18 December 2024

Gelion plc

("Gelion" or the "Company" or the "Group")

£2.5m Australian Government Grant awarded for lithium sulfur cell production testing and validation with partners

Gelion (AIM: GELN), the Anglo-Australian battery innovator, has been awarded a c.£2.5m (A 4.8m) grant by the Australian Renewable Energy Agency ("ARENA") as matched funding to implement its Advanced Commercial Prototyping Centre ("ACPC") Project ("Project") in Sydney. The ACPC Project will enable the Group to produce and optimise its next generation GEN 3 Lithium Sulfur (Li-S) and Silicon Sulfur (Si-S) battery technologies and provide these for test and validation by prospective global partners and customers. The Project will commence upon Gelion securing its appropriate co-funding.

Gelion has achieved 402 Wh/kg (gravimetric energy density) in a 12 Ah Li-S pouch cell which is over 60% higher than traditional lithium-ion. This makes Gelion's light-weight sulfur battery technologies well suited for high growth applications such as electric aviation, electric vehicles and specific stationary energy storage, such as remote power supply.

ARENA's funding will enable Gelion to accelerate its pathway to scale production and revenue, with the ACPC Project targeted to deliver:

- Production of c. 2000 Li-S and Si-S cells p.a. for validation with potential commercial offtake partners, toward revenue generation
- Building out key global supply chain partners to underpin commercial scale up
- Third party certification of Gelion sulfur battery safety
- Advanced manufacturing methods to create efficiencies when scaling up production (e.g. Gelion's unique in-situ-assembly approach to sustainable electrode production giving Gelion a strong advantage in reducing production costs and carbon footprint)

During this Project, Gelion will aim to successfully validate its products with partners and then seek to scale up production to match offtake demand. Gelion plans to work closely with ARENA regarding potential commercial scale up grant funding opportunities in the future.

The ACPC Project aligns with ARENA's strategic priority to improve the economics of energy storage through the use of novel battery chemistries. It also has alignment with the Battery Breakthrough Initiative, which was announced by the Australian Government in the 2024-25 Budget to promote the development of battery manufacturing capabilities.

Gelion CEO John Wood said "We are really grateful to ARENA for their support of this important project.

Australia has developed a small but strong community of battery innovators attaining global recognition. Gelion is part of this community, and this program is key to our own growth and also will continue to develop battery technology development and commercialisation capabilities in Australia.

Gelion aims to deliver both strong commercial returns and impact success by unlocking the breakthrough performance possible with sulfur battery cathode technology. Sulfur offers an early path to commercialisation in applications that benefit from lighter batteries, and we also seek to build on the advantages of its low cost, abundance, and local geographic availability to help attain the full scale of energy storage needed for the clean energy transition.

ARENA CEO Darren Miller said: "The project will drive the next generation of battery technology, delivering more efficient, less expensive and more sustainable energy storage solutions. Energy storage is a critical component in the clean energy transition, and this project which aims to demonstrate the potential of alternative battery chemistries, could be a game changer. The clean energy transition is dependent on batteries for energy storage and transport. It is therefore critical that we explore and commercialise innovations that make batteries perform better through improved energy density and at a reduced cost."

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About Gelion

Gelion ("gel: ion") is a global energy storage innovator, supporting the transition to a more sustainable economy by commercialising two globally important next generation technologies: Lithium-Sulfur (LiS) and Zinc-based (Zn) hybrid cells to electrify mobile and stationary applications. Gelion plc (the Group) is listed on the London Stock Exchange's Alternative

Investment Market and wholly owns Australia based Gelion Technologies Pty Ltd and UK based OXLiD Ltd. Gelion is designing and delivering innovative battery technologies and integrated systems solutions to enable that transition and return value for its customers and investors.

Lithium Sulfur

Gelion's effort is directed at the potential for the Li-S chemistry to deliver double the gravimetric energy density of standard Lithium-ion chemistries whilst concurrently reducing cost and increasing safety, targeting the EV and e-aviation market, helping to make global transport, energy consumption and storage more sustainable.

Gelion is developing a Lithium Sulfur cell product at its expanded R&D facilities in Australia and UK, enabling it to integrate with a variety of anodes ranging from graphite to silicon to lithium metal, depending on the targeted application.

Gelion's GEN 3 cell is unlocking the potential of sulfur batteries for a wide range of global mobile applications including electrical vertical-take-off-and-landing (eVTOL), drone markets, electric vehicles (EVs) and stationary energy storage (ESS).

Gelion's GEN 3 Lithium Sulfur

- High energy density Energy density > 400 Wh/kg, when using a 10+ Ah pouch cell.
- Semi-solid-state as a route to increased longevity/cycle life: GEN 3 employs a semi-solid-state mechanism, maintaining
 the sulfur-based cathode materials in the cathode, preventing their diffusion into the electrolyte and diminishing
 associated battery degradation caused by reactive polysulfides. This approach mitigates the major degradation factor
 associated with conventional Li-S technology.
- Increased sulfur utilisation: GEN 3 demonstrates the full theoretical capacity of sulfur, i.e. a much higher sulfur utilisation than found in conventional Li-S approaches.
- In-Situ Cathode Composite Synthesis: The innovative cathode is produced by mixing commercially available materials with abundant sulfur using a low-energy, room-temperature process, with potential to eliminate the need for prefabrication of the sulfur composite (sulfur composite is related to cathode active material in conventional lithium-ion batteries), streamlining the associated supply chain and production process and enabling localised manufacturing.
- **Environmental and economic benefits:** The cathode production process is water-based and occurs under standardatmosphere, eliminating the need for toxic solvents, leading to significant cost savings and enhanced manufacturability.

Glossary

| Ah | Ampere hours. A measure of capacity stored in the cell. The larger the number the higher the capacity. |
|--|---|
| Energy density (Wh/kg) | The ratio of energy stored per unit weight i.e. Watt-hours per kilogram. The higher the number the lighter the battery. |
| Pouch cell | An industry standard format of a battery which comprises a flat pouch-shaped design with a multi-layered laminate structure. |
| Semi solid-state as a route to increased longevity/cycle life: | Gelion's Advanced Lithium Sulfur technology employs a semi-solid-state mechanism, maintaining the sulfur-based cathode materials in the cathode, preventing their diffusion into the electrolyte and diminishing associated battery degradation caused by reactive polysulfides. This approach mitigates the major degradation factor associated with conventional Li-S technology. |

Zinc

Gelion is adapting its zinc technology to comprise an alternate cathode technology, a zinc hybrid cell to develop complementary next-generation batteries for the lead-acid eco-system. Early testing indicates that this solution has the potential to maintain good energy density levels with enhanced cost and safety aspects. Once fully developed, Gelion intends for our zinc technology to provide a durable and sustainable market extension within the ecosystem that supports lead-acid batteries.

Recycling

Gelion is pioneering an innovative battery recycling technology designed to enhance and supplement current recycling methods. Our technology aims to significantly reduce the initial costs of recycling plants, minimize waste, and lower carbon emissions, while improving the purity of metal products and enabling efficient lithium extraction. This advancement will allow for a broader range of scrap materials to be recycled. Currently in the feasibility stage, Gelion is committed to advancing our technology to a pilot-scale demonstration, paving the way for commercialisation through material production and IP licensing.

Integration Solutions

Gelion leverages its significant integration and BMS capability to deliver bespoke BESS for Australian customers. These BESS are currently based on lithium-ion technology and will also include Gelion's next-generation batteries as these become available. Gelion will deploy BESS with our proprietary cloud-based battery monitoring system, which will provide real-time diagnostics and alerts to maximise performance and return on investment for our customers.

information, please contact ms@lseg.com or visit www.ms.com.

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