





ESI 2014: Recommendations to Policy Makers







Introduction

The India Energy Storage Alliance (IESA) witnessed a stronger participation of various industry stake holders, right from the policy makers to the end users at the recently concluded 2nd international conference & expo, Energy Storage India 2014, at New Delhi. The key industry participants appreciated the reinforced will of MNRE and other policy makers to introduce energy storage at a large scale in India.

The three-day event kicked-off with a series of workshops which covered different topics namely Energy Storage 101, Microgrids and Power Quality Issues and Solutions for Commercial & Industrial customers. In parallel, International Energy Storage Policy and Regulations workshop was hosted by the IRENA (International Renewable Energy Agency) for policy makers from Asia-Pacific region. During the inauguration of IRENA workshop, Dr. Upendra Tripathy, Secretary, MNRE (Ministry of New and Renewable Energy) outlined the vision of MNRE on renewable energy growth and need for energy storage for various applications in the country. He addressed challenges of renewable energy integration to the grid, scheduling of power generated by RE (renewable energy) sources and providing energy access to over 300 million people in the off-grid community in the country during next 5 years. Mr. Gurbuz Gonul, Acting Director, Country Support Programme, IRENA provided overview of IRENA's efforts on developing energy storage roadmap for renewable integration. This effort was launched in March 2014 at Energy Storage Conference in Dusseldorf. The 2nd stake holder consultation took place in Japan in November and IRENA workshop in India was the 3rd and final stake holder consultation for IRENA. This was followed up by four round table discussions to identify best practices and international co-operation on opportunities for large scale storage and for RE integration and small scale storage for powering the remote micro-grids. The roundtable session covered both technical and policy issues. The consolidated recommendations from this session are being compiled by IRENA and would be submitted to MNRE officials in the coming weeks.

On the day one of the conference, both the delegates and the speakers were really excited after the keynote speech of Mr. Tarun Kapoor, Jt. Secretary MNRE, as he acknowledged that the role of energy storage is very crucial for growth of renewable energy and off-grid supply in India. Mr. Tarun Kapoor also released a special report developed by IESA and Shakti Foundation on "Role of Energy Storage Technologies in providing ancillary services: Improving Power Quality and Reliability of Indian Grid" in presence of Dr. Pramod Deo (Ex-Chairperson, CERC) & Mr. S. K. Soonee (CEO, POSOCO). Mrs. Varsha Joshi, Jt. Secretary MNRE, who is leading efforts on drafting national energy storage roadmap, had a roundtable meeting with industry leaders from US, Germany, Japan, Australia and India to discuss inputs for the national storage policy and invited these companies to expand their manufacturing operations in India by assuring that energy storage is a top priority for Indian government considering initiatives on renewables, energy access, smart cities as well as electric mobility. IESA members were encouraged by the response of industry leaders and their recommendations to MNRE and other policy makers. Throughout the conference, many ideas and recommendations were discussed by electricity consumers, project developers and energy storage







manufacturer. Most of these recommendations were regarding change in policy regime to make the energy storage market in India cost-effective and developing manufacturing ecosystem for advanced energy storage in India.

During the inauguration of the ESI 2014, Dr. Rahul Walawalkar, Executive Director of IESA, laid out a vision of reimaging Indian's energy infrastructure during next decade using energy storage and microgrids. He also expressed confidence that over next 5 years, India can not only be seen as a large market for these advanced technologies, but can become a global hub for manufacturing of these technologies and meet needs of not only Indian users, but also help in faster adoption of storage around the globe. As the thought leader for adoption of energy storage in India, IESA, through this document has made a sincere effort to collaborate and list down various recommendations made by the key industry participants to the central government and the policy makers.







Recommendations

- 1. National level policy framework is required to provide a clear signal to technology developers and manufacturers about need of energy storage in India, quantum of the requirement as well as technical performance requirements.
- 2. There is a need to establish business models for storage integration in India. Technical demonstrations could be part of this process, but around the globe most of the technologies have been demonstrated already, so no need to reinvent the wheel.
- 3. Introduction of policy document by CERC to introduce ancillary services in India, parallel to the UI market. Recommendations were made that there should be separate mechanisms for ancillary services (such as frequency regulation and operating reserves) vs penalties for energy deviations (through UI or real time energy market).
- 4. Ancillary services could be introduced either through centralized procurement by system operators or through market mechanism through electricity markets.
- 5. Technology specific Feed-in-Tariff to be introduced to promote different ESS technologies in the market. If this FiT scheme is not accepted by the power distribution companies then 'Viability Gap Funding' scheme can be introduced along with acceptable FiT rates.
- 6. To create market for different energy storage technologies, the custom duties need to be slashed as in case of solar PV panels and inverters. Otherwise, the storage technologies, most of them manufactured outside India would not be able to compete with domestic lead acid batteries.
- 7. Introduction of AD (Accelerated Depreciation) scheme for integrating energy storage equipment with renewable energy resources.
- 8. Most of the manufacturers are looking to localize their products and manufacture them in India, but need to assess the market needs during 2-3 years where customer education is also a critical part for developing the market. During this phase import duties need to be relaxed, so that market development can take place at faster pace.
- 9. Project funding is a big issue for developers of the totally isolated micro-girds. A proper funding scheme should be introduced by the Ministry of Power / MNRE for totally and partially isolated microgrids.
- 10. Many of the microgrid operators have complained that the bill payments in the rural areas are not regular and it makes the project financially unviable. In such cases provision of counter guarantee should be made by the central or the local government to safeguard interests of the developers and the operators.
- 11. There is no electricity tariff mechanism in place for the end users who are part of microgrid. Therefore, a tariff mechanism needs to be designed for microgrids, taking into consideration its size and source of power generation.
- 12. There is a need for rationalization of electricity prices and introducing TOU / Real time pricing mechanisms as well as demand charges that can provide transparent price signals to users for optimizing costs.







- 13. Special amendment need to be made in Electricity Act of 2003 to introduce energy storage system as a source of power generation/load/power system equipment. Classification of ESS as a load or a generation source or an equipment in power system has been a big debate in the industry and necessary steps should be taken by the policy makers to identify ESS as either of the mentioned entities.
- 14. Energy storage can reduce system costs by optimizing the transmission and distribution upgrades. We need to address potential conflict of energy storage as a transmission asset by separating economic vs technical criteria for operations.
- 15. Partially or fully connected (to the grid) microgrids are considered as a franchisee. They should be considered as a licensee and should get all the benefits available under 'Open Access' scheme.
- 16. There is a need for standardization of requirements, so that economies of scale could be deployed for bringing down costs of the systems. Currently individual projects/ states are coming up with their own standard specifications which increase the system design and engineering costs.
- 17. There is need for training for educating different stake holders including policy makers, renewable developers, system integrators, C&I customers on the opportunities.
- 18. There is a need for synchronization of polices across various existing government schemes, which can open up huge market for storage technologies and bring down the costs. These include:
 - a. Deendayal Upadhyaya Gram Jyoti Yojana (DDGJY)
 - b. 100 Smart Cities scheme
 - c. Restructured Accelerated Power Development and Reforms Program (R-APDRP)
 - d. TRAI recommendations for telecom towers
 - e. Open Access policy
 - f. SEZ / township policy
 - g. National Electric Mobility Mission
 - h. Make in India / Electronic Cluster schemes
 - i. National Solar Mission & national Wind mission
 - j. Green Corridors
- 19. For government procurement, the selection criteria should change from L1 (lowest capital cost) to lowest lifecycle cost to optimize system costs and provide incentives for advanced technologies for scaling up their production capabilities.

