mr Sissian advises and partners with a range of companies in the technology and future minerals sectors. Mr Sissian has also spent more than a decade in equities and institutional banking including with the National Australia Bank in Australia and Shanghai and with Wilsons Advisory.

Hugo Schumann

Non-Executive Director | BBusSc, MBA, CFA.

Mr Schumann currently serves as Chief Executive Officer of EverMetal Capital, a private equity-backed metals critical recycling platform, and CEO of Elemental Group's U.S. operations, overseeing large scale e-waste and catalytic converter recycling operations across the United States and as a Non-Executive Director of ASX listed Global Uranium and Enrichment (ASX: GUE). He brings extensive leadership experience spanning corporate strategy, capital markets, and cross-border M&A, with particular expertise in critical minerals, sustainability, and technology-driven growth. He previously served as CEO of the Silver Division at Hindustan Zinc Limited, one of the world's largest silver producers, and as Chief Financial Officer at Jetti Resources, where he played a pivotal role in scaling a revolutionary copper extraction technology and driving global adoption. Mr Schumann holds an MBA from INSEAD, completed the Executive Program at Stanford Graduate School of Business, and earned a Bachelor of Business Science in Finance and Chartered Accountancy from the University of Cape Town, and is a CFA Charterholder.

Jeff Ritoe

Strategic Advisor Commercialisation | LLM

Jeff Ritoe is the Strategic Advisor Commercialisation and has over 15 years of experience in negotiating commercial agreements, acquisitions and divestments in the energy industry. He currently helps Amsterdam-based WMC Energy to expand its battery materials business as the company's Director Corporate Business Development and previously worked for ENGIE in multiple jurisdictions.

Dr Ebbe Dommisse

CEO | B. Eng (Chem), MSc, PhD, MBA, GAICD

Dr. Dommisse is a seasoned professional with over 25 years of experience in commercialising technologies, execution and manufacturing. He previously served as the COO at Circa Group, an Australian start-up that commercialised a biochemical process from laboratory scale to commercial scale. Prior to this, he was Regional GM of Pact Group, an ASX-listed manufacturer, where he was responsible for establishing a world-class plant in Indonesia and overseeing operations in South-East Asia.

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Ray Ridge

CFO and Company Secretary | BA (Acc), CA, GIA (cert)

With over 30 years' experience, Mr Ridge has held senior management positions in finance, compliance and commerce across a range of industries, including previous appointments as General Manager Commercial & Operations with the Utilities, Government and Power Business Group of Parsons Brinckerhoff, CFO of the Merchandise Division of Elders Ltd and Senior Audit Manager at Arthur Andersen. Mr Ridge has recently held, or currently holds, Chief Financial Officer and/or Company Secretary roles at four other ASX listed companies.

Lewis Utting

Commercial Director | BAppSc, GAICD

Lewis Utting is an accomplished executive with extensive experience commercialising advanced technologies across the mining, energy, and environmental sectors. As former Managing Director and CEO of SciDev Ltd (ASX: SDV), he led the company through a period of rapid growth, achieving strong shareholder returns and operational transformation.

At Iondrive, Lewis works closely with the CEO and Board to shape commercial strategy, partnerships, and capital markets engagement. His focus is on scaling the company's recycling and circular-chemistry operations across batteries, e-waste, and solar, supporting global demand growth while driving sustainable, long-term value creation.

Associated Scientists

Prof. Shizhang Qiao

Laureate Professor | University of Adelaide

Professor Shizhang Qiao joined the School of Chemical Engineering of the University of Adelaide as a professor in the inaugural Chair of Nanotechnology, and is the founding Director of Centre for Materials in Energy and Catalysis (CMEC).

Prof. Zaiping Guo

Laureate Professor | University of Adelaide

Professor Zaiping Guo is an ARC Australian Laureate Fellow at School of Chemical Engineering & Advanced Materials, The University of Adelaide. She has won multiple awards for her work on rechargeable batteries amongst other fields.

Iondrive Limited

Positioned for critical minerals and rare earth elements supply security in growing markets

Top 20 Shareholders

As of 17 Oct 2025

	% Ownership	# Shares
CITICORP Nominees Pty Ltd	13.12%	156,245,437
JP Morgan Nominees Australia Pty Ltd	10.59%	126,141,674
Strata Investment Holdings PLC	7.96%	94,464,446
Sailors of Samui Pty Ltd	4.10%	48,762,189
Strata Investment Holdings Plc	3.04%	36,144,000
HSBC Custody Nominees (Australia) Ltd	2.53%	30,111,773
Puntero Pty Ltd	2.18%	26,000,000
S3 Consortium Pty Ltd	1.87%	22,246,000
Ms Chunyan Niu	1.81%	21,500,000
Mr Jianfeng Zhang & Ms Yangmei Zheng	1.80%	21,428,568
Mr Alan Conigrave	1.68%	21,000,000
Mr Jonathan James Hunter & Mrs Rebecca Mei Liang Hunter <HHC Equities Superfund A/C>	1.22%	14,475,000
Natjad & Associates Pty Ltd <Cc & C Super A/C>	1.20%	14,285,714
Mr Jade Wayne Clark	1.20%	14,285,713
UBS Nominees Pty Limited	1.18%	14,086,984
BNP Paribas Noms Pty Ltd	1.13%	13,446,955
Richard Alan Wallis	1.01%	12,000,000
BNP Paribas Nominees Pty Ltd <Clearstream>	0.96%	11,382,294
Strata Investment Holdings PLC	0.90%	10,669,536
Mr Raymond Robert Ridge <Ridge Family A/C>	0.89%	10,594,185

Source: Company data

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

References and Further Education

EV Battery Recycling

Battery recycling takes the driver's seat | McKinsey

https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/battery-recycling-takes-the-drivers-seat

battery-2030-resilient-sustainable-and-circular.pdf

https://www.globalbattery.org/media/publications/battery-2030-resilient-sustainable-and-circular.pdf

ey-the-ev-circular-economy-the-promise-and-hurdles.pdf

https://www.ey.com/content/dam/ey-unified-site/ey-com/en-us/industries/emobility/documents/ey-the-ev-circular-economy-the-promise-and-hurdles.pdf

Striking Gold with EV Battery Recycling

https://www.bcg.com/publications/2023/striking-gold-with-ev-battery-recycling

Navigating the unknowns: drivers and projections for EV battery recycling

https://www.deloitte.com/content/dam/assets-zone2/be/en/docs/industries/consumer/2025/be-navigating-the-unknowns-drivers-and-projections-for-ev-battery-recycling.pdf

IEA (2024), Global available battery recycling feedstock and recycling capacity, 2023-2050, IEA, Paris https://www.iea.org/data-and-statistics/charts/global-available-battery-recycling-feedstock-and-recycling-capacity-2023-2050, Licence: CC BY 4.0

EV Battery Supply Chain Sustainability

https://iea.blob.core.windows.net/assets/e75c9a13-3753-4677-933f-c7f9ae38cfdb/EVBatterySupplyChainSustainability.pdf

Battery Monitor 2024/2025

https://www.rolandberger.com/en/Insights/Publications/Battery-Monitor-2024-2025-A-turbulent-year-and-outlook-for-value-chain-players.html

Lithium Ion Battery Recycling

https://www.csiro.au/en/research/technology-space/energy/Decarbonising-Industry-Transport/Energy-in-the-circular-economy/Battery-recycling

Waste lithium-ion battery projections

https://www.dcceew.gov.au/sites/default/files/documents/waste-lithium-battery-projections.pdf

Recycling and utilization of cobalt, nickel, and manganese from black mass of spent Li-Ion batteries for supercapacitor applications - ScienceDirect

https://www.sciencedirect.com/science/article/abs/pii/S1383586625032927

Black mass: An underused anthropogenic resource - GEOSCIENTIST

https://geoscientist.online/sections/unearthed/black-mass-an-underused-anthropogenic-resource/

Battery Metals

Investing in Global Battery Metals Boom: What to Know

https://discoveryalert.com.au/news/battery-metals-investment-landscape-2025/

Cobalt Market Report 2023.pdf

https://www.cobaltinstitute.org/wp-content/uploads/2025/02/Cobalt-Market-Report-2023.pdf

Pentagon to Invest $500M in Critical Cobalt Stockpile

https://discoveryalert.com.au/news/cobalt-procurement-2025-pentagon-defense-plan/

Advancements in cathode technology, recycling strategies, and market dynamics: A comprehensive review of sodium ion batteries - ScienceDirect

https://www.sciencedirect.com/science/article/pii/S138589472404960X

Battery Metals Boom: Navigating Geopolitics, Supply Chains

https://discoveryalert.com.au/news/battery-metals-boom-navigating-geopolitics-supply-chains-and-recycling-challenges/

Readers should be aware that Corporate Connect Research Pty Ltd has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the important disclosure pages of this report for the general advice warning, disclaimer, and full disclosures

Rare Earth Elements

Rare Earth Element Recycling, A Growing Niche Headed to the Billions

https://rareearthexchanges.com/news/rare-earth-recycling/#:~:text=Key%20players%20in%20rare%20earth%20recycling%20include%20Urban,market%20but%20Western%20companies%20emerging%20as%20important%20contributors.

Recycling of Rare Earth Elements | Stanford Magnets

https://www.stanfordmagnets.com/recycling-of-rare-earth-elements.html

Recycling of the rare earth elements - ScienceDirect

https://www.sciencedirect.com/science/article/abs/pii/S2452223617301256

Recycling Rare Earth Elements: Driving the Global Energy Transition

https://worldpolicyhub.com/recycling-rare-earth-elements-driving-the-global-energy-transition/

BES Rare Earth Recycling | U.S. DOE Office of Science (SC)

https://science.osti.gov/bes/Highlights/2017/BES-2017-03-c

Understanding Rare Metal Recycling Cost Breakdown | Okon Recycling

https://www.okonrecycling.com/magnet-recycling-and-applications/sustainability-and-magnets/rare-metal-recycling-cost-breakdown/

Rare Earth Metals Prices, Price of Lanthanum, Cerium, Neodymium, Yttrium, Scandium| SMM Metal Market

https://www.metal.com/Rare-Earth-Metals/

MHP

Indonesian MHP Prices: Market Trends & Supply Analysis

https://discoveryalert.com.au/news/mixed-hydroxide-precipitate-2025-battery-supply-chains/

Mixed Hydroxide Precipitate (MHP) Market Size, Share, Trends | Growth Report, 2033

https://www.globalmarketstatistics.com/market-reports/mixed-hydroxide-precipitate-mhp-market-11227

Mixed Hydroxide Precipitate (MHP) Market Size, SWOT, Competitive Assessment & Forecast 2033

https://www.verifiedmarketreports.com/product/mixed-hydroxide-precipitate-mhp-market/

Mixed Hydroxide Precipitate (MHP) Market Size by Region, And Sement Forecasts, 2025 - 2032

https://marketresearchcommunity.com/europe-mixed-hydroxide-precipitate-mhp-market/

e-waste Recycling and Metals Extraction

Sustainable technologies for the recycling and upcycling of precious metals from e-waste - ScienceDirect

https://www.sciencedirect.com/science/article/abs/pii/S0048969724002894

The Global E-waste Monitor 2024 - E-Waste Monitor

https://ewastemonitor.info/the-global-e-waste-monitor-2024/

Australian Solar Panel Market

Scoping Study: Solar panel end-of-life management in Australia - APVI

https://apvi.org.au/scoping-study-solar-panel-end-of-life-management-in-australia/

Solar Energy in Australia Market Size and Share Analysis – Growth Trends and Forecasts (2025-2030)

https://www.mordorintelligence.com/industry-reports/australia-solar-power-market-industry

Australia Solar Panel Recycling Market Size, Report | 2033

https://www.imarcgroup.com/australia-solar-panel-recycling-market

Corporate Connect Research Pty Ltd Independent Research Report Disclaimer

General disclaimer and copyright
This report ("report" or "Research") has been commissioned by the Company the subject of this report ("Company") and prepared and issued by Krista Walter of Corporate Connect Research Pty Ltd ("Corporate Connect Research") (ABN 95640 464 320) – Corporate Authorised Representative (AR 001304496) of Australian Financial Services License (AFSL) (Number 518031) in consideration of a fee payable by the Company. Corporate Connect Research may be paid additional fees for the provision of additional services to the Company. Where Corporate Connect Research has been commissioned to prepare content and receives fees for its preparation, fees are paid upfront in cash and NO part of the fee, compensation or employee remuneration paid will either directly or indirectly impact the content provided.

Accuracy of content
All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable; however Corporate Connect Research does not guarantee the accuracy or completeness of this report and has not sought for this information to be independently verified. Opinions contained in this report represent those of the analyst of Corporate Connect Research (Paul Sanger) at the time of publication. The analyst has received assistance from the Company in preparing this document. The Company has provided the analyst with access to senior management and information on the Company and industry. From time to time, Corporate Connect Research's representatives or associates may hold interests, transact or hold directorships in, or perform paid services for, companies mentioned in this report. Corporate Connect Research and its associates, officers, directors and employees, may, from time to time, hold securities in the companies referred to in this report and may trade in those securities as principal and in a manner that may be contrary to recommendations mentioned in this report. As part of due diligence, the analyst has independently and critically reviewed the assistance and information provided by the Company to form the opinions expressed in the report. However, due diligence site visits have not been undertaken at this time. Care has been taken by the analyst to maintain objectivity in preparing this report and making any recommendation. The analyst is responsible for ensuring that this report accurately reflects his or her view of the matters set out in it and that it was prepared in an independent manner. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results and estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations. This report is prepared as at the date stated in it, and to the maximum extent permitted by law, Corporate Connect Research (on its own behalf and on behalf of the analyst) disclaims any responsibility to inform any recipient of this report of any matter that subsequently comes to its notice, which may affect any of the information contained in this report.

Exclusion of liability
To the fullest extent allowed by law, Corporate Connect Research (on its own behalf and on behalf of the analyst) shall not be liable to any person for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you or any other person arising out or in connection with the access to, use of or reliance on any information contained in this report.
No guarantees or warranties regarding accuracy, completeness or fitness for purpose are provided by Corporate Connect Research (on its own behalf and on behalf of the analyst), and under no circumstances will any of Corporate Connect Research's analysts, representatives, associates or agents be liable for any loss or damage, whether direct, incidental or consequential, caused by reliance on or use of the content.

General advice warning
This report and any other Research must not be construed as personal advice or recommendation nor as an inducement to trade the report's named company or any other security. Corporate Connect Research encourages investors to seek independent financial advice regarding the suitability of investments for their individual circumstances and recommends that investments be independently evaluated. Investments involve risks and the value of any investment or income may go down as well as up. Investors may not get back the full amount invested. Past performance is not indicative of future performance. Estimates of future performance are based on assumptions that may not be realised. If provided, and unless otherwise stated, the closing price provided is that of the primary exchange for the issuer's securities or investments. The information contained within the Research is published solely for information purposes and is not a solicitation or offer to buy or sell any financial product or participate in any trading or investment strategy. Analysis contained within the Research is based upon publicly available information and may include numerous assumptions. Investors should be aware that different assumptions can and do result in materially different results. The Research is distributed only as may be permitted by law. It is not intended for distribution or use by any person or entity located in a jurisdiction where distribution, publication, availability, or use would be prohibited. Corporate Connect Research makes no claim that the Research content may be lawfully viewed or accessed, whether inside or outside of Australia. Access to the Research content may not be legal for certain persons and in certain jurisdictions. If you access this service or content from outside of Australia, you are responsible for compliance with the laws of your jurisdiction and/or the jurisdiction of the third party receiving such content. The Research is provided to our clients through our website and our distribution partners. Some Research products may also be made available to our clients via third party vendors or distributed through alternative electronic means as a convenience. Such alternative distribution methods are at Corporate Connect Research's discretion.

Access and use
Any access to, or use of, the Research is subject to the Terms and Conditions of Corporate Connect Research. By accessing or using the Research you hereby consent to Corporate Connect Research collecting and using your personal data (including cookies) in accordance with our Privacy Policy, including for the purpose of a) setting your preferences and b) collecting readership data so Corporate Connect Research may deliver an improved and personalised service to you. If you do not agree to our Terms and Conditions and/or if you do not consent to Corporate Connect Research's use of your personal data, please do not access this service. Copyright of the information contained within the Research (including trademarks and service marks) are the property of the irrespective owners. The Research, or any portion thereof, may not be republished, reprinted, sold, or redistributed without the prior and written consent of Corporate Connect Research.

Australia
Corporate Connect Research Pty Ltd is a Corporate Authorised Representative (001304496) of Point Capital Group Pty Ltd who holds an Australian Finance Services Licence (Number: 518031) which allows Corporate Connect Research to offer financial service advice to wholesale and retail clients. Any advice given by Corporate Connect Research is general advice only and does not consider your personal circumstances, financial situation, needs or objectives. You should, before ac ting on this advice or making any investment decision or a decision about whether to acquire or dispose of a financial product mentioned in any Research, consider the appropriateness of the advice, having regard to your objectives, financial situation, and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument, and also seek independent financial, legal and taxation advice.

New Zealand
The Research in this document is intended for New Zealand resident professional financial advisers or brokers This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a “personalised service” and, to the extent that it contains any financial advice, is intended only as a “class service” provided by Corporate Connect Research within the meaning of the FAA (i.e., without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

United Kingdom
This document is prepared and provided by Corporate Connect Research for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research. This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "FPO") (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on, or act upon, the contents of this document. This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

United States
Corporate Connect Research relies upon the "publishers' exclusion" from the definition of investment adviser under Section202(a)(11) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Corporate Connect Research does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a commendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Analyst Verification
I verify that I, Krista Walter, has prepared this research report accurately and that any financial forecasts and recommendations that are expressed are solely my own personal opinions. In addition, I certify that no part of my compensation is or will be directly or indirectly tied to the specific recommendation or financial forecasts expressed in this report.

For more information contact Corporate Connect

https://www.corporateconnect.com.au/

Level 15
25 Bligh Street
Sydney NSW 2000

Phone: +61 400 897 559
Email: enquiries@corporateconnect.com.au
https://www.corporateconnect.com.au/