

## **LAZARD LAUNCHES LEVELIZED COST OF ENERGY STORAGE ANALYSIS**

- New study complements annual Levelized Cost of Energy Analysis (LCOE 9.0) –**
  - LCOE 9.0 finds continued decline in renewable energy costs –**
- LCOS 1.0 finds power grid storage applications positioned to drive lower costs –**

NEW YORK, November 17, 2015 – Lazard Ltd (NYSE: LAZ) today launched the first Levelized Cost of Storage Analysis (LCOS 1.0), an in-depth study comparing the costs of various energy storage technologies for particular uses.

LCOS 1.0, conducted with support from Enovation Partners, is being released in tandem with Lazard's latest annual Levelized Cost of Energy Analysis (LCOE 9.0), which analyzes the costs of generating electricity from conventional and alternative technologies.

"Although in its formative stages, the energy storage industry appears to be at an inflection point, much like that experienced by the renewable energy industry around the time we created the LCOE study eight years ago," said George Bilicic, Vice Chairman and Global Head of Lazard's Power, Energy & Infrastructure Group. "Based on our analysis of storage technologies and our experience with LCOE, we expect to see rapid declines in the costs of energy storage."

LCOS 1.0 is an analytically rigorous study of the major energy storage technologies in the context of their various uses, from large-scale, power grid-oriented applications to small-scale, residential applications. Its purpose is to compare the cost-effectiveness of each technology on an "apples to apples" basis within applications, and to compare each application to conventional alternatives.

"Energy storage system manufacturers and customers told us they expect to achieve significant price decreases over the next five to seven years," said Jonathan Mir, Head of Lazard's North American Power Group. "Falling prices should in turn drive wider deployment, and spur further innovation that could greatly expand the use of energy storage systems, both on and off the power grid, including greater use of renewable energy."

The two studies offer a variety of insights, including the following selected highlights:

### LCOE 9.0

- The costs of generating electricity from all forms of renewable energy continue to decline, especially in utility-scale solar photovoltaic (PV) technology, where the median levelized cost has declined about 25% from one year ago.
- Despite recent sharp declines in the market price of natural gas, utility-scale solar and wind power remain cost-competitive complements to traditional generation technologies, even without subsidies.

- Rooftop solar PV technology is still not cost competitive without significant subsidies, primarily due to higher installation costs. However, the levelized cost of rooftop solar PV is expected to decline in coming years, primarily as a result of more efficient installation techniques, lower costs of capital and improved supply chains.
- Even though alternative energy is increasingly cost-competitive and storage technology holds great promise, alternative energy systems alone will not be capable of meeting the baseload generation needs of a developed economy for the foreseeable future. Therefore, the optimal solution for many regions of the world is to use complementary traditional and alternative energy resources in a diversified generation fleet.

### LCOS 1.0

- Even without subsidies, certain storage technologies are already cost-competitive with certain conventional alternatives (for example, lithium-ion batteries for certain power grid support applications). Other storage technologies are close to being cost-competitive in other applications, and costs are expected to decline in coming years.
- The transformational scenarios envisioned by some renewable energy advocates – such as residential energy storage systems paired with solar panels to take consumers “off the grid” – are still very expensive without subsidies.
- If industry projections materialize over the next five years, cost-effective energy storage technologies will have increasingly broad applications across the power grid, such as providing an alternative to conventional gas-fired peaking plants in certain areas.

LCOS 1.0 and LCOE 9.0 reflect Lazard’s approach to long-term thought leadership, commitment to the sectors in which it participates, and focus on intellectual differentiation. The two studies are posted at [www.lazard.com/insights](http://www.lazard.com/insights).

Lazard’s Global Power, Energy & Infrastructure Group serves private and public sector clients with advisory services regarding M&A, financing and other strategic matters. The group is active in all areas of the traditional and alternative energy industries, including regulated utilities, independent power producers, alternative energy and infrastructure.

### **About Lazard**

Lazard, one of the world's preeminent financial advisory and asset management firms, operates from 43 cities across 27 countries in North America, Europe, Asia, Australia, Central and South America. With origins dating to 1848, the firm provides advice on mergers and acquisitions, strategic matters, restructuring and capital structure, capital raising and corporate finance, as well as asset management services to corporations, partnerships, institutions, governments and individuals. For more information on Lazard, please visit [www.lazard.com](http://www.lazard.com).

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