

ENERGY STORAGE ISSUES AND OPPORTUNITIES

15 February 2011

International Energy Agency
9, rue de la Federation
Paris 75015

This workshop is the third in a series of events designed to examine strategic, cross-cutting energy technology, policy, or related issues identified by the IEA Committee on Energy Research and Technology (CERT). Expertise draws upon the CERT energy technology network - working parties, experts' groups and multilateral technology initiatives – and involves renowned energy experts worldwide. Results of these workshops will serve to inform activities within the International Low-Carbon Energy Technology Platform.

Rationale

Energy storage is central to all energy sectors. It makes energy efficiency achievable in the buildings and industrial sectors. With the greater integration of variable renewable energy sources, it can help to balance the electricity network. Storage also reduces fossil fuel consumption in the transport sector through hybrid and electric vehicles. However, energy storage is not currently central to technology-specific or sector-specific plans.

Therefore the aims of this workshop is to explore the state-of-the-art R&D activities and their relevance for the market and the industry with a view to bring together stakeholders to catalyse partnerships and activities, share experience on best-practice technologies and policies and review progress on low-carbon technology deployment to help identify key gaps in energy storage relevant policy making and international co-operation.

This workshop links to the IEA's International Low-Carbon Energy Technology Platform, in particular by catalysing the need for co-operation between the different actors in the energy storage space and enhancing the dialogue between representatives from emerging economies, investors, political decision takers and IEA experts.

This event also benefits from leadership of the Implementing Agreement for a Programme of Research and Development on Energy Conservation through Energy Storage (Energy Storage IA), one of the IEA's 41 multilateral technology initiatives.

Scope

Ensuring that energy storage technologies bring these solutions to R&D planners and policy makers is the focus of this workshop. The discussion focuses on the following aspects of this cross-cutting topic:

- **Technology: State-of-the-Art:** What are the gaps and overlaps in current storage technologies?
- **Transformation: From Storage to Savings:** What are the barriers to greater market deployment? How can they be overcome?
- **Integration: Storage in Energy Strategies and Plans.** How can we ensure systematic assessments of energy storage together with technology plans? What measures have proven to be effective in integrating energy storage into national and international strategies and plans?

The day will conclude with a discussion on recommendations and next steps.

Expected Outcomes

Based on the views of energy storage technology experts, taking into account the sectoral considerations and lessons learned from integrating storage into national and international plans, a strategy for energy storage will be designed and pathways for implementation will be explored.

Target Audience

This event is designed for members of the CERT Energy Technology Network, energy technology policy planners, R&D planners, and technology experts from all buildings, electricity networks, industry, and transport sectors from IEA Member and non-Member countries.

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AGENDA

9:00		Motivation and Rationale	<i>Peter Cunz, Chair, IEA Committee on Energy Research and Technology (Switzerland)</i>
TECHNOLOGY: STATE-OF-THE-ART			
Moderator: Astrid Wille, Jülich Research Centre (Germany)			
9:15	1	Storage Technology Issues and Opportunities	<i>Andreas Hauer, ZAE Bayern Center for Applied Energy Research (Germany)</i>
9:45	2	Progress with Energy Storage	<i>Imre Gyuk, Department of Energy (United States)</i>
10:15	3	Thermal Storage: Residential and Commercial Buildings	<i>Luisa Cabeza, University of Lleida (Spain)</i>
10:45		<i>Coffee Break</i>	
11:00	4	Options for Integrated Systems Stationary Batteries for Networks Balancing Grids with Storage	<i>Wolfgang Woyke, E.On (Germany)</i> <i>Hitoshi Koyabu, TEPCo (Japan)</i> <i>John Cheng, CLP Holdings (Hong Kong)</i>
11:30	5	<i>Panel Discussion: What are the gaps and overlaps in current storage technologies?</i>	
12:00		<i>Lunch</i>	
TRANSFORMATION: FROM STORAGE TO SAVINGS			
Moderator: Rolf Schmitz, Federal Office of Energy (Switzerland)			
13:00	6	Break-out Discussions - Sectoral Issues and Opportunities	
		Buildings <i>Art Snijders, If Technology</i> <i>Michael Taylor, IEA</i>	Industry <i>B. Müller, Bosch-Rexroth</i> <i>Cecilia Tam, IEA</i>
			Transport and Electricity <i>Lew Fulton, IEA</i> <i>David Elzinga, IEA</i>
14:00	7	Feedback from sectoral discussions (10 mins each)	
14:30	8	<i>Panel Discussion: What are the barriers to greater market deployment? How can they be overcome?</i>	
15:00		<i>Coffee Break</i>	
INTEGRATION: STORAGE IN ENERGY STRATEGIES AND PLANS			
Moderator: Peter Taylor, Head, Energy Technology Policy (IEA)			
15:15	9	Storage in National Strategies	<i>Henry Kenchington, Electricity Delivery and Energy Reliability, Department of Energy (United States)</i>
15:45	10	Modelling Energy Storage Demand	<i>Karl-Peter Felberbauer, Joanneum Research, Forschungsgesellschaft (Austria)</i>
16:15	11	International Strategies Energy Storage	<i>Rodica Loisel, JRC SETIS (Netherlands) and Bruno Prestat, EDF R&D (France)</i>
16:45	12	<i>Panel Discussion: How can we ensure systematic assessments of energy storage together with technology plans? What measures have proven to be effective in integrating energy storage into national and international strategies and plans?</i>	
DEFINING A STRATEGY AND PATHWAYS FOR IMPLEMENTATION			
17:15	13	Defining a Pathway for Energy	<i>A. Wille, Jülich Research Centre (Germany)</i>
17:45	14	Summary and Conclusions	<i>Bo Diczfalusy, Sustainable Policy and Tech. (IEA)</i>
18:00		<i>Close</i>	