Storage technology, economics, policy and implications for Australian energy markets

PLUS!

In-depth Learning Session A:
Examining the integration of electricity storage and the implications for stakeholders and practical scenario planning

In-depth Learning Session B:
Examining the latest developments in electricity storage technologies and the implications for the electricity market

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THE STATE OF PLAY FOR STORAGE TECHNOLOGIES IN THE ELECTRICITY MARKET
INTERNATIONAL KEYNOTE ADDRESS
09:00 Reducing barriers to the deployment and integration of energy storage
- Examining the drivers for the integration of storage in the California electricity market and an overview of other US state markets
- Defining challenges for developing regulation for the integration of energy storage in California for grid optimisation, renewables integration and GHG abatement
- Creating a framework for storage procurement and targets for deployment for the three key investor-owned utilities and the largest targets internationally for storage integration to grid
- Identifying and overcoming the gaps and barriers in legislation to promote non-discriminatory, cost-effective, transparent interconnection to the state grid

Carla Peterman
Commissioner
California Public Utilities Commission (Via videolink)

KEYNOTE ADDRESS
09:30 The emerging role of battery storage and other disruptive technologies in the Australian electricity market and the outlook for storage
- Examining the emergence of a sophisticated diverse utility business model and influence of distributive generation on electricity markets
- The transformation of energy consumers from passive consumption to empowered energy conscious and literate consumption systems
- Assessing the role and state of play for storage in Australia, implications for grid stability and flexibility and impact on the centralised grid business model
- Enabling a modern home energy storage ecosystem embedded with the smart and insight for choice, flexibility and control

Paul Fox
Chief Technology Officer New Energy
AGL

10:00 Forecasting the impact of battery storage, electric vehicles and fuel switching on the national electricity market
- Investigating the key policies and economic drivers for battery storage uptake
- Quantifying the potential impact of storage technology on operational consumption and maximum demand from the electricity grid
- Examining how emerging storage technologies are changing the generation mix and the opportunities for consumer engagement
- Monitoring and assessing the potential impact on reliability and security of supply
- Challenges for monitoring future uptake and adoption of emerging technologies

Nicola Falcon
Group Manager Planning
Australian Energy Market Operator

10:30 Morning tea

CHARTING THE TECHNOLOGICAL ROADMAP FOR ENERGY STORAGE
11:00 Examining the advantages and disadvantages of storage applications for economic and practical reasons
- Considering storage technology characteristics and their suitability for grid-connected applications in Australia
- Technical challenges and identified knowledge gaps that could limit the effective deployment of storage technologies in Australia
- Considering the potential uptake of particular technologies based on their relative technical maturity and relevance for Australian markets

Sam Behrens
Leader Demand Side Energy Technologies Research Group
CSIRO Energy Flagship

11:30 Enabling technological innovation to integrate storage in the energy market
- Developing standardisation and interoperability of communications and controls with existing utility control and communication systems
- Examining the current deployment models in the market and the technological barriers and challenges for advancing participation
- Managing data privacy between consumers and the grid

Panel Moderator:
Keith Orchison
Director
Coolibah Pty Ltd

Panelists:
Alistair Legge
General Manager Customer and Technology
United Energy and Multinet Gas
Thies F. Clausen
Senior Analyst Electricity Market Design and Renewable Energy
Agora Energiewende, Germany

12:10 Networking lunch

DEVELOPING REGULATION TO ENABLE DEPLOYMENT WHILE MAINTAINING THE INTEGRITY OF ENERGY MARKETS
KEYNOTE ADDRESS
13:10 Future regulatory impact of the integration of storage technologies in the electricity market
- Examining key regulatory issues for the deployment of new technologies by new and existing players and for integration of storage into the market
- Ensuring the market is flexible and resilient enough to respond to new market dynamics brought on by emerging technologies
- Incentives and disincentives in current regulation for business model evolution in response to technological change
- Strengthening the consumer protection framework to remain balanced and effective as technology changes how they engage with the sector

John Pierce
Chairman
Australin Energy Market Commission

13:40 Providing the appropriate level of regulation and regulatory certainty while encouraging storage innovation
- Implications for all levels of energy market as on-site generation, storage and advances in technology enables consumers to more actively manage use of energy
- Understanding how storage and other innovative products and services may impact energy selling models
- How the current framework can be applied to these new products and services and emerging energy models

Tony Pfeiffer
General Manager Effective Market Reform
Ergon Energy

ASSESSING THE VALUE AND COST EFFECTIVENESS OF STORAGE FOR ENERGY ECONOMICS
INTERNATIONAL PRESENTATION
14:40 Debating the value of energy storage against non-storage options
Agora Energiewende has commissioned a series of leading projects by a consortium of European energy experts to analyse the implications of Germany’s energy transition, the growth of renewables and in this context the potential advantages and costs for energy storage in this emerging picture.
- Making a meaningful comparison between the system, installation, integration and management costs for energy storage & alternatives
- Defining the need or value of storage for integration and variability management of renewables to the grid
- In an era of innovation and expansion of demand response strategies and systems can storage become a viable and cost effective option

Thies F. Clausen
Senior Analyst Electricity Market Design and Renewable Energy
Agora Energiewende, Germany

15:10 Afternoon tea

15:40 Evaluating the impact of advancing battery storage and other technologies on energy economics
- Assessing the economics of storage against existing assets and examining the payback period if adoption proceeds at pace
- Comparing the key elements that catalysed the solar boom including rising electricity prices and government incentives and how this would resonate for advancing storage adoption
- Considering the point at which economies of scale will begin to take effect with more production and innovations as cost of production and installation fall

Gerard Reiter
Executive General Manager Asset Management
TransGrid

16:10 Examining the impact of storage systems on demand side participation
- Enabling demand side participation to manage consumption, efficiency and reduce network investment
- Leveraging the ability to provide shared value to networks for efficient management of available capacity
- Overcoming system integration challenges for renewables

Jain MacGill
Director
Centre for Energy and Environmental Markets

16:40 Assessing storage profitability and the implications for the economics of energy markets
- Modelling the cost of storage, PV and electricity and other regulatory costs to understand the economics of storage
- Determining the economically optimal configuration in terms of technology, production costs, market conditions and demand
- Examining the factors that will determine cost going forward including retail and wholesale prices and access to the market
- Assessing the potential value systems that energy storage brings into play on different levels

Senior Representative
School of Economics,
University of Queensland

17:10 Closing remarks from the Chair
17:20 End of Day One & networking drinks
19:00 Official event dinner
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EXAMINING THE EVOLUTION OF NEW BUSINESS MODELS THAT ARE ADAPTING TO THE INTEGRATION OF STORAGE

KEYNOTE ADDRESS

09:00 Preparing for the changing dynamics of the modern electricity business model
- Operating in a dynamic new environment of consumers and distributed energy resources and increasing consumer engagement on price and technology
- Evolution of the design principles for new operating models in the electricity market and the supply and demand drivers for service and technological change
- Why the shifting business strategy to focus on regional priorities makes sense and how electricity storage will drive this transition
- How the convergence of localised renewable generation, energy storage, and smart software will change the business model of the future

Frank Tudor
Chief Executive Officer
Horizon Power

09:30 Comparing the relative benefits and implications of the three emerging storage ownership models for the electricity market
- Determining the emerging pathways for private ownership and the potential consequences for utilities and retailers
- Deploying batteries as an extension of energy infrastructure owned and operated by utilities and the functioning of such ownership with the wholesale electricity market
- Optimising the energy mix and costs through gentailer provision and ownership of battery systems

Phil Mackey
General Manager Solar and Emerging Businesses
Origin Energy

KEYNOTE PANEL

10:00 Posing potential changes to business models as distributors, networks and retailers adjust to expansion of storage
- Debating how far and how quickly utilities will engage to expand and integrate storage
- How prepared are traditional market and economic structures as storage offerings and options grow?
- Managing the infrastructure adaptations brought on by integration of storage
- Developing a business model that allows for flexibility to ensure the optimal level of investment in distributed storage to maximise multi stakeholder benefits

Panel Moderator:
Jim Snow
Executive Director
Oakley Greenwood

Panellists:
Frank Tudor
Chief Executive Officer
Horizon Power

11:10 Developing a clear view of the investment opportunities for battery storage
- Completeness of the investment case for storage considering technology, market conditions, applications and users
- Assessing the development and nature of the market, cost-competitiveness, operating risks and regulatory frameworks
- Creating innovative financial solutions to fund the storage market at different scales and levels of risk
- Translating the technical case for batteries into a business case that is investable

Zeno Atherton
Associate Director, Corporate and Project Finance
Clean Energy Finance Corporation

TECHNOLOGICAL INNOVATION SPOTLIGHT

11:40 Examining the economics of storage for multiple stakeholders in the energy chain
- Assessing the potential of increased storage uptake for reliability, demand response, transmission, flexible generation
- Increasing the penetration and value of renewables to individuals, network operators and investors
- Examining the importance and necessity of batteries within isolated renewable energy systems
- What will be the biggest challenge for suppliers, networks, generators and users?

Panel Moderator:
Jim Snow
Executive Director
Oakley Greenwood

Panellists:
Matthew Warren
Chief Executive Officer
Energy Supply Association of Australia

Gavin Duffy
Manager Policy and Research
St Vincent de Paul’s Society

John Bradley
Chief Executive Officer
Electricity Networks Association

The challenges for the deployment of Smart Meter Infrastructure (SMI)
- Considering the key technical requirements for SMI to enable effective technology selection
- Enabling the effective installation and testing of meter hardware and software, communications and back office systems to ensure that SMI is well integrated
- Managing data collection for effective collection, verification and storage of data from smart meters and the network under normal operating conditions
- Assessing the impact of deployment of SMI on the network operator, retailers and customers

Alistair Legge
General Manager Customer and Technology
United Energy and Multinet Gas

16:50 Developing low-cost, long-life battery technologies that can be installed on the electricity grid for resilient and reliable energy supply
- Comparing the pros and cons for lithium-ion and lead and batteries for stationary energy storage
- Surveying the energy storage options that are available today for the stationary power market, capacitor, compressed air, pumped hydro, flywheels and rechargeable batteries
- Comparing the differences in technical and economic characteristics of the battery types for different applications

Anthony Vassallo
Delta Electricity Chair for Sustainable Energy Development
University of Sydney

17:20 Closing remarks from the Chair and drawing of the lucky door prize!
17:30 End of Day Two and close of conference
Registration and morning coffee for both sessions is at 08:30 and sessions will conclude at 17:00. Lunch, morning and afternoon tea provided.

In-depth learning session A
Examining the integration of battery storage and the implications for generators, transmitters, distributors and retailers and practical scenario planning

This practical and interactive session is tailored for professionals in the energy sector who are directly involved in generating, transmitting, distributing and retailing in the energy market. This session will give you the opportunity to discuss the changes that storage and other disruptive technologies bring to customer expectations, engagement and participation in the energy sector and the consequent challenges, opportunities and strategies for the industry.

This in-depth learning session will provide you with the opportunity to discuss the emergence of the prosumer, the latest developments in a battery storage technologies, the cost and value proposition for deployment and usage, the impact on energy economics and the regulatory barriers for integration. Restructuring the charges for the use of distribution networks, supporting documentation to provide greater choice and control in how customers use the electricity networks and dealing with customers that send their self-generated electricity back into the grid are the challenges of the future energy market. This session will provide related practical scenario planning tools for key stakeholders.

Key topics and take away skills/benefits:
- Develop strategies to meet changing consumer expectations by implementing a more customer centric retail approach
- Discuss challenges and opportunities of the new prosumer trend
- Learn how to meet the new electricity customer expectations
- Highlight the implications of battery storage for the traditional value chain participants
- Develop better distribution approaches to achieve more transparent structural and operational performances
- Analyse increased customer awareness of power use and price sensitivity and their impact on the traditional utility businesses
- Identify opportunities to transform business models to face the challenges of changing consumer behavior

Facilitator:
Jim Snow
Executive Director
Oakley Greenwood

In-depth learning session B
Examining the latest developments in battery storage technologies and the implications for the electricity market

This value-packed session is designed for all stakeholders in the electricity market who want to deepen their knowledge of next generation battery technologies and want to gain insights into the latest developments for making storing power more efficient and less costly.

This engaging full day learning session will analyse the latest developments in electricity storage technology and will give attendees insights into the current capabilities of storage technology available in the market, the outlook for further development and an examination of possible timeframes for battery storage to become viable for energy storage.

From here, the session will focus on analysing how the development of distributed storage will impact the length of the energy supply chain and what the new role of the government needs to be in regulating this.

Key topics and take away skills/benefits:
- Examine the latest battery storage developments and how these might impact existing players in the market
- Analyse how quickly battery storage might become commercially viable for residential or commercial use
- Examine what sort of uptake battery storage could have among residential and/or industrial users and how regulation would need to respond to properly integrate this into the NEM
- Identify opportunities battery storage creates for utilities as well as the threats it may bring
- Gain insights into how solar cars and other battery based innovations may impact the way in which the NEM functions

Facilitator:
Anthony Vassallo
Delta Electricity Chair in Sustainable Energy Development
The University of Sydney

For details on your facilitator’s credentials please visit the speaker page on the event website www.questevents.com.au

Want to develop business at the event?
Speaking, sponsorship and exhibition opportunities available

The Electricity Storage Forum 2016 will bring together Australia’s leading energy sector leaders with policy makers, peak representative bodies and respected analysts to work towards satisfactory and sustainable outcomes for all concerned.

With a room full of key decision makers and buyers from the energy sector, you cannot afford to miss out on these key sales prospects. Attendees will be actively seeking new trends and technologies in electricity storage and other disruptive technologies to become more efficient, productive and innovative. The Electricity Storage Future Forum 2016 is your opportunity to place your technologies and solutions at the front of their mind. Maximise your marketing return on investment and tailor a sponsorship package to suit your needs.

It’s where the industry will meet. Can you afford not to be there?

Potential sponsors please note:
In developing the program and inviting speakers to this event, we researched extensively with stakeholders in the energy sector about the opportunities posed by the emergence of battery storage and the challenges for integration and we have designed an agenda specifically for them to discuss these at the event. By sponsoring this event you have a prime opportunity to demonstrate that you have their solutions at a time and place where they are actively looking.

For speaking, sponsorship or exhibition opportunities at the Electricity Storage Future Forum 2016, please contact Jon Treherne on +61(0)2 8188 7536 or e-mail jont@questevents.com.au

Visit www.questevents.com.au to download the sponsorship prospectus
The key benefits of attending:

- Get a considered view of the outlook for storage from all key market stakeholders
- Analyse the state of play for storage technologies, their emerging role in the Australian electricity market and the outlook for storage
- Examine how battery technologies are changing the generation mix and the nature of consumer engagement and participation with the electricity market
- Assess the value and cost effectiveness of storage and the implications for energy economics
- Explore the potential changes to the electricity business model for generators, distributors, networks and retailers
- Identify the barriers and challenges in the regulatory landscape for integration of storage into the market
- Explore the latest developments in battery storage technologies and the opportunities and threats this could create for current market participants

PLUS! The three pillars of any Quest event:

Meet: Australia’s leading policy makers, industry, peak representative bodies, respected analysts and end users from right across the energy market
Learn: From 25+ high profile speakers over 3 days — delivering you premium content and value that is second to none
Grow: Your professional network and create business development opportunities through face to face interaction

It’s what our events are all about....

Official Event Advisory Panel

Keith Orchison
Director
Coolibah Pty Ltd
(Chair)

Rainer Korte
Executive Manager Asset Management,
Electranet

Gavin Dufty
Manager Policy and Research
St Vincent de Paul’s Society

Jim Snow
Executive Director
Oakley Greenwood

Who should attend:

The Electricity Storage Future Forum will be attended by decision makers from stakeholder groups across the energy sector with an interest in storage technologies, distributed generation, new energy markets and other emerging technologies and will include:

- Federal and state governments and government departments
- Energy sector investors
- Electricity generators
- Electricity transmission, distribution and retail
- Large energy users
- Energy market analysts and professional services firms
- Energy technology and equipment vendors
- Investment banks
- Consumer organisations and experts

But don’t just take our word for it, hear what the speakers are saying about the event:

"The industry is actively seeking to innovate energy supply products including the application of storage to the network and evolve business approaches to add value for our customers as well as our business. The regulatory framework for such innovation is a key part of the discussion and one I am looking forward to engaging at the Electricity Storage Future Forum."

Tony Pfeiffer
General Manager, Effective Market Reform
Ergon Energy

"The energy market is moving incredibly fast with more products and services on offer than ever before. I will be looking at the relevance and opportunities offered by storage systems and technology in such engagement at the Electricity Storage Future Forum."

Gavin Dufty
Manager Policy and Research
St Vincent de Paul’s Society

"Emerging technologies, such as battery storage, electric vehicles, and fuel switching, are providing consumers with greater choice in managing their energy needs than ever before. We, as an industry, must establish in-depth knowledge of the developments in this area, backed by evidence and data, so that we can understand the implications on the reliability and security of energy supply for all Australians and adapt accordingly. The Electricity Storage Future Forum, 2016, provides an excellent opportunity to build on this knowledge, and hear first-hand of the opportunities and challenges associated with emerging technologies."

Nicola Falcon
Group Manager Planning
Australian Energy Market Operator

"It is very early in the evolution of storage as a major contributor to the way we manage energy, but the revolution in solar that occurred over the last decade has demonstrated how quickly a new technology can fundamentally change the shape of energy markets. Will the combination of distributed solar and batteries be the next wave of change? I look forward to discussing this at the forum."

Phil Mackey
General Manager Solar and Emerging Businesses
Origin Energy
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