



WORKSHOP ON ENERGY STORAGE

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

2 December 2024 | Venue: Hyatt Regency (The Family Room), Bhikaji Cama Place, New Delhi

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 to 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 & other relevant stakeholders and to understand their plans for increasing renewable penetration 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. The second workshop 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 fourth workshop under this series was held on 2nd December, 2024 at New Delhi. The workshop was inaugurated in the presence of **Shri Ajay Yadav** (Joint Secretary, MNRE), **Shri Barun Kumar Ray** (Additional Chief Secretary, Govt. of West Bengal), **Shri Ghanshyam Prasad** (Chairperson, CEA), **Ms. Laura Aylett** (Head of Climate and Energy, British High Commission), **Ms. Archana Chauhan** (Head-Energy Sector Reforms, FCDO) and **Shri Nishant Singh** (Senior Advisor, FCDO). The workshop was attended by around 75 participants, including representatives from central & state govt. agencies, PSUs, academic & research institutes, and private sector.

During the inaugural session, a report on 'Assessment of the Global Landscape for Sodium-Ion Batteries and Their Potential in India' was also launched. The report covers aspects across the Sodium-ion battery (SIB) ecosystem, including technology, markets, supply chains, manufacturing, policies, and more. The report also identifies areas to address to support deployment of SIBs and provides targeted recommendations on the same.

Key aspects of the report

	Sodium-ion technology overview
	Market assessment and potential
	Manufacturing capabilities and sourcing of critical minerals
	Policy and regulatory environment
	UK capabilities in the BESS sector
	Recommendations for India



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. After this, a panel discussion on ‘Achieving 200+ GWh of battery energy storage systems by 2030’ was held which included the representatives from Government of India, Industry, Think Tank, Utility and Consultancy. The panel discussion was followed by presentations from UK companies focussing on importance of utilising second life batteries, key learnings identified from scaling up battery manufacturing in international markets and innovation across the battery sector. This was followed by a session on different storage technologies including Sodium-ion batteries, Flow batteries and Liquid Air Energy Storage technologies. The session on storage technologies was followed by an experience sharing session which included presentations on learnings from installed BESS projects at Kachchh, Modhera and BHEL R&D Centre (Hyderabad), focussed on the details of learning and the challenges faced during installation and operation of BESS.

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.

