Gelion are targeting EV, EVTOL and additional mobile and stationary applications

Next-Generation Batteries

Lithium-Sulfur and Zinc Batteries

Investor Meet Company

November 2023

gelion

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Important information and disclaimer

Gelion Zinc Technology

Gelion has pivoted from targeting development of a Zinc Bromide Battery to a Zinc Hybrid Cell, as we aim to adapt the progress, we have made with our zinc anode design to a hybrid cathode that offers path to a commercial product via lower investment, lower product cost, and faster release time horizon (safety and regulatory).

Technology risk remains until sufficient development and testing has been completed. Battery science is complex with all aspects of the cell design (e.g., anode, cathode and electrolyte) impacting each other. All advances need to be reconfirmed whenever any element of design is changed. For this reason, we are reviewing carefully before accelerating. We expect to validate the potential of this technology over the next six months and report back to shareholders in early 2024, as outlined in the timelines communicated for the current R&D Programme.

Gelion Lithium-Sulfur Technology

Lithium-sulfur is a very exciting battery chemistry given its potential for high gravimetric energy density, low cost, and high safety. The technology has historically been held back by challenges including the conductivity of sulfur which has limited charge rate, and cycle life associated with “polysulfide shuttle”. There is a confidence emerging within the industry that a path to move the technology beyond these challenges has been established. Oxis (the source of some of the technology we acquired from Johnson Matthey) was a lead pioneer on two of the paths identified and Gelion believes to be well positioned to build on this technology to capture a position of relevance in the industry. While there are technology targets to still be confirmed and achieved, this activity is very high reward, but also high risk so we have applied strong discounts in creating our commercial models.

Competitive Risk

The market for new battery technologies is very competitive. Both our Zinc Hybrid and Lithium-Sulfur cell technologies have and will continue to have competition both from similar technologies and from completely different technologies aiming at the same performance and market segments. Gelion is developing and securing IP to achieve a scope around freedom to operate and domain of protection, we are also growing our team of technology experts and partnering to maximise our IP advantage and opportunity for success.

Leadership Team

Prof Thomas Maschmeyer

Founder & Non-Executive Director

A serial entrepreneur with four successful companies so far, Thomas was most recently awarded Australia's top honour in technology — the Prime Minister's Prize for Innovation (2020). He is ranked #15 in the list of most influential chemists during 2010 – 2020 globally.

The founding Director of the University of Sydney's $150M Nano Institute, Thomas is currently Professor of Chemistry, leading the University's Laboratory of Advanced Catalysis for Sustainability.

John Wood

Chief Executive Officer

John is an experienced and successful CEO of private and public companies and has led businesses both in the technology and energy industry over a 30-year career. He is also a proven sector specialist with significant commercial, scaling and manufacturing experience.

John has deep experience in the lead-acid sector having established Ecoult which gained recognition as one of the 100 Global Cleantech in 2013 and he implemented many seminal projects after its acquisition by East Penn Manufacturing.

Amit Gupta

Chief Financial Officer

Amit is a Chartered Accountant with over 15 years of experience in accounting and finance roles.

Amit is responsible for the financial strategy of the Gelion Group including financial reporting, corporate development, treasury, forecasting, transformation and M&A.

Prior to joining Gelion in August 2021, Amit worked for KPMG and Deloitte providing advice, predominantly for M&A and IPOs.

Amit holds a Bachelor of Commerce from St Xavier's College, India and a Master of Finance and Master of Accounting from Bond University, Australia

Stuart Rayner

Commercial Director

Stuart brings to Gelion over 20 years of global technology solution and professional services sales experience gained from IBM, Computer Associates (CA) and Ernst & Young.

Prior to Gelion, Stuart worked with Ignite Energy Resources and Licella commercialising novel renewable energy technologies with partners in Australia, Canada and the UK.

Stuart holds a Bachelor of IT and Business with distinction from the University of South Australia.

Gelion PLC

- Gelion PLC (listed on AIM UK exchange, GELN)
- Gelion is a battery technology innovator commercialising two globally important next-generation technologies: - lithium-sulfur (Li-S) and zinc-based (Zn) hybrid cells to electrify mobile and stationary applications.

Gelion's battery technologies

1 Lithium-Sulfur

Industry acknowledged next-gen technology[1]

Striving to become a global leader in Lithium-Sulfur (Li-S) technology by leveraging acquired JM/OXIS IP portfolio

$230B

Li-ion market is forecast to ACCELERATE at 46% CAGR

1.3TWh (2030)[2]

2 Zinc-based hybrid cells

Targeting the lead-acid ecosystem

Develop complementary, next-generation batteries for the lead-acid eco-system

$49B

Lead-acid market is forecast to grow at 2% CAGR

490GWh (2030)[2]

[1]G. Yushin et al, Energy Environ. Sci., 2017, 10, 435-459
[2]AVICENNE Energy, BOI Information (Confidential)

OXLiD Acquisition: Accelerating speed to market

Acquisition will accelerate commercialisation to enable strategic partnership in 2024

1 People


oxis ENERGY

UNIVERSITY OF OXFORD

2 Technology

5 patent applications

2 exclusive licences[1]

3 Facilities

UNIVERSITY OF OXFORD

The University of Nottingham

UCL

Imperial College London

4 Products

gelion

Fraunhofer

5 Revenue

SANYO TRADING CO.,LTD.

ADVANCED PROPULSION CENTRE UK

6 UK Li-S

LiSTAR

WP1 Cathodes | WP2 Electrolytes & Electrochemistry | WP3 Anodes and New Cell Concepts | WP4 Cell and System Engineering | WP5 Li-S Characterisation

Commercial acceleration

OXLiD acquisition

gelion → gelion Samples provided to 3rd party

2024

Enabling major strategic partnership with Gelion

TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6+
$	$$	$$$	$$$$	$$$$$ risk adjusted valuation[2]	

[1] of the two licences, one is an exclusive development licence

[2] Gelion management expects risk adjusted valuation to increase as product readiness increases

Establishing global presence

OXLiD

Strategic acquisition

- Access to advanced lithium-metal anode technology
- Increased speed to TRL 4+ product prototypes
- UK-consortium for increasing Li-S cycle life toward application in EVs

IONBLOX

Joint Development Agreement

- US-based next-generation silicon-anode company
- Major global investors including Temasek and Lilium
- Currently supplying cells for e-VTOL and EV testing
- Plan to develop Gen 2 Si-S cells with improved safety, cost, and lower carbon lifecycle

E-VTOL, Drones, HAPS

EVs

Heavy EVs

Transaction overview

Acquisition	• Gelion has acquired 100% of OXLiD Ltd, a UK domiciled lithium-sulfur technology company
Deal structure	The deal was valued at £4.2m and structured as: • £1.25m paid in cash • £0.4m deferred and paid in cash over 6, 12 and 18 months (subject to performance hurdles) • £2.5m in shares in Gelion plc, escrowed for 18 months
Funding source	• The acquisition was funded from the existing cash resources and the successful capital raise in November 2023
IP	• Gelion acquired the entire IP portfolio including the patents under application
Completion	• The acquisition will be completed on 29th November 2023

Transaction overview

Rationale	• Positions Gelion for sustained growth and success and we are confident that this strategic move will create lasting value for our shareholders.
Valuation parameters	Internal valuation assessed at c. US$7.3m using DCF (development risk discount of 80%) and other qualitative/strategic considerations as summarised below: **Grant funding:** OXLiD has undrawn **approved** grant funding of c.£0.7m post-acquisition **Talent and expertise**: Team of five highly skilled professionals lead by ex-Head of IP of Oxis Energy **Intellectual Property**: 5 patent applications and 2 exclusive licences **Strategic fit**: Ability to accelerate Li-S cell sampling Relationship with Sanyo Trading, Japan with early revenue generated in 2022 **Market expansion**: Expansion in the UK and relationship across leading universities and access to the wider UK Li-S eco system (The Faraday Institution and LiSTAR) Access to potential customers in Europe

Global Battery Chemistry Landscape

Li-ion Lead-acid

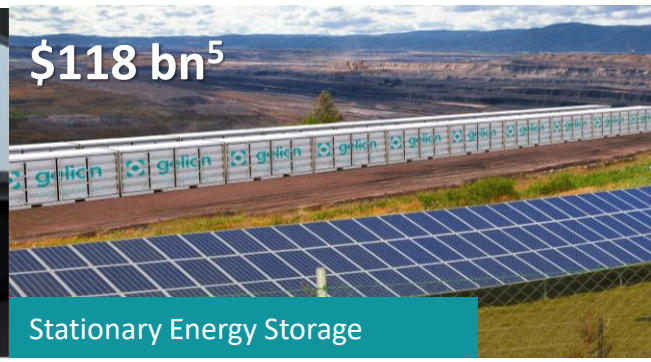
Sodium-ion

Li-S Zn-based Solid state

Mature
Current market of Lithium-ion chemistries (NMC, LFP, NCA) and lead-acid.

Emerging
Sodium-ion chemistries cells are beginning to be deployed in industry.

Next-Generation
Lithium-Sulfur[1], Zinc-based[2], and Solid-state[3] chemistries are recognized as leading next-generation technologies.



Gelion market opportunity[5] > US$1.92 trillion by 2030

[1]G. Yushin et al, Energy Environ. Sci., 2017, 10, 435-459 [2]Secondary batteries with multivalent ions for energy storage. *Sci Rep* **5**, 14120 (2015). [3]ttps://www.technologyreview.com/2023/01/04/1066141/whats-next-for-batteries/ 4 Drone Battery Market Size, Share, & Growth [Report 2030] (snsinsider.com [5]Bloomberg BNEF 2023 - ESS & E-passenger, E-bikes. HAPS (Johnson Matthey Est). Drones (Research & Markets Website).

Indicative Commercialisation Milestones

Lithium-sulfur

2023

- Johnson Matthey and USYD Li-S IP Acquisition
- Li-S R&D expansion initiated
- **£4m Capital raise + strategic acquisition**
- US based Ionblox, silicon anode JDA signed

2024

- Initial samples to anode partner(s)
- Internal cell safety testing
- Strategic partner agreement
- **Advanced Commercial Prototyping Centre[1] (ACPC) established**

2025

- **Demonstration pouch format test cell**

2026

- **Validation cells to Partners**

Partnering with global cell manufacturer(s), for Pilot and Commercial scale up

Zinc

2023

- **Gen 4** Over 1000 cells manufactured at lead-acid partner's site
- **Gen 4** Anode success from validation of pre-commercial cell packs
- **Gen 5** Cathode Optimisation Program

2024

- **Gen 5** Zn cathode optimisation Feasibility completed
- **Gen 5** Prototype pouch cell
- Strategic manufacturing Partner agreement
- **Gen 5** Pre-production prototype

2025

- Manufacturing process development
- **Pilot plant production & early revenue generation**

2026

- **Validation and scale-up**

● Technology review point

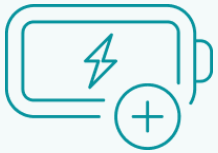
[1]Subject to government and strategic funding

Note: Commercial Milestones are indicative and subject to change

Gelion's Lithium-Sulfur Technology

Gelion's Lithium-Sulfur Battery Advantages

Lighter, safer, greener batteries with double the energy density at a lower cost



Double the gravimetric energy density

Gelion's Li-S is targeting double the gravimetric energy density of current Li-ion batteries.

Bill of materials cost savings of 45%[1,2]

Gelion estimate Li-S can achieve up to 45% saving on bill of materials versus Li-ion NMC (nickel, manganese, cobalt) [1,2].

Improved safety

Sulfur cathode is more stable at high temperatures, minimising risk of thermal runaway related fires and explosions.

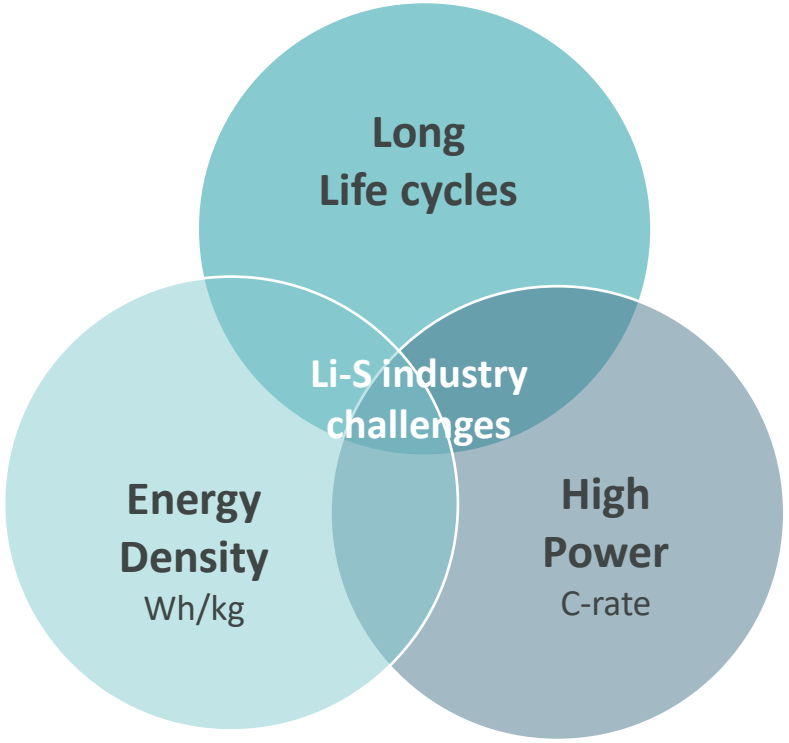
Rare metal free cathode, 30%[3] reduction in carbon lifecycle

Research estimates sulfur batteries' carbon lifecycle will be 30% lower than current Li-ion technology with improved supply chain.

[1]Bloomerg forecast modelling (2023)
[2]Gelion management estimates at multi GWh-scale based on Bloomberg forecast modelling (2023, India production)
[3]Comparative life cycle assessment of Li-Sulphur and Li-ion batteries for electric vehicles, G. Benveniste , Nov 2022

The lithium-sulfur industry challenges

Other industry players have only partially solved the challenges of Li-S

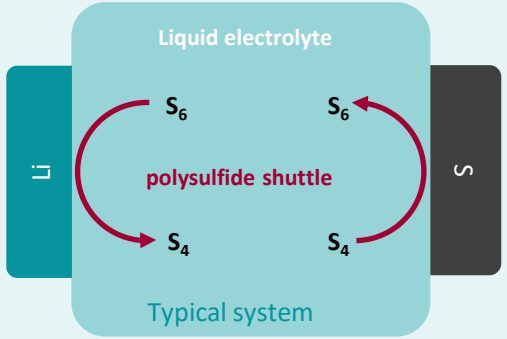


Traditional sulfur challenges

1. Low Lifecycle / Calendar Life

Polysulfide shuttle has limited lifetime

50-100 cycles / 12-24 months[1,2]



2. Lower Power

Slower sulfur chemistry has limited C-rates

C/3

resistive sulfur

Li-S batteries have inherent safety and high energy density

but enabling long cycle life and high power have limited their commercial application

65
patent families

Strategic Acquisition:
Lithium-Sulfur IP portfolio

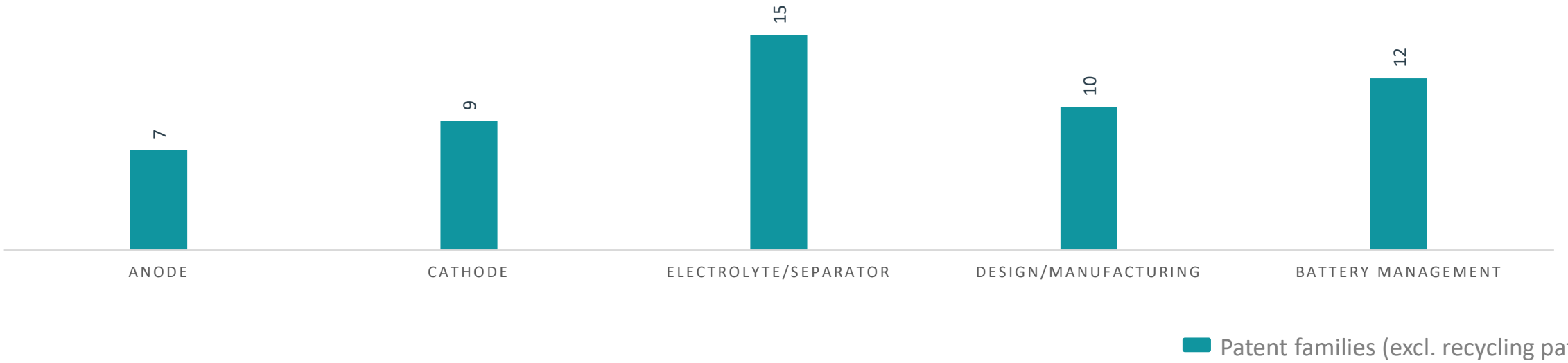
Johnson Matthey/Oxis Lithium-Sulfur IP Portfolio

Gelion's strong IP portfolio

- Support flexible chemistry approach
- Battery systems IP
- Battery Material Recycling

Gelion’s competitive IP position

Gelion has broad IP coverage across all stages of sulfur battery development



IP covering all battery development stages

TRL 1	TRL 2	TRL 3	TRL 4	TRL 5
Cathode chemistry Anode chemistry	Cathode chemistry Anode chemistry	Cell design	Battery Management	Manufacturing

Gelion's flexible technology platform solves the sulfur challenges

The approach can be tuned for energy density & long cycle life to meet multiple applications

Longer lifecycles

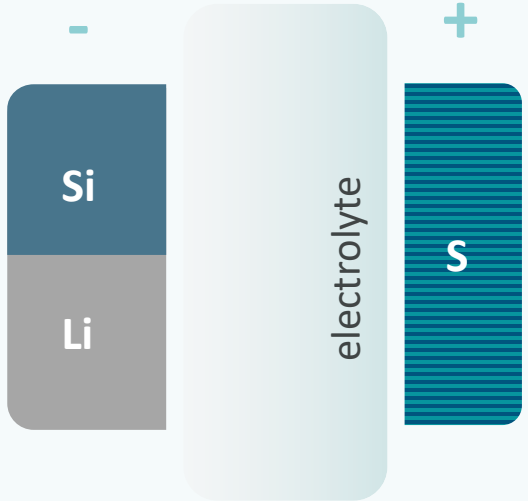
Tuneable electrolyte

IP protected electrolytes enable low polysulfide system for long lifecycle

High energy

Multi-anode capability

Enables high energy, long cycle life (Si) and ultra-high energy density (Li)



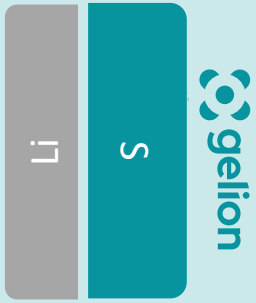
High power

Catalytic materials

Conductive, catalytic materials to enable safe, high energy, high-power cells

THE UNIVERSITY OF SYDNEY

Sulfur is a safe, high-energy density, low-cost cathode solution

Current battery technology			Li metal-S	Si-S
				
Graphite anode	**NMC or NCA** cathode	**LFP** cathode	**Li metal-S**	**Si-S**
Gravimetric energy (Wh/kg)[1]	**250**	**160**	**500+**	**350-400**
Safety	●●○○	●●●●	●●●	●●●●
Cycle life	**500**	**3000**	**300-500**	**1000+**
Material supply[2]	●●○○	●●●○	●●●●	●●●●
Applications	**EV, ESS**	**EV, ESS**	**E-aviation, EV, ESS**	**EV, ESS**

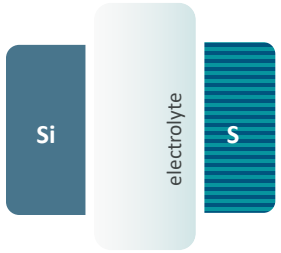
[1]Gelion energy density modelling

[2]Comparative life cycle assessment of Li-Sulphur and Li-ion batteries for electric vehicles, G. Benveniste , Nov 2022

Gelion's technology pathways to achieve mass electrification

gelion

1 Silicon-sulfur
(Si-S)



gelion

Enabling technologies

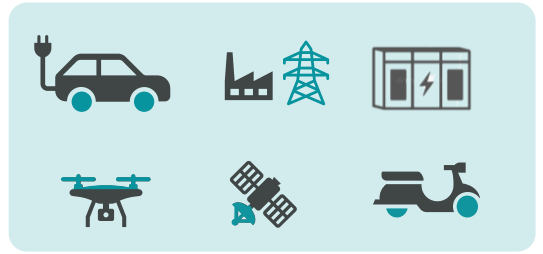
Silicon anodes & prelithiation

JDA signed with US based

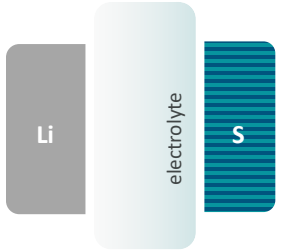
IONBLOX

Market ready (2026+)[2]

>US$1T global market



2 Lithium-sulfur
(Li metal-S)



Enabling technologies

Lithium anode progress

OXLiD

Market match (current)[3]

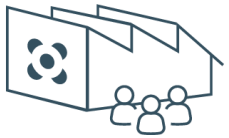
~US$20B market

Future potential
pending the industry's lithium-anode performance improvement[4]

[1]Based on Gelion Management's modelling, research and independent research papers
[2]Based on Gelion Management's modelling, research and commercialisation planning
[3]Based on Gelion's Johnson Matthey / OXIS prototype performance and research papers
[4]Based on Gelion Management's modelling, research and commercialisation planning, assumes the industry can solve the lifecycle and safety challenges with current Li metal anode

Commercialisation pathway with partners

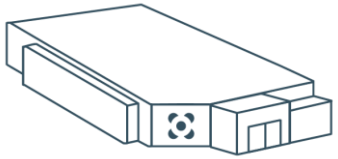
Gelion is following a TRL development framework to establish Li-S at commercial scale



Advanced Commercial Prototyping Centre[1]

Multi kWh p.a. (TRL 4)

2024

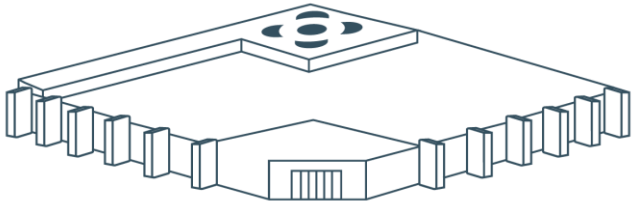


Pilot Scale

Multi MWh p.a. (TRL 5,6)

Revenue generation commencing

2026

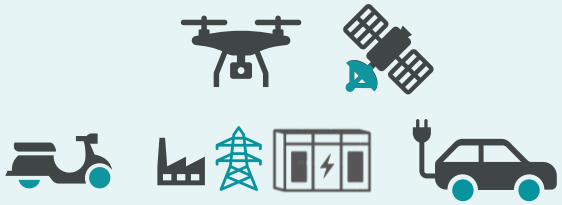


Commercial Scale Cathode/materials supply

GWh scale up (TRL 8,9)

2029+

- Targeting strategic partnering
- Prototype manufacturing to underpin partner testing and validation programs



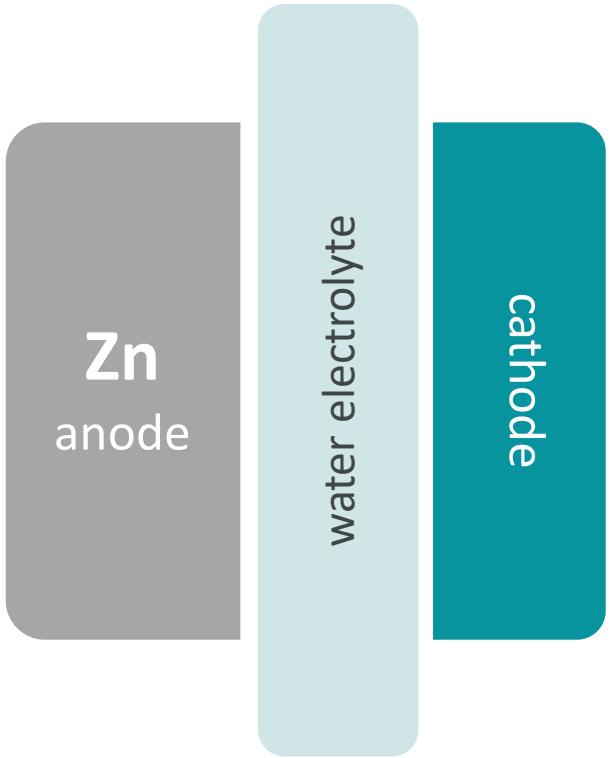
2024 | **2025** | **2026** | **2027** | **2028*** | **2029**

[1] Subject to strategic and government funding

Technology progresses through prototype validation, small, high value quantities, to volume applications in later years. Products will include sulfur cathode materials, sulfur cathodes, and lithium-sulfur cells.

Gelion's
Zinc Technology

Why Zinc?



Gelion's **Gen 5 Zn cells** anticipate high safety, low-cost, and scalability that enable **rapid market adoption** by
leveraging existing infrastructure.

Advantages of zinc

low cost

Cost. Zinc is an abundant low-cost material (US$2.4/kg)[1]

Sustainable. Components are non-toxic and highly recyclable.

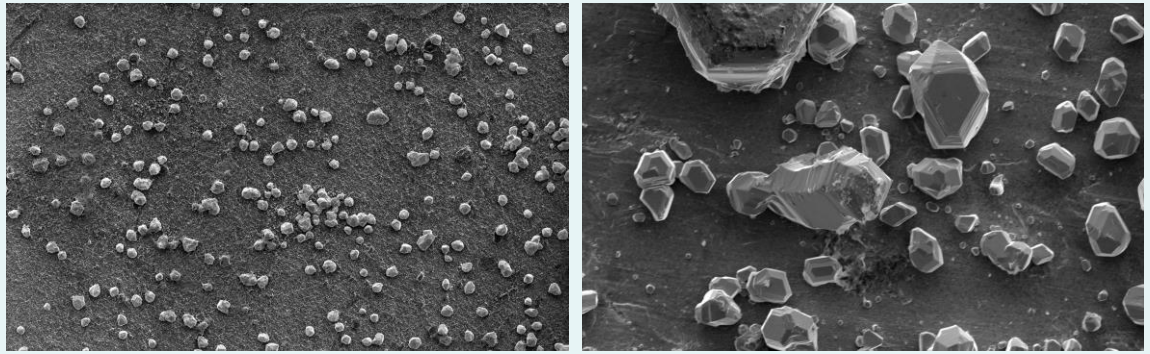
Scalability. Cell format means existing lead-acid ecosystem can be leveraged

Safety. Water-based chemistries are low toxicity and non-flammable

1London metal exchange, 3 month rolling price for Zinc at 8th Sept 2023.

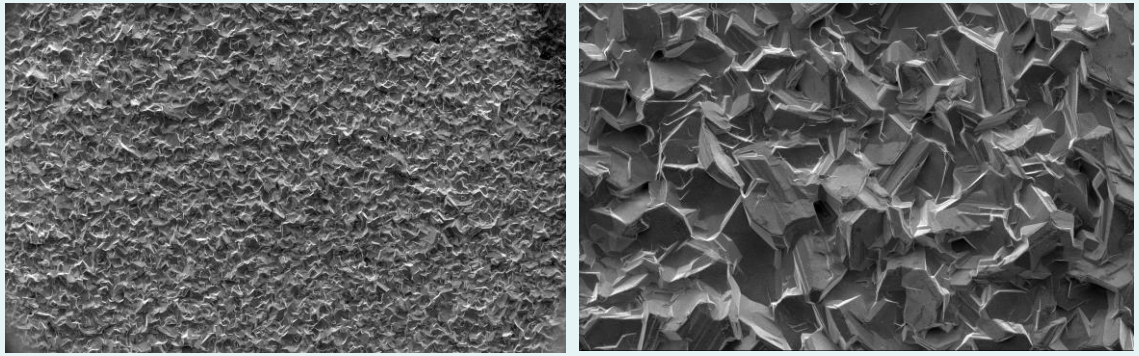
Zinc Gen 4 anode progress informs Gen 5 pathway

Gelion - Zinc anodes (March 2023)

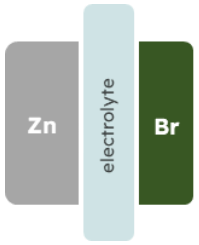


Zinc plating anodes typically suffer from dendritic growth,
however Gelion achieved significant progress in June 2023

Gelion - Zinc anodes (June 2023)



Gelion's technology has enabled smooth zinc plating to increase cycle life

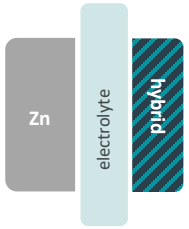


Gen 4

Development of prismatic cell system, BMS and anode technology for $ZnBr_2$

Zinc anode progress

Bromine-free system

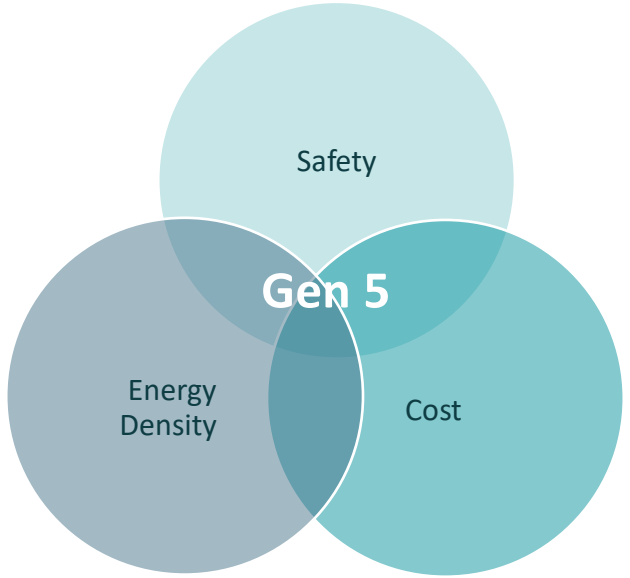


Gen 5

Research to transition zinc anode with alternate cathodes

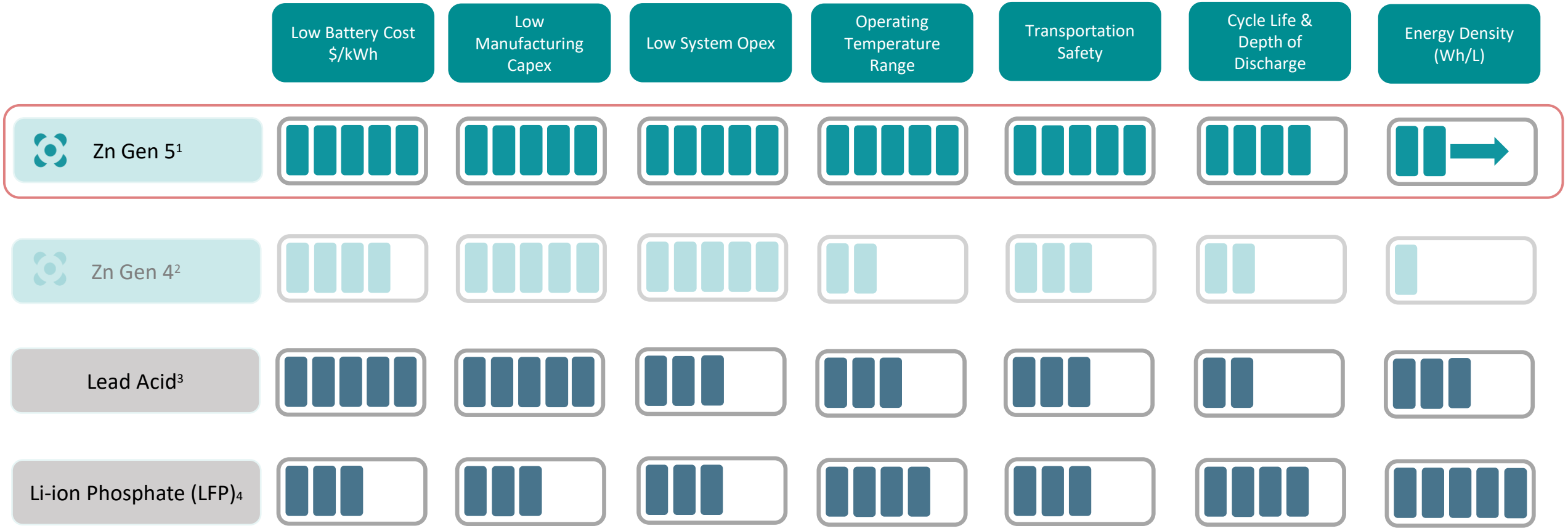
Feasibility gate Q1 2024

THE UNIVERSITY OF SYDNEY



Zinc Gen5 Competitive Advantage

Zn Gen 5 targeted[1] cost and performance competitive advantage against incumbent technologies



[1] Energy Density, Cycle life and temperature range is based on Gelion's target (feasibility to be updated at Q1 2024 validation). Key metrics are based on Demonstrated Laboratory Performance. Jin, J., Geng, X., Chen, Q. *et al.* A Better Zn-Ion Storage Device: Recent Progress for Zn-Ion Hybrid Supercapacitors. *Nano-Micro Lett.* 14, 64 (2022).
[2]Gelion data based on internal testing. Operating temperature range based on internal estimate.
[3]Hamidi, Ahmad & Manla, Emad & Nasiri, Adel. (2015). Li-ion batteries and Li-ion ultracapacitors: Characteristics, modelling and grid applications.
[4]Bloomberg.BNEF. Beyond Lithium LDES. 2023

Financial information

Summarised financial information

Key highlights

- FY23 draft results better than analyst expectations on both EBITDA loss and cash position.
  - Total income is £2.1m or £0.3m (20%) higher
  - Adjusted EBITDA loss is approximately £5.9m or £0.5m (8%) lower
  - Cash position at year-end at 30 June 2023 is largely in line with expectations (£0.2m higher) despite unbudgeted spend of £3.0m towards acquisition and maintenance costs of the acquired Johnson Matthey IP

£'000	Notes	FY22[1] Audited £'000	FY23[2] Draft/Unaudited £'000
Other income	3	1,745	2,054
Total Income		**1,745**	**2,054**
Administrative expenses		(2,847)	(3,840)
Research and development expenditure		(2,970)	(4,147)
Adjusted EBITDA before share based payments and non-recurring items		**(4,072)**	**(5,933)**
Depreciation and amortization		(308)	(463)
Adjusted EBIT before share based payments and non-recurring items		**(4,380)**	**(6,396)**
Share based payments		(49)	(708)
Non-recurring items	4	(4,658)	(266)
Reported EBIT		**(9,087)**	**(7,370)**

Cash Position

£'000	Notes	Jun-22 Audited £'000	Jun-23 Draft/Unaudited £'000
Cash & cash equivalents incl. short-term deposits	5	**17,041**	**7,268**

Notes:

[1] – FY22 results reflect five months as a private business and seven months post listing and therefore does not reflect a full year of listed company expenditure

[2] - Unaudited and prior to currency translation adjustment

[3] – FY23 Draft R&D tax benefits subject to audit process

[4] - FY22: IPO listing and associated expenses

FY23: Sales of fixed assets, transaction costs in relation to JM IP acquisition and divestment

[5] - FY22 incl. short-term deposits £1.0mil

Focused cost savings effort – Annualised impact

Staff

c. £400,000

Contractors

c. £500,000

Marketing and other

c. £100,000

Total savings

c. £1,000,000

Based on annualised cost savings from FY23 to FY 24
Assumed exchange rate 1 AUD = 0.53 GBP

Summary

- **Establish leadership**
- **Targeting fastest commercial integration into global supply chain using capital light relationship approaches**

Commercialisation summary

Gelion is progressing with conviction to be a leader in next-generation battery technologies and convert this to commercial success

We will achieve this with Lithium-Sulfur by:

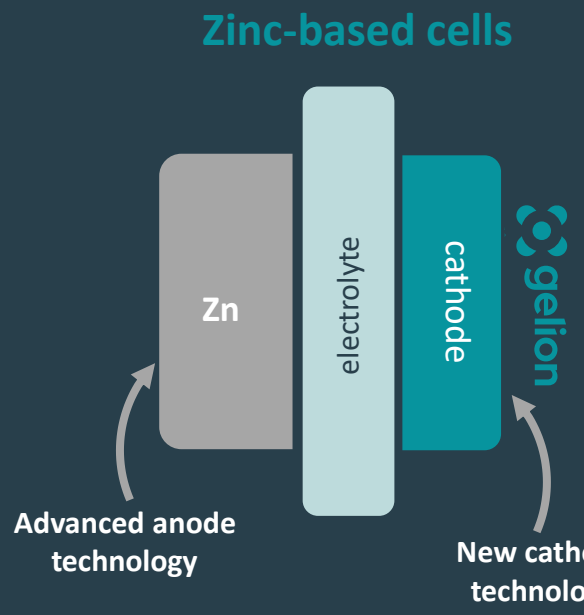
- Leveraging the JM/Oxis IP and integrating the OXLiD acquisition with Gelion's Sulfur R&D team and IP to ...
  - work alongside IonBlox to accelerate our joint Lithium SiOx Sulfur cell development.
  - Continue development activities toward safe Lithium Metal Sulfur technology
- **Targeting fastest commercial integration into global supply chain using capital light relationship approaches**

We will achieve this with Zinc by:

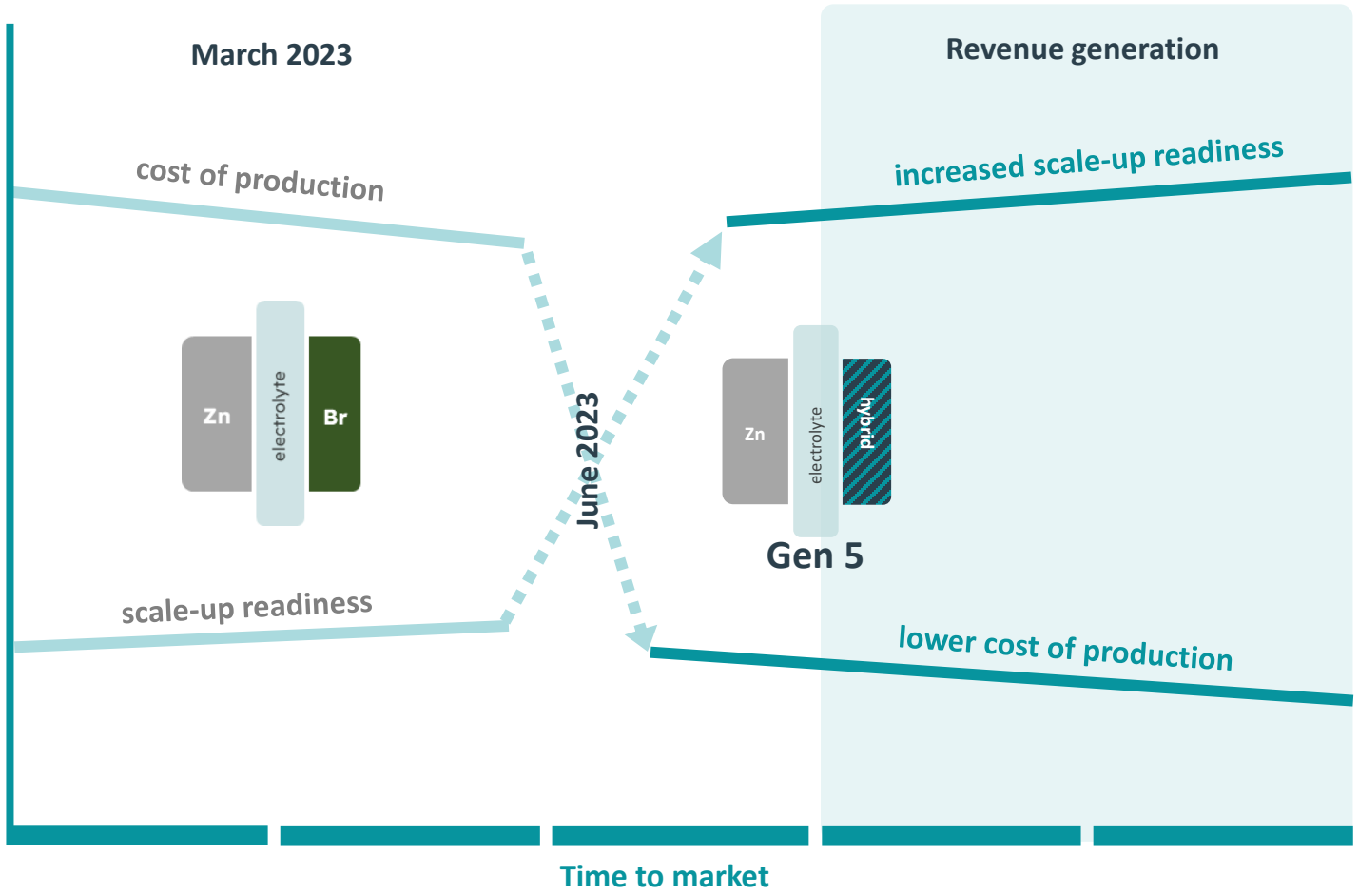
- Combining the progress, we have made toward enhanced anode performance with an advanced cathode formulation being developed in partnership with The University of Sydney
- **Targeting fastest commercial integration into global supply chain using capital light relationship approaches.**

Zinc Hybrid: Pivot to improve match to market and competitiveness

Q1 2024 feasibility will advise pathway viability

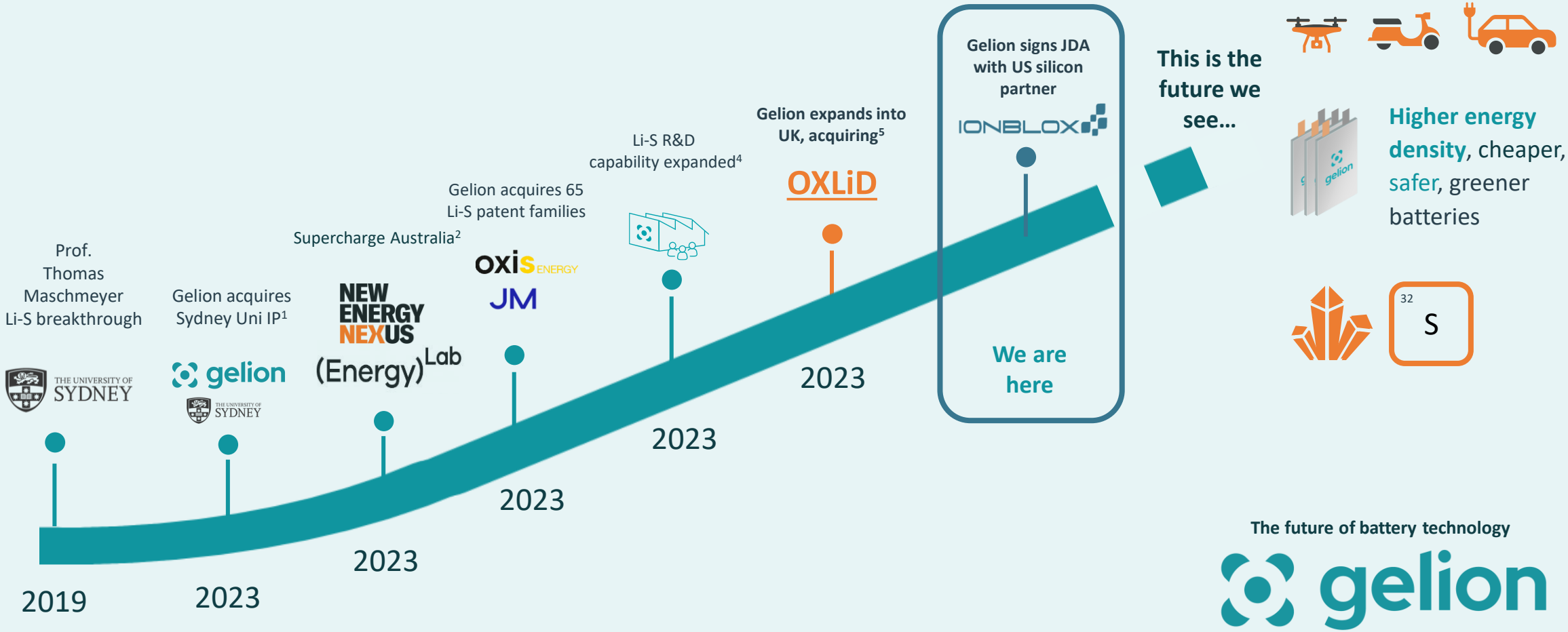


New cathode R&D program to enable
Lower cost & faster speed to market



Gelion's Gen 5 Zinc hybrid cell will have a **lower cost** of production and reach a **higher TRL faster** speeding up **revenue generation**.

Lithium Sulfur: Momentum continues toward global lithium-sulfur leadership



1 https://polaris.brighterir.com/public/gelion/news/rns/story/rm4qdnr, 2 https://polaris.brighterir.com/public/gelion/news/rns/story/rm4qdnr,
3 https://polaris.brighterir.com/public/gelion/news/rns/story/x4gmz3x, 4 https://polaris.brighterir.com/public/gelion/news/rns/story/xql9znr
5 Approved by shareholders on 27 November 2023, https://polaris.brighterir.com/public/gelion/news/rns/story/rggdl7r

Thank you.

gelion
inspired energy

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