

The ISO received comments on the topics discussed at the October 31, 2019 stakeholder call from the following:

1. Bay Area Municipal Transmission group (BAMx)
2. Pacific Gas & Electric Company (PG&E)

Copies of the comments submitted are located on the Local Capacity Requirements Process Page at:
<http://www.caiso.com/informed/Pages/StakeholderProcesses/LocalCapacityRequirementsProcess.aspx>.

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



No	Comment Submitted	CAISO Response
1	<p>Bay Area Municipal Transmission group (BAMx¹) Submitted by: Paulo Apolinario</p>	
1a	<p>Update Category Definitions to Align with Current Standards</p> <p>The 2021 LCR study is intended to determine the minimum capacity needed in each identified transmission constrained “load pocket” or Local Capacity Area to ensure reliable grid operations². Unlike the previous LCR study analysis the CAISO has conducted, the 2021 LCR Study will be evaluating the LCR need based on the entire spectrum of P1-P7 planning contingencies. Therefore, additional LCR deficiencies and import limitations are likely to be identified due to the additional contingencies being evaluated. BAMx is concerned that this methodology change seems to be out of line with the way the CAISO monitors and operates the transmission network in real-time.</p> <p>Moreover, CAISO’s Procedure on “Establishing System Operating Limits for the Operations Horizon” states the following in regard to evaluating higher level contingencies for operations³:</p> <ul style="list-style-type: none"> • “Under system intact conditions at a bus (Meaning, either all buses or bus sections are inservice), a bus section contingency will not be studied at the respective bus and no SOLs will be established unless requested to do so by the PTO. Bus section contingencies may be studied for situational awareness only. • Stuck Breaker Contingencies will not be studied and no SOLs will be established. A Stuck Breaker Contingency may be studied for situational awareness only.” <p>Since the updated LCR criteria would drive up the LCR needs in multiple locations and increase ratepayer costs, BAMx encourages the CAISO to separately identify the LCR needs that are based upon higher-level planning contingencies that are beyond the contingencies for operations. Such</p>	<p>The ISO has updated the 2021 LCR study manual to reflect the fact that the local capacity technical study will assure compliance with all mandatory standards (NERC, WECC, CAISO etc.) and not only a subset either planning or operational standards.</p> <p>It is inherent that when complying with all standards the most stringent of them will dictate the requirement.</p> <p>The bus or stuck breaker outages may not be currently required for compliance with “Established System Operating Limits”, however they are required in order to comply with NERC mandatory standard TPL-001-4 and therefore they could establish the minimum local capacity requirement.</p> <p>Since local resources are just a subset of the overall system resource adequacy need, increasing LCR needs is not estimated to increase the overall resource adequacy capacity needed but rather allow LSEs to make a more informed decision during their procurement process in order to minimize the use of ISO backstop procurement role.</p> <p>Per ISO Tariff, section 40.3.2 the ISO, not local regulatory agencies, allocates local capacity responsibility to scheduling coordinators for load serving entities.</p>

¹ BAMx consists of City of Palo Alto Utilities and City of Santa Clara, Silicon Valley Power.

² Draft 2021 Local Capacity Area Technical Study, p.3.

³ Operating Procedure 3100 Establishing System Operating Limits for the Operations Horizon, Section 3.7. Study Guidelines for Non -Credible Multiple Contingencies.



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	<p>information would be helpful to the local regulatory authorities in allocating LCR requirements to the jurisdictional load-serving entities.</p> <p>BAMx identified an example that illustrates that modeling higher-level contingencies to identify LCR needs leads to the procurement of the local resources even when they are not required to meet the mandatory reliability standards or to provide operational reliability. One example involving the existing LCT criteria is in the Big Creek-Ventura area, where the overall LCR need for 2024 identified in the latest LCR study is 2,577 MW.⁴ The LCR value is driven by an overload on Sylmar-Pardee #1 or #2 230kV circuits following the overlapping outage of the Lugo-Victorville 500kV line and the remaining Sylmar-Pardee 230kV circuit⁵. This outage could be mitigated via Operating Procedure 7680, and therefore does not violate any of the mandatory NERC, WECC or CAISO reliability standards. However, the LCR procurement in 2024 will be based on the 2,577 MW value based on the existing LCT criteria that does not take into consideration any operating procedures that can be used for mitigation. BAMx urges the CAISO to review and eliminate the LCR needs driven by higher-level contingencies that are not required to meet the mandatory reliability standards or to provide operational reliability – or that can be mitigated by existing operating procedures.</p>	<p>The ISO's intent is to use all available operating procedures if applicable. The ISO can confirm that has used Operating Procedure 7680 in running the Big Creek/Ventura LCT study.</p> <p>Per LCR manual resources "hurting" the constraint need to be on-line in the starting case in order to protect their deliverability. Between the first N-1 and the second N-1 up to a net 1150 MW of resources can be re-dispatched down, without violating other constraints elsewhere, in order help mitigation. These "hurting resources" include LA Basin, San Diego-Imperial Valley, Ivanpah and High Desert as well as ISO schedules on PDCI. The 1150 MW dispatched down was shared among ISO internal resources and not the PDCI schedule (most effective) because the PDCI schedule is in hourly blocks and per ISO Tariff and other standards "system readjustment" needs to be done in 30 minutes or less. Else, resources in Big Creek/Ventura need to be increase to make up the requirement (Path 26 is already at maximum N-S in this case).</p>
1b	<p>Provide More Details on LCR Area and Sub-area Hourly Profiles</p> <p>Beginning with the 2020 LCR Study, the CAISO has enhanced its study process to include consideration of availability limitations such that the CAISO can ensure sufficient energy (MWh) is available in addition to the number of MW of capacity in the local areas.⁶ We support the CAISO's plans to continue to include hourly load and available resource data within its existing Local Capacity Technical Study reports going forward to guide resource procurement</p> <p>Currently, the CAISO provides two plots for each LCR subarea and area - one comprising the representative Peak Day Forecast Profile and the other showing the hourly profile for the entire year. BAMx requests that the CAISO provide the underlying data in spreadsheet format to enable stakeholders to perform a deeper-dive analysis. We also request the CAISO to provide high-level</p>	<p>Thank you for your support</p> <p>The actual data behind the plots contains real-time flow on every transmission equipment at the boundary of each area and sub-area along with the output of every individual resource within that area or sub-area escalated to the year of study. The ISO will look into confidentiality of data and other logistics required in order to accomplish</p>

⁴ 2024 Local Capacity Technical Study, Final Report and Study Results, May 1, 2019, p.4.

⁵ CAISO 2020 and 2024 Final LCR Results Big Creek-Ventura Area Presentation, April 10, 2019, Slide #11

⁶ 2020 Local Capacity Technical Study: <http://www.caiso.com/Documents/Final2020LocalCapacityTechnicalReport.pdf>



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	<p>guidance in terms of a duration requirement for a local resource needed to reliably and adequately address the local requirements within each of the LCR sub-areas and areas. We understand the CAISO won't be able to perform the detailed analysis for all areas in its 2021 LCR Study as it performed for the Moorpark Sub-Area.⁷ However, the CAISO's sharing of a combination of the more detailed information provided under the 2021 LCR Study and the LCR Reduction studies performed under the CAISO's 2018-2019⁸ and 2019-2020⁹ Transmission Plans should allow load-serving entities to determine where to pursue and procure local resources that meet the various sub-area and area LCR requirements.</p>	<p>this task; however, it may not be possible to publish the entire data behind the aggregated plots.</p> <p>ISO believes that it is possible to roughly estimate the need by looking at the plots already provided for the day with the highest need along with the yearly profile.</p>
1c	<p>Conclusion</p> <p>BAMx appreciates the opportunity to comment on the 2021 LCR Study Plan and acknowledges the significant efforts of the CAISO to develop this material.</p>	<p>The comment has been noted.</p>

⁷ CAISO Moorpark Sub-Area Local Capacity Alternative Study, August 16, 2017.

⁸ Board-Approved CAISO 2018-2019 Transmission Plan, March 29, 2019.

⁹ "Economic Assessment of Local Capacity Areas Extension of 2018-2019 Transmission Plan," CAISO 2019-2020 TPP Stakeholder Meeting, September 25, 2019.



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2	Pacific Gas & Electric Company Submitted by: Tyrone Hillman	
2a	<p>The CAISO's methodology does not fully account for the changes in resource composition and could result in insufficient resources being procured to meet the minimum capacity requirement. In addition to this, the CAISO should update its Study Manual to reflect how the hourly load profiles, transmission import limits, and hourly dispatch curves up to the NQC will be used in its LCT studies.</p> <p>The original purpose of the LCT Studies was to determine the minimum generation capacity that would be required to meet the local reliability requirements under a peak load condition. This has been traditionally evaluated by assessing a single peak hour "snapshot" with resources that were relatively dispatchable to a predictable output during most hours of the year. The CAISO recognizes the importance of enhancing its evaluation processes to ensure that sufficient "hourly capacity" is available to meet the reliability requirements due to the changing resource mix. With the new resource mix, it is no longer appropriate to assess local area needs based on a single hour snapshot and to apply a single capacity number as the appropriate basis for procurement of local RA for the entire year. In recognition of this scenario, the CAISO has begun including hourly load profiles of local areas but has not included a description of how this is developed or expected to be used within its LCT Study Manual. The CAISO also noted during the stakeholder call that solar resources are dispatched up to its Net Qualifying Capacity (NQC) using hourly curves and a description of this should be included within the Study Manual.</p> <p>Additionally, the CAISO has included the transmission capability under constraint for the hourly profiles and does not consider the outage duration or provide a description of how this should be used. This methodology is inadequate because it assumes that the import limit determined by the most severe contingency in a local area can exceed four hours. This does not take into account the operational need to return from contingency conditions to normal conditions before reaching the four hour limit. By determining the local procurement upon the assumption that the constraint can remain at its emergency condition for more than four hours, this will result in insufficient resources being procured to return the constrained line to its normal limit. The</p>	<p>Hourly load profiles are made by the CEC if it provides an 8760 forecast for the local area under consideration or by the ISO for most local areas and all sub-areas not directly forecasted by the CEC.</p> <p>ISO starts by pooling real-time data for all transmission equipment delimiting the area or sub-area plus all the resources currently available in the area or sub-area. From the pocket info correlated with the CEC forecast for current year the ISO estimates and extracts the PV output for the area or sub-area, therefore resulting in a gross load share. The gross load shape in the pocket is escalated to the appropriate year of study by using the load growth and expected increase in AAEE for the target year per CEC forecast. This future year gross load share is translated into a future year net load shape by using the CEC forecasted PV profile and amount for the target year. The red line through the plots represents the import capability of the area or sub-area usually given by the emergency rating of the limiting equipment.</p> <p>ISO has provided this information for a more informed procurement and future planning of resources into constrained local areas and sub-areas. Currently this information does not translate into a direct requirement for each individual LSE. However, the ISO needs to comply with this requirement since it needs to maintain reliability 8760.</p> <p>Per your request, description of solar resource output has been added to the study manual under Generation Modeled.</p> <p>The ISO intends to rectify the graphs going forward by either:</p> <ol style="list-style-type: none"> 1. Including both the normal and emergency rating of the limiting equipment along with the length of time the limiting equipment can stay at the emergency rating, or 2. By decreasing the single portrayed limit after the expiration of the emergency rating (4 hours for most equipment).



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	<p>CAISO should identify both the normal and emergency limits in the local areas to ensure that sufficient resources are being procured to properly account for resource availability limits and transmission contingency limits.</p> <p>Finally, the CAISO has added a section to its Study Manual indicating that it will consider the storage charging requirements for local resources. This is an important change and additional opportunities should be provided to stakeholders to understand the CAISO concerns and how the proposed methodology will sufficiently remedy the issue by providing adequate reliability certainty. In addition to this, the CAISO should update its Study Manual to reflect how the hourly load profiles, transmission import limits, and hourly dispatch curves up to the NQC will be used in its LCT studies.</p>	<p>The study manual is provided to inform stakeholder of the inputs and how to run a local capacity study. The study manual is not intended to explain how the LSEs or stakeholders may use the data provided in the LCT reports.</p> <p>The ISO will be using the hourly load profiles, transmission import limits, and actual resource dispatch at the time of the peak (up to the NQC) in validating its compliance with mandatory standards.</p>