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Redefining Sustainability: Redox Flow Batteries Leading the Charge in Energy Storage Solutions

The urgency for a swift transition towards sustainable energy systems has been starkly highlighted in the recently released World Energy Outlook 2023 by the International Energy Agency (IEA). As the global community steers towards sustainable energy transitions to combat climate change, the focus sharpens not only on the end-use of technologies but also on their inherent design and the materials employed. Redox Flow Batteries (RFBs) stand out as a paradigm of how sustainability can be embedded at the core of energy storage solutions, beyond just their functionality.

A notable advancement in the domain of RFBs is the development of membranes devoid of Per- and Polyfluoroalkyl substances (PFAS), which are known for their persistent environmental impacts. By eliminating the use of PFAS components, the new generation of Redox Flow Batteries significantly mitigates potential ecological hazards, marking a significant stride towards truly sustainable energy storage.

Furthermore, the innovative shift towards a metal-free electrolyte composition is a testimony to the industry's commitment to reducing environmental footprints. Traditional metal-based electrolytes often entail mining practices that are detrimental to the environment and rely on finite, crucial resources. The advent of metal-free electrolytes in RFBs not only alleviates the dependency on environmentally harmful practices but also circumvents the potential scarcity of critical metals.

Redox flow batteries will play an important role in the energy transition due to their ability to store renewable energy over several hours. The almost unlimited scalability of redox flow batteries predestines them to be used as grid storage for energy transition, for example, to shift solar energy for consumption during the night.

KEMIWATT and MANN+HUMMEL announced a strategic partnership to develop a new generation of Redox Flow Batteries.

As part of this strategic partnership, MANN+HUMMEL and KEMIWATT teamed up to install a Flow Battery System in China, the largest energy storage market in the world, which will be used at a manufacturing facility near Shanghai.

“This partnership is strategic for KEMIWATT and for the critical long-duration stationary energy storage industry while the shift towards renewable energies accelerates all around the world. Using MANN+HUMMEL’s new PFAS-free Ion Exchange Membranes in our Organic Flow battery further solidifies KEMIWATT’s unique value proposition to offer to our customers the safest, 100% recyclable, and most environmentally friendly long-duration energy storage solution in the market, avoiding the use of rare earth or special materials,” says Guillaume Chazalet, President and CEO of KEMIWATT.

“I’m absolutely delighted about our collaboration with KEMIWATT, as it marks a significant step towards contributing to a sustainable energy solution. Together we are pioneering the first utilization of cutting-

edge technology that will shape a greener future for generations to come,” says Cedric Dackam, President and General Manager Membrane, Water & Fluid Solutions.

About:

KEMIWATT is the French specialist of stationary energy storage based on its Organic Redox Battery technology with recyclable electrolytes. Incorporated in 2014, KEMIWATT develops and commercializes its batteries to propose solutions to infrastructure and intermittent energy production applications ranging from 10s of KWh to 100s of MWh scale. KEMIWATT solutions are today installed in France and Italy and will soon be deployed in Sicilia and China. Based in Rennes, KEMIWATT is supported in its development by Demeter Investment Managers, GO CAPITAL, Pierre-Yves Divet, and SATT Ouest Valorisation.

MANN+HUMMEL is a leading global company in filtration technology. Under its two business units Transportation and Life Sciences & Environment, the Ludwigsburg-based Group (Germany) develops intelligent filtration and separation solutions that enable cleaner mobility, cleaner air, cleaner water, and cleaner industry. Thus, the 1941 founded family-owned company makes an important contribution to a clean earth and the sustainable use of limited resources. In 2022, over 22,000 employees at more than 80 locations generated a turnover of EUR 4.8 billion.