



World Energy Council: Bright future for energy storage

Abu Dhabi 20 January 2016: A narrow focus on cost alone may be leading to misconceptions about the real value of energy storage according to a new report by the World Energy Council 'E-storage – shifting from cost to value'. The report, which focusses on solar and wind applications, says that the focus only on investment costs is leading to the perception that energy storage is more expensive than it actually is because it ignores the system value of stored energy.

The report is calling for the true value of energy storage to be recognised by taking into account both its cost and revenue benefits. It looks at a number of storage costings across the technology spectrum to conclude that the widely used levelised cost of energy methodology is hindering the progress of energy storage. The analysis identifies “double trouble” problems with the methodology, namely **arbitrariness** which does not allow for differences in application cases, and **incompleteness** as only limited account of revenue is taken.

Christoph Frei, Secretary General of the World Energy Council, said: “Energy storage is a critical catalyst of the energy transition whose benefits are still undervalued. The costs have already come down, but will have to fall further for a much broader roll-out and use in household and E-mobility. The investment community has good reason to be excited about the innovation and business models that will emerge from new opportunities.

“There is a bright future for energy storage with significant innovation potential. With the cost of capturing and storing wind and solar energy coming down, its deployment across the world will increase. The market is right to be enthusiastic about storage of energy, not just because of the cost reductions that it brings, but also because of additional revenue and other benefits that specific technologies in specific contexts can deliver.”

The report also estimates that with the many new technologies in the pipeline, storage costs of energy will fall by as much as 70% over the next 15 years. Solar storage will become more competitive as new battery technology drives prices down, and wind storage more attractive as technical advances in areas such as composite materials enables the power generated by wind turbines to increase. While batteries are currently too expensive for large-scale use, improving technology is cutting costs, which means storage systems could replace some plants and avoid the need for new ones, as well as reduce demand for oil.

In order to create the right policy environment that will unlock the potential of energy storage and capitalise on its true cost and value benefits, the report makes five recommendations to policymakers:

- Go beyond just costs - cheapest is not always best.
- Examine storage through holistic case studies – generic cost estimates are not sufficient.
- Work with operators and regulators to accelerate the development of flexible markets – often the full value of flexibility is not sufficiently recognised and monetised.
- Establish supporting policies and an enabling regulatory framework to facilitate further commercial deployment of storage technologies.
- Consider storage as a key component for grid expansion or extension.

However, the report warns that the value of stored energy needs to be assessed on a case by case basis because revenue streams will vary over time and between countries as they are dependent on the market, policy regime and variability of competing resources.

Christoph Frei, added: “Too often the industry only talks about one half of the profit formula, namely cost. Policymakers should recognise the wide span of market places that can benefit from energy storage. These range from bringing down the cost of home solar systems, enabling the electric car industry to grow, helping electricity suppliers to manage problems when the grid goes down or there is grid overload to taking advantage of market price fluctuations and selling electricity across borders.

“To take full advantage of the growing wind and solar electricity shares, policymakers must review electricity market design so as to incentivise the build-up of storage capacity and ensure reliable and affordable electricity supply.”

The World Energy Council report ‘E-storage – shifting from cost to value’ is the work of 23 leading industry and academic experts from across the world who are in the World Energy Council Storage Knowledge Network. The lead author is DNV GL with PwC making a significant contribution towards the cost analysis.

The Storage Knowledge Network is one of 15 Knowledge Networks in the World Energy Council who will all be preparing reports for the World Energy Resources flagship study which will be presented at the 23rd World Energy Congress in Istanbul, Turkey in October 2016.

For the full report see: <https://www.worldenergy.org/publications/2016/e-storage-shifting-from-cost-to-value-2016/>

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Notes to Editors

About the World Energy Council Report: 'E-storage – shifting from cost to value'

The World Energy Council 'E-storage – shifting from cost to value' report focusses on the role of storage co-located with renewable wind and solar power and has been prepared by the Storage Knowledge Network which includes 23 leading experts from across the world in companies as well as academia. Companies active in the Storage Knowledge Network include DNV GL (lead author), PwC (who made a significant contribution to the cost analysis), Siemens, Voith, Iberdrola and Enel Green Power.

The Report is structured as follows:

- Executive Summary
- Introduction
- Section 2 – Technology overview: an introduction to energy storage technologies and case studies in how it is already being applied
- Section 3 – Cost modelling: a summary of the cost analysis work
- Section 4 – Discussion and recommendations: including next steps for policymakers
- Appendices: Technology tables; Modelling assumptions; Characteristics of variability of wind and PV.

About the World Energy Council

The World Energy Council is the principal impartial network of leaders and practitioners promoting an affordable, stable and environmentally sensitive energy system for the greatest benefit of all. Formed in 1923, the World Energy Council is the UN-accredited global energy body, representing the entire energy spectrum, with more than 3000 member organisations located in over 90 countries and drawn from governments, private and state corporations, academia, NGOs and energy-related stakeholders. The Council informs global, regional and national energy strategies by hosting high-level events, publishing authoritative studies, and working through its extensive member network to facilitate the world's energy policy dialogue.

Further details at www.worldenergy.org and @WECouncil.