

Role of Battery Energy Storage System (BESS) in Electricity Distribution

The inaugural session started with introductory remarks by Mr. A K Saxena, Senior Fellow & Director, Electricity & Fuels Division, TERI, who addressed the role of BESS in the distribution system to help Discoms in providing continuous, reliable and affordable power to consumers.

Ms. Moutushi Sengupta, Director (India Office), MacArthur Foundation, mentioned about the need of R&D in areas of energy efficiency, storage, renewable energy, EVs etc. and thanked TERI for taking up this initiative.

Mr. Ghanshyam Prasad, Chief Engineer, Ministry of Power, Government of India, stressed the need of BESS in maintaining grid security with increasing RE penetration, in his special address. Dr. P C Pant, Scientist 'F' & Director, Ministry of New & Renewable Energy, Government of India in the key-note address, touched upon the need to develop the entire BESS ecosystem i.e., R&D, Marketing, appropriate business models, and manufacturing support. He also talked about Draft National Energy Storage Mission.

Dr. Anindya Narayan Biswas (IAS), Commissioner, Department of Power & Non-Conventional Energy Sources, Government of West Bengal, in the inaugural address cited global case studies of BESS at the distribution-level, and their replicability in case of West Bengal's distribution network.

Prof. (Dr.) S C Srivastava, Department of Electrical Engineering, Indian Institute of Technology, Kanpur, emphasised the need of storage in facilitating a transition towards cleaner technologies.

Dr. Ajay Mathur, Director General, TERI concluded the session by stating that a high RE penetration would require a portfolio of flexibility options including BESS.

The dignitaries also released a book titled "DSM Action Plan for MESCOM based on Load Research", followed by a video on Demand-Side Management.

Mr. Alekhya Datta (Fellow & Area Convener, Electricity and Fuels Division, TERI) highlighted the importance of BESS at the distribution-level that set the context for a panel discussion that followed. The session chair (Mr. K Ramanathan, Distinguished Fellow, TERI) and panel moderator (Dr. Sajid Mubashir, Scientist 'G' of DST) set the tone of the discussion by mentioning the key points on which each panellist would provide his/ her viewpoints from their perspective.

Starting off from the private utility's perspective, Mr. Amal Sinha (CEO, BRPL) explained the present scenario of power distribution in Delhi and how BESS can be a solution, given the increasing power demand and its dynamics. Mr. Amitava Sen (CE, PIDD of WBSEDCL) also put forward a public utility's take on BESS and its applications. He also showcased how West Bengal has been moving towards energy storage options in the face of increasing demand. Mr. Arun Kumar Mishra (Director, National Smart Grid Mission) explained how smart grid technologies can facilitate the implementation of BESS at the distribution-level. He also put forward the importance of regulatory interventions towards the creation of a BESS ecosystem.

Giving the manufacturer's perspective, Mr. Hiren Pravin Shah (Senior Director, Delta Electronics Ltd.) started with highlighting the approach a utility must adopt towards sizing and securing investments for implementing a BESS project. Mr. Samujjal Ganguly (General Manager, Exide Industries Inc.) remarked on the significance of proper battery technology selection vis-à-vis the

application. From the project financing viewpoints, Ms. Aanchal Kumar (Energy Economist, EESL) remarked on the importance of debt financing for BESS projects. She also cited examples of some innovative business models, such as battery-as-a-rental or battery as a service, for securing the utility's investments.

Dr. Rahul Walawalkar (President, India Energy Storage Alliance) concluded the session by summing up the key points on distribution-level and India's leadership, and also thanked TERI for taking up an important issue for a productive discussion.