

The ISO received comments on the topics discussed at the April 26, 2016 stakeholder meeting from the following:

1. California Department of Water Resources-State Water Project
2. California Large Energy Consumers Association
3. California Public Utilities Commission
4. Pacific Gas & Electric
5. Six Cities
6. Southern California Edison

Copies of the comments submitted are located on the 2016-2017 Transmission Planning Process Page at:  
<http://www.caiso.com/planning/Pages/TransmissionPlanning/2016-2017TransmissionPlanningProcess.aspx>.

The following are the ISO's responses to the comments.

No	Comment Submitted	CAISO Response
1	<b>California Department of Water Resources-State Water Project Submitted by: Mohan Niroula and Aseem Bhatia</b>	
1a	<p>Below are a few suggestions and requests for clarification concerning the Stakeholder call:</p> <p>During the call, the CAISO provided an update that it is considering Demand Response (DR) resources with 20 minute response time. CDWR uses its participating load resources for local Resource Adequacy. These resources are 10 minute response resources providing non-spin without any DR contract. Therefore, CDWR strongly believes that its participating load resources should not be included as part of this study or considered as a slow response DR.</p>	<p>Since those DR resources and participating load that have a response time of less than 20 minutes do not need to be pre-dispatched, the study is not applicable to such resources.</p>

No	Comment Submitted	CAISO Response
<b>2</b>	<b>California Large Energy Consumers Association (CLECA)</b> <b>Submitted by: Nora Sheriff and Barbara Barkovich</b>	
2a	<p>CLECA has appealed the CAISO’s BPM change specifying that a resource must be available within 20 minutes or have sufficient pre--dispatch capability in order to be eligible for local resource adequacy (RA) credit. (PRR 854.) By submitting these comments, CLECA does not waive its appeal.</p> <p>CLECA also reiterates below some of the questions raised in its appeal.</p> <p>As indicated on the April 26, 2016 stakeholder call, CLECA does not find the Study Plan presentation to be particularly transparent. Furthermore, the explanation of what will be done with the results of the Study is not clear. Two questions arise. The first is what would be done with the results in the context of the TPP. The second is how the CAISO would use the results to operate the grid. How would DR that might be characterized as “slow response”, or any other “slow response” resource, be pre--dispatched and under what conditions? From the stakeholder call on April 26th, it appears that the goal of the study is to determine how many hours a “slow response” resource would have to be available for pre--dispatch.</p> <p>However, this does not provide clarity as to how such pre--dispatch would take place. Indeed, this point has never been clear from the moment of the BPM change. Key questions remain, including: how the decision to “pre--dispatch” would be made, will the considerations that go into a determination of “sufficient frequency” vary by local area and the specific conditions in the local area, and where will these processes and conditions be described.</p> <p>Thus, while the study results may be helpful, there is still a need for a stakeholder process on the subject of the pre--dispatch of DR and any other “slow response” resources;; a stakeholder process should provide clarity as to how and under what circumstances the “slow response” resources would be dispatched. This matter should be addressed in the context of resource adequacy at the CPUC as well as at the CAISO.</p> <p>As noted on the stakeholder call, not all existing DR resources are “slow response”. Thus, DR resources should be appropriately characterized based on their dispatch time. CLECA supports the proposal of the CAISO to rely on the</p>	<p>The comments correctly note that the pre-contingency dispatch study being conducted within the transmission planning process, in conjunction with the IOUs, focuses on the technical requirements, e.g. the performance characteristics necessary for slow response resources. It does not address implementation issues.</p> <p>Subsequent to the stakeholder call, the ISO’s BPM Appeals Committee released its Decision on Appeal of PRR 854, and directed that a new stakeholder consultation process will be launched to address implementation considerations. ISO staff are now resourcing this initiative, and information will be shared on scope and timing as it becomes available.</p> <p>The decision also directed technical studies to better define energy requirements for resources that can be dispatched pre-Contingency to meet local reliability needs – which is being addressed through this effort within the transmission planning study cycle.</p> <p>Please also refer to the responses to CPUC’s comment 3(e) and Six Cities’ comment 5(b) below.</p>

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	<p>LSEs to provide information on the dispatch time for “slow response” resources. However, for DR, other non-utility DRPs should also have information to provide on their own DR resources, such as those bidding into the DR Auction Mechanism (DRAM) or DR bid by third parties into the CAISO’s markets outside the DRAM. Furthermore, for DR, the DRPs should be able to provide information on the duration of the DR programs or contracts, to counter the CAISO’s mistaken assumption that they are only for one year. The load impact reports that are annually conducted for the utilities for their own DR programs show the MW of DR available by program over many years. Even if individual customers come and go, the programs have been in existence for many years.</p>	

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<b>3</b>	<b>California Public Utilities Commission</b> Submitted by: Rachel McMahon, Candace Morey, Meredith Younghein and Keith White	
<b>3a</b>	<p><b>Forum</b></p> <p>At the beginning of the stakeholder call, CAISO staff mentioned that other issues around the topic of local resource adequacy requirements will be addressed in another forum. CPUC Staff understands that CAISO is conducting this study as part of the TPP because one of the purposes of local capacity resources are to offset a potential need for greater transmission resources for local areas. The CPUC staff is concerned, however, that conducting this review within the TPP is not the appropriate forum in which to resolve local RA issues, especially because it is not clear how the results of this study will be used to do more than plan for transmission needs, given that the purpose of the TPP is to inform transmission needs.</p> <p>At the beginning of the stakeholder call on April 26, a CAISO staff member mentioned that the “other issues” around the topic of response times for local resources will be addressed elsewhere. CPUC staff appreciates this mention, and recommends that the CAISO establish a stakeholder process that will address all issues associated with this topic, and in a comprehensive manner. Furthermore, when such a stakeholder initiative begins, the connection between this study’s results and that process should be clearly explained in an issue paper, and the results of this study should be incorporated into that initiative. Finally, CPUC staff requests that the Schedule provided on Slide 9 of the April 26 slide presentation include detail as to when the results of this study will feed into a larger stakeholder process, and operational rule development.</p>	<p>Please refer to the response to CLECA’s comment 2(a) above.</p>
<b>3b</b>	<p><b>Terminology</b></p> <p>CPUC Staff wishes to note that the terminology in the slide presentation<sup>1</sup> for the April 26<sup>th</sup> stakeholder call is not consistent with adopted terminology in CPUC proceedings. The CPUC does not use the terms “fast” and “slow” response to refer to Demand Response programs. While these terms may have been used in earlier TPP studies, the CAISO should provide specific definitions of these</p>	<p>We have incorporated additional text in the study plan to further clarify that the ISO considers resources that are not capable of responding to dispatch calls within 20 minutes as slow-response resources.</p>

<sup>1</sup> “Characteristics of Slow Response Local Capacity Resources – Study Plan”. Powerpoint presentation for stakeholder call held on April 26, 2016.

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	<p>terms as used in the TPP so that stakeholders may comment on them or propose alternatives.</p>	
<p><b>3c</b></p>	<p><b><i>Missing Details</i></b></p> <p>For each of the two study method options presented on the call, we request that these study options be described in more detail, in a public document provided for review and comment. At a minimum, these detailed descriptions should include:</p> <ol style="list-style-type: none"> <li>1) A clear definition of what specific use-limited, “slow response” resources will be evaluated – including, at a minimum, fuel type, resource type, nature of use limitation and current start-up time.</li> <li>2) Specific definition of the resource in each Local Capacity Area (LCA), including the actual DR program name.</li> <li>3) Description of the source and vintage of data used for both study methods.</li> <li>4) “(S)ignificant upward availability adjustments to the minimum requirements may be needed to account for some of these factors.”(Slide 7, penultimate bullet). We request more detail as to the criteria that will be used to determine whether adjustments to availability are necessary in the first instance. We further request detail as to the actual availability adjustment made to each resource.</li> </ol> <p>Further, in the interest of transparency and formation of consistent regulations, we request that the spreadsheets for both study options, with all data, be provided confidentially to the CPUC for review.</p>	<ol style="list-style-type: none"> <li>1. As indicated in the study plan, the study will evaluate existing slow-response DR as well as generic amounts of slow-response resources which could be additional DR or other types of similarly use-limited, slow-response resources. We have added further clarifications in the study plan regarding this. Specific resource information is not a necessary input for the technical study.</li> <li>2. As noted in the study plan, the ISO expects LSEs will compile existing slow response-DR information as part of their scope of work and provide it to the ISO. The ISO will make the information available to stakeholders subject to any confidentiality restrictions. We have added further clarifications in the study plan regarding this.</li> <li>3. As noted in the study plan LSEs will be the source of the hourly load and DR data used in the study. The hourly load data will be consistent with the current CEC 1-in-10 peak load data.</li> <li>4. The ISO will be presenting the results of the study to stakeholders without any availability adjustments. The ISO included the referenced factors to caution stakeholders that those factors would need to be considered before minimum availability requirements can be established.</li> </ol> <p>This request has been noted and will be discussed with the Participating Transmission Owners that will be providing most of this data.</p>
<p><b>3d</b></p>	<p><b><i>Slow Response Resources for Local Capacity</i></b></p> <p>The CAISO’s proposed study would calculate, for different Local Capacity Areas (LCAs), the amounts of pre-contingency positioning for slow response resources that would keep resulting hourly net loads below certain specified thresholds that could have reliability implications. Magnitudes of this calculated use of “slow response” resources would be quantified in terms of MW, duration and frequency of calls. This could reduce the amount of “fast response” local capacity resources needed to achieve a given level of reliability.</p>	<p>The ISO understands that all most all of the existing DR resources have a duration of at least 4 hours. As such, the ISO does not consider such a study is warranted at this time.</p>

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	<p>However, it seems that slow response resources could <u>also</u> reduce the need for fast response resources even without prepositioning. This could occur if any of the fast response resources are energy limited (which seems likely), and if slow response resources could respond in time to reduce the needed duration of response from the energy-limited fast response resources. For example, a particular set of energy-limited fast response resources might only be able to provide 50 MW over the required 4 hour duration of response but might be able to provide 100 MW for 2 hours, if they could then be replaced by slow response resources. CPUC Staff request that the CAISO consider and report the feasibility of such a mechanism, and conduct applicable studies if warranted.</p>	
3e	<p><b>DR Program Assumptions</b></p> <p>The final bullet on Slide 7 of the CAISO’s presentation states the following:</p> <p>“DR contracts typically are limited to one year, so future availability may be impacted as use increases. This is a concern in particular in those areas where DR is used to avoid investment in transmission or more dependable local capacity resources.”</p> <p>This assumption is mistaken. To date, DR program portfolios of the investor owned utilities (IOUs), and their associated budgets and program tariffs, are approved by the CPUC on a three year basis. The DR programs that are currently in place were actually originally funded in the 2012-14 program cycle, and have now been extended for two years, through the close of 2016. This means that these programs have been in existence for 5 years. Furthermore, in Rulemaking (R.) 13-09-011, longer program cycles (in excess of three years) may also be considered for programs starting in 2018.</p> <p>CAISO staff has explained to CPUC Staff that the bullet reflects its understanding of the program participation requirement for an individual customer. To this latter point, it is generally true that customers are not required to sign up for a program in excess of one year. However, the DR provider can sign up new customers for a particular program to replace those that leave, and</p>	<p>As noted on the stakeholder call, the CAISO is referring to individual customers signed up under DR programs and not to the CPUC budgetary approval cycles.</p> <p>CAISO experience during the energy crisis is that the majority of DR customers opted out of the program early on due to the increased event burden. A recent study performed by SCE on event-related attrition from the SDP DR program also shows that with increase in DR utilization comes an increase in customer-requested attrition. In this case, the increase in event burden resulted from economic dispatch as SDP was transitioning from a reliability-only program to a price-responsive program.<sup>2</sup></p> <p>If a significant amount of DR suddenly becomes firm load in a resource constrained area, the ISO is concerned that the system could be left with NERC/WECC/ISO reliability standards violations that may need years to mitigate.</p>

<sup>2</sup> “Southern California Edison Company’s (U 338-E) Proposal In Response To Assigned Commissioner’s Ruling Directing Activities In Response To Natural Gas Leak At Aliso Canyon Storage” (CPUC R.13-09-011) dated April 4, 2016, Pages 6-7.

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	<p>it is also reasonable to assume that a customer may leave one DR program only to immediately sign up for another DR program, provided by either a third party DR provider or a utility. In either case, the resource is no less reliable from the perspective of the grid operator, and should not be depicted as such. Further, as more DR is integrated into the CAISO market, it is reasonable to assume that the DR provider, be it a third party or a utility, will be even more motivated to ensure that the capacity it offers into the market is reliable and consistent.</p>	

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<b>4</b>	<b>Pacific Gas &amp; Electric</b> <b>Submitted by: Matt Lecar</b>	
<b>4a</b>	<p>Explanation of Method 1</p> <p>As a matter of background for stakeholders, PG&amp;E notes that Method 1 as explained in the April 26 presentation represents the methodology jointly developed by PG&amp;E, San Diego Gas &amp; Electric, and Southern California Edison. PG&amp;E has attached a joint IOU presentation illustrating the methodology using a case study for each of the IOUs that is based on the CAISO's Local Capacity Technical Study. Each case study assumes that demand response (DR) is the last resource to be dispatched, and assesses the dispatch frequency within a Local Capacity Area (LCA) or sub-area based on 1-in-10 weather conditions.</p> <p>PG&amp;E plans to carry out Method 1 for all of its LCAs but not for its sub-areas because sub- area definitions are unclear and subject to frequent change. For each LCA, PG&amp;E will study scenarios for demand response representing 2%, 5%, and 10% of the forecasted 1-in-10 peak load. PG&amp;E notes that in Slide 4 of the CAISO's April 26 presentation, the CAISO indicates that annual hourly load forecast data will be used for each LCA for Method 1.</p> <p>Instead, PG&amp;E will be using the recorded historical load profile which will be scaled to mimic the hourly load forecast for the study year.</p> <p>PG&amp;E recommends that this study be performed periodically to re-verify that local demand response resources are meeting the pre-dispatch need. The limiting contingencies within an LCA can change relatively frequently due to changing local load profiles caused by the rapid growth of distributed generation and energy efficiency, as well as changes to the distribution of demand response customers.</p>	<p>Your comments have been noted. The ISO will incorporate PG&amp;E's study plan details in the final study plan. Depending on how widely the results vary among the various LCA areas, studies for PG&amp;E sub-areas may need to be performed in the future if use-limited, slow response resources such as DR are to be used to meet reliability requirements at the sub-area level.</p>
<b>4b</b>	<p><u>As Part of the Study, the CAISO Should Provide Operational Details on How Slow Response Local Reliability Resources Will Be Dispatched.</u></p> <p>PG&amp;E sees the CAISO's study plan as a good first step in framing the discussion on requirements for resources to provide local reliability services.</p>	<p>Please refer to the response to CLECA's comment 2(a) above.</p>

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	<p>Ultimately, other operational and market process questions will need to be brought into the discussion. For example, how would the pre-contingency dispatch of these resources at the LCA level differ from the normal dispatch protocols for Supply Resource (SR) DR? Could Load Modifying Resource (LMR) DR be used instead and be dispatched via alternative protocols?</p>	
4c	<p>The Study Should Focus Only on the Requirements for Resources to Provide Local Reliability</p> <p>The CAISO cites three factors that would require “significant upward availability adjustments” to the requirements for local reliability resources:</p> <ol style="list-style-type: none"> <li>1. Responses to prices or triggers other than local capacity related reliability events</li> <li>2. System events or by PTOs for distribution system issues</li> <li>3. Planned outages and unforeseen events</li> </ol> <p>PG&amp;E questions whether any factors other than those associated with providing local reliability need to be addressed in this study. Trying to incorporate the above three factors will require the CAISO to make blanket assumptions on the intent of each resource without leaving open the possibility that some resources will be more narrow in scope. PG&amp;E recommends that the CAISO focus this study only on the requirements for a resource to provide local reliability.</p> <p>Should the CAISO insist on further investigating potential upward availability adjustments, there may not be a need for an upward availability adjustment at all. Method 1 and Method 2 likely already overstate the probability of multiple exceedances of the 1-in-10 load level in any given year, because the methodologies are simply scaling historic load data to the 1-in-10 load forecast level. So, for an LCA which would normally experience three 1-in-2 type heat events each summer this simple scaling will suggest that the LCA could experience three 1-in-10 heat events each summer. Clearly, the real likelihood that an LCA will experience three 1-in-10 heat events in a single summer is extremely low, much lower than suggested by the proposed methodology.</p>	<p>Your comment has been noted and will be considered when assessing required availability adjustments.</p>

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<b>5</b>	<b>Six Cities</b> <b>Submitted by: Bonnie S. Blair</b>	
<b>5a</b>	<p>First, Slide 7 of the ISO's Study Plan explains that the ISO's study methodology does not account for potential uses of resources by PTOs for distribution system issues. Therefore, it states that "[s]ignificant upward availability adjustments to the minimum requirements may be needed to account for" this and other factors. For certain of the Six Cities, import capability at the intertie with the ISO is limited such that there is insufficient intertie capability to meet the City's peak load. In that case, the City has to run internal generation to meet its peak load. If the same conditions that the ISO is factoring into its availability requirement for the full system are the peak load conditions that cause the Cities to need to dispatch their units for distribution system reliability needs, then there may be an overlap between the needs of the ISO and distribution system needs. The same conditions that would trigger dispatch by the ISO for availability needs could trigger dispatch for distribution system reliability needs under high load conditions, and the internal generation resource would be needed for pre-contingency dispatch at the same time that it is being used as a must-run resource. In that case, the ISO should take into account the fact that the same dispatch would satisfy both of these needs.</p>	<p>Your comment has been noted and will be considered when assessing required availability adjustments.</p>
<b>5b</b>	<p>The Six Cities' second comment relates to the ISO's plan for performing the LCA studies. On Slide 8, the ISO explains that LSEs will perform studies for those LCAs and sub-areas in which they expect to use DR or other use-limited, slow response resources for local resource adequacy. The slide is silent with regard to which LSEs will perform these studies. On the April 26, 2016 stakeholder call regarding the study, the ISO explained that it had contemplated that these studies would be completed by the three large California LSEs – Pacific Gas and Electric Company, San Diego Gas and Electric Company, and Southern California Edison Company ("SCE") – and the ISO has had individual discussions regarding the studies with these three LSEs only. The ISO also stated that other LSEs could conduct studies if they choose. The Six Cities request additional information from the ISO as to how an LSE would get involved in the study process either to conduct its own study or to participate in the study conducted by one of the larger LSEs. For example, the Six Cities anticipate that the study conducted by SCE will cover the area in which the Six Cities are located, and the Six Cities would be interested in providing input and receiving information regarding that study.</p>	<p>The ISO contemplated the studies (Method 1) would be completed by the three PTOs with assistance from LSEs. The three PTOs cover all of the ISO Local capacity areas and sub-areas. Since other LSEs do not have a service area that covers an entire LCA or sub-area, it is not clear to the ISO how such LSEs would go about conducting their own studies. Also, as indicated in the draft study plan, in addition to their LSEs' existing slow-response DR amounts, the PTOs will be assessing generic amounts of future slow-response resources as a percentage of area load which includes the load served by other LSEs in those areas. If Six Cities or another entity would like to provide input in the studies conducted by one of the three PTOs for the area in which the LSE or the other entity is located, the LSE can contact the PTO directly. We will include the appropriate contacts for each PTO in the final study plan.</p>

No	Comment Submitted	CAISO Response
5c	<p>Lastly, the Six Cities seek clarification from the ISO that the intent of the Study Plan is not to disqualify slow response resources that currently qualify as local RA capacity. It is the Six Cities' understanding that, while the study focuses mainly on DR resources, it is intended to study the characteristics of slow start resources in general with the intent of expanding, rather than narrowing, the scope of resources that qualify. Thus, the Six Cities would not need to be concerned that, for example, gas units that already qualify as local RA capacity would no longer qualify as a result of the study.</p>	<p>As described in the study plan, the study methodology assumes that the resource is the last to be called in the pre contingency dispatch order. As such, the frequency and duration of the dispatch for this resource would be the minimum required for all other pre contingency dispatch resources.</p>

No	Comment Submitted	CAISO Response
<b>6</b>	<b>Southern California Edison Submitted by: Martin Blagaich</b>	
<b>6a</b>	<p>General Comments</p> <p>SCE suggests a few clarifications for the study plan and materials. The CAISO should clarify that this study focuses on DR resources that are not capable of being dispatched post-contingency due to their notification (response) time, while recognizing that there are DR resources that are capable of such dispatch (i.e. not all DR is “slow-response” DR). Furthermore, while this stakeholder process has been kicked off within the Transmission Planning Process (TPP), the CAISO should work closely with the California Public Utilities Commission (CPUC) to coordinate with the Resource Adequacy (RA) proceeding, and ensure that the Load Serving Entities (LSEs) have a consistent set of regulatory requirements for Resource Adequacy and Transmission Planning purposes.</p>	<p>Your comment has been noted. We will incorporate the suggested clarifications into the study plan.</p>
<b>6b</b>	<p>Method 1 Clarifications</p> <p>For the benefit of the stakeholders in this process, SCE hereby provides additional details on the proposed study steps under the “Method 1” approach. As discussed on the call, the PTOs would first perform the analysis, and share it with the CAISO and the stakeholders. The CAISO would then have the option to verify these results by performing the “Method 2” approach.</p> <p>In the attached presentation, additional details and initial results from the three IOUs are provided [see SCE’s comments for presentation]. The proposed methodology starts with the one-in-ten load forecast target, and scales historical loads to the target level. Several levels of Demand Response (DR) are assumed, and the expected resulting dispatch frequency is recorded. The methodology looks at various possible levels (MW) of DR, and calculates the associated requirements, where a higher volume of DR implies a more frequent use, and therefore a more stringent set of requirements.</p> <p>The study will be performed for all the Local Capacity Areas and Sub-Areas, and it may indicate different regional requirements due to differing load shapes and DR penetration. This information can then be used to inform the Transmission Planning Process as well as the DR program design.</p>	<p>Thank you for the additional details. The ISO will incorporate the comment regarding the LCAs and sub-areas SCE will be assessing in the final study plan.</p>