

Storing solar energy

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A research project conducted by Leclanché S.A., the Ecole Polytechnique Federale de Lausanne (EPFL), Romande Energie and with the financial support of the Canton of Vaud could bring a real added value in the development of renewable energies.

As part of its "100 millions pour les énergies renouvelables et l'efficacité énergétique" programme, the Canton of Vaud allocates about two million francs to the Distributed electrical systems laboratory of Professor Mario Paolone of the EPFL, in order to implement a comprehensive system of [energy storage](#).

Scientists want to study innovative solutions of industrial type for storing solar energy and subsequently be able to distribute it in an optimal way at times of peak consumption during the day. The heart of the device

developed by Leclanché will be based on an innovative titanate Lithium-ion battery, which uses titanate instead of the traditional graphite. It will operate in conjunction with the Romande Energie solar park at the EPFL, one of the largest solar electric plants in the French speaking part of Switzerland. This pilot project brings together the Ecole Polytechnique Fédérale de Lausanne (EPFL), Leclanché S.A. (SIX Swiss Exchange:LECN), Romande Energie and the Canton of Vaud.

"The storage of electrical energy through the use of high-capacity and long life batteries is a challenge that determines the massive integration of [renewable energy](#) for the power generation. This partnership will allow us to validate the technologies used in order to store [solar energy](#) on an industrial scale, explains Professor Paolone. The issue is, therefore, very important".

A campus-based laboratory

About the size of a shipping container, the Leclanché storage device will be connected to the solar cells grid installed by the EPFL and Romande Energie over an area of 15,000 m². The container will be equipped with Leclanché's high performance Lithium-ion titanate batteries which have a very long life, with approximately 15,000 charge-discharge cycles, compared to the usual 3,000. To increase the safety of the device, a ceramic separator patented by Leclanché will be one of the key elements. This would be complemented by a sophisticated management system.

"We welcome this collaboration, adds Fabrizio Marzolini, Manager of the development of [energy storage systems](#) at Leclanché SA. This is the best way to share the high technology developed at Leclanché and scientific research to enable us to remain at the forefront of innovations that serve the vital energy transition". State Councillor Jacqueline de Quattro, Head of the Department of territorial planning and

environment, welcomes the fact that public funds are being invested in an innovative project meeting the strategic lines of the government renewable energies policy.

As a true testing ground, the storage unit of industrial size can store up to 500kWh, equivalent to the production of 2,500 square metres of electricity from solar panels in one hour or the consumption of a hundred households over one day, whilst managing variations in power related to sunlight.

"This joint research will help develop the contribution of solar cells to the Swiss [energy](#) supply, concludes Christian Frère, Manager of the Energy business unit at Romande Energie".

Research related to the container will last 23 months and will help to optimise the operation of the various components.

Provided by Ecole Polytechnique Federale de Lausanne

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