New LDES Council Report Finds Up to 140 TWh of Long-Duration Energy Storage Needed to Enable Grid Net Zero by 2040 at Lowest Cost

With ESS Inc. as a contributing author, report details how LDES will play a crucial role in limiting the rise in global temperatures to 1.5°C.

WILSONVILLE, OREGON- Nov 23, 2021 ESS, Inc. ("ESS" or the "Company") (NYSE:GWH), a U.S. manufacturer of long-duration batteries for utility-scale and commercial energy storage applications, announces the publication of the Long-Duration Energy Storage (LDES) Council's LDES report, with ESS as a contributing author and founding member. The LDES report documents how the world's power systems can become carbon net-zero by deploying long-duration energy storage systems to store renewable power such as wind and solar.

The newly formed CEO-led Council, which debuted at COP 26, published the report to detail the application of LDES technologies, the flexibility requirements needed in high-renewables future power grids, and the investment and unlocks required.

"Long-duration energy storage technology is essential for enabling grid decarbonization at scale," said Eric Dresselhuys, ESS Inc. CEO. "This report provides insightful, actionable information to help accelerate transformation of the world's energy systems. ESS is proud to be a founding member of the LDES Council and to be delivering solutions today that will help our clients in achieving their net-zero carbon objectives."

The report provides beneficial information for governments and grid operators on how LDES technologies can help achieve decarbonization at the lowest overall cost to society. It offers the following conclusions and deployment suggestions:

- 85-140 TWh of long-duration energy storage (>8 hours) can be deployed globally by 2040 to enable power grids to become carbon net-zero, eliminating between 1.5 to 2.3 Gt of CO_2 currently produced annually. This will require an estimated investment of $1.5 trillion to $3 trillion.
- With LDES, renewable sources (rather than fossil fuels) can address grid energy imbalances, which is equivalent to 10-15% of total emissions in today's power sector.
- A suggested LDES deployment plan over the next decades can coincide with recent pledges to deliver net-zero nationally, including the commitment by the UK for a net-zero power system by 2035, and similar commitments by the US, Australia and India with later timescales.

- There is increasing momentum behind LDES deployments, with around $3 billion invested in LDES technology companies in the last five years, and an expected 25-35 GW /1TWh of capacity to be deployed globally by 2025 with approximately $50 billion investment.

ESS collaborated with 24 other founding Council members in creating the report. The Council's findings were based on advanced power systems modeling using more than 10,000 data points supplied by LDES Council technology providers. The findings were developed in collaboration with McKinsey & Company as its knowledge partner, who supported insight development and analysis.

To view the full LDES report, visit ldescouncil.com/publication

About ESS Inc.

ESS Inc. (NYSE: GWH) designs, builds and deploys environmentally sustainable, low-cost, iron flow batteries for long-duration commercial and utility-scale energy storage applications requiring from 4 to 12 hours of flexible energy capacity. The Energy Warehouse™ and Energy Center™ use earth-abundant iron, salt, and water for the electrolyte, resulting in an environmentally benign, long-life energy storage solution for the world's renewable energy infrastructure. Established in 2011, ESS Inc. enables project developers, utilities, and commercial and industrial facility owners to make the transition to more flexible non-lithium-ion storage that is better suited for the grid and the environment. For more information, visit www.essinc.com.

About the LDES Council

The LDES Council is a global, CEO-led organization that strives to accelerate decarbonization of the energy system at lowest cost to society by driving innovation, commercialization, and deployment of long-duration energy storage.

The LDES Council provides fact-based guidance and information to governments, industry, and broader society, drawing from the experience of its members, which include leading energy companies, technology providers, investors, and end-users.

Full List of 24 founding members:

Alfa Laval, Ambri, Azelio, Baker Hughes, BP, Breakthrough Energy, CellCube, Ceres Power Holdings PLC, Echogen Power Systems, Energy Dome, Enlighten Innovations Inc., EOS Energy Enterprises, Inc., ESS Inc., e-Zinc, Form Energy, Inc., Greenko Group, Highview Power, Malta Inc., NEOM, Quidnet Energy, Redflow Limited, Rio Tinto, Siemens Energy, Stiesdal

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This communication contains certain forward-looking statements, including statements regarding ESS' and its management team's expectations, hopes, beliefs, intentions or

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