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News

Innovation and Industry

Renewable energies

Energy storage

**Accelerate the decarbonization of your energy mix with the deployment of large-scale electricity storage solutions:  
IFPEN and STOLECT sign a framework partnership agreement to intensify their collaboration**

**IFP Energies nouvelles (IFPEN) and STOLECT have signed a 5-year framework partnership agreement to intensify their collaboration and step up the deployment of “Carnot battery” technology. These large-scale electricity storage solutions are the flexibility tools needed to integrate the growing proportion of intermittent generation into electricity mixes and thus speed up the process of reducing carbon emissions.**

Across the world, the rise in the contribution of renewable sources to electricity generation is giving rise to new challenges in terms of stability and flexibility. Given the advent of large-scale photovoltaic and wind power generation in the electricity mix, there is a need to roll out Long Duration Electricity Storage (LDES) solutions that are capable of storing energy for more than 4 hours, in order to compensate for the variable nature of these renewable energies and incorporate them into the energy mix.

**STOLECT, an innovative large-scale electricity storage technology**

STOLECT offers an electricity storage solution that addresses the challenges of incorporating renewable energies and reducing the carbon footprint of the energy mix. With this “Carnot battery” solution, electricity from the grid is converted into heat by air compressors during the charging phase. This heat is then stored in refractory materials. During the discharging phase, the stored heat is recovered and converted back into electricity, which is then fed back into the electricity grid.

STOLECT’s technology can store large quantities of energy to be reused at a later stage to cover electricity demand, and does so using an environmentally-friendly process. Unlike battery storage systems, it uses natural materials that are widely available, economically cost-effective, and recyclable or recycled. Its environmental impact throughout the entire life cycle is also more favorable compared to that of batteries. It can handle an unlimited number of cycles without any loss of capacity. This solution is also one of the few LDES solutions that can be rolled out on industrial or tertiary sites without any risk to the environment or human activities.

### **IFPEN, a leading force in research and innovation in new energy technologies**

In 2014, IFPEN launched a research program into large-scale energy storage and has acquired solid expertise in this field, particularly in large-scale compressed air energy storage. More specifically, IFPEN has a small-scale experimental Thermal Energy Storage facility, as well as numerical tools capable of running dynamic simulations of the behavior of the entire storage system.

### **A stronger partnership**

IFPEN and STOLECT have already been collaborating in R&D for 2 years and are now keen to enter a new phase with a strengthened partnership. The aim is to combine all their strengths to gain a strong foothold in the electricity storage market.

“Following the initial work carried out with STOLECT, we would like to enter into a stronger partnership so that we can combine our efforts and actions to roll out large-scale energy storage solutions. This framework partnership agreement illustrates IFPEN’s determination to work with leading industrial players to rapidly roll out the most relevant technologies to support the energy transition.” explains Yannick Peysson, Energy Storage and Management Program Manager at IFPEN.

“This partnership with IFPEN is strategic at this stage of STOLECT’s development. IFPEN is a center of excellence when it comes to energy R&D, and is also an industrial group with an international network of partners capable of bringing our storage solutions to market all over the world much faster.” adds Jean-François Le Romancer, CEO of STOLECT.

### **About IFPEN**

IFP Energies Nouvelles (IFPEN) is a major research and training player in the fields of energy, mobility and the environment. From scientific concepts in fundamental research to technological solutions in applied research, the Institute’s activities are focused on innovation and hinged around four key priorities: climate, the environment and the circular economy, renewable energies, sustainable mobility and responsible oil and gas.

## About STOLECT

STOLECT is developing a large-scale electricity storage solution. The company has received backing from the Brittany Region's European Regional Development Fund (ERDF) for the construction of a first production demonstrator on an SNCF site in Rennes. It has also been awarded the "Efficient Solution" label by the Solar Impulse Foundation founded by Bertrand Piccard, and was recently a winner of the Ile-de-France Region's "Décarbonation des Infrastructures sportives" call for solutions to reduce the carbon footprint of sports infrastructures.

STOLECT's ambition is to create a new industrial sector in the field of electricity storage, by leveraging the skills and expertise of French and European partners. STOLECT benefits from a team with extensive experience and expertise in the energy sector, and in electricity in particular, as well as a network of prestigious industrial partners.

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