

Press release

## **Leclanché and Visedo to deliver breakthrough sustainable electric drive solutions**

**Yverdon & Lappeenranta, 4 May 2015** – Leclanché SA and Visedo Oy have entered into a strategic alliance concerning close cooperation in marketing, selling and developing Visedo's electric drive trains with Leclanché's battery systems. Within this partnership, Leclanché will provide high quality lithium-ion solutions and batteries with long calendar and cycle life.

Leclanché and Visedo will collaborate to develop a joint BMS platform by merging Visedo's battery control system and Leclanché's battery management know-how. The integration of battery and traction control systems will establish the first full plug-and-play drive train system in the marketplace applicable to any electric bus or other EV-solution. Leclanché and Visedo's solution is a true breakthrough for the industry as real-time tests show that it is 30-40% more efficient compared with its peers currently on the market.

The first joint project with Visedo's drive train and Leclanché's battery system will be an electric bus project for a European city. After successful installation and testing of the system, the end customer has committed to order the first fleet of 30 to 50 electrified bus drive trains including batteries starting in 2016, each with approx. 30-50 kWh resulting in a total amount of 1.0-2.5 MWh of batteries.

Anil Srivastava, CEO of Leclanché SA, commented: "Leclanché is proud to offer its energy and power intensive battery technologies to Visedo Oy in order to develop and combine the offering of both companies into an integrated plug-and-play drive train solution for electrical and hybrid engines. This is truly an industry leading offer delivering the most optimum solution to further reduce CO<sub>2</sub> emissions and other harmful particles affecting the environment. We are also proud to announce this alliance's first significant success as we have already secured commercial orders within the sustainable electric mobility segment. This achievement also constitutes a validation of Leclanché's growth strategy announced in September 2014. Leclanché is ready to fully capitalize on the opportunities within the market leveraging its production facilities in Germany and Switzerland".

Kimmo Rauma, CEO of Visedo Oy, added: "I am excited to have a strategic business partner with a team specialized in batteries with the best technology. The Leclanché battery cells combined with Visedo's existing BMS-technology form an integral part of the complete drive train solution. Visedo has been involved in several heavy machinery drive train projects where the battery technology and especially the BMS selected have been the key success factors to win the customer confidence. By this alliance we will be able to bring to the market a full proven electric drive train which meets and exceeds customer requirements and with which the time-to-market is now minimized".

In addition to the transportation segment, Leclanché and Visedo are cooperating in electric drive-and propulsion projects for industrial machinery and the marine industry. These segments are also facing an increasing regulation for energy efficiency and to reduce local emissions and acoustic noise. Leclanché and Visedo have already been selected to be preferred suppliers of electric drive and propulsion projects with batteries of more than 10 MWh in terms of battery capacity for the years 2016 - 2020.

Leclanché and Visedo are confident that this strategic alliance will provide a new and novel offering to the market replacing diesel power trains at an increasing pace in the transportation, industrial machinery and marine customer segments.

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### For further information

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### About the technology

The new drive train solution offers major benefits in system performance and integration to the customer system. The integrated electric drive train developed by Leclanché and Visedo has achieved as low as 0.7 kWh/km consumption in an electric bus, which is 30-40% better efficiency compared to conventional drive train solutions, where the components are purchased in a disjointed manner from various suppliers. This means in effect that the investment in the battery required is 30-40% less or the range available for the battery is 30-40% longer. Thanks to these superior performances, deep integration capabilities and the unique partnership of Visedo and Leclanché, the companies are targeting to deliver an increasing share of electric bus projects around the world with their integrated drive train solution.

### About Visedo

Founded in 2009, Visedo is a Finnish company specialized in design and manufacturing of power electronics and drive train systems for industrial machines, electric buses and marine vessels in challenging operating environments.

Visedo develops and manufactures electric drive train components in power range from 30-700 kW for heavy mobile work machine, marine vessel and bus applications. The drive trains are suitable for both hybrid electric (HEV) and electric vehicle (EV) solutions.

Our products are designed from the basis of harsh operating environment and heavy duty requirements. We are using the latest technology based on our own patents to offer the optimal solutions to save fuel and to lower emission and noise levels. The products and systems are developed together with key customers.

### About Leclanché

Established in 1909 Leclanché has been a reliable partner for battery storage technologies. Founded in the tradition of Georges Leclanché, the inventor of the dry cell battery, Leclanché today has a rich portfolio of Energy Storage Systems that include a range of Specialized Customer-specific Battery Systems through industry leading lithium-ion solutions.

Through the integration of a spin-off of the German Fraunhofer Institute in 2006 the company evolved from a traditional battery producer into one of the first developers and manufacturers of lithium-ion cells in Europe.

Leclanché's Storage Solutions are optimized for various applications, in particular for the integration of renewable energy, diesel fuel reduction, electricity grid-connected ancillary services and peak power shaving for heavy industries but also for heavy duty transportation in buses, trams, trains or maritime vessels.

Leclanché products are characterized by a very high cycle stability (cells with titanate anode) and long service life. Thanks to our patented separator technology, which is a core element of lithium ion cells with titanate anode, Leclanché is able to make cells with very good safety characteristics in automated production. Leclanché operates a fully automated plant for the production of large format lithium-ion cells at an annual maximum capacity of up to 175MWh or up to one million cells.

In addition, Leclanché offers a number of specialized battery systems through its Portable Business Unit, such as customer-specific energy storage systems for military and medical applications. Leclanché also distributes primary and secondary batteries and accessories of other producers.

Leclanché, which is quoted on the Swiss stock exchange (SIX:LECN), has a wide range of storage products for homes, small offices, large industries, electricity grids, hybridization for mass transport systems like fleet of buses, trams etc.