Energy storage for microgrids denmark

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NEST is a research infrastructure for the development of energy system transition soft- and hardware. It is supported by the Danish National Council on Research Infrastructure, NUFI.

NEST serves as a pivotal research infrastructure aimed at advancing both the development and integration of technologies essential for the energy system transition, including both software and hardware solutions. This initiative is backed by the Danish National Council on Research Infrastructure, NUFI, highlighting its significance in the national research landscape.

In Denmark and globally, Power-to-X (PtX) technologies are a focal point of research due to their potential in sustainable energy solutions. While the fundamental electrolyzer technology has seen considerable progress, there remains a need for further advancements in efficiency and durability. Consequently, there"s a clear demand for additional research on integrating PtX technologies on a larger scale with renewable energy sources, hybrid storage solutions, and the existing utility grid.

At Aalborg University, the department AAU Energy is set to create a pioneering test and demonstration platform. This platform will connect a pilot-scale PtX production facility with a hybrid renewable energy storage system, situated at the Port of Aalborg. This initiative will allow for comprehensive studies and optimization of the entire energy conversion chain. The primary objective is to design scalable hybrid renewable energy power plants that incorporate advanced energy storage technologies and PtX solutions, ensuring stability amidst fluctuating energy supplies.

Concurrently, CROM is dedicated to the development of a microgrid storage test facility. This will encompass a variety of energy storage technologies, power electronics converters, and real-time control and monitoring systems. The microgrid developed will work in conjunction with the PtX facility, positioning the physical and virtual platform as a holistic development and demonstration environment.

This strategic approach underscores the collective effort to push the boundaries of energy transition technologies, underlining the commitment to a more sustainable and efficient energy future.

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