



# California ISO

## **Commitment Cost Enhancements Phase 3 Action Plan**

November 10, 2017

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## Commitment Cost Enhancements Phase 3 – Action Plan

### 1. Executive Summary

In March 2016, the ISO Board of Governors approved the Commitment Cost Enhancements Phase 3 (CCE3) policy to improve the accuracy of commitment costs used in the ISO market. The CCE3 initiative proposed a market-based mechanism to optimally commit and dispatch use-limited resources, allowing the market to dispatch the resource in its highest value hours across its limitations' horizon. The CCE3 policy included removing tariff provisions that automatically deemed certain types of resources as "use-limited" (including demand response). Instead, the revised CCE3 policy considers resources to be use-limited only if they have opportunity costs for limited starts, run hours, or energy production that extend beyond the ISO's market optimization horizon. CPUC Commissioner Michel Florio and stakeholders cited concerns with the changed policy concerning default use-limited status, especially for demand response and storage resources that have entered into contracts assuming they had a use-limited designation. In light of stakeholder concerns about the CCE3 policy changes, the ISO Board directed ISO management to conduct additional stakeholder outreach and allow for a transition period for preferred resources to adhere to the new policy.

In response to the Board directive, the ISO conducted two full-day stakeholder workshops in June and July focused on explaining the CCE3 policy in detail. The ISO held these workshops to: 1) identify and document stakeholder concerns about demand response and storage resource impacts under CCE3, 2) assess if the concerns required policy changes, 3) identify points warranting additional clarification, and 4) ultimately determine and document the appropriate venue to provide needed policy changes and/or clarifications. The last point resulted in this Action Plan, which documents how each issue raised will be addressed prior to implementation of CCE3.

### 2. Background

Bids submitted in the ISO market have three parts: energy, start-up cost (if any) and a minimum load cost (if any). The latter two bid components—start-up (*i.e.*, shutdown costs for demand response) and minimum load costs—are collectively referred to as commitment costs.

For several years the ISO has developed enhancements to improve market participants' ability to accurately reflect a resource's commitment costs in their bids so that the market can best optimize and prioritize the use of resources based on a feasible, least cost dispatch.<sup>1</sup> While energy costs can be frequently updated to reflect changing conditions (*e.g.*, intra-day changes in natural gas costs),

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<sup>1</sup> See the six stakeholder initiatives to date that have addressed commitment costs: <http://www.caiso.com/informed/Pages/StakeholderProcesses/CommitmentCosts.aspx>.

commitment costs are held constant for a day or longer<sup>2</sup> because of market power concerns and technical challenges with accommodating frequent changes to commitment costs.

Over time, the ISO grew concerned with the proliferation of resources registering as “use-limited.” Use-limited status began as an exceptional category of resource adequacy resources that could not meet the standard must offer obligation, such as a power plant with an environmental emissions permit that limited its run hours. Use-limited resource owners/operators only offered energy into the ISO market when the use-limited resource was deemed available, based on the owner’s/operator’s judgement and translation of its resource’s use limits. The ISO did not have an alternative process or method to determine when resources with use limitations could be optimally dispatched through the market. Over time, the use-limited resource adequacy category had grown to 35,000 MW<sup>3</sup>, which was too large to ignore and motivated by less stringent must offer obligation rules that applied to use-limited resources relative to the 24/7 must offer obligation of non-use-limited resources.

Unable to overlook the growing number of registered use-limited resources, the ISO analyzed the situation and found that many resources did not need to be use-limited as a default designation. The ISO instead would have resource owners provide the ISO information about a resource’s limitations and apply for use-limited capacity status if warranted. Reasons for granting use-limited status could include programmatic or physical limitations that would not allow a resource to meet a 24/7 must-offer obligation and, therefore, need an ISO-calculated market opportunity cost for the ISO to optimally dispatch the resource. If approved by the ISO, the designated use-limited resource would receive a resource specific market opportunity cost calculated by the ISO. For example, Proxy Demand Resources (PDR) that are not available during all hours due to either programmatic or physical limitations<sup>4</sup> may submit to the ISO information about such programmatic or physical limitations and apply for use limited status.

The ISO’s CCE3 stakeholder initiative,<sup>5</sup> addressed both the growing use-limited resource category and the lack of an approved process or method to determine when resources with use limitations could be optimally dispatched through the market. The CCE3 stakeholder initiative developed a market-based mechanism to optimally commit and dispatch resources with qualified limitations, allowing the market to elect the highest value hours to dispatch the resource across the resource’s limitation horizon, such as a month or year. Use-limited resources will be eligible for an opportunity cost adder to include in their daily commitment cost bids and/or their default energy bid. Thus, under the CCE3 policy, the distinction between a use-limited and non-use-limited resource is a use-limited resource can apply a market opportunity adder to its energy and/or commitment cost bids to value

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<sup>2</sup> This period can be the span of a day from the day-ahead market to the real-time market or up to 30 days under the Registered Cost option.

<sup>3</sup> Memo to ISO Board of Governors, “Decision on commitment cost bidding improvements proposal,” March 17, 2016, page 1.

<sup>4</sup> This was established under the policy for Reliability Services Initiative Phase 1, conditionally accepted by the Federal Energy Regulatory Commission on October 1, 2015 and implemented in the ISO market on November 1, 2016. ISO’s tariff amendment filing is available here: [http://www.caiso.com/Documents/May29\\_2015\\_TariffAmendment\\_Implement\\_Phase1A\\_ReliabilityServicesInitiative\\_ER15-1825.pdf](http://www.caiso.com/Documents/May29_2015_TariffAmendment_Implement_Phase1A_ReliabilityServicesInitiative_ER15-1825.pdf)

<sup>5</sup> <http://www.caiso.com/informed/Pages/StakeholderProcesses/CommitmentCostEnhancementsPhase3.aspx>

the resource's programmatic and physical limitations, whereas a non-use-limited resource cannot submit this market opportunity cost adder.

For clarity, the opportunity cost calculated under the CCE3 methodology is a different opportunity cost than the opportunity cost of a customer's lost production, comfort, etc., what we call here customer opportunity cost. The opportunity cost calculated under the CCE3 methodology is the market opportunity cost of lost ISO market revenue if a resource uses up its limited starts, run hours, or energy production. Therefore, the market opportunity cost described in CCE3 is different than a customer opportunity cost associated with lost production. Importantly, demand response and storage resources are not subject to local market power mitigation so market opportunity costs due to limits on energy production that would be factored into default energy bids are not applicable to these resources. Unlike mitigated resources, these resources can bid up to the energy bid cap, as appropriate, to reflect marginal and customer opportunity costs of the resource.

ISO management presented its CCE3 policy proposal to the ISO's Board of Governors meeting in March 2016. Stakeholders, including CLECA, STEM, CPUC, and Joint Demand Response Parties, voiced certain concerns with the proposal as it applies to demand response and storage resources. Stakeholder voiced concerns on the impact removing the default use-limited status would have on demand response and storage resources, and the additional replacement or resource adequacy availability incentive mechanism (RAAIM) cost<sup>6</sup> in the event a resource adequacy demand response or storage resource is no longer available for dispatch.

California Public Utilities Commission (CPUC) Commissioner Florio submitted a letter to ISO Management generally supporting the CCE3 policy, but he reiterated stakeholder concerns with the change in default use-limited status for preferred resources.<sup>7</sup> Specifically, his letter asked the ISO to provide "more time [for affected stakeholders] to understand and manage the implications" of the proposed changes on preferred resources and to "ease this transition."

In response to Commissioner Florio's letter and stakeholders' concerns, the ISO Board approved a modified motion committing ISO Management "to provide an adequate transition period, through at least 2017, for demand response resources to reflect new obligations resulting from this [CCE3] proposal in contracts. Further, Management commits to the design of an opportunity cost (or equivalent) methodology for commitment costs for demand response and storage through an ongoing stakeholder process."<sup>8</sup>

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<sup>6</sup> Developed in the Reliability Services Initiative Phase 1, implemented in the ISO market on November 1, 2016. ISO's tariff amendment filing is available here:  
[http://www.caiso.com/Documents/May29\\_2015\\_TariffAmendment\\_Implement\\_Phase1A\\_ReliabilityServicesInitiative\\_ER15-1825.pdf](http://www.caiso.com/Documents/May29_2015_TariffAmendment_Implement_Phase1A_ReliabilityServicesInitiative_ER15-1825.pdf)

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[http://www.caiso.com/Documents/PublicCommentLetter\\_from\\_CPUCreCommitmentCostBiddingImprovementsProposal-Mar24\\_2016.pdf](http://www.caiso.com/Documents/PublicCommentLetter_from_CPUCreCommitmentCostBiddingImprovementsProposal-Mar24_2016.pdf)

<sup>8</sup> [http://www.caiso.com/Documents/Decision\\_CommitmentCostBiddingImprovementsProposal-RevisedMotion-Mar2016.pdf](http://www.caiso.com/Documents/Decision_CommitmentCostBiddingImprovementsProposal-RevisedMotion-Mar2016.pdf)

### 3. Stakeholder Engagement

Pursuant to the ISO Board motion, two all-day stakeholder workshops were held on June 15 and July 27 to continue discussing demand response and storage resources under the Board approved CCE3 proposal. The objectives of the workshops were to: 1) document the concerns for demand response and storage resources under CCE3, 2) assess if the concerns required policy changes, 3) identify points warranting additional clarification, and 4) ultimately determine and document the appropriate venue to provide any needed policy changes and/or clarifications. The last point resulted in this Action Plan.

The first workshop focused primarily on understanding and documenting stakeholder concerns with the CCE3 policy and enabling the ISO to explain in detail the CCE3 policy and the modified ISO Board motion as it related to demand response and storage resources. Stakeholders participated in panel discussions during which they were able to document the concerns and/or outstanding questions they believed warranted further consideration by the ISO. Presentations were made by representatives from CLECA, SCE, CPUC, and CESA. Upon completion of the first workshop, an issues matrix<sup>9</sup> was created whereby the identified issues/concerns were documented and enabled tracking areas needing clarification or policy modifications. It was also determined a second workshop was necessary to provide clarification stemming from modifications made under the Reliability Services Initiative Phase 1 (RSI1) that, at the time, had not been implemented but were considered inputs into the CCE3 policy proposal. These clarifications were needed to enable a more productive discussion with demand response and storage resource providers about the CCE3 proposal.

The ISO hosted a subsequent workshop where the ISO provided stakeholders' requested clarifications about demand response and storage resources' market participation post RSI1 implementation, and post RSI1 and CCE3 implementation. During the stakeholder discussion, the ISO presented the methodology developed under CCE3 explaining the market opportunity cost adder and describing how it would apply to demand response and storage resources. The workshop discussion, in combination with stakeholder comments, enabled the ISO to identify the clarifications needed to address the issues raised by stakeholders.

The ISO committed to developing this Action Plan to communicate with stakeholders and ISO management, and to address Commissioner Florio's concerns, the resolution reached between stakeholders and the ISO concerning application of the CCE3 policy to demand response and storage resources. The Action Plan will also be provided to the ISO Board as an informational item. The following two sections provide a summary of stakeholder comments and the resolution of each identified concern through this stakeholder engagement effort.

### 4. Summary of Stakeholder Comments

The ISO provided stakeholders the opportunity to submit written comments after the second workshop discussion. Specifically, the ISO asked stakeholders to comment on the discussions

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<sup>9</sup> The finalized Issues Matrix is available at:  
[http://www.caiso.com/Documents/IssuesMatrix\\_CommitmentCostEnhancementsPhase3.pdf](http://www.caiso.com/Documents/IssuesMatrix_CommitmentCostEnhancementsPhase3.pdf)

that took place in the workshops as well as comment on the draft issues matrix the ISO provided and updated after the workshops. A summary of stakeholder comments, by issue, is provided below.

Stakeholders appreciated the additional efforts the ISO provided to explain and clarify how the CCE3 policy applied to demand response and storage resources. The initial concerns raised by stakeholders will be addressed through the policy implementation phase, as shown in Table 1 below, either as BPM changes or through the CCE3 tariff language development stakeholder process.

### ***Use-limited status***

Stakeholders were concerned about the elimination of default use-limited designation for demand response and storage resources. The ISO provided clarification that PDRs, which includes storage-backed PDR, can apply and receive use-limited status. Use-limited status would be provided if the resource meets the tariff definition of use-limited and provides necessary documentation and data to the ISO. This data includes the scheduling coordinator ID, resource ID, use limit type (starts, run hours, energy, or other), the granularity of the limitation (e.g., monthly, annually), and the date the limitation becomes effective and ends.<sup>10</sup>

Furthermore, the ISO explained that regardless of use-limited status, demand response and storage resources will continue to be exempted from local market power bid mitigation as well as bid insertion for RA resources that fail to submit energy bids, meaning these resources can bid up to the energy bid cap, as appropriate and as warranted to reflect customer opportunity costs. These resources will also have access to outage cards that convey when a limitation has been reached and the resource is no longer available for dispatch. The outage cards exempt resources from the Resource Adequacy Availability Incentive Mechanism (RAAIM) developed in RS11. The first outage card is the “short-term use-limited reached” outage card developed under RS11 for use-limited resources. This card will be extended under CCE3 to include both use-limited and non-use-limited PDR to allow for “fatigue outages,” such as when program limits are reached. When a use-limited resource has depleted its program availability requirements, it may use a monthly or annual use-limit reached outage card per its monthly or annual requirements, respectively. Both of these outage cards were developed under RS11 and will apply under the CCE3 policy. The only exception is for the annual outage card. After the transition period (see Issue #1 in Table 1 below), if a PDR reaches its annual limitation before the last month of the year, the outage card will exempt the resource from RAAIM for the rest of the month but the resource will be non-exempt starting the first day of the subsequent month unless there is substitute capacity. Stakeholders appreciated the additional clarification provided illustrating a neutral impact to demand response and storage resources with or without use-limited status under the CCE3 proposal.

Stakeholders continue to have detailed implementation questions regarding how the data and/or documents are to be provided to the ISO, as required during the use-limited application process

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<sup>10</sup> For more information see: <https://www.caiso.com/Documents/Use-LimitedResourceGuideBook.pdf> and [http://www.caiso.com/Documents/UseLimitPlan DataTemplate\\_V1\\_0.xls](http://www.caiso.com/Documents/UseLimitPlan DataTemplate_V1_0.xls)

and under what conditions that information needs to be updated. It is the ISO's current process to provide implementation details, and address questions such as those posed, through the BPM change process.

### ***Opportunity cost model***

ISO Management, via the ISO Board motion approving the CCE3 policy, committed to working with stakeholders to refine the market opportunity cost methodology for demand response and storage resources. The ISO and stakeholders discussed how to efficiently dispatch demand response and storage resources through the market given the monthly and annual limitations that extend beyond the ISO market's optimization horizon. As presented by SCE at the first workshop, an optimal solution is to enable scheduling coordinators to reflect the opportunity cost due to number of events and run-hour limitations in commitment cost bids as opposed to energy bids. Noteworthy, the ability to apply commitment costs in a PDR's bid exists today. The ISO and stakeholders subsequently discussed application of the CCE3 market opportunity cost methodology to demand response and storage resources, and determined it to be a reasonable methodology as it achieved the objectives of the methodology presented by SCE. Once the CCE3 policy is in-place, demand response and storage resources with use-limited status will be able to reflect a market opportunity cost in their commitment cost bids, which will enable the ISO to optimally dispatch these use-limited resources over the resource's limitation horizon.

### ***Resource adequacy availability incentive mechanism (RAAIM)***

Stakeholders were concerned about the potential cost of replacement capacity and the resource adequacy availability incentive mechanism (RAAIM) under CCE3 since it was not contemplated in contracts for the 2017 deliverability period. Stakeholders requested the ISO provide a transition period, based on the 2018 bifurcation date determined by the CPUC, such that the potential cost can be reflected in subsequent contracts and the forthcoming DRAM cycle. The ISO agreed to provide such a transition period, after which the updated RAAIM treatment as specified in CCE3 proposal will apply to PDR.

## **5. Action Plan**

The ISO has created this Action Plan based on the discussions with CPUC staff and stakeholders during the two workshops and in the development of the issues matrix. This Action Plan is intended to be a document that tracks where each issue raised will be addressed prior to implementation of CCE3. Table 1 below identifies the issue, whether a resolution has been reached, and where the change, if any, will be made. The narrative discussion following the table provides the intended resolution or clarity about the venue where an issue identified in Table 1 will be addressed.

*Table 1  
Commitment Cost Enhancements Phase 3 demand response and storage resource action plan*

#	Issue	Resolution status	Where changes will be made:			
			Current BPM clarification	CCE3 BPM detail	CCE3 Tariff language	Other
1	RAAIM exemption over transition period.	Resolved.			X	
2	Continued exemption from bid insertion and mitigation.	Resolved.				Existing policy (RSI1a).
3	Can PDR apply for use-limited status and what criteria will be used to qualify PDR?	Resolved.		X	X	
4	How does a program with one event per day align with CCE3 policy regarding the exception to the minimum of two starts per day?	Resolved.		X	X	
5	How will the ISO optimize or allocate use of PDR resources through new market design?	Resolved.	X	X	X	
6	How would the ISO calculate opportunity costs for PDR?	Resolved.		X	X	
7	What would the contractual remedy be if a resource is dispatched more than provided for in the contract?	Resolved.		X		Not within ISO business functions.
8	How will storage resources with existing PDR contracts ensure they do not face significant RAAIM charges?	Resolved.				Existing policy (RSI1a).

#	Issue	Resolution status	Where changes will be made:			
			Current BPM clarification	CCE3 BPM detail	CCE3 Tariff language	Other
9	If LSE is SC for PDR/NGR, is RAAIM exposure avoided?	Resolved.				Clarification provided.
10	How to address RA replacement risk under CCE3?	Resolved.		X	X	
11	How to manage limitations for storage resources under NGR.	Pending.				ESDER Phase 2

**Issue 1: RAAIM Exemption for transition period** - The ISO will provide a transition period for PDRs where the updated RAAIM treatment as stated in the CCE3 Draft Final Proposal<sup>11</sup> will not apply until after the CPUC’s demand response bifurcation date of January 1, 2018. As such, PDR resources will not be exposed to the updated RAAIM treatment until January 1, 2018.

This transition period will be reflected in CCE3 tariff language and in the appropriate Business Practice Manual (BPM).

**Issue 2: Continued exemption from bid insertion and mitigation** - RS11 policy provides local market power mitigation exemption for PDR and storage resources regardless of use-limited status. CCE3 Draft Final Proposal also reiterates these resources will continue to be exempt from bid mitigation independent of use-limited status.

This will be reflected in BPM changes corresponding to RS11 and will continue to be reflected in the BPM with CCE3 implementation.

**Issue 3: Applying for use-limited status and criteria to be used to qualify PDR** - As stated in the Draft Final Proposal for CCE3, PDRs can apply to receive use-limited status. A resource will be deemed use-limited if it meets the proposed tariff definition and provides the required data and supporting documentation. Per the CCE3 policy, the use-limited definition identifies resources with exogenously imposed limitations that extend beyond the ISO market’s optimization horizon and that need to reflect market opportunity costs in commitment cost bids and/or in the resource’s default energy bid (DEB). Note, however, that PDR and storage do not have DEBs because their energy bids are not mitigated.

<sup>11</sup> <http://www.caiso.com/Documents/DraftFinalProposal-CommitmentCostEnhancementsPhase3.pdf>

As discussed at the workshop, programmatic limitations<sup>12</sup> can define a PDR's limitations; without such limitations, the resource would not exist. Therefore, PDR resources will be considered to have design limitations due to programmatic limitations under the use-limited definition in CCE3. During the application process, and annually thereafter, the limits of the resource will be provided through the use-limited plan data template (ULPDT).<sup>13</sup> Documentation will be required during the application process that supports the limitations identified in the ULPDT. The documentation will need to identify the maximum availability of the resource over the horizon limitation (e.g. starts and/or run-hours per year or month). Based on discussions at the workshop, the following documentation currently exists and specifies the maximum availability of the PDR resources:

1. CPUC or Commission approved tariffs, programs, and contracts for utility demand resource programs (e.g., Summer Discount Plan, Aggregator Managed Program)
2. Limitations arising from manufacturer warranty specifications, such as for battery storage devices.

It was also noted there may be a potential need for PDR to be able to update the use-plan after the current October deadline reflected in the ISO tariff. After consideration, the ISO will not entertain PDR owners/operators updating their ULPDT (use plan) more frequently than currently provided in the tariff since these programs and contracts are signed at least a year in advance.

These clarifications and modifications will be reflected through the tariff language as it is developed for the CCE3 proposal, and further clarified through BPM changes as necessary, including a list or description of acceptable documentation to support the limitations of the resource.

**Issue 4: Exception to the minimum of two starts per day for PDR** - CCE3 proposal states that resources are able to reflect a "preferred" maximum daily start for each resource in the ISO Masterfile to be used by the market, subject to a minimum of two starts per day. Exceptions were provided enabling a resource to have one start per day, such as if the resource design only allows for one start per day. As noted above, the programmatic limitations for PDR resources are considered design limitations. Therefore if the programmatic limitations specify a maximum of one event (shutdown) per day, the ISO would accept that as an exception to the minimum of two starts per day provided supporting documentation is made available to confirm this limitation.

This will be reflected through the tariff language as it is developed for the CCE3 proposal, and further clarified through BPM changes as necessary.

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<sup>12</sup> Programmatic limitations refers to the maximum events or hours per year or month for which customers are expected to be willing to curtail when called upon.

<sup>13</sup> For more information see: <https://www.caiso.com/Documents/Use-LimitedResourceGuideBook.pdf> and [http://www.caiso.com/Documents/UseLimitPlan DataTemplate V1\\_0.xls](http://www.caiso.com/Documents/UseLimitPlan DataTemplate V1_0.xls)

**Issue 5: Optimizing PDR resources through the market** – The ISO provided clarification at the workshops that PDR resources can submit commitment costs in their bids today. This will be clarified in the existing BPM.<sup>14</sup> A start-up (shutdown) cost is a cost incurred per event, or per call, of the resource and does not vary with the hours the resource is called and/or the dispatch level of the resource. Minimum load costs are costs incurred per hour to maintain the resource at the minimum operating point as specified by the Pmin value in the ISO Masterfile.

Commitment cost are subject to a bid cap. The CCE3 policy developed a methodology to increase the commitment cost bid cap for qualifying use-limited resources for the market to value a resource's market opportunity costs due to these limitations that extend beyond the ISO's market optimization horizon. As described earlier, ISO market opportunity costs in this context are the foregone ISO market profits, rather than customer opportunity costs associated with lost production, etc. PDR resources will be able to reflect both actual commitment costs and customer opportunity costs through market bids. The CCE3 market enhancement enables the ISO to optimally dispatch a use-limited resource over the resource's limitation horizon based on its energy, commitment costs, and commitment cost adder.

The methodology for market opportunity costs will be reflected through the tariff language as it is developed for the CCE3 proposal, and further clarified through BPM changes as necessary.

**Issue 6: Calculating market opportunity costs for PDR** - The CCE3 commitment cost adder is based on a use-limited resource's foregone energy profits in the ISO markets due to having limited events, run-hours, or output. The CCE3 market opportunity cost methodology was developed to be technology agnostic and can be applied equally to gas-fired generators or other non-traditional resources such as PDR.

This point will be reflected through the tariff language as it is developed for the CCE3 proposal.

**Issue 7: Contractual remedy for a resource being dispatched beyond what is provided for in their contract** - Contractual remedies are outside of ISO business functions. Under the CCE3 policy, PDRs will be provided access to 'use-limit reached' outage cards regardless of use-limited status. When a resource reaches its limitation, the scheduling coordinator can submit an outage card to reflect the resource is no longer available to the market.

The use-limited outage cards originated from RSI1 policy and therefore will be in BPMs with RSI1 implementation. The added clarification as provided for under CCE3 for PDR resources will be reflected through BPM changes along with CCE3 implementation.

**Issue 8: Mitigating significant RAIM charges for storage resources with existing contracts** - Under RSI1 policy, resource adequacy resources, including storage resources, that are no longer available to the market can provide substitute/replacement capacity to avoid RAIM charges.

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<sup>14</sup> The clarification will be made in the Market Instruments BPM, which discusses start-up and minimum load costs. Other BPMs may also be updated for this clarification.

This point will be reflected in BPM changes corresponding to RSI1 and will continue to be reflected in the BPM with CCE3 implementation.

**Issue 9: RAIM exposure when Load Serving Entity is the Scheduling Coordinator** - The ISO clarified that RAIM is assessed at a resource level with charges and credits allocated to the resource's scheduling coordinator. When the LSE is the SC, the RAIM charges or credits will be assessed to the LSE. This topic did identify that there may be contractual arrangements outside the ISO between the LSE and the resource owner that may not currently consider which party bears responsibility for such costs. As stated above, contractual remedies are outside the ISO business functions, therefore this concern is best addressed when structuring and negotiating contracts.

**Issue 10: Addressing RA replacement risk under CCE3** - The ISO provided a transition period during which PDR resources will not be assessed RAIM once a limitation has been reached. The transition period will end on January 1, 2018 as noted above in item 1. Post transition period, resource adequacy resources that are no longer available to the market and assessed under RAIM, can provide substitute/replacement capacity to avoid RAIM charges.<sup>15</sup> Prior to reaching the limitation, if the resource is registered as use-limited, it can utilize the commitment cost market opportunity cost adder to optimally allocate the resource's use.

This will be reflected through the tariff language as it is developed for the CCE3 proposal, and further clarified through BPM changes as necessary.

**Issue 11: Managing limitations for storage resources under the Non-generator resource (NGR) model** - As noted in the CCE3 Draft Final Proposal, the ISO is engaging stakeholders through the ESDER Phase 2 initiative to better understand the limitations of NGRs and assess the need for potential model enhancements or other means to manage limitations. Within ESDER 2, a working group has been created to specifically discuss the limitations of storage resources under NGR.

Several stakeholders asked more specific questions that are implementation details or outside the scope of this initiative. The ISO's responses to those comments/questions are provided in the attached stakeholder's comments matrix.

The following timeline is provided to clarify the timing of upcoming events, *i.e.*, BPM change and tariff language processes, as they relate to the timing of modifications currently underway for the Reliability Service Initiatives Phase 1 proposal. All changes made during the CCE3 BPM and CCE3 tariff process will be incremental to BPM and Tariff modifications made for initiatives implemented prior to the effective date of CCE3, which is currently targeted for Fall 2017.

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<sup>15</sup> See D.16-09-056 - <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M167/K725/167725665.PDF>

Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017
RSI1 BPM	-----◆				
		CCE3 Tariff process	-----◆		
		CCE3 BPM changes	-----◆		
Non-initiative related BPM changes/clarification processes					
◆	Effective date				
	Stakeholder engagement				

## 6. Next steps

Please submit comments on the action plan by Tuesday, November 29, 2016. The ISO will review the comments and update the action plan as appropriate. The final action plan will be presented to the ISO Board of Governors at the December board meeting scheduled for December 14-15, 2016.

Also, the IOUs and demand response providers are encouraged to provide the ISO information about demand response use limitations that exist but cannot be optimized across the ISO market optimization horizon, what those limitations are, and documentation that would support and explain those limitations. Such information could be local regulatory authority approved program or tariff documentation, program materials, contracts, end-use device information, etc. The ISO is interested in understanding the various use limitations for different types of demand response, e.g. demand response from traditional load shedding to demand response from behind the meter devices, such as storage. This information will help the ISO consider what details should be included in its business practice manuals and in its use limited plan data template.