

The ISO received comments on the topics discussed at the February 17, 2015 stakeholder meeting from the following:

1. Bay Area Municipal Transmission group (BAMx)
2. Blythe Energy Inc.
3. Boston Energy Trading and Marketing (Boston Energy)
4. California Public Utilities Commissions (CPUC)
5. Duke American Transmission Company (DATC)
6. Imperial Irrigation District (IID)
7. Nevada Hydro Company (Nevada Hydro)
8. Office of Ratepayers Advocates (ORA)
9. Pacific Gas & Electric (PG&E)
10. San Francisco Public Utilities Commission (SFPUC)
11. Silicon Valley Power (SVP)
12. Southern California Edison (SCE)
13. Transmission Agency of Northern California (TANC)
14. Tubb Canyon Desert Conservancy (TCDC) and Anza Borrego Foundation (ABF)
15. Westlands Solar Park (WSP)

Copies of the comments submitted are located on the 2014-2015 Transmission Planning Process Page under the *2014-2015 transmission planning process* subheading at: <http://www.caiso.com/planning/Pages/TransmissionPlanning/2014-2015TransmissionPlanningProcess.aspx>.

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

No	Comment Submitted	CAISO Response
1	Bay Area Municipal Transmission group (BAMx) Submitted by: Robert Jenkins, Barry Flynn and Pushkar Wagle	
1a	Introduction Many of the BAMx comments below are driven by a concern about the impact of the CAISO's proposed recommendations and decisions on the Transmission Access Charge (TAC) for load served from the CAISO grid. Substantial increases in the TAC have been felt by users of the CAISO grid and significant increases are still yet to come due to not only the Capacity projects in the current CAISO Transmission Plan but the significant non-capacity work (maintenance, compliance, automation, etc) being planned by the PTOs. As such, BAMx believes that it is important to include TAC forecasts as an integral part of the transmission plan. BAMx looks forward to reviewing the CAISO's updated TAC model that is expected to be incorporated into the Final Draft Transmission Plan.	The updated Regional (High Voltage) Transmission Access Charge model results has been included in the revised draft Transmission Plan.
1b	San Francisco Peninsula Extreme Event Assessment and Recommendation <i>See Market Participant Portal for comment.</i>	<i>See Market Participant Portal for response.</i>
1c	North East Kern Voltage Conversion BAMx continues to be concerned about the recommendation to approve this project. BAMx provided extensive comments following the September 2014 stakeholder meeting where this project was first presented. BAMx does not believe that the CAISO has presented any meaningful response to its earlier comments, which makes it difficult to continue a dialogue regarding the proposed project. BAMx earlier comments generally fell into three categories: <ol style="list-style-type: none"> 1. Identifying potentially lower cost alternatives to address the identified criteria violations. 2. Questioning the inclusion in the scope a change in the method of service for some stations from radials to network loops without applying the decision matrix laid out in Section II.5 of the CAISO Planning Standards. 3. Converting of three different 115 kV stations each to a breaker-and-a-half (BAAH) configuration. While providing greater reliability and operating flexibility, this design is also more costly, especially when the entire station must be rebuilt rather than simply expanded to add the necessary line terminations. In response to the first concern, it was stated during the February 17 th	First, the ISO would like to clarify the misunderstanding that the North East Kern Voltage Conversion Project is driven by 500 MW of Qualifying Facility (QF) generation capacity retirements in the North East Kern Area. The North East Kern Voltage Conversion Project was found to be needed utilizing the base cases developed as part of the 2014-2015 Transmission Planning Process (TPP). This base case assumed all existing QFs in the area to be active with the exception of the single 36 MW QF generation plant in the area which was confirmed to retire, and was effectively retired early this year. The detailed assumptions have been documented in the 2014-2015 Unified Planning Assumptions and Study Plan. The project was found to be needed and was based solely on those study assumptions. The ISO, in its February 17 th Stakeholder Meeting #4, further explained that the anticipation of potential future QF retirements coupled with load interconnections (both at the transmission and distribution levels) in the area would only serve to exacerbate the various NERC Category B and C contingency

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	<p>stakeholder meeting that the full scope was needed to accommodate the potential shut down of 500 MW of Qualifying Facility (QF) generation in the area. This number far exceeds the amount of generation in the area of study. It remains unclear what that comment is supposed to convey. If the generation assumed to be retired in the study is part of a larger plan to replace QF generation with transmission, the economics of this option should be studied. However, such changes were not included in the 2014-15 Unified Planning Assumptions and Study Plan nor in the base cases. And no such assessment has been made for the assumed retirements within the study area. Arbitrarily assuming these QF generation plants will retire despite being less than 40 years old seems to violate the rule of thumb used by the CAISO contained in the study plan for this 2014- 2015 TPP. As such, stakeholders have not been given an opportunity to understand how such loss of local generation impacts local reliability. There is no evidence presented that options of replacing these expiring QF contracts or persuing Preferred Resources in their place was a consideration. BAMx is concerned that justifying a project based on new generation assumptions that are not included in the Study Plan nor fully shared with stakeholders violates the integrity of the process.</p> <p>The other two areas of concern were not addressed in either the CAISO response matrix nor in response to direct questions at the stakeholder meeting. These additions to the project scope represent additional costs to the project and ultimately transmission users and should be separately justified rather than allowed to free-ride on reliability project to address violations of the Planning Standard.</p> <p>With further study of information that is available concerning this project and having received no meaningful response to our earlier concerns, we conclude the following:</p> <ol style="list-style-type: none"> 1. There does not appear to be a need to terminate the line converted to 115kV at Kern Oil Substation. This extra termination also appears to be the driver for including the conversion of Kern Oil substation to a breaker and a half scheme). 2. It is not very clear, but it appears that the reconductoring of the Kern Oil-Lerdo Jct. 115kV line, which was part of the PG&E request window application, is not included in the CAISO's proposed scope for this project. This is a 	<p>conditions identified in the area during this planning cycle. The ISO therefore recommends that the project be approved to better address the identified concerns and serve the long term needs of the area.</p> <p>With respect to the use of the Breaker-And-A-Half (BAAH) scheme as part of the project scope, it is PG&E's practice to design substations for BAAH arrangement when they meet certain criteria based on, for example, the number of transmission terminations, voltage level, and other factors. Some substation design arrangements allow for a BAAH scheme that can be operated as ring-bus with fewer circuit breakers; however this was not applicable in this case The North East Kern Voltage Conversion Project scope identified the need for BAAH arrangements at Famoso, Kern Oil, and Kern PP Bus Section E based on the number of transmission elements required.</p> <p>The full scope of the project has been documented in the Draft 2014-2015 Transmission Plan under the subsection "<u>2.5.7.3 Assessment and Recommendations</u>," of the Kern Area, and includes the reconductoring of the 10.3-mile Lerdo-Kern Oil-7 Standard 115 kV Line (Kern Oil-Lerdo Jct-Lerdo line sections).</p>

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	<p>reasonable reduction in scope, but since it did not result in any change in estimated costs, we cannot be sure whether it was deleted.</p> <p>This major project is proposed to be completed in 2022. We would like to suggest the CAISO take another year to study the details of this proposal, including the alternatives of solving some of the reliability issues with contracting for existing generation capacity and developing preferred resources.</p>	
1d	<p>Treatment of Preferred Resources</p> <p>BAMx is highly supportive of the major strides made by the CAISO in the 2013-2014 Transmission Plan in identifying the likely impact of preferred resources on the transmission grid in the LA Basin and San Diego area following the shut down of SONGS. While the CAISO continued this important work in the current plan, it has not expanded beyond its original limited geographic area. For example, we have not found any evidence of preferred resources being considered as the mitigation solutions considered by the CAISO in the PG&E area. We encourage full recognition by the CAISO of the ability of funded preferred resources to offset the need for transmission and to support the further development of these resources when their expected benefits, including offsetting the need for additional transmission projects, exceeds their expected ratepayer costs.</p>	<p>The ISO has considered utilization of preferred resources in the assessment of the PG&E area in the 2014-2015 TPP. As indicated by the analysis, there were limited areas where constraints were identified requiring mitigation. In addition, the ISO has identified that in the East Bay area a more detailed assessment will be undertaken in the 2015-2016 TPP.</p>
1e	<p>San Luis Transmission Project</p> <p>At the February 17th stakeholder meeting, there were comments by a proponent of the San Luis Transmission Project (SLTP) advocating that participation in the project be included in the 2014- 2015 Transmission Plan. Participation was characterized as a fleeting opportunity to right size the project to facilitate a fifty percent renewable energy goal. BAMx supports the CAISO's position that it is premature for the CAISO to include the SLTP in the Transmission Plan as a policy driven upgrade. There are numerous questions concerning the state policy in this area including the options for meeting increased renewable energy target, how such a transmission project would fit into a system-wide plan and, not least of which, how joint participation in such a project would be structured. BAMx supports consideration of how state policies for increased renewable generation may impact the long term transmission plan in a future planning cycle, including how cost signals can be made available to policy makers so that total consumer costs of any such policies can be minimized.</p>	<p>The comment has been noted.</p>

No	Comment Submitted	CAISO Response
2	Blythe Energy Inc. Submitted by: Seth D. Hilton	
2a	<p>I. Background</p> <p>Blythe Energy Inc. owns the Blythe Energy Project (“BEP”), a 520 megawatt natural gasfired electric-generating facility located in the City of Blythe, Riverside County. BEP commenced commercial operation in December 2003. In order to improve delivery to the ISO system, Blythe financed, constructed and placed in service a 67-mile 230 kV generation tie line from Buck Blvd. substation located adjacent to BEP, to the Southern California Edison/Metropolitan Water District Julian Hinds substation.</p> <p>Though the gen-tie line enhanced BEP’s ability to deliver its full capacity to the ISO system, reliability issues involving voltage control and overload issues at the Mirage and JulianHinds substations exist under certain operating conditions and contingencies. These reliability issues are currently being addressed through remedial action schemes (“RAS”), reactive compensation and operating procedures.</p> <p>Southern California Edison’s (“SCE”) 2014 Annual Transmission Reliability Assessment identified that exceedingly high voltages could result in circumstances where Metropolitan Water District (“MWD”) pumps and BEP are both off-line. To address this contingency, SCE developed GCC Operating Procedure No. 128. Under the current version of the Procedure, the Buck Blvd. breaker would be opened at Julian Hinds to take the BEP gen-tie off-line to address the high voltage issue.</p> <p>SCE’s implementation of the Operating Procedure has significant operational and financial impacts on BEP. SCE has taken the position that BEP is not available when it opens the Buck Blvd. breaker at Julian Hinds. While not conceding the point, if BEP is deemed unavailable when the breaker is opened, it would result in significant financial consequences to BEP under its power purchase tolling agreement with SCE.</p> <p>To address the high voltage and other issues, Blythe timely submitted a request into the Request Window for the 2014-2015 Transmission Planning Process</p>	<p>The ISO is continuing its analysis of the benefits reported by Blythe Energy Inc. and also examining the broader reliability implications of the project. Reliability concerns have been identified that the ISO is exploring, and as a result, the ISO intends to continue its analysis as “further study” as an extension of the 2014-2015 planning cycle.</p>

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	<p>("TPP") for the ISO to evaluate the Loop-In Project. The Loop-In Project would take advantage of Blythe's existing gen-tie line to create network facilities that would create a "loop" between the Colorado River Switching Station 500 kV system and the 230 kV system to the Devers substation. Blythe's existing gen-tie would be segmented, and each new segment would be connected to the Colorado River Switching Station. Due to the proximity of the Colorado River Switching Station, the new segments would be only about .4 miles in length, requiring minimal new construction. The Project would result in a 230 kV loop between Julian Hinds and Colorado River Switching Station, and a new BEP gen-tie from Buck to Colorado River Switching Station.</p> <p>Blythe intends to become the project sponsor for the Loop-In Project, and to become a Participating Transmission Owner with the ISO. Blythe has already submitted a Right-of-Way Plan of Development to the Bureau of Land Management ("BLM") for the Loop-In Project. Because the line would involve minimal new construction, the proposed in-service date is December 2016.</p> <p>The draft Transmission Plan identifies the high voltage issue when both the MWD pumps and BEP are off-line, but recommends that Operating Procedure No. 128 be used to mitigate that concern. (Draft Transmission Plan at 2.7.4.4, p. 117.) The draft Plan concludes that because the Operating Procedure will address the high voltage issue, the Loop-In Project does not address any reliability need. (Draft Transmission Plan at 2.7.4.3, p. 117.) The draft Transmission Plan does state, however, that the ISO "will revisit the concept in future reliability assessment, generation interconnection or other transmission planning processes." (Draft Transmission Plan at 2.7.4.4, p. 117.)</p> <p>As explained below, in addition to addressing the high voltage concern referenced in the draft Transmission Plan, the Loop-In Project would have additional reliability benefits, as well as significant economic benefits. It would also support the public policy goals referenced in the 2014-2015 Study Plan. Neither the economic benefits nor the public policy implications appear to have been considered by the ISO in its initial consideration of the Loop-In Project. Blythe therefore urges the ISO to continue to study the Loop-In Project in this TPP,4 or, at a minimum, make the Project a priority in the 2015-2016 TPP.</p>	
2b	II. The Project Would Provide Significant Reliability Benefits	

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	<p>The Loop-In Project would provide a number of reliability benefits, in addition to the high voltage issues identified above, as analyzed in detail in Blythe's Request Window submission.</p> <p>Under normal conditions, the Loop-In Project would reduce high flow on several critical and aged facilities, including: (1) the two Mirage-Devers 230 kV lines (reduced by 106 MW); (2) the Julian Hinds-Mirage 230 kV line (reduced by 121 MW); (3) the Julian Hinds-Julian Hinds MWD 230 kV line (reduced by 87 MW), and (4) the Eagle Mt.-Iron Mtn. 230 kV line (reduced by 33 MW). The Loop-In Project would also result in higher transmission utilization on the Colorado River 500/230 kV and 500 kV lines between Colorado River and Devers.</p> <p>The Loop-In Project would also eliminate overloads and high voltage issues under N-1 conditions without requiring the need to initiate the Julian Hinds RAS or the SCE Operating Procedure No. 128. The loss of either Julian Hinds-Eagle Mt. 230 kV or a bus fault at Julian Hinds 230 kV will overload the Julian Hinds-Mirage 230 line to 151%. The Loop-In Project will eliminate the overload, reducing loading on the line to 63%. The current Julian Hinds RAS requires dropping MWD pump load to address these contingencies. The Loop-In Project would therefore reduce the need to drop MWD pump load.</p> <p>The Loop-In Project would also eliminate high voltage issues that arise under certain outage conditions, and mitigate voltage deviations in excess of NERC reliability requirements.</p> <p>The Loop-In Project would also improve system stability under N-2 conditions, including eliminating overloads caused by two contingencies studied in the CAISO's 2014-2015 Reliability Assessment: (1) J.Hinds-Mirage & Eagle Mtn-Iron Mtn, and (2) J.Hinds-Mirage & Iron Mtn-Camino-Mead-Gene230. The Draft Transmission Plan proposes a mitigation solution for those contingencies that would involve the use of SCE GCC Operating Procedure No. 128 and ISO Operating Procedure 7720F. (Draft Transmission Plan Appendix B). By eliminating these overloads, the Loop-In Project would eliminate the need to utilize these operating procedures.</p> <p>In sum, the Loop-In Project would provide the following benefits by improving</p>	<p>Please see response above.</p>

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	<p>reliability in SCE's 230 kV system east of Devers:</p> <ul style="list-style-type: none"> • Eliminate high voltage issues at Julian Hinds, thereby eliminating the need for an SCE operating procedure that would potentially reduce the availability of BEP; • Support MWD pumping operations by eliminating the need for the Julian Hinds RAS, which in certain circumstances would drop MWD pump load; • Increase deliverability from and through SCE's 230 kV system east of Devers, including deliverability from renewable generation; and • Improve the stability of SCE's 230 kV system east of Devers by mitigating overloads and voltage issues occurring during N-1 and N-2 conditions. 	
2c	<p>III. The Project Would Provide Significant Economic Benefits</p> <p>As mentioned above, the Project would also provide substantial economic benefits. As part of Blythe's Request Window submission, ZGlobal conducted an analysis of the expected economic benefits for the Loop-In Project, using the same Transmission Economic Analysis Methodology ("TEAM") used by the CAISO to conduct its economic planning studies in the transmission planning process. That analysis showed that the total reliability and economic benefits would be approximately \$33.7 million, with production cost benefits of over \$15 million.</p> <p>ZGlobal also calculated the transmission revenue requirement ("TRR") for the Project, using the methodology provided in the FERC Cost-of-Service Manual. The annual TRR for the Project is expected to be \$18.9 million. The expected net benefit of the Project is therefore more than \$14.3 million in the first year alone, with a cost-benefit ratio of 1.8. By comparison, the cost-benefit ratio for the Delaney-Colorado River Project, approved by the ISO Board last year after the adoption of the Final Transmission Plan, had a maximum cost-benefit ratio of 1.17. The fact that the vast majority of the Loop-In Project is already constructed also provides significant benefits, and cost certainty, to customers, as well as minimizing the environmental impacts and permitting timelines associated with constructing new transmission lines.</p> <p>Overall, the expected present value of the net benefits from the Loop-In Project would be approximately \$278 million.</p>	Please see response above.
2d	<p>IV. The Project Supports State Policy Goals</p> <p>The Loop-In Project also supports achievement of both public policy goals</p>	

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	<p>identified in the 2014-2015 Final Study Plan: (1) achieving the 33% RPS on an annual basis, and (2) supporting RA deliverability status for needed renewable resources outside the ISO balancing authority area.</p> <p>Currently, the Eastern Riverside County 500 kV transmission corridor from Devers to Palo Verde is constrained due to overload on the North Gila-Imperial Valley-ECO 500 kV corridor. Any additional renewable generation located in Eastern Riverside County may require major and expensive transmission upgrades. Yet the RPS portfolios developed by and submitted to the CAISO by the California Public Utilities Commission for the 2014-2015 TPP identify between 1,400 to 3,800 MWs of renewable generation to be developed in Eastern Riverside. (Draft Transmission Plan at 202-204). The Loop-In Project would increase deliverability from and through SCE's Eastern Bulk system, thereby allowing additional deliverability from renewable projects in both Eastern Riverside and western Nevada.</p> <p>Governor Brown also recently announced a 50% renewable energy goal. On February 26, 2015, the California Public Utilities Commission also opened a new RPS proceeding that will, among other things, evaluate whether the CPUC should increase the current 33% RPS, pursuant to the authority granted it in AB 327 (R.15-02-020.). Given the high likelihood that California will increase its RPS in the near future, the CAISO has also included a special study in its 2015-2016 draft Study Plan that would evaluate potential transmission needs to meet a 50% renewable energy goal.</p> <p>The 2015-2016 draft Study Plan states that it would be premature to approve any projects associated with a higher RPS in the 2015-2016 TPP in part because the 50% goal has a target date of 2030, outside of the planning horizon for the next TPP. It is worth noting, however, that a 50% goal would require significant increases in RPS generation well before the target date of 2030, including increases well within the study horizon of this TPP. A linear increase of the RPS from 33% in 2020 to 50% in 2030 would require an RPS of over 40% by 2025.</p> <p>Given the likely growth in RPS generation in California, it becomes that much more important that the CAISO give serious consideration to projects like the</p>	<p>Please see response above.</p>

No	Comment Submitted	CAISO Response
	Loop-In Project, which will support California's efforts to achieve the 33% RPS in 2020.	
2e	<p>V. Conclusion</p> <p>Blythe's Loop-In Project would provide significant reliability and economic benefits, and supports the State policy goals that the ISO identified in the 2014-2015 Study Plan. The Project will eliminate voltage issues and overloads in SCE's 230 kV system east of Devers, and will provide net economic benefits of \$14.3 million in the first year alone. The net economic benefits over the 40 year life of the Project are likely to be over \$755 million. In light of these benefits, Blythe urges the CAISO to further consider the Loop-In Project in this TPP, or, at a minimum, make the Project a priority in the 2015-2016 TPP.</p>	Please see response above.

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3	Boston Energy Trading and Marketing (Boston Energy) Submitted by: Michael Kramek	
3a	<p>At the February 17th transmission planning stakeholder meeting ISO staff discussed 115 kV cable upgrades associated with SF Peninsula extreme events reliability assessment. The ISO characterized the 115kV cable upgrade as capital maintenance work to be conducted by PG&E. Given the transmission elements discussed are part of the ISO-controlled transmission system, Boston Energy request the ISO clarify the following:</p> <ol style="list-style-type: none"> 1. Will these upgrades be individually listed in the final version of the 2014/2015 Transmission Plan? If not, how will the dates be communicated to market participants given these facilities are part of the ISO controlled bulk system? 2. Do these upgrades have proposed in-service dates? <p>Boston Energy views transparency to the scope and schedule of these upgrades as critical to market participation in the CAISO administered Energy and Congestion Revenue Rights (CRR) market. As such, communication of scope and schedule should be handled in the same manner as all other transmission projects approved through the transmission planning process. Boston Energy understands the sensitivity around project scopes and supports including such information under the market participant portal page of the ISO's secure website (similar to all other request window projects). Information regarding proposed in-service dates should be transparent and made available to all market participants, similar to all other approved transmission projects impacting the ISO-controlled grid.</p>	<p>Please refer to the response to the Bay Area Municipal Transmission group (BAMx), item 1(b) above.</p>

No	Comment Submitted	CAISO Response
4	California Public Utilities Commission (CPUC) Submitted by: Keith White	
4a	<p>1. The San Francisco Peninsula Extreme Event Study Brought Significant Rigor and Transparency to an Inherently Difficult and Non-Transparent Planning Problem, and the Resulting Recommendations Appear to be Prudent and Appropriate. <i>CPUC Staff hope that our comments on this topic are sufficiently general that they can be posted on the public website.</i></p> <p>The planning problem addressed by the San Francisco Extreme Event Study appears to represent an unprecedented challenge for the TPP, especially regarding stakeholder process and potential mitigation investments. CPUC Staff support both the ultimately utilized analytic process and the ultimate decision regarding infrastructure needs. The analytic and stakeholder processes evolved constructively to produce enhanced understanding of risks and key risk drivers. We hope that this kind of structured assessment may be used or extended if there is future consideration of complex extreme event risks and mitigation options for the San Francisco Peninsula or elsewhere. Also, we hope to ultimately learn more about how the San Francisco Peninsula mitigation recommendations in the Draft Plan are translated into specific actions and investments.</p>	<p>Please refer to the response to the Bay Area Municipal Transmission group (BAMx), item 1(b) above.</p>
4b	<p>2. The TPP and Related Processes Clarified Interrelated Planning Options Regarding Southern California Local Capacity Needs and Imperial Valley Deliverability, in a Usefully Proactive and Contingent (“What if...”) Manner That Should be Continued. CPUC Staff appreciate the CAISO’s effort to analyze interacting transmission planning issues regarding coastal Southern California load center reliability and access to Imperial Valley resources in a proactive, integrated manner in consultation with stakeholders. In this regard, CPUC Staff finds the extended (10-year) LCR Study and the Imperial County Transmission Consultation to have been valuable adjuncts to the TPP.</p> <p>In particular, it is important, and we support these efforts, to clarify: 1. what transmission <i>is or is not</i> needed (e.g., for LA Basin/San Diego reliability, and delivering Imperial Valley resources) under present policy and reliability requirements, given specific planning assumptions regarding loads, resources</p>	<p>The comment has been noted.</p>

No	Comment Submitted	CAISO Response
	<p>and transmission; and 2. what might be needed under <i>specific alternative assumptions</i> (e.g., failure of certain assumed local resources to materialize or perform, or required additional delivery of renewable generation from Imperial Valley); and 3. what are the options for achieving 2. above?</p> <p>Such proactive identification of options that may be needed in the event of specific changes in assumed future conditions gives us time and opportunity to identify, assess and collect information regarding both the options and the possible conditions. This includes information on environmental feasibility of transmission options, and on progress in achieving local resources assumed in the base case. We believe that the 2014-15 TPP represents continued useful refinement in these kinds of studies and information, such as preliminary studies of a number of transmission options that are not currently needed. It is important for such studies to specifically identify what the estimated local capacity value of a given transmission option represents, e.g., substitution for what <i>specific types and amounts of local resources, at what locations.</i></p> <p>We look forward to continuation of this proactive approach to Southern California transmission options and the contingencies that might drive them, which was evident and appreciated in the last planning cycle.</p>	
4c	<p>3. Over-generation (Frequency Response) Studies Were Conducted for the First Time in the 2014-15 TPP Cycle, and CPUC Staff Look Forward to Refinement of Such Studies in the Future, to Address Interaction of RPS/Carbon Policy with System Reliability.</p> <p>The CAISO's over-generation study examined frequency response to a major outage (both Palo Verde nuclear units), which would drive down west-wide frequency until mitigated via frequency response. Based on AC powerflow and voltage stability studies of conditions derived from a Gridview production simulation for April 7, 2024 (renewables-driven over-generation), CAISO observed WECC frequency response to be adequate but with the CAISO area not contributing its required (under reliability standards) share and thus "leaning on" the rest of WECC. CAISO stated that study assumptions may have been optimistic in several respects, but on the other hand certain favorable assumptions and explicit consideration of potential mitigation measures have yet to be examined.</p>	<p>The analysis conducted in the 2014-2015 TPP was an initial study to assess potential impacts of frequency response. The analysis did not look at detailed mitigation to address the potential impacts. The ISO will be continuing the frequency response assessment in the 2015-2016 TPP to address the issues identified in the study and to further look at potential mitigations that may be required.</p> <p>Some aspects that will be addressed and were not included in the 2014-2015 study are: validation and refinement of the models, sensitivity studies with composite load model, studies of contingencies other than an outage of two Palo Verde units, studies of additional hours when over-generation may be expected and evaluation of mitigation measures.</p>

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	<p>CPUC Staff appreciate the CAISO's introduction of over-generation/frequency response studies into the planning cycle. We look forward to refinement of these studies in the future both to examine appropriately conservative (stressful) scenarios and also to evaluate realistic mitigation options such as system operational changes (commitment and dispatch re-optimization), effective use of storage and demand-side resources, potential frequency responsive capabilities in nonconventional resources (inverter-based, wind, storage) and increased exports under over-generation conditions.</p> <p>Finally, we are uncertain (and perhaps the final 2014-15 Transmission Plan could clarify) which aspects of over-generation-related reliability problems and solutions are intended to be addressed, versus not addressed, in these studies. For example: Is the focus limited to governor response or does it include inertial response? Are those frequency response issues being studied considered to be the most critical or limiting reliability risks from over-generation, essentially "the canary in the coal mine", or might other (which ?) over-generation related issues be equally or more critical, and under what conditions?</p> <p>Again, CPUC Staff look forward to continuation of these studies. We may provide additional comments in connection with the Draft 2015-16 TPP Study Plan that was discussed at the February 23 stakeholder meeting.</p>	<p>Regarding the over-generation-related reliability problems, inertial response is studied together with governor response since it is also a part of frequency response. System inertia defines how fast frequency declines after a contingency, and governor response defines frequency recovery. Frequency response and recovery after contingencies is the most critical issue of over-generation related to transmission planning. If any other reliability aspects of over-generation related to transmission planning are identified in the study, they will be evaluated and described in the study report. Over-generation issues related to system operations are not covered in this type of study.</p>

No	Comment Submitted	CAISO Response
5	<p>Duke American Transmission Company (DATC) Submitted by: Christopher T. Ellison</p>	
5a	<p>INTRODUCTION</p> <p>Duke American Transmission Company (“DATC”) respectfully offers the following comments on the California Independent System Operator’s (“CAISO”) on the draft 2014-2015 Transmission Plan.</p> <p>At the outset, DATC wishes to make four points clear. First, DATC greatly values its relationship with the CAISO and seeks a collaborative approach not only regarding the San Luis Transmission Project (“SLTP”), but also regarding electric system issues generally. Second, based on extensive discussions with SLTP sponsors, DATC is convinced that they strongly believe the SLTP is in the best long-term interest of federal water customers and their decision to proceed with the SLTP is not dependent upon the CAISO’s decision regarding “right sizing” the project to 500 kilovolts (“kV”). Third, while DATC has shown that the SLTP has both reliability and economic benefits within ten years, DATC agrees that the ten year forecast of reliability and economic needs prepared by the CAISO for the draft plan, which assumes only the scenarios provided by the California Public Utilities Commission (“CPUC”) and California Energy Commission (“CEC”), and no others, does not <i>by itself</i> support inclusion of “right sizing” the SLTP in the plan. Finally, DATC’s interest in asking the CAISO to consider “right sizing” the SLTP is not based on any attempt to shift costs or promote unneeded transmission, but rather on a sincere belief that “right sizing” the project will serve the needs of CAISO ratepayers and the state as a whole notwithstanding the conclusion of the 10-year forecast.</p> <p>Stated simply, where DATC finds fault with the draft plan is this: the plan uses an analysis of need based on the North American Reliability Corporation (“NERC”) minimum ten-year forecast to determine the need to “right-size” the SLTP. DATC believes that in this case, the minimum 10-year forecast is not sufficient to fully consider all of the planning assumptions relevant to whether the SLTP is needed.¹ Plainly, projects that the forecast finds necessary within 10 years to meet reliability standards or economically relieve congestion are needed. But the opposite is not true. One cannot say that the SLTP is not needed without answering key questions that the minimum reliability forecast simply does not address. These basic questions are these:</p>	<p>The concept of “right-sizing” referenced in the comments is based upon the Garamendi Principles which sets out the expectation that once it has been determined that there is a need for new capacity, the best practice is to encourage expansions of existing facilities and rights of way. These principles are also based in avoiding costs associated with the development of stranded assets. The ISO supports these principles; however must note that the loads Western Area Power Administration (Western) intends to serve from the proposed project are already being served today via existing transmission on the ISO operated system, and the ISO projects that this transmission can continue to be able to provide this service well into the future. Under these circumstances, it is not clear that the SLTP does align with the stated principles.</p> <p>In addition when assessing the benefits of candidate transmission projects, the ISO incorporates information provided by proposed project developers and stakeholders as well as data provided through other processes. These include the California Public Utility Commission’s Long Term Procurement Process proceedings, the California Energy Commission’s Integrated Energy Policy Report’s electricity demand projections, and databases prepared by the Western Electricity Coordinating Council. The ISO developed unified planning assumptions and has held ongoing stakeholder meetings throughout the annual planning process. The ISO’s analysis includes detailed technical studies that comprehensively evaluate the electricity reliability and economic benefits of proposed projects in relation to their costs, as well as the utility of projects in meeting identified policy requirements, such as providing access to preferred resources to meet established state RPS goals. The process is consistent with the ISO’s obligation, under its FERC-approved tariff, to approve only projects that meet specified needs and ensure just and reasonable rates for ISO customers.</p>

No	Comment Submitted	CAISO Response
	<ul style="list-style-type: none"> • How long will the opportunity to “right-size” the SLTP be available and can a decision be postponed to a future planning cycle? • What is the potential cost in dollars and environmental impact of failing to “right-size” the SLTP now and needing the capacity later? • What are the chances that this capacity will be needed over the long term? • How do the risks of passing on the chance to “right-size” the federal project compare to the cost of doing so? <p>Saying that the SLTP is “not needed” based solely on the minimum ten-year forecast of average system conditions rather than a robust analysis of multiple scenarios, ignores these fundamental questions and puts CAISO stakeholders at risk of incurring potentially very high costs in the future.</p> <p>That risk is illustrated by the following hypothetical. Suppose that the answers to the questions above are as follows: 1) the opportunity to “right-size” SLTP will no longer be available in future planning cycles; 2) building the SLTP-equivalent capacity later is either not feasible or involves far higher financial and environmental cost than “right sizing” SLTP; and 3) it is likely that this capacity will be needed for the long term. In this scenario, the prudent planning decision is to seize the opportunity to “right-size” the SLTP now to avoid the likelihood of much higher costs and impacts later. <i>This is true even if the project is not required to meet the minimum ten-year forecast.</i></p> <p>These comments will show that there is good cause to believe that all of these hypothetical answers are true for the SLTP. If, in the CAISO’s expertise and judgment, the answers to these questions do not support inclusion of “right sizing” the SLTP, that would resolve the matter for DATC and other stakeholders even if we disagree. But currently the draft plan does not address these questions. By these comments, DATC seeks a more collaborative relationship with the CAISO that seeks objective answers to these questions.</p> <p>Specifically, DATC urges the CAISO to take the following specific actions:</p> <ul style="list-style-type: none"> • Commit to making by the end of this year a long-term decision regarding whether to “right-size” the SLTP; 	<p>With this, the ISO has examined the need for further reinforcement of the Tracy-Los Banos path in all stages of studies conducted in the current 2014-2015 transmission planning cycle, exploring the reliability-driven, policy-driven and economically driven needs of the grid over the next 10-years. The study assumptions relied upon were developed in concert with the CPUC, the CEC, and other stakeholders, consistent with our established process. Among the key assumptions are the renewable generation portfolios, which are developed through a CPUC process, and the load forecast developed by the CEC. As noted in the draft 2014-2015 transmission plan, the ISO study results do not demonstrate any need for the additional capacity this upgrade would provide.</p> <p>The ISO will, however, revisit needs in the area in the 2015-2016 planning cycle. As indicated in the draft Study Plan for the 2015-2016 TPP the ISO will undertake a special study for information purposes in light of the Governor’s announcement of a goal to derive 50% of our electricity from renewable resources by 2030, which may provide further insights into potential future needs. The ISO’s own dialogue with Western has indicated that if a need is identified in the 2015-16 process, they would have enough time to proceed with timely development of either a 230 kV or 500 kV upgrade.</p>

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	<ul style="list-style-type: none"> • Work with the CEC to develop information comparing the costs, environmental impacts and permitting issues attendant to “right sizing” the SLTP to developing equivalent capacity along the same path later; • Analyze the likely long term need for the SLTP capacity in a manner consistent with the CAISO’s Transmission Economic Assessment Methodology (“TEAM”) and Brattle Group concepts (discussed below) by developing a forecast of twenty years that considers the Governor’s 50% renewable energy goal by 2030, significant likely development of solar energy in the San Joaquin Valley, and the potential need to transfer significant amounts of energy between northern and southern California to address planning uncertainties; and • Based on the foregoing, objectively assess whether the approximately \$300 million cost of “right sizing” the SLTP is warranted to avoid the cost of developing equivalent capacity in a new corridor with significant additional right-of-way requirements later. 	
5b	<p>SLTP BACKGROUND</p> <p>The SLTP is a 62-mile transmission project that will consume the last remaining existing transmission corridor space between Los Banos and Tracy. It is proposed by the Western Area Power Administration (“Western”) to serve the approximately 400 megawatt (“MW”) water pumping load of federal Central Valley Project, operated by the U.S. Bureau of Reclamation (“USBR”). That load has, until now, been served by a contract for power with Pacific Gas and Electric (“PG&E”) that expires in 2016. The SLTP can meet federal needs at 230 kilovolt (“kV”) without “right sizing” to 500 kV. Building the SLTP at 500 kV, however, would as much as quadruple its transmission capacity (to 1600 MW) with little additional environmental impact.</p> <p>Financially, this quadrupling of capacity would come at only twice the cost, thereby creating a classic “win-win” opportunity. Thus, DATC’s proposal to the CAISO is that it would receive approximately 1200 MW of backbone transmission capacity for approximately \$300 million (assuming the cost is shared with Western in proportion to the capacity received).</p> <p>The SLTP is currently under environmental review by the Western Area Power Administration (“Western”) in both 500 kV and 230 kV configurations. The preferred option, and that put forward for consideration by the CAISO, is to</p>	Please see the response to comment 5a above.

No	Comment Submitted	CAISO Response
	<p>“right-size” the project at 500 kV. Western’s schedule calls for completion of the environmental review and issuance of a record of decision by next February.</p>	
5c	<p><u>DISCUSSION</u></p> <p>The CAISO has the discretion to look beyond a 10-year planning horizon in its transmission planning process. (Indeed, as discussed in section 3.d below, pursuant to the CAISO’s TEAM approach, it arguably has an obligation to do so.) Currently, the CAISO tariff employs a minimum 10-year planning horizon in considering and approving transmission solutions, stating:</p> <p style="padding-left: 40px;">[T]he CAISO will develop the annual comprehensive Transmission Plan and approve transmission solutions using a Transmission Planning Process] The Transmission Planning Process shall, at a minimum . . . reflect a planning horizon covering a <i>minimum of ten (10) years</i> that considers previous approved transmission upgrades and additions, Demand Forecasts, Demand-side management, capacity forecasts relating to generation technology type, additions and retirements, and such other factors as the CAISO determines are relevant.</p> <p>The tariff specifies that this ten-year planning horizon is merely a minimum. In Order 1000, the Federal Energy Regulatory Commission (“FERC”) affirmatively declined to establish minimum planning horizons on transmission planning authorities such as the CAISO, choosing instead to provide transmission providers flexibility to determine the most appropriate manner, in consultation with stakeholders, “requirements that work for [the] transmission planning region.” Similarly, while NERC’s reliability standards make clear that the CAISO should evaluate transmission solutions across a ten-year planning horizon, the CAISO generally interprets NERC’s reliability standards, including the 10-year planning horizon standard, to be a minimum threshold.</p> <p>The CAISO’s Planning Standards identify the NERC Transmission Planning (“TPL”) standards and Western Electricity Coordinating Council (“WECC”) Regional Criteria as minimum standards that the CAISO needs to follow in its planning process unless NERC or WECC formally grants an exemption or deference. Specifically, the CAISO implements its Planning Standards to complement the NERC and WECC reliability standards “where it is in the best interests of the security and reliability of the ISO controlled grid”. The CAISO’s</p>	<p>As indicated in response 5a above with respect to the “right-sizing” of the proposed project. The ISO has conducted analysis of the 10-year planning horizon based upon the study assumptions and input from stakeholders and the current 33% RPS requirements in the 2014-2015 TPP. The ISO has not identified a reliability need on the ISO controlled system to supply the existing load or the reliability or economic need for the increased capacity. The ISO will, however, revisit needs in the area in the 2015-2016 planning cycle. As indicated in the draft Study Plan for the 2015-2016 TPP the ISO will undertake a special study for information purposes in light of the Governor’s announcement of a goal to derive 50% of our electricity from renewable resources by 2030 which may provide further insights into potential future needs.</p>

No	Comment Submitted	CAISO Response
	<p>Planning Standards “establish planning guidelines and standards <i>above</i> those established by NERC and WECC, and interpret the NERC Reliability Standards and WECC Regional Criteria specific to the ISO Grid.” DATC believes that California’s policies to maximize use of existing transmission corridors, reduce greenhouse gas emissions and potentially push to achieve a 50 percent penetration of renewables warrant consideration of need for the SLTP beyond a 10-year planning horizon. The SLTP will provide flexibility and a hedge against uncertainty in generation location, demand growth, and will provide access to renewable energy development in the Fresno/Kern area, which is also an area in need of economic stimulation. Thus, consistent with past practices, the CAISO should look beyond a 10-year planning horizon to consider whether there is a longer term need for the SLTP.</p> <p>If the CAISO does not look beyond the 10-year forecast in considering the SLTP, key questions regarding the need for the SLTP will go unanswered. As shown below, it is likely that an objective assessment of these issues will conclude the following:</p> <ul style="list-style-type: none"> • That the decision whether to “right-size” the SLTP cannot be deferred to future planning cycles; • That the environmental and economic cost of failing to “right-size” the SLTP is potentially very high and that failure to avoid such costs is inconsistent with statutory policies regarding transmission planning in California. • That it is likely that the capacity resulting from “right sizing” the SLTP will be needed to support: 1) the Governor’s announced goal of achieving 50% renewable penetration by 2030; 2) development of preferred solar energy sites in the San Joaquin Valley; and 3) to provide flexibility and a hedge against major planning uncertainties that potentially threaten reliability and economic development in the long term. • That the approximately \$300 million cost of “right sizing” the SLTP is a prudent expenditure compared with the likely much higher costs and risks of failing to do so. <p>The importance of each issue is addressed below to demonstrate to the CAISO the need to conduct its own objective assessment of these questions.</p>	

No	Comment Submitted	CAISO Response
5d	<p>1. The Decision Whether to “Right-Size” the SLTP Cannot be Deferred. Western and the other federal entities involved in supplying electricity to the CVP pumps have been actively developing a plan to replace the expiring PG&E contract for nearly ten years. Those efforts have included serious negotiations with PG&E on a replacement contract, careful consideration of taking service from the CAISO, and consideration of transmission alternatives including the SLTP. A key consideration for these entities has been cost certainty in the long term. Based on this and other factors, they have concluded that the SLTP provides them the greatest certainty and is the preferred option.</p> <p>While it must complete and consider its on-going environmental review, Western does not need approval from the CAISO to proceed with the SLTP. Nor is their decision to proceed with the project financially dependent on the CAISO’s decision regarding ‘right sizing’ the SLTP. Western’s seriousness in pursuing the SLTP is reflected in the on-going environmental review, which has to date cost more than four million dollars and is proceeding to a record of decision next February. Western’s decision regarding the voltage of the project will need to be made in that timeframe. Once Western has committed to constructing the project at 230 kV, the opportunity to “right-size” the SLTP will be lost. Absent a change in the SLTP schedule, that commitment will occur prior to completion of the next CAISO planning cycle.</p> <p>Thus, statements in the draft plan (and at the stakeholder workshop) that there is time to reconsider right sizing the SLTP in next year’s 2015-16 planning cycle do not accurately reflect Western’s stated schedule for proceeding with the SLTP.</p>	<p>Please see responses to 5a and 5c above.</p>
5e	<p>2. The Environmental And Economic Cost Of Failing To “Right-Size” The SLTP Is Potentially Very High, And Failure To Avoid Such Costs Is Not Consistent With Statutory Policies Regarding Transmission Planning In California. As noted above, regardless of its voltage, the SLTP will be constructed within the existing high voltage transmission corridor between Los Banos and Tracy. Once it is constructed, however, there will be no remaining space in the corridor. Additional future capacity will have to either expand the corridor in some way, or require the development of an entirely new corridor. This will have to occur in an area with prime agricultural land, significant endangered</p>	<p>Please see responses to 5a and 5c above.</p>

No	Comment Submitted	CAISO Response
	<p>species issues, competition for available land (including from solar projects as discussed below) and many other permitting and land acquisition challenges. Expanding the corridor or creating a new one is likely to be significantly more costly, more time consuming and difficult, and more environmentally harmful than “right sizing” the SLTP in the existing corridor. Indeed, given the history of challenges to siting major new transmission corridors in California, it is conceivable that it is simply not feasible to replicate the capacity of “right sizing” the SLTP in the future.</p> <p>The CAISO has generally relied upon the CEC to assess the impacts and permitting issues for transmission projects being considered in its planning process. However, the draft plan includes no such analysis of the cost, impacts and feasibility issues related to the SLTP and alternatives to it. To pass on the opportunity to “right-size” the SLTP based on a minimum 10-year horizon forecast without any consideration of the consequences should that capacity be needed later is not prudent, and the planning process should accurately capture and address such issues.</p> <p>Moreover, such a decision is not consistent with applicable state law and policy. Section 24 of the CAISO Tariff provides that transmission solutions needed to meet state, municipal, or federal policy requirements or directives identified in the transmission planning process will be evaluated by the CAISO.</p> <p>Pursuant to section 24 of the CAISO Tariff, any planning process that considers relevant policies must start by strictly applying California statutes that expressly address transmission planning. California law provides that to “promote the efficient use of the existing transmission system” and to avoid new rights of way that “may impose financial hardships and adverse environmental impacts on the state and its residents” the CAISO should “encourage the use of existing rights of way, the expansion of existing rights of way, and the creation of the new rights of way in that order...” The right sizing of the SLTP is consistent with this policy, as it maximizes the use of right of way space available for high-voltage transmission to provide transmission capacity to California residents more economically and with fewer adverse environmental impacts relative to the construction of upgraded or new transmission projects at a later date.</p>	

No	Comment Submitted	CAISO Response
	<p>The right sizing of transmission projects “intended to maximize project value and minimize the financial and environmental impact associated with building new transmission capacity” is a policy supported by the California Energy Commission and state and congressional legislators. The right sizing of projects, such as the SLTP, “maximize[s] the value of land associated with already necessary transmission investment while avoiding future costlier upgrades to accommodate additional needed development”, in addition to environmental benefits such as “minimizing the biological resource impacts of ground disturbance.”</p>	
5f	<p>3. It Is Likely That The Capacity Resulting From “Right Sizing” The SLTP Will Be Needed To Support: 1) The Governor’s Announced Goal Of Achieving 50% Renewable Penetration By 2030; 2) Development Of Preferred Solar Energy Sites In The San Joaquin Valley; And 3) Providing A Hedge Against Major Planning Uncertainties That Potentially Threaten Reliability And Economic Development In The Long Term.</p> <p>The SLTP lies on the backbone of the California high voltage grid. It is essentially a northern extension of Path 15 along the main north-south artery of the CAISO system. Thus, the capacity that right sizing would create directly enhances the ability of the CAISO to move power between northern and southern California. In other words, the location of the SLTP is the polar opposite of the proverbial “bridge to nowhere”; it would reinforce service to all of California and beyond. In a state with a growing and shifting population, a major move to electrify transportation, and a major move to rely on more renewable generation, the notion that the SLTP capacity will not be valuable over the long term is fraught with risk. As shown in this section, a closer look confirms that this capacity is needed for multiple reasons.</p> <p>a. The SLTP offers near-term and longer reliability and economic benefits</p> <p>On October 15, 2014, DATC submitted information during the reliability open window demonstrating the near-term and longer term reliability and economic benefits of the SLTP. We summarize below the crucial components of that information, and request that the need for the SLTP be reconsidered in light of this information.</p> <p>The SLTP addresses specific reliability issues that may occur within the 10 year planning horizon, as well as issues that are likely to occur in the future</p>	<p>Please see responses to 5a and 5c above.</p>

No	Comment Submitted	CAISO Response
	<p>beyond 10 years. During off-peak summer hours in 2024, initial simulations with transmission planning models indicate that there may be significant base case and N-1 reliability violations using normal seasonal ratings on the transmission system. Specifically, during this time normally scheduled maintenance outages will result in overloading of Midway-Los Banos, Los Banos-Tesla and Los Banos-Tracy transmission lines. These reliability events become more severe with anticipated renewable energy development in the San Joaquin Valley. Given the growing interest in solar development in the San Joaquin Valley and California’s movement towards achieving 50 percent renewable penetration, the development of 1,000 MW (or more) in the valley is a reasonable assumption. Utilizing CAISO transmission planning tools, initial model runs indicate that the SLTP 500 kV option eliminates these reliability concerns by providing additional 500 kV transmission pathways for power to flow from south to north during these summer off-peak periods. The proposed new SLTP 500 kV transmission line between Tracy and the Los Banos area solves this reliability event and ensures that the system is flexible and robust for the future.</p> <p>Further, as can be seen from the 2011 California Transmission Planning Group (“CTPG”) Statewide Transmission Plan and previous CAISO studies, under certain situations the SLTP would be an effective way to mitigate identified reliability issues. Specifically, the CTPG found that for high south to north flows during periods of low load (typically fall), additional bulk facilities would be needed to allow power generated from renewables in southern California to flow to load centers in northern California. As discussed above, DATC’s own studies using CAISO’s current off peak case shows similar needs as more generation is added south of Los Banos. DATC will gladly make these studies available to the CAISO.</p>	
5g	<p>b. The SLTP will likely be needed to support the Governor’s announced goal of achieving 50% renewable penetration by 2030</p> <p>The 2014-15 ten-year forecast and the resulting draft plan do not take into consideration the Governor’s recent announcement that the state will seek to achieve 50 percent renewable energy penetration by 2030. State legislators are already acting to achieve this goal. However, as presented at the February 17th Stakeholder Meeting, the CAISO’s 2014-2015 forecast was developed based on a 33 percent Renewables Portfolio Standard (“RPS”). DATC encourages the CAISO to reevaluate the forecast and transmission needs based on California’s</p>	Please see responses to 5a and 5c above.

No	Comment Submitted	CAISO Response
	<p>GHG reduction policies and any new policy to achieve a greater level of renewable generation.</p> <p>DATC recognizes and shares the near-term “duck curve” concerns regarding integration of new renewable resources. However, the Governor’s announced goal considered these concerns, and nonetheless concluded that it is in the public interest to significantly increase the penetration of new renewable energy facilities, including new solar resources. This is unquestionably a policy that the CAISO will need to recognize in evaluating policy driven projects going forward.</p> <p>One objective measure of the impact of the Governor’s policy is the E3 <i>California GHG Scenarios & Policy Framework Work Product for California Energy Agencies</i>, commissioned to determine an achievable 2030 GHG reduction target. That study concludes that achieving GHG emissions reductions of 25 to 36 percent below 1990 levels requires significant continued renewable energy development beyond the 33% RPS goal considered by the CAISO’s 2014-15 planning assumptions. Specifically, E3 concluded that 56 to 76 gigawatts (“GW”) of renewable capacity from utility-scale facilities and installation of rooftop photovoltaic systems will be needed.</p>	
5h	<p>c. The SLTP will likely be needed to support development of preferred solar energy zones in the San Joaquin Valley</p> <p>The addition of up to 76,000 MW of renewable energy serving the California market from anywhere will significantly affect the need to transfer power along the Path 15/SLTP corridor, given that this is the major path for transfer of power between northern and southern California. But the impact of the Governor’s announced policy will likely have an even greater impact on the need for the SLTP than these numbers suggest. That is because there is an emerging consensus among policy makers and stakeholders that the Southern San Joaquin Valley should be a focus for new solar development. The San Joaquin Valley is widely viewed by state and federal legislators, California energy agencies, the environmental community, and the agriculture community as being a preferred location for solar generation projects. As noted by the California Energy Commission, the SLTP has the potential to “interconnect[] future renewable resource generation, primarily solar, in the San Joaquin Valley that could require additional capacity to deliver the renewable generation</p>	Please see responses to 5a and 5c above.

No	Comment Submitted	CAISO Response
	<p>to northern California load centers.” The Westlands Solar Park, a series of phased projects totaling upwards of 2,400 MWs of solar power located in the Central Valley is just one of the renewable projects for which the SLTP can provide crucial transmission capacity. The CAISO has already analyzed the transmission upgrades necessary to interconnect significant amounts of 3,600 MW of solar resources in the San Joaquin Valley in Cluster 3 of its Generator Interconnection Process. In Cluster 3, the CAISO’s analysis concluded that the SLTP is one of the key elements of the upgrades needed to support the deliverability of power from these facilities.</p> <p>Given the suitability of areas of the San Joaquin Valley for renewable energy development and California’s new push to achieve 50 percent renewable penetration, it is reasonable to conclude that additional transmission capacity in that region will be needed. Further, the SLTP will bring much needed economic benefits and growth to the San Joaquin Valley. The SLTP will spur the construction of new infrastructure, investment, job creation, and revenue in an area “hard hit by chronic double-digit unemployment and exceedingly high levels of poverty.” The CAISO should examine these new policy considerations when evaluating whether or not the right sizing of the SLTP is needed.</p>	
5i	<p>d. “Right sizing” the SLTP is a prudent action as a long-term hedge against planning uncertainties</p> <p>The CAISO Tariff requires that the Transmission Planning Process shall, at a minimum:</p> <p>“(a) Coordinate and consolidate in a single plan the transmission needs of the CAISO Balancing Authority Area for maintaining the reliability of the CAISO Controlled Grid in accordance with Applicable Reliability Criteria and CAISO Planning Standards, in a manner that promotes the economic efficiency of the CAISO Controlled Grid and considers federal and state environmental and other policies affecting the provision of Energy; . . .</p> <p>(d) Identify existing and projected limitations of the CAISO Controlled Grid’s physical, economic or operational capability or performance and identify transmission solutions, including alternatives thereto, deemed needed to address the existing and projected limitations....”</p> <p>These fundamental goals of the TPP require that the CAISO plan prudently and</p>	Please see responses to 5a and 5c above.

No	Comment Submitted	CAISO Response
	<p>consider all the relevant facts impacting the future need for electric transmission capacity on the CAISO grid. Two of the most fundamental facts that the CAISO must consider are: 1) planning, permitting and construction of any new high-voltage electric transmission project in California takes many years; and 2) California’s electricity future has never been so uncertain due to multiple and simultaneous upheavals in electric markets.</p> <p>The first fact is beyond dispute. A review of any recently built or currently planned major transmission project in California will confirm that the time from initial proposal to operation is many years, sometimes a decade or longer. (Even the SLTP, which is well into its environmental review process, is not expected to be operational until 2023.) This means that a failure to plan for future transmission needs cannot be remedied quickly or easily, if it can be remedied at all.</p> <p>The second fact is equally clear. Planning for California’s future electricity needs must consider the cumulative and interactive effects of all of the following tectonic changes in California’s electricity supply and demand picture:</p> <ul style="list-style-type: none"> • A growing population and a rebounding economy; • The closing of the San Onofre Nuclear Generating Station; • The effort to reduce GHG emissions and achieve an unprecedented increase in the penetration of renewable generation; • The closing or repowering of many California power plants that rely upon once-through cooling pursuant to the State Water Resources Control Board’s ban on that cooling system; • The effort of air agencies and auto manufacturers to replace gasoline with electricity as the state’s principal transportation fuel and uncertainties regarding the amount and timing of recharging such vehicles will have on increasing electricity demand; • The state’s efforts to encourage electricity storage and the technical and market success of large-scale electricity storage technologies; • The state’s efforts to encourage distributed “behind the meter” generation; and • The impacts of climate change and drought on electric supply and demand. <p><i>Any of these changes alone would be significant and would introduce</i></p>	

No	Comment Submitted	CAISO Response
	<p>uncertainty into the TPP. That all of them are happening at once means that transmission planning must be flexible enough to seize upon opportunities that provide benefits across multiple scenarios and not simply one near-term forecast based on one set of assumptions.</p> <p>These principles are entirely consistent with the CAISO's planning policies. In its TEAM, the CAISO has stated:</p> <p>Decisions on whether to build new transmission are complicated by risks and uncertainties about the future. Future load growth, fuel costs, additions and retirements of generation capacities and the location of those generators, exercise of market power by some generators, and availability of hydro resources are among some of the many factors impacting decision makers. Some of these risks and uncertainties can be easily measured and quantified, and some cannot. There are fundamentally three reasons why we must consider risk and uncertainty in transmission evaluation.</p> <p>First, changes in future system conditions can significantly affect benefits of a transmission expansion. The relationship between transmission benefits and underlying system conditions is in many cases nonlinear. Thus, evaluating a transmission project based only on assumptions of average future system conditions might greatly underestimate or overestimate the true benefit of the project and may lead to less than optimal decision making. The following figure depicts two examples of the possible relationship between the benefit of transmission expansion and future peak load. If the marginal benefit of a transmission project increases at an increasing rate with an increase in peak load (the left panel), then the evaluation based on average future peak load will underestimate the benefit. Conversely, if the benefit does not increase at the same or greater rate with an increase in peak load, then the evaluation based on average future peak load will overestimate the benefit (the right panel). Similar non-linear relationships may also exist between transmission benefits and other factors. To make sure we fully capture all impacts the project may have, we must examine the value of a transmission expansion under a wide range of possible system conditions.</p>	

No	Comment Submitted	CAISO Response
	<p>Second, transmission upgrades are particularly valuable during extreme conditions and major values of transmission upgrade are insurance against extreme events. For example, the California energy crisis might have been avoided had there been a significant transmission capacity between the Eastern interconnection and the Western interconnection. If all of the inexpensive Eastern power could have gotten to the West during that time period, prices would not have risen and the state of California would not have had to assign forward contracts at prices that reflected substantial market power. In addition, it would have perhaps avoided the recent blackout in the eastern U.S. that led to significant economic loss to that area of the country.</p> <p>Third, transmission upgrades have significant option values and the only way to value these options is to consider probabilities of risk and uncertainty. Option analysis can tell whether projects are really needed, or can be deferred or should be advanced. Decision makers need to consider probabilities to calculate option values. Although our methodology does not focus on option analysis, nevertheless it is an important aspect of risk and uncertainty analysis.</p> <p>***</p> <p>Deterministic analysis is performed using point estimates, for example, a single set of assumptions about loads, natural gas prices, and the availability of generating plants to meet customer loads. <u>While a deterministic analysis is useful for understanding a single set of input forecasts, it does not reflect the impact of risk and uncertainty. Deterministic analysis is best used for initial analysis of an expansion proposal. A complete transmission evaluation process should incorporate stochastic analysis or scenario analysis described below.</u></p> <p>A report by the Brattle Group on assessment of the benefits of electric transmission (which acknowledges CAISO Vice President Dr. Keith Casey as having played a peer review role) also emphasized the importance of consideration of uncertainties and using a long-term horizon in the evaluation of transmission projects. Summarizing its conclusions, Brattle recommended that transmission planners need to, among other things:</p>	

No	Comment Submitted	CAISO Response
	<ul style="list-style-type: none"> • <i>Address Uncertainties.</i> The industry faces considerable uncertainties on both a near- and long-term basis that should be considered in transmission planning. The consideration of near-term uncertainties—such as uncertainties in loads, volatility in fuel prices, and transmission and generation outages—is important because the value of the transmission infrastructure is generally disproportionately concentrated in periods of more challenging, or possibly extreme, market conditions. The consideration of long-term uncertainties—such as industry structure, new technologies, fundamental policy changes, and other shifts in market fundamentals—is important for developing robust transmission plans and investment strategies, valuing future investment options, and identifying “least-regrets” projects. <u>We recommend a more comprehensive planning approach that includes: (1) evaluating long-term uncertainties through scenario-based analyses; and (2) evaluating near-term uncertainties within scenarios through sensitivity or “probabilistic” analyses.</u> • <i>Consider Long-Term Benefits.</i> Several methods exist for comparing benefits and costs in the transmission planning processes. The methods currently used by planners and regulators differ by the number of years analyzed (<i>i.e.</i>, planning horizons), how benefits are estimated over the short-term and long-term, whether levelized or present values are used in the benefit and cost estimations, and the benefit-to-cost threshold that projects must clear. <u>After analyzing the various methods currently employed in different planning regions, we recommend that the estimated benefits be compared with estimated project costs—either on a present value or levelized annual basis—over a time period, such as 40 or 50 years, that approaches the useful life of the physical assets. Paying attention to how benefits and costs accrue over time and across future scenarios will also help planners to optimize the timing of transmission investments from a long-term value perspective.</u> <p>Never has it been more important that the CAISO transmission plan accommodate a wide range of California electricity futures. Taking advantage of a one-time chance to increase the backbone capacity of the CAISO grid at relatively low cost, in addition to meeting the other planning policies set forth above, is fully consistent with CAISO planning policies and meets this goal.</p>	

No	Comment Submitted	CAISO Response
5j	<p>CONCLUSION</p> <p>DATC supports the CAISO’s 2014-15 forecasting effort and thanks the CAISO for the opportunity to submit these comments. As shown above, however, there are key unresolved questions regarding the need for “right sizing” the SLTP that the minimum ten year forecast and the current draft plan do not answer. Moreover, there is good cause to believe that the answers are likely to support “right sizing” the SLTP as being in the best long term interest of the CAISO, its ratepayers and the state. DATC continues to believe that proceeding with the draft plan without a credible investigation of these questions is imprudent and would be inconsistent with the CAISO Tariff, the CAISO’s planning process as articulated in the TEAM, the Garamendi Principles, and expressed interest of a wide spectrum of interested stakeholders including elected and appointed officials, environmental advocates, energy trade associations and many others.</p> <p>As the TEAM approach illustrates, the CAISO has an admirable track record of adapting its planning process to address new questions. DATC believes that such adaption is warranted where, as here, a limited window exists to capitalize on a project that would provide substantial benefits to the state and ratepayers. Specifically, DATC urges the CAISO to do the following:</p> <ul style="list-style-type: none"> • Commit to making by the end of this year a long-term decision regarding whether to “right-size” the SLTP; • Work with the California Energy Commission to develop information comparing the costs, environmental impacts and permitting issues attendant to “right sizing” the SLTP to developing equivalent capacity along the same path later; • Analyze the likely long term need for the SLTP capacity in a manner consistent with its TEAM and Brattle Group concepts by developing a forecast of twenty years that assumes achieving the Governor’s 50% renewable energy goal by 2030, significant development of solar energy in the San Joaquin Valley, and the potential need to transfer significant amounts of energy between northern and southern California to address planning uncertainties; and • Based on the foregoing, objectively assess whether the approximately \$300 million cost of “right sizing” the SLTP now is warranted to avoid the likely much higher cost of developing equivalent capacity in a new corridor 	<p>Please see responses to 5a and 5c above.</p>

No	Comment Submitted	CAISO Response
	<p>later.</p> <p>DATC hopes to work collaboratively with the CAISO and all stakeholders to address these unanswered questions in a timely manner.</p>	

No	Comment Submitted	CAISO Response
6	Imperial Irrigation District (IID) Submitted by: Jamie Asbury	
6a	<p>MIC IID appreciates the CAISO clarification, at slide 10 of the CAISO's February 17th presentation, that there is available MIC that can be utilized by resources connecting to the IID or to the CAISO, to enable those resources to count as Resource Adequacy capacity in the CPUC solicitation process. This confirms the Draft 2014-2015 Transmission Plan discussion which sets forth 662 MW of MIC from IID for 2020, and an additional 500-750 MW of incremental deliverability for the Imperial Zone.</p> <p>While policy differences remain between the CAISO and IID on MIC and the inability of IID-located resources to rely upon a durable MIC as they work through the procurement process, IID's primary objective here is to ensure that this availability of additional deliverability, whether it is MIC or deliverability internal to the CAISO system, is accurately incorporated in the ongoing renewable solicitation process. The CPUC's Procurement Decision states, in part, as follows:</p> <p>While the Commission is encouraged by the execution of contracts in the Imperial Valley area and successful development of new renewable energy facilities, we continue to direct monitoring of renewable procurement activities in the Imperial Valley area. Only a small portion of the executed contracts are operational, and continued monitoring will enable the Commission and the public to observe the progress of renewable facilities development in the area.</p> <p>The Commission directed the IOUs to assume a maximum import capacity from the IID Balancing Area, in part, to recognize the resource potential in the Imperial Valley area. While the Commission still recognizes the Imperial Valley resource potential, the Commission agrees with SCE that it is reasonable to calculate capacity benefits for offers located in the Imperial Valley area based on CAISO's <i>Advisory Estimates of Future Resource Adequacy Import Capability</i> because CAISO's methodology for calculating maximum import capability has changed. This change in CAISO's methodology eliminates the Commission's previous concerns. Further, the Commission finds it reasonable</p>	<p>The ISO supports the use of the information in the 2014-2015 Transmission Plan in CPUC proceedings, as applicable, and will help to ensure that the information is accurately reflected in CPUC proceedings.</p>

No	Comment Submitted	CAISO Response
	<p>for PG&E and SDG&E to calculate its resource adequacy benefits based on the same CAISO estimates.</p> <p>Therefore, SCE's proposal to modify its least-cost, best-fit methodology by calculating resource adequacy benefits based on CAISO's <i>Advisory Estimates of Future Resource Adequacy Import Capability</i> is approved. Furthermore, the Commission's requirement to assume a maximum import capability of 1,400 MW from IID Balancing Authority Area as directed in June 7, 2011 ACR and D.12-11-016 is removed.</p> <p>Accordingly, the Commission's Energy Division staff shall continue to monitor RPS development in the Imperial Valley according to the parameters set forth in Appendix A of D.09-06-018. Consistent with D.12-11-016, PG&E, SCE and SDG&E shall provide a specific assessment of the offers and contracted projects in the Imperial Valley region in future RPS Procurement Plans filed with the Commission pursuant to §§ 399.11 <i>et seq.</i> until directed otherwise.</p> <p>In its final 2014 RPS Procurement Plan, SCE's least-cost, best-fit methodology that calculates resource adequacy benefits based on CAISO's <i>Advisory Estimates of Future Resource Adequacy Import Capability</i> is approved. Furthermore, in their final RPS Procurement Plan, PG&E and SDG&E shall, as applicable, remove the assumption of a maximum import capability of 1,400 MW from IID Balancing Authority Area adopted in the June 7, 2011 ACR and D.12-11-016 and may base its resource adequacy calculations on CAISO's <i>Advisory Estimates of Future Resource Adequacy Import Capability</i>.</p> <p>IID's concern is rooted in the uncertain application of the referenced <i>Advisory Estimates of Future Resource Adequacy Import Capability</i>. The Advisory Estimate published December 17, 2015, includes the 500-750 MW of incremental MIC or deliverability for new resources. Clearly, this is the Advisory Estimate that should be used by the CPUC-jurisdictional entities in the ongoing solicitation. However, there is no way to confirm that this is the case. IID is contemplating seeking clarification of this matter at the CPUC, and welcomes the CAISO's input to ensure that accurate values are reflected in the ongoing solicitation.</p>	
6b	<u>Southern California Transmission Solutions</u>	

No	Comment Submitted	CAISO Response
	<p>The CAISO's February 17th materials reference multiple-benefit projects that may contribute to solving local capacity requirements in the Southern California Local Reliability Areas, while also meeting broader policy objectives. IID has submitted two projects into the Request Window: (1) the Hooper-SONGS Projects ("STEP"), which is a DC line which is designed to be responsive to local reliability while allowing increased delivery of renewable resources; and (2) the Midway-Devers 500 kV Project, which would increase transfer capability from IID and allow greater delivery of both flexible and renewable resources to the CAISO BAA, but is not designed to remediate coastal load pocket reliability concerns without combination with other projects. IID is keenly interested in how, objectively, the CAISO will assess countervailing considerations in the upcoming 2015-2016 TPP cycle. While each of the three categories of transmission (economic, policy driven, reliability) is relatively straightforward, balancing cost, siting considerations, and multiple objects in a quantifiable way, is less clear. These metrics should be provided to stakeholders for consideration and comment early in the 2015-2016 cycle so that upcoming decisions can be based on the most solid foundation possible.</p>	<p>The ISO will monitor the need for addressing a potential resource development shortfall in the LA Basin/San Diego area and providing additional transmission deliverability for potentially higher levels of renewable generation from the Imperial area. Continued analysis will be required as needs evolve in future planning cycles.</p>

No	Comment Submitted	CAISO Response
7	Nevada Hydro Company (Nevada Hydro) Submitted by: Rexford Wait	
7a	A letter was received from Nevada Hydro which was addressed to the ISO Board of Governors and to Regional Transmission comment window on the draft transmission plan.	<p>Management has provided the letter to the Board as public comments.</p> <p>One section of the letter, Section 4, was identified by Nevada Hydro as specifically commenting on the draft plan. Those comments have been set out and responded to in this stakeholder comment response document.</p>
7b	<p>4.0. Specific Comments on Draft TPP</p> <p>Although this letter is intended to convey the points addressed in the previous sections of this letter, below, Nevada Hydro provides a few comments on the Draft Plan itself.</p> <p>4.1. Reliability</p> <p>The ISO claims, in its discussion of reliability in the southern California basin that its “reliability assessment results did not indicate need for additional resources, beyond previously authorized amounts, to meet reliability requirements.” However, as the reliability assessment is based on full procurement of the Track 1 and Track 4 authorizations, the Draft Plan also acknowledges the risks if these goals are not met: a “resource deficiency”. Further the Draft Plan, on page 147, also acknowledges the difficulties due to:</p> <ul style="list-style-type: none"> • “The overlapping N-1-1 contingency of 500 kV lines in southern San Diego area.” • “The overlapping outage of Otay Mesa power plant, followed by the Imperial Valley–North Gila 500 kV line.” <p>Nevada Hydro’s own studies show that its TE/VS Interconnect can solve for all of these contingencies, including that flowing from the loss of IV Miguel and IV Suncrest. Yet, by careful maneuvering around its assumptions, the Draft Plan concludes that potential reliability benefits from the TE/VS Interconnect are not needed.</p> <p>As an aside, Nevada Hydro was pleased to note that SCE's proposed a DC line</p>	<p>Similar to the earlier responses to other stakeholders' comments, the ISO will monitor the need for addressing a potential resource development shortfall in the LA Basin/San Diego area and providing additional transmission deliverability for potentially higher levels of renewable generation from the Imperial area. Continued analysis will be required as needs evolve in future planning cycles.</p>

No	Comment Submitted	CAISO Response
	<p>from Alberhill to Talega, as it indicated the value of Nevada Hydro's proposed TE/VS Interconnect. Simply, SCE has proposed a shrunken and less integrated form of the TE/VS Interconnect. Clearly also, SCE couldn't propose an AC line without admitting that the TE/VS Interconnect is all ready to do the same thing with significantly less development time, and at far lower cost. And of course it would not be owned by SCE.</p>	
7c	<p>4.2. Integrating renewables On page 9 and later on page 28 of the Draft Plan, the ISO notes that its “study work and resource requirements determination for reliably integrating renewable resources is continuing on a parallel track outside of the transmission planning process, but steps are taken in this transmission plan to incorporate those requirements into annual transmission plan activities”. The Draft plan notes further on page 28 the need for flexible resources, identifying a “trajectory scenario up to 4,600 MW of additional flexible resource capacity could be required” claiming further that there is some “existing fleet” of flexible resources available to the ISO up to 2020.</p> <p>In a discussion on page 30 of the Draft Plan, the ISO warns that “the successfully mitigating reliability concerns remains dependent on materially higher forecast levels of preferred resources than have previously been achieved. Given the uncertainty regarding all of the forecast resources materializing as planned, contingency planning is necessary. The ISO anticipates continuing to monitor the development of the various resources, and is also exploring possible mitigations in the event they are found to be necessary,” referencing sections 2.6 and 3.3.</p> <p>Yet, and notwithstanding all of these platitudes to a greener grid, the Draft Plan fails to assess LEAPS as it must to meet these needs.</p>	<p>Please refer to the above response.</p>
7d	<p>4.3. Aspen analysis ignored In the PowerPoint presented at its October 8, 2014 Imperial County Transmission Consultation Stakeholder Meeting (the “Imperial Meeting”), the ISO noted that Aspen Environmental Group (“Aspen”) and the California Energy Commission were going to provide a high level environmental feasibility analysis of the TE/VS Interconnect as it has been configured by Nevada Hydro. Previously, Aspen had provided such an assessment for a much larger project that included the TE/VS Interconnect as one small segment. In its report titled,</p>	<p>We have reviewed the CEC/Aspen’s “Second Addendum to Transmission Options and Potential Corridor Designations in Southern California in Response to Closure of San Onofre Nuclear Generating Station (SONGS)” (CEC-700-2014-002-AD2), and note that the description of the high-level environmental assessment for the proposed 500kV line is in line with the comments the ISO included in Table 2.6-9. The CEC/Aspen described the routing for the 500kV line</p>

No	Comment Submitted	CAISO Response
	<p>“Second Addendum to Transmission Options and Potential Corridor Designations in Southern California in Response to Closure of San Onofre Nuclear Generating Station (SONGS)”, Aspen noted that the “likelihood of successful permitting for Nevada Hydro’s project ranged from “challenging” to “possible but challenging”. While Nevada Hydro may quibble with portions of the analysis and conclusions, Aspen’s designation of the TE/VS Interconnect as perhaps the least difficult of all alternatives presented to address the reliability challenges posed by the loss of SONGS should have been an important aspect in the ISO’s evaluation of the TE/VS Interconnect.</p> <p>However, Table 2.6–9 of the Draft Plan purports to provide a summary “High-Level Environmental Assessments for the LA Basin / San Diego Area Backup Transmission Solutions”. The table claims that Aspen concluded that the TE/VS Interconnect has “serious siting challenges”, ignoring the updated findings that the ISO had asked Aspen to undertake. This oversight needs to be corrected before the transmission plan is finalized.</p>	<p>from Serrano-Valley 500kV interconnection to proposed Case Springs Substation as “challenging” for the 500 kV segment across the Cleveland National Forest (CNF). This designation of “challenging” (denoted with orange color) in Table 2 in the updated CEC/Aspen report has an explanation (see Table 1 – Key to Summary Table: Likelihood of Successful Permitting and Construction) as “serious siting challenges that may not be resolvable”. ISO’s Table 2.6-9 has the same notes of “serious siting challenges” for the proposed 500kV line interconnection.</p>

No	Comment Submitted	CAISO Response
8	<p>The Office of Ratepayers Advocates (ORA) Submitted by: Charles Mee</p>	
8a	<p>I. DISCUSSION</p> <p>1. Need for North East Kern Voltage Conversion</p> <p>Background The Semitropic-Wasco-Famoso-Kern Oil-Kern 70 kV Voltage Conversion <i>a.k.a.</i> North East Kern 70-kV to 115-kV Voltage Conversion Project (Project) would convert 45 miles of existing 70-kV circuit to 115-kV for an estimated cost of \$85 million to \$125 million. Pacific Gas and Electric Company’s (PG&E’s) request window application represents that this project will address the following four Category B contingency overloads.</p> <ul style="list-style-type: none"> • Lerdo – Kern Oil – 7th Standard 115-kV Line • Kern – Live Oak 115-kV Line • Kern Oil – Witco 115-kV Line • Live Oak – Kern Oil 115-kV Line <p>In the Draft Plan, the CAISO claims that this Project will mitigate the NERC Category B and C contingency related thermal overloads as well as the CAISO planning standards for combined line and generator outage concerns identified in the Kern area 115-kV system.</p> <p>ORA Recommendations ORA recommends the CAISO study this Project further before it is approved because the need for this Project is not clear. The CAISO should clarify the following two issues:</p> <p>a. The assumption regarding the level and impact of the retirement of Qualifying Facility (QF) generation should be better understood: In response to the concern raised by the Bay Area Municipal Transmission Group (BAMx) during the February 17th stakeholder meeting to discuss the Draft Plan, the CAISO stated that the full scope of the voltage conversion was needed to accommodate the potential shut down of 500 MW of QF generation in the area. First, the retirement amount far exceeds the amount of QF generation in the study area; and second, the loss of 500 MW of generation in the study area was not included as a scenario in the 2014-2015 Unified Planning Assumptions and Study Plan or in the base case studies. Therefore, it is not clear what the CAISO means by the statement that “the voltage conversion was needed to accommodate the</p>	<p>Please refer to ISO’s response to Stakeholder Comment 1c above with respect to the misunderstanding that the North East Kern Voltage Conversion Project is driven by a 500 MW of Qualifying Facility (QF) generation capacity retirements in the North East Kern Area.</p> <p>The full scope of the project has been documented in the Draft 2014-2015 Transmission Plan under the subsection “<u>2.5.7.3 Assessment and Recommendations</u>,” of the Kern Area, and includes the reconductoring of the 10.3-mile Lerdo-Kern Oil-7 Standard 115 kV Line (Kern Oil-Lerdo Jct-Lerdo line sections).</p>

No	Comment Submitted	CAISO Response
	<p>potential shut down of 500 MW of Qualifying Facility (QF) generation in the area". If ORA assumes that the potential loss of 500 MW generation in the study area is part of a larger plan by CAISO or PG&E to replace the QF generation with transmission, the economics of this scenario remain to be studied and stakeholders should be afforded the opportunity to understand and/or comment on how such loss of local generation impacts local reliability in the study area. Thus, ORA is concerned that justifying a project based on generation assumptions that were not part of the Study Plan or fully shared with stakeholders violates the integrity of the CAISO's project approval process. Since this Project is slated for completion in 2022, ORA recommends that the CAISO study this Project further, including the alternatives of solving the potential reliability issues with generation capacity and preferred resources that are located in the Kern area.</p> <p>b. The change in scope for the Project is not reflected by a corresponding change in the cost estimates: It is not clear from the Draft Plan that the reconductoring of the Kern Oil-Lerdo Jct. 115-kV line, which was part of the PG&E request window application, is included in the CAISO's proposed scope and estimated cost for the Project. The CAISO should clarify whether the reconductoring of the Kern Oil-Lerdo Jct. 115-kV line is included in or excluded from the scope and estimated cost of the Project.</p>	
8b	<p>2. CAISO's Recommendation on the San Francisco 115-kV Upgrades and Martin 230-kV Bus Extension Project</p> <p>Background The 2014-2015 transmission planning process (TPP) continued to assess the reliability need of the San Francisco Peninsula and the supply of power to the downtown San Francisco area during an extreme event as defined by the reliability standards. The continued study by the CAISO tested the incremental benefits of a major reinforcement, e.g. a new power supply to the Peninsula to complement existing sources, aiding the maintenance of electricity supply to the Peninsula or aiding restoration objectives following a major earthquake. The CAISO engaged Quanta Technology to assist in assessing the risk and benefit of potential mitigation of extreme events in the San Francisco Peninsula in two phases. Phase 1 included development of an assessment methodology to evaluate risks and benefits of proposed mitigation strategies. Phase 2</p>	<p>Please refer to the response to the Bay Area Municipal Transmission group (BAMx), item 1(b) above.</p>

No	Comment Submitted	CAISO Response
	<p>applied that methodology to evaluate risks and benefits of the proposed mitigation option.</p> <p>In addition to mitigating disruption to the electric supply in the peninsula during major seismic events, the Draft Plan included a proposal to modify the 230-kV Bus Extension at Martin Substation at an estimated capital cost of \$85 to \$129 million to reduce the risk of an extreme event from a third party action. The Draft Plan recommends the CAISO Board's approval of this new project as part of the CAISO TPP. The scope of the project is to connect the Jefferson-Martin 230-kV cable and one of the two Martin-Embarcadero 230-kV cables within 2 miles of the existing substation and install a new 230-kV connector between the 230-kV Bus Extension and the existing Martin Substation.</p> <p>PG&E has planned ongoing seismic upgrade projects at the Martin 115 kV bus, the San Mateo 115 kV bus, and for the following 115 kV substations within San Francisco: Mission 115 kV, Larkin 115 kV, Hunters Point 115 kV, Potrero 115 kV, and Bayshore 115 kV. The CAISO has indicated that it supports PG&E's modernization plans and seismic upgrades at these substations.</p> <p><u>ORA Recommendations</u> ORA commends the CAISO's San Francisco Extreme Events analysis that evaluated the risks, estimated power restoration time, and customer impacts of an extreme seismic event in the Peninsula. The work completed by Quanta for the CAISO is an exemplary analysis that ORA encourages more of. The last work the CAISO shared with stakeholders on the San Francisco Peninsula Extreme Events Assessment prior to Quanta's analysis indicated that the limiting factor in service restoration following a major seismic event is the restoration of the 115-kV system within San Francisco. However, Quanta's analysis has now enabled CAISO to change its recommendation of importing power to the City gate to modernizing and strengthening the existing power infrastructure system within the San Francisco Peninsula to withstand extreme seismic events.</p> <p>According to the CAISO, upgrading and modernizing the existing San Francisco transmission system, primarily the 115-kV system to enhance the seismic design withstand capability, would increase the reliability of the</p>	

No	Comment Submitted	CAISO Response
	<p>transmission system for extreme seismic events. However, the Draft Plan does not include the estimated reliability improvement associated with these 115-kV upgrades. Such an analysis should be performed using the tools developed by Quanta and shared with Stakeholders before the CAISO decides to fully support the changes to the 115-kV cables.</p> <p>With respect to the Martin 230-kV Bus Extension proposal, the CAISO should provide more information on how the decision was and will be made to align its recommendations with the Quanta’s studies and conclusions. Otherwise, the CAISO should conduct studies on whether the Martin 230-kV Bus Extension is needed to meet the NERC and CAISO planning standards.</p> <p>At the last Stakeholder meeting to discuss the San Francisco Peninsula Extreme Events Assessment on December 15, 2014, there was no mention or decision on system modifications to address the risks associated with “third party actions” and no analysis was provided on the best way to minimize potential impacts based upon these events. Therefore, the proposed Martin 230-kV Bus Extension project is a surprise to ORA, as it was not previously identified in prior San Francisco Extreme Event Assessment reports. This proposal involves reconfiguring the existing 230-kV transmission line terminating at Martin Substation to provide one 230 kV bypass to the Martin Substation. The CAISO did not provide any alternatives to this project. For example, the proposed project includes a 230-kV cross tie between Martin Substation and the Martin 230-kV Bus Extension. Such a cross tie will require a new switching station to accommodate the required switchgear. Such additional infrastructure is not needed to establish the bypass as described by the CAISO. In other words, there are less expensive ways to solving the potential threats from third party action at the Martin Substation such as removing the Jefferson-Martin and one of the Martin-Embarcadero cables from the Martin 230-kV bus and connecting them together without the new infrastructure the CAISO is proposing.</p> <p>The CAISO should share its analysis leading up to the recommendation for the Martin 230 kV bypass project and alternative methods explored to achieve the goals of reducing impacts of third party actions at the Martin Substation with Stakeholders before the CAISO Board approves this project. The CAISO</p>	

No	Comment Submitted	CAISO Response
	<p>should provide the stakeholders with a more complete justification, its analysis and rational for the need of the newly proposed \$129 million Martin 230-kV Bus Extension project prior to approving it in the Final 2014-2015 Transmission Plan.</p>	
<p>8c</p>	<p>3. Use of Preferred Resources</p> <p><u>Background</u> The CAISO's Preferred Resources Study Methodology implemented in the 2013-2014 TPP integrated preferred resources -- such as Energy Efficiency (EE), Demand Response (DR), and energy storage -- into the reliability assessment. The CAISO's stated intent for this assessment was to (1) exclude the preferred resources when developing resource assumptions, (2) identify reliability problems based on its assumptions, and (3) consider preferred resources as potential solutions to mitigate identified problems. When considering preferred resources as mitigation measures, the CAISO should have examined whether the preferred resources have the performance attributes that qualify them for transmission mitigation. While the CAISO considered preferred resources as transmission alternatives in the San Diego/LA Basin area, it failed to do so in PG&E's service area.</p> <p><u>ORA Recommendations</u> ORA appreciates the major advances made by the CAISO in the 2013-2014 Transmission Plan in identifying the likely impact of preferred resources on the transmission grid in the LA Basin and San Diego area following the shut-down of SONGS. While the CAISO has continued this important work in the current plan, it did not expanded it beyond its original limited geographic area in Los Angeles and San Diego region. ORA has not found any evidence of preferred resources being considered by CAISO as mitigation solutions in the PG&E service area. Thus, ORA requests the CAISO to consider preferred resources as transmission mitigation solutions in all the local areas of the CAISO Balancing Authority Area. In particular, ORA recommends the CAISO to facilitate the full utilization of preferred resources by modifying, among other things, the CAISO market rules to remove any barriers to implementing preferred resources as transmission mitigation solutions. For example, some preferred resources have the capability to provide ancillary services such as ramping reserve, spinning reserve, or frequency response reserve. Therefore, the CAISO should remove market barriers in order to implement the existing</p>	<p>Please refer to the response to the Bay Area Municipal Transmission group (BAMx), item 1(d) above.</p>

No	Comment Submitted	CAISO Response
	<p>technical capability of preferred resources and to fully utilize preferred resources as solutions to identified transmission problems.</p>	
8d	<p>4. Need to Make the High Voltage TAC Model Available Soon <u>Background</u> ORA is concerned about the impact of the CAISO's proposed transmission recommendations and decisions on the ever increasing Transmission Access Charge (TAC) for load served in the CAISO Balancing Authority Area. The CAISO continues to update and enhance its internal tool used to estimate future trends in the High Voltage Transmission Access Charge (HV TAC) to provide an estimate of the impact of transmission projects identified in the 10 Year Transmission Plan on the HV TAC. This tool was first used in developing results documented in the 2012-2013 Transmission Plan and the model itself was released to stakeholders for review and comment in October 2013. The CAISO did not provided any update of the HV TAC estimating tool as part of the 2013-2014 and the 2014-2015 TPP.</p> <p><u>ORA Recommendations</u> The CAISO has indicated that it is currently in the process of updating the HV TAC estimating model. CAISO did not provide an estimate of future HV TAC rates using this tool in the Draft Plan or during the February 17th stakeholder meeting. However, the CAISO has indicated that it will provide this update in the final transmission plan. This means that the stakeholders will not have any opportunity to review the CAISO's updated TAC forecasting tool and will not be able to provide any meaningful input before the CAISO presents its final 2014-2015 transmission plan to its Board for approval. Therefore, ORA recommends the CAISO to provide the updated HV TAC estimating model as soon as possible prior to presenting its Draft Plan to its Board for approval.</p>	<p>As noted in the response to the Bay Area Municipal Transmission group (BAMx), item 1(a) above, the updated Regional (High Voltage) Transmission Access Charge model results has been included in the revised draft Transmission Plan.</p> <p>For clarity, the ISO posted the model after it was used in the 2012-2013 Transmission Plan, conducted a stakeholder call, received stakeholder input, and continued to refine the model before it was then populated with the latest data and used to produce estimated values for the 2013-2014 Transmission Plan.</p> <p>Following the same process, the model was then again posted, with a stakeholder call and opportunity for stakeholder input, for refinement before being populated with updated data and used to provide the estimates contained in the revised draft 2014-2015 Transmission Plan.</p> <p>The ISO intends to post the model that was used to develop the Regional (High Voltage) TAC estimates provided in this transmission plan in the spring of 2015, and again provide an opportunity for stakeholder input to continue to refine the model for future cycles.</p>

No	Comment Submitted	CAISO Response
9	Pacific Gas & Electric (PG&E) Submitted by: Justin Bieber	
9a	<p><u>San Francisco Peninsula Extreme Event Assessment</u> PG&E echoes its appreciation from prior comments of the thorough analysis on the San Francisco Peninsula Extreme Event Assessment and the potential impact to customers that could result from an extreme seismic event. The approach and methodology to analyze the potential unserved customer load based on the seismic integrity, location, and restoration times for damaged facilities provides valuable information about resiliency of the grid after an extreme event. Maintaining reliable service to PG&E's customers is a priority and PG&E supports CAISO's plan laid out in the Draft 2014-2015 Transmission Plan to improve reliability as informed by this assessment.</p> <p>The assessment ultimately concluded that reliability on the San Francisco Peninsula can be improved with a project to reconfigure Martin substation and certain additional capital improvements to PG&E's existing system. In addition to the Martin substation reconfiguration, the Draft 2014-2015 Transmission Plan supports additional refinements to PG&E's modernization plan including (a) replacement of certain older design 115 kV underground cables in San Francisco and (b) upgrades to the 230 kV buses at San Mateo and Martin substations, to further improve seismic withstand capability. With these refinements to PG&E's modernization plan, the San Francisco Peninsula Extreme Event Assessment indicates that the electric transmission system should maintain the ability to provide reliable service after a major seismic event. PG&E supports this analysis, including the recommended approval of the Martin substation reconfiguration, and will utilize this information to expand its existing modernization plan to further improve reliability.</p>	The comment has been noted.
9b	<p><u>Kern Area Reliability</u> PG&E also supports the reliability analysis that was performed in the Kern area, including the North East Kern Voltage Conversion Project to mitigate thermal overloads. This project will convert the North East Kern Area 70 kV system to 115 kV and addresses important reliability issues in that area. PG&E plans to initiate work on this project beginning this year.</p>	The comment has been noted.
9c	<u>LA Basin / San Diego Area Local Reliability Needs and Imperial Area Deliverability</u>	The comment has been noted.

No	Comment Submitted	CAISO Response
	<p>PG&E appreciates the CAISO's in depth analysis of local reliability needs in the LA Basin/San Diego Area and Imperial Area deliverability in the 2014-2015 planning cycle. PG&E recognizes that both local capacity and deliverability requirements in these areas are met with the existing system and approved projects. However, PG&E strongly supports the CAISO's plan to monitor and evaluate local reliability in the LA Basin and San Diego in subsequent planning cycles to ensure that reliability needs for the grid can still be met as study assumptions and inputs may change in the future. PG&E also supports Imperial area deliverability assessment that was performed. It is reassuring that there is sufficient deliverability to accommodate all projects currently moving forward, with an additional incremental 500-750 MW of available deliverability for future development of renewable generation.</p> <p>PG&E also supports the CAISO's analysis of potential back-up transmission solutions. However PG&E has some concern about the joint objective of increasing reliability in the Southern California Local area and improving deliverability from the Imperial Valley. Of course, if there is a need in one of these areas and both objectives be achieved with one solution that has low incremental costs over other alternatives than that could be a very effective solution. However, some project cost estimates have the potential to increase very significantly if project scope changes. An example could be where a transmission line originally considered being overhead needs to be underground for certain portions of the line. Both the risk of potential scope/cost increase and the incremental cost of back-up transmission solutions over alternatives should be considered in this analysis.</p>	
9d	<p><u>Load Interconnections</u> In the November 19, 2014 TPP Stakeholder Meeting, the CAISO indicated its concurrence for the 3 load interconnection projects (Lathrop 60 kV Load Interconnection, Aera Energy-East Cat Canyon Load Interconnection, and Southeast Surface Water Treatment Facility). For documentation purposes and consistency, PG&E would like to see this concurrence documented in the Final 2014-2015 Transmission Plan as well.</p>	<p>The ISO review and concurrence for the three load interconnection projects has been updated in Appendix B.</p>
9e	<p><u>Over Generation Frequency Response Assessment</u> PG&E echoes its earlier comments and appreciates the CAISO's attention to the matter of over generation and efforts to identify next steps for further evaluation. The CAISO's Duck Curve illustrates changes in the net load pattern</p>	<p>The comment has been noted.</p>

No	Comment Submitted	CAISO Response
	<p>that will bring about significant challenges in managing the grid. While this frequency response assessment is a good start towards evaluating potential over generation consequences, it is narrowly focused and further robust analysis must continue to prepare for all of the upcoming impacts of over generation.</p> <p>The CAISO's analysis shows that there will be adequate response from the WECC system; however the CAISO will not have adequate governor response to satisfy its frequency response obligation per Bal-003-1. Furthermore, as suggested in the stakeholder meeting, the study was based on an optimistic view of resource capabilities and reality could lead to worse result. The changes in study assumptions could significantly impact the outcome of the study. Therefore PG&E supports CAISO's plan to further evaluate the impacts of over generation in the next TPP cycle and encourages the CAISO to work closely with WECC entities to review and update the modelling assumptions and expand the analysis to encompass a more comprehensive scope.</p>	

No	Comment Submitted	CAISO Response
10	San Francisco Public Utilities Commission Submitted by: Michael Hyams and James Hendry	
10a	<i>See Market Participant Portal for comment.</i>	<i>See Market Participant Portal for response.</i>

No	Comment Submitted	CAISO Response
11	Silicon Valley Power Submitted by: Joyce Kinnear	
11a	<p>In addition to the comments by the Bay Area Transmission Group (BAMx), of which Silicon Valley Power (SVP) is a member, SVP would like to make the following comments regarding the 2014-2015 Transmission Plan.</p> <p>The CAISO, at the request of Duke-America Transmission Company, Path 15, LLC (DATCP), was asked to evaluate the upgrade of the proposal by Western to construct a 230kV line between San Luis reservoir and Tracy Substation. The proposal was to increase the voltage level for the Tracy to Los Banos portion to 500kV. The CAISO explains in its draft 2014-2015 Transmission Plan how, at DATCP's request, it has studied in detail whether this larger facility is justified from a reliability, public policy, or economic perspective and determined that the proposed line is not needed to satisfy those requirements of the appropriate Tariff and past planning practices.</p> <p>In particular, the CAISO has found that the current CPUC adopted renewable generation portfolios do not support the need for additional capacity on this transmission path. SVP is very concerned about the rate of TAC increases that are driven by the CAISO approval of projects that SVP, at times, has questioned the need for. The current HV TAC rate of \$10.16/MWh is already higher than the one that was included in the CAISO's last HV TAC forecast for 2015.</p> <p>In summary, SVP fully supports the CAISO conclusion not to approve the 500kV line from Los Banos to Tracy in the CAISO 2014-15 transmission plan.</p>	<p>The comments have been noted.</p>

No	Comment Submitted	CAISO Response
12	Southern California Edison (SCE) Submitted by: Garry Chinn and Karen Shea	
12a	<p><i>Demand Response Assumptions</i> SCE appreciates the CAISO's assessment and consideration of nontraditional resources to support the CAISO grid. This is a significant development, and builds on the previous work by the CAISO in the 2013-14 TPP.</p> <p>Table 3.2-7 (page 146) indicates that SCE currently has 181 MW of demand response that can be used by the CAISO to meet a contingency condition (i.e., "fast" product with response time within 20 minutes to allow Operator's adequate response time). In fact, SCE currently has approximately 90 MW of such existing "fast" demand response located in the CAISO-identified effective locations primarily in the Southwestern LA Basin in the Draft TPP. SCE shares the CAISO's goal of meeting LCR needs through the most cost effective alternatives and will continue to work with the CAISO to evaluate potential ways to meet this contingency, including consideration of existing and potentially new demand response alternatives.</p>	The comment has been noted.
12b	<p><i>San Luis Transmission Line</i> Duke-American Transmission Company, Path 15, LLC (Duke) proposed expanding Western Area Power Administration (Western)'s proposed 230 kV San Luis Transmission Line to 500 kV, adding 1,200 MW of incremental capacity to the transmission operated by the CAISO. The Duke proposal provides for 75% of project costs (\$375M of the estimated \$500M project cost) to be allocated to CAISO customers and 25% of the project costs allocated to Western customers. In its draft 2014-2015 Transmission Plan, the CAISO indicated that it does not currently have a need for this additional capacity and is not able to justify the expansion on economic, public policy, or reliability grounds. Accordingly, CAISO decided not to include Duke's proposal in its 2014-15 Transmission Plan. SCE supports the CAISO's findings as it would be inequitable for the CAISO customers to pay for this project, given the current lack of benefits for CAISO customers. Given that the proposed San Luis project appears to impact two planning regions – CAISO and WestConnect (for Western) - it may be more appropriately considered for interregional cost allocation.</p>	The comment has been noted. Please refer to the response to comments from Duke American Transmission Company (DATC), Item 5, above.

No	Comment Submitted	CAISO Response
13	Transmission Agency of Northern California (TANC) Submitted by: Ann Czerwonka	
13a	<p>Reliance on the Seasonal Nomogram on the COI to Mitigate Reliability Issues</p> <p>TANC's primary concern regarding CAISO's studies is the negative impacts due to the loss of the remedial actions previously contracted for by Pacific Gas & Electric (PG&E) with the California Department of Water Resources (CDWR) would have on the ability to import power over the COI of which the California-Oregon Transmission Project (COTP) is a major component.</p> <p>Specifically, the TPP reliability studies noted a number of issues due to Category B and Category C outages of Pacific AC Intertie (PACI) 500-kV lines if the CDWR generation at Hyatt and Thermalito and the CDWR pump loads are not tripped via remedial action scheme (RAS). The CAISO can no longer trip such generation since CDWR's participation in the PG&E RAS stopped on December 31, 2014 with the termination of the Comprehensive Agreement. Table 1 summarizes information derived from the CAISO reliability study results on the critical outages, the facilities impacted by each outage, and the potential mitigation solutions identified by the CAISO. As shown in Table 1 [see comments for table]:</p> <ul style="list-style-type: none"> • A total of six facility overloads were noted in the CAISO studies for which the only "potential" solution identified by the CAISO was to reduce COI transfers. • Five other facility overloads were noted in the CAISO studies for which one of the potential solutions was to reduce COI transfers. 	<p>The studies identified no reliability constraints with the flows limited to the planning nomograms identified in Appendix B. In addition, there was very limited congestion on COI as a result of the planning nomograms as reflected in the economic analysis.</p> <p>Historical data for the last four years did not show Northern California Hydro output higher than 80%. Also, high COI flow did not coincide with high output of Northern California Hydro units. Therefore, as both historical data and the ISO economic analysis showed, the conditions when these facilities may overload are unlikely. Since no congestion was identified in the economic studies, applying seasonal COI nomograms appeared to be more cost-effective than the system upgrades even without the CDWR RAS.</p> <p>Single and double outages of the 500 kV lines in Northern California will be studied in the 2015-2016 Transmission Plan to determine if there is a need for system upgrades in the future.</p>
13b	<p>In Appendix B of the draft 2014-2015 Transmission Plan, the CAISO presented information on estimated COI flow limits for various combinations of Northern California hydro generation, CDWR generation, Colusa generation, and Hatchet Ridge generation for the Table Mountain-South DLO and no CDWR RAS. Figure 1 [see comments for figure 1] is a nomogram based on the information in Appendix B and depicting the flow limits on the COI at the 60%, 70%, 80%, 90%, and 100% Northern California hydro levels for the summer of 2016 if the CDWR generation at Hyatt and Thermalito was limited to 500 MW (at all but the 100% hydro point); the generation at the Colusa project (690 MW) and the Hatchet Ridge project (103 MW) was off-line (top line) and was on-line (bottom line); and COI flows were limited to mitigate the impacts of an outage of the Table Mountain-Tesla and Table Mountain-Tesla 500-kV lines.</p>	<p>The economic studies apply the planning nomograms that are presented in Appendix B. The economic benefits of upgrades on COI would be based upon the projected flows on COI and any congestion due to the path limits of the nomogram.</p>

No	Comment Submitted	CAISO Response
	<p>With respect to the information presented in Figure 1:</p> <ul style="list-style-type: none"> • The COI flows without the Colusa and Hatchet Ridge projects on line were limited as shown to mitigate flows on the Round Mountain-Cottonwood #3 230-kV line or the Eight Mile Lodi 230-kV line. It is noted that the COI limits in the above nomogram are lower than those in the 2014 summer operating nomogram (which included use of the CDWR RAS) as follows: <ul style="list-style-type: none"> • 110 MW at the 80% hydro level • 240 MW at the 90% hydro level • 955 MW at the 100% hydro level • The COI flows with the Colusa and Hatchet Ridge projects on line were limited as shown to mitigate flows on the Delevan-Cortina 230-kV line. As shown in Figure 1 the COI limits with these two projects on-line are lower than the limits with the two projects off-line as follows: <ul style="list-style-type: none"> • 440 MW at the 70% level • 525 MW at the 80% level • 1,000 MW at the 90% level • 1,370 MW at the 100% level <p>On page 54 the Transmission Plan states, “The ISO will continue to explore in future planning cycles if there is an economic-driven alternative to reducing COI flows according to the seasonal nomogram.” TANC welcomes and highly encourages such studies and notes that the CAISO is recommending reconductoring of the Eight Mile-Lodi line as an “economic project.” However, TANC is concerned whether the issue will be studied within the current Economic Studies construct since the study plan for the 2015-16 Transmission Plan makes no mention of studying economic alternatives to the use of seasonal nomograms to meet reliability concerns. TANC would appreciate greater detail on the CAISO’s plans to study economic options in future transmission cycles.</p>	
13c	<p>Economic Studies</p> <p>TANC wishes to re-emphasize the departure that the CAISO economic studies have taken from the operational realities in relation to the COI. The CAISO economic studies continue to show a surprisingly low level of congestion for the COI, just two hours in 2019 amounting to just \$3,000 of congestion costs. By</p>	<p>The 2024 COI flows and potential congestion in the economic production simulation analysis is based upon the future assumptions of load and generation taking into account the RPS generation portfolios. In addition, the historical congestion also reflects a number of</p>

No	Comment Submitted	CAISO Response
	<p>2024, the CAISO models no congestion at all. This is counter to the over \$343 million of congestion on the path in 2009 - 2014. For 2015, there has been over \$18 million of congestion costs on the COI with congestion occurring over 57% of the time, in the first two months. <i>[see comments for table]</i></p> <p>In November TANC requested that the Final Plan explain how the CAISO reconciles its modeled congestion on the COI (and other paths) with the historical congestion. Unfortunately, no such discussion has been included in the Draft Transmission Plan. Congestion on the COI has cost California hundreds of millions of dollars and yet there is no discussion of this impact within the transmission planning process.</p> <p>TANC encourages the CAISO to perform sensitivity analyses for COI imports based upon historical system operations and the transfer limit reductions that occur on the COI when various facilities are out of service.</p>	<p>significant maintenance outages on the path during the timeframe identified.</p>

No	Comment Submitted	CAISO Response
14	Tubb Canton Desert Conservancy and Anza Borrego Foundation Submitted by: Kenneth Lounsbery	
14a	<p>Focus of Comment Letter</p> <p>The Parties are submitting this comment letter to address the February 2, 2015 draft of the 2014- 2015 Transmission Plan (the Plan) prepared by the California Independent System Operator (the CAISO). The Parties particularly address a certain transmission route through the Anza-Borrego Desert State Park, and environs. It is identified in the May 2014 report entitled "Transmission Options and Potential Corridor Designations in Southern California in Response to Closure of San Onofre Nuclear Generating Station (SONGS)" prepared by the Aspen Environmental Group (the Aspen Report), as alternative Routes 5, IA and 5B, IB (the Subject Route).</p> <p>Prior Comment</p> <p>As part of, and following, the Stakeholders Meeting of November 19-20, 2014, the ABF, one of the Parties, commented on the Subject Route by submitting reasoned objections to its inclusion in the draft Plan. A copy of the comment submittal is attached as Exhibit "A", and incorporated herein. In response, the CAISO stated that, "The ISO has not found a need in this transmission plan for any major transmission upgrades like the alternative 5 that is referenced in the comment."</p> <p>Current Comment; the Infeasibility of the Subject Route</p> <p>The Parties were participants, telephonically, in the Stakeholders meeting of February 17, 2015.</p> <p>The Parties re-emphasize their opposition to the Subject Route. Noting that the Subject Route is not included in the Plan as a recommended upgrade, the Parties urge that the express exclusion of said route be addressed in the Plan, for the following reasons.</p> <p>The Aspen Report identifies Alternative 5 as Very Challenging. In fact, by the terms of the Report, the Subject Route would be virtually impossible to permit and utilize, irrespective of the overhead (Alternative IA of 5) or underground (Alternative IB of 5) methods of construction. Pages 46-51 of the Aspen Report are attached, with maps, detailing the reasons for rejection of the Subject</p>	<p>The purpose of the analysis and stakeholder consultation at this stage is to develop information for future consideration on a contingency basis. It would not be appropriate to attempt to make such strongly determinative statements at this time about any option, especially regarding routing issues that are eventually re-considered in other forums in any event.</p>

No	Comment Submitted	CAISO Response
	<p>Route. (Exhibit "B")</p> <p>In summary, the geographic, geologic, topographic and environmental features of the Route Present insurmountable construction hurdles for the installation of overhead facilities. Such hurdles would be magnified exponentially by resorting to the undergrounding alternative. These engineering constraints would be compounded by committed objections lodged by the State Parks Department, the State Parks Commission, the La Jolla Indian Reservation, and the Parties, to name only a few.</p> <p>The infeasibility of utilizing Alternative 5 as a viable transmission corridor is so compelling that its rejection should not be by mere omission from the terms of the Plan. Rather, the CAISO should include in the Plan an express finding which rejects Alternative 5 as a result of a reasoned analysis and conclusion.</p>	
14b	<p>Current Comments; the Lack of Need for the Subject Route</p> <p>While the Alternative Route 5 is a practical, engineering, and environmental impossibility, there is a more fundamental reason to consider its rejection-- the basic and growing lack of need for this, or any similarly situated, transmission line route.</p> <p>The generation of behind-the-meter solar power, aka distributed, in-basin generation, has changed, and promises to change more significantly in the future, the assumptions which drive the analysis of demand for transmission facilities. The Anza~Borrego corridor is a prime example of how such changes will be felt most acutely ~ in a positive way ~ by those who monitor the area.</p> <p>It is the Anza-Borrego route which has been targeted for the transmission of solar power from Imperial to the points of need in the San Diego metropolitan area. By all indicators, utility-scale solar such as that proposed for Imperial. is going to be supplanted by locally generated power sources. Currently, behind-the-meter solar installations produce more than 1,000 MW per year. Distributed, in-basin generation is increasingly cost-competitive with utility power. State law mandates that the Public Utilities Commission support sustained growth of behind-the-meter solar installations through appropriate rate design. The state is also committed to grid modernization to allow acceptance of two-way power flows, diminishing, or eliminating, transmission</p>	<p>The ISO relies on the CPUC and CEC for analyses of distributed generation capacity development potential, and we have included that information in this transmission plan.</p>

No	Comment Submitted	CAISO Response
	<p>grid reliability issues.</p> <p>It is an undeniable maxim - if solar power is generated at the point of need, transmission facilities delivering from district utility-scale solar farms are unnecessary. Gone with such long transmission stretches are the concerns about reliability. Increased reliability is matched by another benefit - the cost of building transmission facilities becomes a savings.</p> <p>At page 98 of the draft Plan, the CAISO touches on this issue. When discussing the Imperial Valley generation model, the Plan states:</p> <p>"There are a number of uncertainties that could impact the above results for the long-term planning horizon including uncertainties associated with the amount of authorized local capacity additions, AAEE, distributed generation, and the amount of existing demand response that would be repurposed for use in meeting local reliability needs. The assessment will be revisited in the next planning cycle with the latest available information."</p> <p>Aside and apart from the degree of difficulty in permitting and building a transmission lone in the Anza-Borrego region, the more basic question of the necessity of such a line, irrespective of reliability issues, must be definitively asked and answered.</p> <p>Conclusion The Parties urge the CAISO to specifically reject the Alternative 5 transmission line route, based upon express findings of non-feasibility. Further, the Parties urge the CAISO to conduct a thorough analysis of the distributed, in-basin generating capacity in San Diego and Los Angeles service areas and adjust its analysis of the need for transmission facilities serving such areas. Accordingly.</p>	

No	Comment Submitted	CAISO Response
15	Westlands Solar Park Submitted by: Daniel Kim	
15a	<p><u>Background</u> The WSP is the fifty---fifth competitive renewable energy zone (CREZ) created from the Renewable Energy Transmission Initiative --- more commonly known as RETI. The size of the WSP is approximately 27,000 acres and it is the only CREZ designated by RETI in the San Joaquin valley. The concept of master planning both transmission and solar generation in the WSP was inspired by the RETI discussions and reinforced by the needs of farmers in the Westlands Water District to retire thousands of acres of drainage impaired farmland from irrigated agriculture due to unreliable surface water allocation, a multi year drought and a lack of a drainage system to move contaminated water out of these areas.</p> <p>The best alternative use for these drainage impaired farmlands is conversion to solar generation and the Westlands Water District in partnership with the farmers and the development team of Westside Holdings have embarked on a strategy to master plan the generation and transmission opportunity in this area.</p> <p>The California Energy Commission has endorsed this concept of opening up renewable generation opportunities in the central valley on marginal farmland in the 2013 Integrated Energy Planning Report. Also numerous environmental and agricultural organizations have supported directing energy and transmission planning efforts to the Westlands Solar Park due to it being "smart from the start".</p> <p><u>Constantly changing renewable portfolio assumptions hinders renewable energy planning and development and inadequate transmission in central and San Joaquin valley creates a chicken and egg problem for renewable energy projects</u></p> <p>One of the main hurdles for successfully bringing out renewable generation from the central valley is the lack of transmission access. One of the inputs to directing transmission planning is the renewable resource portfolio letter from the CPUC and the CEC. In the 2014-15 renewable resource portfolio the resource assumptions for the Westlands CREZ is no higher than 505 MW</p>	<p>The ISO continues to coordinate with the CPUC and CEC on the portfolios to be included in the ISO transmission planning process analysis to meet the 33% RPS. In addition the ISO will be conducting a special study for information purposes in the 2015-2016 TPP to assess potential scenarios for a 50% renewable energy goal with input from the state agencies.</p>

No	Comment Submitted	CAISO Response
	<p>under the 33 percent 2024 Low Mid AAEE and as low as 389 MW under the High DG/33 percent/Mid AAEE + DSM. These assumptions do not match with what is happening at the ground level and is drastically different from previous assumptions for the Westlands CREZ. As of January 2012 there have been forty---five solar PV projects and another fifty---nine proposed for the southern San Joaquin Valley. This combined amount of solar energy would be over 4,000 MW's that is far in excess of the renewable assumption for this area in the 2014--15 renewable resource portfolios. We ask that the CAISO work with the CPUC and the CEC to develop future portfolios that do not fluctuate so dramatically from year to year unless there is a clear demonstration that the resource potential in an area has changed positively or negatively.</p>	
<p>15b</p>	<p><u>Recommended solutions to building renewable generation in the San Joaquin valley</u> The CAISO, CPUC and the CEC should begin studying the transmission needs of meeting renewable generation beyond 33 percent. Given that transmission development has a long lead time it is necessary to begin studying for these eventual scenarios of higher renewables now versus on a "wait and see" approach when the alternatives to transmission will be more costly to ratepayers. Beginning the transmission planning process now is important for the renewable development in the San Joaquin since developers are now beginning to make long term commitments on whether to invest here or in other states. The WSP supports increasing transmission planning efforts for this area in the 2014-15 TPP since increasing capacity will accelerate the renewable development opportunity in the area and support the regions burgeoning clean energy jobs.</p>	<p>The ISO will be conducting a special study for information purposes in the 2015-2016 TPP to assess potential scenarios for a 50% renewable energy goal.</p>
<p>15c</p>	<p><u>Transmission projects that WSP supports to bring renewable generation out of San Joaquin valley</u> Lastly the WSP supports Westerns planned 230 kV San Luis Transmission Project and encourages CAISO to study proposals in this planning cycle to augment the 230 kV project to a 500 kV project that would significantly improve the reliability and renewable benefits to the CAISO system and renewable energy development in the San Joaquin valley.</p>	<p>The ISO has not identified a need for the facilities in the 2014-2015 TPP analysis; however will continue to asses in the 2015-2016 TPP.</p>