

Southern Gold to acquire battery technology company and Placement to accelerate commercialisation

Highlights

- SAU to acquire battery materials commercialisation company Iondrive Technologies Pty Ltd (“IDT”) for \$1.2 million in SAU Shares, subject to shareholder approval.
- The proposed acquisition is a strategic investment by SAU, with an opportunity to add shareholder value and diversify Southern Gold’s business.
- IDT acquisition complements SAU’s recent diversification to include lithium and rare earth elements within its exploration portfolio, which will continue to be the Company’s core business.
- IDT has a strategic partnership agreement (“SPA”) with the University of Adelaide (the “University”) which leverages the significant investment by the University into next-generation battery research led by world-class laureate researchers.
- The SPA provides IDT the right to exclusively licence or purchase the intellectual property of three commercialisation-ready technologies developed by the University.
- The three battery technologies comprise non-flammable lithium-ion batteries, a new lithium battery recycling solvent, and high-performing aqueous batteries; technologies are protected by patent applications.
- IDT will progress translation of these new technologies to commercial application over the next 12 months, including engaging with potential international industry partners for piloting these technologies.
- SAU to raise \$2.5 million through a placement to fund IDT’s operations and fund further exploration activities on the Company’s existing projects in South Korea, subject to shareholder approval.

Southern Gold Limited (ASX: SAU) (‘Southern Gold’ or the ‘Company’) is pleased to announce the proposed acquisition of 100% of the issued capital of battery technology company Iondrive Technologies Pty Ltd (“IDT”) for consideration of \$1.2 million payable through the issue of SAU fully paid ordinary shares (the “Acquisition”). The Company is proposing a concurrent \$2.5 million placement (the “Placement”), with \$1.2 million to fund IDT’s commercialisation activities, and the remainder to fund continued exploration activities in South Korea. Both the Acquisition and the Placement are subject to shareholder approval.

Southern Gold’s exploration business will continue to be its core focus, with this Acquisition providing an exciting strategic investment opportunity in the rapidly growing global energy storage market. IDT holds the first right to acquire or enter exclusive world-wide licences across patent protected battery technologies being developed by the University. The technologies are grouped into three commercialisation ready projects: 1) enhanced performance non-flammable lithium-ion based batteries, 2) a low-cost, environmentally sustainable method for recycling lithium batteries, and 3) low-cost, safe, high cycle life aqueous based batteries, with the potential to be the next generation of batteries, particularly suited to grid storage.

Commercialisation over the next 12 months will be progressed through IDT’s funding of the University’s research to optimise performance at a larger scale, whilst in parallel, the IDT team engages with potential battery industry partners in the key markets of China, the US, the EU, South Korea and Japan.

The Acquisition also diversifies the existing exploration business and builds on Southern Gold's recent move into lithium and rare earth element exploration in South Korea. It provides an opportunity to be involved in downstream processing and future applications for lithium. In particular, the lithium battery recycling project provides an alternate source for scarce resources that compliments the potential sourcing of these critical minerals from exploration (whilst also solving a growing environmental issue). Further, it provides an opportunity to leverage recently established relationships in the government and private sector within the battery materials industry in South Korea.

Whilst IDT will be resourced as a separate and focussed business unit, there are existing complementary skills within Southern Gold. Prior to joining Southern Gold in 2021, the Company's CEO and Managing Director, Mr Smillie, gained valuable experience overseeing battery materials research & commercialisation as the Resources and Materials Manager at GNS Science (New Zealand's world-class clean-energy research institute). Southern Gold's CFO and Company Secretary, Ray Ridge, has experience with ASX-listed companies commercialising technologies originating from university research. Mr Ridge is based in Adelaide and will work closely with IDT and its collaboration with the University of Adelaide.

A General Meeting will be held on 28 June 2023. The Notice of Meeting will be lodged following this announcement.

Southern Gold Managing Director Robert Smillie said:

"This acquisition is an exciting strategic investment for Southern Gold, with the global push to net zero emissions by 2050 driving significant demand for both electric vehicles and grid energy storage. IDT is well positioned to participate in this growing industry with access to technologies across three key areas and a collaboration agreement that leverages the University of Adelaide's considerable investment in the School of Chemical Engineering and Advanced Materials.

While exploration in South Korea will continue to be our core business, we see this as an opportunity with the potential to add shareholder value and diversify Southern Gold's business."

University of Adelaide Chief Innovation and Commercialisation Officer, Dr Stephen Rodda said:

"This transaction is a testament to the calibre of research being undertaken by our world class researchers at the University of Adelaide, in the field of energy storage and battery technology.

Our researchers now have a platform to access a pool of like-minded investors and the corporate skillset to accelerate the translation of our research to industry.

"This is another wonderful example of the University of Adelaide partnering with industry to support the transfer and development of new technologies."

About Iondrive Technologies (IDT)

With exclusive access to cutting-edge technologies developed through the University of Adelaide, Iondrive Technologies is well positioned to play a significant role in the growing energy storage industry, through the commercialisation of new battery related technologies.

Commercialisation opportunities include the sub-licensing or sale of the technologies to established battery manufacturers and suppliers of battery materials and through direct participation as an industry materials supplier.

Strategic Partnership with the University of Adelaide

The collaboration with the University is established through the Strategic Partnership Agreement (“SPA”), executed in October 2022. The SPA provides a framework for IDT and the University to identify certain commercialisation-ready technologies developed by the University. The SPA has a term of 30 months.

Under the SPA, IDT has agreed to provide funding to the University of Adelaide to progress the next stage of research totalling \$2.5 million over the term of the SPA, which includes \$1.5 million over the first year and a further \$0.5 million in each of the two subsequent years. IDT expects to claim this research funding and other qualifying expenditure under the Federal Government’s Research & Development Tax Incentive.

The SPA provides IDT with a first right to an exclusive worldwide licence of the intellectual property arising from the University’s research into each project funded by IDT. Each licence will extend over the life of the underlying patents.

Existing Commercialisation Projects

Under the umbrella of the SPA, IDT has already entered into agreements with University of Adelaide, to fund three projects that collectively satisfy the SPA requirement for IDT to provide \$1.5 million in funding for the first 12 months.

Importantly, the three projects are protected by four International Patent Applications and/or Provisional Patent Applications held by the University of Adelaide, and additional patent applications are expected as technologies are further developed.

Following the proposed Acquisition, a management committee comprising representatives from IDT and the University will meet monthly to monitor progress of the research and to ensure a strong focus on the commercialisation pathway.

These projects are summarised below, with additional information available on IDT’s website: www.iondrivetech.com.au.

1. Enhanced performance non-flammable lithium-ion batteries

Lithium-based batteries are currently the most efficient method to store energy on scale today and until better options reach the market, new developments are needed to improve the safety and longevity of lithium cells. Under this project, the University of Adelaide has developed three innovative technologies relating to the cathode, anode and electrolyte components of lithium-ion batteries. Together, these components create an improved battery system that has a very high energy density, long cycle life, and is non-flammable therefore safer.

2. Lithium battery recycling

The global push for improved battery recycling is increasing significantly as batteries are depleted and stockpiled, creating environmental issues. The University of Adelaide has developed an environmentally friendly, highly selective, re-useable deep eutectic solvent (DES) that can be used to extract lithium, manganese, nickel and cobalt from spent cathode material to produce precursor or cathode material for commercial purposes. Laboratory testing to date has achieved recoveries of over 90% for these metals.

The application of the DES can significantly simplify the critical metal recovery process, lower energy consumption and selectively separate each critical metal, and uses low-cost, and environmentally friendly leaching solvents that are re-usable multiple times before replenishment is required.

3. Aqueous based batteries

Aqueous batteries are much cheaper to produce than lithium-ion batteries due to the use of readily available inputs, albeit at a lower energy density than lithium-ion batteries. They also provide much longer cycle life,

making them ideal for large scale grid energy storage. The historic technical challenge with water-based batteries has been to increase energy density while maintaining a water-based batteries' long cycle life.

Applied research conducted by the University of Adelaide led to development of a water-based battery that uses proprietary technology involving the application of a patented novel layer on the cathode, a titanium compound-based anode, and a sodium chloride-based electrolyte. The performance of this new battery technology has provided highly promising results that have exceeded all known published research.

A World Class Team

The 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, and supported by Dr JC Tan, a technology commercialisation expert and international business strategist. JC has significant experience in business development and research translation globally, founded UniSA Ventures Office in China, played a key role in the spinning out of 3 companies, and successfully closed multiple high value deals with various biotech / pharma companies and venture capital. He is a qualified patent attorney in Australia, with a PhD in engineering / materials science.

Professor Guo recently represented IDT at China's 15th International Battery Fair held in Shenzhen on May 16 to 18, 2023.

For more information:

- Professor Shizhang Qiao: [Staff Directory | Professor Shizhang Qiao \(adelaide.edu.au\)](#)
- Professor Zaiping Guo: [Professor Zaiping Guo | Researcher Profiles \(adelaide.edu.au\)](#)
- Dr JC Tan: [Staff Directory | Dr JC Tan \(adelaide.edu.au\)](#)

Next 12 months for IDT

IDT's focus for the first 12 months following the transaction is to progress translation of all three technologies from the laboratory to commercial application through:

1. Research to optimise performance and scale-up laboratory testing at the University of Adelaide, funded by SAU's investment;
2. Engagement with potential industry partners in piloting the use of the technologies at a commercial scale; and
3. Seeking to access government funding and support available globally. There is considerable government funding and support available to support the clean energy transition and environmental/recycling projects in the US, the EU, Asia and Australia.

Acquisition & Placement Terms

The proposed Acquisition of Iondrive Technologies Pty Ltd ("IDT") for consideration of \$1.2 million is to be satisfied through the issue of 60 million fully paid ordinary shares in SAU, at an agreed value of \$0.02 per Share (the "Acquisition Shares"). The Acquisition Shares will be subject to a six-month voluntary escrow.

The proposed Placement will raise approximately \$2.5 million through the issue of 126 million fully paid ordinary shares at a price of \$0.02 cents per share, together with one unlisted option for every 2 shares subscribed. The options will have an exercise price of \$0.027 and will expire 18 months following the date of issue. The Placement is being managed by Prenzler Group, with participation by Southern Gold's two largest shareholders: Strata investment Holdings Plc (previously Metal Tiger Plc) and Ilwella Pty Ltd. The Company also looks forward to welcoming the addition of new institutional and high net wealth investors to its register via the Placement. The Company will seek shareholder approval for participation in the Placement by Strat Investment Holdings Plc, as it is considered a related party under the listing rules, having a

shareholding greater than 10% of the issued capital and a director nominated to the SAU Board.

The Chair, CEO/MD, and CFO/Company Secretary are all proposing to participate in the Placement. The Directors are considered related parties under the ASX Listing Rules and therefore their participation is subject to shareholder approval.

\$1.2 million of the funds raised will fund IDT's near-term commercialisation activities, while the remaining \$1.3 million will fund continued exploration activities in South Korea and general working capital.

As part of the Acquisition, IDT has retained the expertise of Mr Keong Chan, as a consultant, for a minimum period of 12 months. Keong is one of the founders of IDT, with established relationships with key University of Adelaide staff and deep battery industry experience. Additionally, the Company anticipates finalising the appointment of a suitably experienced General Manager for IDT, soon after completion of the Acquisition.

The Acquisition is expected to be completed soon after shareholder approval. Following completion of the Acquisition, the Southern Gold Board will be augmented through the appointment of Mr John Rock as a non-executive director. John also been involved with the IDT business and has extensive experience in the development of commercialisation pathways for university developed technologies, including identifying access to government funding to further accelerate progress.

The Company proposes to grant 20 million unlisted options to incentivise and retain the above key staff (the "Options"), including the General Manager. The Options will be granted following Acquisition completion, vest following one year's service, have an exercise price of \$0.04 and a term of three years from the grant date.

The proposed issue of securities for the Placement, the participation in the Placement by each of the related parties, the issue of the Acquisition Shares, and the granting of the Options are each subject to shareholder approval. A general meeting of shareholders is to be held on 28 June 2023 to consider these matters. Further detail may be found in the notice of meeting to be lodged with the ASX, following this announcement.

A presentation relating to IDT and the Acquisition is attached.

This release has been approved by the Board.

Further Information

Robert Smillie
MD & CEO
08 8368 8888
info@southerngold.com.au

Maude Lacasse
Investor and Media Relations
0416 499 856
maude@nwrcommunications.com.au

Southern Gold Limited: Company Profile

Southern Gold Ltd is a successful mineral explorer listed on the Australian Securities Exchange (under ASX ticker "SAU"). Southern Gold owns 100% of a substantial portfolio of high-grade gold-silver, Li and REE projects in South Korea. Backed by a first-class technical team, Southern Gold's aim is to find world-class precious and critical metals deposits in a jurisdiction that has seen very little modern exploration.

Forward-looking statements

Some statements in this release regarding estimates or future events are forward looking statements.

In relation to the Company's exploration business, these may include, without limitation:

- Estimates of future cash flows, the sensitivity of cash flows to metal prices and foreign exchange rate movements.
- Estimates of future metal production; and
- Estimates of the resource base and statements regarding future exploration results.

In relation to the proposed acquisition of IDT, there can be no assurance that others will not independently develop similar or improved technologies or design around patents available to be licensed by the IDT, or that patents available to be licensed by IDT will provide meaningful protection or competitive advantages.

Such forward looking statements are based on a number of estimates and assumptions made by the Company and its consultants in light of experience, current conditions and expectations of future developments which the Company believes are appropriate in the current circumstances. Such statements are expressed in good faith and believed to have a reasonable basis. However, the estimates are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from estimated results.

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 or ASX release, except as maybe required under applicable laws. Recipients should make their own enquiries in relation to any investment decisions from a licensed investment advisor.



MAY 2023

Acquisition of Iondrive Technologies



Legal 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 proposed 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.

Not an offer of securities

This Presentation is not a prospectus, product disclosure statement or other offering document under Australian law (and will not be lodged with ASIC) or any other law. This Presentation does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any shares nor does it constitute financial product or investment advice nor take into account your investment objectives, taxation situation, financial situation or needs. An investor must not act on the basis of any matter contained in this Presentation but must make its own assessment of the Company and conduct its own investigations and analysis. Before making an investment in the Company, a prospective investor should consider whether such an investment is appropriate to their particular investment objectives and financial situation and seek appropriate advice, including legal, taxation and financial advice appropriate to their jurisdiction and circumstances.

United States and Other jurisdictions

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

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 Managing Director and Exploration Manager at Southern Gold 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.



SAU at the Forefront of Next Generation Energy Storage Market with Iondrive Technologies

1

Southern Gold (SAU) is set to acquire Iondrive Technologies (IDT)

2

IDT partnering with the University of Adelaide (the “University”) and its world class research team to commercialise leading edge battery technologies

3

Three commercialisation project agreements in place to date: low cost high cycle life water based batteries, a lithium battery recycling solvent, and significantly enhanced performance of non-flammable lithium-metal batteries.

4

Technology protected by four Patent Applications held by the University with more patents anticipated to be lodged as IDT’s technologies are rolled out.



The Strategic Rationale

1

An opportunity to invest in the rapidly growing clean energy sector globally as the world looks to carbon-neutrality by 2050, backed by significant government support.

2

Diversifies SAU business and builds on the recent progress in SAU's critical mineral exploration strategy including lithium and rare earth elements in South Korea.

3

Overseen by the SAU Board with collective experience in international operations, capital markets and technology commercialisation, augmented with a new Director with direct IDT experience.

4

Leverages established contacts in South Korea as the country seeks local acquisition of lithium and REE.

Transaction Overview

Acquisition	<ul style="list-style-type: none">• SAU set to acquire 100% of the issued capital of Iondrive Technologies Pty Ltd• IDT has a strategic partnership with the University of Adelaide to commercialise technologies in the rapidly growing global energy storage industry
Acquisition Consideration	<ul style="list-style-type: none">• \$1.2 million (60 million fully paid ordinary shares at a price of \$0.02 per share)• Six month voluntary escrow• Subject to shareholder approval and a concurrent capital raise
Capital raising	<ul style="list-style-type: none">• Targeting \$2.0 million with rights to accept oversubscriptions to \$2.5 million, at a price of \$0.02 per share• One unlisted option for every 2 shares subscribed (exercise price \$0.027, 18 month term)• Cornerstone support from SAU's two largest shareholders Strata Investment Holdings Plc (formerly Metal Tiger Plc) and Ilwella Pty Ltd• Subject to shareholder approval and completion of the Acquisition
Use of funds	<ul style="list-style-type: none">• Funds raised via the Share Placement will be used for:<ul style="list-style-type: none">• \$1.2 million to fund IDT's commercialisation activities• With the remainder to fund continued exploration activities, costs of the capital raise and general working capital
IDT key person incentives	<ul style="list-style-type: none">• 20 million unlisted options to incentivise and retain consultants driving the IDT commercialisation (exercise price \$0.04, 3 year term)• Subject to shareholder approval
Board participation	<ul style="list-style-type: none">• Chairman, Mr Peter Bamford 1,500,000 shares, 750,000 Options (subject to shareholder approval)• CEO/Managing Director, Mr Robert Smillie 500,000 shares, 250,000 Options (subject to shareholder approval)• Company Secretary/CFO, Mr Ray Ridge 1,000,000 shares, 500,000 Options
Broker	<ul style="list-style-type: none">• Prenzler Group Pty Limited

Capital Structure

Corporate Structure

Ordinary Shares	300.3m
Share Price (24 May 2023)	AUD\$0.023
Market capitalisation	AUD\$6.9m
Cash (30 April 2023)	~AUD\$3.1m
Enterprise Value (EV) AUD	~AUD\$3.8m
150m Shares in BMV (LSE Listed) [#]	~AUD\$3.5m
Total cash + BMV Shares	~AUD\$6.6m

**Strong balance sheet,
including BMV Shares**

[#] Mark-to-market 150m BMV shares @ 1.25p (and 1.88 GBP to AUD FX Rate).

Options / Performance Rights

ESOP 5c and 10c Call to various dates	2,660,000
Directors	3,700,000
USD11c ADS Pref. Rights 2024	10,000,000
CEO/MD LTI Performance Shares subject to vesting hurdles	5,000,000

Major Shareholders (>5%)

Strata Investment Holdings Plc (formerly Metal Tiger Plc)	~19.1%
Ilwella Pty Ltd	~16.8%

Introducing Iondrive Technologies





Strategic Partnership with the University of Adelaide

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:

- Pre-agreed terms available for IDT as a first option to acquire or exclusively license the IP.
- To maintain the first right, IDT provides funding of \$1.5 million in the next 12 months followed by \$0.5 million in each of the two following years. IDT expects to claim qualifying expenditure under the Federal Government's Research & Development Tax Incentive.
- A framework for identifying further battery related technology appropriate for commercialisation.

IDT is commercialising three important energy storage applications

These three projects are engaging in optimisation and larger scale of laboratory testing as part of the commercialisation process, whilst IDT is engaging industry partners to collaborate on trialling use at a commercial scale.

1

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

2

Non-Flammable 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

Lithium Ion Battery Recycling Solvent

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

A photograph of several white wind turbines on a grassy hill. The sky is a mix of orange, pink, and purple, suggesting sunset or sunrise. The turbines are arranged in a line, receding into the distance. A small red building is visible on the hill near the base of one of the turbines.

1

Water Based Batteries

A sustainable energy storage solution for the rapidly growing need for battery materials. The 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 will assist countries to meet carbon net neutral requirements with significantly lower cost and safer/more stable materials.

Water based batteries are particularly suited to grid energy storage. 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.

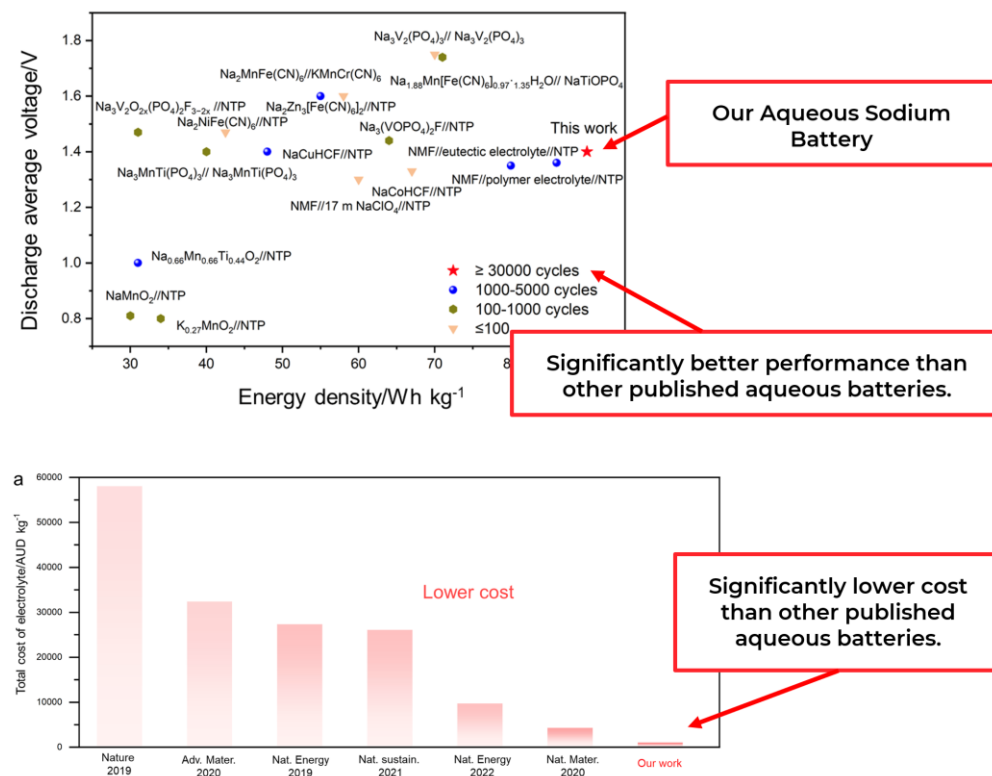
WATER BASED BATTERIES

IDT's Water Based Batteries Technology

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.



Higher Performance Safer Lithium Metal Batteries

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.

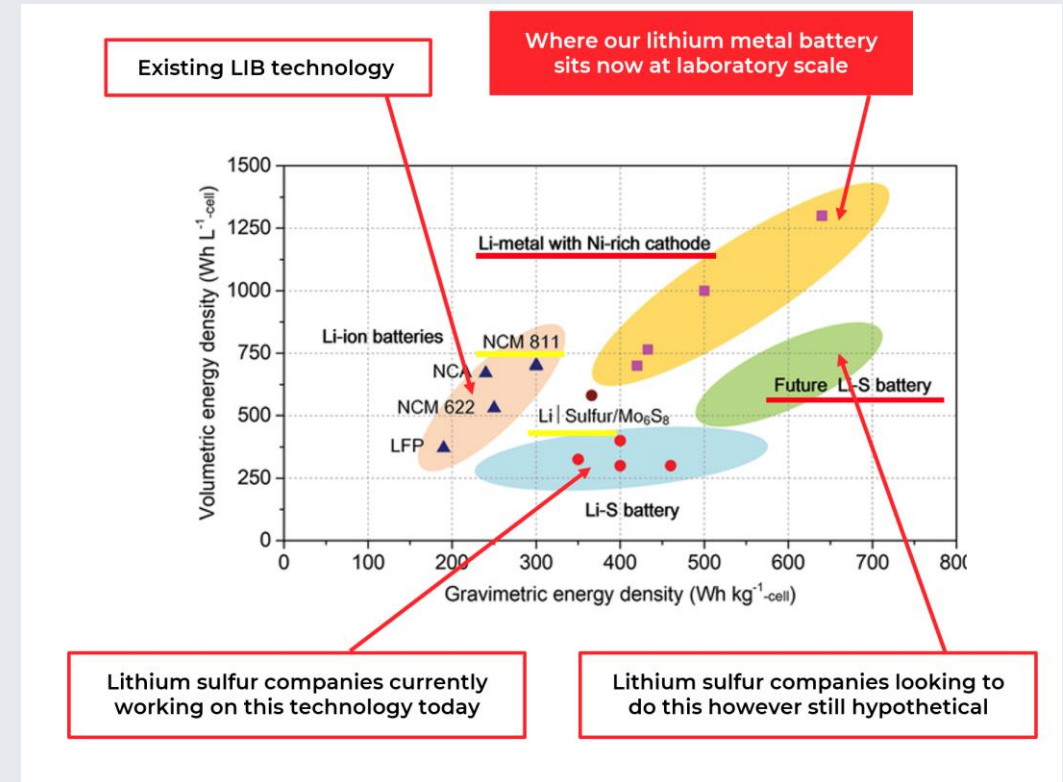
With these improvements, a Li-ion battery cell may be capable of much more, such as electric vehicles capable of driving more than 1,000 kms on a single charge or mobile phones that require recharging once per week.

IDTs Lithium Metal Battery Technology

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.



Battery Recycling

The need for battery recycling is increasing significantly as batteries are depleted and stockpiled, creating environmental issues. It is estimated that only 5 to 10% of Lithium batteries are recycled globally. What Lithium battery recycling there is, is currently extremely inefficient, hazardous, and costly. Most recycling is accomplished through incineration at extreme temperatures, or corrosion with powerful and toxic acids. In addition, the EU Battery Passport is leading the world with recycled material requirements in new batteries, creating a large opportunity for value to be found.

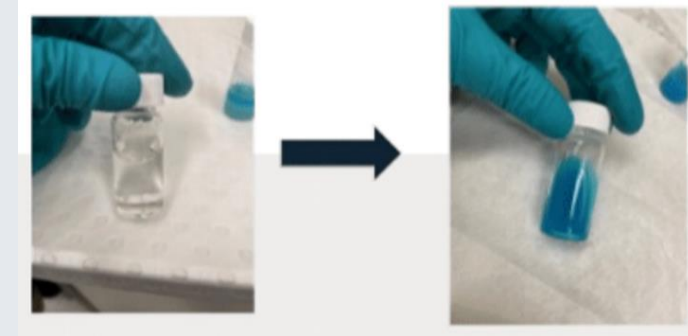
As the demand for batteries grows it is becoming unsustainable to source battery materials solely from exploration and mining.

BATTERY RECYCLING

IDTs Battery Recycling Solvent Technology

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 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.

SOUTHERN GOLD

Company Overview





Portfolio Expanded to Li & REE, Backed by an Experienced Team

Southern Gold Ltd holds 100% of a substantial exploration portfolio of high-grade gold-silver-copper, recently expanded to include Li and REE projects, based in South Korea. Backed by a first-class technical team, Southern Gold's aim is to find world-class precious and critical metal deposits, in a low-risk jurisdiction that has seen very little modern exploration. Strong interest and support from Korean Government agencies in the Li and REE projects, with their status as a global leader of Li-ion battery production and seeking to secure their access to critical minerals.

The foundation for success is built upon several key factors:

- Exploration license applications submitted for five lithium project areas in South Korea, covering a total area of 454 sq km in April - Soil assay results achieved over 400ppm
- Exploration license applications have been submitted in close proximity to the two known rare earth element (REE) deposits
- Jangnam REE Project, consisting of 53 license applications spanning 143.8 sq km with awaiting assays from a recently discovered outcropping, and is adjacent to a REE deposit, which yielded assay results of up to 19.75% TREO
- Multiple high priority Gold-Silver exploration projects actively worked up for drilling
- Strong interest in the Gold-Silver and Lithium project portfolios from potential JV partners



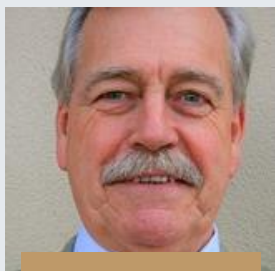
Exploration Update

DEOKON DRILLING UPDATE

- Preliminary assay results returned from two of the three Deokon Main Mine drillholes (DKDD014 and DKDD015), drilled in February-early April.
- Elevated silver and gold grades returned in the hanging wall of DKDD015 - including 1.1m @ 5.83 g/t Au and 27.6 g/t Ag, 1m @ 1.3 g/t Au and 5.5 g/t Ag, and 1m @ 0.2 g/t Au and 49.2 g/t Ag - together with strong silica-pyrite alteration and network veining downhole, highlight the extent and silver-rich nature of the of the Deokon epithermal system, and the potential for economic Au-Ag grades to be discovered along strike in the hanging wall.
- Target structures were intersected by both drillholes, however mineralised shoot extensions of the Main Deokon Mine vein within the structure not encountered in drilling; review of results in progress with good potential to discover mineralised shoots remaining.
- Assays pending for Deokon drillhole DKDD016 drilled at the Bonanza Zone at Golden Surprise Trend for 202.5 metres.

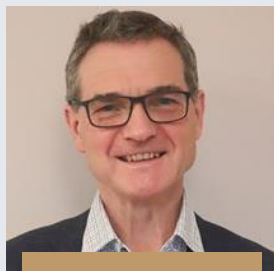
OTHER FORTHCOMING RESULTS

- First drillhole GSDD001 successfully completed at Goseong Cu-Au project last week for 151.4 metres; drilling commenced this week on second Goseong hole GSDD002 targeting the Bupo co-incident geophysical and geochemical anomaly.
- Lithium and Rare Earth Element (REE) fieldwork actively progressing, with potential REE carbonatite outcrop found at Jangnam Project; assays have been expedited and expected in 3 to 4 weeks.



Peter Bamford

Chairman



Robert Smillie

Managing Director



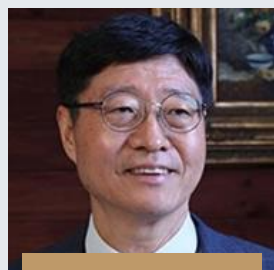
Douglas Kirwin

Non-Executive Director



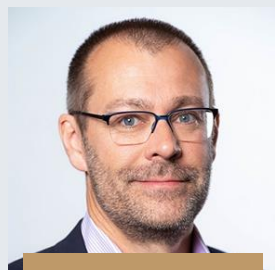
Michael McNeilly

Non-Executive
Director



Beejay Kim

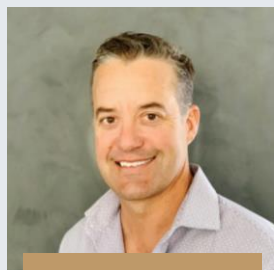
Non-Executive Director



Ray Ridge

Company Secretary

**John Rock to Augment
SAU Board from IDT**



John Rock

Non-Executive Director

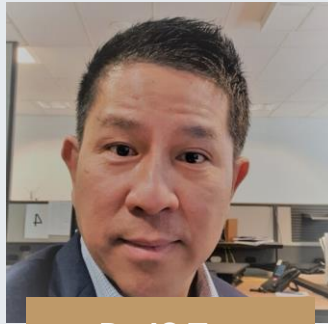
SAU Relevant Board Experience & Updates

- SAU Managing Director & CEO Robert Smillie, will oversee the appointed IDT GM. Rob has recent experience in the clean technology sector overseeing carbon reduction and battery materials research & commercialisation as the Resources and Materials Manager at GNS Science in NZ.
- Michael McNeilly identified the IDT investment opportunity and has been a key part of the due diligence team. Michael has extensive board experience and a deep understanding of equity capital markets.
- CFO and Company Secretary Ray Ridge is based in Adelaide and will work closely with IDT and its collaboration with the University of Adelaide. Ray has recent experience with ASX-listed companies in commercialising technologies originating from university research.
- Beejay Kim has extensive industry experience, previously holding a senior executive position for Samsung C&T, and has extensive South Korean industry & government contacts.
- Collectively the Board has a depth of other experience relevant to IDT, including:
 - Governance
 - International Operations
 - Capital markets and corporate finance
 - Construction management
 - Assessing & managing investments
- Upon appointment, John Rock will contribute his direct experience with IDT and his extensive experience in the development of commercialisation pathways for university-borne technologies including identifying opportunities for government funding to further accelerate progress.



Keong Chan

**IDT Founder &
Industry Consultant**



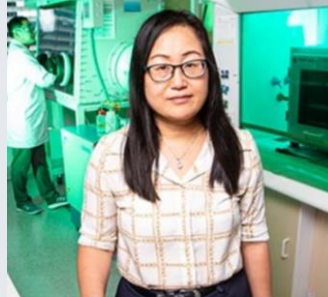
Dr JC Tan

**Commercial
Manager (UoA)**



Prof. Shizhang Qiao

**Laureate
Professor (UoA)**



Prof. Zaiping Guo

**Laureate
Professor (UoA)**

IDT Next Steps Along the Commercialisation Path

- Imminent appointment of IDT General Manager
- Assess, engage and formalise battery material trialling activities with overseas industry partners:
 - Dr JC Tan & Laureate Professors leveraging China contacts
 - Appoint a market consultant for the EU & US
 - Keong Chan leveraging US & Australia contacts
 - Mr Chan and Mr Rock recently attended the International Battery Seminar conference in Orlando, FL, and Mr Chan is soon returning to the US to engage his contacts in US Government and private industry.
- Scaling up research on 3 major projects and leveraging UoA industry contacts.
 - Professor Guo recently represented IDT at China's 15th International Battery Fair held in Shenzhen on May 16 to 18, 2023.
- Access and leverage government funding specifically earmarked to increase battery manufacturing capability in Australia.
 - [US & AUS joint leaders statement](#)
 - [ARENA announcing funding](#)
- Strengthen and increase IP portfolio through UoA contacts and Partnership Agreement
- Preparations and planning for pilot plant construction

Post-Acquisition Plan

Enhance IDT's 12-month plan	<p>IDT's focus for the first 12 months following the transaction is to progress translation of all three technologies from the laboratory to application through:</p> <ul style="list-style-type: none"> • Continuing research to progress optimisation of performance and the scaling up the research on larger quantities, funded by SAU's investment • Commencing engagement with partners in piloting the use of the technologies at a commercial scale leveraging SAU industry contacts and expertise • Seeking to acquire government funding available in Australia, US, EU and Asia
Establish a management committee to accelerate commercialisation	<p>Following the proposed acquisition, a management committee comprising representatives from IDT and UoA will meet monthly to monitor progress of and accelerate the research and to ensure a strong focus on the commercialisation pathway.</p>
Retain IDT market specialist consultant	<p>IDT has retained the consulting expertise of Mr Keong Chan, one of the founders of IDT with established relationships with key University of Adelaide staff and global contacts in the energy storage market, to assist with the commercialisation through industry partnerships.</p>
Appoint a new consultant and GM to IDT	<p>IDT will appoint a specialist EU and US market consultant to engage with industry partners in that region. The Company will also appoint a suitably experienced General Manager with experience in commercialisation and the battery industry.</p>
Incentives to retain and motivate IDT consultants	<p>The Company proposes to grant 20 million unlisted options to incentivise and retain key IDT consultants. The proposed options will be granted following Acquisition completion, vest in one year, have an exercise price of \$0.04 and have a term of three years from the grant date. The granting of these options is subject to shareholder approval.</p>
Southern Gold and IDT company changes post acquisition	<p>Southern Gold's exploration business will continue to focus on its existing operations in South Korea, while the IDT business will be resourced to operate separately, with some minimal involvement from SAU's management team:</p> <ul style="list-style-type: none"> • IDT's new GM will be accountable to SAU's Managing Director, Robert Smillie, who brings considerable experience in the clean energy sector. • Southern Gold's Chief Financial Officer and Company Secretary Ray Ridge is based in Adelaide and will work closely with IDT and its collaboration with the University of Adelaide. Mr Ridge has prior experience with ASX-listed companies commercialising technologies originating from university research.
Changes to the SAU board	<p>The Southern Gold Board will be augmented by the addition of John Rock of IDT upon Acquisition completion.</p>



Thank you


감사합니다

Robert Smillie

Managing Director

E: rsmillie@southerngold.com.au

W: www.southerngold.com.au

 southerngold.com.au

 [IDT LinkedIn](#)

 [SAU Twitter](#)

