

Updated Corporate Presentation

Iondrive Limited (“Iondrive” or the “Company”) (ASX: ION) is pleased to provide the attached updated corporate presentation.

Authorised for release by the Chair of the Iondrive Board.

Further Information

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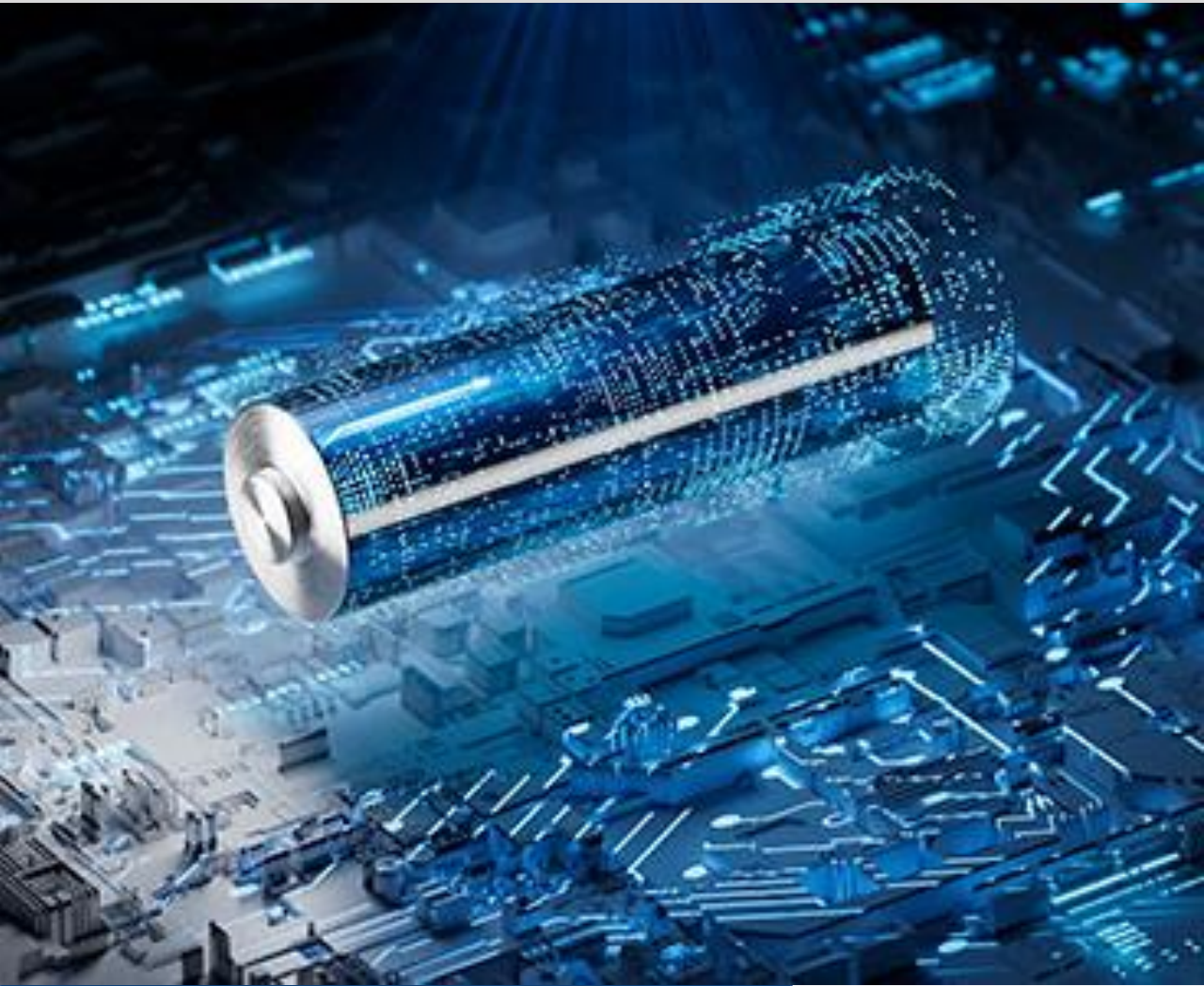
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Iondrive Limited: Company Profile

Iondrive is an emerging battery technology commercialisation and a mineral exploration company listed on the Australian Securities Exchange (under ASX ticker “ION”).

The commercialisation business holds three exclusive world-wide licences from the University of Adelaide comprising next generation battery technologies 1) an enhanced performance non-flammable lithium-ion based battery, 2) a low-cost, environmentally sustainable method for recycling lithium batteries, and 3) a low-cost, high cycle life water-based battery.

The mineral exploration business includes 100% interest in a portfolio of REE, Lithium and precious metals exploration projects in South Korea. The Company has an earn-in and joint venture agreement with a subsidiary of KoBold Metals Company (“KoBold”), whereby KoBold are incurring exploration expenditure to earn an interest in Iondrive’s Lithium projects. Iondrive is contracted to undertake much of this exploration work for KoBold. Iondrive is reviewing opportunities to realise value for its REE and precious metals exploration projects.



February 2024



Providing next-gen energy storage solutions for our sustainable future

ASX Ticker: ION

DISCLAIMER

Forward looking statements

This document contains certain forward-looking statements that involve risks and uncertainties. Although we believe that the expectations reflected in the forward-looking statements are reasonable at this time, we can give no assurance that these expectations will prove to be correct. Given these uncertainties, readers are cautioned not to place undue reliance on any forward-looking statements. Actual results could differ materially from those anticipated in these forward-looking statements due to many important factors, risks and uncertainties including those risks detailed from time to time in the Company's announcements to the ASX including, without limitation, risks associated with:

- the exploration business, such as regulatory matters and the tenure of exploration and mining leases, the results of present and future exploration activities, the impact of fluctuating commodity prices and foreign exchange rates on the business; and
- the acquisition of IDT. There can be no assurance that others will not independently develop similar or improved technologies or design around patents or patent applications available to be licensed by IDT, or that patents available to be licensed by IDT will provide meaningful protection or competitive advantages.

All reasonable efforts have been made to provide accurate information, but the Company does not undertake any obligation to release publicly any revisions to any "forward-looking statement" to reflect events or circumstances after the date of this presentation, except as may be required under applicable laws. Recipients should make their own enquiries in relation to any investment decisions from a licensed investment advisor.

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

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

Competent Person's statements

The information in this report that relates to Exploration Results has been compiled by Mr Robert Smillie (MAusIMM). Mr Smillie, who is Exploration Consultant at londrive Limited and a member of the Australasian Institute of Mining and Metallurgy, has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Smillie consents to the inclusion in this presentation of the matters based on the information in the form and context in which it appears and should be read in conjunction with the Company's ASX announcements.

Unique partnership with leading Battery Research Institution to commercialise breakthrough technologies



BATTERY FOCUS

Subsidiary IonDrive Technologies (IDT) aims to provide high-performing replacements for, and improvements to, current Lithium-Ion Batteries



COMMERCIAL MANAGEMENT

Refreshed Management team and Board, with addition of experienced individuals with backgrounds in the battery sector, successful start-ups and commercialising breakthrough technologies



PATENTED BREAKTHROUGH TECH

IP to three technologies available for commercialisation

- Hydrometallurgical Battery Recycling
- Safer Lithium Metal Batteries
- Next-gen Aqueous Sodium Batteries



STAKEHOLDER SUPPORT

Supportive shareholder base, Government funded research projects and extensive network of potential industry partners in Korea and regionally



INDUSTRY LEADING RESEARCH

IDT has a strategic partnership agreement with the University of Adelaide leveraging their significant investment into next-generation battery research led by world-class laureate researchers



BATTERY INDUSTRY CONNECTIVITY

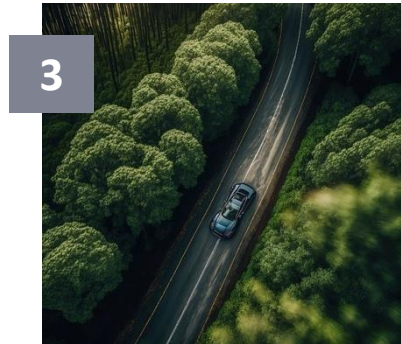
Operating in South Korea since 2016, ability to leverage our first mover advantage in a country at the forefront of the Energy Transition

- **June 2023, acquisition of IonDrive Technologies (IDT)**
- IDT acquisition post ION's pivot to Li exploration in South Korea
- **IDT has a strategic partnership agreement with the University of Adelaide**
- Leverages significant investment into next-generation battery research led by world-class laureate researchers
- **Provides IDT with the IP to three commercialisation-ready technologies**
- IDT is developing three projects that address the shortcomings of Lithium-Ion Batteries (LIBs)
- <https://iondrive.com.au/iondrive-technologies/>



RECYCLING LIBS Hydrometallurgical Battery Recycling

A safer, cleaner solvent to extract and recover scarce and expensive elements from defunct Li-ion batteries – consuming less power for heating and no corrosive acids.



NEXT GENERATION BATTERIES

Aqueous Sodium Batteries

IonDrive is also working on the next generation of energy storage solutions by developing batteries that rely on materials that are abundant but are still able to perform reliably.

IMPROVEMENTS OF THE LIB Safer Lithium Metal Batteries

New technology to improve current Li-ion batteries. IDT has developed a lithium-ion battery that holds more energy, is safer to operate and lasts longer.

<https://iondrive.com.au/iondrive-technologies/technology-projects/>

Corporate Structure

Ordinary Shares	486.3m
Share Price (31 January 2024)	AUD\$0.010
Market capitalisation	AUD\$4.9m
Cash (31 December 2023)*	AUD\$2.5m
Enterprise Value (EV)	~AUD\$2.4m

Options / Performance Rights

ESOP incl. Directors various dates & prices	41,430,000
Options ex \$0.027 30 December 2024	63,000,000
Performance Rights	10,000,000

¹ Quarterly Report December 2023 [Link](#)

² Reported in December Quarterly

³ Agreement to Sell BMV Shares – see ASX Announcement 22 August 2023

⁴ KoBold Metals is part funding Korean exploration activities – see ASX Announcement 22 Nov 2023

Balance Sheet – Funded Activity⁴

Debt	NIL
Cash (31 December 2023)¹	AUD\$2.5m
+ January 2024 Cash Inflow²	AUD\$0.2m
+25m Shares in BMV (LSE Listed)³	AUD\$0.2m
Total cash + BMV Shares	AUD\$2.9m

Supportive Strategic Shareholders

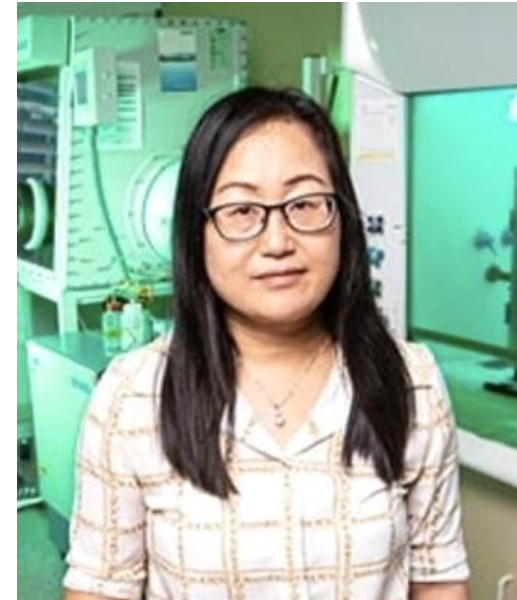
Major Shareholders (>5%)

Strata Investment Holdings Plc	~16.7%
Ilwella Pty Ltd	~15.0%

A WORLD CLASS TEAM



IDT/UOA PARTNERSHIP



Under a **Strategic Partnership Agreement (SPA)**, IDT has a first right to acquire or enter into an exclusive worldwide license of the IP from technologies identified as appropriate for commercialisation.

Three such projects have been formalised to date, protected by four patent applications.

IDT's **SPA leverages The University of Adelaide's considerable investment** in the School of Chemical Engineering and Advanced Materials, **led by two Laureate professors**, Professor Shizhang Qiao and Professor Zaiping Guo.

Professors Zaiping Guo and Shizhang Qiao from the University of Adelaide's School of Chemical Engineering have been inducted as Fellows of the Australian Academy of Science

[Fellowships super-charge esteemed scientists \(Link\)](#)



[YouTube Link](#)



Professors Zaiping Guo and Shizhang Qiao from the University of Adelaide's School of Chemical Engineering have been inducted as Fellows of the Australian Academy of Science **in recognition of their ground-breaking research**. Professor Guo has been recognised for her work **improving the efficiency of batteries**, and Professor Qiao for his research in **functional materials for new energy technologies**.

"For two University of Adelaide researchers to be elected as Academy of Science Fellows in 2023 demonstrates the **high level of quality research being conducted on our campus**, as well as the benefits of our projects not only on the local Adelaide community, but also the rest of Australia and the wider world."

Professor Anton Middelberg, Deputy Vice-Chancellor and Vice-President (Research) at the University of Adelaide

Announce IDT Acquisition

IDT has a strategic partnership agreement with the University of Adelaide which leverages the significant investment by the University into next-generation battery research led by world-class laureate researchers

Provides IDT the right to exclusively licence or purchase the IP of three commercialisation-ready technologies developed by the University.

22 June
2023²

Completes IDT Acquisition

SAU completes its acquisition of battery technology company Iondrive Technologies Pty Ltd

IDT holds three licences over next generation battery material technologies developed by the University of Adelaide (water-based batteries, safe lithium metal batteries and a deep eutectic solvent for battery recycling)

24 July
2023⁴

\$5mn Govt Funding

University of Adelaide (UoA) to receive \$5m funding from the Australian Research Council (ARC) for the establishment of new ARC Industrial Transformation Training Centre for Battery Recycling

Positions UoA and IDT at the forefront of battery recycling research in Australia

10 October
2023⁶

Commercialisation Progressing

Iondrive collaborates with Rho Motion and Lycopodium for DES battery recycling PFS.

The PFS assesses technical gaps, material sources, and eco-friendly waste treatment. It aims to establish Iondrive's DES technology as a superior, cost-effective method for high-purity metal recovery.

29 May
2023¹

Exclusive IP Licences

Executed rights to license three next generation battery material technologies from the University of Adelaide

Dr JC Tan appointed GM of IDT, to commence commercialisation activities of technologies. Previously the Commercial Manager at the University of Adelaide

4 July
2023³

Key Appointments

Bolsters Leadership with Key Appointments in Tech and Battery Innovation

Dual Senior appointments signify dedication to driving technological innovation and advancing the commercialisation of our battery technologies

15 August
2023⁵

IDT Interim CEO Appointed

Ebbe Domnisse to spearhead Iondrive's critical prefeasibility study in battery recycling

Leveraging a rich 25-year global experience, Ebbe is spearheading Iondrive's prefeasibility for battery recycling, set for completion in early 2024

24 Nov
2023⁷

¹ Acquisition of Battery Technology Company & \$2.5m Placement (29 May 2023) [Link](#)

² IDT Exclusive IP Licences and General Manager (22 June 2023) [Link](#)

³ SAU Completes IDT Acquisition & Placement (4 July 2023) [Link](#)

⁴ SAU Bolsters Leadership with Key Appointments (24 July 2023) [Link](#)

⁵ SAU Collaboration in \$5M Funded Battery Recycling Centre (15 August 2023) [Link](#)

⁶ Interim IDT CEO to Advance Technology to Prefeasibility (10 October 2023) [Link](#)

⁷ Battery Recycling Progress Update (24 November 2023) [Link](#)

A REFRESHED ION TEAM WITH THE PREREQUISITE EXPERIENCE



Michael McNeilly
BA Econ – NED

Chief Executive Officer of AIM listed Metal Tiger Plc – 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 Metal Tiger Group. Past Board appointments include MOD Resources Limited (up to acquisition by Sandfire in November 2019), Metal Capital Limited, Greatland Gold Plc and Connemara Mining Plc.



Dr Jack Hamilton
PhD – NED

Highly accomplished senior executive and board director, with a deep knowledge spanning technology commercialisation, operations, manufacturing, project management, business development, and commercial ventures. He has held significant leadership roles both locally and internationally within the energy sector, including a distinguished tenure as the Director of NorthWest Shelf Ventures for Woodside, overseeing Australia's largest resource project.



Beejay Kim
MBA EVP Samsung – NED

Professional project manager who has had a long career with Samsung C&T Corporation and Hyundai Engineering and Construction Company over 30 years. As a senior executive for Samsung C&T, Mr Kim led projects in several countries and regions including the Middle East, Australia and South-East Asia. This includes more recent positions of Vice President and Regional Representative of Saudi Arabia LLC and Head of MENA Regional Headquarters in the UAE for Samsung C&T.



Adam Slater
BA – NED

Three decades of invaluable experience in the commodities industry. Led the development of the commodity division at CWT Limited, a company listed on the SGX, from 2007 to 2018. Pivotal to the growth in the CWT commodities division, which accounted for over 80% of Group revenues (\$\$12 Billion out of \$\$14 Billion) and in excess of 50% of the Group's profits. The HNA Group acquired CWT Logistics for \$1.04 Billion in 2017. In 2019, he transitioned his primary focus towards venture capital, contributing his expertise to multiple company boards and advisory committees.



John Rock
OTB Ventures – NED

Mr Rock brings extensive leadership, entrepreneurial and commercialisation experience to the SAU Board and has been directly involved with the IDT business since its inception. Mr Rock joins with experience in the start-up and commercialisation sector. He is a Co-founder and Director of OTB Ventures, a company with the specific mandate of finding, nurturing, and commercialising early-stage University technologies.



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

Dr. Dommissie is a seasoned professional with over 25 years of experience in operations, strategy, execution, and manufacturing. He previously served as the COO at Circa Group, an Australian startup that commercialized a disruptive biochemical innovation. Prior, he held key positions at Pact Group, an ASX-listed plastic manufacturer with a broad regional presence. His roles at Pact included Director & Regional General Manager for Plastop in Indonesia & the Philippines, Director & General Manager for Plastop in Indonesia, and Business Unit Manager for the Closures Division.



Robert Smillie
FSEG MAICD –
Exploration Consultant

Experienced management and exploration professional, with over 30 years of experience, including significant epithermal gold exploration through and is particularly familiar with living and working in Asia. Ok Tedi Mining in Papua New Guinea, the National Petroleum and Mining Authority in Timor-Leste, and TSX-listed Calibre Mining in Papua New Guinea, the Solomon Islands and Vanuatu, and Oceana Gold Ltd at projects in New Zealand and the Philippines.



Jeff Ritoe
Strategic Advisor
Commercialisation – IDT

Jeff is an energy professional with over 15 years of experience in negotiating commercial agreements, acquisitions and divestments in the energy industry. Having worked for French energy company ENGIE in multiple jurisdictions and in multiple roles, Jeff currently helps private and public clients expand their battery materials business activities.



Early 2024

Battery Recycling Pre-Feasibility Study

Dr. Ebbe Dommissé is undertaking a comprehensive Prefeasibility Study, with a focus on establishing the commercialisation path for the Company's high priority Deep Eutectic Solvent (DES) battery recycling technology.

The Company expects the prefeasibility study to be completed pre-30 June 2024.

Battery Recycling Equipment Sourcing and Site selection

Sourcing required equipment and site identification for pilot manufacturing facility

Aqueous Sodium-Ion Battery and NCM 811 cathode material technologies roadmap

Dr. Dommissé also conducting high-level study to explore the technical and commercial aspects of londrive's Aqueous Sodium-Ion Battery and NCM 811 cathode material technologies, including the development of a roadmap for technology commercialisation and scale-up options.

Kobold JV Exploration Activities commence at Lithium Projects

Actively seeking sale or earn-in/JV partners for REE Projects

12-18 Months

IDT Technologies Funding and Partnership Agreements

Government grant funding discussions to support the projects

IDT: Battery recycling pilot line to demonstrate effectiveness of our proprietary DES solvent technology in separating black powder into lithium, cobalt, manganese and nickel with extremely high efficiency of 98%.

Work up Li projects to Drill status

Ongoing

Accelerated commercialisation program of londrive Battery Projects

Precious Metals: Seeking sale or earn-in/JV Partners



THANK YOU 감사합니다

Dr Ebbe Dommisse

Chief Executive Officer

 [Iondrive LinkedIn](#)

 [Iondrive Twitter](#)

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W: www.iondrive.com.au





APPENDIX A



IONDRIVE TECHNOLOGIES

From theoretical application, to industrial-scale solutions; we are providing high-performing replacements for, and improvements to, the Li-ion batteries of today. We're committed to building world-wide partnerships of researchers, government and industry.

Contact

Dr Ebbe Domnisse

Chief Executive Officer

ebbe.domnisse@iondrive.com.au

The University of Adelaide, in addition to being ranked in the top 1% of universities in the world, has a leading-edge laboratory with a large investment into the research and development of energy storage technologies, led by two Laureate professors, Professor Shizhang Qiao and Professor Zaiping Guo.

Under a Strategic Partnership Agreement (SPA), IDT has a first right to acquire or enter into an exclusive worldwide license of the IP from projects identified as appropriate for commercialisation. Three such projects have been formalised to date, protected by four patent applications.

The SPA includes:

- IDT holds a right of first option to acquire or exclusively license the technology invented by the UoA team.
- A framework for identifying further battery related technology appropriate for commercialisation.



About Prof Shizhang Qiao

Prof Shizhang Qiao joined the School of Chemical Engineering of the University of Adelaide (UoA) in March 2012 as a professor (the inaugural Chair of Nanotechnology) from University of Queensland.

He is the founding Director of Centre for Materials in Energy and Catalysis (CMEC) and Director of Australian Research Council (ARC) Industrial Transformation Training Centre for Battery Recycling.

In recognition of his achievements in research, he was honoured with:

1. The Prestigious South Australian Scientist of the Year (2021).
2. ARC Australian Industry Laureate Fellow (2023) and ARC Australian Laureate Fellow (2017)

The Australian Laureate Fellowship is an Australian professorial research fellowship awarded by the ARC (Australia Research Council). The scheme supports Australia's highest quality researchers who play a significant, sustained leadership and mentoring role in building the country's internationally competitive research capacity.

One of the 8 industry-focused Laureate Fellowships were awarded for the first time.

3. University of Adelaide Vice-Chancellor's Award for Excellence in Research (2019).
4. Australian Star of Research (Lifetime Achievers Leader board, by "The Australian" 2019-2023).
5. Fellow of Australian Academy of Science (FAA), a Fellow of Institution of Chemical Engineers (FIChemE), Royal Society of Chemistry (FRSC) and Royal Australian Chemical Institute (FRACI).
6. Editor-in-Chief of EES Catalysis (RSC)
7. Thomson Reuters/Clarivate Analytics Highly Cited Researcher (with 124 highly cited papers) in three categories of Chemistry, Materials Science, Environment and Ecology.

He has co-authored more than 530 papers in refereed journals, including Nature, Nature Energy, Nature Nanotechnology, Nature Chemistry, Nature Materials, Nature Catalysis, Nature Communications, Science Advances, Angew Chem Int Ed, J. Am. Chem. Soc, Advanced Materials (over 104,376/120,958 citations, h-index: 165/178, Web of Sci./Google Scholar).

He has filed seven patents on novel nanomaterials and attracted more than 35 million dollars in research grants from industrial partners and ARC.

South Australian Scientist of the Year

Professor Shizhang Qiao

Leads transformative work in energy conversion and storage technologies, bringing together expertise in materials engineering, physical chemistry, electrochemistry and quantum chemistry.



[Link](#)

About Prof Zaiping Guo

Prof Guo received a PhD in Materials Engineering from the University of Wollongong in 2003.

Before joining The University of Adelaide, she was a Distinguished Professor in the school of Mechanical, Materials, Mechatronic, and Biomedical Engineering, Faculty of Engineering & Information Sciences, University of Wollongong.

Prof Guo is the inventor of the patent next-generation silicon anode technology licensed to Sicona Battery Technologies. (<https://www.siconabattery.com/>).

Latest success story of Sicona (<https://www.prnewswire.com/news-releases/industry-leaders-invest-22-million-in-australian-energy-start-up-sicona-battery-technologies-301850413.html>)

In recognition of her achievements in research, she was honoured with:

- ARC Australian Laureate Fellow (2021).
- NSW Premier's Prizes for Science & Engineering (2020)
- ARC Queen Elizabeth II Fellowship in 2010
- ARC Future Fellowship (FT3) in 2015,
- Clarivate Analytics Highly Cited Researcher Award in 2018, 2019, 2020, 2021 and 2022.

The Academy's Fellows



Fellows of the Australian Academy of Science are among the Nation's most distinguished scientists, elected by their peers for ground-breaking research and contributions that have had clear impact. Each year the Academy may elect up to 20 new Fellows by 'Ordinary Election' and up to four additional Fellows by 'Special Election'. From 1954 to 2023, there have been 915 Fellows elected to the Academy.



[Link](#) [YouTube Link](#)

Our three projects are undergoing optimization and larger scale laboratory testing as part of the commercialisation process,

whilst IDT is engaging industry partners to collaborate on trialing use at a commercial scale.

1

Lithium-Ion Battery Recycling Solvent

A patented solvent that can be applied to spent cathode active materials to extract critical minerals such as lithium, cobalt, manganese and nickel.

2

Reliable Lithium Metal Batteries

A whole battery system that has the potential to increase LIB energy density by 2-3x while being safe using patented IP in both cathode, anode and electrolyte

3

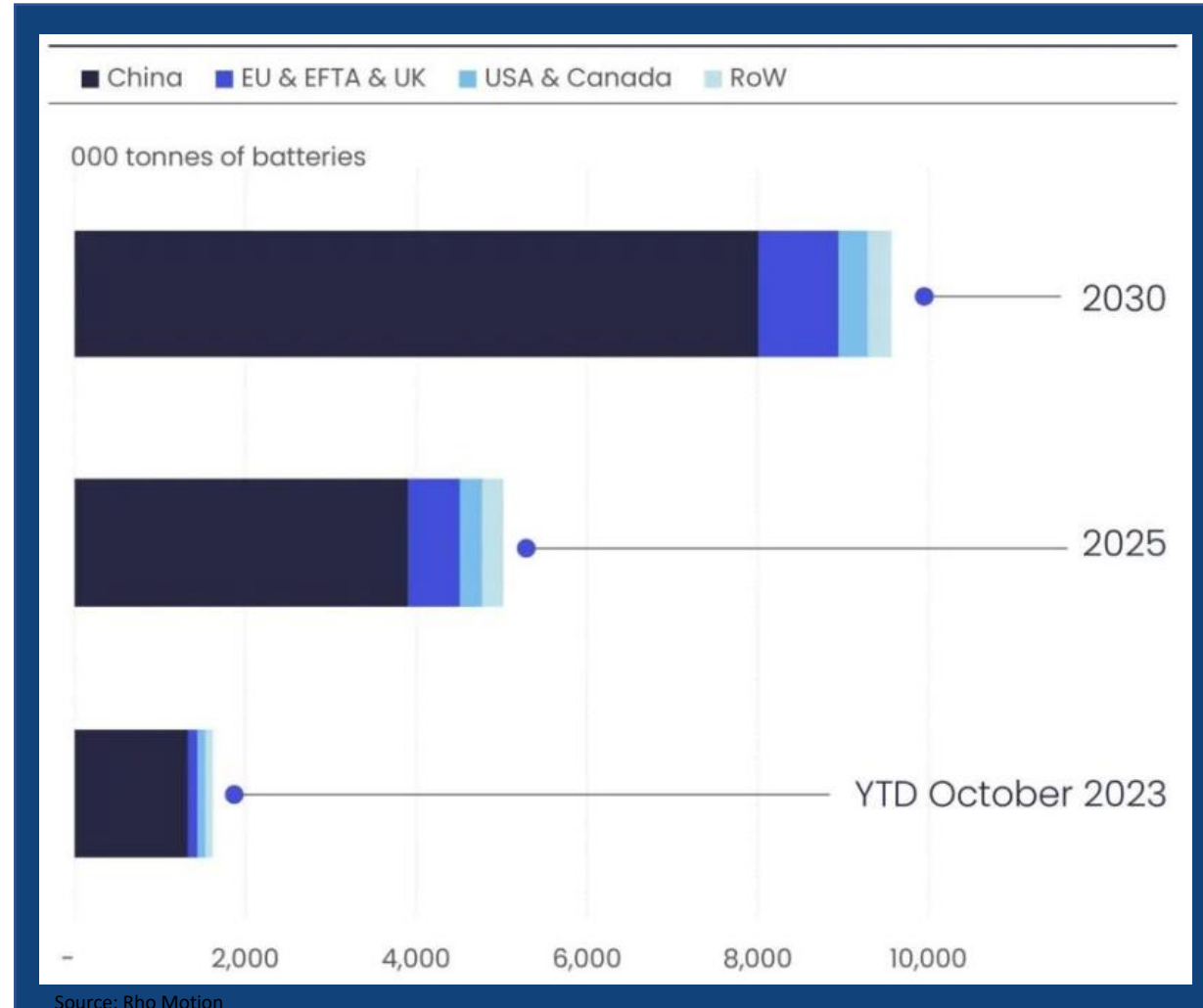
Water Based Batteries

Next generation water-based battery to be used in renewable energy settings – significantly longer cycle life and much lower cost than LIBs

ION's DES technology is expected to have a significant market opportunity due to the need for improved battery recycling methods.

- Increasing need for battery recycling due to environmental concerns from battery disposal.
- Global lithium battery recycling rates are low, at 5 to 10%, and the process is inefficient, hazardous, and costly.
- Recycling mainly involves incineration or use of toxic acids.
- The EU Battery Passport sets recycled material standards for new batteries, presenting a significant opportunity.
- As the demand for batteries grows it is becoming unsustainable to source battery materials solely from exploration and mining.
- Post new regulations in place in the EU and the US, recycled material is no longer considered waste and will be kept and treated as a valuable feedstock going forward. Battery recycling pre-treatment capacity is forecast to grow circa fivefold through the remainder of this decade, reaching nearly 10 million tonnes by 2030.
- Research from the University of Technology Sydney (UTS) suggests 30,000 tonnes of EV batteries will reach their end-of-life in Australia by as soon as 2030. This is forecast to blow out to 360,000 tonnes by 2040, and 1.6 million tonnes by 2050.¹
- It is estimated that the Australian market could miss a \$603 million to \$3.1 billion opportunity by not recycling batteries efficiently.²

Global Battery Recycling – Pre-Treatment Capacity



¹ <https://www.abc.net.au/news/2023-06-01/electric-vehicle-battery-waste-projections-uts-research/102417114>

² <https://www.csiro.au/en/news/All/Articles/2021/March/super-charging-australias-lithium-ion-battery-recycling-industry>

Lithium-ion battery recycling is currently inefficient, dangerous, and expensive, typically involving high-temperature incineration or harmful acids.

Current incumbent technologies are power intensive, IDT's tech offers a superior solution.

Iondrive's hydrometallurgical recycling process offers a safer alternative, avoiding extreme heat and corrosive materials.

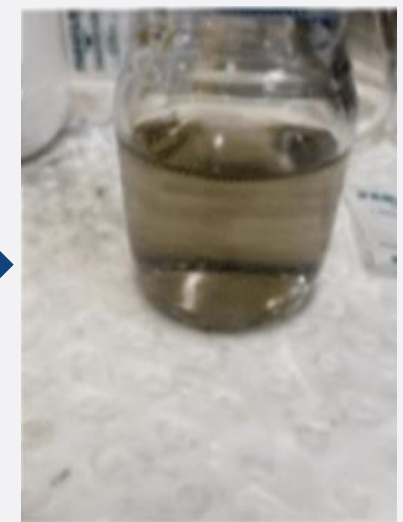
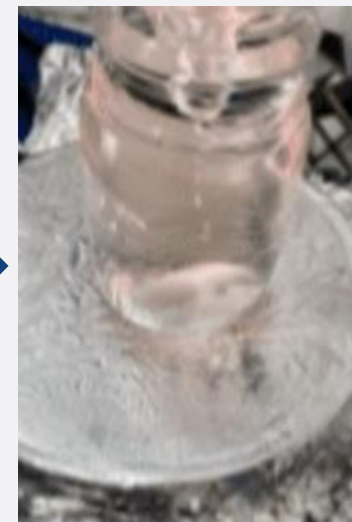
IDT has first rights to a low cost, environmentally friendly, highly selective deep eutectic solvent (DES) which has the potential to change the way LIBs are recycled worldwide.

Laboratory tests have achieved **recovery rates of 91% to 98% of lithium, manganese, nickel and cobalt**, from spent cathode material, with low impurities.

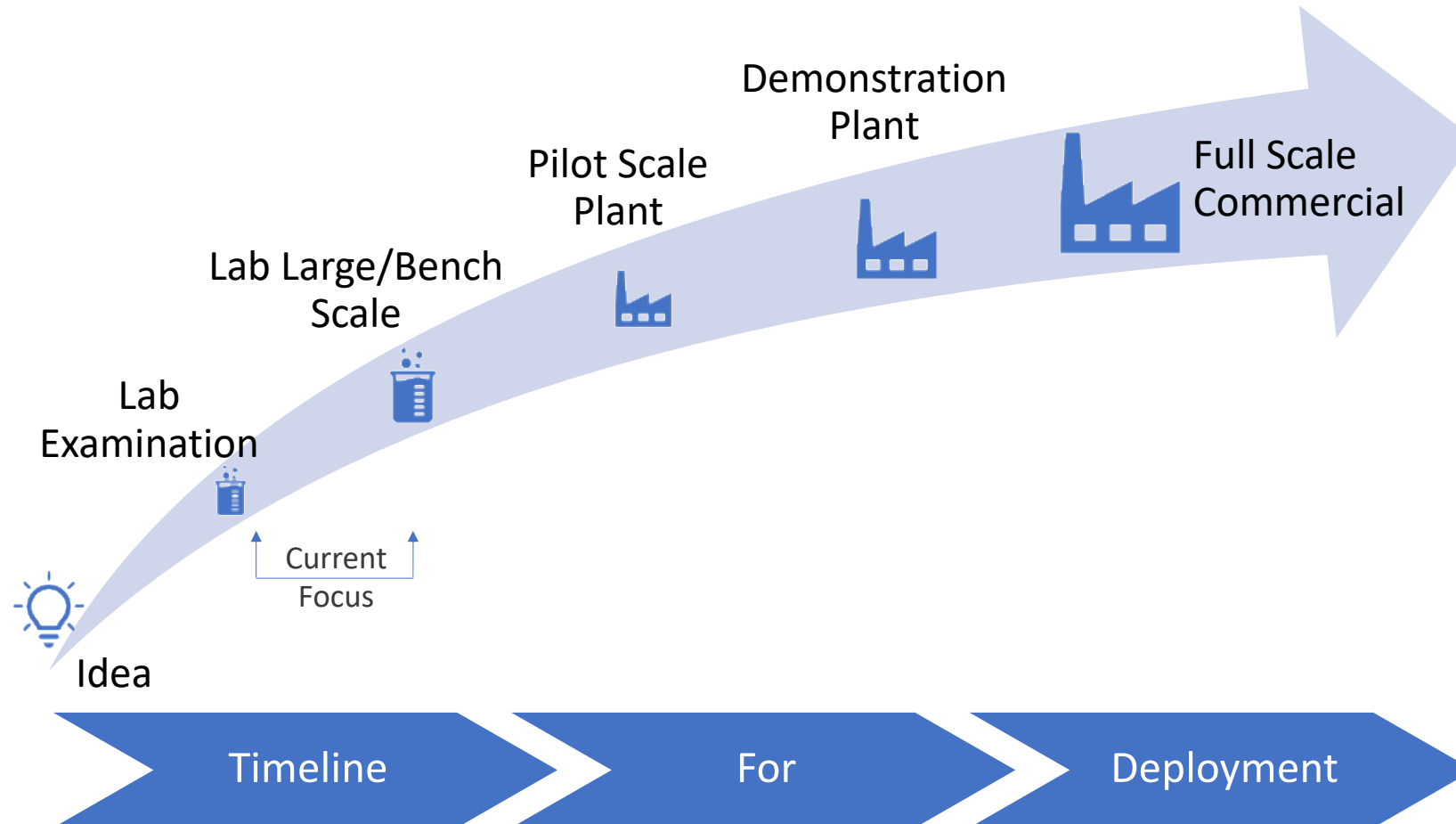
This technology is ready for larger scale recycle testing for NCM111 and other cathodes such as NCM811 or mixed cathodes.

The target market for this technology would include battery recyclers, as well as battery materials and EV manufacturers looking for improved access to materials precursors.

This is our achieved lab-tested recycling process behind extracting the essential elements behind the Lithium Battery



ION Direct Solvent Extraction (DES) battery recycling technology



Benign Organic Solvents: The DES Battery Recycling Technology uses benign organic solvents like Ethanol and Acetone in conjunction with the DES solvent in the process to recover the critical minerals.

Closed-circuit, Continuous Hydrometallurgical Process: The organic solvent process to extract the respective minerals like Li, Mn, Co and Ni comprises a closed-circuit, continuous hydrometallurgical process and therefore has a significantly smaller environmental footprint compared with conventional hydrometallurgical processes that use strong, toxic mineral acids. These acids in conventional processes have the downside of difficult to be recycled and therefore require expensive waste treatment processes.

High Recoveries: A further advantage of the IDT process is that the organic solvents effect high recoveries (95%+) while ensuring very high selectivity in separating the critical minerals – specifically those of Ni and Co that are notoriously difficult to separate in conventional hydromet processes.

Minimise Costs: Critical to the economic viability of IDT's organic solvent process is the recovery of these liquid solvents to minimise costs of make-up chemical requirements. The organic solvents need to be recovered from solids (precipitated minerals) and separated and recovered from other organic liquids and/or water.

Next Steps: A secondary project is therefore proposed as a subset of the overall technical scale-up pathway to investigate suitable solvent recovery processes that can be deployed in a large-scale commercial plant:

- Phase 1: Large-scale bench-scale trials to identify suitable processes and equipment to efficiently recover solvents;
- Phase 2: Validation of processes in a continuous process pilot plant




Lithium-based batteries are currently the most efficient method to store energy on scale today and, until better options reach the market, developments to improve the safety and longevity of lithium cells are required.

With these improvements, a Li-ion battery cell may be capable of much more, such as electric vehicles capable of driving more than 1,000 kms on a single charge or mobile phones that require recharging once per week.



IDT has first rights to three innovative technologies relating to the cathode, anode and electrolyte components of lithium-ion batteries.

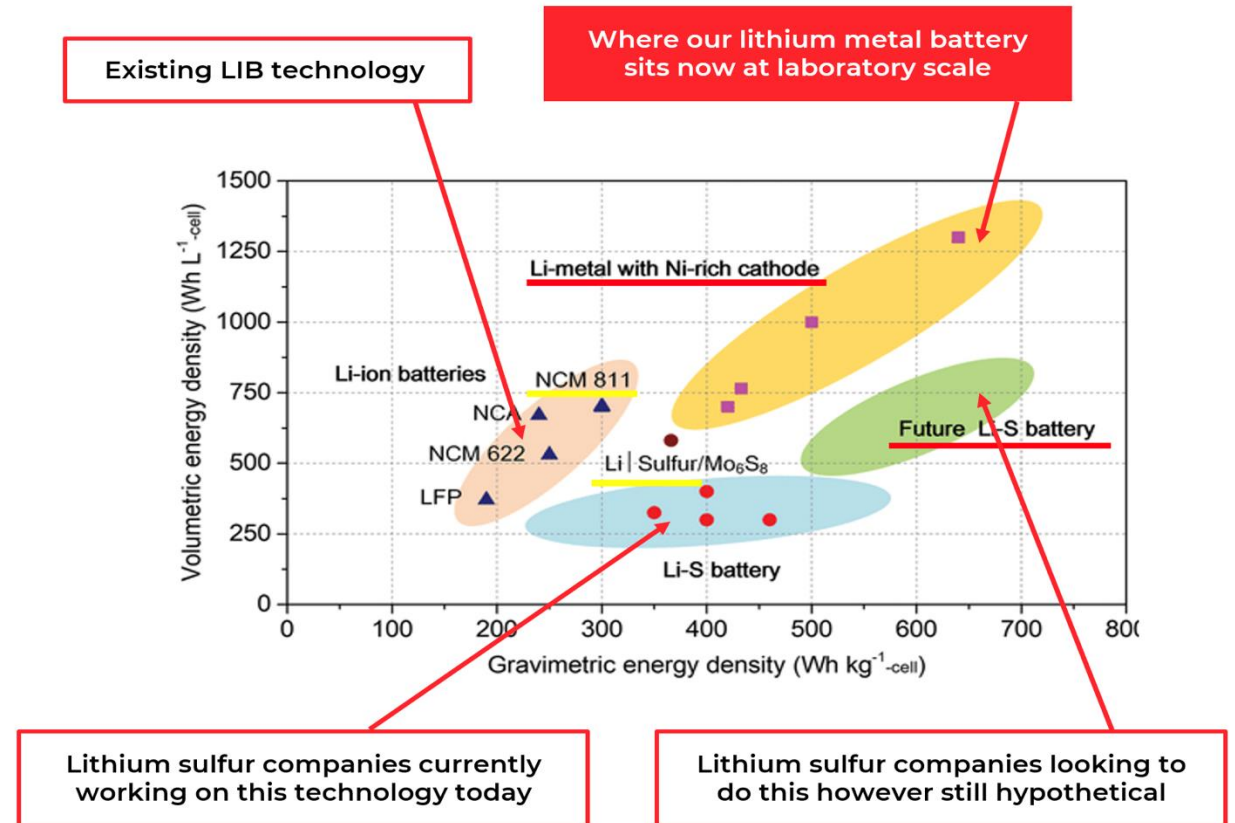
Together these components can be used to create a next-generation lithium battery system that has a very high energy density/capacity, long cycle life and is safe/non-flammable, or may be commercialised individually:

-  A groundbreaking, patented lithium metal anode that allows LIBs to reach theoretical maximum energy density.
-  A new cathode material that uses less cobalt and manganese with increased energy density
-  An electrolyte that is non-flammable

IDT's non-flammable Li-ion battery **approaches the theoretical maximum energy density**, bringing lithium metal battery technology to the next phase.

Laboratory testing has shown the design improves the energy storage, increases the life cycle of the cell, and significantly reduces the risk of lithium fires allowing for safer use and easier transportation.

Comparison of these results against published material, and positive industry feedback, provide indicators of the potential for industry adoption of these technologies.



3 WATER BASED BATTERIES

With the world pushing to an energy mix dominated by renewable power, power input into the grid becomes more intermittent and distances from the power source to the end consumer increase.

Energy storage solutions therefore are increasing in significance, to mitigate these risks and offer a steady supply of power to end markets;

Water Based Batteries provide a sustainable energy storage solution for the rapidly growing need for battery materials.

A Water Based Battery uses predominantly lower cost abundant materials, minimising reliance on critical minerals, and has a significantly longer life cycle than Li-ion cells - capable of operating for more than three times the charge cycles.

Water based batteries are particularly suited to grid energy storage (versus alternative solutions);

- Although LiBs are suited for grid energy storage solutions, there are cheaper and more suitable solutions that could relieve the pressure on lithium demand;
- Sodium-ion batteries can offer a cheaper alternative for grid energy storage because Sodium is an abundant element in nature and, more importantly, the technology is easier to 'drop in' and scale up to Gigahour scale compared to other battery technologies offered as an alternative to LiBs.

Water Based Batteries will assist countries to meet carbon net neutral requirements with significantly lower cost and safer/more stable materials.

The historic technical challenge with water-based batteries has been how to increase energy density while maintaining a water-based battery's natural long cycle life.

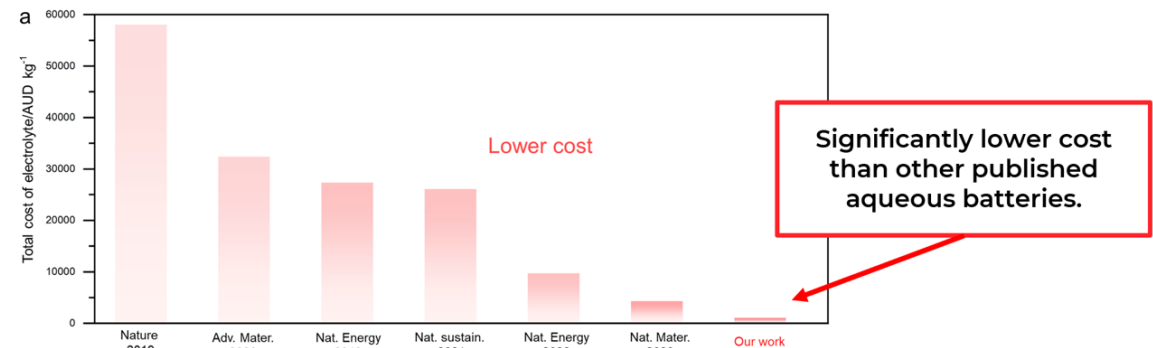
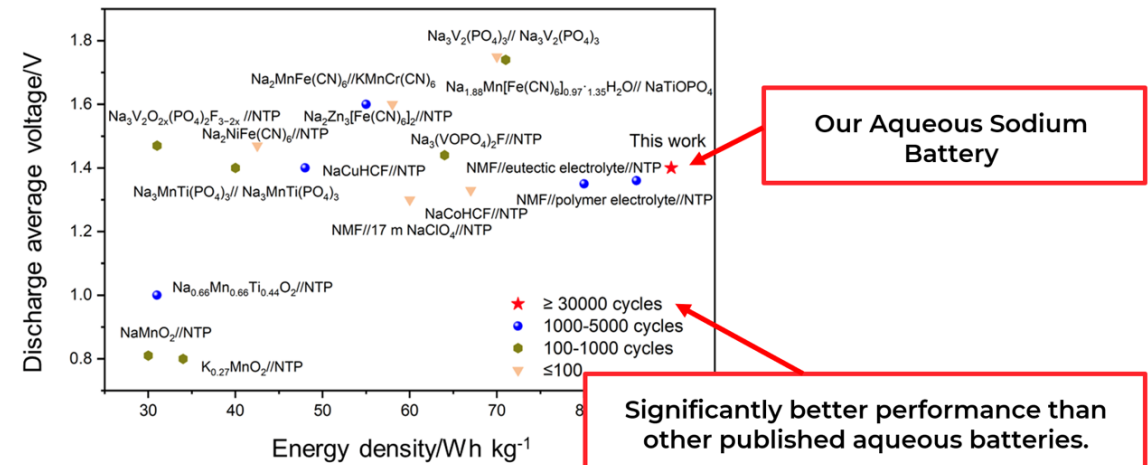


IDT has first rights to a patented novel layer on the cathode, titanium compound-based anode and sodium chloride-based electrolyte that significantly reduces the reactivity of the anode with alkaline electrolyte, leading to dramatic improvements in energy density and cycle life.

The observations from the research have provided promising results that have exceeded known published material for similar batteries both in terms of theoretical energy maximum in combination with a life of over 200 cycles in pouch cell format.

Importantly these results have been achieved while using low-cost inputs and excluding the use of organic electrolytes.

The focus of upcoming research is to further increase theoretical energy density maximums, life cycle and capacity which will accelerate any potential commercial adoption particularly as it is believed that water-based batteries can be manufactured using existing lithium-ion battery manufacturing lines.





APPENDIX B



Battery Metals Exploration in South Korea

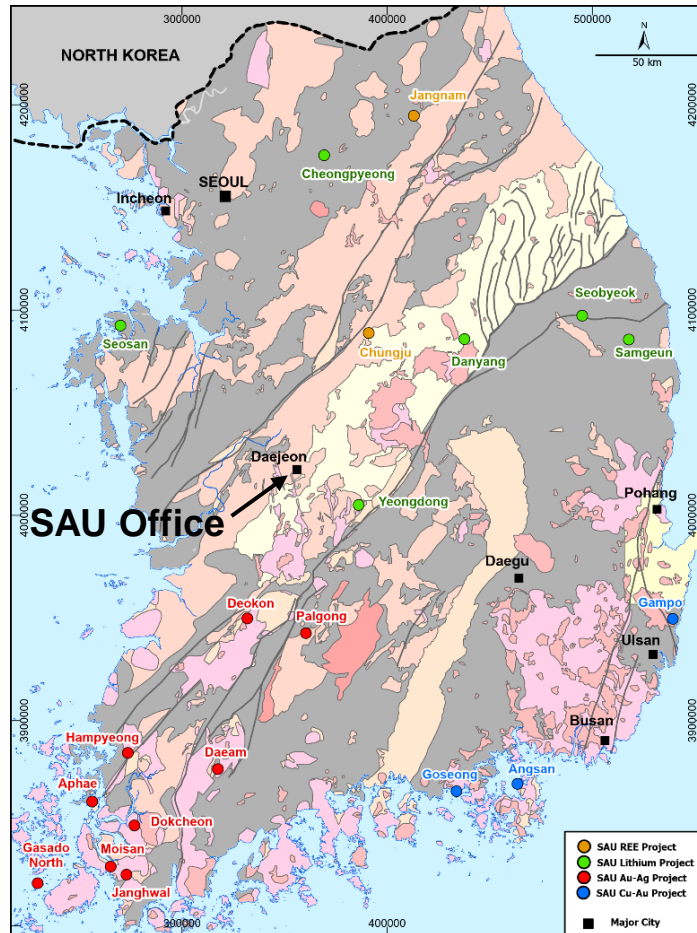
Began search in late 2022 for Cu, Li and REEs.
Developed extensive country-wide exploration portfolio
First-mover advantage in modern mining jurisdiction.
Highly experienced field team.
Very promising early results culminating in Kobold JV.

.Contact

Robert Smillie

Exploration Consultant

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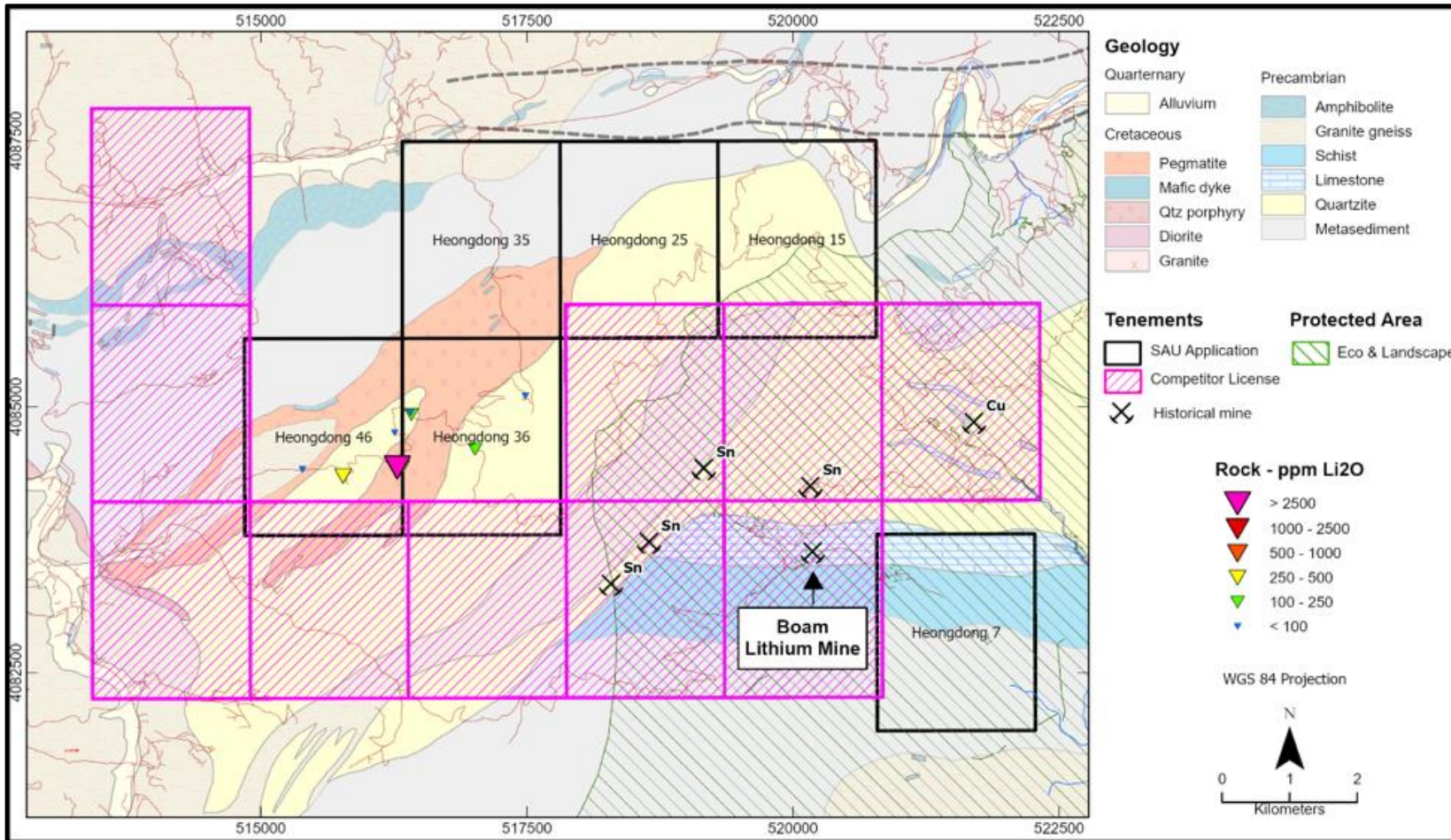
- **100% focus on South Korea**
- Frontier destination – under-explored by modern exploration
- Historically explored for Au-Ag – *targeting 1M oz Au*
- **Expanded search in late 2022 to include Cu, Li and REEs**
- Developed extensive country-wide exploration portfolio
- First-mover advantage in modern mining jurisdiction
- Highly experienced field team
- **Promising early results culminating in KoBold Li JV¹**



¹Billionaire-backed KoBold Metals widens lithium hunt across four continents [Press Link](#)

“KoBold Metals, a California-based startup whose backers include billionaires Bill Gates and Jeff Bezos, is searching for lithium deposits across four continents, widening its hunt for metals the world needs for cleaner energy and electric vehicles.

The Silicon Valley startup, which uses artificial intelligence to search for critical metals, will deploy the latest technology to search for lithium in South Korea, Quebec in Canada, the United States, Australia and Africa.” Reuters, December 14, 2023



Samgeun Li Project

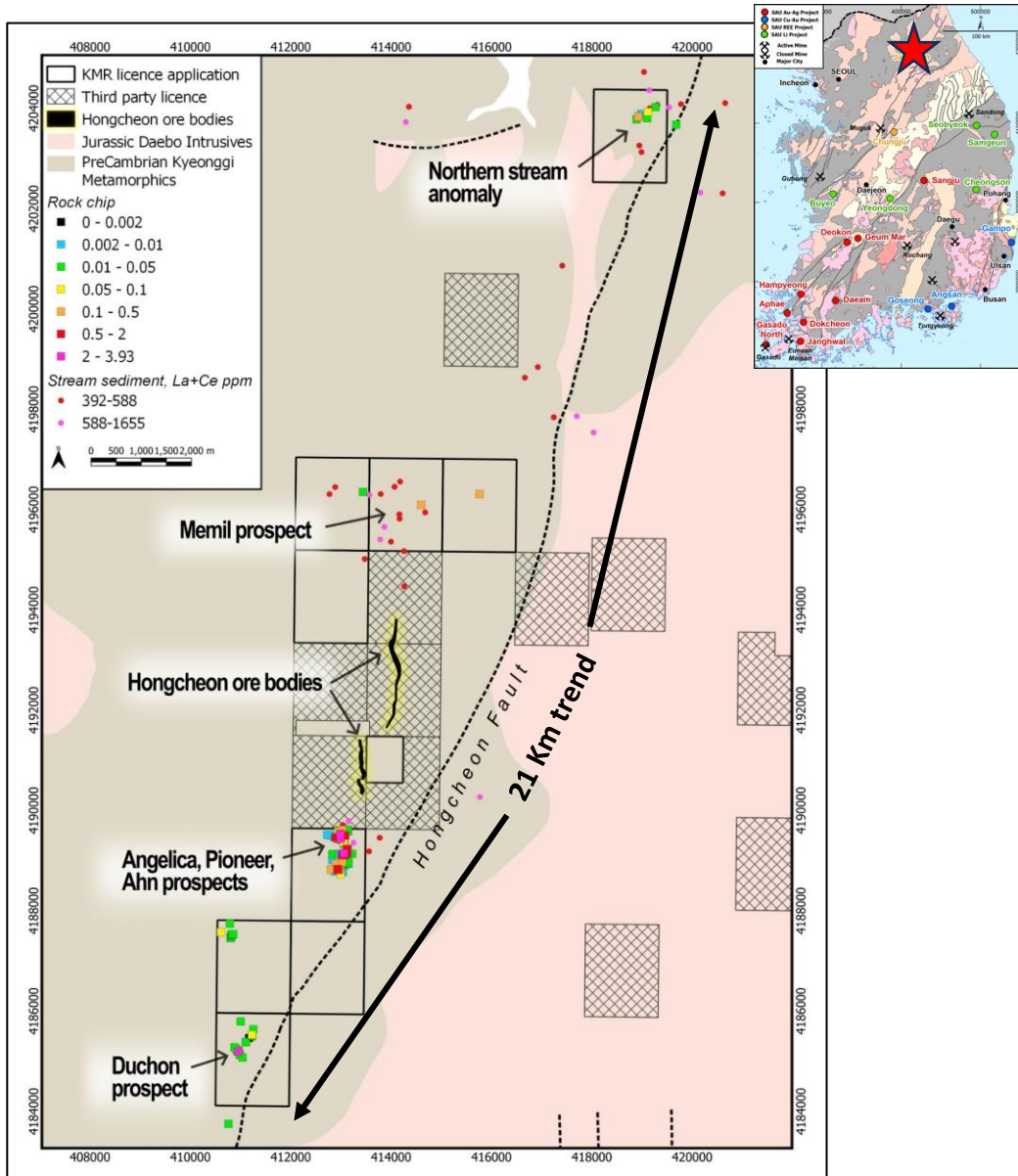
- Exploration licence applications lodged over 6 Li project areas covering a total area of 384 km²
- Samgeun Project 4km from historical Boam Mine which produced Li from 1945–1963
- First pass fieldwork Rock chip samples returned >1%Li₂O at Seobyek Project & 0.3% Li₂O at Samgeun Project
- Favourable Li fertility and fractionation indicators for the formation of LCT Pegmatites



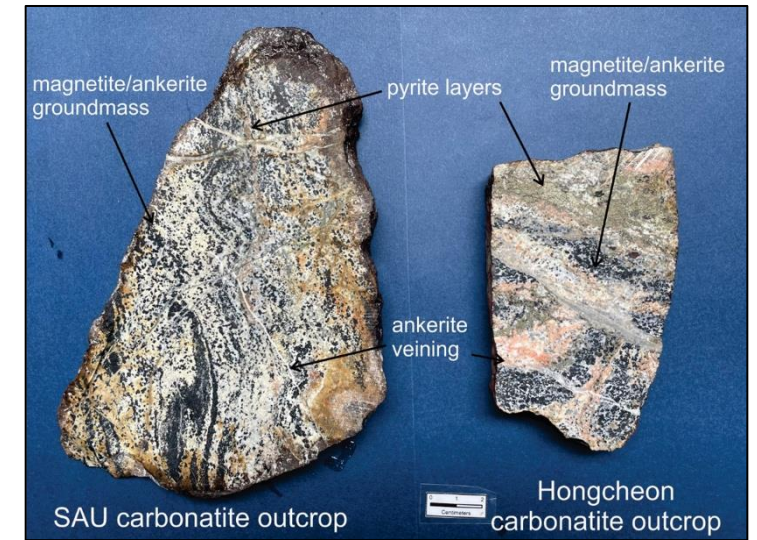
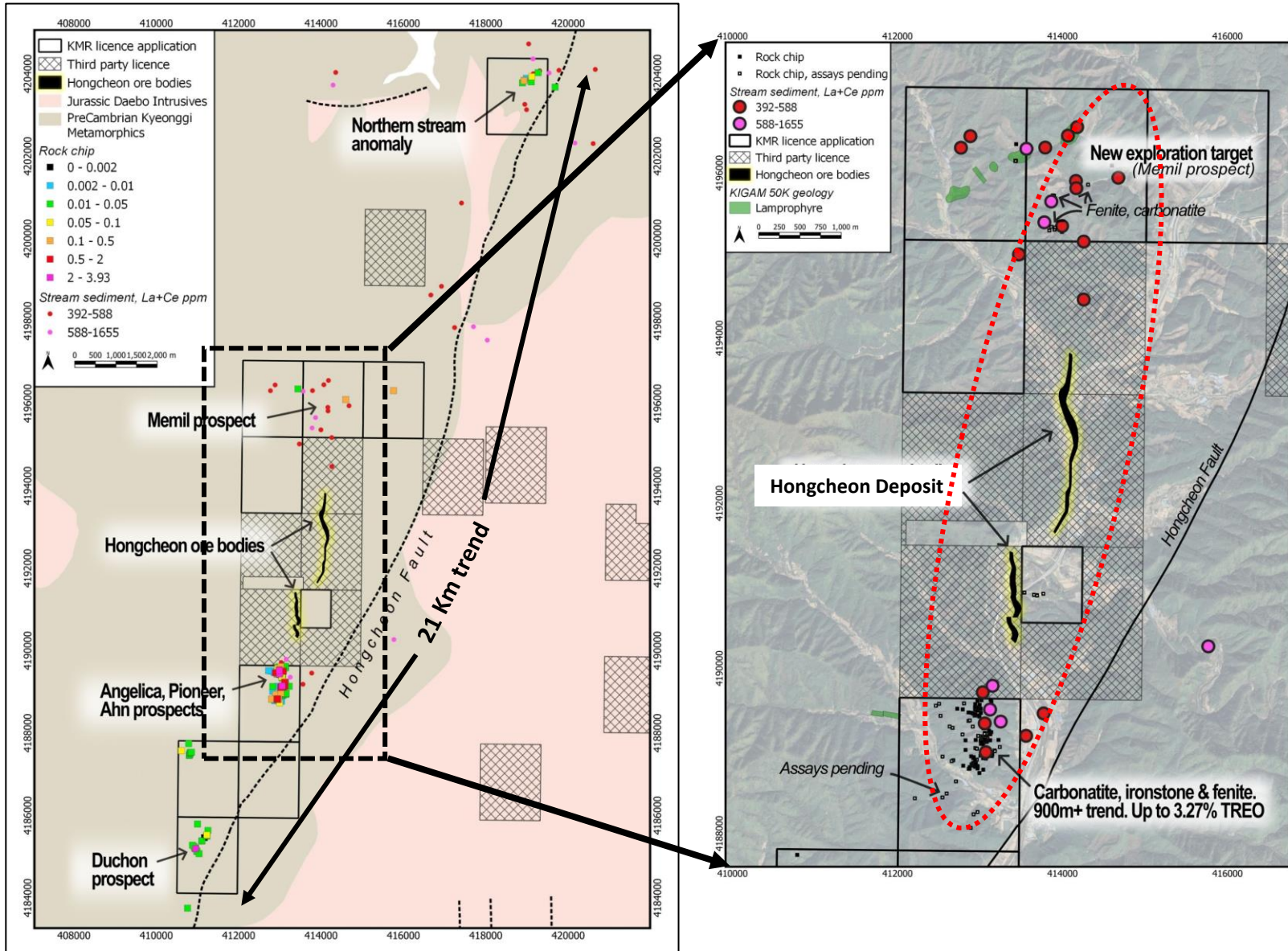
KoBold Team at Seobyek Li Project December 2023

- Earn-in and Joint Venture Agreement with Kobold Metals on 5 Lithium Projects executed in November 2023 – \$7M Earn-in & JV over 5 years
- Kobold is a private exploration and technology company backed by Bill Gates, Jeff Bezos, Jack Ma, Andresen Horowitz
- KoBold Team commenced fieldwork at Samgwen, Seobyek in November 2023; extensive program planned for 2024

REE CARBONATITE DISCOVERY: JANGNAM PROJECT



- Two REE Projects pegged in March adjacent to Korea's only two known REE deposits
- Jangnam Project: 10 licence applications covering 24.7km² (in back) adjacent to Hongcheon REE deposit
- Significant rock-chip REE results returned from carbonatite discovered in May 2023 over a 900 m long zone – Angelica and Pioneer Prospects
- Samples returned up to **3.27% TREO with 12 samples above 1% TREO** and up to 22% MREO.
- The discovery is an extension of the Hongcheon REE carbonatite deposit that outcrops 800m to the northeast outside of SAU's ground
- One sample returned 2.6% TREO 5km south of the deposit at Duchon Prospect
- Stream sediment samples returned 0.3% TREO 16Km to the north
- Highly prospective corridor over 20Km length totally underexplored



- ION discovery extension of Hongcheon Deposit
- Clearly a much larger deposit over 5Km long
- Monzanite - favourable beneficiation; low Th (<259ppm) and U (<8ppm)

1st REE Licenses

Two new REE exploration licence applications

- Chungju REE project
- Jangnam REE project

Adjacent to South Korea's only two known REE deposits

27 April
2023²

Jangnam outcrop

Fieldwork on lithium and REE projects identifies carbonatite outcrop at Jangnam Project. First drillhole finished at Goseong project

15 June
2023⁴

REE Grades

REE grades of 3.27% TREO from carbonatite at Jangnam Project discovered south of the Hongcheon deposit

Regional exploration defines a 21-km long prospective corridor for REE carbonatite mineralisation

14 Sep
2023⁶

\$7M JV with Kobold Metals

Earn-in and Joint Venture for 5 Lithium Projects Signed with Kobold Metals

Billion Dollar Bill Gates-backed exploration and technology company to earn in on 5 ION Lithium Projects
ION Korean subsidiary KMR appointed Field Operator for JV

8 March
2023¹

1st Li Licenses

Exploration licence applications lodged over five project areas - total area of 454 km² with Li anomalies

Prospective geology across the projects includes pegmatites and granites mapped by KIGAM

29 May
2023³

REE Results

Significant rock-chip REE results returned from carbonatite outcrop within Jangnam REE Project

11 additional exploration licence applications applied for bordering the Hongcheon carbonatite deposit

29 August
2023⁵

REE & Li Rock-chip samples

Reconnaissance exploration adds 3 more Li projects

Rock-chip samples returned >1% Li₂O at Sebyeok Li and 0.3% Li₂O at new Danyang Li Projects

Rock-chip samples from Chungju REE project confirm 1.4% TREO, marking an 8 km+ REE mineralised trend

22
November
2023⁷

¹ Rare Earth Elements License Applications & Work Underway (8 March 2023) [Link](#)

² SAU Develops New Lithium Exploration Portfolio (27 April 2023) [Link](#)

³ Deokon Drilling Results, Goseong Commenced, Jangnam Outcrop (29 May 2023) [Link](#)

⁴ REE Carbonatite Discovery at Jangnam Project (15 June 2023) [Link](#)

⁵ Southern Gold reports 3.27% TREO at its Jangnam Project (29 August 2023) [Link](#)

⁶ Encouraging Lithium Grades & REE's at SAU Projects (14 September 2023) [Link](#)

⁷ \$7M Earn-in and Joint Venture Agreement Executed with Kobold Metals (22 November 2023) [Link](#)



FOR FURTHER INFORMATION

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