

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the presentation and discussion from the California Energy Storage Roadmap workshop held on October 13, 2014.

Submit comments to EnergyStorage@caiso.com

[Comments are due October 27, 2014 by 5:00pm](#)

Presentation materials and background information discussed during the October 13, 2014 workshop may be found at:

<http://www.caiso.com/informed/Pages/CleanGrid/EnergyStorageRoadmap.aspx>

Please provide your comments regarding each of the actions listed below that were discussed during the workshop. In particular, please direct your comments towards refinements needed to each action and any additional actions that may not have been identified or discussed. Also, please provide feedback on the priority of the proposed actions.

Actions and venues to address barriers

a. Actions to advance revenue opportunities

- i. **Defining and communicating grid needs will clarify gaps in existing markets and help identify new products**

Action ¹	Venue(s)
Describe and clarify operational needs at the transmission level, and the operating characteristics required of storage and other resources, connected at either the distribution or transmission level, in order to meet these needs.	CAISO
Describe and clarify operational needs at the distribution level, and the operating characteristics required of storage and other resources connected at the distribution level in order to meet these needs.	CPUC
Facilitate clarification by IOUs of operational constraints that would limit the ability to accommodate storage on the distribution system and behind the customer meter.	CPUC

Comments:

As the Six Cities have commented previously, any efforts to create new ISO market products should be driven primarily by considerations of operational and reliability requirements, rather than by the capabilities of energy storage or any other types of resources. Development of new products and services entails costs to grid users, and the desire to provide compensation to particular resource types should not result in new market products for which there is not a well-established need or that cannot be economically developed. The Six Cities support the proposal to evaluate whether there are needs that may be satisfied with storage (or other types of) resources. This evaluation should objectively identify needs that may exist, but should not presume the existence of such needs.

ii. Clarify existing wholesale market product opportunities for storage

Action	Venue(s)
Clarify existing energy and AS market products and requirements for energy storage to participate in the ISO market	CAISO
Clarify roles of storage in an evolving RA framework	CPUC

¹ WDAT and Rule 21 are addressed under section 2.C.i

Comments:

The Six Cities support clarification of existing energy and ancillary services products to facilitate the ability of storage resources to participate fully in the markets for these products. As a general matter, storage resources should compete in markets on equal footing with other resource types. In seeking to clarify rules relating to existing products and requirements, the Six Cities urge the ISO to consider whether there are unique aspects of storage that might unduly increase prices for these products.

iii. Refine existing and add new wholesale market products to meet grid needs

Action	Venue(s)
Identify gaps and consider changes or additions to existing wholesale market products that would better meet grid needs and improve revenue opportunities for resources such as storage that can provide those needs.	CAISO
Further examine and clarify the role of storage in deferring or eliminating the need for transmission or distribution upgrades	CAISO, CPUC
Consider revising the ISO’s procedure for testing and certifying resources for ancillary services	CAISO
Streamline rules for aggregations of distributed storage units to participate in CAISO markets, including participation via use of the NGR model.	CAISO
Evaluate the need and potential for the development of distribution level grid services and products that provide new revenue opportunities for distribution connected storage resources.	CPUC

Comments:

As stated above, new products should only be developed if there is an operational or reliability need for the product. Any improvements in revenue opportunities for storage resources may be a consequential benefit of such new products, but new products should not be invented (in the absence of need) solely for purposes of creating a revenue stream for storage or any other types of resources.

The Six Cities support assessment of whether storage resources may allow for deferral or elimination of network upgrades. However, considerations of the cost of storage resources (and who pays the cost of these resources) relative to the cost of undertaking upgrades, which are paid for by ISO transmission customers, should factor prominently in the ISO’s analysis of this issue. Relying on a storage resource to defer an upgrade should occur when the storage resource (i) may provide cost savings relative to the cost of the upgrade and (ii) represents an operationally sound alternative to the upgrade. More broadly, the Six Cities urge the ISO to expand its consideration of whether storage

resources could allow for deferral or eliminate upgrades to include this type of analysis for other resources. As a general matter, the Six Cities support measures that serve to reduce transmission costs.

iv. Identify gaps in rate treatment and identify existing rules that could address issues

Action	Venue(s)
Clarify rate treatment for the charging mode of grid-connected or distribution-connected storage participating in the wholesale market under current ISO market settlement rules.	CAISO, CPUC
Clarify existing tariffs for Behind the Meter storage devices that are paired with NEM generators	CPUC
Consider new proceeding for stand-alone Behind the Meter storage devices to address rates for charging and exporting power	CPUC

Comments:

Any clarifications regarding the rate treatment for the charging mode of ISO grid-connected storage participating in the wholesale markets should be developed through an open and transparent ISO stakeholder process initiated for the purposes of considering this issue.

v. Define multiple-use applications of storage to facilitate development of models and rules

Action	Venue(s)
Define and develop models and rules for multiple-use scenarios of storage where feasible.	CPUC, CAISO

Comments:

The Six Cities have no comments on this topic at this time, but observe that the compensation structure for resources capable of operating in multiple-use scenarios should ensure that such resources do not double- or over-collect their costs, such as might occur if a given resource recovers all or part of its costs through access charges and all or part of its costs through participation in markets and earning market revenues.

vi. Determine hybrid storage configurations to enable prioritization and development of requirements

Action	Venue(s)
Identify and develop clear models of use cases for hybrid energy storage sites, and prioritize them for purposes of facilitating their participation	CAISO, CPUC, IOUs
For the use cases of greatest interest or greatest likelihood of near-term development, clarify the requirements and rules for participation.	CAISO, CPUC, IOUs

Comments:

The Six Cities have no comments on this topic at this time.

vii. Assess existing methodologies for evaluating storage and identify or develop a preferred common methodology

Action	Venue(s)
Prepare report or summary of efforts underway to develop publicly available models for assessment of energy storage	CEC
Consider refinements to the evaluation methodologies used by IOUs for to support CPUC decisions on storage procurement	CPUC, CEC

Comments:

The Six Cities have no comments on this topic at this time.

b. Actions targeted at cost reduction

i. Review metering requirements for opportunities to reduce costs

Action	Venue(s)
Establish the value of and develop a regulatory and policy framework under which the ISO	CPUC,

and UDC can share metering and/or meter data.	CAISO
Establish rules for resource owners to submit settlement quality meter data	CAISO
Establish rules for UDC subtractive metering for BTM wholesale resources	CPUC
Establish rules for certifying sub-metering and third-party meter data collection and VEE	CPUC
Complete the Expanding Metering and Telemetry Options Phase I and II initiatives – “expand scenarios for SC metered entities”	CAISO

Comments:

The Six Cities have no comments on this topic at this time.

ii. Review telemetry requirements for opportunities to reduce costs

Action	Venue(s)
Evaluate CAISO telemetry requirements for smaller resources	CAISO
Evaluate KYZ, increasing 1-minute requirement, 10 MW limit	CAISO
Evaluate value of common telemetry framework for California	CAISO
Complete the Expanding Metering and Telemetry Options Phase I and II initiatives – definition and support for “data concentrators”	CAISO

Comments:

The Six Cities have no comments on this topic at this time.

iii. Assess codes and standards to identify gaps and best practices

Action	Venue(s)
Review existing fire protection codes for various energy storage technology and applications and identify best practices	CEC
Determine applicability and scope of UL and other certifications for stationary storage systems	CEC

Comments:

As the Six Cities have noted previously, certain locally-developed safety codes and standards may reflect the individualized needs of different local jurisdictions. Any effort to evaluate existing practices and develop standardized models or best practices should acknowledge that flexibility for differing local needs may be required.

iv. Review interconnection process for small distribution-connected resources to reduce costs

Action	Venue(s)
Address certification process for integrated device metering	CPUC
Address fees for interconnection of non-exporting resources	CPUC

Comments:

The Six Cities observe that publicly-owned utilities may have their own interconnection requirements and fees applicable to resources connected to their distribution systems, and publicly-owned utilities should retain discretion regarding the applicable interconnection requirements.

c. Actions focused on process and timing improvement

i. Clarify interconnection processes to make it predictable and transparent

Action	Venue(s)
Clarify existing interconnection processes, including developing process flow charts and check lists	CAISO, CPUC
Coordinate between Rule 21 and WDAT to streamline queue management processes	CPUC
Evaluate the potential for a streamlined or 'faster track' interconnection process for storage resources that meet certain use-case criteria	CAISO, CPUC, and IOUs

Comments:

Again, publicly-owned utilities may have their own procedures for interconnecting resources to their systems, and they should retain discretion regarding the applicable interconnection requirements.

d. Identify interdependencies and determine priorities to minimize delays

During the workshop the Roadmap team highlighted the importance of identifying interdependencies among the actions. Correctly prioritizing actions and selecting the ones that currently either prevent other actions from being productive or directly prevent storage contracts from being signed will enable the CPUC, the CAISO and the Energy Commission to maximize progress in removing roadblocks to storage. Please provide comments on important interdependencies among actions that should be factored into the roadmap.

Comments:

The Six Cities have no comments on this topic at this time.

Applicability to Storage Configuration and Use Cases

The Roadmap team presented an early draft of a “matrix” that seeks to convey what actions will support each identified use case or storage configuration to come online and contribute to grid stability. Please provide comments and suggestions on how such a matrix can be made the most useful to stakeholders. If applicable, please provide examples.

Comments:

The Six Cities have no comments on this topic at this time.