



WORKSHOP ON

# ENERGY STORAGE

The Role of Battery Energy Storage System (BESS) in Sustainably Integrating Renewable Energy Into the Grid

13- 14 July 2023| Mercure Hyderabad KCP, Hyderabad

## Workshop Summary

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 required 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 26.7 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 to understand their plans for increasing renewable penetration in their respective states in a sustainable manner, a series of workshops have been planned for DISCOMs and Grid Operators 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 in Hyderabad, Telangana.

The second workshop was inaugurated by **H.E. Mr. Gareth Wynn Owen** (British Deputy High Commissioner to Andhra Pradesh and Telangana), **Shri J.K. Jethani** (Senior Director, MNRE), **Shri N. Janaiah** (VC & MD, TSREDCO) and **Shri Nishant Singh** (Senior Advisor, FCDO). The workshop was attended by around 60 participants, including representatives from DISCOMs, SNAs, other central and state government departments, academic institutes and private sector.

The inaugural session was followed by three technical sessions starting with a presentation from KPMG on different energy storage technologies, manufacturing landscape, global overview, policy and regulatory best practices, insight into technology deployment costs, India's potential for energy storage etc. The second technical session was covered with case study presentations by Grid Controller of India Limited, NLC India Limited and developers on grid systems integration, experience of implementing BESS projects in India and learnings regarding various benefits of BESS. The third technical session has covered aspects related to BESS supply chain, manufacturing, safety and Li-Ion technology alternatives by various battery manufacturers. In addition, two technical presentations were also made by global companies covering aspects related to international development on battery safety, data analytics, testing standards and Sodium-Ion batteries.

On the second day of the workshop, a site visit was organized to 1 MWh BESS pilot project installed at BHEL Research & Development (R&D) facility, Hyderabad. **Ms. Shyamala Venkataraman** (GM, BHEL R&D) welcomed all the participants and briefed about the initiatives of R&D centre of BHEL in developing pilot project which includes three different types of battery technology installations namely Lithium-Ion, Advanced Lead-Acid and Vanadium Flow Battery in their campus, which was coupled with 500KW solar PV installation within the facility. After that, AGM (BHEL R&D) has delivered a detailed presentation on the project background and technical details followed by a Q&A session with the participants wherein queries related to the project were discussed and addressed. After the presentation, the participants visited the project location to understand the technical and operational parameters.

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

