

California Energy Storage Market

Key Highlights

September 20, 2017



About CESA

The **California Energy Storage Alliance (CESA)** is a 501c(6) membership-based advocacy group committed to advancing the role of energy storage in the electric power sector through policy, education, outreach, and research. CESA was founded in January 2009 by Janice Lin and Don Liddell.

CESA's mission is to make energy storage a mainstream energy resource in helping to advance a more affordable, clean, efficient, and reliable electric power system in California.



California ISO
Shaping a Renewed Future



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UniEnergy Technologies
Viridity Energy
Yunicos

CESA Supports All Types of Energy Storage Technologies

Electro-Chemical



Mechanical



Bulk Mechanical



Thermal



Bulk Gravitational

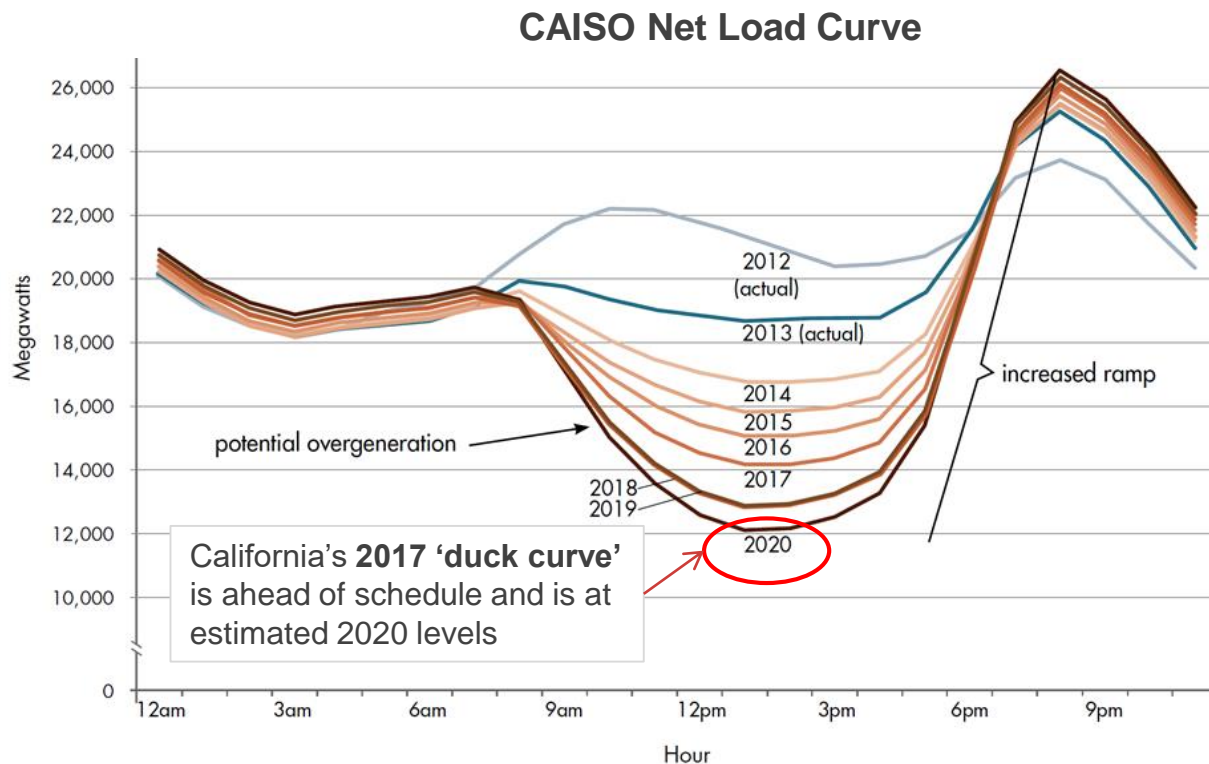


Transportation

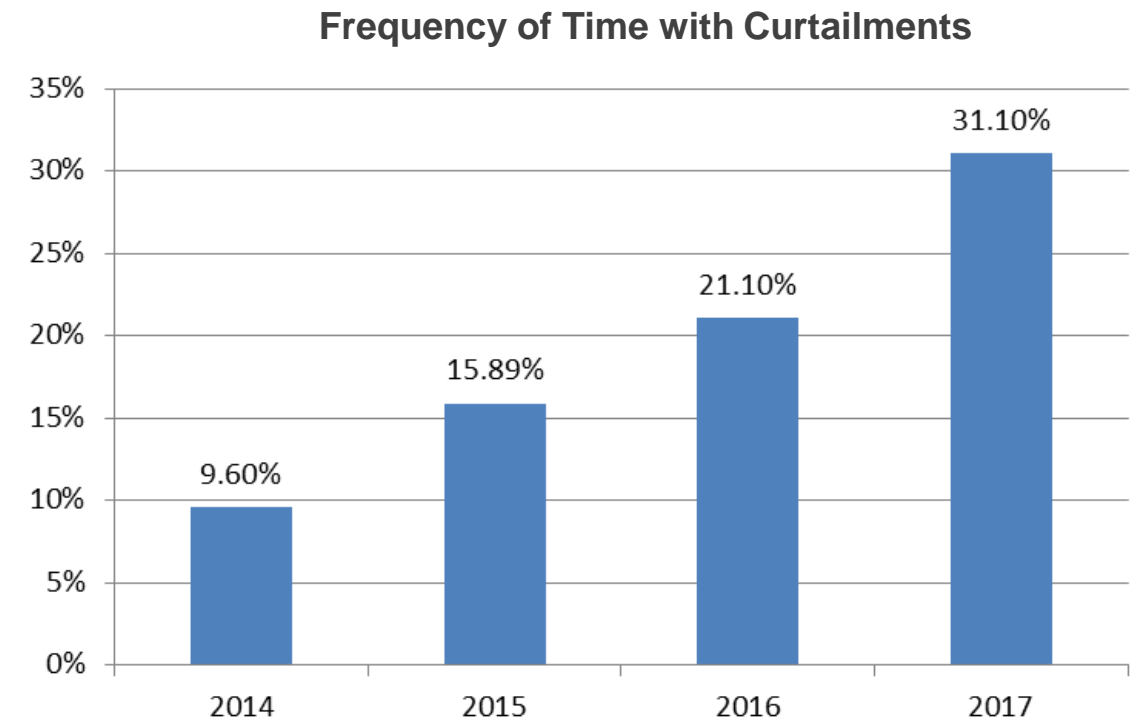


California's Ambitious & Important Clean Energy Goals

The 50% RPS by 2030 and 40% GHG emissions below 1990 levels by 2030 create a need for more energy storage to maximize renewables investments and manage grid reliability



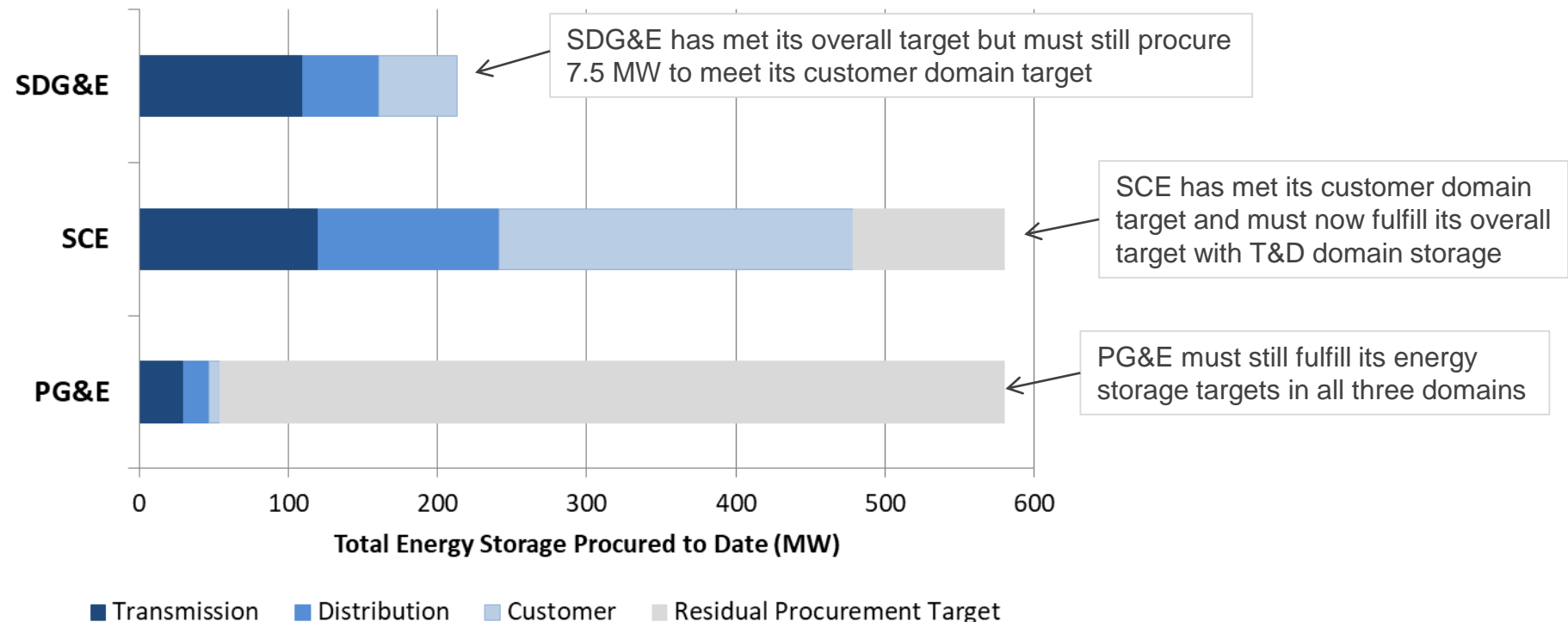
Source: CAISO 2013



Source: CAISO 2017

Energy Storage Is Arriving

Each of California's three investor-owned utilities (IOUs) are making major progress toward their 1,325 MW energy storage procurement target by 2020, including 99.5 MW of energy storage that was procured and operational *in six months* to address reliability issues stemming from limitations of the Aliso Canyon gas storage facility



Expedited Aliso Canyon Procurement

In six months, 99.5 MW of energy storage was procured and operational to address reliability issues stemming from limitations of the Aliso Canyon gas storage facility

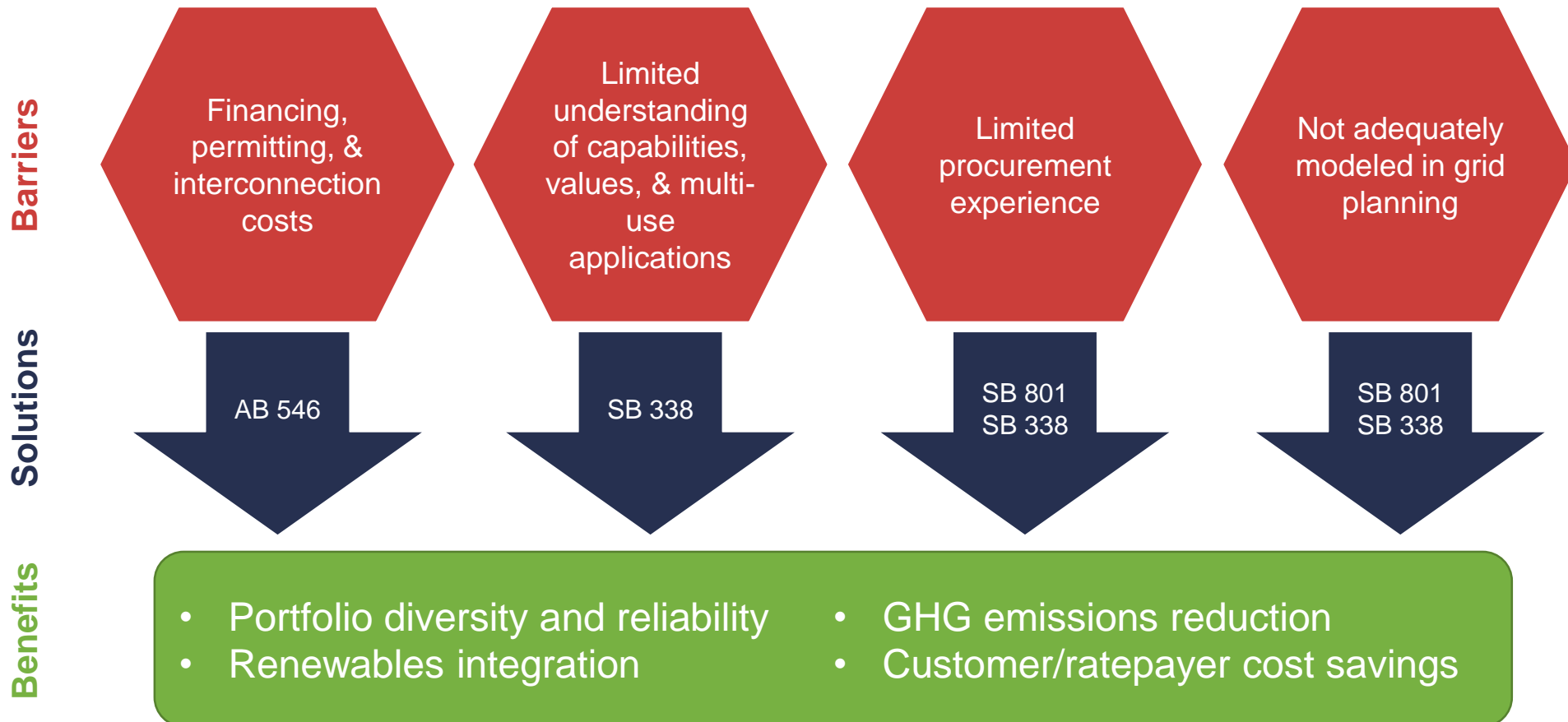
Utility	Developer	MW	COD
SCE	AltaGas Services / Greensmith	20.0	12/31/2016
	Powin Energy	2.0	12/31/2016
	Tesla Energy	20.0	12/31/2016
	GE Energy Storage	20.0	12/31/2016
SDG&E	AES Energy Storage	37.5	1/31/2017
Total		99.5	

More Energy Storage to Come

- In **implementing AB 2868**, each of the IOUs will be submitting applications for up to 500 MW combined in additional distributed energy storage
- **Los Angeles Department of Water & Power (LADWP)** has a 400-MW energy storage procurement goal to address near-term reliability challenges and long-term renewables targets
- The **Integrated Resources Plan (IRP)** proceeding is likely to identify energy storage procurement needs due to their fast-ramping flexibility capabilities
- The **Self-Generation Incentive Program (SGIP)** will continue to support BTM energy storage deployment after having nearly \$400 million in incentives made available early this year

Very successful 2017 legislative session!

Key bills are await Governor Browns signature that will help overcome barriers and help realize the benefits that energy storage can provide



Want to help shape California's energy storage market going forward?

Please visit us online: www.storagealliance.org

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