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## 5<sup>th</sup> International Conference on

## STATIONARY ENERGY STORAGE INDIA

Focused on the roadmap & outlook for stationary energy storage

## CONFERENCE ON Solution 17 APR

Time: 09:00 AM - 6:00 PM Venue: Mahatma Mandir, Convention and Exhibition Centre, Gandhinagar, Gujarat



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Energy storage plays a crucial role in ensuring grid stability and reliability. It supports renewable energy integration, helps in decarbonization and emission reduction, optimizes costs, improves efficiency, and enhances overall resilience. Since solar and wind power are intermittent energy sources, their output depends on weather conditions. Energy storage bridges this gap by storing energy when renewables generate excess power and supplying it when generation drops, ensuring a continuous power supply. It also enhances grid stability by absorbing surplus energy during peak generation and releasing it during high demand, reducing fluctuations and improving overall reliability.

The Government of India has been actively supporting the energy storage sector. According to the National Electricity Plan (NEP) 2023, India will require an energy storage capacity of 82.37 GWh, with 47.6 GWh from PSP and 34.72 GWh from BESS by 2026-2027. This requirement is further expected to increase to the projected storage capacity requirement will significantly rise to 411.4 GWh, including 175.18 GWh from PSP and 236.22 GWh from BESS by 2031-32. To accelerate growth, thegovernment has introduced a Viability Gap Funding (VGF) scheme for the development of 4,000 MWh of BESS by 2030-31. The scheme provides financial support of up to 40% of the capital cost, with a total outlay of INR 9,400 crore, including INR 3,760 crore in budgetary support.



IESA is working with central and state government departments from past 12 years towards growth of the energy storage sector in India and constantly advocating on the importance of creating the energy storagetarget for India.

Furthermore, the Ministry of New & Renewable Energy (MNRE) has planned to invite bids for 50 GW of renewable energy capacity per year from FY 2023-24 to FY 2027-28, creating opportunities across the electricity ecosystem, including generation, transmission, and distribution.

The stationary energy storage sector witnessed remarkable growth in 2024. A total of 32 tenders, with a combined energy storage capacity of 67 GWh linked to 18 GW of renewable energy, were issued by various authorities, including SECI, NHPC, GUVNL, RVUNL, and SJVN. These tenders comprised 19 BESS projects with a total capacity of 16.6 GWh and four PSP projects amounting to 50.5 GWh. Among these, 11 standalone BESS projects totaling 8.8 GWh were announced, though 2 GWh of capacity was later canceled due to compliance issues.

The year 2024 saw significant developments in the energy storage space. A total of 32 tenders were floated, representing 1.7 times increase in ESS capacity tendered compared to 2023. Additionally, three projects with a total capacity of 178 MWh were commissioned, accounting for 81% of the total capacity commissioned that year. With this, India's total commissioned BESS capacity now stands at approximately 0.22 GWh. Power Sale Agreements (PSAs) were signed for six projects totaling 29 GWh, doubling the total capacity signed between 2018 and 2023. The year also saw the awarding of 18 projects with a cumulative capacity of 21.1 GWh, achieving a 75% success rate. A new policy was introduced to promote pumped hydro storage (PSP), with specific budgetary support of INR 17.5 million for its development. The year also marked the first competitive bidding for non-lithium-ion and long-duration energy storage (LDES) technologies, led by NVVN and GUVNL. The central VGF of INR 3,800 crore for standalone BESS was extended, benefiting eight states with a total capacity of 6 GWh, along with CPSUs receiving another 6 GWh.

The progress has continued into 2025, with 2 GWh of BESS projects announced in January by GUVNL, NHPC, and Telangana Power Generation Corporation Limited (TGGENCO). Of this, 1 GWh is supported by the central VGF, reflecting the ongoing expansion of India's energy storage market.

The India Energy Storage Alliance (IESA) has been actively working with central and state government agencies to accelerate the growth of the energy storage sector. In addition to mainstream storage technologies, IESA is also focusing on alternative storage solutions, including flywheels, compressed air energy storage (CAES), gravity storage, and thermal storage for stationary applications. The organization has played a key role in shaping India's energy storage policy, which is expected to be finalized by the Ministry of Power soon. IESA is closely collaborating with its member companies, energy storage technology providers, battery manufacturers, renewable energy developers, state nodal agencies, utilities, and tendering authorities to develop the energy storage market in India.

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