

## PRESS RELEASE

### **Zero-emission winter tourism using hydrogen technology**

(Wels, 26/03/2020) Several project partners, including Fronius, combined their know-how for the “HySnow” flagship project, which aims to significantly drive forward the decarbonisation of winter tourism using an innovative hydrogen refuelling system and the associated “Lynx HySnow” snowmobile. The zero-emission, low-noise and powerful hydrogen drive once again proves its great potential when replacing conventional combustion engines in different types of vehicles.

The reduction of noise and pollution, as well as the possibility of using renewable energy sources, is a key issue, including in winter sports regions. The declared objective of the HySnow project, which has been funded by the Austrian Research Promotion Agency (FFG) and the Climate and Energy Fund, is to create a zero-emission energy cycle in Alpine tourism regions. The entire chain, from the photovoltaic system and hydrogen production, including the refuelling system, to the vehicle prototypes themselves, has therefore been developed, installed and tested under real operating conditions at the Hinterstoder-Wurzeralm ski resort. The project presentation took place during the FIS Ski World Cup 2020.

It is crucial that snowmobiles provide as much power as possible at a low weight and are reliable in low temperatures. Short refuelling times and comparatively high ranges ensure high vehicle availability for mountain rescue or maintenance service employees. The fuel required – green hydrogen in this example – is generated using a 34.5-kWp PV system. This is directly coupled with an electrolysis module with a downstream compressor, thus establishing a 350-bar tank infrastructure. Fronius provides the project with important components for the refuelling system infrastructure and the two Fronius Symo inverters are the energy source for producing hydrogen from solar power.

Several project partners came together to share their know-how as part of the “White mobility revolution” project with HySnow. BRP-Rotax GmbH&CoKG is the consortium leader of the four-year project and is being supported by Fronius International GmbH, HyCentA Research GmbH, the Institute of Electrical Measurement and Measurement Signal Processing (EMT) of TU Graz, Elring Klinger AG, ECuSoL GmbH and Hinterstoder-Wurzeralm Bergbahnen AG as project partners.

### **Powering vehicles with green hydrogen from solar energy**

*“At Fronius, we are certain that green hydrogen represents a sustainable alternative to fossil fuels for mobility,”* explains Martin Hackl, head of solar energy at Fronius International GmbH. *“With our multiple-award-winning Fronius Solhub<sup>1</sup>, we have already developed a complete turnkey solution for decentralised hydrogen production, storage and supply, which is available immediately.”* Municipalities, companies and organisations with their own vehicle fleet can produce their own fuel in the form of green hydrogen using the Fronius Solhub. Large roof areas are often available to install the photovoltaic systems and the generation of clean, green hydrogen can begin.

The Solhub uses electrolysis to convert environmentally friendly energy generated on-site into green hydrogen, which can be stored over the long term. The ability to store the hydrogen opens up several possibilities, such as fuelling hydrogen vehicles or using the solar energy yields from the summer to

<sup>1</sup> 2019: Energy Star Award of the State of Upper Austria in the “Innovation” category, 2018 National Environmental and Energy Technology Award

provide power in the winter (through reconversion), making green electricity available all year round. Furthermore, a positive side-effect of the electrolysis and reconversion process is that the waste heat can be used to heat buildings or generate hot water, resulting in a more attractive overall system efficiency level. An increasing number of vehicle manufacturers are already offering models or prototypes with fuel cells. Internal logistics, working vehicles, bus fleets, lorries, special vehicles or snow groomers are good examples of this. The next stage is to install the necessary refuelling infrastructure.

### Hydrogen expertise all under one roof

Fronius has been researching and developing hydrogen solutions for over two decades and has become the innovation leader in solar hydrogen. The high-tech company has acquired an enormous wealth of experience through numerous collaborations, innovative pilot projects and by being a member of leading hydrogen committees. With the establishment of the Fronius hydrogen centre of excellence in Steinhaus, Upper Austria, the ideal environment has been created in which expertise and resources can be combined to drive forward hydrogen research, development and production for H<sub>2</sub> systems. Training and customer presentations will also be conducted under one roof in the future. Of course a Solhub, including reconversion and storage systems, will be built in Steinhaus and the existing vehicle fleet is being expanded to include hydrogen vehicles. Construction will begin in April 2020.

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### Photographs – overview:



The Lynx HySnow – the hydrogen fuel cell-powered snowmobile from Rotax

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Fronius Solhub: Complete turnkey solution for decentralised solar hydrogen production, storage and refuelling of vehicles such as buses, lorries, working vehicles and special vehicles

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**More information about the Fronius Solhub is available here:**

<https://www.fronius.com/en/photovoltaics/customers-partners/business-owners/green-hydrogen-with-solar-energy>

**Reference HySnow:** <https://www.fronius.com/en/photovoltaics/infocentre/references/at-hinterstoder>

**HySnow factbox**

**Project duration:** 2017 - 2021  
**Consortium leader:** BRP-Rotax GmbH & Co KG  
**Project partners:** Fronius International GmbH,  
HyCentA Research GmbH,  
Institute of Electrical Measurement and Measurement Signal Processing (EMT)  
of TU Graz,  
Elring Klinger AG,  
ECuSoL GmbH,  
Hinterstoder-Wurzeralm Bergbahnen AG



**Cooperation partners:** Climate and Energy Fund  
Austrian Research Promotion Agency (FFG)

The HySnow project was awarded the Austrian National Mobility Award in the category of "Future Mobility" in 2019.

**About Fronius Solar Energy**

The Fronius Business Unit (BU) Solar Energy has been developing photovoltaic energy solutions and distributing its products through a global network of expert installation, service and sales partners since 1992. More than 24 Solar Energy subsidiaries, an export ratio of over 95 percent and a total output of more than 17 Gigawatts from installed inverters are testament to this. Its mission is to achieve 24 hours of sun. Day after day Fronius is hard at work turning this vision of a future in which 100% of the world's energy needs are covered by renewable sources into a reality. With this in mind, Fronius develops energy solutions to generate, store, distribute and consume solar energy economically and intelligently.

**About Fronius International GmbH**

Fronius International is an Austrian company with headquarters in Pettenbach and other sites in Wels, Thalheim, Steinhaus and Sattledt. Founded by Günter Fronius in 1945, this long-standing company with a rich tradition will be celebrating its 75th anniversary in 2020. What began as a local one-man venture has grown into a global player with more than 4760 employees worldwide working in the areas of welding technology, photovoltaics and battery charging systems. Its export ratio of around 92 percent is achieved with 30 international Fronius subsidiaries and sales partners/representatives in more than 60 countries. Moreover, its innovative products and services and its portfolio of 1253 registered patents make it an innovation leader on the world market.

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