
Press release

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MAN Energy Solutions wins Storage Highlight Award

MAN Energy Solutions receives the Storage Highlight award for its new energy management solution MAN ETES during the Energy Storage Europe 2019.

Patrik Meli, Vice President, Head of Compressor Engineering of MAN Energy Solutions, proudly received the award during the “Energy Storage Technology Highlights” ceremony, which was held at the Energy Storage Europe trade fair in Düsseldorf (Germany) on March 13. An independent jury of experts was tasked by Messe Düsseldorf and pv magazine to select the most innovative energy storage solutions exhibited at the event.

“It is a great honor to receive this acknowledgement for the MAN ETES technology. Energy storage experts have recognized the great potential that lies in our innovative energy management solution, which was developed in collaboration with ABB,” states Patrik Meli. “MAN ETES is the first tri-generation energy management system that enables effective sector coupling by allowing electricity, heat and cold to be generated, stored and used across different sectors. Power and heat/cold are no longer treated separately and with this approach, we are breaking down the existing silo mentality in the industry. Our system functions as a bridge between the power supply and heat/cold supply markets.”

The award jury commented: “Breaking the silo mentality of the power, transport, and heat sectors is highly relevant for industry and the energy transition. Furthermore, the concept contains various relevant technological innovations.” The technology experts further highlighted the most important aspect of the system: “The MAN solution cuts across traditional industry boundaries and enables effective sector coupling by combining heat, cold and electricity storage.”

According to the REN21 “Global Status Report”, heating and cooling account for 48% of global energy consumption and 39% of CO₂ emissions, because renewable sources deliver only 10% of the energy. In order to reduce emissions and decarbonize the whole energy supply industry, the development of solutions that consider all sectors, not just electricity generation, are crucial. Efficient and intelligent energy management systems are required in order to reconcile the growing human requirement for power with the fluctuating supply.

MAN ETES offers a scalable and CO₂-neutral energy storage and sector coupling solution. The system solves two fundamental challenges: On the one hand, it helps balance the grid by absorbing large amounts of surplus or off-peak electricity from renewables and feeding it back into the grid on demand. On the other hand, it integrates multiple sectors by generating, storing, and providing thermal energy for heating and cooling purposes. The heat can be made available both in the form of district heating and for manifold industrial applications (e.g. the food industry, heating systems for large buildings such as hospitals or school complexes). Typical

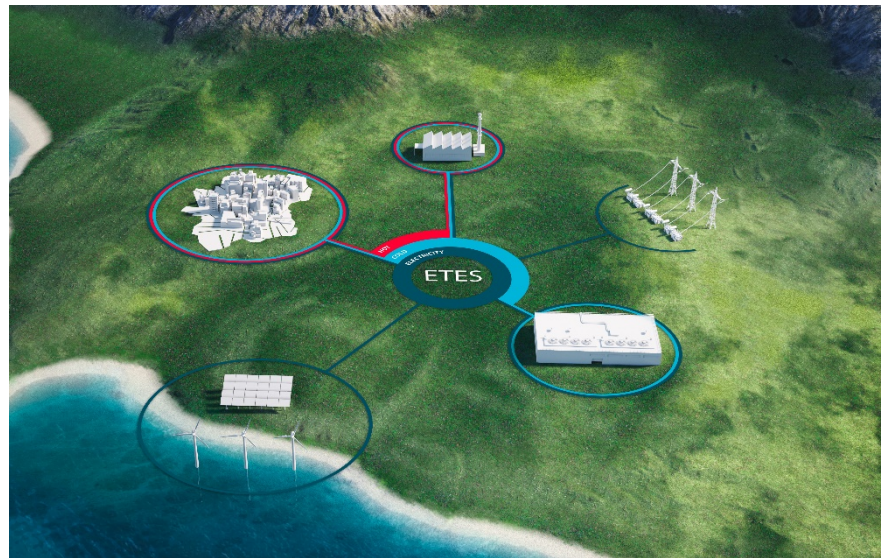
applications for the cold include the cooling of data centers or air-condition of large buildings, among other possible applications.

The basic principle of MAN ETES is the reversible conversion of electrical energy into thermal energy via storage in form of hot water and ice. The solution is based on heat pump and thermal engine technologies using CO₂ cycles and the storage of pumped heat. The turbomachinery technology and the process design of the CO₂ cycles are the key elements and reflect MAN Energy Solutions' core competences.

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.



Patrik Meli, VP, Head of Compressor Engineering of MAN Energy Solutions, introduces the MAN ETES energy storage system during the award ceremony at the Energy Storage Europe 2019 in Düsseldorf (Germany).



MAN ETES: the first tri-generation energy management system that enables the sector coupling.