

International Renewable Energy Agency Workshop

## Battery storage costs & market outlook to 2030

Dusseldorf Energy storage Europe 2017

Halle 8b Forum area (entrance north B or D)

15:30-17:30, 15<sup>th</sup> March 2017

Renewable energy is now recognised as a key solution in the global response to climate change and for sustainable development generally. At the same time, a new day is dawning in the ways we produce and consume energy. The increase in the deployment of variable renewable power generation technologies and electric vehicles is accelerating this change and also providing increased prominence to electricity storage. IRENA projects that battery storage for electricity capacity could increase from less than 1 GW today to 250 GW by 2030 (REthinking Energy, 2017).

Battery storage can play multiple roles in the energy transition. Today it is already an integral part of off-grid solutions which are now the economic source for off-grid electrification either in solar home systems or mini-grids. While recent cost reductions mean storage is either increasingly economic for providing grid services, or on the cusp of competitiveness. Longer-term, electricity storage will be needed for very high levels of VRE integration to allow for periods of low wind and solar production over days or weeks.

The International Renewable Energy Agency (IRENA) is in the process of completing a report “Battery electricity storage costs and market outlook to 2030” that provides an overview of current and emerging electricity storage technologies (with a focus on battery storage), their costs and performance, as well as the cost reduction potential to 2030 and the market outlook for battery storage. The findings will inform IRENA’s 150+ Member States and provide valuable information for energy modellers, researchers, policy makers and decision makers about the rapid changes in the very dynamic fields of battery storage technology, applications and business models.

This workshop is an opportunity to join with IRENA to get an overview of the reports preliminary findings and help shape recommendations in the report. IRENA would like to get industry’s and other key stakeholders’ feedback on the results through the workshop. As such, the workshop is designed to be as interactive as possible with ample time allocated for Q&A sessions after the presentations. Presentations will be given by IRENA experts and the external stakeholders that have been working with IRENA on the analysis

**The workshop is open to registered participants and a free exchange of ideas is encouraged on such topics as:**

- Existing market and technology options, their performance and the market segments/applications (e.g., self-consumption, off-grid and utility-scale grid services, etc.) in different geographic markets. What are the technologies most suited to different markets/applications, how will this

change as deployment scales, technology innovations are commercialized and costs fall? What battery chemistries offer the most opportunity for improvement and cost reduction?

- How will cost and performance change between now and 2030, just as importantly what cost and the breakdown of costs into components will drive these cost reductions?
- Are the cost reduction and technology performance improvements identified by technology reasonable for 2030? Will a dominant technology emerge, or will niche markets remain? What are the key uncertainties and sensitivities that need to be taken into account and how could they change the implications for market growth?
- What are the key applications that will drive the market to 2030 and how sensitive is overall market growth to technology improvements and cost reductions compared to the potential impact of supportive policy frameworks?
- What are the existing different potential revenue streams for electricity storage and the business models for unlocking the value of energy storage in different applications and markets? How will these change in the period to 2030?

## **Agenda**

- 15:30-15:50 *The Energy Transition: The Role of Energy Storage*
- Michael Taylor, Senior Analyst, IRENA
  - Q & A
- 15:50-16:20 *Overview: Battery storage cost reduction potentials and market outlook to 2030*
- Eun young So, Programme Officer, IRENA
  - Q & A
- 16:20-16:50 *Battery storage technology improvements and cost reductions to 2030: A Deep Dive*
- Kai-Philipp Kairies, Head of Department, RWTH Aachen University
  - Q & A
- 16:50-17:20 *Policy implications with cost drop of battery storage*
- Harald Diaz-Bone, Storage market analyst
  - Q & A