



Energy Storage

29th February-1st March Luxembourg City, Luxembourg

Evaluating the Techno-Economic Feasibility
of Energy Storage Systems

2012

Key Topics:

- Energy Storage Policy & Regulatory Update
- Energy Storage Economics & Investment Strategies
- Key Established & Emerging Markets
- Energy Storage within Utility Strategy
- Energy Storage within TSO Strategy
- Storage Requirements in Smart Grids
- Role of Energy Storage in Micro-grids
- Renewables Case Studies
- Emerging Small & Medium Scale Technologies
- Large Scale Technological Developments



For Registration Contact:
Mohammad Ahsan
+44.20.7981.2503
mahsan@acieu.net



Event Sponsors



SGL GROUP
THE CARBON COMPANY

HYDROGENICS
Advanced Hydrogen Solutions

For information on available sponsorship & commercial opportunities contact:

Maureen Ignacio
+44 (0)20 7981 2508
mignacio@acieu.net

Energy Storage

29th February-1st March Luxembourg City, Luxembourg

Evaluating the Techno-Economic Feasibility of Energy Storage Systems



ACI's Energy Storage 2012 will once again bring together senior executives from power generation, TSOs, DNOs, utility companies as well as technology providers and

academia to evaluate the economic and commercial feasibility of energy storage within the conventional & renewable power industry.

The event will include case study examples of large scale renewables integration projects, emerging small & medium scale technologies as well as large scale technological developments in Energy Storage.

The key areas of discussion for the event will be:

- Energy Storage Policy & Regulatory Update
- Energy Storage Economics & Investment Strategies
- Key Established & Emerging Markets
- Energy Storage within Utility Strategy
- Energy Storage within TSO Strategy
- Storage Requirements in Smart Grids
- Role of Energy Storage in Micro-grids
- Renewables Case Studies
- Emerging Small & Medium Scale Technologies
- Large Scale Technological Developments

The two day conference will comprise a series of informative formal presentations from senior industry executives and experts, panel discussions encouraging information exchange between you and your peers and excellent networking opportunities allowing you to maximise the productivity of your two days at the event.



Who will attend?

Leading power generating companies, TSOs, DNOs and utilities including: managers and directors of energy storage, power generation, R&D and new technologies, renewable strategy, innovations and strategic project managers as well as business development executives from technical service providers, consultants, regulators and academia.

COMMERCIAL EXPOSURE OPPORTUNITIES



Showcase your storage technologies to the industry, with opportunities to demonstrate the capabilities of your latest products and services.

A wide range of opportunities are available, all of which can be finely tuned to match your exact requirements.

For information on available sponsorship and commercial opportunities contact:

Maureen Ignacio,
+44 (0)20 7981 2508
mignacio@acieu.net



EXCLUSIVE SITE VISIT

Tuesday 28th February 2012

Vianden Pumped Storage Plant – Unit 11

During the afternoon of Tuesday 28th February 2012 a limited number of conference attendees will have the opportunity to attend an exclusive site visit

*** There is no extra charge to attend the site visit. Please register your attendance for the site visit when booking for the conference***

Schedule of Site Visit:

12:00 – Registration for site visit at conference hotel in Luxembourg City

12:30 – Depart conference hotel

13:40 – Welcome address & company presentation by SEO/RWE, at their facilities in Vianden

14:00 – Guided tour of the plant facilities including technical explanations

15:00 – Closing remarks & refreshments

15:45 – Depart Vianden Plant

16:55 – Arrive conference hotel in Luxembourg City







Energy Storage

29th February-1st March Luxembourg City, Luxembourg

Evaluating the Techno-Economic Feasibility
of Energy Storage Systems

| | |
|--|--|
| DAY ONE: Wednesday 29th February 2012 | |
| 08.00 | Registration and Coffee |
| 08.45 | CHAIRMAN'S OPENING ADDRESS |
|  | |
| Jillis Raadschelders, Vice President Energy Storage, KEMA | |
| 09.00-10.15: SESSION ONE: | |
| Energy Storage Policy & Regulatory Update | |
| 09.00 | 'Presentation title & themes to be confirmed' |
|  | <ul style="list-style-type: none"> •Discuss EU policy affecting energy storage: a focus on EU 2020 targets and ECF Roadmap 2050 |
|  | <ul style="list-style-type: none"> •Clarification on legislations and policies in the renewables sector - to create a sustainable market for energy storage growth in the short, medium & long term. |
| Pierre Bernard, Head of Business Development, Elia Group & Cécile Musialski, Senior Associate Lawyer, Philippe & Partners and Bernard Energy Advocacy | |
| 09.30 | 'The role of storage in achieving the EU energy policy objectives' |
|  | <ul style="list-style-type: none"> •The EU policy framework and objectives on renewables •Energy roadmap 2050 and the role of renewables •Variable electricity generation - flexibility - storage |
| Joachim Balke, Policy Officer, EU Commission – DG ENERGY | |
| 10.00 | Panel Questions and Answers |
| 10.15-11.00: CONFERENCE PRESENTATION: | |
| Energy Storage Economics & Investment Strategies | |
| 'Grid Scale storage: can it become the backbone of utility grids?' | |
|  | <ul style="list-style-type: none"> •Ancillary services •Peak shaving •Backbone to replace baseload •The future image of a utility grid |
| David Anthony, Managing Director, 21 Ventures LLC | |
| 11.00 | Morning Refreshments |
| 11.30-12.45: SESSION TWO: | |
| Key Established & Emerging Markets | |
| 11.30 | 'Established and emerging markets for electricity storage' |
|  | <ul style="list-style-type: none"> •Key issues in the energy sector •The national and international opportunities and challenges for electricity storage" •Orderly progression or disruptive change |
| Anthony Price, Director, Swanbarton | |
| 12.00 | 'Presentation title & themes to be confirmed' |
| Anissa Dehamna, Research Analyst, Pike Research | |
| 12.30 | Panel Questions and Answers |
| 12.45 | Lunch |

| | |
|--|---|
| 14.00-14.45: CONFERENCE PRESENTATION: | |
| Energy Storage within Utility Strategy | |
| 'Aligning Energy Storage with the Strategic Utility Perspective' | |
|  | <ul style="list-style-type: none"> •Learn more about the motivation of a utility to implement storage •Get an idea how daily and seasonal storage could fit together •Discover a scheme of technically estimating the flexibility need in a case analysis |
| Erik Hauptmeier, Corporate Research & Development, Technologies – Power Networks and Storage, RWE AG | |
| 14.45-15.30: CONFERENCE PRESENTATION: | |
| Energy Storage within TSO Strategy | |
| 'Efficient and smart system operation' | |
| <ul style="list-style-type: none"> •Need for flexibility in the future energy system •Energy storage and smart control of power systems •Efficient integration and system operation | |
| Jan Ove Gjerde, Senior Vice President, Statnett | |
| 15.30 | Afternoon Refreshments |
| 16.00-16.45: CONFERENCE PRESENTATION: | |
| Storage Requirements in Smart Grids | |
| 'Energy storage in smart grids' | |
|  | <ul style="list-style-type: none"> •Latest developments & challenges of integrating energy storage into smart grids •Pilot experiences of smart grids in The Netherlands •Discuss necessary improvements to achieve a feasible application of storage in smart energy systems. |
| Petra de Boer, Principal Consultant New Energy Technologies, KEMA | |
| 16.45-17.30: CONFERENCE PRESENTATION: | |
| Role of Energy Storage in Micro-grids | |
| 'The Role of the Energy Storage in Micro-grids: CENER Case.' | |
|  | <ul style="list-style-type: none"> •The main points are: •Microgrids, applications and benefits •Energy Storage in microgrids •CENER Micro-grid |
| Raquel Garde Aranguren, Head of Energy Storage, Renewable Energies Grid Integration Department, CENER | |
| 17.30 | CHAIRMAN'S SUMMATION |
|  | |
| Jillis Raadschelders, Vice President Energy Storage, KEMA | |
| 17.40 | Close of Day One |



Energy Storage

29th February-1st March Luxembourg City, Luxembourg

Evaluating the Techno-Economic Feasibility
of Energy Storage Systems

DAY TWO: Thursday 1st March 2012

08.30 **Registration and Coffee**

08.45 **CHAIRMAN'S OPENING ADDRESS**

Jillis Raadschelders, Vice President Energy Storage, KEMA

08.55-10.10: SESSION THREE: Renewables Case Studies

08.55 'Distributed energy storage capacity of drinking-water networks: enhancing penetration and profitability of RES through a Virtual Power Plant (VPP) approach.'



- Barriers to RES penetration in Northern Italy
- The Virtual Power Plant (VPP) approach to maximize profitability of independently-owned power sources drinking water networks potential in terms of energy storage capacity
- STO.DRI.WA.N project: a pilot case in North Western Italy

Dr. Sergio Olivero, Head of SiTI's Security & Safety Research Area, Istituto Superiore sui Sistemi Territoriali per l'Innovazione (SiTI)

09.25 'Presentation title & themes to be confirmed'

Gerard Thijssen, Senior Consultant, Quanta Technology Europe

09.55 **Panel Questions and Answers**

10.10 **Morning Refreshments**

10.40-11.55: SESSION FOUR:

Emerging Small & Medium Scale Technologies

10.40 'Heat Storage Systems Based on Phase Change Materials'



- The key component for a sustainable energy recovery for discontinuous processes is a thermal energy storage
- How does the heat storage system works?
- Benefits and standardized heat storage units
- Customer values, e.g. model calculations
- Case study of 1st SGLs pilot plant - Xella Deutschland
- Process flow chart & Savings
- Summary

Thomas Gruenberger, Project Manager BD, SGL Carbon

11.10



- Battery storage implementation as Smart City pilot.
- Battery storage as source for Distributed Generation, power quality and customer backup.
- Operations issues and benefits of Battery Storage implementation.
- Battery Storage - Cons and pros for Utility.

*Igor Aronovich, Senior Deputy Operations Manager, National Dispatch, Israel Electric Corp

11.40 **Panel Questions and Answers**

11.55-12.55: PANEL DISCUSSION:

Why is Storage Operated on a Commercial Scale in the US & not in the EU?

Panel Members

11.55 'Hydrogen Storage - Innovation in Clean Energy Infrastructure.'



- Hydrogen (H₂) as a flexible way to store energy – short term & long term – for transport and stationary applications, on grid & off grid
- H₂ and electricity are complementary energy carriers.

Dr. Marcel Weeda, Senior Researcher Policy Studies, ECN, & Operating Agent for Task 28 - Large Scale Hydrogen Delivery Infrastructure, International Energy Agency Hydrogen Implementing Agreement (IEA HIA)

12.05 'Smart End-Use Energy Storage in the US'



- Wind Power Issues in the Pacific Northwest
- Demand Response: Energy Storage for the Electric Grid
- The Business Case for Demand Response
- Energy Storage in the US

Kalin Lee, Consultant, Ecofys US

12.15



- Israel road map for smart grid
- Smart city and demo center
- Importance of storage due to renewable integration in MV grid

*Kobi Yahav, Ph.D, Smart Grid Initiative Manager, Israel Electric Corp

12.25 **Panel Questions and Answers**

12.55 **Lunch**

14.00-15.50: SESSION FIVE:

Large Scale Technological Developments

14.00 'Presentation title & themes to be confirmed'

- Latest developments and challenges in large scale energy storage systems
- Results and lessons learned from storage projects around the world, looking at their OPEX & CAPEX
- A techno-economic focus on:
CAES

Otto Pirker, Vice-Chair Working Group Hydro, EURELECTRIC, Verbund-AHP

14.30 'Liquid Air Energy Storage'



- Non-geologically constrained, large scale, long duration energy storage.
- Pilot plant experiences of world first LAES plant
- Opportunities within the market place

Gareth Brett, Chief Executive Officer, Highview Power Storage

15.00 'Presentation title & themes to be confirmed'

Raymond Schmid, Global Market Strategist, Hydrogenics

15.30 **Panel Questions and Answers**

15.50 **CHAIRMAN'S SUMMATION**



Jillis Raadschelders, Vice President Energy Storage, KEMA

16.00 **Afternoon Refreshments & Close of Conference**

* Subject to final confirmation

With thanks to our sponsors:



Energy Storage

29th February-1st March Luxembourg City, Luxembourg

Evaluating the Techno-Economic Feasibility
of Energy Storage Systems

5 EASY WAYS TO REGISTER

Mohammad Ahsan
Tel: +44 20 7981 2503
Fax: +44 20 7593 0071
Email: mahsan@acieu.net

Web: <http://www.acius.net>
Mail: ACI Europe, 5/13 Great Suffolk Street, London, SE1 0NS

TERMS AND CONDITIONS

How to Register

Registrations must be received in writing or electronically at our secure web site. Please complete and mail or fax a copy of the registration form with a cheque or credit card number. Fee includes program materials, networking luncheon and refreshments.

Payment

Payment must be received within five business days of returning the signed contract. After receiving payment a VAT receipt will be issued. If you do not receive a letter outlining details two weeks prior to the event, please contact the Conference Coordinator at ACI Europe Ltd.

Discounts are available for multiple/group bookings. Please call +44 20 7981 2503 for more information

Cancellations

Substitutions are welcome up to 24 hours prior to the event. Cancellations must be received in writing no less than 3 weeks prior to the start of the conference; a full credit voucher towards a future ACI conference will be issued. Any cancellation received less than 3 weeks prior to the start of the event shall be deemed to be a breach of this contract by client, and accordingly, no credits will be given. Cancellations must be received in writing by mail or fax three weeks before the conference. Thereafter the full conference fee is payable. If for any reason ACI Europe Ltd decides to amend, cancel or postpone this conference, the conference fee will not be refunded. Furthermore, ACI Europe Ltd will not be responsible for covering airfare, hotel or other costs incurred by registrants. In the event that ACI Europe Ltd cancel or postpone the event, ACI Europe Ltd reserves the right to transfer this booking to another conference to be held in the following twelve months, or to provide a credit of an equivalent amount to another conference within the following twelve months. The construction, validity and performance of this agreement shall be governed in all respects by the laws of England to the exclusive jurisdiction of whose courts the Parties hereby agree to submit.

About ACI

ACI, a UK owned company, have been running successful conferences for the last 15 years in the USA. Headquartered in Chicago with offices all around the States, they run forums in varied fields and are market leaders in healthcare business conferences. Opening their European head office at the end of 2005, they have expanded rapidly and are launching a series of events covering the maritime, energy, oil and gas industries.

Venue: Luxembourg City, Luxembourg

Novotel Luxembourg Kirchberg
6, Rue du fort niedergruenevald L-2226 Luxembourg
Phone: + 352 42 98 48 1
H1930-re2@accor.com

The cost of accommodation is not included in the event fee. Preferential rates will be arranged with or near the event venue, and all confirmed delegates will be given details of how to book accommodation at this rate in due course.

Prices and Payment Information

Conference (Includes Documentation Packet)
Documentation Packet

29th February – 1st March 2012
Copies of all conference proceedings

£1395 + VAT
£395 + £25 P&P

Documentation Packet Available

You can purchase the **Energy Storage 2012** papers at just £395. Simply tick the box on the booking form, send it with payment and your copy will be on its way to you after the meeting. This important manual will be a source of invaluable reference for the future.

Discounted Registrations

Members and customers of all supporting organisations are entitled to a discount off their conference package.

For more information please call +44 20 7981 2503.

With Thanks to our Media Partners



Fuel Cell Europe

