

Flow batteries were shown to have the best rate between costs and performance according to today's technological status, as low as \$0.06/kWh, which is close to DOE's \$0.05/kWh target. Lithium-ion batteries hold the second place with \$0.07/kWh, followed by zinc battery varieties, e.g. ZnMnO 2, with \$0.08/kWh followed by the first ever

Oregon-based flow-battery developer ESS Inc. says it is learning from its existing deployment projects to scale up and modify its long-duration energy storage (LDES) technology to meet a wider variety of requirements.



Long-duration energy storage (LDES) is the linchpin of the energy transition, and ESS batteries are purpose-built to enable decarbonization. As the first commercial manufacturer of iron flow battery technology, ESS is delivering safe, sustainable, and ???

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ESS Inc is the only manufacturer and holder of patents on its flow batteries, which use an iron and saltwater electrolyte in rugged systems that can deliver long-duration energy storage (4-12 hours" duration) over many years without the degradation that lithium-ion batteries experience with use, in particular from frequent and deep cycling.

The company has developed the most reliable, longest-lasting vanadium flow battery in the world, with more than 500 megawatt-hours installed or in development worldwide, and more than 1,000,000 hours of demonstrated performance.







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SOLAR°

The iron flow battery's first deployment in Australia is underway through a partnership between ESI and Queensland government-owned energy company Stanwell Corporation. A 1MW/10MWh system is being trialled at a Stanwell energy innovation hub, with installation underway since late last year.



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ESS's energy storage solutions, backed by an industry-leading warranty, have a 25-year design life with unlimited cycling and zero capacity fade. ESS iron flow batteries have no risk of thermal runaway. Safe and sustainable electrolyte means minimal need for secondary containment. Safer ESS's **Energy Warehouse products**



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US-based ESS Inc. (ESS) and Australia's Energy Storage Industries (ESI) have formed a partnership to assemble and distribute large-scale iron flow batteries across the Oceania region. Under an agreement signed in 2022, ESS will initially supply Energy Warehouse systems manufactured in the United States to ESI.

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1MWH





ESS Inc, the US-headquartered manufacturer of a flow battery using iron and saltwater electrolytes, has launched a new range of energy storage systems starting at 3MW power capacity and promising 6-16 hours discharge duration.

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