

IESA Activity Report 2013-14



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India Energy Storage Alliance (IESA)

The India Energy Storage Alliance (IESA) was launched in 2012 by Customized Energy Solutions to promote Energy Storage and Micro grid technologies and their applications in India. IESA does this by creating awareness among various stakeholders to make the Indian industry and power sector more competitive and efficient, and by promoting information exchange with the end users to assist with more informed decision making. IESA also provides insights to technology developers and system integrators on the policy landscape and business opportunities in India through frequent interaction with key stakeholders. With response received from the industry across the globe, the IESA is quickly gaining a strong foothold across various stakeholders and technology providers.

IESA Activities

During last 2 years, we have focused on building a strong foundation for understanding the need for energy storage and micro-grids in India. We have also focused on building relationships across the stakeholders through sharing of information of latest trends in technologies and applications as well as business models through direct one on one interaction with various policy makers as well as presentations at numerous national and international events. We are helping create awareness as well as shape policies both at national and state level through participation in various working groups and taskforces. These include National Taskforce for Renewable Integration set up by Central Electricity Authority, India Smart Grid Forum set up by Ministry of Power, Working Group on energy storage for Maharashtra Electricity Regulatory Commission and Standing Committee on energy storage and hybrids by Ministry of New and Renewable Energy.

IESA members include technology developers, system integrators, project developers, social entrepreneurs, investors, large users as well as research groups and universities. **Current IESA**

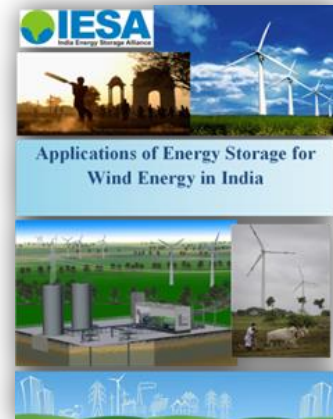
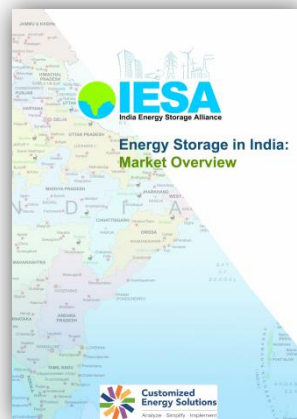
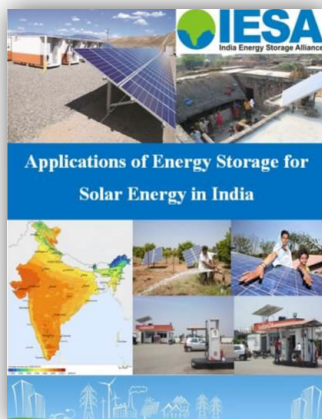
Members include



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India Energy Storage Alliance (IESA) had a very eventful second year (2013-14), including successful launch of Energy Storage India conference & expo in December 2013. IESA is working on creating awareness about energy storage and microgrids through various knowledge sharing initiatives like webinars, Information Bulletins, IESA – Emerging Technology News magazine, Energy Storage Project Database and creation of IESA-KPN resource platform. To give you an overview of our activities for the year 2013-14, here we have listed some of our major activities.

1. IESA has compiled the most comprehensive assessment of market potential for energy storage and micro-grid technologies in India for 2013-2020 and released '**Energy Storage India: Market Overview Report - 2013**'. This assessment takes into consideration the current opportunities as well as detailed overview of various growth scenarios and key government initiatives such as National Solar Mission and National Electric Mobility Mission. Our initial estimates suggest a 15-20 GW market potential for energy storage technologies for applications ranging from 5-10 kW for distributed telecom towers or residential backup systems to MW scale systems for C&I applications or even larger systems for renewable integration and ancillary services.



2. IESA research team has also released additional reports including:
 - Applications of Energy Storage for Solar Energy in India
 - Applications of Energy Storage for Wind Energy in India
 - Applications of Energy storage for Telecom Towers in India
3. IESA hosted the **2nd IESA Technology tour** from April 15th to April 20th, 2013 to encourage one on one dialogue between technology companies and key Indian stake holders. IESA brought together delegates from leading energy storage and emerging technologies companies such as

Applied Material, Imergy Power (formerly Deeya Energy), S&C Electric Company, Urban Electric Power, United Technologies (UTC), BVES (German Energy Storage Alliance) and US India Business Council for the 2nd tour.

The week-long tour included various round table discussions with over 100 representatives from C&I customers, utilities, renewable developers, regulators, financial institutions and various trade organizations. The IESA delegates also participated in additional networking opportunities through relevant panel discussions conducted at 3 co-located conferences (EcoBuild in Mumbai, SmartElec in Vadodara and South Asian Cities Summit in New Delhi) during the week.



4. IESA was invited to showcase advances in energy storage and microgrid technologies at Innovation Showcase Pavilion at Clean Energy Ministerial on 17th-18th April in New Delhi. The Innovation Showcase Pavilion (ISP) highlighted innovative products and services that can accelerate the global deployment of clean energy. The ISP was inaugurated on the evening of 16 April by Dr. Farooq Abdullah, India's Minister of New and Renewable Energy, and U.S. Energy Secretary Steven Chu presiding over a ribbon-cutting ceremony. The CEM is the only regular meeting of energy ministers from 20 largest economies in the world at which they exclusively discuss clean energy.



5. As per our regular activity we conduct **Webinars for IESA-KPN members** to share knowledge and opportunities in Indian Market. Some of our past webinars include

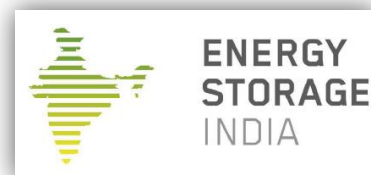
- ESS (Energy Storage System) Integration with Wind Energy- India Perspective
- ESS (Energy Storage System) Integration with Solar Energy- India Perspective
- ESS (Energy Storage System) Integration with Telecom Towers in India
- IESA Road Map and current opportunities for energy storage in India
- Incremental Levelized Cost of Energy Storage (LCOE)
- Renewable Energy Storage Technologies for India organised by USAID and IESA

- 6. Through monthly **IESA-Information Bulletin**, we provide **Industry and Technology news** to all our members. It also includes IESA featured events where IESA members can get special discount to participate.
- 7. IESA team has uploaded **100+ research papers, presentations, industry reports, case study and white papers** under resource category for its members through secure login access on IESA website (<http://indiaesa.info>). We are working with members to incorporate their feedback to screen and rank these resources to improve the usability of this vast resource for all our members.

8. India Energy Storage Alliance (IESA) signed a **partnership Memorandum of Understanding (MoU) with Strategen Consulting, LLC (“Strategen”) for International Energy Storage Database (IESDB)**. The DOE’s IESDB is a publicly accessible database of worldwide energy storage projects and policies, and is the go-to place for unbiased, accurate, and up to date information on energy storage projects and policies. IESA is helping to list the Indian Energy Storage Projects in the database. Some of the projects are already listed and you can find the details on both the websites www.indiaesa.info and www.energystorageexchange.org .



9. **IESA hosted India’s 1st Energy Storage conference in December 2013**, which was attended by over 300 participants from 12 countries and has generated lots of interest on energy storage and micro-grid opportunities in India. Most of the companies who participated in the event have provided very strong positive feedback, and are looking forward to continuing the discussion for implementation projects. We also saw a very strong interest in developing long term strategic partnership, which is essential in developing this sector. Here is a link to post show report: http://esiexpo.in/PDF/PSR_ESI_2014_4-3-2014.pdf . Bloomberg TV- India also hosted 30 minutes program based on the conference. Here is the link to the program:

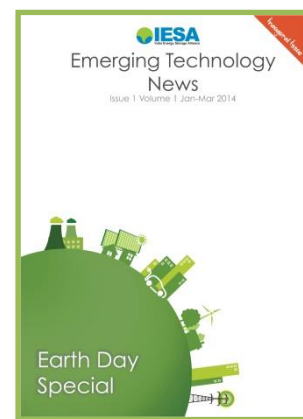


<http://www.youtube.com/watch?v=nJLOcyi8uoM> .



10. We are very much thankful to all our IESA-KPN members for active participation in **One on One Call** in the month of January 2014. It was helpful to IESA team to understand their needs. Based on the discussion and interaction with IESA-KPN Members IESA started new features like enlisting 'India Energy Storage business opportunity' and publishing 'IESA magazine – Emerging Technology News'.

11. To spread the knowledge among all stake holders and to create a market for energy storage, **IESA started quarterly magazine name Emerging Technology News (ETN)**. IESA has recently released inaugural issue of "Emerging Technology News (ETN)" as quarterly magazine for India Energy Storage Alliance. It covers articles from different domain areas such as Micro grids, Smart cities, storage for DR, Smart Grid and Storage for Renewable Integration. Apart from articles it also includes case study on technology and national & international happenings in energy storage sector. The Magazine was inaugurated on the Earth day and was also publicized at different recent national and International conferences such as Energy Storage Germany.



12. Recently we started another feature for IESA members, as **opportunity (RFP/Tender) related to emerging market India**. All IESA members can access this page through their login credentials at IESA website.

13. IESA represented Indian market and IESA members at various National and international events. Some of the conferences, workshop mentioned here

- South Asian Cities Summit- April 2013, New Delhi, India
- 5th India Smart Grid Summit- April 2013, New Delhi, India
- Renewable World- April 2013, New Delhi, India
- Smart Electric- April 2013, Vadodara, Gujarat, India
- Energy Storage Association(ESA) Annual Conference- May 2013, California, USA

- 3rd Grid-Scale Energy Storage-July 2013, Brussels, Belgium
- IPPAI Regulators and Policymakers Retreat- August 2013, Goa, India
- Energy Storage North America- September 2013, California, USA
- World Renewable Energy Technology Congress & Expo- Sept 2013, New Delhi, India
- 8th Sustainability Solutions Summit- October 2013, New Delhi, India
- InterSolar India- November 2013, Mumbai, India
- Eilat Eilot Energy Storage & Management Forum- November 2013, Israel
- NattBatt Annual Meeting & Symposium- January 2014, California, USA
- IRENA Workshop-2014, USA
- ARPA-E Energy Innovation Summit- February 2014, Meriland, USA
- Energy Storage, Germany- March 2014, Dusseldorf, Germany
- Power Gen- May 2014, New Delhi, India
- Energy Storage Association(ESA) Annual Conference- June 2014, Washington DC, USA
- Renergy June 2014, Chennai, India
- Asia Clean Energy Forum- June 2014, Manila, Philippines
- Energy Storage China- June 2014, China

14. India Energy Storage Alliance (IESA) is founding member of Global Energy Storage Alliance

(GESA): Global Energy Storage Alliance (GESA) is established to Advance International Collaboration on Clean Energy Policies and Programs. The newly created Global Energy



Storage Alliance (GESA) has been established as an international non-profit organization to bring together many of the world's leading energy storage and clean energy industry associations to advance education, collaboration, and proven frameworks about the benefits of energy storage. Its co-founders are the U.S. Energy Storage Association (ESA), California Energy Storage Alliance (CESA), China Energy Storage Alliance (CNESA), Germany Energy Storage Association (BVES), India Energy Storage Alliance (IESA) and the Alliance for Rural Electrification (ARE).

15. ESA joined standing committee on energy storage and hybrids solutions formed by Ministry of New and Renewable Energy (MNRE), Govt. of India

Increasing the penetration of wind and solar energy in the grid required development and use of electricity energy storage technologies and hybrid solutions for storage and grid stability, to make renewable power more firm and reliable. The world over electrical storage systems are being developed to provide ancillary services such as grid frequency regulation, voltage support and operating reserves, thereby enhancing grid stability and reliability.

In the aforesaid context, Ministry of New and Renewable Energy has constituted a standing committee on energy storage and hybrid solutions to explore solutions for renewable integration challenges in India. IESA has been invited to join the committee as a member and Dr. Rahul Walawalkar, Executive Director IESA is in the panel as expert to contribute to the standing committee.

Recently, India witnessed world's largest electoral battle. As a result on May 16 2014, Mr. Narendra Modi lead party received decisive mandate to form the government. Under this government India is expected to witness strong infrastructural investment in both public and private sector. There is also great expectation from this government related to power and energy sector. IESA will work closely with policy makers for speedy implementation and suitable financing opportunities for energy storage sector in coming years.

Thanks to our supporting Partners

