



Iondrive Limited (ION.ASX)

Sol(vent)ing Critical Problems

Our View

Iondrive Limited (ION.ASX) is metal and mineral processing technology company that is in the midst of commercialising its Deep Eutectic Solvent (DES) technology platform, referred to as IONSolv™. ION's key focus has pivoted towards e-waste as the sector offers the best near term potential to commercialise of IONSolv™.

Being a platform enables ION to tailor the application of its technology for bespoke problems and current market needs using a smaller and lower cost (capex) modular plant. We think that by providing lower cost tailored solutions that meet pressing needs, this can accelerate and improve the odds of commercialisation success. We see evidence of this occurring with recent partnership agreements with Colt Recycling LLC (rare earths in e-waste) and Livium Ltd (LIT.ASX, e-waste & solar panels). Commercialisation of battery recycling opportunities remains ongoing with ION involved in several European partnerships and consortiums; however, these have a longer term success and payoff profile.

Government push on policy, regulation and supply chain independence is being made with tangible incentives, grants and capital which suggests to us that the opportunity is and remains quite real despite some recent easing in geopolitical tensions. This suggests to us that the window of opportunity may persist for several years, thus it will continue to create opportunities for ION and improve the odds of commercial success.

We initiated coverage on ION with a recommendation of Speculative Buy and a valuation of \$0.073/sh, which is a premium of 204% to the current share price. The valuation is largely driven by the modelling of a commercial rollout for IONSolv™ for rare earth recycling and the "optionality" value of a commercial deployment of a battery recycling plant by the end of the decade.

Key Points

DES is an emerging area of chemical and processing science that ION is applying to critical minerals through recycling and primary metal production. ION initially applied DES to lithium-ion battery recycling, but it has since developed tailored solutions to address opportunities in e-waste such as for the recovery of rare earth elements (REEs) from magnets and high purity silver and silicon from solar panels. As such, the pivot towards the e-waste vertical brings forward the potential of commercial success of IONSolv™.

2025 has been a significant year of progress for ION as the company has entered into several agreements and consortiums that can drive commercial outcomes as early as 2026. Notable agreements include that with Colt, Livium for e-waste and a consortium in Germany which includes several established companies that operate within the electric vehicle battery recycling supply chain.

The window of opportunity for successfully commercialising this technology is open given regulation and government support in key western jurisdictions is driving recycling as a near term solution to meet critical mineral supply challenges. This is intertwined more recently with geopolitics and national security concerns with Western governments pushing harder to boost domestic and friendly supply of critical minerals.

R&D remains ongoing which can drive further application development to build off the early success of modular solutions for REEs and solar panels. It can also drive the potential to improve the economics of existing applications of IONSolv™ through improving recoveries, additional metal recovery or through improved re-use rates for reagents. Improving economics outside of higher commodity prices reduces hurdles and improves the odds of commercial success.

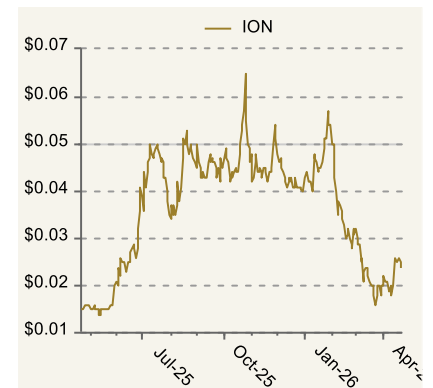
22 April 2026

Recommendation: Spec Buy

Summary (AUD)

Market Capitalisation (undiluted)	\$31.1m
Share price	\$0.024
52 week high	\$0.067
52 week low	\$0.013
Cash (31/12/2025)	\$8.4m
Debt (31/12/2025)	\$0.0m
Ordinary Shares (undiluted)	1,296.1m
Options (various)	128.4m
Performance Shares	36.1m

Share price graph (AUD)



Board & Management

Michael McNeilly	Non-Exec Chairman
Dr Duncan Turner	Non-Exec Director
Adam Slater	Non-Exec Director
Andrew Sissian	Non-Exec Director
Hugo Schumann	Non-Exec Director
Lewis Utting	CEO

Top Shareholders*

Strata Investment Holdings Plc	12.9%
Ilwella Pty Ltd	9.2%
Terra Capital	8.0%
Regal Funds Management	5.2%
Top 20	64.0%
Board & Management	6.4%

*FY25 Annual Report

Company Introduction

Iondrive Limited (ION.ASX) is an emerging technology company who has developed a Deep Eutectic Solvents (DES) platform, referred to as IONSolv™, which can be applied within critical mineral recycling (e-waste & batteries) and primary mineral processing (mixed hydroxide precipitates [MHP]). ION's technology is considered a platform in which ION can create a range of solvents that can be tailored for recovering targeted metals from specific waste/ore streams. This level of flexibility gives ION the ability to tailor solutions to meet specific unmet needs and opportunities within the critical minerals sector, which enables the company to cast a wide net to maximise commercialisation success.

The intellectual property (IP) behind ION's DES platform came with the acquisition of Iondrive Technologies Pty Ltd (IDT) which was completed in July 2023. Consideration for the acquisition was \$1.2m in ION shares (known at the time as Southern Gold, SAU.ASX). IDT holds a strategic partnership agreement (SPA) with the University of Adelaide (UoA) under which the company holds the rights to exclusively licence or purchase 3 commercialisation ready technologies. The 3 patent protected technologies are the enhanced performance for non-flammable lithium-ion batteries, aqueous based batteries and battery recycling, the IP that underpins ION's current DES platform which has been expanded beyond use in battery recycling.

In November 2023, the company effectively went "all in" on DES formally rebranding to Iondrive and since then there has been a progressive refresh of key executives and board members to support the commercialisation of the technology. Notable additions include Ebbe Dommissie (CEO, Feb 2024), Lewis Utting (Commercial Director, Dec 2024) and Hugo Schumann (NED, Dec 2024) with all three having relevant experience in commercialising and scaling new technologies and specifically in chemicals/metals processing and recycling. Spend on the company's portfolio of exploration has been minimised and in April 2026, the assets were divested.

What are Deep Eutectic Solvents?

DES are an emerging class of chemical solvents that look to improve on and become an alternative to mainstream inorganic and organic solvents/acids. DES are generally considered greener and safer in comparison, which makes them favourable to a range of industry applications and in a world that is aiming to be more environmentally friendly in general. In the case of ION, the key application for commercialisation is the production of critical metals through recycling. Figure 1 illustrates the key elements that ION's platform can target in ore, tailings and waste streams:

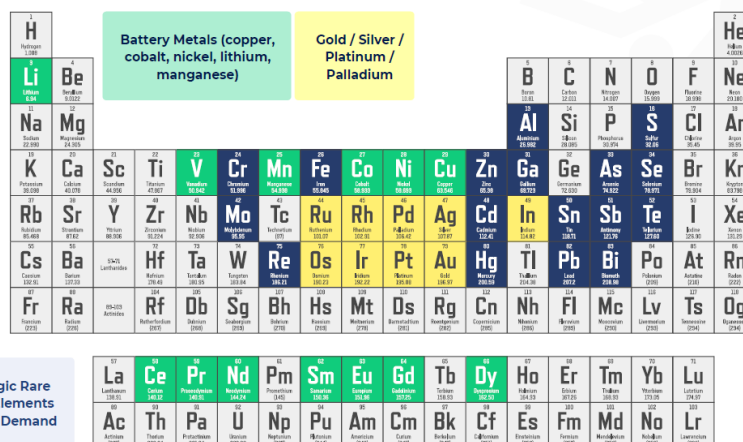
Figure 1 – ION's Target Elements

PROCESS ADVANTAGE

- DES enables selective, efficient recovery even at low grades
- Potential to unlock value from complex ores, tailings & waste streams that conventional methods avoid
- Targets metals critical to batteries, electronics, and renewables
- Supports supply security in both circular and virgin economies

- Battery / Critical Metals
- Precious Metals
- Other Metals
- Yet to be Evaluated

Strategic Rare Earth Elements in High Demand



Disclaimer: Metals shown are reported DES application areas in public studies; ongoing validation either underway or planned by Iondrive

Source: Presentation dated September 2025

In simple terms a DES covers a range of chemical compounds (notably Lewis and Brønsted types) that exhibit what is referred to as hydrogen bonding properties, which when combined form a solvent (the DES) that can interact with the targeted metal(s) at the elemental level. In application, a DES is typically comprised of two compounds generally referred to as hydrogen bond acceptors (HBA) and hydrogen bond donors (HBD), which when combined have operating parameters/conditions that are better than the individual chemicals (i.e. temperatures & pressures). As such, DES can perform under conditions that are less intensive than existing hydrometallurgical and pyrometallurgical processes which means DES can deliver similar outcomes with a potentially lower operating intensity and cost.

A DES is applied to the ore/waste stream whereby it leaches out the targeted metal(s) into solution, which is then processed to separate the targeted metal(s) into a saleable product. The DES itself is then recharged to be reused in the circuit again, noting that a unit of solvent can potentially be reused 5 or more times and in the case of ION at least 20 times with validation work suggesting it can be re-used 50-100 times.

Compared to existing solvents and acids used in similar applications, the general advantages of DES include:

- Compounds typically involved have a lower toxicity risk to humans (low lipid solubility and volatility)
- Lower environmental impacts due to reusability and being biodegradable
- Lower cost potential given base precursor chemicals are often cheap, available and reusable
- Lower cost potential given operations occur in a lower temperature/pressure setting
- Easier to tailor to a specific solution (i.e. designability), which has potential economic benefits

Ionic liquids (ILs) have also been considered as an alternative solvent solution in the same context as DES although DES still retains some advantages as illustrated in Figure 2 below.

Figure 2 – Comparison of DES to Organic Solvents and Ionic Liquids

Table 3. Comparison of the main properties of DESs with ILs and organic solvents.			
	Organic solvents	DESs	ILs
composition	organic compounds ^[a]	HBA + HBD	cation + anion
volatility	high	low	low
flammability	usually flammable	usually non-flammable	usually non-flammable
viscosity	low	± high	± high
hazard level	high	low	high
solubility of chemicals	mainly organic compounds	organic and inorganic compounds	organic and inorganic compounds
tunability	–	high	high
biodegradability	non-biodegradable	± biodegradable	± non-biodegradable
toxicity to the environment	high	low	low
cost	± expensive	± less expensive	± expensive

[a] Aliphatic or aromatic hydrocarbons, amines, esters, ethers, ketones, and nitrated or chlorinated hydrocarbons.

Source: [Deep Eutectic Solvents: An Eco-friendly Design for Drug Engineering](#), by Feras Oyoum et al

With the basic science of solvents out of the way, from a broader standpoint, a processing solution using DES (i.e. IONSolv™) is effectively in competition with existing hydrometallurgy and pyrometallurgy processes. The latter are typically used in primary mineral processing and given the costs and complexity of these types of processes, they have a much higher scale requirement to support economics if they can be applied to the same applications as IONSolv™. In addition, they tend to be relatively energy and/or chemical intensive with less flexibility to process a multi commodity mix of waste streams or target specific metals within an ore or waste stream.

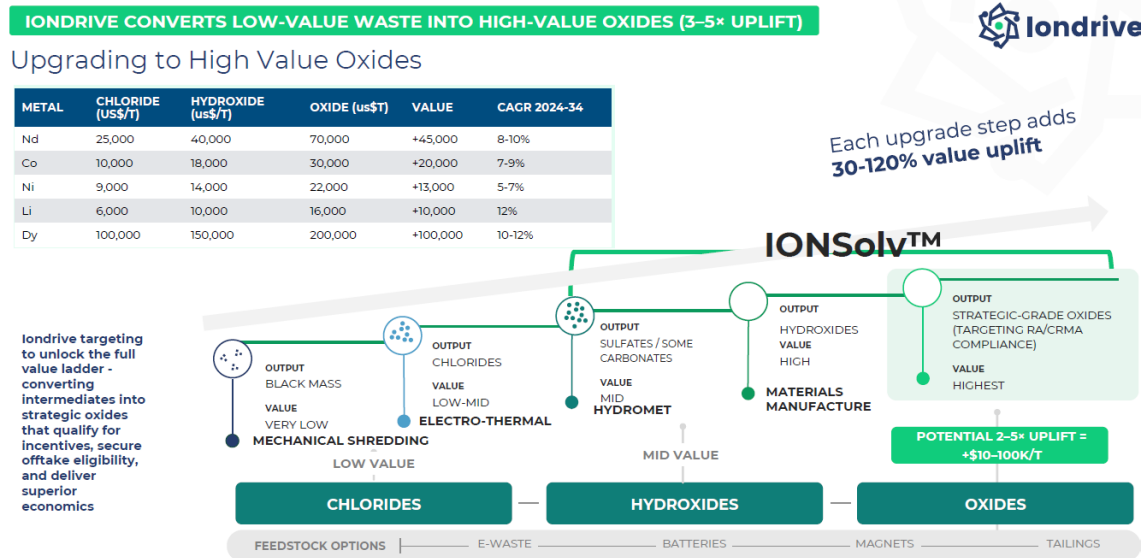
In our view, these aspects and the comparative benefits of alternatives like DES make it appear unlikely that existing hydrometallurgy and pyrometallurgy flowsheets will be used widely to address the issues and opportunities associated with metals recycling and as such, this cracks open the market opportunity for new technologies like ION's IONSolv™ to enter the market and build profit generating businesses in recycling and processing critical minerals.

Core Market Opportunities

The Economic Focus

The IONSolv™ process is being designed and tested to maximise economic value from processing various waste streams as often recycling can be a low margin endeavour, whilst in the case of critical minerals, there is commodity price volatility to also contend with (i.e. revenue variability). Whilst ongoing technological improvements can improve economics and reduce that price sensitivity, the other avenue is to ensure that the highest value product is produced from the process, which in the case of IONSolv™, metals are recovered into oxide form. Particularly in REEs, oxide form is typically the highest value form and sits below direct metal products. The value add in product forms is illustrated below:

Figure 3 – Value of Recovered Product Forms



Source: Presentation dated April 2026

The Target Verticals

ION's IONSolv™ platform can be applied to three verticals being e-waste recycling, lithium-ion battery recycling and mineral processing (specifically nickel/cobalt MHP). Battery recycling was front and centre post the acquisition of IDT with a pre-feasibility study released in November 2024, however, since then the focus has pivoted towards the broader e-waste sector as the technology that underpins battery recycling is capable of being tailored and applied to the recovery of a broader range of high value metals contained in e-waste. A summary of ION's key target verticals is detailed below:

Figure 4 – Value Opportunity of ION's Target Sectors



Sources for TAM estimates: Rhodium Group / Battery Outlook / Recycling Market (latest available) United Nations – Global E-waste Monitor (UNITAR/ITU/UISWA, latest edition). Iondrive internal market view (2025) for mining intermediates (e.g., MHP Ni+Co), informed by public company disclosures and analyst datasets. All USD, rounded; Iondrive assumptions applied to size/CAGR where noted.

Source: Presentation dated September 2025

The opportunity within the e-waste sector has accelerated significantly for ION as new technology solutions are needed now to improve recycling outcomes and help close the loop in the supply chain of critical minerals. The broader range and density of valuable metals contained within e-waste compared to lithium-ion batteries improves the economic potential of a new recycling technology, particularly if it can recover valuable and strategic metals such as rare earth elements (REEs), which

are typically not recovered in existing e-waste recycling. Not specific to the US, but global recovery of REEs from e-waste is estimated to be as little as 1% thus it creates a significant opportunity to address.

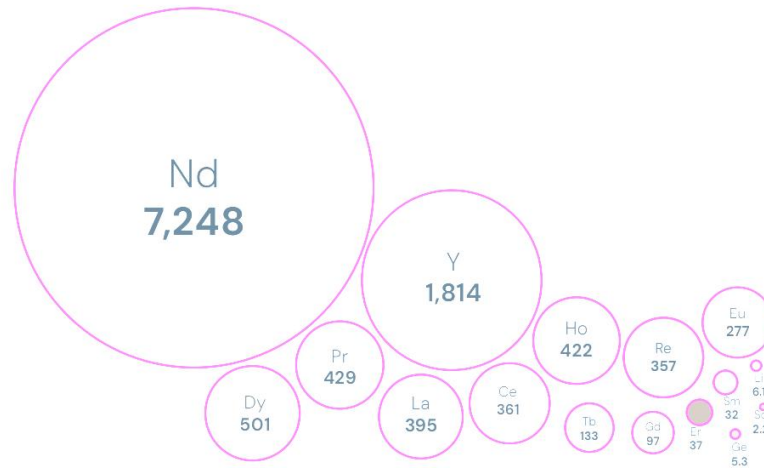
Figure 5 – Global REEs in E-waste

With the exception of lithium (Li) and germanium (Ge), several critical raw materials, primarily rare earth elements, are difficult to recycle from e-waste. In 2022, approximately 12 million kg of these elements were present in the e-waste generated globally, with neodymium (Nd) accounting for 7.2 million kg (commonly used in magnets) and yttrium (Y) accounting for 1.8 million kg (Figure 20).

Figure 20. Critical Raw Materials in Global E-waste as per European Union Definitions, with No or Low Recovery Rates (in thousand kg, 2022)



Source: Global E-waste Monitor 2024

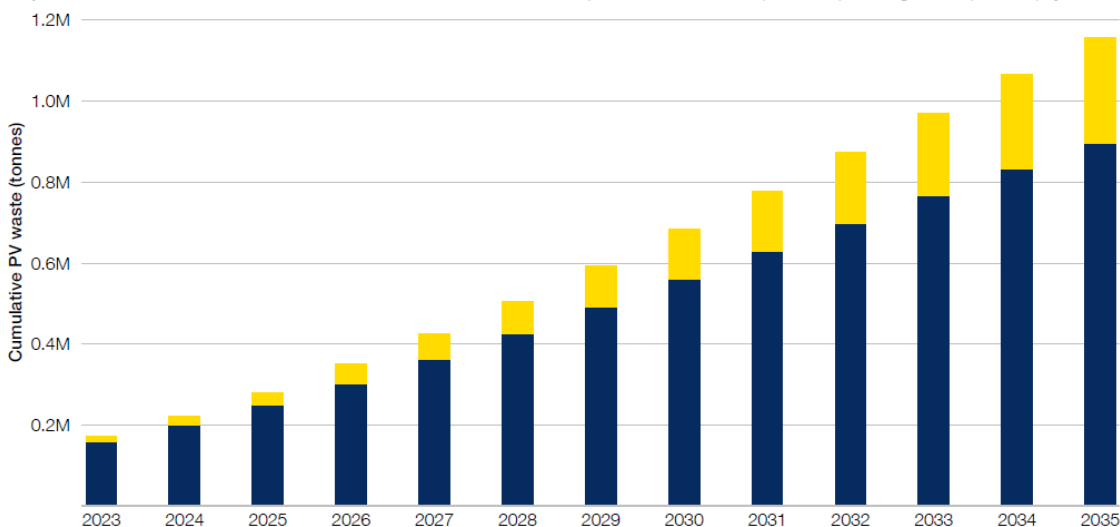


Strong regulatory and geopolitical tailwinds are also expediting support and funding for solutions to close the loop in western supply chains and increase production through the recovery of critical minerals in waste. In addition, we think in comparison a battery recycling operation that the scale and focus of e-waste recycling deployments can be tailored to the needs of the partner or achieve a specific outcome, thus a modular approach to market likely makes the hurdle to gain commercial traction lower and reduces the capital requirements for funding a commercial operation. In ION's case, this is evident in the development of the IONSolv™ solution which is a tailored solution designed to recover high value REEs from e-waste based around the needs of an established e-waste recycling partner.

In many regions and notably in Australia, solar panels are typically classified as e-waste thus this opportunity represents another specific sub-opportunity with the e-waste sector and one where Australia is of focus given the long history and scale of deployment of residential and commercial solar. The opportunity for ION exists as regulations are creating volume and more value in recycling whilst the potential to enhance recoveries of valuable metals that are currently hard to recover (e.g. silver and silicon). The growing scale of the problem in Australian is illustrated in the figure below.

Figure 6 – Australian PV Waste Forecasts

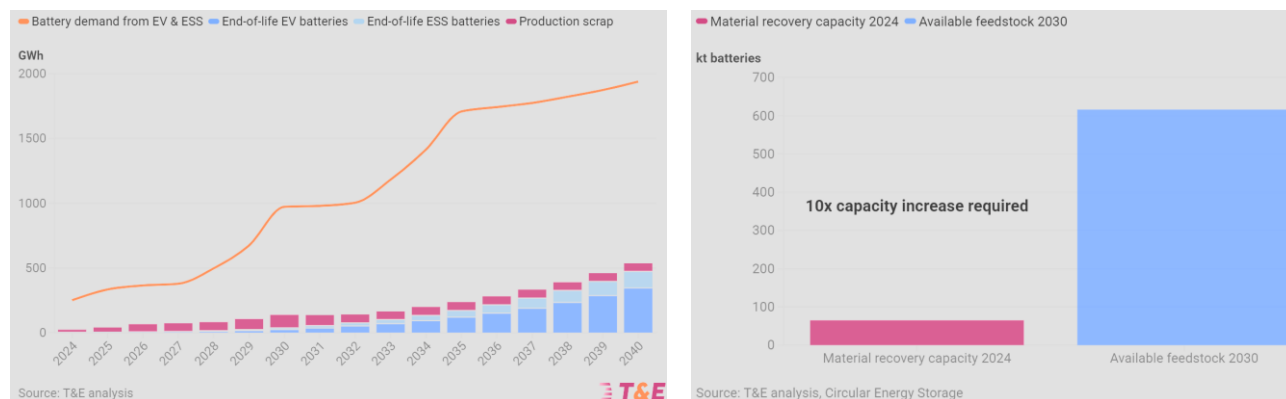
Projected cumulative PV waste in tonnes in Australia from 2022 to 2035, comparison between small (<=100kW) and large-scale (>100kW) systems.



Source: UNSW Scoping Report Dated 2022

Given the policy and regulatory backdrop, in our view the EU is the leading region to explore opportunities in lithium-ion battery recycling and advance new processing technologies. This is a function of relatively high and increasing rates of EV and renewable energy adoption alongside policies and regulation pushing aggressive targets for end of life battery recovery and recycling. In addition, the regulations drive targeted levels of recycled materials in new batteries which essentially forces a minimum level of recycling capacity to be constructed for battery makers to be compliant. The figure below shows analysis from T&E illustrates the gap in EU recycling capacity for batteries based on forecasted EV penetration rates and regulatory recovery and recycling levels:

Figure 7 – EU EOL Battery Volumes and Recycling Capacity Requirements



Source: T&E Report Dated December 2024

“Why now?” is the question often asked when considering the commercialisation potential of new technologies such as DES and in particular its application towards the critical mineral processing and recycling. In our view, the drivers that create the window of opportunity are geopolitics and regulation, drivers which have accelerated over CY25, and amplifies the underlying trend of achieving more environmentally friendly outcomes to support decarbonisation targets and to improve industrial and national security.

Trade War

China is using export and tech restrictions across the REE value chain, as part of its retaliation in the ongoing trade war with the US, is expediting the western push, led by the US, to create an independent western supply chain for critical minerals, and particularly in REEs. In April 2025, China announced export restrictions on 7 key REE metals and magnet materials which was then followed up in June 2025 with special export licences needed to export materials. The scope of controls were broadened again in October 2025. Whilst this latter round has been temporarily paused as a result of recent trade talks, China has since still selectively applied restrictions under dual use clauses towards Japan and Europe.

Elevated supply risk has expediated the US’s push to create and expand domestic supply chains in which they have put their money where their mouths are on multiple fronts. The notable example is a US\$550m (equity and debt) investment into MP Materials via the Department of Defence (DoD). Alongside the investment, the DoD will buy NdPr products under a 10 year price floor at US\$110/kg which aims to ensure that the mine can deliver consistent supply through the cycle. Beyond direct investment in the US’s only primary REE mine, the Defence Production Act (DPA) has also been used to fund and support the progression of opportunities in recovering critical minerals from e-waste to close the loop and help boost domestic supply.

After trade talks in late October 2025, China offered a 12 month pause alongside other relaxations in controls over multiple critical minerals that have been the focus of US attention. These relaxations potentially reduce tensions and supply disruptions near term, however, exports still require licences and approvals in which we think there are still risks skewed to dual-use materials (i.e. for military use) thus keeping the national security issue elevated. This pattern of controls and trade wars over REEs has repeated before and usually ends up in the status quo being maintained and, in this case, it is not unreasonable to assume this could occur again.

We think that the return to status quo risk is low and the window of opportunity remains open as with the US it is a case of following the money as a couple of days after the talks, the US announced US\$1.4b in funding for Vulcan Elements and ReElement Technologies to support downstream REE magnet production capacity. Additionally, the US has furthered its potential support mechanism floating the concept of critical minerals stockpiles and creating a Western pricing floor. With money, investment and policies still flowing from the US Government, the commitment to the development of an independent supply chain in REEs remains intact.

Beyond the US based companies, Lynas Rare Earths Limited, has executed two agreements in March 2026 which contain price floors for NdPr at US\$110/kg. The first was signed with Japan Australia Rare Earths B.V. (JARE) and the second with the Department of War (DoW), with the latter showing an emerging willingness from the US to provide this kind of support to producers associated with friendly countries.

This dynamic is positive of ION's partnership with Colt Recycling (detailed later in the report) as we think the fastest way to increase domestic production of REE supply to support downstream processing and manufacturing in the near term is through recycling as the turnaround on building recycling capacity is faster than building out new primary mine supply even with planned reforms to mine permitting.

Environmental: Policy and Regulations

Beyond those associated with the US led trade war, the broader pursuit of decarbonisation, energy transition and improving environmental standards have driven a broad range policy and regulations around recovery and recycling of critical minerals. Although often discussed in terms of environment and sustainability, these policies and regulations are intertwined with national security interests as well. These policies aim to minimise waste through recycling which also helps to minimise national security risks by reducing outside influence/control (i.e. China) in these supply chains.

In the EU, this is notably driven by the Critical Raw Materials Act (CRMA) which has set significant targets for domestic production, processing and recycling levels by 2030 whilst also diversifying imports sources for critical minerals. This comes on top of existing sustainability targets set under other regulations like the European Battery Directive that drive critical mineral recovery, recycling and minimum use levels of recycled materials in new batteries which come into effect and ramp up into the mid-2030s. On top of this, the EU has effectively all but banned the export of black mass as a way for the EU to retain control over critical minerals within the Union, which will drive the need for domestic refining capacity. Whilst still to be finalised, the introduction of the Circular Economy Act in 2026 represents another policy initiative that will drive further support for battery recycling.

We broadly observe that existing recovery and recycling capacity in the EU can produce up to a black mass product whilst further downstream covers precursor materials downwards. In our view, for the development of a truly circular supply chain in the EU and for any of these targets to be met, the key missing piece in the supply chain appears to be refining capacity to process black mass. Thus, the core opportunity appears to be for new hydrometallurgical technologies that can cost effectively process black mass into reusable products. As detailed later, through the participation in consortiums, ION has put itself in a position to prove its technology in a manner that increases the potential of developing into commercial opportunities.

Greater e-waste export restrictions and generally tighter landfill controls will only contribute to growing waste management problem in Western nations that we think will have to be largely solved through recycling. Australia offers a notable opportunity as any other key region targeted by ION as newer restrictions prevent many types of e-waste being exported in any significant volume, and with increasing costs for landfill, this creates a significant need for recycling and processing capacity. From the Australian context, the best application for ION appears to be in recycling solar panels as the DES platform has potential to improve or enable the recovery of high value such as silver and silicon which is difficult to currently recover.

Technological Progress

Trials, Pilots, R&D Grants, Validation and Feasibility

Since the acquisition, ION has been highly active in ongoing R&D, trials and pilot programs with leading organisations which have helped to validate and expand the capability of the DES platform. ION has also secured several grants which provide material non-dilutive funding to support R&D initiatives and validate the technology. Their key programs and tech validation for ION's DES platform is detailed below:

- August 2023: ION through its partnership with UoA received a \$5m grant from the Australian Research Council (ARC) for a training centre for battery recycling centre. The program will go towards further advancing ION's DES platform.
- July 2024: A benchmark study commenced with the PEM of RWTH Aachen which aims to support and validate the commerciality of ION's DES technology for battery recycling ahead of the PFS. This marks the starting point of a growing involvement with PEM RWTH Aachen which has culminate in two consortia insolents as detailed later in the report. Alongside this, Koch Modular was engaged for engineering studies to evaluate and help refine solvent recovery and minimising capex to support the PFS.
- March to July 2024: Large scale trials at UoA with results validated by Independent Metallurgical Operations which are a key input to the PFS. This trial was 1000x larger (120kg of black mass) than prior trials and is key in derisking the scalability of the DES platform in battery recycling. Testing confirmed key assumptions including recoveries, solvent loss and consistency of results at higher volumes, whilst also identifying areas of further optimisation on metal targeting.

- October 2024: Signed a non-binding MOU with TNO which is a Dutch based research and technology firm specialising in the energy transition and battery ecosystems.
- October 2024: A metallurgical update detailed improved recoveries of key metals from black mass from further optimisation test work done as part of the PFS workstreams, which included testing of a pre-treatment step ahead of the solvent stage. The work showed recoveries of the key battery metals can achieve 90%+ including up to 100% for nickel. Alongside improved recoveries, it also reduced impurities such as PVDF binder, graphite and ferrous iron. As we note later, graphite has the potential to go from impurity challenge to revenue driver.
- November 2024: Release of the PFS for a commercial scale battery recycling plant which was supported by PEM Aachen, Wood and Koch Modular, and is discussed in detailed further below.
- December 2024: Finalisation of the \$5m grant (from August 2023) from the ARC to support a \$15m, 5yr training centre for battery recycling. The focus of the program is to support and develop new battery recycling technologies in addition to including cell design and new battery tech standards. For ION, the program will enable further refinement of the DES platform as a key solution for battery recycling.
- February 2025; The PFS results were independently validated thus supporting the key financial metrics in the study, which is discussed in detailed further below
- March 2025: ION announced that it was expanding the scope of the DES platform in a primary mineral processing application. The trial would test the suitability of using mixed hydroxide precipitate (MHP), which is an intermediate product typically containing nickel and/or cobalt, as a feedstock for the DES technology. Success in this application would open up ION's technology to become a solution in streamlining the refining of MHP directly into separated products suitable for the battery sector.
- June 2025: Received a grant of \$100k to test the DES solution on printed circuit boards (PCB) which are a high value type of e-waste. The grant is from the South Australian Government's Green Industries program with testing to be conducted at the UoA. This program has the potential to further validate ION's technology to the recovery of higher value metals such as gold, silver, palladium and copper which are commonly used in PCBs.
- July 2025: Received a grant totalling \$84k from the CSIRO to test graphite recovery from lithium-ion batteries which is covered in more detail latter in the report given the value-add success in this testing could add to the established battery recycling flow sheet.
- August 2025: Australian Federal Government grant of up to \$3.9m to support the planned pilot plant for battery and critical mineral recycling, which was done under a competitive application process. The funding will cover 50% or up to a maximum of \$3.9m of the capex and opex of operating a pilot plant which will initially focus on battery recycling. The plant then provides the potential to test the process on a broader set of waste streams such e-waste. ION scoped the capex of the plant to \$4.8m and with receipt of the grant, ION commenced construction of the plant with commissioning commencing in late CY25 with ongoing operation and testing through to the end of CY26.
- August 2025: ION was brought into a European consortium lead by RWTH Aachen and battery cell manufacturer Fraunhofer FFB that includes other battery recycling companies (e.g. Fortum, Primobius, and Umicore). Inclusion into the consortium will see ION's DES technology be benchmarked against other recycling technologies in a Life Cycle Assessment (LCA) study. Positive outcomes in this study, particularly against competing solutions has the potential to provide ION with a competitive advantage when exploring commercial opportunities.
- November 2025: ION commences development work on solar panel recycling efforts by starting a broader testing program on feedstock sourced from commercial operators in Australia and Taiwan, whilst the company is also engaging similar groups in the EU for supply agreements. The testing will optimise for silver and silicon recovery given they are the highest value recyclable materials in a photovoltaic cell which aren't readily addresses in existing recycling. Testing is being done under two programs with ION conducting testing and techno-economic analysis with a commercial lab in the UK whilst the second program is being conducted with the UoA.
- November 2025: ION releases a techno-economic evaluation for the REE recycling modular unit now referred to as IONSolv™. The study released attractive economics for the solution in which we cover in more detail further below.
- February 2026: ION release preliminary testing results for the application of the IONSolv™ process relating to solar recycling with the results showing the potential silver recoveries of 85%+. The results support progressing testing to apply IONSolv™ on mechanically prepared end of life solar panel feedstock from Livium. The next phase will also consider optimisation across the whole process chain and in particular, assess the recovery potential of polysilicon, which is another large value opportunity in recycling solar panels.
- April 2026: ION release two updates relating to progress on REE recycling in the US in addition to an update on the pilot plant. Test work on commercial samples of e-waste (~250kg) has yielded NdPr recoveries that exceed the assumptions

of those in the techno-economic study released in 2025. Secondly, ION detailed scope changes in the pilot plant to support multi-feedstock processing in addition to process optimisations that can potentially reduce capex and opex through improved solvent usage and recovery.

Battery Recycling PFS

The first key validation of the DES platform came in the PFS released November 2024 that was independently validated in a review study released in February 2025. The study detailed a plant that would process 21ktpa of black mass to recover 4 key product streams being Lithium Carbonate, Nickel Hydroxide, Cobalt Oxide and Manganese Hydroxide. Based on a 20 year operating period and a price curve from BMI, the study showed an NPV10 of A\$249m with capex of A\$370m, including black mass pre-treatment. ION's flowsheet was benchmarked to a conventional hydrometallurgical process with the economics comparing favourably for ION with the biggest comparison being a capex intensity that was 36% lower. Opex was also lower on a pure processing cost comparison by ~12% but once including the cost of pre-treating the black mass, it was ~7% higher. However, it's worth noting that including the pre-treatment stage, ION's process still produced margins that are ~20% higher than a conventional hydrometallurgical process due to the increase in metal recoveries from pre-treatment, increasing from a blended rate of ~89% to ~95% versus ~86% from the conventional hydrometallurgical process.

Figure 8 – ION Financial Summary and Recovery Comparison for Pre-Treatment

Normalised (€/t)	Competitor 2024	ION 2024	ION 2035	Battery Minerals		Total Recovery			
				Pretreated Black Mass	Raw Black Mass	IMO ¹ pCAM	UoA pCAM		
Sales Revenue	€ 6,489	€ 7,158 ^a	€ 15,132 ^b	Lithium	89.1%	82.9%	NA	NA	
Opex 1	€ 4,667	€ 4,096	€ 4,096		Nickel	100.0%	88.5%	98.3%	97.6%
EBITDA 1	€ 1,822	€ 3,062	€ 11,036			Cobalt	98.6%	96.5%	98.6%
EBITDA 1/Sales%	27%	43%	73%		Manganese		98.4%	94.4%	84.6%
Sales Revenue	€ 6,489	€ 7,158 ^a	€ 15,132 ^b						
Opex 2	€ 6,940	€ 6,369	€ 8,118						
EBITDA 2	-€ 451	€ 789	€ 7,014						
EBITDA 2/ Sales%	-7%	11%	46%						
Capex (€/tonne)	€ 20,218	€ 12,911	€ 12,911						

Source: Presentation dated November 2024

Since the PFS, the economic potential of a battery recycling deployment could improve through two main avenues being additional metal recovery and improve reagent reuse.

The recovery of graphite from the black mass input, which makes up a large portion of the battery by weight and the residual "tailings" under the current flowsheet. Initial internal analysis from ION suggests adding a step targeting graphite can produce ~8.4ktpa with a recovery of 90% which under the same pricing source, could increase revenue by ~25%. Confirmation of the parameters and the net value add from recovering graphite is subject to testing under a grant backed project in conjunction with CSIRO. We think that the incremental cost above the PFS metrics is potentially modest given the graphite is already handled on the front end of the circuit (i.e. partial costs already sunk) with the incremental cost mostly being related to the solvent extraction step. Whilst it is hard to quantify specific numbers at current, the drop through from adding graphite recovery should be higher margin which falls through to the bottom line thus improving profitability and overall economics.

Reagents are the second biggest driver of economic sensitivity and the PFS is currently predicated on 20x reuses (5% loss rate). ION has indicated the potential for 50-100 reuses (1-2% loss rate) which would drive a significant reduction in opex (potentially 5-25% lower) and significantly improves the economics and competitiveness of a recycling operation. ION continues to conduct further testing and validation work to improve confidence in higher re-use rates.

We highlight these examples as it shows how ongoing R&D from ION can potentially result in material improvements to the economics of a DES based recycling operation. Any success in adding graphite revenue and/or reducing reagent costs through improved reuse rates can add significant leverage to the economics of a recycling operation and would drive a significant uplift in the NPV10 whilst it also further minimises waste from the process. We note that at spot metal pricing, there is likely limited incentive to construct a plant based on the current economics but through increasing revenue from additional metal recoveries and/or reducing the opex profile, this would reduce the economic hurdle (or metal price incentive level) to build a facility thus improving the odds of a progressing a commercial development sooner rather than later.

Building off the PFS, larger pilot scale testing is a key next step with the construction of the pilot plant underway and supported with a grant under the Australian Government's Industry Growth Program. The grant covers 50% of the capex and opex of the pilot plant up to a maximum of \$3.9m and with the pilot plant estimated to cost \$4.8m to build, the grant is expected to cover a significant proportion of the overall cost of building and operating the pilot plant. Dry container commissioning commenced in early CY26 with results from batch and ongoing operations expected later in CY26. The results of the pilot plant will provide more robust operating parameters from the DES process and support further refinement of capex and opex estimates for a commercial scale operation.

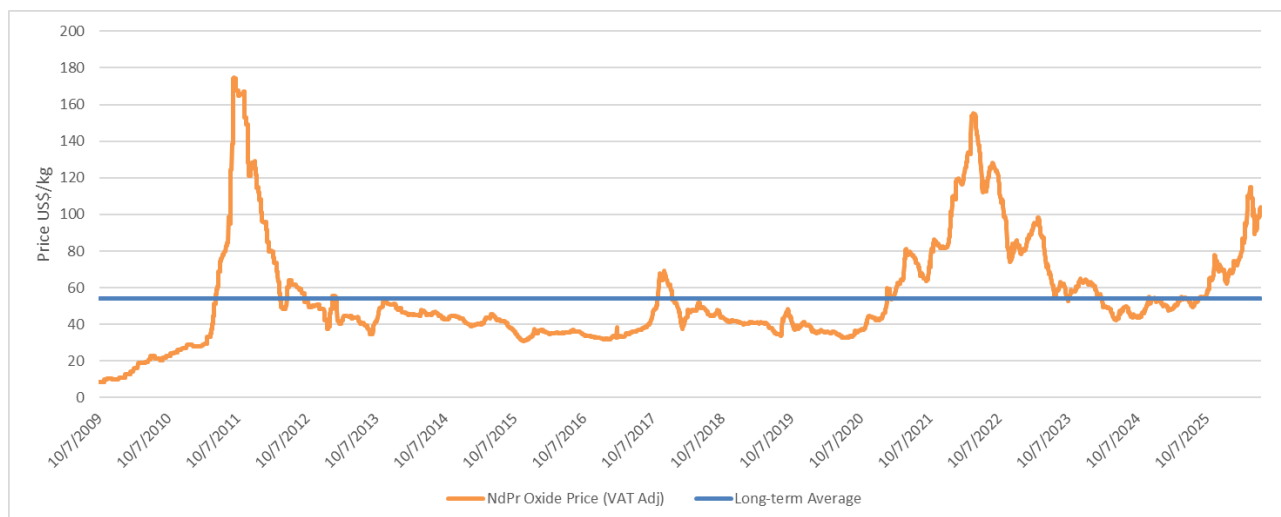
IONSolv™ REE Recycling Evaluation

The second key validation came in November 2025 with the release of the techno-economic evaluation for a commercial scale modular REE recycling plant designed to recover REOs from end of life NdFeB magnet e-waste, which is essentially tailored to the requirements of the Colt Partnership. The evaluation detailed that IONSolv™ can produce a MREO product containing 5 strategic and high value rare earth oxides (Nd, Pr, Dy, Ho and Gd) from magnet scrap. The process is optimised to maximise the extraction (90%+) of Nd and Pr given these elements drive the economic value of the MREO produced. In April 2026, ION demonstrated further validation for NdPr recoveries being in the mid 90% range through test work based on commercial e-waste samples in the US.

The economics detailed were for a single modular deployment with a designed throughput of 2.0ktpa that produces ~115k kg of MREO per year of which NdPr comprises ~90% of the basket with Ho and Dy being other key payable recovered metals. The release detailed the attractive economic potential of recovering REEs from steel scrap with a post-tax NPV10 of ~US\$7.0M (~A\$10.8m) with an IRR of 46% based on a net estimated basket price of ~US\$67/kg after a payability of 80%. Capex is estimated to be US\$4.6m in addition to US\$2.3m of sustaining capex whilst opex is ~US\$4.4m p.a. or ~US\$38/kg with a breakeven price estimated at ~US\$51/kg payable (including capital recovery).

Given REE pricing is trending above the average over the last couple of cycles, a level that supports attractive economics for IONSolv™, coupled with an established recycling partner, policy, regulation and funding programs aiming to increase US supply chain independence, we think the current market dynamic creates an improving backdrop for ION to achieve commercial success and build the company's first revenue and earnings generating business unit.

Figure 9 – NdPr Oxide Price History



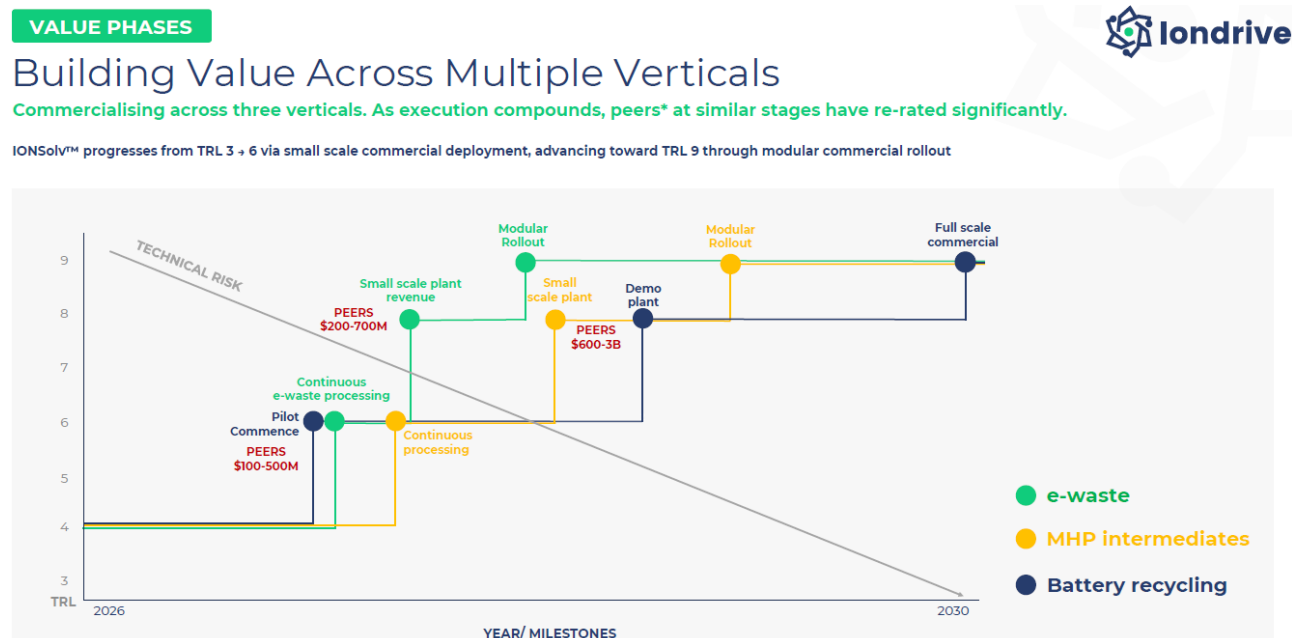
Source: SMM Accessed via Refinitiv April 2026

Going forward, ION is working on phase 2 validation which aims to independently validate the assumptions of the techno-economic evaluation. This work is expected to be completed in 2Q CY26 and cover further process data for IONSolv™ on rare earth recoveries, reagent re-use & recovery rates, and refined financial inputs to support a PFS level study. We note in April 2026, ION provided an update demonstrating strong recoveries of 93-95% for NdPr using 250kg of commercial e-e-waste samples. Similar to the battery recycling plant, we understand that the process assumes 20x reuses in reagents, which if ongoing validation can improve on this parameter, IONSolv™ could see a further improvement in opex and overall economics thus making it an even more attractive solution.

Commercialisation Opportunities (Consortiums & Partnerships)

2023 & 2024 were the years of focusing on validating the capabilities of IONSolv™ whilst 2025 was the year of forming partnerships and agreements which can lead to commercial scale deployments of the technology potentially as early as 2026. E-waste provides the best opportunity with the potential for a commercial deployment in 2026 whilst in battery recycling and MHP intermediates commercial deployments can potentially come towards the back end of the decade.

Figure 10 – ION's Forward Commercialisation Milestones



Over CY25, ION has established four key opportunities that we think improve the potential of resulting in commercial deployments in line with the timeline detailed above.

Team Building in the EU

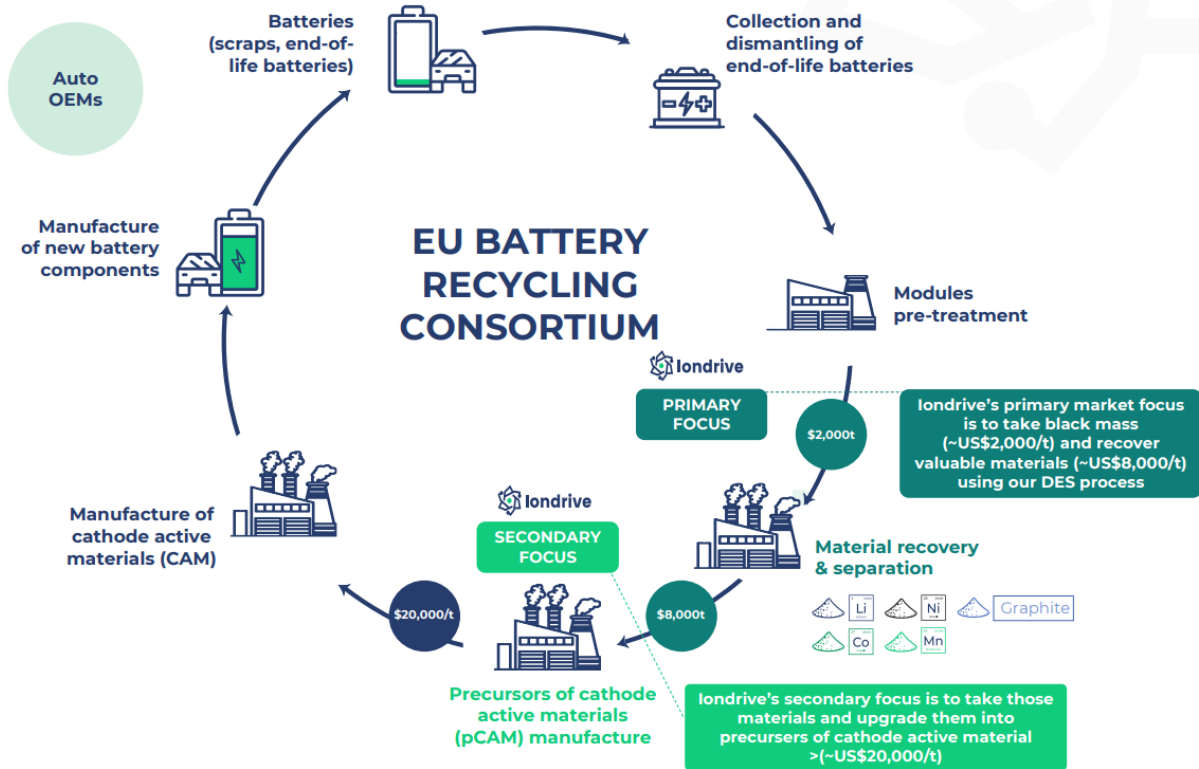
June 2025 essentially kicked off the establishment of an EU Consortium to work on an end to end supply chain for battery recycling supported by IONSolv™. The consortium was worked on by ION with their partner, the PEM of RWTH Aachen University, and includes several other major European companies that are involved across other aspects of the supply chain. The aim of the consortium is to establish a closed loop battery recycling supply chain that can demonstrate that batteries made from 80% recycled materials can perform on par with batteries made from primary materials. Partners in the consortium include companies that can provide/produce black mass as well as OEMs that can build and validate the use and performance of recycled materials in new batteries. ION's tech is applied at the black mass refining stage of the value chain whilst also testing the ability to further process into pCAM materials. PEM will aid in validating the pCAM materials produced by ION and testing it in their existing CAM pilot plant.

Alongside the initial establishment of the consortium, a grant was applied for which would cover a significant proportion of the expected cost of the activities to be conducted under the consortium. In October 2025, a grant of ~EUR2.1m was awarded which supports the formation of the consortium with members providing an additional ~EUR1.1m in funding. The other partners to ION and PEM involved in the consortium include:

- Accurec Recycling GmbH is a German recycling company that specialises in battery and e-waste and will provide its expertise in battery dismantling and processing to produce a treatable black mass.
- NEUMAN & Esser Process Technology GmbH is a provides advanced processing technology and equipment and will provide process engineering expertise to help scale up recycling operations.
- Constantia Patz GmbH is a packaging and materials group that is bringing expertise in material design and recovery pathways and ensure that the produced materials can be utilised by manufacturers.

Overall, the consortium covers the supply chain from dismantling batteries through to the production of precursor materials that can be used to make new batteries. ION also noted that European OEMs are expected to join as associate members once key technical milestones have been made, which provides the final validation of the quality of the materials produced. Success with OEMs would effectively close the loop and validate ION with companies that could be the ultimate customers of the recycled materials and drive support the development of a commercial scale recycling supply chain.

Figure 11 – EU Consortium Diagram



Source: Presentation dated June 2025

We note that consortiums are a common approach in Germany and the EU to bring together companies from across a supply chain to work on a problem to meet a specific outcome or in this case, regulations that mandate increasing levels of recycling and the use of recycled materials in the EV sector. We think the involvement of ION in a consortium like this is not just a further chance to improve and validate its DES technology but to put itself in a greater position to create commercial opportunities post the conclusion of the consortium. We note that whilst the EU is mandating increasing levels and use of recycled materials, success in proving the tech with a consortium is in essence akin to a long data call option as a commercial deployment would likely only occur once the downstream partners decide to put the supply chain into action to meet the pending regulatory requirements.

A Foray into US Rare Earth Elements

The second major commercialisation opportunity was announced in September 2025 with ION signing a binding agreement with Colt Recycling LLC. Colt is a significant US based e-waste processing business and is part of Elemental Holdings Group which is an established global urban mining company. This agreement marks ION's first material engagement in the US with a partner that is established in the e-waste sector that is looking for new recycling solutions to enable the recovery of REEs which are typically lost in their existing recycling operations. The framework of the agreement covers the testing and validation in addition to commercial deployments for ION at Colt's facilities if considered feasible. Colt will provide ION with e-waste feedstock to test the ability of IONSolv™ to recover REEs. We think this opportunity has strong commercial potential given:

- Colt is an established e-waste recycling company that has access to REE rich feedstock waste materials (e.g. magnets from hard drives)
- The current dynamic for rare earths in the US supports investment into recycling capacity to provide domestic supply
- The higher value nature of rare earths waste streams (i.e. end of life magnets) supports the potential for attractive economics of a bespoke REE recycling deployment, as illustrated in the techno-economic evaluation released in November 2025

Should ION both technically and economically validate the IONSolv™ process with Colt, we think this can lead to the first commercial deployment in 2026 with the potential to rollout out multiple modules over the next 3-5 years.

Expanding the Recycling Opportunity

In September 2025, ION announced an agreement with Livium (ASX:LIT) to test and commercialise IONSolv™ in Australia on a range of waste. Livium is the owner of Envirostream which is a major battery recycling operation in Australia and has its own strategic growth plans which can provide access to other waste streams such as solar panels.

Under the agreement, the waste streams include processing black mass, a proven existing capability of ION, in addition to new waste streams such as rare earth magnets and solar panels. The agreements endeavours to negotiate binding commercial agreements on supply and colocation whilst, any IP generated by ION through the partnership will be retained by ION. We think a bespoke solution addressing the challenges in solar panel recycling will likely resemble the scope, scale and economics of IONSolv™ for REEs. The key catalysts in understanding the potential value to ION of this partnership will be in validation that the DES process can be applied to recover silver and silicon and a techno-economic evaluation on a modular processing solution due in CY26.

Akin to the Colt partnership, success under this partnership would lead to more tangible commercial opportunities given the established recycling operations of Livium and the accelerating problem and legislation in Australia around e-waste and in particular solar panels. Should ION both technically and economically validate a recycling solution, we think this can lead to a commercial roll out in within the next 1-2 years and be the start of a multi-module roll out over the next 3-5 years.

Nordic Cobalt

In October 2025, ION signed a binding term sheet with Latitude 66 Ltd (ASX:LAT) to apply ION's DES technology to the processing of LAT's cobalt concentrate, which would be a by-product output from its proposed gold mining project. This marks ION's first formal testing on primary mining concentrate, although from a technology perspective it will be an extension of a proven capability of being able to extract cobalt from black mass. Results from this testing, if positive, will form part of LAT's future feasibility studies, thus this partnership has the potential to lead to a commercial deployment in a future mine development i.e. creating another long dated call option. We also think success can further increase interest from other mining companies that are looking to capture more value from production.

Competitive Landscape

As noted, ION's DES technology/IONSolv™ solution is a modern alternative to existing conventional hydrometallurgical or pyrometallurgical processes and has been compared to these processes to validate the DES on an economic basis. However, as conventional hydrometallurgical and pyrometallurgical processes have limited scope to be applied as solutions in the verticals targeted by ION, we view competition as other competing new era processing technologies which are being applied in the same manner as ION. There are many competitors in the space, included several listed on the ASX, applying a wide range of technologies to address the same problems.

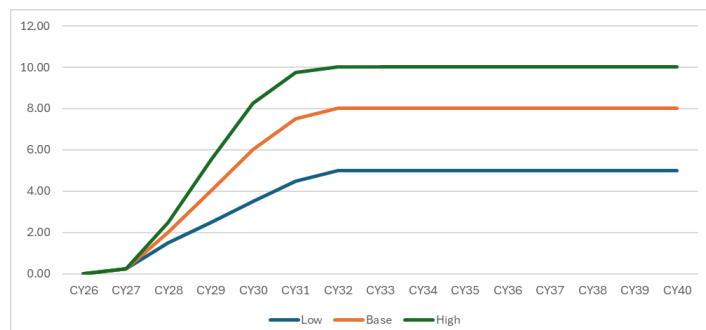
Having a leading and attractive technology is half the requirement as long term success is as much about having the capability to commercialise the technologies. We think ION has a technology that improves upon existing processes and in a manner that is attractive to potential partners that are in need of this kind of solution. We also think ION has the people involved who can maximise the commercial opportunities of this technology in what is emerging as an attractive window in time to achieve commercial success.

Valuation

As a technology company entering the commercialisation stage for its IP, valuations can be difficult to construct as often it is a series of binary options until a commercial deployment is secured, often with economic parameters that are unclear for some time. With the release of the techno-economic evaluation for the company's IONSolv™ modular REE recycling plant, we have a better ability to construct a valuation based on a potential rollout of a commercial scale operation with Colt as they have extensive e-waste operations in the US and the capacity to facilitate a deployment of plants.

In our modelling, we consider three levels of rollouts being 5, 8 and 10 modules over 5 years starting from late CY27 using the economic parameters from the techno-economic evaluation as a baseline. With the value driven by NdPr, we use a price of US\$90/kg, which reflects an incentive price level for new Western supply, as our base case in our modelling to calculate an NPV12 and earnings at peak rollout to derive a blended valuation for each scenario. Inclusive of future dilution, whereby we assume full equity funding for the first 3 plants, the modelling gives a valuation range of ~\$74m to ~\$157m or \$0.036/sh to \$0.076/sh.

Figure 12 – IONSolv™ Rollout with Colt



REE Recycling	NPV12	Earn. 10x	Bl. Ave.
Low (5 plants)	71.2	77.5	74.3
Base (8 plants)	113.9	129.9	121.9
High (10 plants)	145.0	169.8	157.4
Low (5 plants)	0.035	0.038	0.036
Base (8 plants)	0.055	0.063	0.059
High (10 plants)	0.070	0.082	0.076

Source: TC Estimates and Analysis

The key sensitivity to any rollout is the REE basket price and payability given cost inputs for processing (i.e. power, reagents) have lesser sensitivity impacts. The sensitivity analysis for our blended valuation is detailed below for the base case scenario of an 8 plant rollout and shows attractive economic potential at most REE prices above the long term average (~US\$55/kg). It also highlights a breakeven gross basket price as low as ~US\$60/kg and an ~78% payability for the NPV analysis.

Figure 13 – Sensitivity of the IONSolv™ Rollout with Colt (Gross Basket Price vs Payability)

		Basket Price (~90% NdPR)									
		50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0
Payability	70.0%	-49.5	-19.4	10.6	40.7	70.8	100.9	130.9	161.0	191.1	221.2
	72.5%	-44.1	-13.0	18.2	49.3	80.5	111.6	142.8	173.9	205.1	236.2
	75.0%	-38.8	-6.5	25.7	57.9	90.1	122.4	154.6	186.8	219.0	251.3
	77.5%	-33.4	-0.1	33.2	66.5	99.8	133.1	166.4	199.7	233.0	266.3
	80.0%	-28.0	6.3	40.7	75.1	109.5	143.8	178.2	212.6	247.0	281.3
	82.5%	-22.7	12.8	48.2	83.7	119.1	154.6	190.0	225.5	260.9	296.4
	85.0%	-17.3	19.2	55.8	92.3	128.8	165.3	201.8	238.4	274.9	311.4
	87.5%	-11.9	25.7	63.3	100.9	138.5	176.1	213.7	251.3	288.8	326.4
	90.0%	-6.5	32.1	70.8	109.5	148.1	186.8	225.5	264.1	302.8	341.5

Source: TC Estimates and Analysis

Whilst the solar recycling opportunity represents another high value bespoke solution to target in e-waste akin to the REE recycling with Colt and has the potential to develop quickly in the near term, information on economics is limited and at this stage ascribe nil value although we note a techno-economic evaluation is expected to be released in 2026. If the evaluation is positive, it could be modelled in the same manner as the Colt rollout thus adding another layer to the valuation of ION.

In the absence of key commodity prices rising, the lithium ion battery recycling opportunity in the EU may ultimately be brute forced by regulation as current commodity prices provide limited incentive to support new battery recycling operations. However, we think that cost competitive solutions with higher metal recoveries like ION's can become preferred options should incentive prices remain relatively subdued leading into regulatory deadlines. As such, we consider a battery recycling deployment to be akin to a deep, out of the money call option that has a maturity extending into the early 2030s. However, this option is complex given the dynamic nature of several drivers of success in a commercial outcome (commodity prices, technological progress and regulation). To keep it simple we back date the NPV of a single recycling facility to commence construction in 2029 which results in production starting in 2030 and apply a 15% risking to represent the optionality of the opportunity. Our base case results in a value of ~\$26m or \$0.012/sh which increases to ~\$44m or \$0.022/sh based on the successful inclusion of graphite.

Based on the valuations detailed above, we derive a sum of the parts NAV valuation for ION of \$0.073/sh which is ~204% higher than the current share price of \$0.024/sh.

Figure 14 – Valuation and NAV

	Value A\$m	Per Share	Notes
E-Waste	121.9	0.059	
REE Recycling Rollout	121.9	0.059	
NPV	113.9	0.055	50% prop
Earnings Multiple	129.9	0.063	50% prop
Solar Recycling	0.0	0.000	OTM Call option
Battery Recycling	25.5	0.012	15% of NPV of a deployment by 2029
MHP Primary Processing	0.0	0.000	OTM Call option
Cash	9.0	0.004	PFAs at 31 Dec 25
Debt	0.0	0.000	
Corporate	-6.0	-0.003	1yr fwd spend
Total	150.4	0.073	

Source: TC Estimates and Analysis

From a peer comparison perspective, given most key peers are at similar pre-commercial stages, it is hard to derive firm comparables (i.e. price/sales, etc..) that could give an indication of how the market may be valuing the optionality in the thematic and odds of successfully commercialisation technology. From our perspective, most key peers on the ASX seem to be at similar or lesser technology development levels than ION whilst many have yet to scope economics in a manner similar to what ION has released to investors for individual applications. We note:

- IXR is a little more advanced from a technology perspective given it has operated a demonstration plant since late 2024 but is at similarly advanced commercial stages via EU consortiums and US partnerships
- MTM is still refining its technology to produce higher value products in REEs (beyond chlorides), which we consider a sign that the existing capability of the Flash Joule Heating technology potentially doesn't capture enough of the value chain to maximise the value of commercial opportunities.
- LKY is testing a DES solution to refine antimony whilst it is also more recently sponsoring research on new sustainable REE processing technologies (note for primary ores).

We also note that several private VC funded peers, of which we don't think have a significantly more advanced technology or commercialisation potential so far, have raised money at valuations well north of A\$150m equivalent (e.g. DEScycle and Cylib). Despite this, ION trades at a much lower enterprise value than these and a broader set of ASX listed peers as detailed in the figure below:

Figure 15 – Key ASX Comparables

	ION	MTM	IXR	LKY	LIT	TIO	IPX
Shares	1,296.1	736.8	226.0	375.0	2,064.1	154.6	339.4
Share Price	0.024	0.635	0.300	0.180	0.010	0.130	4.280
Market Cap	31.1	467.9	67.8	67.5	20.6	20.1	1,452.6
Cash	9.0	100.0	12.4	19.5	5.7	5.2	94.0
Debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ent Value	22.1	367.9	55.4	48.0	14.9	14.9	1,358.5
Focus	Crit Mins	Crit Mins	Mag REEs	Antimony	E-waste/Lith	Crit Min	Titanium
Tech	DES	FJH + DES	Solvent	DES	Mech	RCL	HAMR
Category	Hydro	Pyro + Hydro	Hyrdo	Hyrdo	Mech	Hydro	Powdered

Source: Company Data & TC Analysis

Board & Management

Michael McNeilly, Chairman

Michael is currently the CEO of Strata Investments Holding Plc (SRT.ASX), which is an ASX listed investment company with ~\$64m in net assets and is a substantial investor in ION. Michael has extensive experience as a director of listed companies and is currently a Non-Executive Director of Cobre Limited (CBE.ASX) with past appointments including MOD Resources, Metal Capital and Greatland Gold Plc.

Lewis Utting, CEO

Lewis has a strong track record of successfully commercialising chemical based solutions in the mining, water treatment, and oil & gas sectors, notably as Managing Director and CEO of SciDev Ltd, where he led the company through a period of rapid growth. This included the acquisition of and commercial scale out of a technology targeting the emerging PFAS problem.

Hugo Schumann, Non-Executive Director

Hugo is the CEO of Elemental Group's US operations whilst he also is the founder and CEO of EverMetal Capital which is a private equity backed investment platform for critical metals recycling. Hugo has extensive experience in the resources sector and in utilising new processing technologies to improve metal recoveries. He previously was CEO of the silver division at Hindustan Zinc Limited and prior to that was the CFO of Jetti Resources which is progressing a new copper extraction technology.

Dr Duncan Turner, Non-Executive Director

Duncan is a metallurgist and chemist with has 35yrs of global experience in extractive metallurgy, hydrometallurgy and process innovation in which he is best known as a co-developer of the Albion Process for gold processing. He has experience in scaling complex metallurgical processes from development through to commercial operation.

Adam Slater, Non-Executive Director

Adam has an extensive career in the commodity sector overseeing MRI Trading which is the commodity trading subsidiary of logistics company, CWT Group. MRI Trading's operations included financial services, brokerage of commodities, commodity trading, and comprehensive supply chain management for commodities. In 2019, Adam pivoted focus towards venture capital bringing his expertise to company boards and advisory committees.

Andrew Sissian, Non-Executive Director

Andrew has 15yrs+ of experience in corporate finance, technology and is the current CEO of Procon Telematics Pty Ltd, where he has been instrumental in leading the international fleet asset management platform since 2011. Andrew also has listed company experience as he is co-founder and Non-Executive Director of Cobre Limited (CBE.ASX).

Risks

There are general risks associated with investments in emerging technology companies. Key risks that apply to ION are presented below:

- Technology risk – Despite independent reviews and validation, there remains a risk that ION's DES technology fails to scale properly or at all resulting in weaker economics or an inability to deliver targeted outcomes. This would significantly impair the long term commercial outlook for the company and reduce the potential for ION to become a successful and profitable business. This risk will be progressively mitigated through ongoing R&D and testing of the technology at higher volumes and/or scale levels (i.e. pilot to demonstration in addition to lab testing larger volumes)
- Commercialisation risk – A proven and leading technology solution doesn't always translate into commercial success as this generally also requires the right window of opportunity and the right people that can deliver commercial outcomes. For ION, we think that several applications of their technology have the right window of opportunity that maximises the potential of successful commercial outcomes, whilst key members of the board and management have experience in commercialising new technology and solutions. Given ION's technology is focused on the refining stage of an overall processing/recycling supply chain, the company is often symbiotically reliant on more than one other group to support the commercial application of its solution. If one or more partners in any application of the technology change their timelines or strategic objectives, this could negatively impact the commercial prospects of ION.
- Customer risk - Several of ION's applications for DES result in the production of highly specialised products which require testing and validation by customers and if ION cannot deliver the required specifications/quality of product then it could impact the ability to commercialise the technology or the economics of commercial operations.

- Geopolitics & Government Policy risks – The current and significant window of opportunity for ION is in a large part driven by the intertwining of geopolitics and government policy which is driving the need for greater recycling of critical minerals and in the case of minerals such as REEs, national security interests that drive the need for independent western supply chains. Policy and regulation driving recovery and recycling targets can always be amended which would push out and reduce the current pressure for investment to be made into recycling whilst geopolitics ebbs and flows in cycles with a risk the world returns to a comfortable status quo and disincentivises investment in independent western supply chains for critical minerals. This has occurred previously in sectors such as REEs. Changes in policy can also impact support and funding sources for projects if grants and incentive programs are delayed, reduced or cancelled.
- Supply risk – ION's DES platform requires several specific chemicals to create its suite of tailor solvents in which there are limited suppliers of scale of certain precursor chemicals. If there is an issue with the ability of the supplier to produce or maintain production, then this could impact ION's ability to deliver or sustain any commercial operations. If the supplier fails to increase supply, then this could also impact the ability of ION to grow the business over time. Supply risk can also extend to feedstock for processing in commercial operations in which if the quality of input was to reduce or vary, this could impact the quality and quantity of the output and impact the economics of an operation.
- Commodity pricing – Whilst ION is a technology company, its technology is a new proprietary hydrometallurgy technology thus it has the economics associated with that of a hydrometallurgical refining operation. Given the cost structure of such an operation (high fixed cost level), the economics has a higher level of leverage to prevailing commodity prices. Thus if the commodity prices of key targeted verticals decrease or go through a prolonged period of weakness, this will reduce the probability of achieving commercial success.
- Intellectual Property risk – There is a risk that ION's IP could be infringed on which could impact the long term commercial potential of the company. It is also hard and expensive for emerging companies to afford to defend its IP in the event it is infringed. This risk is in part mitigated through technical expertise, trade secrets and knowhow as this is much harder to steal and replicate.
- Capital Markets – Whilst capital markets are currently open to funding technology companies focusing on the critical mineral sector, as a pre-revenue company, ION is reliant on capital markets to fund ongoing operations as well as any future commercial deployments of its technology. There is a risk that an event or a change in sentiment may reduce the risk appetite of capital markets to fund ION which could result in funding becoming materially more expensive or unavailable all together which would impact the commercial success of the company.

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