

RESILIENTPOWER

A project of **CleanEnergy**Group



State of the U.S. Energy Storage Industry: Q1-Q2 2016

August 3, 2016

Housekeeping



← All participants are in “Listen-Only” mode. Select “Use Mic & Speakers” to avoid toll charges and use your computer’s VOIP capabilities. Or select “Use Telephone” and enter your PIN onto your phone key pad.

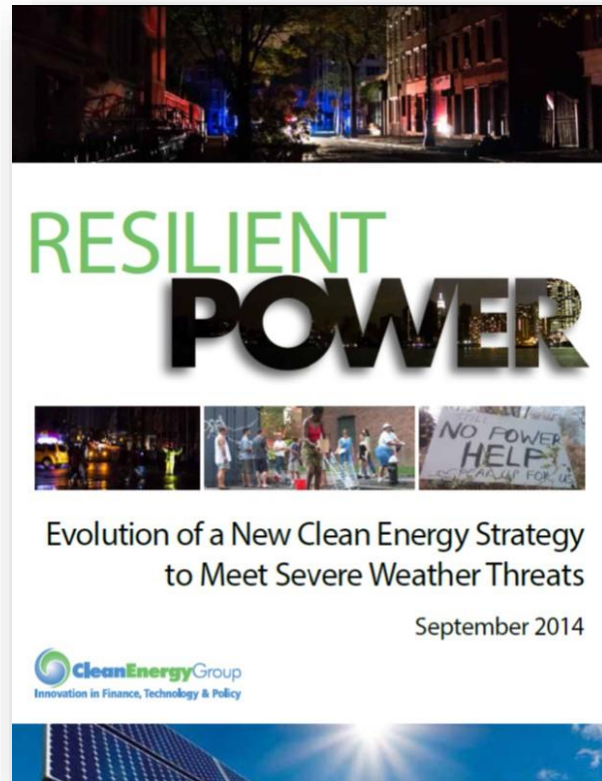
← Submit your questions at any time by typing in the Question Box and hitting Send.

This webinar is being recorded.

You will find a recording of this webinar, as well as previous Resilient Power Project webinars, online at:

www.resilient-power.org

Who We Are



www.cleangroup.org

www.resilient-power.org

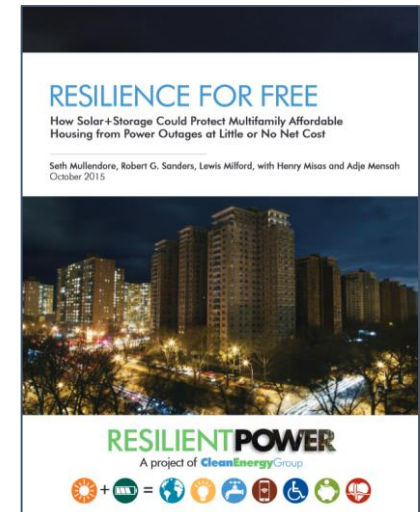
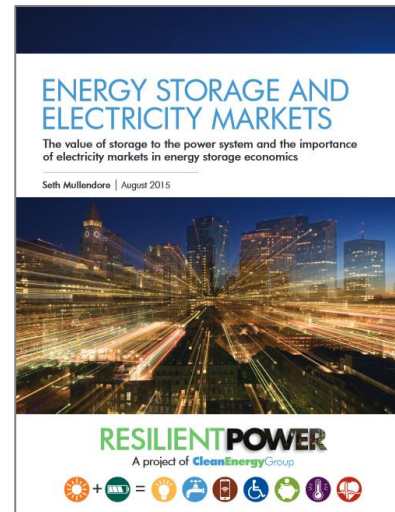
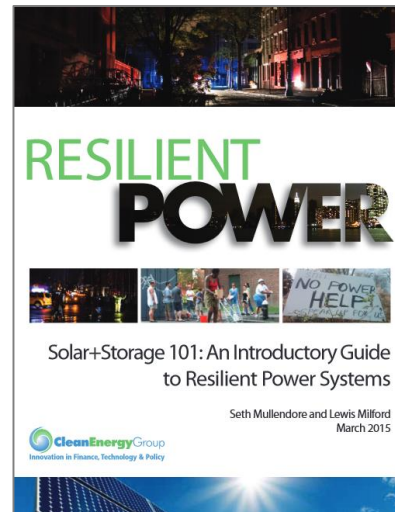
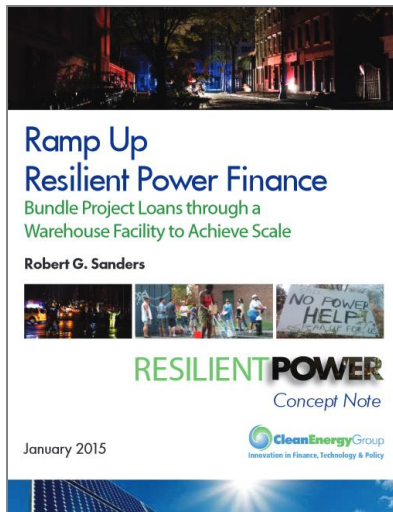


SURDNA FOUNDATION

Fostering sustainable communities in the United States

Resilient Power Project

- Increase public/private investment in clean, resilient power systems
- Engage city officials to develop resilient power policies/programs
- Protect low-income and vulnerable communities
- Focus on affordable housing and critical public facilities
- Advocate for state and federal supportive policies and programs
- Technical assistance for pre-development costs to help agencies/project developers get deals done
- See www.resilient-power.org for reports, newsletters, webinar recordings



Resilient Power Project

You are here: [Home](#) / [Projects](#) / [Resilient Power Project](#)



RESILIENT POWER PROJECT

To reduce impacts and dangers of power outages in communities now and in the future, the Resilient Power Project works to provide technology and policy solutions to address three challenges: Community Resiliency, Climate Adaptation, and Climate Mitigation.

[Overview](#) | [Publications](#) | [Webinars](#) | [Blog](#) | [Newsletters](#) | [FAQs](#) | [Project Map](#) | [Featured Installations](#)



Sign Up for the Resilient Power
Project Mailing List

CONTACT

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Project Manager
seth@cleanegroup.org

With the Resilient Power Project, Clean Energy Group and [Meridian Institute](#) are working to accelerate market development of clean energy technologies for resilient power applications that serve low-income communities and vulnerable populations during disasters and power disruptions, and to address climate adaptation and mitigation goals through expansion of reliable renewable energy deployment. To reduce impacts and dangers of power outages in communities now and in the future, the Resilient Power Project works to provide technology and policy solutions to address three challenges facing the country: Community Resiliency, Climate Adaptation, and Climate Mitigation.

Clean Energy Group's role in this process is to help inform, coordinate, and support federal, state, and local officials, policy makers and developers with the goal of deploying resilient power projects in communities across the country. In addition to providing program guidance to policy makers and limited technical assistance funding for project development, we also prepare reports and analysis on resilient power

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Disproportionately on the Poor and
Minorities in South Texas
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Navinant Research

Today's Speakers

- **Brett Simon**, Analyst, Energy Storage, GTM Research
- **Ravi Manghani**, Director, Energy Storage, GTM Research

gtmresearch

State of the U.S. Energy Storage Industry: Q1-Q2 2016

Prepared For:



Brett Simon - Analyst, Energy Storage

Ravi Manghani - Director, Energy Storage

August 2016

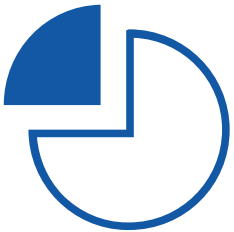
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About Greentech Media



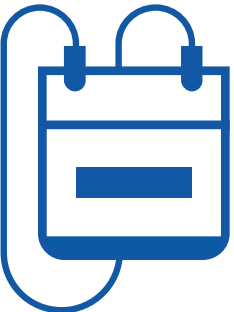
News/Online

Greentech Media delivers business-to-business news, analysis and events at the forefront of the global energy transformation. Our coverage area extends across the clean energy industry with a focus on solar power and the electric utility market's evolution. Greentech Media's industry-leading coverage is provided by a team of analysts from our market intelligence arm, GTM Research, as well as our world-class journalists and global network of expert contributors.



Research

GTM Research is the market analysis and consulting arm of Greentech Media. GTM Research is comprised of analysts covering solar, grid edge, and energy storage markets. Our analysts combine diverse backgrounds in energy, environmental, emerging technology, information technology and strategic consulting sectors. This diverse team provides critical and timely market analysis in the form of research reports, consulting, and data subscription services.



Event

Greentech Media and GTM Research experts come together to produce all of Greentech Media's industry conferences throughout the year. These summits provide a platform for our latest market intelligence and draw together the industry influencers from organizations across the value chain.

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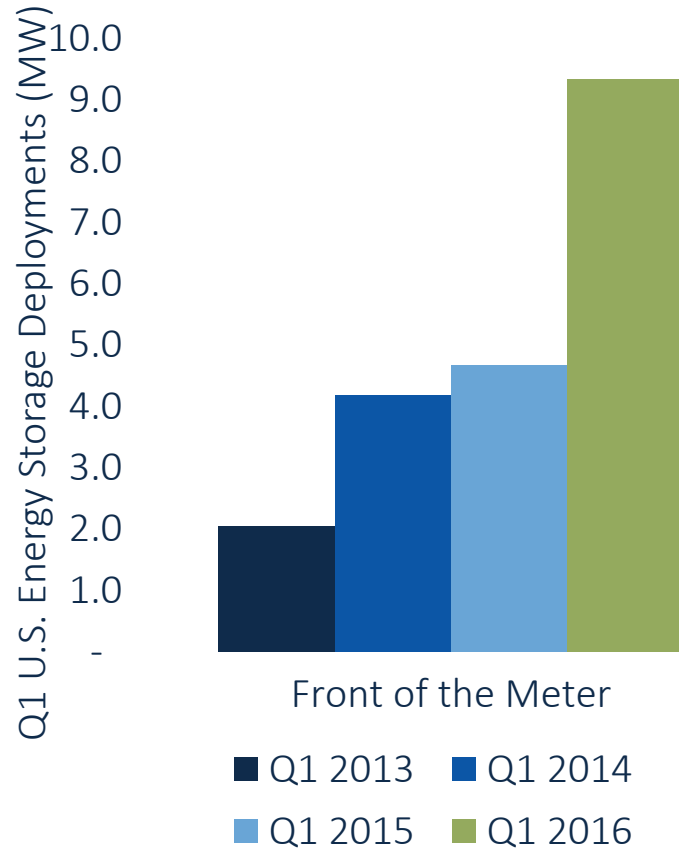
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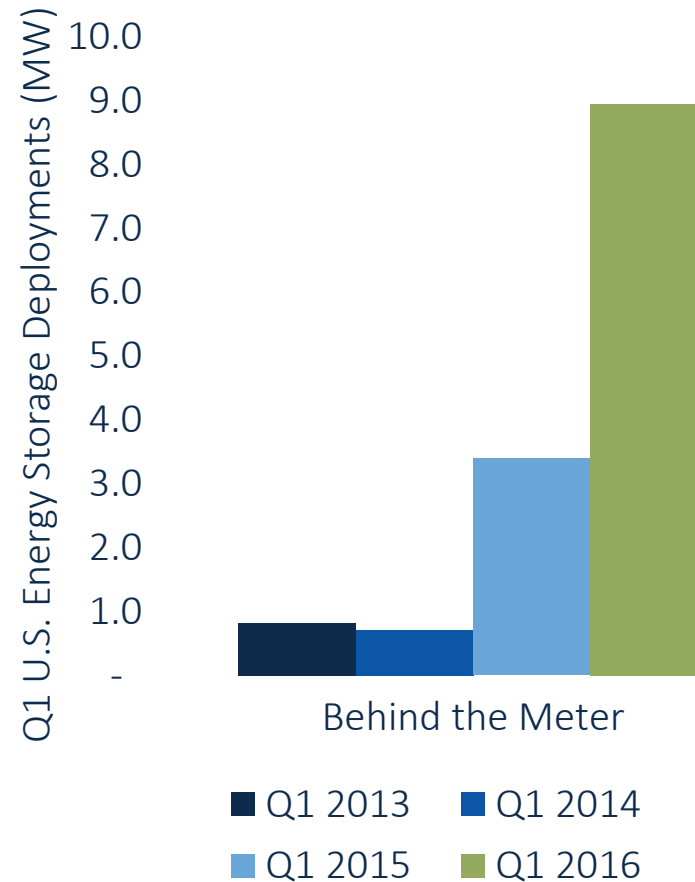
1. Deployment Trends

Q1 2016 Deployments Grew 127 Percent Year-Over-Year to 18.3 MW

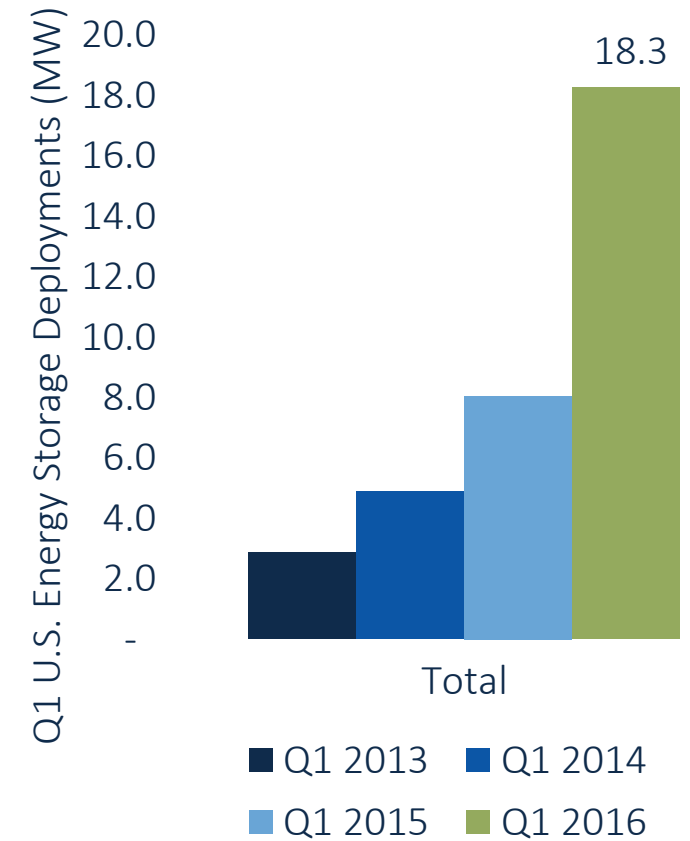
Front of the Meter



Behind the Meter



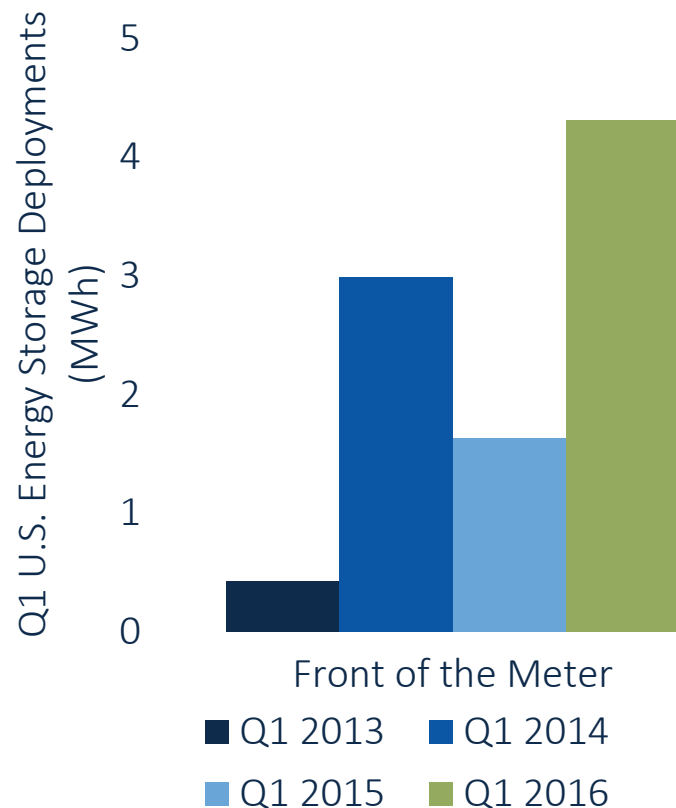
Total



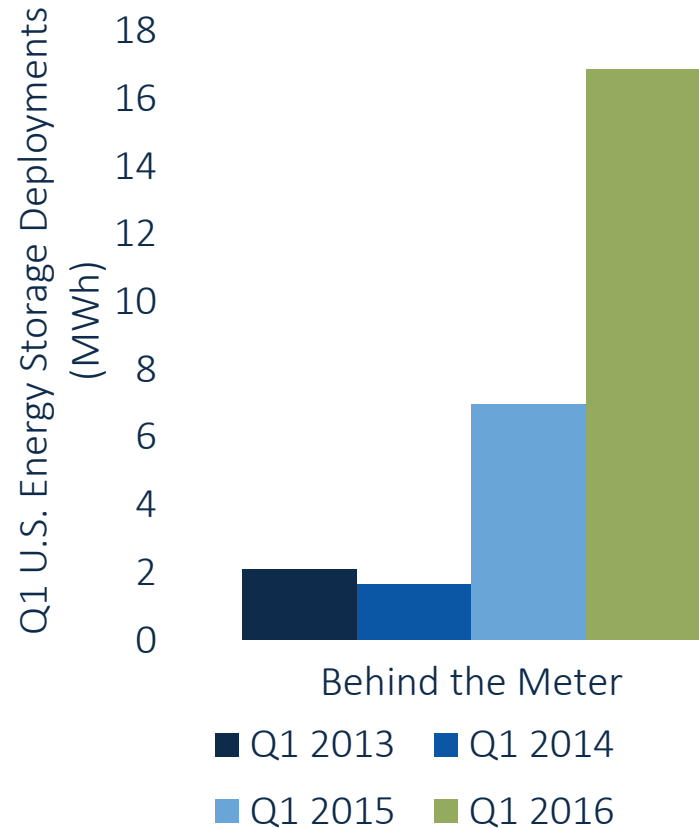
Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Behind-the-Meter Sector Continues 4-Quarter Trend of Deploying at Least 10 MWh in Q1 2016

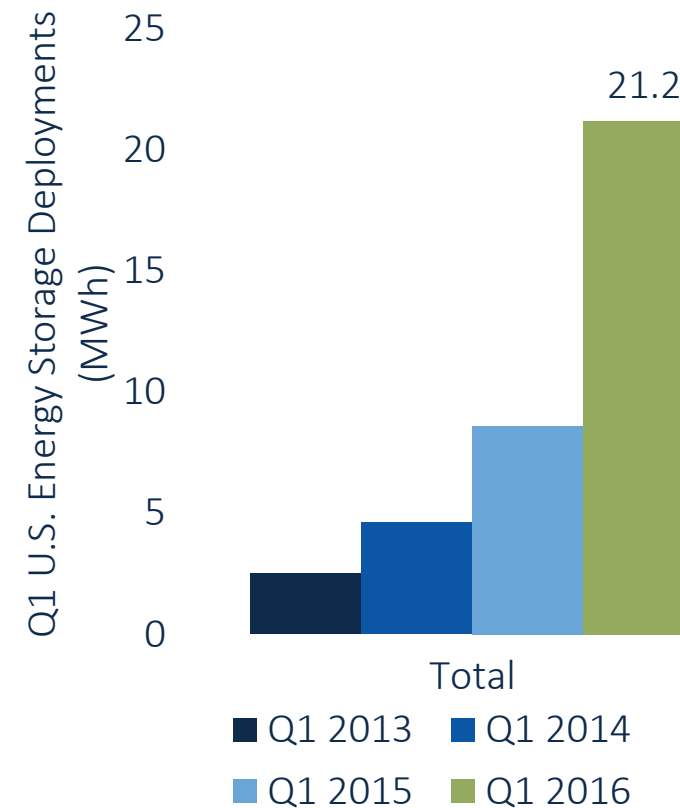
Front of the Meter



Behind the Meter



Total



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

California and PJM (Excl. NJ) Account for 92 Percent of Deployments Since Q1 2013

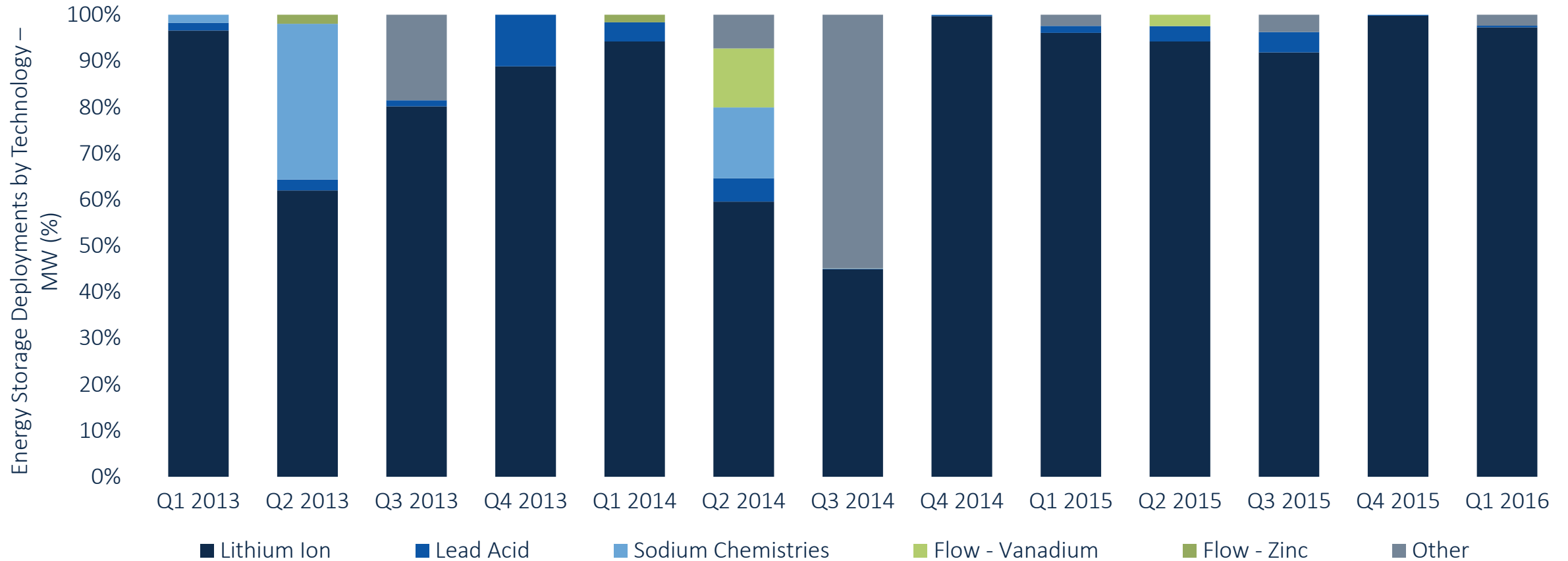
Rank	Residential	Non-Residential	Utility
1	California	California	PJM (excl. NJ)
2	All Others*	All Others*	California
3	Hawaii	New Jersey	All Others*

*GTM Research is currently monitoring seven individual markets. Complete coverage of all markets is available in the full report.

Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Lithium-Ion Technology Comprised 97% Of Deployments in Q1 2016

Quarterly Energy Storage Deployment Share by Technology (MW %)

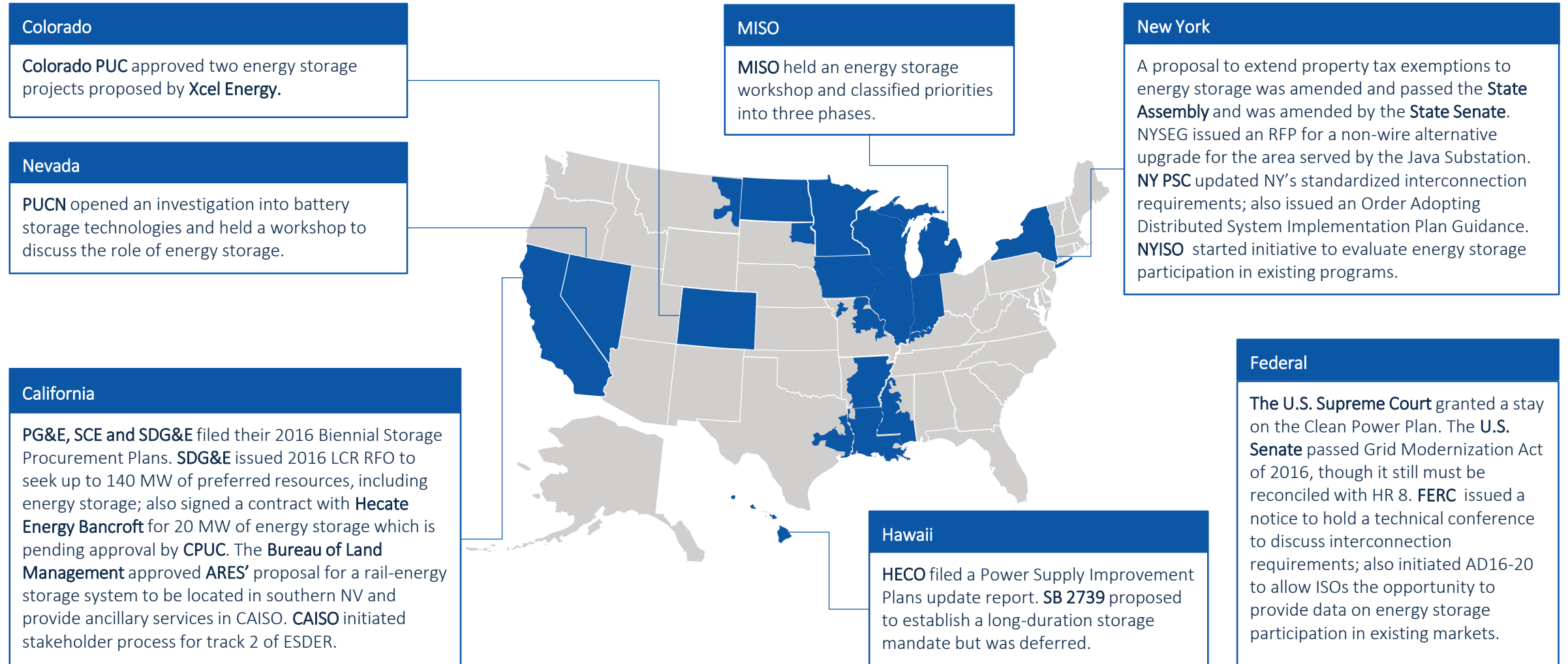


*"Other" includes flywheel and unidentified energy storage technologies

Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

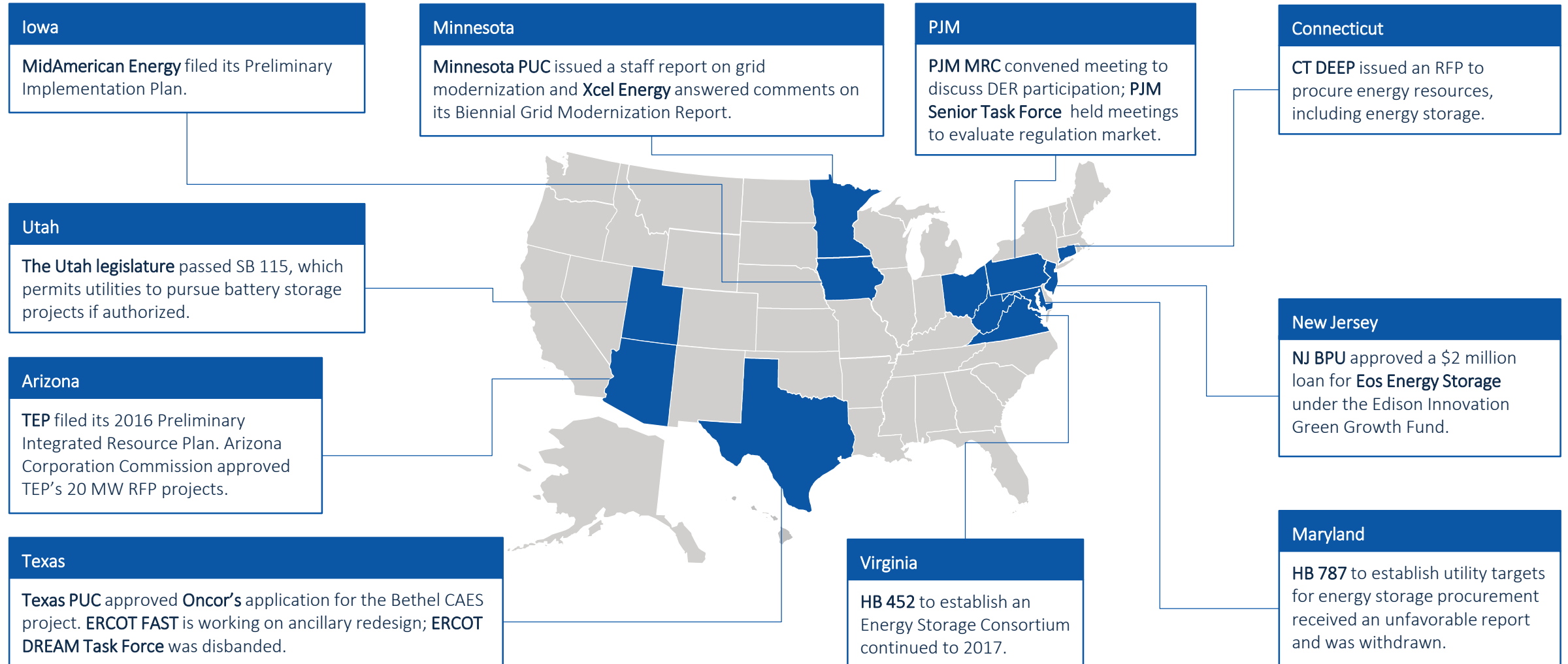
2. Market Drivers

Front-of-the-Meter Policy and Market Developments, Q1 2016



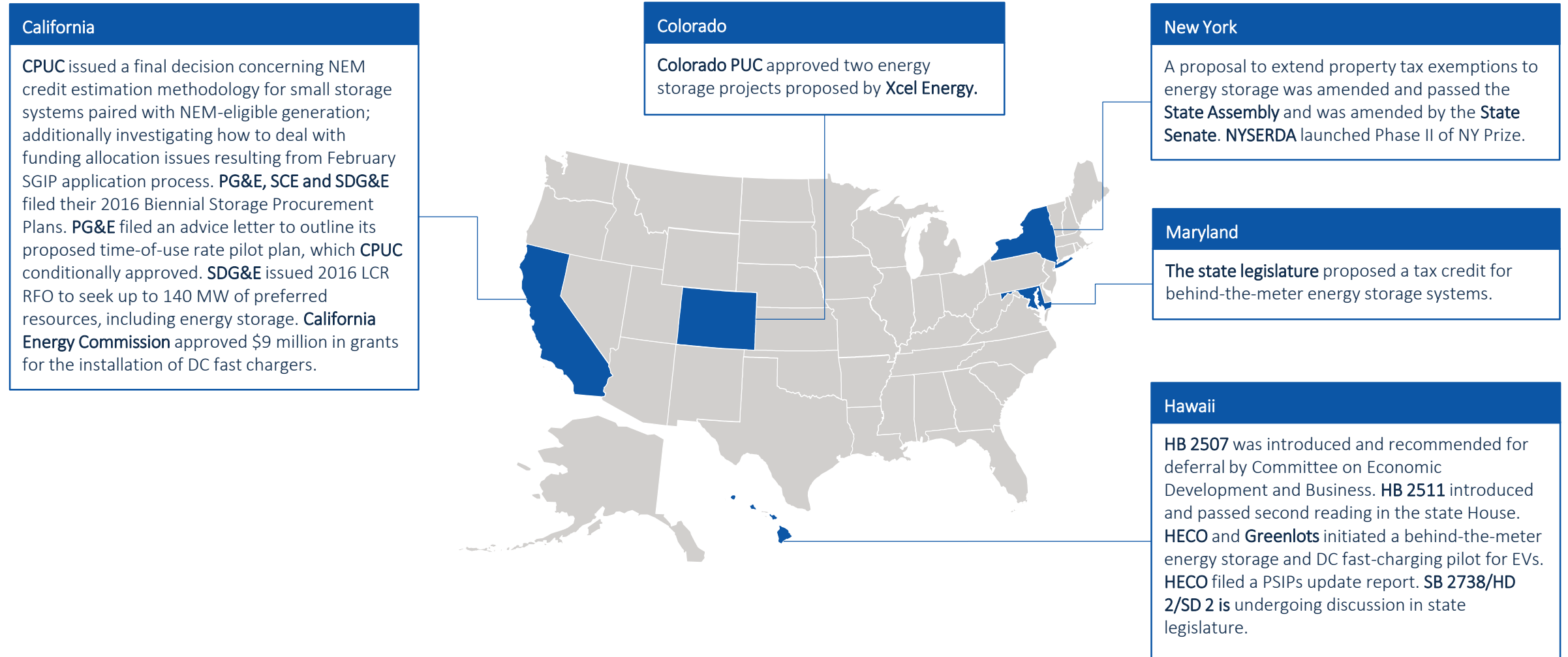
Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Front-of-the-Meter Policy and Market Developments, Q1 2016 (Cont.)



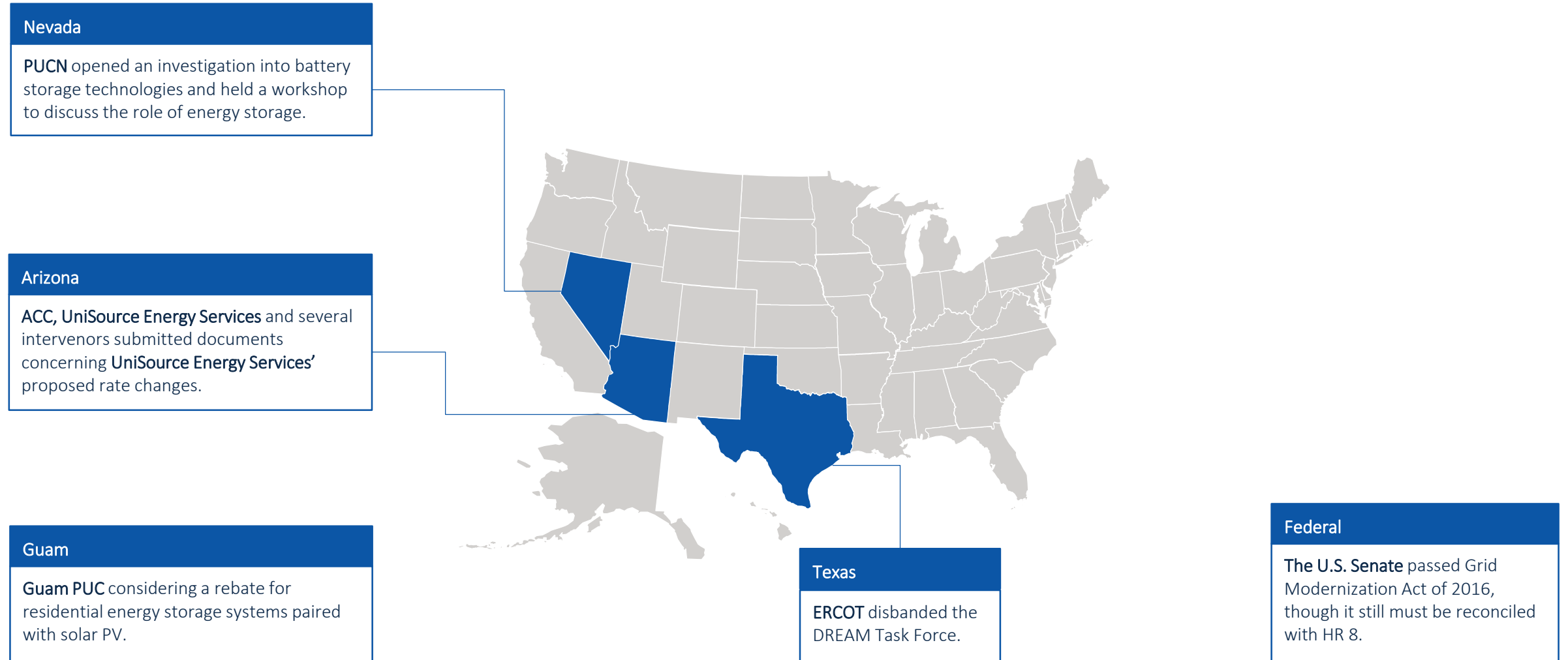
Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Behind-the-Meter Policy and Market Developments, Q1 2016



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Behind-the-Meter Policy and Market Developments, Q1 2016 (Cont.)



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Total Closed Acquisition of Saft

Completed \$1.1 Billion Deal Is the Largest in Energy Storage to Date



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Tesla and SolarCity Announced \$2.6 Billion Merger Deal

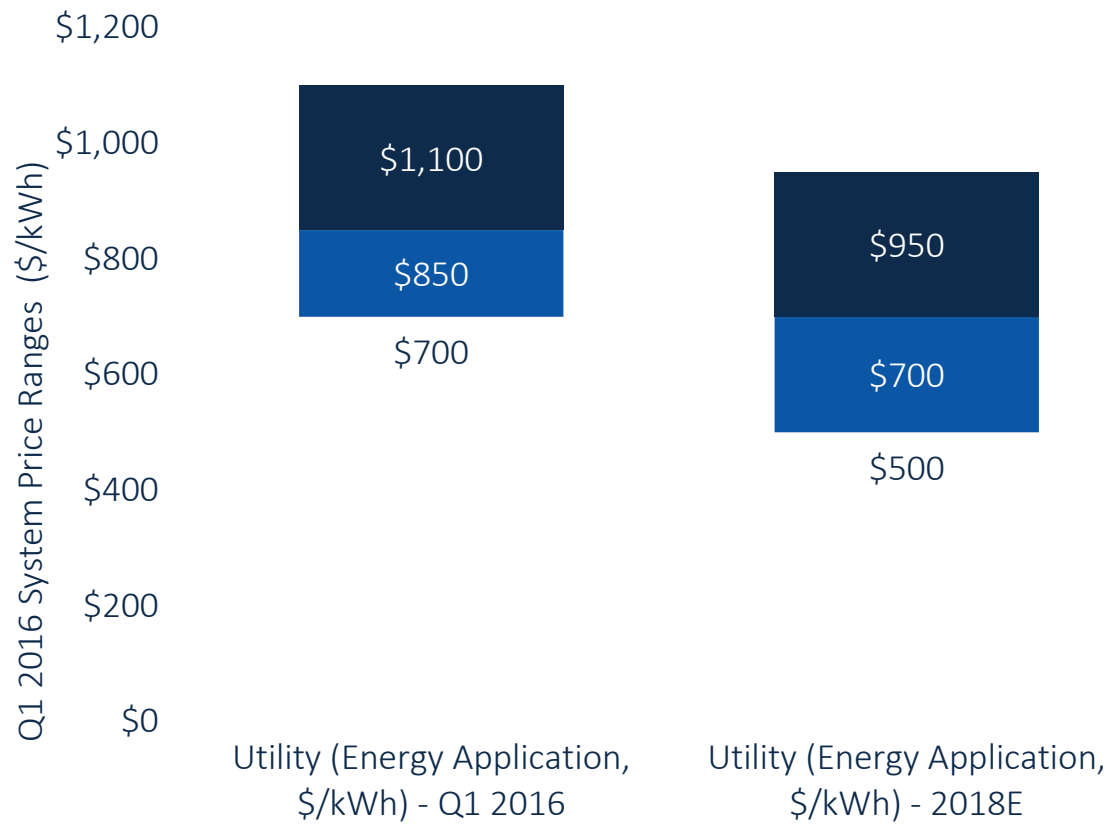
Goal to create vertically integrated clean energy company offering solutions across the value chain including energy storage, solar PV and electric vehicles

TESLA



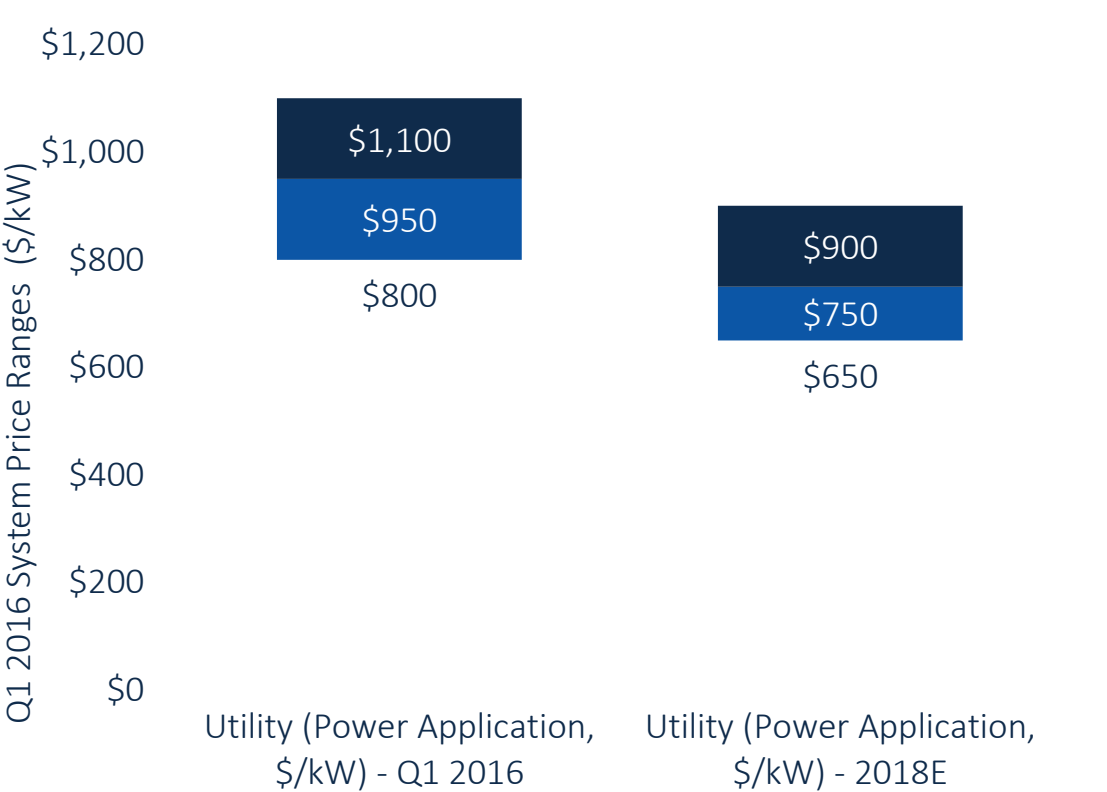
Front-of-Meter System Price Trends in Q1 2016

Utility-Scale Price Trends Q1 2016 and 2018E, Energy Applications – 2 Hours (\$/kWh)



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

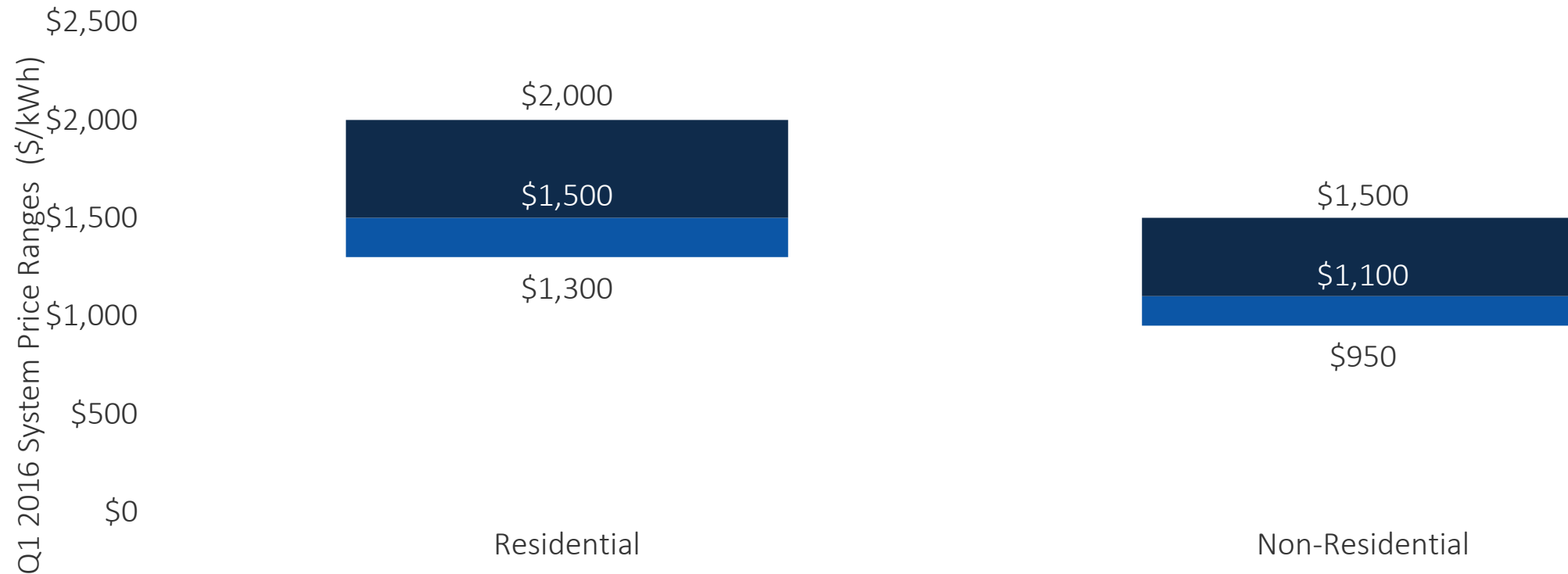
Utility-Scale Price Trends Q1 2016 and 2018E, Power Applications (\$/kW)



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

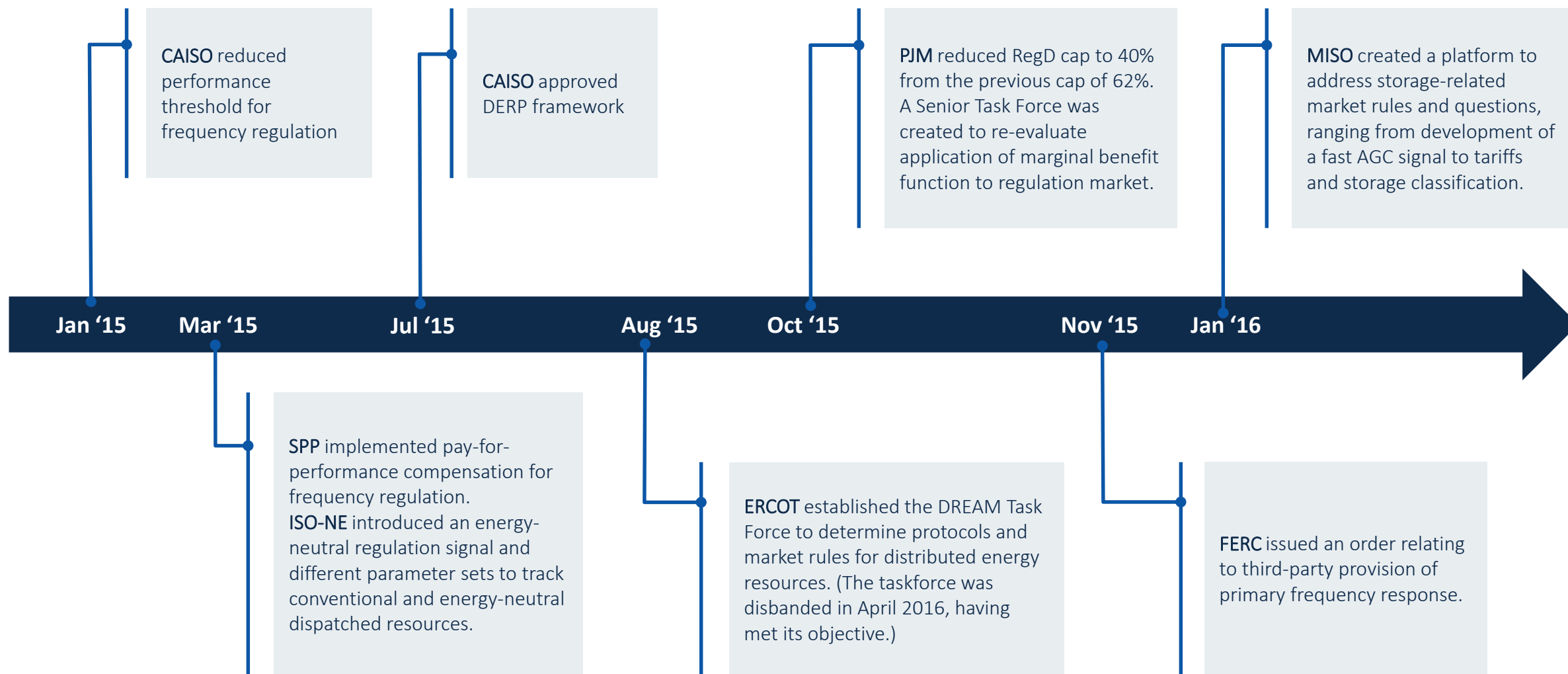
Behind-the-Meter Price Trends in Q1 2016

Behind-the-Meter Price Trends Q1 2016 (\$/kWh)



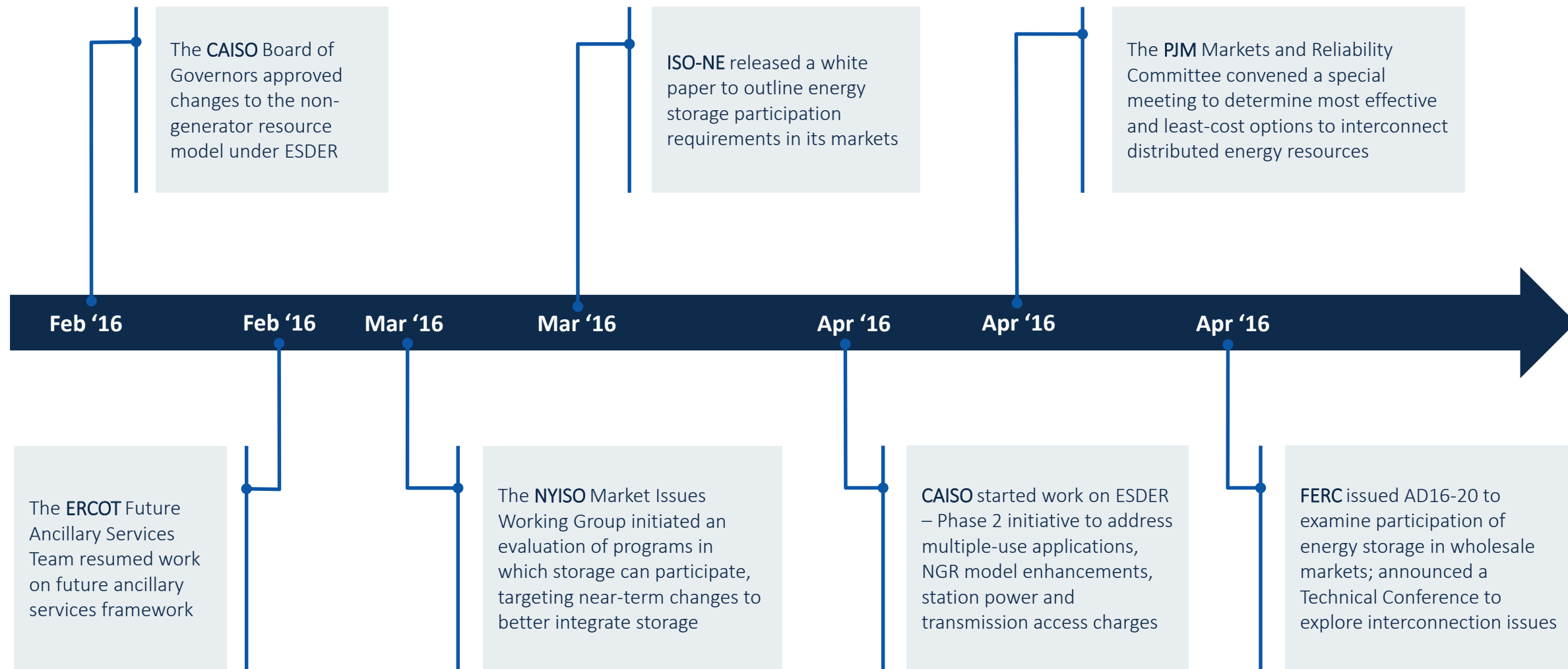
Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Wholesale Markets' Structures Evolving to Include Storage



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

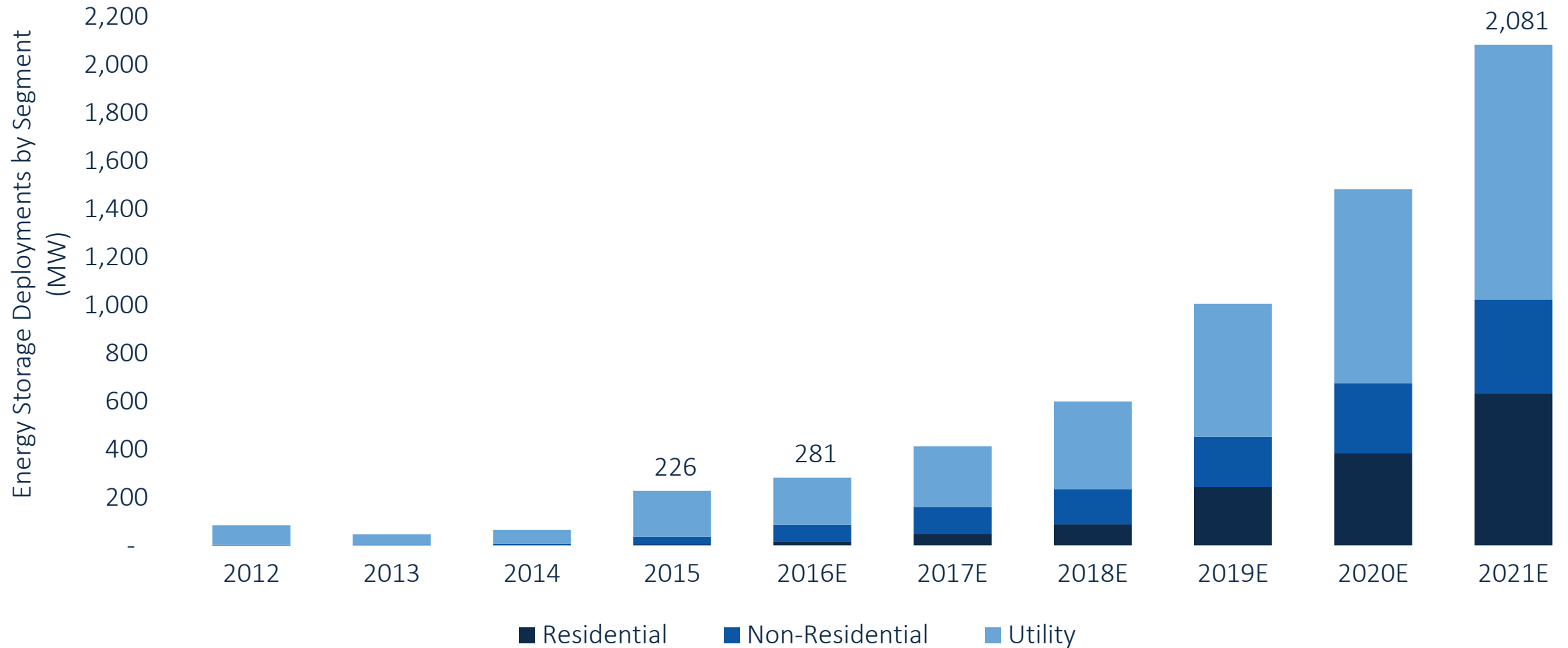
Wholesale Markets' Structures Evolving to Include Storage (Cont.)



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

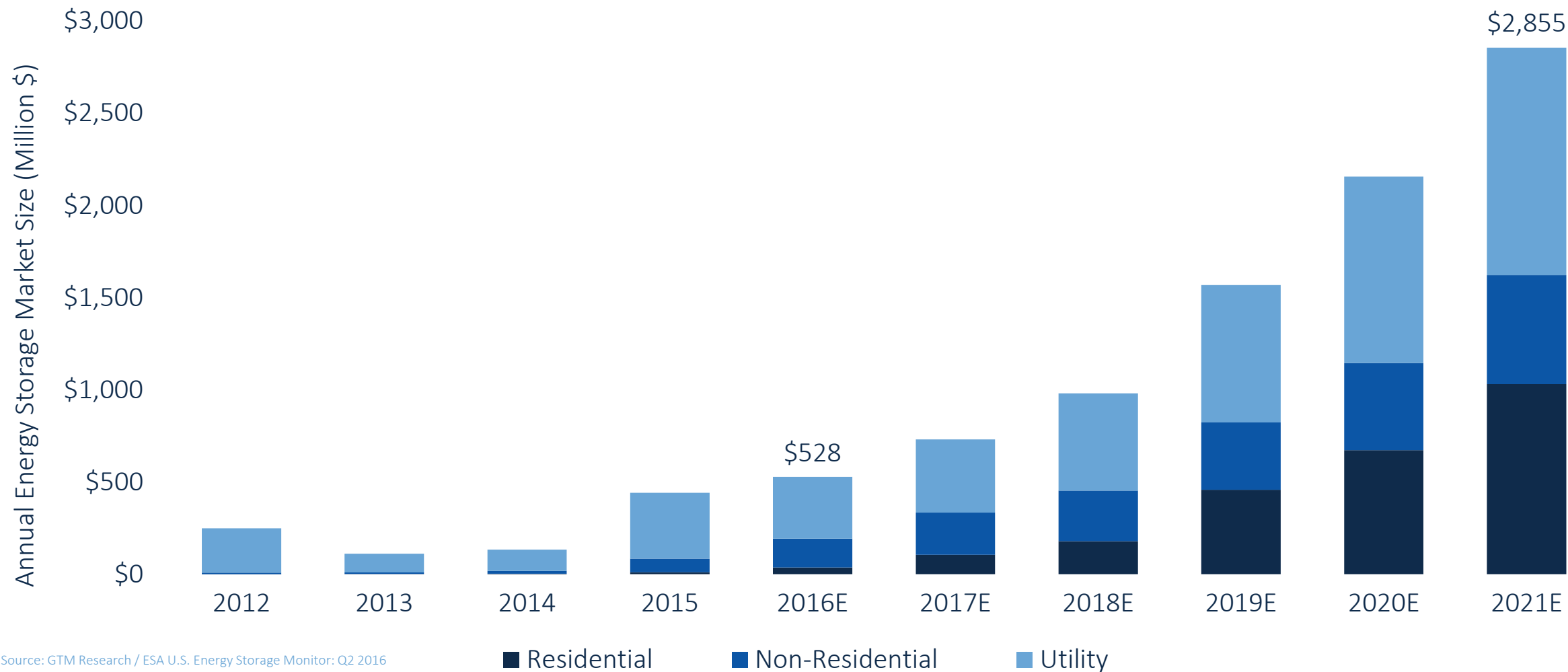
3. Outlook

U.S. Energy Storage Market Will Exceed the 2 GW Threshold in 2021



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

U.S. Energy Storage Market Will Be Worth \$2.9 Billion by 2021



Source: GTM Research / ESA U.S. Energy Storage Monitor: Q2 2016

Thank you!

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August 2016

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Thank you for attending our webinar

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