



4th Annual Conference on

GRID-SCALE ENERGY STORAGE

Trends, Developments, Issues and Opportunities

July 1-2, 2014, Steigenberger Grandhotel, Brussels, Belgium

Hosted by:

Global **Transmission** Report

Information and analysis on the global electricity transmission industry

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MISSION

Energy storage is entering a new phase of growth as regulatory forces and technology developments attempt to establish it as an important element of the low-carbon energy future. Governments are more willing to offer financial and policy support and regulators have begun to mandate storage in the utility planning process. Several technology firms have been able to achieve the price and performance targets needed to be competitive. Storage projects have begun the transition from demonstration to commercialisation.

These developments have the potential to rev up the entire energy storage space. As a result, the debate on energy storage is moving away from technology to how best to integrate storage and capture new business opportunities offered by the emerging industry. Project developers have to now cope with new information and communication technology requirements to integrate their facilities into the grid. They also have to build an understanding of the legal issues and challenges involved and find solutions to make their projects bankable.

In response to these developments, Global Transmission Research will host its fourth annual conference on “Grid-Scale Energy Storage” on July 1–2, 2014 at Steigenberger Grandhotel, Brussels, Belgium. The objective of the conference is to learn how to best capture business opportunities in the emerging energy storage space.

The one-and-a-half day conference will have focused sessions and discussions featuring speakers representing a wide spectrum of experience, expertise and perspectives. The first day will be dedicated to analysing the developments that have taken place on the policy, regulatory, market and financing fronts. It will also have a special session dedicated to understanding the legal obligations that may need to be fulfilled in building energy storage projects.

The second day will feature key market-ready technologies as well as emerging technologies. It will also feature the information and communication technology requirements for integrating storage into the grid. There is also a dedicated session on project case studies to learn from the experiences in deploying energy storage solutions and understand the challenges involved.

The conference will provide an opportunity to interact with regulators, transmission system operators (TSOs), utilities, technology providers, researchers and project developers, and learn about the future prospects of grid-scale energy storage.

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Our previous conferences:

Global Transmission organised its first conference on “Grid-scale Energy Storage” on June 21–22, 2011 at Hotel Metropole, Brussels; the second on July 3, 2012 at Conrad Hotel, Brussels; and the third on July 1–2, 2013 at Steigenberger Grandhotel, Brussels. These conferences were attended by senior-level executives from leading organisations from over 17 countries across the world.

The organisations that participated in the last three conferences include: A123 Energy Solutions, ABB, AICIA, Alliander, Alstom Grid, Analog Devices, Ansaldo, Aster Capital Finance, Austrian Power Grid, Balfour Beatty, BAE Batterien, Baccari & Associates, Beacon Power, Bernard EnergyAdvocacy, Bloomberg New Energy Finance, Brattle Group, BSRIA Worldwide Market Intelligence, Bundesnetzagentur (BNetzA), Capricorn Venture Partners, Clean Horizon Consulting, CREG, CSIRO, Customized Energy Solutions, DNV KEMA, EDF, EFACEC, EirGrid, Ella, Electrovaya, Elektroprivreda HZHB d.d. Mostar, Emerald Technology Ventures, Emrol, ENDESA, Enel Trade Spa, Energa-Operator SA, Enrichment Technology Company, ENTSO-E, Eos Energy Storage, E.ON Gas Storage GmbH, Epsilon-Electric Fuel Ltd, EURELECTRIC, European Commission, European Association for Storage of Energy (EASE), Evonik Degussa GmbH, FIAMM SPA, First Solar, Fefer Petersen & Cie, Fluxys SA, Frontier Economics, Gaelectric Energy Storage, GDF SUEZ, Gravity Power, GreenPower, Heindl Energy, Highview Power Storage, Hungarian Energy Office, Hydrogenics Europe, IBGE (Brussels Regio for Environment and Energy), Internationale Freileitungsmontage AS, Isentropic, ITM Power UK, JP Elektroprivreda, JRC Institute for Energy, JSC “INTER RAO UES”, Kintech Synergy, Lahmeyer International GmbH, Macquarie Capital, Maschinenfabrik Reinhausen, MAVIR ZRT., Moody's, Mott MacDonald, NamPower, National Grid UK, Optimal Power Solutions, OmniCompete, Parker Hannifin Europe, PJM Interconnection, Publik Services Regulatory Commission, REC Systems Germany GmbH, Red Electrica De Espana, Regulation & Supervision Bureau, RENT A PORT ENERGY NV, Robert Bosch GmbH, RTE of France, RWE Effizienz GmbH, Siemens, Shun Hing Power T&E Co.SSE, Statkraft, Statnett, Storengy, Suzlon Energy, Technical University of Denmark, TECNALIA, Tema, Toshiba Corporation, Tractebel Engineering, Trina Solar, Terna SpA, University College Dublin, University of Birmingham, University of Leuven, University of Louvain, University of Warwick, VERBUND, VITO, VTT Energy, White & Case, World Bank, Younicos AG, ZBB Energy, etc.

AGENDA (Tentative)

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Day 1: July 1, 2014

Session	Time	Topics
	8:30-9:00	Tea/Coffee
Introduction	9:00-9:10	Introduction to the conference and welcome remarks
Policy, Legislative and Regulatory Developments	9:10-10:30	<ul style="list-style-type: none">❖ Review of new regulations, legislations and approaches to support energy storage in Europe, USA, China, Japan, etc.❖ Discussion on innovative rules and regulations to open up markets and create business opportunities for effective storage technologies and applications❖ Role that utilities and technology developers can play in shaping policy to boost energy storage
	10:30-10:45	Q&A and discussion with the panel
Break	10:45-11:00	Tea/Coffee break
Utility Perspectives	11:00-12:15	<ul style="list-style-type: none">❖ Business case for energy storage from a utility's perspective❖ Drivers for utilities to build and own energy storage facilities❖ Exploiting energy storage's multiple applications and value streams to capture new revenue and cost-saving opportunities❖ Resolving ownership and tariff issues for developing storage projects❖ Best practices in capturing new business opportunities offered by energy storage❖ Managing the investment risks associated with storage projects
	12:15-12:30	Q&A and discussion with the panel
Break	12:30-13:30	Lunch
Technology Showcase	13:30-14:30	<ul style="list-style-type: none">❖ New and promising technologies❖ Aligning technologies with utilities' needs and electricity market rules❖ Bankable and profitable energy storage applications
	14:30-14:45	Q&A and discussion with the panel
Legal Challenges and Contractual Obligations	14:45-15:30	<ul style="list-style-type: none">❖ Discussion on legal challenges in deploying energy storage projects and finding solutions❖ Defining contractual arrangements for energy storage and drawing lessons from existing models
	15:30-15:45	Q&A and discussion with the panel
Break	15:45-16:00	Tea/Coffee break
Financing Energy Storage	16:00-17:15	<ul style="list-style-type: none">❖ Drivers for investment in energy storage technologies and solutions❖ Impact of new energy market structures and frameworks on funding energy storage❖ Lenders' perspectives and criteria for funding the development and commercialisation of energy storage solutions❖ Experiences so far in funding energy storage projects
	17:15-17:30	Open floor and wrap-up

Day 2: July 2, 2014

Session	Time	Topics
	08:30-9:00	Tea/Coffee
Recap of Day 1	9:00-9:10	<ul style="list-style-type: none">❖ Recap of Day 1 and introduction to Day 2
Technology Developments	9:10-10:15	<ul style="list-style-type: none">❖ Technologies ready for commercial applications❖ Innovative solutions to make renewable energy and storage effective and viable❖ Next generation of energy storage technologies under development
ICT Requirements and Solutions for Integrating Storage	10:15-11:00	<ul style="list-style-type: none">❖ Impact of energy storage on future grid planning and operations❖ Technical requirements and solutions for integrating storage into the grid and maintaining flexibility❖ Optimal network designs for energy storage facilities
	11:00-11:15	Q&A and discussion with the panel
Break	11:15-11:30	Tea/Coffee break
Experiences, Learnings and Best Practices (Project Showcase)	11:30-12:45	<ul style="list-style-type: none">❖ Viability of storage – analysing returns on investment from an energy storage project❖ Experience so far in USA, Europe and elsewhere❖ Case studies of projects that are making progress and analysing their key success factors❖ Challenges and learnings for grid operators and utilities
	12:45-13:00	Open floor and wrap-up
	13:00-14:00	Lunch
	14:00	Close of Conference

WHO SHOULD ATTEND?

The conference is targeted at:

- ❖ Transmission system operators and utilities
- ❖ Regulators and policymakers
- ❖ Renewable energy developers
- ❖ Equipment manufacturers and information and communications technology providers
- ❖ Research and development organisations and individuals
- ❖ Technical institutes
- ❖ Industry consultants and solution providers
- ❖ Energy lawyers, law firms and legal counsels
- ❖ Investment bankers, private equity investors, bankers, venture capitalists and other financiers.

KEY BENEFITS TO PARTICIPANTS

The conference will have focused sessions to:

- ❖ Review new regulations, legislations and approaches to support energy storage in Europe, USA, China, Japan, etc.
- ❖ Discuss innovative rules and regulations to open up markets and create business opportunities for effective storage technologies and applications
- ❖ Understand the role that utilities and technology developers can play in shaping policy to boost energy storage
- ❖ Examine the drivers for utilities to build and own energy storage facilities
- ❖ Comprehend energy storage's multiple applications and value streams to capture new revenue and cost-saving opportunities
- ❖ Assess the impact of energy storage on grids and network operations and understand the technical requirements
- ❖ Evaluate the work done so far to design optimal network solutions
- ❖ Discuss the legal challenges in deploying energy storage projects and find solutions
- ❖ Understand contractual arrangements for energy storage
- ❖ Learn from the experience of utilities in building storage systems for renewable energy in Europe, USA and elsewhere
- ❖ Understand the lenders' perspectives and criteria for funding the development and commercialisation of energy storage solutions
- ❖ Analyse returns on investments from an energy storage project
- ❖ Explore the solutions ready for commercial applications and the next generation of energy storage technologies under development
- ❖ Discuss the challenges and learnings for utilities and TSOs.

Global Transmission Research is a leading provider of information and analysis on the global electricity transmission industry. We publish newsletters and reports. We also organise conferences on crucial issues and topical themes relevant to the transmission industry. We publish the **Global Transmission Report** (a monthly newsletter) and **Global Transmission Weekly** (a weekly update). We also operate the website www.globaltransmission.info. These products and services provide information on all the key developments, trends and issues in the sector.

We also publish industry-focused research studies such as the **Global Electricity Transmission Report** and the **Global High Voltage Transmission Projects Report**. The first report describes the existing state of, and the expected growth in, the electricity industry across the globe in terms of generation and transmission capacity. The second report features detailed profiles of key high voltage transmission projects either under construction or planned to be built by 2020 in over 90 countries across the globe.

So far, we have organised three conferences on “Grid-Scale Energy Storage” in Brussels, Belgium, and two on “Transmission Finance” in London, UK. These conferences received a strong response from speakers and delegates alike.

Our clients include leading organisations across the world such as EU GIG OÜ, ABB, Siemens, Alstom, GE Energy, Tractebel Engineering, ESB International, State Grid International Development, International Energy Agency, European Investment Bank, Nexans, Bechtel, Mott MacDonald, Balfour Beatty, Pöyry, Nexant, SNC-Lavallin, MidAmerican Energy Holdings Company, Maxwell Technologies, Power Grid Corporation of India Limited, Red Eléctrica de España, Terna, Elia, Reliance Energy, KEC International, Swissgrid, Brookfield, Statnett, Boston Consulting Group, El Sewedy Cables, National Contracting Company, Energinet, Energostroyaladka, CTEEP, EdF, Hyosung, AltaLink, Suez-Tractebel, MWB Shanghai, Xcel, Teshmont, Vattenfall, Dow Chemicals, Alberta Electric System Operator, AIC-USA, Hubbel Power Systems, EfacecEnergia, ISA InterconexionElectrica, Israel Electric Co., Trade Wind, Hythro Power, BHP Billiton, Eskom, EFACEC, UB Engineering, PJM Interconnection, BKW FMB Energie AG, Thomas & Betts Corporation, Fraunhofer-InstitutfürUmwelt-, Sicherheits- und Energietechnik UMSICHT, Cardiff University, ABEINSA, European Commission, KEMA, Volta River Authority, etc.

SPONSORSHIP (Limited to four organisations)*

This conference will provide an excellent opportunity for organisations to showcase their products and services. The deliverables include:

- Two delegate registrations (full conference)
- Table space at the conference
- Distribution of sponsor promotional material to each delegate
- Logo presence at the conference
- Acknowledgement on conference website
- A hyperlink to the organisation's website
- Speaker slot (If relevant, subject to approval of organisers)

** Available on a first-come, first-served basis.*

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DELEGATE FEES

The delegate fee is EUR1,500 for one participant; EUR2,700 for two; EUR3,900 for three; and EUR5,100 for four participants.

There is a 30 per cent “early bird” discount for those registering before May 9, 2014 and 15 per cent for those registering before June 6, 2014.

There is a special low fee for transmission and distribution operators; utilities; regulatory authorities; governmental/inter-governmental agencies and academic institutions. It is EUR600 per delegate for those registering before May 9, 2014; EUR700 per delegate for those registering before June 6, 2014; and EUR800 per delegate for those registering after that.

HOTEL INFORMATION

Steigenberger Grandhotel

71, Avenue Louise/Louizalaan 71

1050 Brussels, Belgium

Tel: +32 2 5424242

Fax: +32 2 5424200

Email: brussels@steigenberger.com

DELEGATE FEES

Delegates	Price before May 9, 2014	Price before June 6, 2014	Price after June 6, 2014
One delegate	€1,050	€1,275	€1,500
Two delegates	€1,890	€2,295	€2,700
Three delegates	€2,730	€3,315	€3,900
Four delegates	€3,570	€4,335	€5,100
Special category delegates*	€600	€700	€800

*Transmission and distribution operators; utilities; regulatory authorities; governmental/inter-governmental agencies and academic institutions.
(Fee includes lunch, tea/coffee on both days of the conference.)

REGISTRATION FORM

I would like to register for the conference

Please send me more information

NAME/DESIGNATION _____ COMPANY _____

MAILING ADDRESS _____

PHONE _____ MOBILE _____

FAX _____ EMAIL _____

PAYMENT OPTIONS

1. Credit Card: To make payments by credit card, please visit http://www.globaltransmission.info/shopping_cart.php

All credit card payments will be subject to standard credit card charges

2. Wire Transfer:

Beneficiary: India Infrastructure Publishing Private Limited
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Bank Address: R-47, Greater Kailash-1, New Delhi-110048, India
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Swift Code: HSBCINBB

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To register, email us to: registration@globaltransmission.info or visit us at www.globaltransmission.info

TERMS AND CONDITIONS

Payment Policy

Full payment must be received prior to the conference.

Cancellations

- Cancellations received in writing 30 days (May 30) before the date of the conference will receive a full refund, minus a service charge/administration fee of €150 or \$210. **We regret that no refunds will be made for any cancellations received less than 30 days prior to the conference.**
- Substitutions/name changes are welcome at no extra charge. Please send these in writing at least two days prior to the conference.
- **Disclaimer:** Global Transmission shall assume no liability whatsoever in case the event is postponed or cancelled due to a fortuitous event or unforeseen occurrence that renders the performance of this conference impracticable, illegal or impossible. For purpose of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency. Global Transmission's responsibility is limited to return of the registration fee only and is not liable for any cost in relation to travel and accommodation.
- Please note that it may become necessary for reasons beyond the control of the organisers to make alterations to the content and timing of the programme or speakers.