



California Native American Tribal Energy Storage Demonstrations

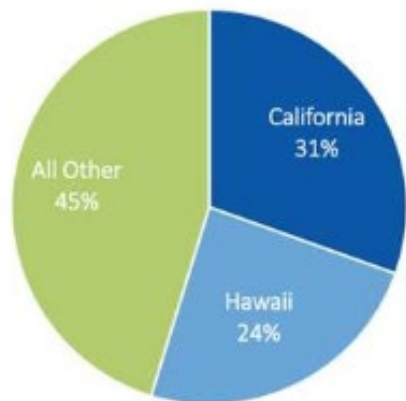
David Erne – August 21, 2020

Growing Need for Energy Storage in California

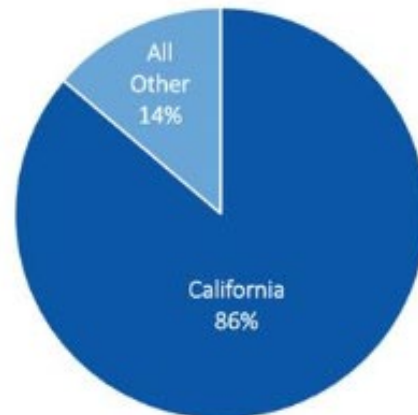
Where Is Energy Storage Deployed So Far?

U.S. Energy Storage Deployments (MWh), Cumulative Through Q3 2016

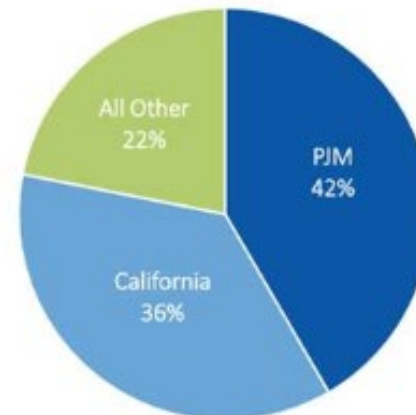
Residential



Non-Residential



Utility



Kann - U.S. Solar Market Insight 2016

Source: GTM Research

gtmresearch

Growing use in CA

- Large scale (≥ 1 MW) installations in 2016-2017 moved CA from minor player to 44% of U.S. energy capacity
- Small scale installations were 90% of U.S. energy capacity (2017)
- CA accounts for 77% of planned large scale storage

Drivers for growth in California

- CPUC procurement targets
- Title 24 (residential new construction code)
- Customer demand
- Resiliency

Energy Storage Research Strategies

Diversify



Eos Aurora 1000 | 6000
Grid-Scale Energy Storage



Demonstrate



Derisk*



*Lower manufacturing costs

Solicitation Overview

- California Needs
 - Longer duration energy storage for resilience and to capture excess renewable generation
 - Most current energy storage designed for 4 – hour duration
 - Energy code and PSPS increasing interest in residential storage
 - Title 24 requires solar on all new construction
 - PSPSs demonstrate the need to better use residential solar
- Research Purpose
 - Demonstrate energy storage that can provide at least 10 hours duration
 - Demonstrate value of energy storage for residential customers

Solicitation Overview

Type	Group	Demo	Site	Awards	
				All	Tribal
Long Duration	1	10 hr /400 kw	Any	3	1
	2	10 hr/50 kw	CA Native American Tribe	3	3
	3	10 hr/50 kw	Low-income/Disadvantaged Community	2	0
Residential	4	15 homes	3 climate zones	3	1

Group 1 (400 kw/10 hours)



Rincon Band of Luiseno Indians

- Vanadium Redox Flow Battery + Flywheel
 - Connected to solar
- Provides resilience & energy savings to:
 - Waste water treatment plant
 - Gas station/convenience store
 - Office building
 - Harrah's Resort - serves as emergency ops center & shelter



Group 2 (50 kw/10 hours)*



- Vanadium Redox Flow Battery
- Soboba Band of Luiseño Indians
 - Supports fire station



- Flywheel
- Viejas Band of Kumeyaay Indians
 - Supports water wells supplying drinking water



Kinetic Energy
Storage Corporation

*Pechanga Band of Luiseño Indians – proposed award, requiring Business Meeting approval

- Vanadium Redox Flow Battery supporting recreation center/emergency shelter

Group 4 (Residential Storage)



- Commercially available Tesla systems
- 10 of 15 sites are homes in Tribal areas
 - Sherwood Valley Band of Pomo Indians – 3 homes
 - Bear River Band of Rohnerville Rancheria – 5 homes
 - Campo Kumeyaay Nation – 2 homes



TESLA



Questions

