



Brill powering its way to making batteries smarter with \$10.5m Series A round

Oxford University spin-out Series A funding round led by Legal & General Capital and Barclays

- Breakthrough intelligent battery management system saves money, spares increasingly rare materials and accelerates zero emissions
- Proven technology deployed in enterprise stationary storage and residential battery applications
- Investment will fund team growth and new product development for stationary energy storage and electric vehicles following a series of successful projects

Brill Power, an Oxford University spin-out company, announced the conclusion of its Series A round raising \$10.5m today to support their mission to make batteries smarter, cleaner, safer and longer-lasting as a critical element of the shift to zero emissions energy. The funding will support team growth and new product development to expand presence in both static energy storage and the automotive sectors.

The round was led by two new blue-chip investors - Legal & General Capital and Barclays Sustainable Impact Capital Programme and supported by all of Brill's existing investors including Oxford Science Enterprises, Oxford Investment Consultants, Big Rock Capital and Oxford University. Shell Ventures and Climate KIC have also become shareholders.

The investor confidence is driven by Brill Power's pioneering development of a new way to manage batteries that suffers none of the limitations of previous methods. Brill's optimised Active Loading method increases battery life by up to 60% and allows used batteries to discharge up to 46% more energy with a proprietary combination of hardware and intelligent software.

Brill Power's technology is a key enabler for battery systems in applications including commercial & industrial on and off grid energy storage, residential batteries and electric vehicles in a battery market estimated at \$400 billion by 2030. Brill's solutions are consistent with their new investor interests in partnering with enablers of clean energy generation including intermittent renewables as part of the wider shift to clean infrastructure, businesses and technologies.

Brill Power's plans following investment round are threefold. The company will be doubling its team size across both engineering and commercial operations, while it will expand its product range for both static energy storage and for the world's largest battery market – electric vehicles - based on successful projects completed with Aston Martin, AMTE Power and Delta Cosworth. Finally, the funding will support the next phase in development of company's data platform (BrillAnalytics) to help customers monitor and predict battery safety, health and performance data remotely.

"As we grow our climate and clean energy platform, investing in Brill Power is an exciting move into energy storage technologies that are crucial to enable an increase of renewables on the power grid, electrification of transport, and to power our homes, businesses and key infrastructure. Through extended lifetimes, improved safety, and waste reduction, Brill Power's work is setting a new standard for how to store and use clean power to accelerate progress to our net zero emissions goals."

John Bromley, Managing Director, Clean Energy at Legal & General Capital

“Reliable and long-lasting storage solutions for renewable energy are going to be vital for a successful and orderly transition to a low-carbon economy. Pioneering technology, such as Brill Power’s battery management system, will play an important role and we are excited to be supporting them as they scale and extend their product range.”

James Ferrier, Head of Sustainable Impact Capital at Barclays

“Thanks to our exceptional team at Brill, we have made great strides over the past two years. We have a ground-breaking commercial product in the marketplace and a pipeline of new developments and products to address the stationary energy storage and automotive markets. Our progress and our potential has attracted an impressive cadre of both existing and new investors. We are delighted to welcome Legal & General Capital and Barclays Sustainable Impact Capital on board while also enjoying the continued support of all our existing investors for this important journey ahead of us. We now have the means to act on the opportunity to offer the market step change improvements for zero-emissions technologies - for the benefit of our investors, our customers and also the community we serve.”

Dr Christoph Birkl, Brill Power’s CEO

Editor’s Note: No Joule Left Behind – An Explainer

Every battery needs a battery management system (BMS) to ensure batteries operate safely and effectively.

Until now, BMS haven fallen into two broad categories, both of which impose limitations on battery system operations. One approach, active balancing BMS, are inherently expensive and therefore are not a scalable proposition for mass application, whereas more affordable passive balancing solutions introduce operating inefficiencies and wider safety consideration into battery control. Brill Power’s approach offers a third way that overcomes the limitations of these traditional BMS architectures.

Brill Power’s Active Loading method represents a step-change for BMS through proprietary algorithms that determine the state of health and power capability of every parallel-connected cell block in the battery with novel control circuitry to regulate the electric current accordingly. Stronger cell blocks are exposed to higher currents and weaker ones to lower currents. This ensures that every joule of energy is extracted from each individual cell during every discharge cycle. As a result, no single cell becomes the limiting factor in the energy storage capacity, power capability or lifetime of the battery system.

Brill’s proprietary Active Loading method BMS offers significant performance, cost of ownership, durability and safety benefits that are available to battery systems developers immediately, negating the need for expensive R&D into new battery chemistries.

The benefits of Brill Power’s BMS technologies include:-

- Up to 60% increase in battery lifetime
- Up to 46% more energy for used batteries
- BMS provides fully regulated output voltage, removing the requirement for costly DC/DC converters or charge controllers
- BMS allows for battery maintenance and augmentation without shutdown
- The BMS is future-proof for new battery chemistries and 2nd life batteries
- The BMS provides a cloud-based analytics platform for remote system analysis and optimisation

Notes to editors

About Legal & General

Established in 1836, Legal & General is one of the UK's leading financial services groups and a major global investor, with over £1.4 trillion in total assets under management* of which a third is international. We also provide powerful asset origination capabilities. Together, these underpin our leading retirement and protection solutions: we are a leading international player in pension risk transfer, in UK and US life insurance, and in UK workplace pensions and retirement income. Through inclusive capitalism, we aim to build a better society by investing in long-term assets that benefit everyone.

*at 31 Dec 2021

About Legal & General Capital

Legal & General Capital (LGC) is Legal & General Group's alternative asset platform, creating assets for Legal & General Retirement and third-party clients in order to achieve improved risk-adjusted returns for our shareholders. LGC has built its capabilities in a range of alternative sectors, including in residential property; specialist commercial real estate; clean energy; alternative credit; and venture capital, which are all supported by long-term structural growth drivers, meet a financing gap and respond to a scarcity of supply that is underpinned by enduring societal needs.

Its purpose is to invest society's capital for society's benefit. Investing in the real economy and supporting the Group's focus on climate and inclusive capitalism, LGC's investments create jobs, change lives and contribute towards a net zero carbon future.

Legal & General has invested over £29bn in levelling-up regional economies, including through major UK-wide regeneration schemes and has recently made a commitment to enable all its new homes to operate at net zero carbon emissions from 2030.

(As of June 2021)

About Brill Power

Brill Power's mission is to harness the potential in novel battery management systems to improve the performance and reduce the costs of ownership of stationary & motive power batteries as an enabling and sustainable technology for society. The company has been founded on world-class research pioneered at the University of Oxford and has closed a Series A round led by led by Legal & General Capital and Barclays Sustainable Impact Capital.

Further information

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