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**Press release**

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## **MAN Energy Solutions and Energy Dome Collaborate on CO<sub>2</sub> Battery Technology**

**New strategic partnership between MAN Energy Solutions and Energy Dome to provide long-duration energy storage (LDES) solution to facilitate the transition to net-zero**

MAN Energy Solutions and Energy Dome, an LDES solution provider based in Milan (Italy), have entered into a Memorandum of Understanding (MoU) for a non-exclusive collaboration. Both companies are committed to exploring the potential of integrating their individual technologies and competencies to further optimize Energy Dome's CO<sub>2</sub> Battery technology, a pioneering long-duration energy storage system addressing the increased need for energy storage solutions worldwide.

Matteo Falco, Head of Industries, Region Europe at MAN Energy Solutions, said: "Long-duration energy storage systems are vital to the success of the energy transition as they are the perfect complement to clean yet volatile renewable energies. Unfortunately, energy storage is lagging behind alternative energy production and preventing its widespread implementation. Various technologies with different capacities and characteristics must be utilized to bridge this gap. This is why we are very excited to embark on this new collaboration with Energy Dome. Together, we will leverage our collective strengths and expertise to accelerate the deployment of sustainable energy storage plants."

Claudio Spadacini, CEO of Energy Dome, said: "In order to shift to fully renewable and sustainable energy, we need efficient and cost-effective ways to store it. Our CO<sub>2</sub> Battery is a concrete solution that will change how sustainable, long-duration energy storage is adopted, making it more accessible and impactful for communities worldwide. The combination of MAN Energy Solutions' advanced turbomachinery know-how with our cutting-edge battery design ensures that anyone considering the adoption of our technology solution can do so with confidence."

Energy Dome's technology is based on a closed thermodynamic transformation of CO<sub>2</sub> between its gaseous and liquid states. When operating in charge mode, the CO<sub>2</sub> is withdrawn from an atmospheric gas holder, the Dome, and compressed into an inter-refrigerated compressor, driven by a motor. The heat generated from the compression is stored in a thermal energy storage system, whereas the CO<sub>2</sub> is liquefied and stored in vessels under pressure at ambient temperature with zero atmospheric emissions. This allows for high-density energy storage without using extreme cryogenic temperatures. In discharge mode – whenever energy is needed – the CO<sub>2</sub> is heated up, evaporated and sent into an expander before it flows back into the Dome. The expander drives the generator in order to feed climate-neutral electricity into the grid.

Energy Dome's first commercial CO<sub>2</sub> Battery plant in Italy will use an MAN Energy Solutions 20 MW CO<sub>2</sub> expander. The turbomachinery will be shipped in summer 2024 for installation.



*A visualization of Energy Dome's CO<sub>2</sub> Battery process*



*Real-size rendering of the CO<sub>2</sub> Battery plant*



*Patrice Mauger (left), Head of Region Europe at MAN Energy Solutions, and Claudio Spadacini (right), CEO of Energy Dome, signing the Memorandum of Understanding (MoU)*

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**About MAN Energy Solutions:** 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.

**About Energy Dome:** Energy Dome is at the forefront of redefining long-duration energy storage with its CO<sub>2</sub> Battery. This is the only storage technology on the market available today, offering the right combination of efficiency, cost, scalability and that's viable globally. With a modular approach and site-independent footprint, CO<sub>2</sub> Batteries use readily available, off-the-shelf components from reliable, existing supply chains, providing a scalable pathway to store massive amounts of intermittent renewable energy and accelerate the energy transition. The company has collected funding from investors such as ENI, CDP, the European Union, Neva, Barclays and many others who believe in this ambitious project and it's commercialising the CO<sub>2</sub> Battery on all five continents and in over 40 countries.