Hydrogen is now.
H-TEC SYSTEMS

PRESS RELEASE

Citizen Wind Park Ellhöft (Bürgerwindpark Ellhöft) deploys PEM electrolyser by H-TEC SYSTEMS for wind energy conversion

- **Regionally produced green hydrogen sold as fuel for regional hydrogen filling station for the first time**

02 October 2018, Lübeck – H-TEC SYSTEMS delivers its ME 100/350 PEM electrolyser for first customer practical application: The Citizen wind park Ellhöft (Bürgerwindpark Ellhöft) will use it to convert wind energy into green hydrogen and sell it to the transport sector. By drying the generated hydrogen, H-TEC makes it usable as a fuel according to ISO 14687. A new hydrogen refueling station west of Flensburg will sell it as fuel. It is planned to have the electrolyser installed and up and running by the spring of 2019.

"Our ME 100/350 PEM electrolyser is a key component for converting renewable energies into electricity thereby opening up new and attractive markets above all for wind park operators outside the EEG (German Renewable Energies Act). It produces up to 100 kilograms of hydrogen per day nominally, at an electric load of 225 kilowatts – this is sufficient for fuelling up to 20 hydrogen cars per day, which will satisfy the current demand", explains Frank Zimmermann, managing director for sales at H-TEC SYSTEMS. The very compact design of the electrolyser in a 20-foot container makes its placement very flexible: Wind Park Ellhöft has decided on placing it directly at the hydrogen filling station.

The H-TEC electrolyser will be integrated into a grid, which makes it possible to generate green hydrogen on site in Ellhöft, exclusively for the local hydrogen filling station in Westre. "If the demand for hydrogen increases, it is no problem to add further electrolysers to the grid", says Frank Zimmermann. In general the ME 100/350 electrolyser can adapt to changing load profiles automatically, for example due to fluctuating (wind) energy or a change in hydrogen demand.

Reinhard Christiansen, initiator and director of Wind Park Ellhöft is convinced that the hydrogen mobility turnaround is coming: "Our wind park started operation in the year 2000. As the EEG funding expires and in view of the high wind over-capacity, the need arises to find alternative, economically attractive marketing options. We see very great potential in converting wind energy to hydrogen and using it for transport. First of all we will begin supplying individual and public transport with the hydrogen filling station. We specifically decided to use the PEM technology because this ensures that hydrogen is produced in very high purity." Compared to other conversion and storage methods, electrolysis has the highest energy storage potential. The electrolyser by H-TEC SYSTEMS can convert 5.4 MWh of energy into 4 MWh of hydrogen and 1.4 MWh of heat achieving 95 percent efficiency.

"We look forward to this innovative practical application of sector coupling using the power-to-gas method", says Ove Petersen, who is both managing director of H-TEC SYSTEMS and GP JOULE, with H-TEC belonging to the latter's company group. "Today an electrolyser costs between 1,000 and 2,500 euros per kilowatt performance. However, the material and manufacturing costs will drop quickly similarly to the developments in photovoltaics. The technology exists as does the market, and the market for green hydrogen is growing. Hydrogen is the zero-emission fuel and ideally suited to any kind of mobility and

especially for powering public transport and heavy-duty transportation such as buses, trains and ships CO2-free. What is more, passenger cars are also ready for serial production and can offer an alternative thanks to their range and emissions (only water vapour) in the current discussion about diesel driving bans."

GP JOULE itself will integrate five of the PEM electrolysers by H-TEC SYSTEMS into its public transport hydrogen mobility project, which is being implemented with a number of partners. Here too, regional wind energy is converted into green hydrogen as an affordable and climate-friendly fuel for buses and other hydrogen cell vehicles. In this context two hydrogen filling stations are planned in Niebüll and Husum.

Captions: (f.l.to.r) Frank Zimmermann, Managing Director H-TEC SYSTEMS, and Reinhard Christiansen, Managing Director Windpark Ellhöft, in front of the demo model of the PEM electrolyser ME 100/350 at WindEnergy Hamburg 2018.

Photo/image rights: H-TEC SYSTEMS, can be used free of charge

Press contact:
H-TEC SYSTEMS GmbH, Maria-Goeppert-Straße 9a, 23562 Lübeck • h-tec-systems.com

Ms. Birka Friedrich
Head of Corporate Communications GP JOULE und H-TEC SYSTEMS
T +49 (0) 4671 6074-237
b.friedrich@gp-joule.de

About H-TEC SYSTEMS
H-TEC SYSTEMS belongs to the GP JOULE Group and offers high-quality electrolysis stacks and electrolysis systems, specialising in the polymer-electrolyte-membrane method. With sites in Schleswig-Holstein and Bavaria, the company has been developing innovative techniques and new devices for industrial use on this basis since 2010. H-TEC was founded as long ago as 1997 for the development and marketing of hydrogen technologies in the area of educational materials.