



ASX ANNOUNCEMENT

FOR IMMEDIATE RELEASE TO THE MARKET

Li-S Energy Limited – ASX Code: LIS

Wednesday 24 November 2021

Chairman’s Statement and CEO Presentation

Li-S Energy Limited (ASX: LIS) (“LIS” or “the Company”) is pleased to provide the following which will be presented at the Company’s Annual General Meeting today:

- Chairman’s Statement
- CEO Presentation

This announcement has been authorised by the Board.

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Li-S Energy AGM 2021 Chairman's Statement AGM 24 Nov 2021

Ladies and gentlemen, on behalf of the Board and the entire Li-S Energy team, I would like to welcome you to the 2021 Annual General Meeting of Li-S Energy shareholders.

My name is Ben Spincer, Li-S Energy's Chair, and I am delighted to be hosting my first Annual General Meeting with Li-S Energy.

First, I would like to acknowledge the Traditional Owners of the various lands from where we're joining the webcast today, and I pay my respects to their Elders past, present and emerging.

It would have been great to be with you all in person today but with COVID-19 border restrictions still in place, I have remained in Melbourne for today's meeting, with the balance of the Board and management in Brisbane and Sydney. We look forward to engaging with you via this virtual platform today, and I would also like to extend a warm welcome to those of you who are joining us.

I would like to start by introducing the LiS Energy team who are online today. I am joined by my fellow Directors, Ms Hedy Cray, Mr Robin Levison and Mr Tony McDonald. They are joined by the CEO, Dr Lee Finniear who you will hear from shortly, the CFO Mr Ken Hostland, the General Counsel Mr Will Shiel and Company Secretary, Mr Andrew Cooke.

I must also thank the efforts and contribution from the two Directors who retired from the LiS Energy Board in 2021 – Mr Glenn Molloy and Dr Greg Pullen.

Li-S Energy was established in 2019 as a venture between the PPK Group and Deakin University to validate and commercialise novel battery technology using boron nitride nanotubes as a nano-insulator in lithium-sulphur batteries.

In a little over two years, the company has validated the science behind its Lithium Sulphur battery technology, developed a new product, Li-Nanomesh that we believe will improve the durability of any battery with a metal anode, and successfully completed an IPO on the Australian Stock Exchange, raising \$54m through the IPO and a pre-IPO raise. Coupled with a \$3.25m raise at the start of the 2021 financial year, the company is immensely grateful for the ongoing support from its shareholders and is in a strong position financially to invest in its growth.

Turning briefly to the outlook. Affordable, high-performance lithium sulphur batteries have the potential to drive adoption in an electrifying global economy, creating EVs that drive further, drones that fly longer and mobile devices that last for days instead of hours. Li-S Energy has an enviable opportunity to contribute to the development and production of such batteries to supply a multitude of industries and uses.

Following from the efforts of 2021, the Li-S Energy research and development program is designed to provide a path to deliver Li-S Energy Batteries, materials and intellectual property to market. It has the following four primary goals in 2022 and beyond:

1. Further optimise Li-S Energy technology, both the performance of our Lithium Sulphur batteries and the broader opportunities afforded by Li-Nanomesh
2. Produce Li-S Energy Batteries in pouch, cylinder and flexible battery formats to address the needs of partners and prospective customers
3. Build a pilot scale production capability, manufacture batteries and prove their benefits in commercial products with commercial partners
4. Develop intellectual property on how lithium-ion battery manufacturing plants can be adapted to produce Li-S Energy Batteries

Commercially, the clearest demonstration of Li-S Energy Battery benefits will be to show its performance in real products. We have often stated our intention to collaborate with product original equipment manufacturers in key markets, retrofit their products with Li-S Energy Batteries, and have the OEM complete a comparative field test. It is incredibly exciting that in recent months we have attracted so much interest from partners, exemplified by this week's announcement of the collaboration with Janus Electric and opportunities that it presents to us, which Lee will talk about shortly.

Li-S Energy is building a strong management team and, with the ongoing support from Deakin's talented scientists and engineers, is well positioned to deliver on its objectives.

Finally, I want to say something on our Environmental, Social and Governance commitment, commonly called ESG. We have a great opportunity to lead and adopt best practice and embed ESG into our governance frameworks to build a more sustainable and resilient business, and future. We will continue to prioritise this commitment at the LiS Energy Board, for all our stakeholders.

I will now hand over to the CEO, Dr Lee Finniear to give you a company update and discuss some of the recent exciting developments at LiS Energy. Thank you.



Li-S Energy

AGM CEO Presentation
24 November 2021




There **NO**
PLANET B

THE WORLD

IS WATCHING



“
Saving the planet isn't a partisan issue.
BARACK OBAMA


goal that countries signed up to in the 2015 Paris Agreement.
The technology target is a way to cauterise a divisive debate in the Coalition partyroom, with Na-
Cassavan and Liberal MP's Man also jvt to be sold on whether a specific target should be met.
PAUL KELLY P12
EDITORIAL P13

Renewables save the day in energy crisis

EXCLUSIVE
DAVID PENBEKTHY
SOUTH AUSTRALIA
CORRESPONDENT

Portland plant would have destroyed the facility, which relies on 24-hour electricity for its survival, costing 3000 jobs and threatening aluminium supplies.
A workaround was found with the Murraylink interconnector between the South Australia town of Berru and the Victoria city of Mildura being used to link the Portland plant alone to South Australia.

A key section of the nation's energy infrastructure has been restored after the storm-affected interconnector between South



“Global Net Zero” is now a central issue in Governments and the public conscience – its driving change, its driving investment and its driving technology...

Battery Demand Drivers

The lithium-ion battery market is currently valued at US\$35.3 Billion and expected to double to US\$71 Billion by 2025. Significant demand for lithium ion-batteries is driven by the global shift towards electric vehicles, with other industries also adding to this demand.



Electric Vehicles and E-Mobility



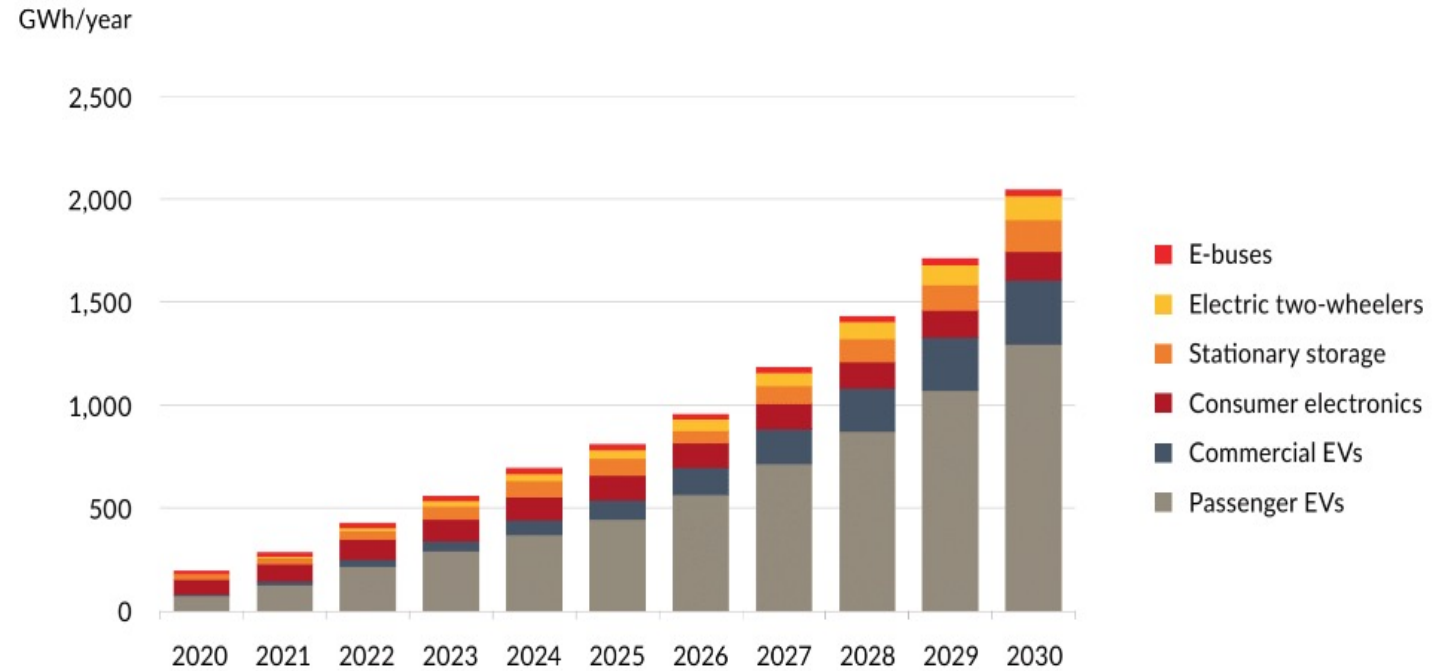
Law Enforcement & Defence



Aviation & Drone Technology



Consumer Electronics and Internet of Things (IoT)



Lithium-ion battery Demand Outlook for EV's by Segment

Source: "Electric Vehicle Outlook 2020, Bloomberg NEF (Bloomberg Finance L.P.)

Li-S Energy

- Founded by Deakin University & PPK Group in 2019
- IPO late September 2021 (8 Weeks Ago)

- **GOAL:**

“To commercialise the first high energy density Lithium Sulphur Battery with cycle life equal or exceeding that of Lithium ion”.

- **TARGET MARKETS:**

- Electric vehicles (of all types), Drones, Aviation

- **TARGET MARKET OBJECTIVES:**

- EVs that can drive more than 1000Km between charges,
- Drones that fly for hours not minutes,
- Electric Aviation at a commercial scale, maximizing range and payload & minimizing battery weight

The Advantages of Lithium-Sulphur

Lithium-sulphur batteries have more than 5 times the theoretical energy capacity of Lithium-ion batteries. Beyond this they have a range of other potential advantages over today's lithium-ion batteries:



Higher Energy Density

Lithium-sulphur batteries have a theoretical gravimetric energy density of 2,567 Wh/Kg - in the order of 5x that of lithium-ion batteries.



Faster Charging Capacity

Lithium-sulphur batteries have a higher charge rate capacity and can be recharged faster due to their chemical design. The higher energy density also delivers more energy per charge/discharge cycle, leading to fewer charges being required



Enhanced Safety

According to the Faraday Institute, lithium-sulphur batteries offer significant safety benefits over other battery types due to their operating mechanism. While thermal runaway remains a possibility, research has shown that the magnitude of this failure is significantly lower than Lithium-ion cells.



Lighter Weight

The lithium, sulphur and carbon used in lithium-sulphur batteries are substantially lighter than the heavy metal oxides used in lithium-ion batteries, facilitating a lighter battery for the same energy stored.



Lower Cost per kWh

Sulphur is one of the most abundant elements on Earth and costs less than 1% the cost of lithium cobalt oxide. The low mass of lithium metal needed for a lithium-sulphur battery anode also keeps the material cost of the anode down.



Cleaner & Greener

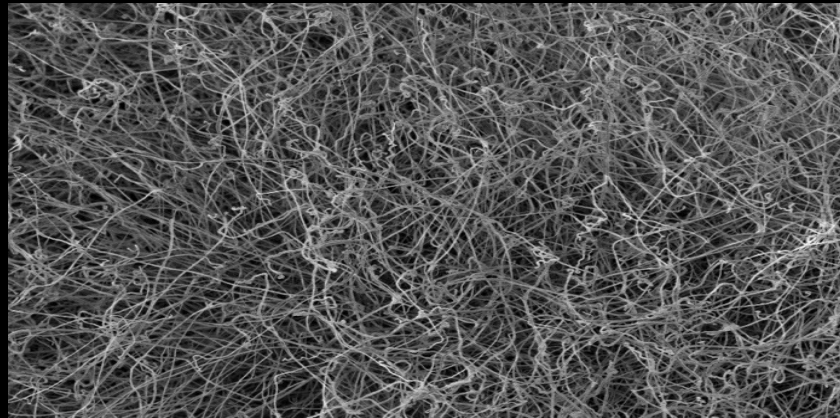
Unlike lithium-ion, lithium-sulphur batteries do not contain heavy metals. Most lithium metal is produced from mined ore and brine reservoirs. Sulphur is an industrial by-product that can be re-purposed for lithium-sulphur batteries

BUT historically Li-S cells have had a very low cycle life, preventing them from being used commercially.

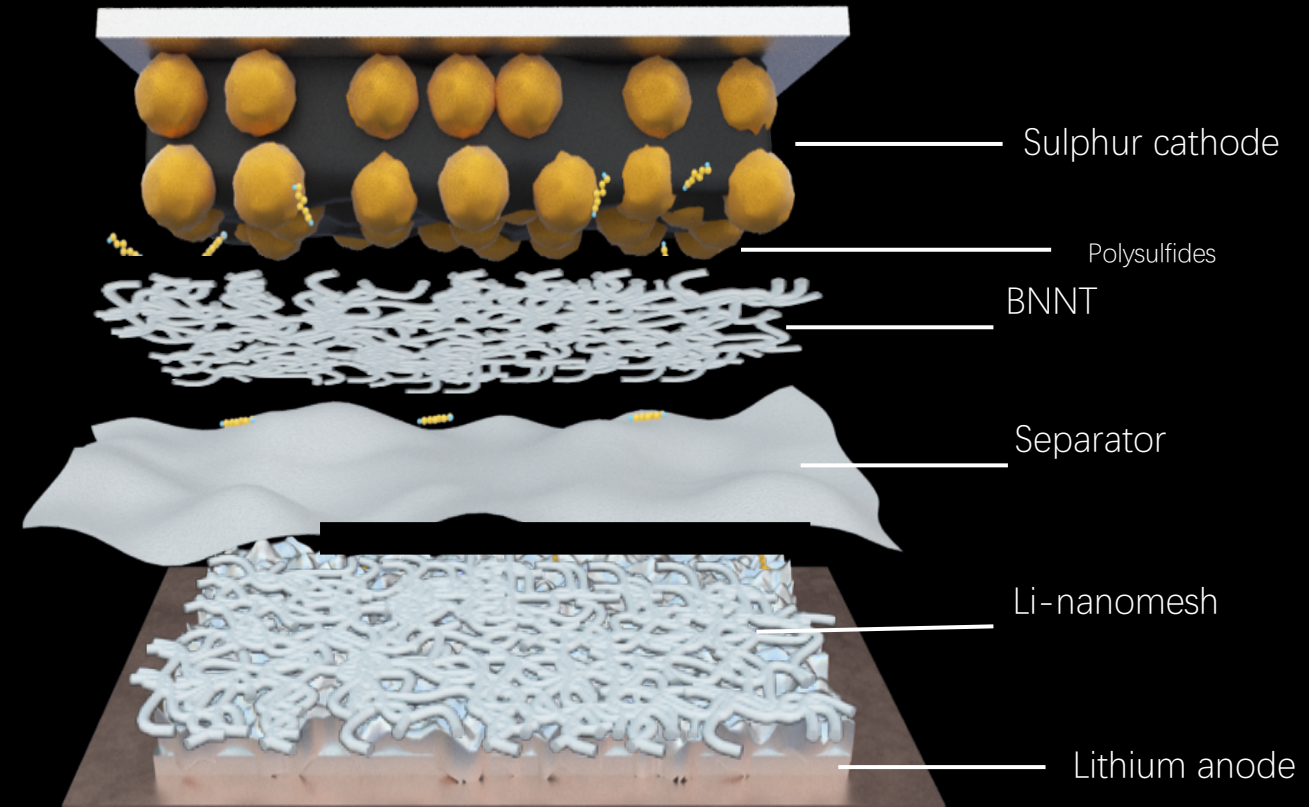
The Li-S Energy Solution

We have a solution to extend Lithium Sulphur cycle life using Boron Nitride Nanotubes and Li-nanomesh, plus an exclusive distribution agreement for BNNT for Li-S batteries

1. **BNNT - Stabilising the Cathode**
2. **Li-Nanomesh – Stabilising the Anode**
3. **Obtaining a viable BNNT Supply**
4. **Locking in an Exclusive Global Distribution Agreement for BNNT**



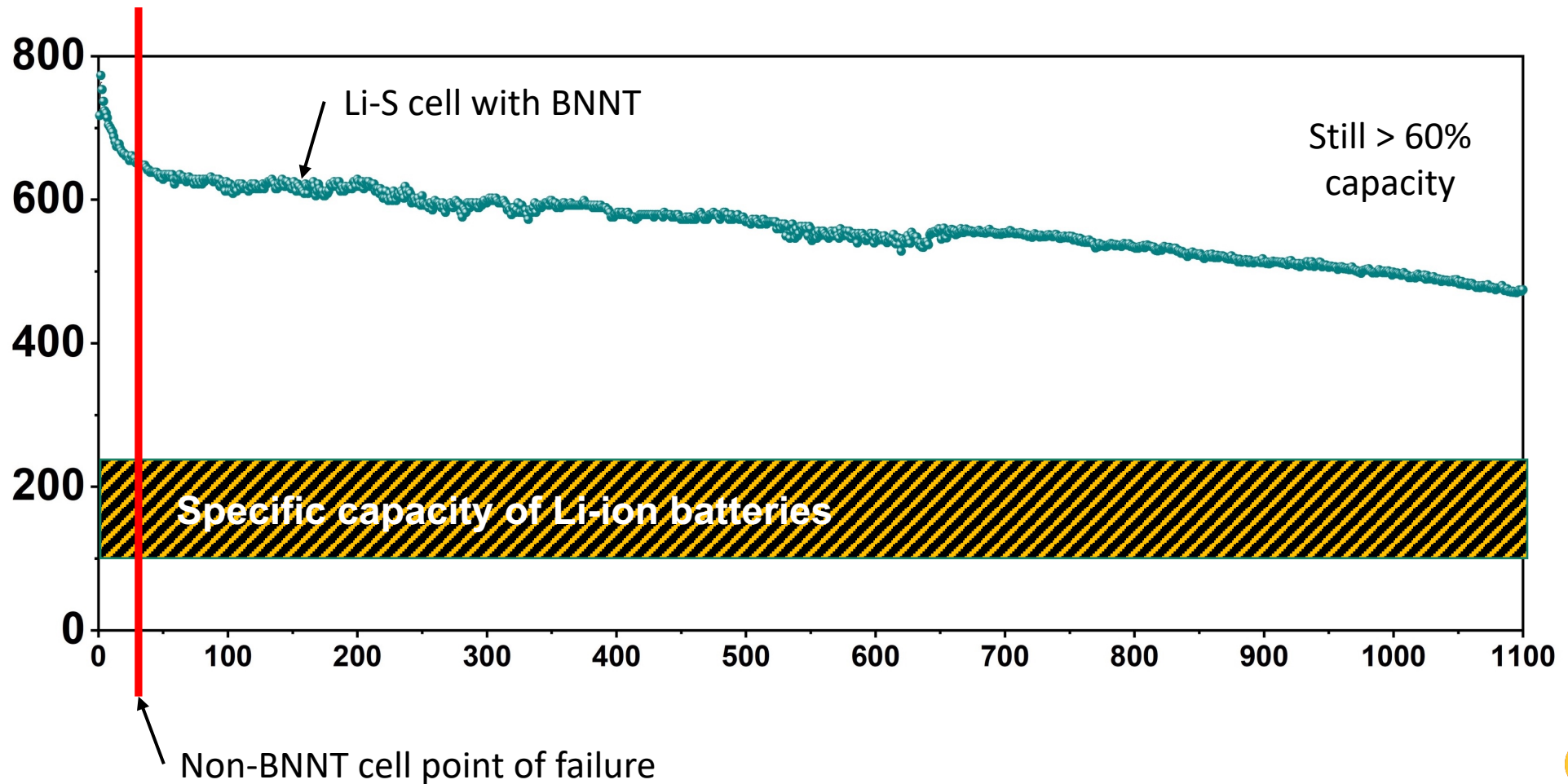
Pure BNNT – SEM Image



Li-S Energy Battery Cell Construction

Test Results to date – Lithium Sulphur

Cell testing has been continuing to prove cycle life performance. These are the ongoing results of cycle testing on a lithium sulphur pouch cell with BNNT.



Test Results to date – Li-Nanomesh

Test results show that Li-nanomesh can prevent dendrite formation on Lithium Metal Anodes.

Dendrites Cause Batteries to Short Circuit

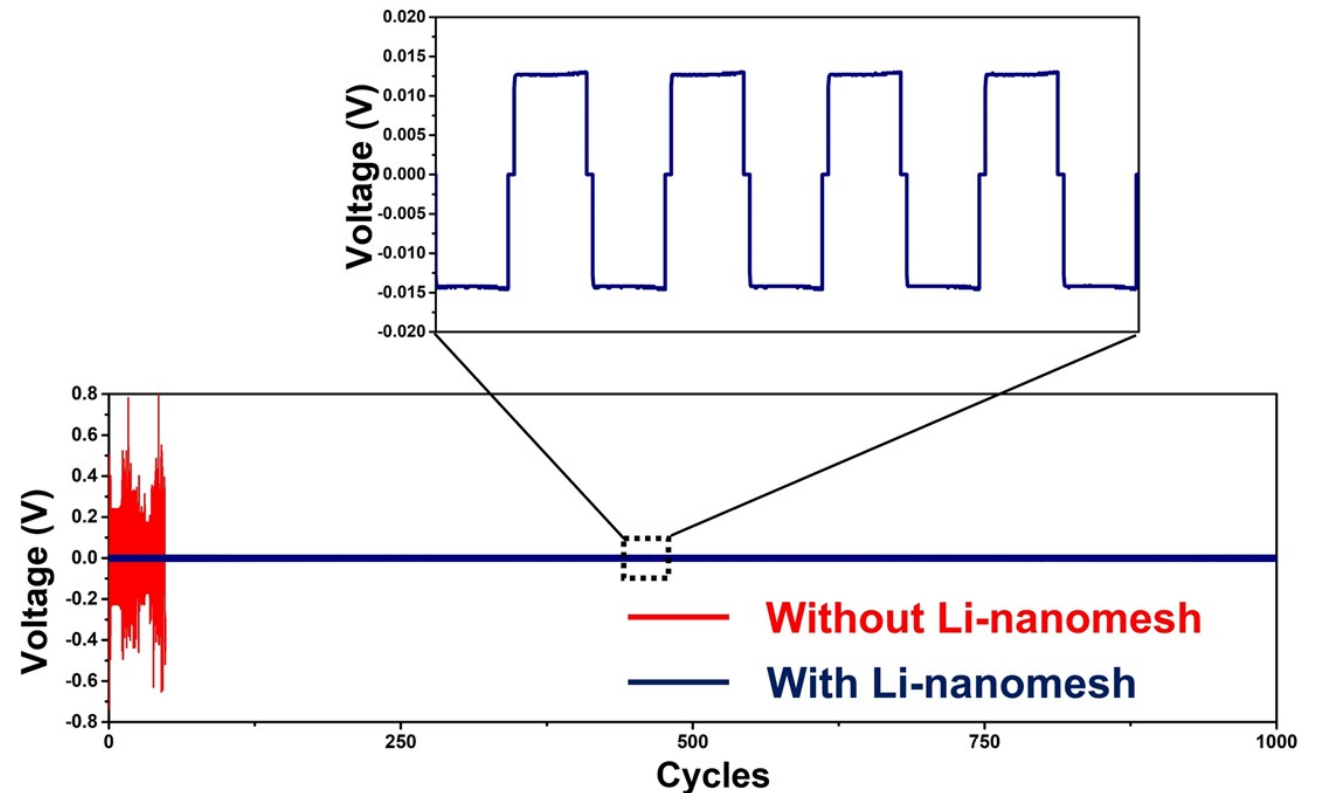
Stopping Dendrites (Lithium metal "spikes") forming on the lithium anode during cycling is critical to avoid catastrophic battery failure

Identical Cells tested with and without Li-nanomesh

We tested identical Lithium symmetric cells, but some with Li-nanomesh on the lithium, and some without to prove whether Li-nanomesh helps prevent dendrites

This graph shows excellent results for Li-nanomesh

This is a graph showing overpotential voltage against charge/discharge cycles for the test cells. A high voltage indicates dendrite formation and failure. The graph shows that without Li-nanomesh dendrites formed quickly leading to cell failure. With Li-nanomesh the overpotential voltage was very small and stable out to 1000 cycles – showing no indication of dendrite formation or short circuits



Janus Electric

A key collaboration for Heavy Vehicle EVs with a clear path to larger orders



- Australian company with innovative technology & business model
- Janus can retrofit existing diesel Prime Movers to full electric in less than a week.
- Innovative exchangeable battery system – 600KWh batteries exchanged in less than 3 minutes
- **Technical Objective:** to increase vehicle range and reduce battery pack weight using Li-S Energy cells (Lithium Sulphur or Lithium-Metal)
- **Commercial Objective:** Janus has forecast orders of 495,000 cells (totaling 247MWh) by end 2023 with progressive switch to Li-S Energy cells subject to project success, further commercial terms and volume supply capability

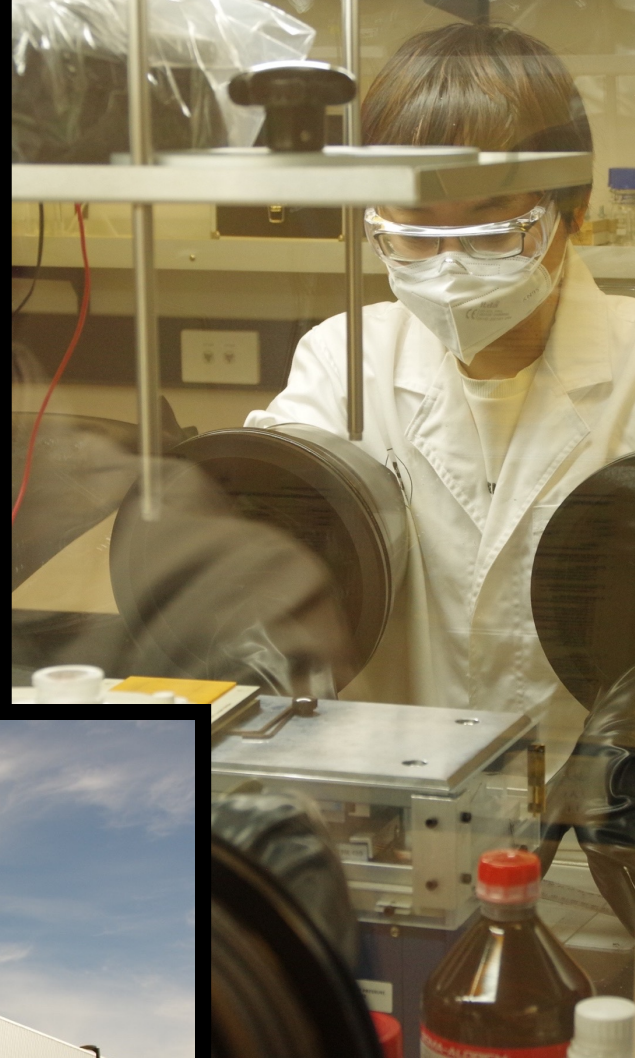
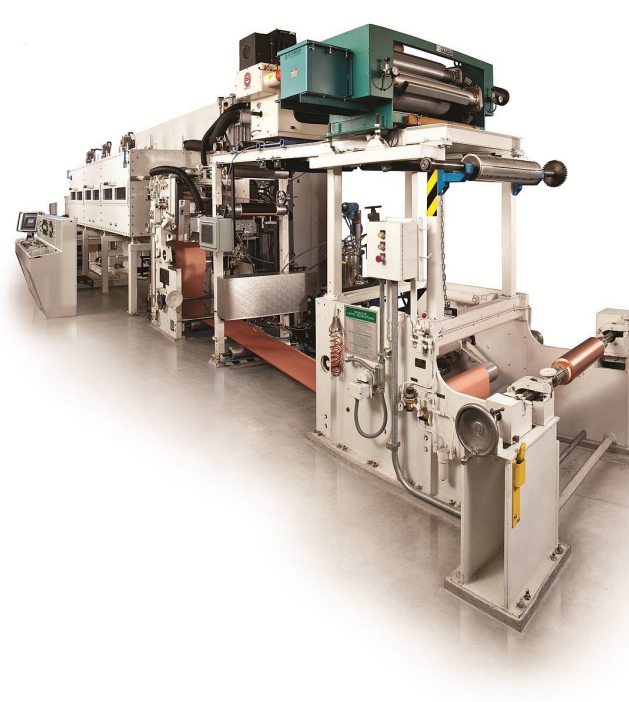
Project Update

Development is progressing with outstanding results

- Lithium Sulphur Battery Material Optimisation
- Li-Nanomesh Testing & Optimisation
- Li-Metal Battery using Li-Nanomesh to maximise cycle life
- Multi-layer Lithium Sulphur and Lithium Metal cell construction
- Solid-State & Semi Solid-State Lithium Sulphur cell development
- Industry Collaboration Projects



An Li-S Energy multi-layer lithium sulphur battery cell ready to start cycle testing



Labs, Team and Pilot Facility

Scaling our Laboratories and building our Pilot Facility

New lab at
ManuFutures, Deakin
University Campus,
Geelong Vic

Building Team with
world leading
scientists, engineers
and collaborations

Engaging with pilot line
equipment
manufacturers in
Europe, USA and Asia
to scope and trial key
equipment

Securing pilot facility





The Road Ahead

Year 1 2021-2022

- **Optimise:**
 - Li-S Pouch Cells
 - Li-Metal Pouch Cells
 - Multi-layer cells
- Commence Solid State R&D projects
- Start Pilot Plant implementation
- Build Product Manufacturer collaborations

Year 2 2022- 2023

- **Complete Pilot Plant**
- **Continue Development Projects**
- **Work towards Janus supply**
- **Expand Product Manufacturer Collaborations**
- **Engage with Battery Manufacturers**
 - Li-Metal Battery IP
 - Li-S Battery IP

Year 3 + 2024 and Beyond

- **Advance Global business development**
- **IP Licensing and BNNT / Li-nanomesh supply agreements**
- **Ongoing development and optimisation of IP**
- **Consider options for home grown Australian manufacturing**

Target Timelines

Decision on pilot plant location	2 – 4 weeks	Li-nanomesh commercialisation	12 - 24 months
Secure Pilot Facility Building	2-3 months	Janus Electric product supply	2023 & Beyond
Fit out & install pilot plant & labs	12-15 months	Sign additional commercial collaborations	Ongoing
Pilot Plant operational & producing trial cells	15-24 months	Bi-monthly shareholder newsletter	Early 2022



Questions

The logo consists of a circular emblem with a yellow-to-orange gradient, bisected by a black lightning bolt. To the right of the emblem, the text "Li-S Energy" is written in a bold, orange, sans-serif font.

Li-S Energy

