



Towards Utility-Scale PV with BESS

The Perspective of a Technical Advisor

Madrid, January 10, 2018

ata renewables
Carlos Rodriguez

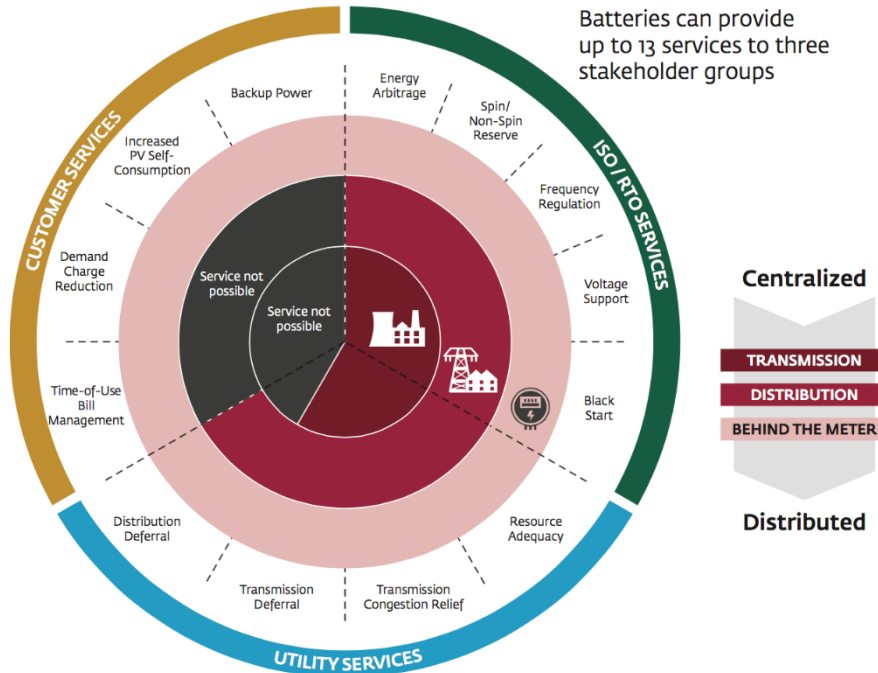


1. ata renewables

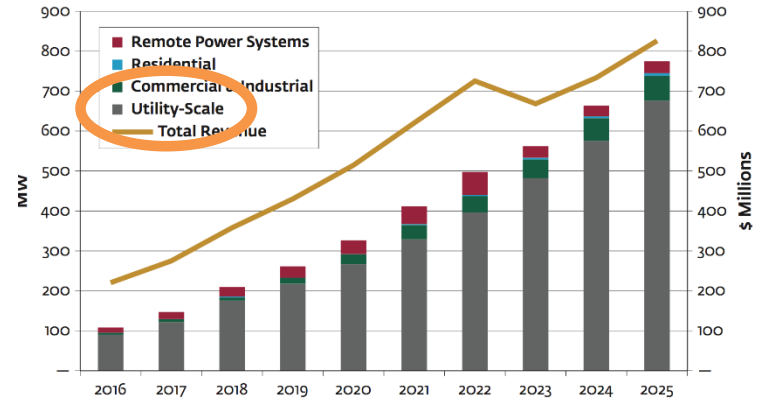


TOTAL
21 GW+

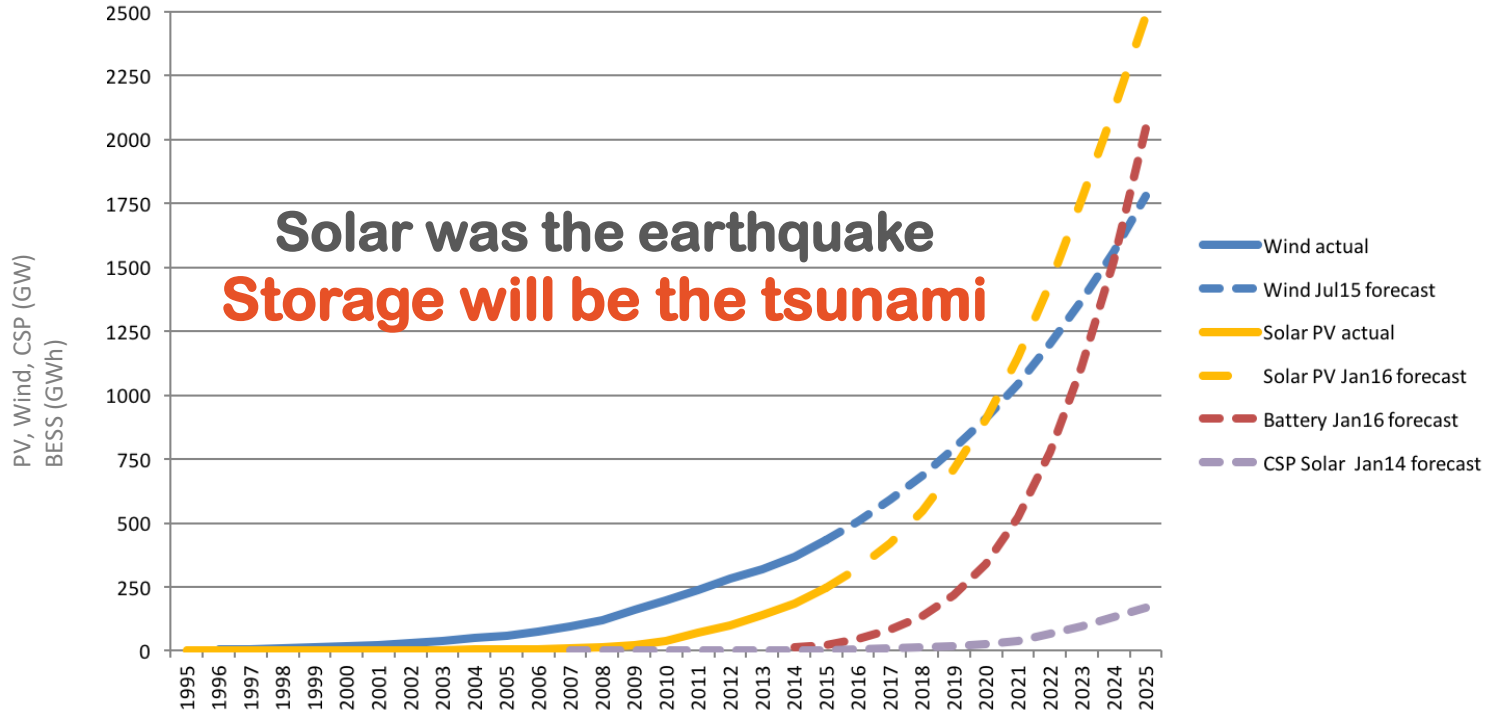
2. BESS value chain, upstream portion



Projected Annual Stationary Energy Storage Deployments, Power Capacity and Revenue by Market Segment, Eastern Europe & Central Asia: 2016–2025



3. Global capacity growth and forecast to 2016 - 2025

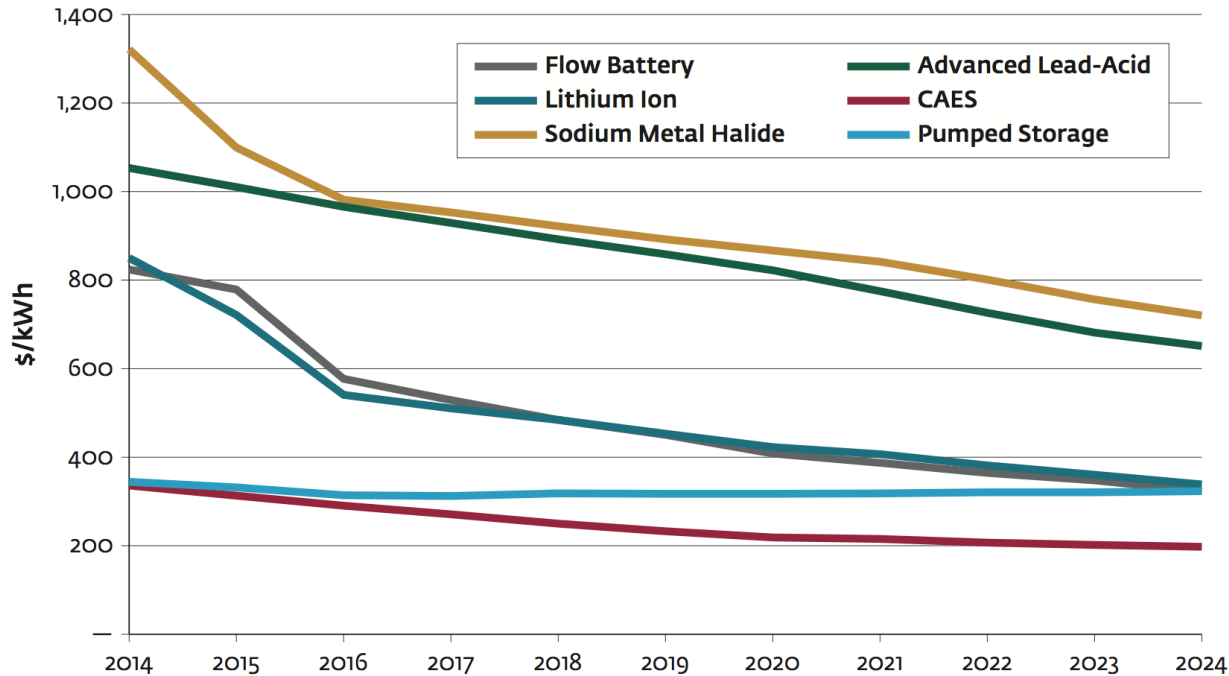


3. Global capacity growth 2015 and forecast to 2025

Figure ES4: Battery electricity storage energy capacity growth in stationary applications by sector, 2017-2030

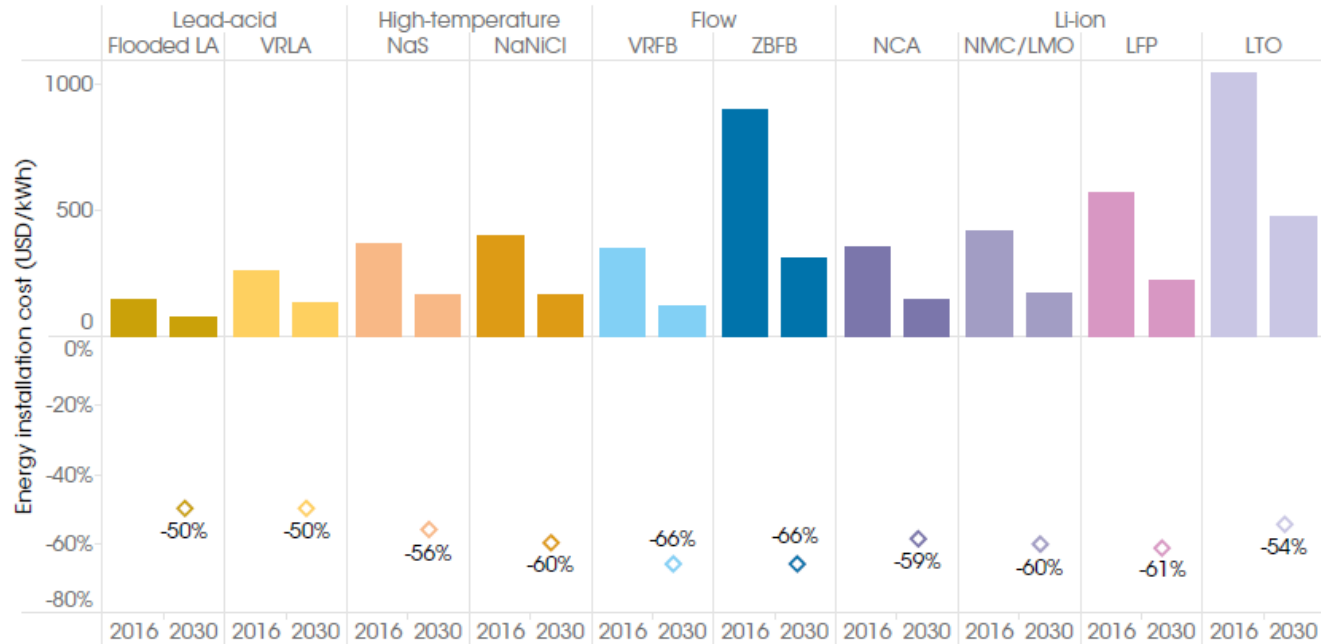


4. Utility-Scale BESS cost trends



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Figure ES6: Battery electricity storage system installed energy cost reduction potential, 2016-2030



5. BESS for PV: News

The Switch

Tesla's enormous battery in Australia, just weeks old, is already responding to outages in 'record' time

By [Brian Fung](#) December 26, 2017 

Less than a month after Tesla unveiled a new [backup power system](#) in South Australia, the world's largest lithium-ion battery is already being put to the test. And it appears to be far exceeding expectations: In the past three weeks alone, the [Hornsedale Power Reserve](#) has smoothed out at least two major energy outages, responding even more quickly than the coal-fired backups that were supposed to provide emergency power.

Source: The Washington Post

5. BESS for PV: News

JANUARY 4

Tesla is chosen to build another big battery in Australia after the first one proves impressive

Fred Lambert - Jan. 4th 2018 9:51 am ET [@FredericLambert](#)

FEATURE

AFR reported today that Tesla was picked to build a 20 MW battery system to support their 204 MW wind farm at the Bulgana Green Power Hub in Western Victoria.

We are talking about a less powerful battery system than the one in South Australia, but it should still end up being one of Tesla's biggest projects to date.

Source:electreck.com

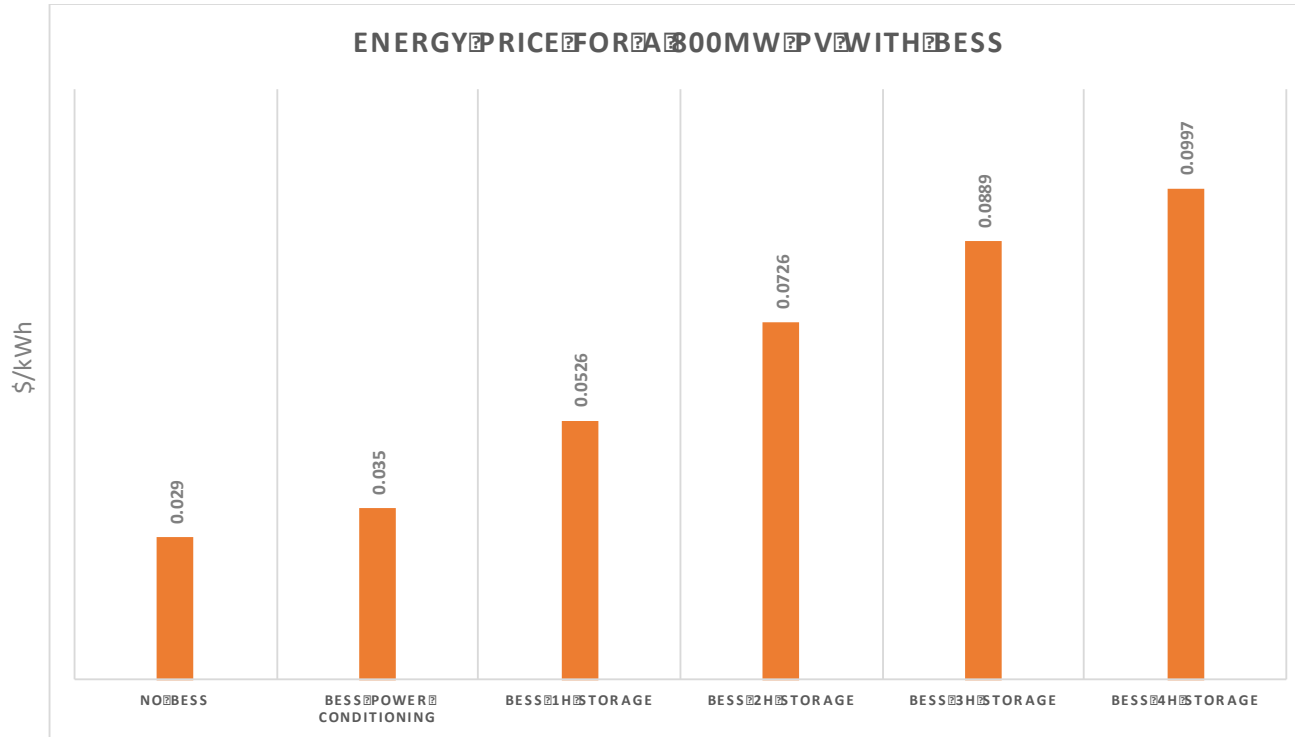
5. BESS for PV: News

'Incredible' low prices for renewables-plus-storage in Xcel's solicitation

Median bids received by US utility Xcel Energy in a solicitation for energy resources for energy storage paired with solar came in at **US\$9 per** megawatt lower than the previously observed record.

Solar PV with battery storage: 87 bids, for 16,725MW, for a total 59 projects and 10,813MW minus duplicates. Bids were priced at **US\$36 per** MWh.

6. Utility-Scale PV with BESS. A simplified case study *



* 800 MW PV in UAE with a 25-year PPA and 2.0% escalation

Source: ATA Renewables