Energy Storage and Distributed Energy Resources (ESDER) Stakeholder Initiative

Revised Scope and Schedule

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1 Introduction

In this paper the ISO presents the scope and schedule it will use in its new stakeholder initiative focused on enhancing the market participation of energy storage connected directly to the ISO grid and energy resources connected to the distribution system. This scope and schedule was developed with stakeholder input and includes one set of issues to be addressed in 2015 and a second set of issues to be addressed in 2016 and beyond. The ISO considers this scope and schedule final and will now turn its attention to beginning work on the scope of issues for potential policy resolution in 2015.

2 Background

Energy storage connected directly to the ISO grid and distributed energy resources (DER) – i.e., resources on the distribution system such as rooftop solar, energy storage, plug-in electric vehicles, and demand response – are growing and will represent an increasingly important part of the future resource mix. Integrating these resources will help lower carbon emissions and can offer operational benefits.

California is taking a number of steps to facilitate market participation of storage and aggregated distributed energy resource. In 2013, the CPUC established an energy

storage procurement target of 1,325 MW by 2020. Energy storage developers responded by submitting a significant number of requests to interconnect to the ISO grid. For example, ISO generator interconnection queue cluster 7 (i.e., interconnection requests received in April of 2014) includes approximately 780 MW of energy storage (13 projects), while cluster 8 (i.e., interconnection requests received in April 2015) includes approximately 7,300 MW of energy storage (66 projects).[1]

Also in 2013, the ISO conducted an effort to clarify interconnection rules for storage; this effort concluded as a stakeholder initiative in 2014 and found that existing interconnection rules accommodate the interconnection of storage to the ISO controlled grid.[2] However, the initiative also identified non-interconnection related issues that should be addressed. To address this spectrum of issues, the ISO collaborated with the CPUC and CEC to publish the California Energy Storage Roadmap in late 2014.

The roadmap identified a broad array of challenges and barriers confronting energy storage and aggregated distributed energy resources. The roadmap also identified needed actions to address these challenges, including several high priority actions issues assigned to the ISO. These are listed below:

- Rate treatment: Clarify wholesale rate treatment and ensure that the ISO tariff and applicable BPMs and other documentation provide sufficient information.
- Market participation:
  - Clarify existing ISO requirements, rules and market products for energy storage to participate in the ISO market.
  - Identify gaps and potential changes or additions to existing ISO requirements, rules, market products and models.

[1] The ISO generator interconnection queue as of June 18, 2015 is posted on the ISO website at http://www.caiso.com/Documents/ISOGeneratorInterconnectionQueue.pdf

[2] http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorageInterconnection.aspx

– Where appropriate, expand options to current ISO requirements and rules for aggregations of distributed storage resources.

The ISO plan for carrying out these action issues is comprised of two parts. The first part is to educate stakeholders on existing ISO requirements, rules, market products and models for energy storage and aggregated DER through an education forum. The ISO accomplished this first part by developing a special purpose education forum and hosting it on two different dates – April 16 and 23 – to accommodate as many stakeholders as possible. The forums were a success – over 200 stakeholders attended and the feedback received was positive.

The second part of the plan is to conduct a stakeholder initiative to identify and consider potential enhancements to existing requirements, rules, market products and models for energy storage and DER market participation. The ESDER is that initiative. As an initial step, the ISO has been working with stakeholders to develop a scope of issues to be addressed in the ESDER initiative and a schedule for resolving them. The ISO will use the revised scope and schedule presented in this paper to conduct the ESDER initiative.

3 Stakeholder process

The ISO published its initial proposed scope and schedule for the ESDER initiative on May 13, 2015. A stakeholder web conference was held on May 21 and written stakeholder comments were received on or about May 29.

The ISO developed the revised scope and schedule presented in this paper based on a consideration of the stakeholder comments received. The ISO considers this scope and schedule final and believes that further stakeholder web conferences on the scope and schedule for the ESDER initiative are neither necessary nor a productive use of stakeholder's time.[3] Instead, the ISO will now turn its attention to beginning work on

[3] The initial proposed scope and schedule had included the step of presenting the scope and schedule to the Board for approval in July. After giving this further consideration, the ISO has concluded to omit this step for two reasons. First, to maximize the potential for policy resolution this year, work on the 2015 scope of issues needs to begin without delay. Second, initiative scopes and schedules are not typically presented to the Board for approval.

the scope of issues proposed for 2015. Although the ISO will not be holding a stakeholder web conference on the revised scope and schedule, the ISO is providing another comment opportunity and invites interested stakeholders to submit written comments on this document to InitiativeComments@caiso.com by 5:00 p.m. (Pacific) on July 2. The ISO will address any comments received in the issue paper and straw proposal (discussed in the next paragraph).

The following table outlines the schedule for the policy development portion of this stakeholder initiative for those issues in the 2015 scope. The next step will be to develop an issue paper and straw proposal on the issues in the 2015 scope. The ISO plans to post this paper in late July or early August. Specific dates for the remainder of the 2015 phase of the stakeholder process will be presented in the issue paper/straw proposal.

The objective is to bring proposed resolutions to identified policy issues in the 2015 scope to the Board by December 2015. This schedule does not include implementation steps including development and filing of tariff amendments, making changes to relevant business process manuals, and making and implementing changes to market system software and models.

Stakeholder Process Schedule (for the scope of issues identified for potential policy resolution in 2015)		
Step	**Date**	**Activity**
Initial proposed scope and schedule	May 13, 2015	Post initial proposed scope and schedule (posted in presentation format rather than a paper)
	May 21, 2015	Stakeholder web conference
	May 28, 2015	Stakeholder comments due
Revised scope and schedule	June 25, 2015	Post revised scope and schedule
	July 2, 2015	Stakeholder comments due
Issue paper and straw proposal	July/August	Post issue paper and straw proposal
	TBD	Stakeholder web conference
	TBD	Stakeholder comments due

Stakeholder Process Schedule (for the scope of issues identified for potential policy resolution in 2015)		
Step	**Date**	**Activity**
Revised straw proposal	TBD	Post revised straw proposal
	TBD	Stakeholder web conference
	TBD	Stakeholder comments due
Draft final proposal	TBD	Post draft final proposal
	TBD	Stakeholder web conference
	TBD	Stakeholder comments due
Board approval	December 17-18, 2015	ISO Board meeting

Regarding the proposed scope of issues for potential policy resolution in 2016 and beyond, the ISO intends to delay any work on these issues until early 2016. Taking this approach will maximize the potential for bringing proposed resolutions to the 2015 scope of issues to the Board by December 2015.

4 Revised scope and schedule

The following sections describe and clarify the revised scope of issues for potential policy resolution in 2015 and 2016.

4.1 Scope of issues for potential policy resolution in 2015

As background, the initial proposed scope and schedule[4] listed the following issues in the 2015 scope:

[4] The initial proposed scope and schedule for the ESDER initiative was posted on May 19, 2015 as a presentation entitled, "Agenda and Presentation – Energy Storage and Distributed Energy Resource Participation" and was discussed during the May 21, 2015 web conference. A copy of the presentation is available on the ISO's website at: http://www.caiso.com/Documents/AgendaandPresentation-EnergyStorageandDistributedEnergyResourceParticipation.pdf

1. Non-generator resource (NGR) model enhancements
    a. Update documentation on NGR to capture material and clarifications compiled for the April education forums.
    b. Clarify how the ISO uses state of charge in market optimization.
    c. Evaluate initial state of charge as a submitted parameter in the day-ahead market.
    d. Evaluate option to not provide energy limits or have ISO co-optimize an NGR based on state of charge.
2. Proxy Demand Resource (PDR) and Reliability Demand Response Resource (RDRR) enhancements – Evaluate inclusion of baselines that meet the North American Energy Standards Board (NAESB) measurement and validation standards. Clarify how to enable alternative baselines that meet NAESB standards and specify tariff provisions to define alternative baselines in BPMs.
3. Evaluate pseudo-tie or dynamic scheduling arrangements for storage resources, using available market models.
4. Specify tariff provisions needed for the following two multiple use applications
    a. Non-RA DER provides services to the distribution system (operational services and infrastructure deferment) and participates in wholesale market.
    b. Non-RA behind-the-end-use customer meter DER provides services to end-use customer and participates in wholesale market.

<u>Issue 1</u>

In their written comments stakeholders generally expressed strong support for inclusion of issue 1 (enhancements to the NGR model) in the proposed 2015 scope and the ISO intends to retain all four sub-topics listed under issue 1 in the 2015 scope. As one stakeholder commented, these were issues that, for the most part, surfaced in the NGR market simulations in 2012. This same stakeholder added that while the lack of these features up to this point may not have been an impediment to NGR entry to the ISO

market, they are well timed to accommodate resources that are nearing commercial operation and subsequent market participation.

Stakeholders have little experience with participating under the NGR model (e.g., there is only one energy storage facility participating under the NGR model at present). This is because the many projects that could utilize the NGR model are under development, thus they are not yet in commercial operation and not available to participate in the ISO market and utilize the NGR model. However, energy storage developers with projects in the development pipeline are expressing interest in the NGR model and want to increase their knowledge of the model. The ISO recognizes that there is a need to assess whether the documentation available on the NGR model is sufficient or whether it should be supplemented with more information. For example, the ISO could assess whether the presentation materials developed on the NGR model for the April education forums includes new information that should be documented in appropriate business practice manuals. Another aspect of the NGR model that stakeholders have made inquiries about is state of charge – stakeholders would like more detail and certainty about how the ISO uses state of charge values in market optimization. As part of the 2015 scope, the ISO will develop and provide additional details about how the ISO uses state of charge values in resource optimization, market dispatch, and energy management system control. Inquiries have also been made as to whether an energy storage facilities' initial state of charge could be submitted as a parameter in the day-ahead market. The ISO will examine this change as part of the 2015 scope. Lastly, in response to stakeholder inquiries, the ISO will evaluate the potential for NGRs to not provide energy limits or not have the resource optimized based on state of charge. One stakeholder commented that it supports broad flexibility in allowing state of charge to be managed either by the ISO or the resource.

<u>Issue 2</u>

In their written comments stakeholders expressed strong support for inclusion of issue 2 (expansion of baseline methodologies for PDR and RDRR) in the proposed 2015 scope. One stakeholder recommends including a review and consideration of metering alternatives that can account for multiple resources at the same site. The ISO supports a review and consideration of this suggested topic as part of issue 2. The ISO will retain issue 2 in the 2015 scope.

Issue 3

Regarding issue 3 (evaluate pseudo-tie or dynamic scheduling arrangements for storage resources), some stakeholders suggested deprioritizing this issue and moving it to the 2016 scope. After giving this feedback consideration, the ISO has concluded to move this topic to the 2016 scope. The resulting six month delay on this topic likely will not have a significant adverse impact, would enable more focus on the issues in the 2015 scope, and would increase the probability of their completion in 2015.

Issue 4

In their written comments on issue 4 (evaluation of two non-RA multiple use applications), some stakeholders argue that the 2015 ESDER scope should include multiple-use scenarios involving provision of RA capacity. They argue that the resource owner or scheduling coordinator would be responsible to ensure that the resource meets its RA obligations. These parties also raised the concern that the ESDER, by limiting its scope to the non-RA scenarios, would somehow impede the ability of resources already procured to meet local capacity requirement (LCR) needs to meet their RA commitments. Another party said the scope should include scenarios where the resource provides services outside the ISO – for example, to support the distribution grid – and does not participate in the ISO markets.

The ISO offers the following clarifications regarding the aspects of this issue that it intends to address within the 2015 scope.

First, a primary reason for deferring a more general treatment of multiple-use scenarios to include ones that involve provision of RA capacity is to await the initial results of the ISO's "Reliability Services Initiative – Phase 2" (RSI-2) and "Flexible Resource Adequacy Criteria and Must Offer Obligations – Phase 2" (FRACMOO-2) initiatives. The ISO will begin both initiatives this summer and will complete RSI-2 in the first quarter of 2016, whereas FRACMOO-2 will take somewhat longer. The ISO will begin working group activities on FRACMOO-2 in July, begin the regular stakeholder process in October, and will have completed at least two rounds of straw proposals by first quarter 2016 with the intent of completing the initiative by summer 2016. Thus if the next phase of ESDER begins in first quarter 2016, the ISO will have the benefit of the RSI-2 results and the

substantial work done in FRACMOO-2, and can build on these results and ensure consistency across all three initiatives.

Between RSI-2 and FRACMOO-2 the ISO will address several important issues for energy storage and aggregated DER that wish to provide RA capacity. FRACMOO-2 will expand the definition of flexible capacity to address ISO operational concerns that were not addressed in the original definition, and will consider provision of flexible capacity by resources that have not been eligible thus far, such as imports and non-NGR energy storage facilities. RSI-2 will take up, among other things, substitution rules for flexible RA resources on scheduled or forced outage. Because energy storage and some types of aggregated DER are likely to provide flexible RA capacity, the ISO believes it is necessary to have these initiatives complete or well advanced before the ESDER initiative takes up multiple-use scenarios involving RA.

Although the ISO will look at effective flexible capacity (EFC) rules for non-NGR energy storage resources, specific treatment of multiple-use resources for RA and EFC are not within the scope of either RSI-2 or FRACMOO-2. However, additional work must be done with the ISO and LRAs to determine how much RA capacity a multiple-use resource can provide. The LRAs and ISO need to develop RA standards for, among other things, minimum availability standards, measurement and verification, and deliverability. All resources currently eligible to supply RA have provisions for each of these and how they determine the amount of RA a resource can provide. Once the quantity of RA or EFC a multiple-use resource is eligible to provide is determined and used in an RA showing, the scheduling coordinator for the resource should be able to refer to the must offer obligation for the applicable capacity type – local, system, and/or flexible – for a complete description of how to meet the appropriate obligation. The ISO does not currently have an open stakeholder initiative to address this issue at this time.

Second, the ISO proposes to define the distinction between RA and non-RA in temporal terms on a monthly basis. Thus if a resource is providing RA capacity only in some months of the year, the provisions the ISO develops here for non-RA multiple-use scenarios would be applicable during months when the resource is not providing RA capacity. The ISO does not think it is feasible to take up – and complete by the end of 2015 – scenarios in which a resource splits its capacity between RA provision and non-RA.

Third, the ISO does not believe there will be any conflict between the provisions developed in the ESDER and any contractual arrangements already agreed to by providers of energy storage or aggregated DER. If a resource has agreed to provide system, local or flexible RA capacity to a load serving entity (LSE) for a given month, the ISO will expect the resource to comply with all provisions relevant to its provision of RA capacity that are in effect at the time it provides RA capacity. A possible implication of any new multiple-use provisions developed in the 2015 scope of the ESDER *could be* that the resource would have to relegate any service it wants to provide to another entity to a secondary position, so that its RA obligations always take priority over any possibly conflicting needs for the resource.[5] The ISO mentions this possibility only as supposition at this point, because some stakeholders have raised concerns about whether the proposed ESDER scope would entirely prevent their energy storage or aggregated DER resources from providing RA capacity. The ISO assures these stakeholders that, no, the proposed ESDER scope would not prevent their energy storage or aggregated DER resources from providing RA capacity; but, the provisions developed in 2015 may limit their flexibility to provide services to other parties during the same months they provide RA capacity.

Fourth, regarding DER providing services to another entity such as the distribution company and not participating in the ISO markets, it is not clear why it would be appropriate for an ISO initiative to take up matters related to DER that do not participate in the ISO markets.

Finally, the ISO has not yet defined the scope of multiple-use scenarios and issues that will be taken up in 2016. The ISO expects that the 2015 activities will help to identify additional issues that need to be addressed, and there will be ample opportunity for stakeholders to help develop the 2016 scope when the ISO is ready to begin that phase next year.

[5] This proposal currently is tentative and should not be assumed as a foregone conclusion.

Other issues

Stakeholders suggested additional topics for inclusion in the 2015 scope in their written comments. The ISO responds to those here.

Regarding the Bidding Rules Enhancement initiative, one stakeholder raised the topic of modeling of use limitations in the NGR model for inclusion in the 2015 scope. However, the ISO did not fully understand this comment. If this stakeholder is suggesting the inclusion of additional resource characteristics in the NGR model, then the ISO responds that it is not feasible to include this in the 2015 scope but that it is appropriate to consider this as part of the 2016 scope of NGR enhancements. However, if this stakeholder is suggesting how the ISO should consider use limitations such as daily starts, minimum up time and minimum down time (i.e., generically but not specific to the NGR model) then these comments should be submitted in the Bidding Rules Enhancement initiative.[6]

The same stakeholder also recommended that several DR related issues be added to the 2015 scope (e.g., DR discrete dispatch capability, removing the requirement that DR resources must contain service accounts from a single LSE, and expanding the telemetry waiver for DR programs). Although the ISO already responded to these issues in the CPUC's Supply Integration Working Group, the ISO will consider including these issues in the 2016 scope.

Another stakeholder suggested adding to the 2015 scope the process for NGRs to aggregate and provide resources to the regulation energy market as a single resource. The ISO points out that current rules do not preclude an aggregated resource from participating under the NGR model. However, to the extent this stakeholder suggestion is more narrowly focused on aggregations of DER, the ISO notes that in the Expanding Metering and Telemetry Options stakeholder initiative the ISO has developed a

[6] http://www.caiso.com/informed/Pages/StakeholderProcesses/BiddingRulesEnhancements.aspx

framework for the aggregation of DER and is planning to present that to the ISO Board for approval at its July 2015 meeting.[7]

Another stakeholder suggested adding to the scope of this initiative topics related to compensation of resources in the regulation market. The ISO notes that it is not experiencing reliability issues as a result of the current performance of its fleet of resources providing regulation service and stated as such in tariff revisions concerning its frequency regulation market design that it filed with the Federal Energy Regulatory Agency (FERC) on December 2, 2014. In its filing the ISO offered to evaluate the performance of new technologies that are expected to join its regulation fleet over the next few years. In its order issued January 30, 2015, the FERC found the ISO's proposal to reduce the minimum performance threshold from 50 percent to 25 percent just and reasonable. Accordingly, the FERC order directs the ISO to file an informational report to review the minimum performance threshold no later than 18 months from January 1, 2015. The FERC order further notes that because data collected for this initial informational report may not be ripe in considering emerging technologies, the FERC also directs the ISO to file a second subsequent informational report no later than 36 months from January 1, 2015. This second informational report is to include an analysis of how the entrance of new and faster-responding technologies potentially influenced overall resource accuracy measurements in the ISO's regulation market. Given that this timeline takes this analysis out to late 2017, the ISO believes it would be premature to add this issue to the scope of the ESDER initiative at this time.

4.2 Scope of issues for potential policy resolution in 2016 and beyond

As background, the initial proposed scope and schedule[8] listed the following issues in the 2016 scope:

[7] More information about this initiative is available on the ISO's website at http://www.caiso.com/informed/Pages/StakeholderProcesses/ExpandingMetering-TelemetryOptions.aspx

1. Additional NGR enhancements
    a. Consider a single participation agreement, rather than the current requirement that an NGR execute both a participating generator agreement (PGA) and a participating load agreement (PLA).
    b. Evaluate interconnection requirements for non-exporting NGR.
    c. Explore multiple configurations for a single NGR where each configuration is allowed different operating characteristics and economic bid curves based on physical constraints of the resource.
    d. Evaluate expanding bid cost recovery for NGR to potentially cover additional resource types and configurations.
    e. Enhance load management capability and participation under the NGR model (i.e., both increasing and decreasing consumption).
2. Additional PDR/RDRR enhancements – Explore dispatching DR to increase consumption (also see topic 1e)
3. Address remaining policy issues from the DERP initiative.
4. Evaluate the distinction between wholesale charging energy and station power.
5. Consider additional multiple use applications.
6. Examine alignment between distribution level interconnection and the ISO NRI process.
7. Consider open policy issues from CPUC demand response working groups.

Issue 1a

Although no stakeholder commented specifically on issue 1a, the ISO will retain this issue in scope for 2016. The ISO notes however that some aspects of this issue may be addressed in 2015 during development of the distributed energy resource provider

[8] See footnote 4.

agreement as part of the Expanding Metering and Telemetry Options initiative (see footnote 7).

Issues 1b-1e, 5, and 6

In their written comments some stakeholders suggested that issues 1b, 1c, 1d, 1e, 5 and 6 should be reprioritized and moved to the 2015 scope. On issues 1b, 1c, 1d and 1e (all of these are NGR enhancements), the ISO will retain these issues as in scope for the initiative in 2016 because it is in-feasible to add these to the 2015 scope. However, in recognition of stakeholders' desire that work begin on these issues soon, the ISO will begin internal work on these issues in 2015 so that stakeholder process work on these issues can begin in earnest in early 2016. Comments on issue 5 (multiple use applications) were already addressed in section 4.1. On issue 6 (alignment between distribution level interconnection and the ISO NRI process), the ISO views this topic as a significant undertaking requiring coordination with the CPUC and the distribution utilities. As a consequence, the ISO believes that this topic cannot feasibly be added to the 2015 scope and will retain this issue in scope for 2016.

Issue 3

Although stakeholders did not specifically comment on issue 3 (remaining policy issues from the DERP initiative), the ISO interprets this as agreement that this issue is appropriate for the 2016 scope. Through the Expanded Metering and Telemetry Options initiative, the ISO is taking a first step by proposing a framework to enable a DER provider ("DERP") to aggregate DER to meet the ISO's 0.5 MW minimum participation requirement and thereby open a pathway for aggregated DER to participate in the wholesale market. The ISO believes this proposed framework represents a significant step forward. To ensure that these enhancements can be implemented quickly, the ISO will rely on existing market models and tariff rules to the maximum extent possible. Taking this approach means that the ISO and market participants can avoid major market system changes and the associated time required to implement those changes. This approach also means that this first step comes with some limitations. That said, the ISO is committed to consider further enhancements to offer greater flexibility in participating in the ISO markets. Some of these enhancements will be explored in the 2016 scope and beyond as the ISO gains operational experience with DER aggregations. Thus, the ISO is retaining issue 3 in the 2016 scope.

Issue 4

In response to issue 4 (distinction between wholesale charging energy and station power), one stakeholder believes that wholesale charging issues were already addressed in the ISO's 2014 energy storage interconnection initiative. The ISO agrees;[9] however, the ISO does not believe that the distinction between station power and wholesale charging energy is sufficiently clear and believes that additional clarity would be beneficial. Under the ISO tariff, station power is energy for operating electric equipment, or portions thereof, located on the generating unit site owned by the same entity that owns the generating unit, which electrical equipment is used exclusively for the production of energy and any useful thermal energy associated with the production of energy by the generating unit; and for incidental heating, lighting, air conditioning, and office equipment needs of buildings or portions thereof, that are owned by the same entity that owns the generating unit; located on the generating unit site; and used exclusively in connection with the production of energy and any useful thermal energy associated with the production of energy by the generating unit. Station power includes the energy associated with motoring a hydroelectric generating unit to keep the unit synchronized at zero real power output to provide regulation or spinning reserve. For an energy storage facility, station power would be any energy actually consumed and not energy that is used to charge the storage device. Since NGRs are treated as generators, the rules for settlement of station power are the same as for conventional

[9] Through that stakeholder process the ISO provided the clarification that its existing non-generator resources (NGR) model already addresses some rate treatment issues for resources that participate exclusively in the wholesale market as an NGR. For example, under the ISO tariff NGRs are generation resources with a MWh limitation that can be seamlessly moved within an operational range consisting of positive generation only, negative generation only, or positive and negative generation. The ISO settles the energy dispatches for positive or negative energy (i.e., when discharging or charging) at the locational marginal price (LMP), *i.e.,* at a wholesale rate. The ISO does not consider NGRs in the charging mode as "consuming" energy for end-use consumption, but rather storing energy for later resale in ISO wholesale markets. NGRs may either be interconnected to the CAISO controlled grid or to a utility distribution system served by the CAISO grid. Round-trip efficiency losses for an NGR could reasonably be argued are part of charging, since the energy is not being used for any other purpose. Moreover, the CAISO does not consider "losses" generally as end-use consumption. Round-trip efficiency losses will be captured at the resource level in the wholesale transaction. It is expected that the resource will require more energy from the grid than it will generate. These differences are accurately captured in the metered settlement between the NGR's scheduling coordinator and the ISO.

generators. For traditional gas generators, it is relatively simple to distinguish what portion of station power is to be treated as retail station power consumption. Because the ISO tariff allows for simultaneous netting of consumption against output within a five-minute interval, station power is measured as the amount of consumption that exceeds output within a five-minute interval. However, although NGRs are treated as generators, it may be difficult to distinguish station power consumption from charging unless the two activities are metered separately for storage facilities, in which case simultaneous netting would not be a factor, but this may be a means to distinguish charging from end-use consumption. The ISO notes that this same topic is in the scope for the CPUC energy storage proceeding[10] and the ISO is a party to that proceeding. The ISO intends to retain issue 4 in the 2016 scope.

The ISO will also respond here to a comment from another stakeholder requesting clarification on which aspects of the draft final proposal[11] in the ISO's energy storage interconnection initiative will apply to the ESDER initiative. The ISO reminds stakeholders of the context in which that paper was written. At that time it wasn't initially clear whether any potential policy and process changes to the ISO's generator interconnection rules[12] were needed to accommodate storage. Through that initiative it was determined that existing tariff rules can accommodate the interconnection of storage to the ISO controlled grid without the need for tariff changes. Key to this approach is that storage projects are treated as generators for both aspects of their operation. This means that a storage resource is treated as a generator that produces positive energy (i.e., positive generation) during discharge mode and negative energy (i.e., negative generation) during charge mode. This is consistent with how storage is treated in ISO markets under the NGR model. In addition, just like conventional generation, the resource must respond to ISO dispatch instructions, including curtailment to manage congestion. In the context of storage, this would apply during

[10] R. 15-03-011.

[11] http://www.caiso.com/Documents/DraftFinalProposal_EnergyStorageInterconnection.pdf

[12] New interconnection requests to the ISO grid are governed by the Generator Interconnection and Deliverability Allocation Procedures (GIDAP) approved by FERC in 2012. The GIDAP rules are contained in ISO Tariff Appendix DD.

both discharge and charge modes. In the draft final proposal the ISO made clear that this approach is limited to grid-level interconnections of stand-alone storage and storage combined with generation, but not storage combined with load. To reiterate, the ISO produced that paper to address the interconnection of storage to the ISO controlled grid. Further, in that paper the ISO clarified that its existing NGR model already addresses some rate treatment issues for resources that participate exclusively in the wholesale market (this was already discussed above in response to the previous comment). Thus, although the focus of that paper was on transmission level interconnections of storage that participate exclusively in the wholesale market, it still holds that NGRs may either be interconnected to the ISO controlled grid or to a utility distribution system served by the ISO grid, and that the ISO does not consider NGRs in the charging mode as "consuming" energy for end-use consumption, but rather storing energy for later resale in ISO wholesale markets. The ISO will apply this same approach in the ESDER initiative.

Issue 7

Commenting on issue 7 (consideration of open policy issues from CPUC demand response working groups), one stakeholder believes that open policy issues from the CPUC demand response working groups should be addressed as soon as resolved in the CPUC process rather than waiting until the 2016 scope of the ESDER initiative. It is the ISO's expectation that issues that were resolved in these working groups will be brought to a close as soon as possible. The ISO will wait until a CPUC resolution of the working group report is published. Soon after, the process for changing the BPM language will be initiated. If a tariff change is necessary, that will be addressed in the 2016 scope.

Other issues

One stakeholder express several concerns from a demand response perspective. One concern was that other than evaluation of alternative baselines, most PDR/RDRR related topics are in the 2016 scope rather than the 2015 scope and that the resolution of these issues will impact on implementation of the CPUC's bifurcation policy direction. Another concern expressed was that the ESDER initiative will combine demand response topics with issues related to all forms of DER (i.e., not just demand response). Integration of demand response into forward and real time markets is an important policy goal of the ISO, and as such the ISO fully supports the CPUC bifurcation policy. It

is important for stakeholders to point out the issues and the required timing of the resolution of these issues to support the ESDER initiative. The ISO has shown its willingness to allocate necessary resources to meet the critical timelines (e.g., ISO resource allocation in 2014 and 2015 for the new demand response registration system) and that support will continue for issues that are found to be legitimate barriers to entry of demand response into the ISO market.