Press release

Canton of Neuchâtel: More than 33,300 innovative solar roof tiles are paving the way to energy independence

- Three heritage buildings in Neuchâtel will soon be outfitted with 33,300 solar tiles, thanks to a partnership between Freesuns and CSEM, marking a significant stride toward the 2050 energy transition.
- The Collège des Parcs will enjoy self-sustained energy production of nearly 150,000 kilowatt-hours (kWh) per year, meeting its annual energy needs. Two iconic Hauterive stone buildings on Rue A.-L. Breguet are also being fitted with new solar tiles, including a grey variant.
- Freesuns and CSEM are now pushing the envelope in developing and marketing even more efficient generations of solar tiles, bolstered by a recent fundraising of one million Swiss francs secured by Freesuns.

Neuchâtel, June 25, 2024 – Three major renovation projects of protected buildings are reaching their final stages in Neuchâtel. These buildings will be equipped with 33,300 innovative solar tiles, the result of a fruitful collaboration between CSEM, the technology innovation center, and Freesuns. This milestone signifies substantial progress for the City and Canton of Neuchâtel in the race to the 2050 Swiss energy transition.

A transition respectful of Neuchâtel's architectural heritage

Three major renovation projects for protected buildings are entering their final phase in the Canton of Neuchâtel. These establishments encompass the Collège des Parcs, owned by the City of Neuchâtel, in addition to the Beaux-Arts school building and the Rue Breguet university building, both of which are assets of the canton. At the Collège des Parcs, architectural challenges were met by installing several thousand Freesuns solar tiles, which conform to the irregular curves of the historic roof without causing damage. This solution should enable the college to generate an annual production of nearly 150,000 kWh, equivalent to the consumption of about 50 Swiss households[i]. The cantonal buildings Breguet and Beaux-Arts will benefit from an installed capacity of 130 kilowatt-peak (kWp) and 95 kWp respectively. These renovations are expected to be completed between September and November 2024, marking a new chapter in Neuchâtel's energy transition.

Matthieu Despeisse, Group Leader Solar Modules at CSEM, states: “These projects demonstrate that through innovation, we can blend tiles, photovoltaics, energy transition, and the preservation of architectural heritage.”

Solar roofs to reduce building’s energy impact

Switzerland has committed to achieving carbon neutrality by 2050, with crucial interim milestones such as reducing CO_2 emissions by 50% by 2030 compared to 1990 level. According to a report by the International Energy Agency (IEA), buildings account for over 40% of energy consumption and one-third of CO_2 emissions. Therefore, energy-efficient renovations of public buildings, like those undertaken in Neuchâtel, play a key role in this national strategy.

Deborah Learoyd, General Manager from Freesuns, adds: “We hope that these pioneering renovation projects will serve as an inspiring model for other cantons and municipalities. This perfectly illustrates the balance between balance between respecting heritage and sustainable development, made possible by our tiles.”

CSEM’s and Freesuns’ collaboration continues

With their aesthetic appeal and robust technology, Freesuns' solar roof tiles have become a benchmark for architectural integration and renewable energy production in Switzerland. New modules of solar tiles have been designed and developed in partnership with CSEM that are now even more efficient, and these tiles will start to hit the market by the end of 2024. These advancements were made possible thanks to a successful fundraising effort by Freesuns, which raised 1 million Swiss francs, and additional backing from the Swiss Technology Fund, allowing the company to boost its production and advance its technology.

The projects led by CSEM and Freesuns open up promising economic prospects for the energy enhancement of heritage buildings in the municipalities and cantons of Switzerland. Together, they highlight the importance of technological innovation in overcoming technical and economic challenges.

The Collège des Parcs in Neuchâtel, slated for completion in 2025, now features a dynamic solar-tiled roof, a collaborative innovation by Freesuns and CSEM.

Further information

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About the partnership between CSEM and Freesuns – A collaboration transforming innovation into a powerful and stylish reality

In 2014, John Morello and his wife were actively looking for an aesthetically pleasing solar solution for the roof of their newly acquired custom-designed house. Unfortunately, none of the options on the market met their criteria, not least because of their complex roofs. An engineer by profession, John developed his solar roof tile to combine photovoltaic performance with an appealing design. John then turned to Christophe Ballif and his teams at CSEM for support in the development and industrialization phases. This work was first backed by the Swiss Innovation Agency, InnoSuisse, and later by European and private funding, enabling the collaboration between CSEM and Freesuns to develop further. The focus of this partnership is on constantly improving the performance, reliability and aesthetic integration of the solar roof tiles, while reducing production costs and the environmental impact. As a result, both companies have consolidated their position as innovative leaders in solar energy. Their success with Freesuns tiles means they can offer a sustainable, high-performance, local niche solution based on Swiss Engineering. See the video showcasing this collaboration in the CSEM 2023 annual report.

About CSEM – Energy harvesting for next-generation applications

CSEM is a non-profit-oriented public-private Swiss technology innovation center renowned for developing advanced technologies with profound societal impact. Our mission is to transfer these innovations to industries, strengthening the economy. We create energy harvesting solutions for IoT products, sensors, and customized photovoltaic (PV) applications like BIPV and AgriPV. With a cutting-edge infrastructure, we develop thin-film and crystalline solar cells and offer advanced encapsulation, polymer solutions, and innovative PV module stacks. From wearable to mobile and automotive applications, we optimize power-to-weight ratios, robustness, and reliability in extreme environments. Supported by a strong technical team and with access to interdisciplinary knowledge we are driving energy innovation for a sustainable future. https://www.csem.ch/en/technical-focus/integrated-lightweight-photovoltaics

[i] https://pubdb.bfe.admin.ch/fr/publication/download/10559