



WORKSHOP ON

ENERGY STORAGE

Sustainably Integrating 500 GW of Renewables into Grid and the Role of Energy Storage

22- 23 August 2024| Courtyard by Marriott, Hinjewadi, Pune

Workshop Brief

During the COP-26 held in Glasgow, Hon'ble Prime Minister of India has announced 'Panchamrit' which inter alia include achieving about 50% cumulative electric power installed capacity from non-fossil fuel-based energy by 2030 and net-zero by 2070. Majority of these capacities would be coming from solar and wind energy sources, which are intermittent in nature and possess challenges with the grid integration. Energy Storage technologies are necessary to address these challenges of intermittency and also reduce the Renewable Energy (RE) curtailments. As per the National Electricity Plan (NEP), Central Electricity Authority (CEA) has estimated the requirement of 236 GWh of Battery Energy Storage System (BESS) and 175 GWh of Pumped Hydro Power (PHP) by 2032.

In order to create an awareness about the benefits of energy storage and have a detailed discussion with states/ central agencies and to understand their plans for increasing renewable penetration in their respective states in a sustainable manner, a series of workshops have been planned under the Accelerating Smart Power and Renewable Energy in India (ASPIRE) Programme, of the India-UK strategic partnership. The first of such workshop was held during 27-28 April, 2023 at Gandhinagar, Gujarat and the second one under this series was held during 13-14 July, 2023 at Hyderabad, Telangana. The third workshop under this series was held during 22-23 August, 2024 at Pune, Maharashtra.

The workshop was inaugurated in the presence of **Shri Dinesh Dayanand Jagdale** (Joint Secretary, MNRE), **Dr. Mohommad Rihan** (DG, NISE), **Dr. Kadambari Balkawade** (DG, MEDA), **Shri Rajeev Sharma**, (DDG, BIS) and **Shri Nishant Singh** (Senior Advisor, FCDO). The workshop was attended by around 60 participants, including representatives from central & state agencies, PSUs, academic & research institutes, and private sector.

The inaugural session was followed by the technical sessions starting with a presentation by KPMG which has provided an overview of the need for energy storage, BESS fundamentals, different energy storage technologies, steps involved in the BESS supply chain, various use cases of BESS, insights into deployment costs. IESA in their presentation has further highlighted the progress in energy storage deployment in India and the expected future outlook. The technical session was followed by a session covering the global perspective on BESS, emphasising the importance of gender inclusion in the energy storage sector and two presentations by UK companies focussing on recycling of Lithium-ion batteries and potential of solid-state and sodium battery technology for long duration energy storage (LDES). The next session focussed on different battery technologies emphasising their role in Energy Storage sector for Indian grid. The next session focussed on experience sharing from the BESS projects installed in India which focussed on the details of learning and the challenges faced during installation and operation of BESS. During the last session, an open-house discussion with the participants was held, where participants shared their opinions and discussed their doubts on various topics related to energy storage.

On the second day of the workshop, a site visit to **research facility of KPIT Technology Ltd. at Pune** was organized. The KPIT team gave a detailed presentation on their approach for developing SIBs in their research facility in Pune and further informed about their plan for commercialisation of the batteries in India and technology benchmarking with other battery chemistries. Subsequently, the participants got to witness the various prototype cell, packs, raw materials, and other components developed by KPIT technologies.

The workshop was a huge success wherein a broad range of issues related to BESS and related emerging technologies were discussed and deliberated which has provided a strong foundation to promote planning for BESS deployment in a sustainable manner. The participants have expressed their satisfaction and shared the positive feedback about the workshop.

