

A DELTA MULTI-CLIENT STUDY

EXPERTISE IN DECENTRALISED ENERGY MARKETS

Emerging Electricity Storage Technologies: Time for Utility Engagement?

- ▶ Will storage play a critical role in future electricity markets?
- ▶ Does your utility have a strategy for the emergence of new electricity storage facilities?
- ▶ How are other utilities engaging with these technologies?
- ▶ What are the best options/strategies for your company?

Electricity storage's time may finally be arriving. New storage technologies are being deployed and demonstrated. A few utilities, generators and end users are deploying storage products on networks. Numbers are small today – but activity is growing year-on-year while technology development, potential for cost reduction, and strengthening storage drivers point to a rosy future.

This study explores how utilities can benefit from emerging storage technologies. It details how products are being deployed today – in many cases by utilities – and how they are

likely to be deployed in the future. Drawing on this, it evaluates different utility storage strategies.

The study provides essential reading for utilities – whether they are currently standing on the sidelines, or already have a storage strategy.

Succinct, to-the-point, right up-to-date and rich in project case studies and examples of strategies, this study will help utilities assess their strategy towards emerging electricity storage technologies.



Why Delta?

Delta is a specialist decentralised energy (DE) research and consulting company.

We are international DE market specialists

DE is our core business - we are not a general energy or market research organisation. Our team has several decades of combined experience of DE markets in five continents.

We deliver rigorous and in-depth research

Delta's commitment to its clients is to deliver clear and concise analysis that is based on rigorous, in-depth research. We cut no corners in this effort to provide deep and insightful research and analysis.

We have a track record for impressing clients

Repeat business accounts for over two thirds of our work. Our clients span Europe, North America and East Asia and are large electric and gas utilities, oil & gas majors, investors, and DE equipment manufacturers (for a full client list, visit www.delta-ee.com).

Storage applications examined include:

- ▶ Bulk arbitrage and load shifting.
- ▶ Grid support for weak or constrained networks.
- ▶ Supporting connection of wind power to constrained networks.
- ▶ Ancillary services – such as frequency regulation.
- ▶ Balancing generation and demand.

Study Benefits

Written for an international utility audience, the study will assist subscribers in understanding and assessing:

- ▶ How and where emerging electricity storage products are being demonstrated and installed, and what's driving this activity.
- ▶ How utilities are engaging with emerging storage technologies, together with the rationale supporting this engagement.
- ▶ Early experiences with emerging storage technologies.
- ▶ The drivers and rationale for electricity storage.
- ▶ Future utility strategy options.

Study Deliverables

- ▶ A main report.
- ▶ A website providing details of storage technology and product developers and manufacturers.
- ▶ Discussions and dialogue with Delta's storage team.
- ▶ Delta is also able to provide an onsite presentation and bespoke consultancy to help subscribers develop and take forward their own strategies and activity in this area.

Research Team and Methodology

Delta's storage team held discussions and interviews with over 40 utilities, storage developers & manufacturers, and other relevant organisations in Japan, North America and Europe. These formed the basis for the 50 page main report. Research and analysis was also guided by the following research advisors:

- ▶ David Sigsworth, Delta Associate and ex-board director at Scottish & Southern Energy, UK.
- ▶ Frank Escombe, EscoVale Consultancy Services, author of EscoVale's Flow Battery Management Report.
- ▶ Yasushi Santo, Delta Associate, Visiting Professor at Kwansai Gakuin University, and ex-senior manager at Osaka Gas.

This report complements a separate Delta report offering – ***'Flow Batteries: Technologies, Applications and Markets'***. This separate report provides a detailed assessment of flow battery technologies and a top down view of applications and markets.

Together with *'Emerging Electricity Storage Technologies: Time for Utility Engagement'* utilities will be well armed to engage with what will be an important component of future electricity markets.

For more information and to subscribe:

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