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## **Energy Storage Europe 2019: MAN Showcases Solutions for Energy Storage and Synthetic-Fuel Production**

### **Company to present wide range of storage solutions for energy industry in Hall 8B, Stand 8BD39**

At the Energy Storage Europe trade fair in Duesseldorf (Germany) from March 12 to 14, MAN Energy Solutions will present an extensive portfolio of storage solutions, including Power-to-X applications, its ETES (Electro-Thermal Energy Storage) energy management system, as well as battery-storage and hybrid systems for decentralised energy generation.

Dr. Uwe Lauber, CEO of MAN Energy Solutions, said: "The use of storage technologies with different capacities is essential for the future success of the energy transition. It will only be possible to reduce CO<sub>2</sub> emissions if renewable energy is also available outside of the grid. Therefore, our solutions enable the use of green electricity as heat and cold or in the form of climate-neutral fuels, for example in shipping. This is how we connect electricity, heat and mobility."

### **Power-to-X to drive energy transition**

MAN Energy Solutions sees great potential in the Power-to-X technology, which can be used to convert renewable energy into synthetic fuels such as natural gas. At Energy Storage Europe, the company is presenting a 50 MW complete solution on an industrial scale.

Marc Grünewald, Head of Business Development, Power and New Energies at MAN Energy Solutions, said: "With the help of Power-to-X, climate-neutral synthetic gas can be produced which reduces the carbon footprint in a wide range of applications without the need for major infrastructural investment. For example, CO<sub>2</sub> emissions can also be reduced in all areas where the use of batteries is not possible. This applies, for example, to international shipping where complete electrification is not technically feasible, especially in the case of container ships."

### **Innovative storage solution ETES links heating, cooling and electricity**

MAN Energy Solutions is also presenting its innovative, tri-generation ETES (Electro-Thermal Energy Storage) solution, developed jointly with ABB. Dr. Dominik Heiß, Head of Energy Storage at MAN Energy Solutions, said: "ETES is a flexible storage-and-energy-management system that allows electricity, heat and cold to be generated, stored and used across sectors. We are very excited about its potential."

The technology uses renewable energy to generate heat and cold, which can be stored in insulated reservoirs and converted back into electricity or used directly.

Utilisation and distribution can take place parallel to the storage process. Typical heat applications include district heating or supplying the food industry, while cooling is used to cool data centers or air-condition large buildings, among other applications.

## **Battery storage for hybrid solutions and grid stability**

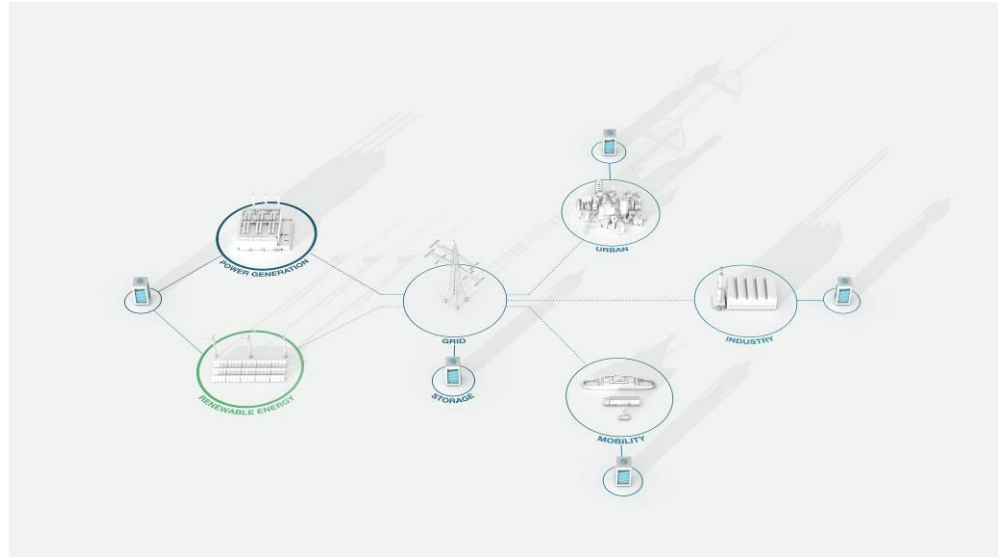
The company's broad portfolio of decentralised and flexible power-plant solutions combines renewable energies and highly-flexible gas engines with energy-storage solutions to create intelligent energy-management systems. In 2017, MAN Energy Solutions expanded its expertise in this segment by acquiring a stake in Canadian battery-storage-specialist, Aspin Kemp Associates. Today, MAN Energy Solutions offers battery-storage solutions for a variety of different applications and integrates them into power grids or hybrid-energy solutions.

## **Storage solutions with longer unloading times are becoming more important**

With the further expansion of renewable energies, it is necessary to balance supply-and-demand peaks over even longer periods of time. MAN Energy Solutions offers solar-thermal power plants (CSP – Concentrated Solar Power) with integrated salt storage. Heiß added: “With the help of thermal salt storage, we can make solar energy base-load-capable and relieve the load on the grid.” With the help of salt-storage systems, conventional power plants could also be used as energy storage.

Storage technologies such as CAES (Compressed Air Energy Storage) and LAES (Liquid Air Energy Storage) allow large quantities of energy to be stored at low cost. The core of these storage technologies are turbo-machines that compress or liquefy air and generate electricity when required again. MAN Energy Solution is a leading supplier of highly efficient and flexible compressors and turbines for these technologies.

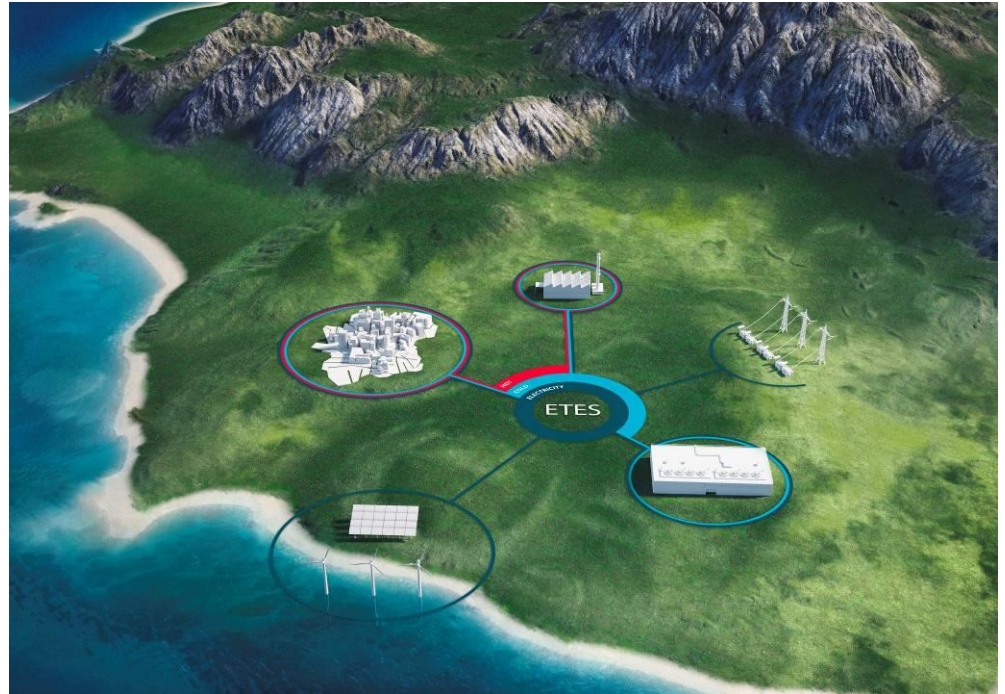
Heiß concluded: “Due to our comprehensive portfolio, we have the ability to develop solutions based on a variety of technologies and thus to respond perfectly to our customers’ challenges.”



*The energy storage solutions of MAN Energy Solutions enable the use of green electricity as heat and cold or in the form of climate-neutral fuels and thus connect electricity, heat and mobility.*



*At Energy Storage Europe MAN Energy Solutions showcases its Power-to-X solutions which can be used to convert renewable energy into climate-neutral synthetic fuels.*



*The energy management system ETES (Electro-Thermal Energy Storage) allows electricity, heat and cold to be generated, stored and used for manifold applications.*

*To have a closer look on the features of ETES, you can watch this video animation:*  
<https://www.youtube.com/watch?v=Lp1LTkCOM8s>

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MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.