

# Levelized Cost of Energy Analysis 10.0

The cost of generating electricity from renewable energy, especially solar, continues to decline, according to the latest Levelized Cost of Energy Analysis (LCOE 10.0) – Lazard's annual study comparing the cost of generating energy from conventional and alternative technologies.



## Highlights from the study include:

The cost of generating energy from solar photovoltaic (PV) technology continues to decline: The median levelized cost of energy from utility-scale PV technologies is down approximately 11% from last year, and rooftop residential PV technology is down about 26%, although the latter is still not cost competitive without significant subsidies and other policy support.

The cost of generating energy from renewable sources other than solar, such as onshore wind, geothermal, and biomass, declined only at the margins from last year, reflecting both the maturing of technology in those areas and a

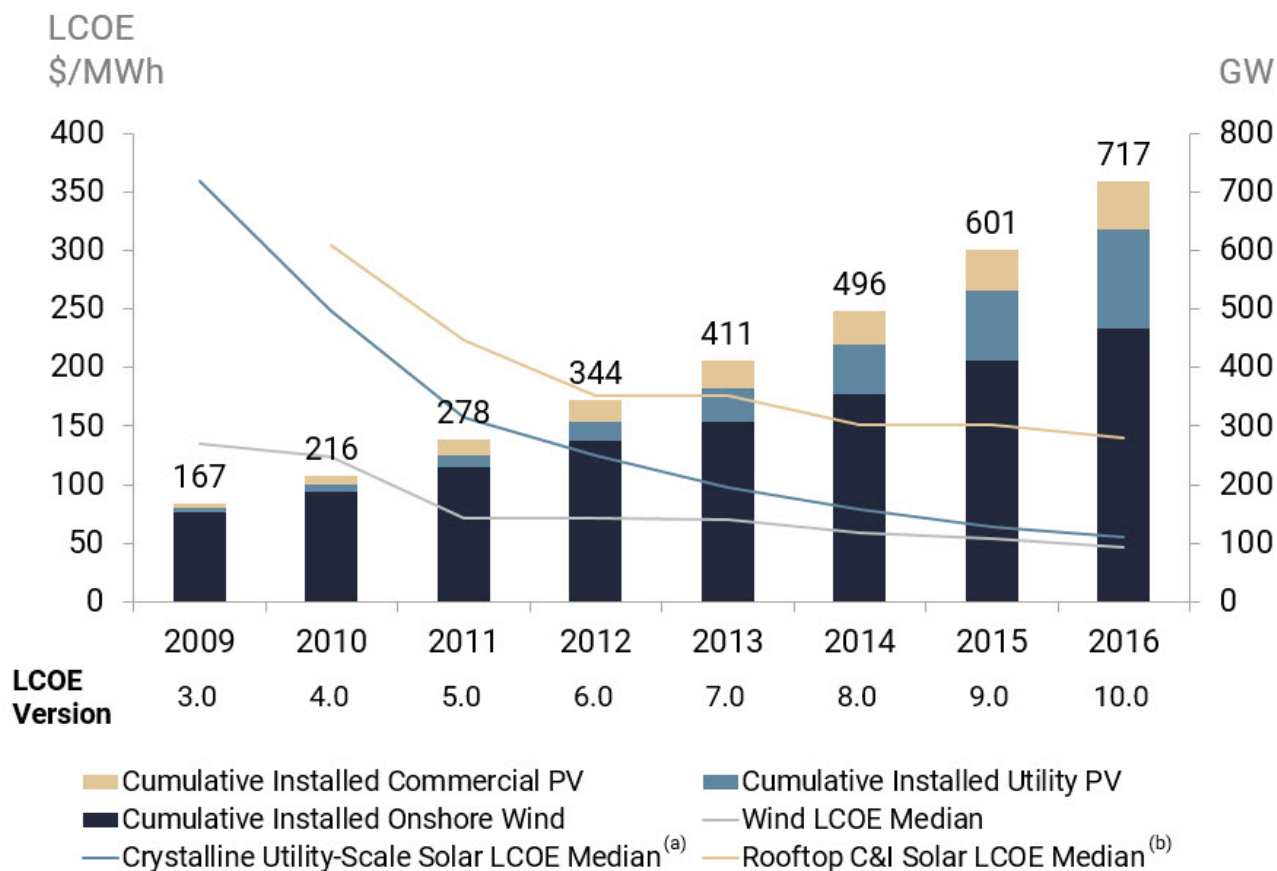
relatively low level of investment.

The median cost of generating energy from offshore wind generation declined approximately 22%, but remains substantially more expensive than onshore wind facilities, especially in the U.S.

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.

The chart below shows how, as the cost of generating energy from onshore wind, utility-scale solar and rooftop solar has declined, the cumulative installed base of these technologies has grown.

## **Unsubsidized Levelized Cost of Energy—Wind/Solar PV (Historical)**



Source: Lazard estimates and BNEF.

Note: LCOE medians represent average between low end and high end of LCOE range for each technology.

(a) Low end represents crystalline utility-scale solar with single-axis tracking in high insolation jurisdictions (e.g., Southwest U.S.), while high end represents crystalline utility-scale solar with fixed-tilt design.

(b) Lazard's LCOE initiated reporting of rooftop C&I solar in 2010.

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