Press Releases

Leclanché introduces a new generation of lithium-ion battery modules for e-transport vehicles and vessels and unveils a high-volume European module production line

- The new module is compatible with the full range of Leclanché cells - LTO 34Ah, G/NMC 60Ah and G/NMC 65Ah
- The modules are designed to support up to 800A in continuous current and enabling a battery system of up to 1'200V with a functionally safe battery management system (BMS)
- The new modules feature a very-high cycle life of up to 20'000 cycles (LTO) or up to 8'000 cycles (G/NMC) - allowing for significant reductions in total cost of ownership
- The new module production line is planned for a production capacity of up to 500 MWh per year, and further expandable, representing more than six times the production capacity of the previous module generation

YVERDON-LES-BAINS, Switzerland and ANDERSON, Indiana, June 15, 2021 /PRNewswire/ -- Leclanché SA (SIX: LECN), one of the world's leading energy storage companies, has developed a new generation of lithium-ion battery modules for energy intensive e-transport applications, such as marine, commercial vehicle and railway, and simultaneously inaugurated a dedicated new production line for their high volume manufacture in Europe.

The new modules, called M3, represent the next generation in Leclanché's module production with an increased energy and power density compared to the company's previous module generation. They feature a very-high cycle life of up to 20'000 cycles (LTO) or up to 8'000 cycles (G/NMC) – allowing for significant reductions in total cost of ownership and making them ideal for commercial applications. The modules are designed for a wide range of current and voltage outputs, going all the way up to 800A continuous current and for battery system voltages of up to 1'200V with its functionally safe BMS. The module and production line have been designed to accept a high level of flexibility in product configurations while maintaining production efficiency and traceability.

The modules are designed for a range of transport vehicles requiring high cycle life in both power and energy configurations and addressing commercial vehicles, rail and marine applications. The higher density G/NMC versions are used in the majority of transport applications whereas the LTO version is typically used where fast opportunity charging is needed such as for certain bus and AGV (Automated Guided Vehicles) applications and in hybrid hydrogen fuel cell systems used in certain trucks and trains. Complete specifications are available online at the following links:

- M3 ENERGY MODULE (GNMC, 60Ah)
- M3 ENERGY MODULE (GNMC, 65Ah)
- M3 ENERGY MODULE (LTO34AH)

Leclanché Installs a New European Module Production Line

Leclanché inaugurated its high-volume production line in a new facility close to its current corporate headquarters in Yverdon-Les-Bains. The company will move its corporate headquarters into the same building in Q4 of this year. The state-of-the-art highly automated production line was with the result of a simultaneous engineering process with its partner Comau Spa (Stellantis Group), a leading global provider of industrial automation and robotic systems, based in Turin, Italy.

The line includes the latest technologies in terms of quality and process control setting the foundation for the transition towards Industry 4.0 principles. It will allow Leclanché to produce up to six times its current capacity reaching an output of more than 60'000 modules per year when in full operation. The line is designed to further expand its capacity as the business grows. This positions the company amongst the first major manufacturer to produce both cells and modules at scale in Europe.

"Today's twin milestone is the result of long-term planning, research and development and significant investments enabled by our employees, business partners and stakeholders," **said Anil Srivastava, CEO, Leclanché**. *"We are especially grateful to our clients and business partners who have collaborated with us and pushed us to innovate and deliver this next generation of battery technology which will contribute to the transformation of transportation and energy efficiency, driving the reduction in greenhouse gas emissions."*

M3 Modules: Safety and Efficiency are Key Design Elements

Each M3 module is fitted with a functionally safe slave battery management system unit which communicates with a functionally safe master battery management system unit. The BMS provides several advanced energy-saving and safety features:

- It is designed to meet both ASILC and SIL 2 requirements.
- The slave measures cell voltages and temperatures, and runs diagnostics such as open wire detection, reverse polarity protection and self-checks.
- A dual-core processor offers redundancy, and the functionally safe operating system provides reliability by providing built-

in memory protection and task management.
- Power management integrated circuits offer stable power.
- Low power consumption during operation and further reduced during sleep mode; and
- Temperature sensors are fitted on alternate cells, providing fast and accurate response to individual cell temperature variations while ensuring a high level of safety and precise monitoring of temperature distribution for an optimisation of the module lifespan.

The M3 modules are designed to be fully compliant with the relevant transport certification standards for battery modules (selected configurations). For more information, visit https://www.leclanche.com/our-technologies/modules/ or contact Leclanché at info@leclanche.com.

About Leclanché

Headquartered in Switzerland, Leclanché SA is a leading provider of high-quality energy storage solutions designed to accelerate our progress towards a clean energy future. Leclanché's history and heritage is rooted in over 100 years of battery and energy storage innovation and the Company is a trusted provider of energy storage solutions globally. This coupled with the Company's culture of German engineering and Swiss precision and quality, continues to make Leclanché the partner of choice for both disruptors, established companies and governments who are pioneering positive changes in how energy is produced, distributed and consumed around the world. The energy transition is being driven primarily by changes in the management of our electricity networks and the electrification of transport, and these two end markets form the backbone of our strategy and business model. Leclanché is at the heart of the convergence of the electrification of transport and the changes in the distribution network. Leclanché is the only listed pure play energy storage company in the world, organised along three business units: stationary storage solutions, e-Transport solutions and specialty batteries systems. Leclanché is listed on the Swiss Stock Exchange (SIX: LECN).

SIX Swiss Exchange: ticker symbol LECN | ISIN CH 011 030 311 9

Disclaimer

This press release contains certain forward-looking statements relating to Leclanché's business, which can be identified by terminology such as "strategic", "proposes", "to introduce", "will", "planned", "expected", "commitment", "expects", "set", "preparing", "plans", "estimates", "aims", "would", "potential", "awaiting", "estimated", "proposal", or similar expressions, or by expressed or implied discussions regarding the ramp up of Leclanché's production capacity, potential applications for existing products, or regarding potential future revenues from any such products, or potential future sales or earnings of Leclanché or any of its business units. You should not place undue reliance on these statements. Such forward-looking statements reflect the current views of Leclanché regarding future events, and involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. There can be no guarantee that Leclanché's products will achieve any particular revenue levels. Nor can there be any guarantee that Leclanché, or any of the business units, will achieve any particular financial results.

SOURCE Leclanché

For further information: Media Switzerland/Europe: Thierry Meyer, T: +41 (0) 79 785 35 81, E-mail: tme@dynamicsgroup.ch; Media North America: Henry Feintuch / Ashley Blas, T: +1-914-548-6924 / +1-509-494-4053, E-mail: leclanche@feintuchpr.com

---

Additional assets available online: Photos (1)