



**CA Energy Storage Alliance Comments:  
“Energy Storage Technologies and Policies Needed to  
Support CA’s RPS Goals of 2020”**

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# California Energy Storage Alliance (CESA)

**Our Goal:** Expand the role of storage technology to promote the growth of renewable energy and create a more stable, secure electric system



Human Energy™

FLUIDICENERGY

Xtreme Power



ICE ENERGY®  
CLEAN ENERGY DOESN'T  
GET ANY COOLER THAN THIS.

A123  
SYSTEMS

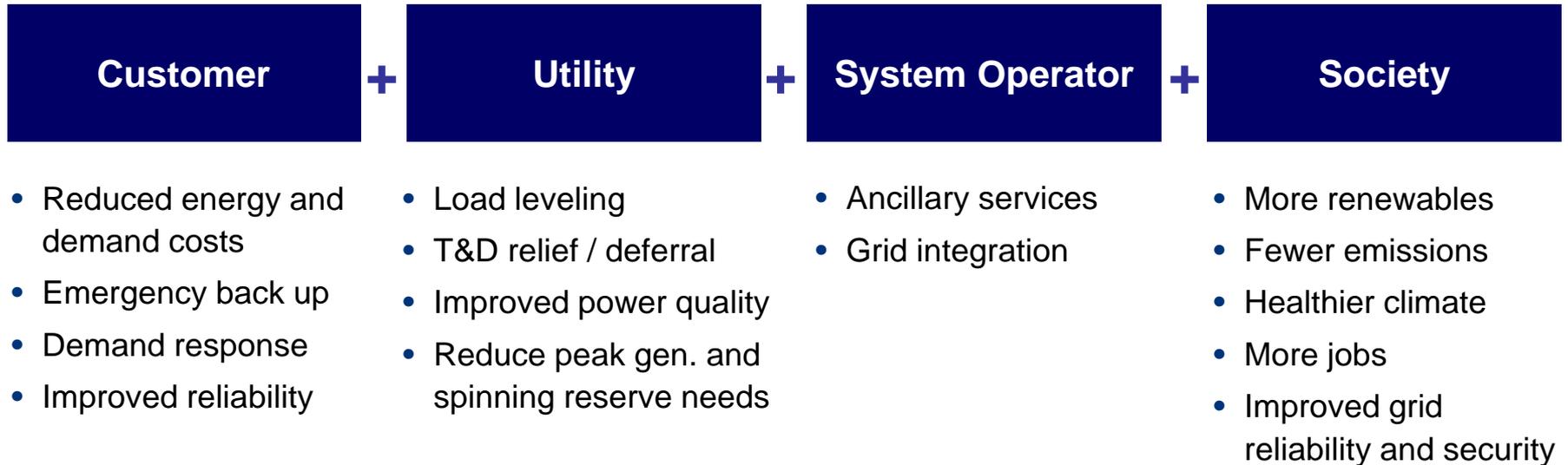


StrateGen  
Strategies for Clean Energy

- CA-focused advocacy group representing energy storage stakeholders
- Focus on storage coupled with renewable energy integrated into the smart grid
- Immediate work is on distributed applications of energy storage
- Current priorities/activities include:
  - » CPUC
    - SGIP AES implementation
    - DG (DER) cost benefit methodology
    - Smart Grid OIR
  - » Storage legislation - AB 44

# Distributed Applications for Storage

Distributed applications offer the potential to capture the greatest number of value streams, and are well suited for commercially available technologies



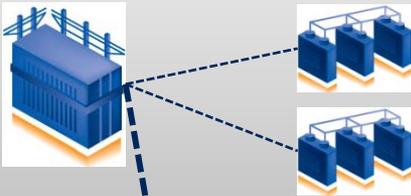
## ***Furthermore...***

- » *Many commercially available solutions are small-scale (<5MW) – and are best suited for distributed applications*
- » *Smaller systems open up many business models (besides simply utility owned)*
- » *Storage + renewables = “dispatchable renewables”*

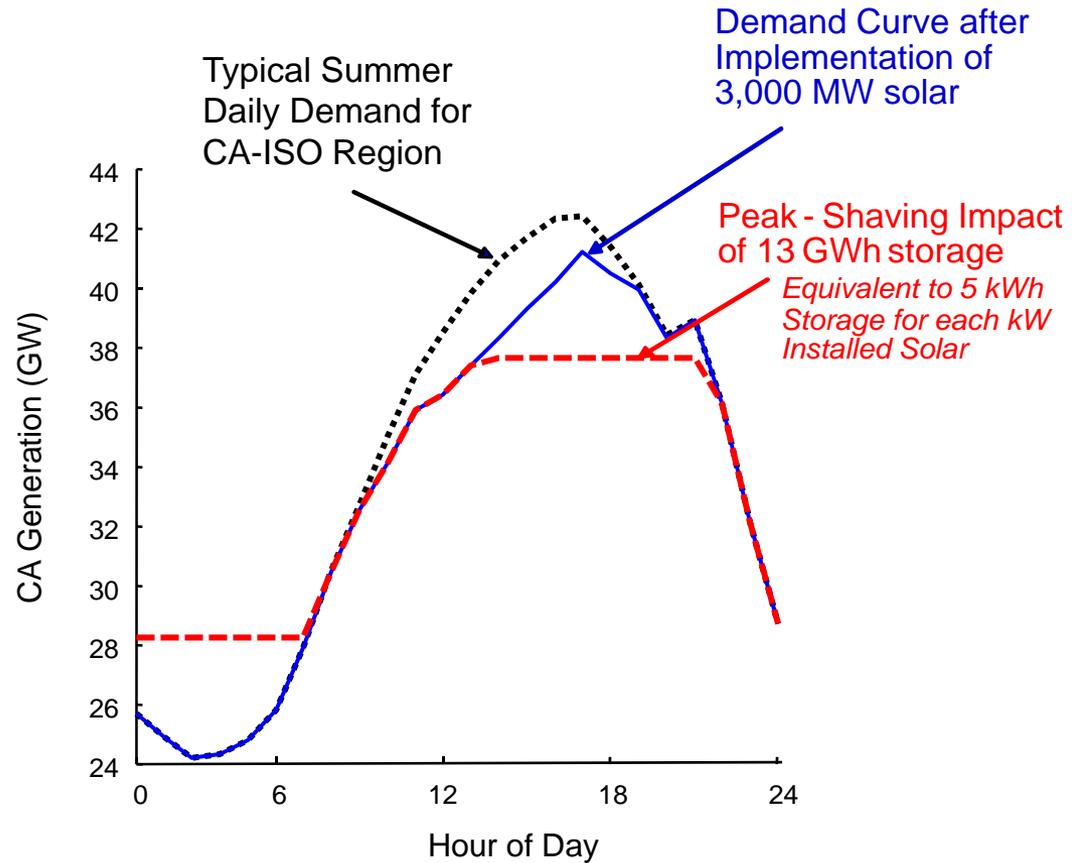
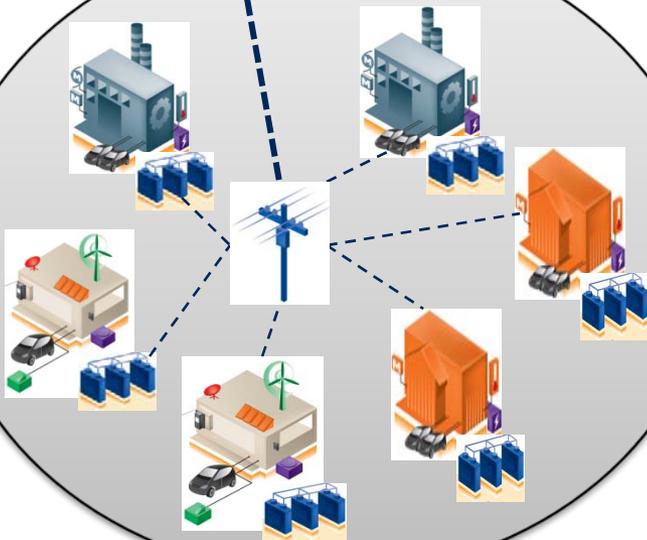
# Distributed Applications Are Utility Scale

Small distributed systems can have a grid-scale impact

Substation Sited Storage



Customer Sited



Source: EPRI

# Benefits of Storage – Renewable Integration

***“Enabling technologies such as fuel switching in ‘smart’ appliances, dispatch-able load from plug-in hybrid or other electric vehicles, or stationary energy storage would be required to enable very high levels of PV contribution (>20%) to the electric power system”.***

- NREL Denholm & Margolis, April 2006

***“When PV penetration reaches sufficiently high levels (e.g., 5 to 20% of total generation), the intermittent nature of PV can begin to have noticeable, negative effects on the entire grid” [requiring storage]***

- US DOE, SEGIS-ES, July 2008

***“Storage will need to be part of our portfolio if going to 15 to 20 percent wind at a national level, otherwise it won’t be efficient at a lower level and it won’t get us where we want to go environmentally”***

- Electric Power Research Institute, March 2009

# What is Stopping Storage Today?

Energy policy that supports energy storage will also support CA's RPS, peak load reduction and national smart grid policy

## Current Barriers

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- » Cost / Economics
  - Many systems have not yet achieved scale economies
- » Technology
  - Many solutions; all with tradeoffs
  - First demonstrations of new applications are difficult to implement
- » Regulatory/Policy
  - Difficult to aggregate complete value streams provided by storage
  - Perception that storage is just a 'utility solution'
  - Tariff design that does not reflect true cost of producing and delivering power on peak
  - Integration of storage into various aspects of policy making

## Recommendations

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- » Incentives
  - 'Fully implement' SGIP (standalone, w/ solar)
  - Increased rate of return for utility owned storage
- » Policies that encourage integration of storage, smart grid, DR, EE and RE under multiple business/ownership models
  - Tariff design that encourages load shifting
  - Clarification of net metering + with storage
  - Increase cap on FiT (w/ storage)
  - 3:1 RPS multiplier for RE delivered on peak
  - Peak reduction std for state energy purchases
- » RD&D funding
  - Support CA storage proposals for ARRA
  - Accelerate deployment of integrated demonstration projects
  - Energy Storage Center of Excellence



# End of Presentation

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