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No	Submitter (Name & Company)	Comment Submitted	ISO Response
1	Douglas Draeger or Barry Flynn, Alameda Municipal Power	In AMP's comments to the CAISO dated October 11, 2012 on the reliability assessments that were performed under the 2012-13 transmission plan, AMP had identified a need for a long-term solution for the Oakland/Alameda area such as the one proposed by PG&E in 2009 under the Oakland Long Term Plan. We noticed that there is nothing in the Draft 2012-13 Transmission Plan that identifies a need for the long-term transmission solution for the Oakland/Alameda area. Furthermore, there does not seem to be any plan to investigate such possibility in subsequent planning cycles. Since Alameda forms a significant portion of the load that must be served in the area, we want to participate in the process that selects the long-term solution. We are currently engaged with PG&E on some operational issues concerning our two systems. We would like to see a separate but related forum developed that would assist the CAISO in selecting the long-term transmission solution for the Oakland/Alameda area. We believe that the interests of the area are best served by minimizing the period of reliance on the SPS (that is still being developed) and encourage the CAISO to welcome and participate in efforts to that end. We urge the CAISO to propose investigating a long-term solution for the Oakland/Alameda area in the 2013-14 transmission study	Thank you for the comments. The ISO will continuing to assess the reliability needs of the area in the 2013-2014 Transmission Planning Process.

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		plan.	
2	Jason R. Smith, Arizona Public Service Company and Brian D. Weber, MidAmerica Transmission, LLC	We concur with the CAISO's assessment of the Delaney to Colorado River line. We feel this line will deliver the significant net benefits ultimately sought by the CAISO and the CAISO's customers.	Thank you for your comment.
3	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	**Stakeholder Input** BAMx appreciates the enormous amount of CAISO staff effort in performing several comprehensive studies in a timely fashion. In the Draft Plan, the CAISO has identified 42 reliability, policy driven and economic projects adding up to approximately $2 billion that are candidates for approval under the Transmission Planning process (TPP). The CAISO has used the term "ISO Determination" in the Draft Plan as well as in the February 11th Stakeholder meeting in reference to these candidate transmission projects. We submit these comments under the assumption that the CAISO means that this is a tentative "ISO Determination" subject to additional Stakeholder input. Otherwise, we question the purpose in receiving Stakeholder input at this time. We suggest the CAISO use the term "Initial Determination," as presumably such determination is not finalized in the Final Transmission Plan without Stakeholder input per the CAISO tariff Section 24.4.10.	The intention in drafting the draft report is to write it in the manner, to the greatest extent possible, it is ready for presentation to the ISO Board of Governors for approval, properly reflecting the recommendations and providing clarity as to what is approved or not by passing a motion approving the final plan presented to the Board. Revisions can be made between the draft plan presented in late January and the release of the final draft in March being presented to the Board. Given the size of the document and the timelines involved, it would not be practical to re-write the draft study plan at each stage. We should note we could not find where the ISO used the word "determination" in the draft plan in the context suggested. The ISO management has, consistent with past years' practices and the briefing given to the Board of Governors

			on February 7 in the general session, approved the projects less than $50 million. This approval of the smaller projects streamlines the later approval of the complete plan, and enabled streamlining the interconnection study results for a number of generation interconnection customers whose phase II study results were being finalized at the same time.
4	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	**Significant Growth in HV TAC** BAMx very much appreciates the CAISO's efforts in developing a High Voltage Transmission Access Charge (HV TAC) forecasting tool to address concerns over increasing upward pressure on transmission costs. Your efforts should help others understand how much transmission costs are increasing and how it is no longer a small portion of consumer electricity costs. As BAMx has pointed out repeatedly, the HV TAC along with Low Voltage TAC are rising exponentially. The HV TAC has gone up from $1.40/MWh in 2001 to $8.70/MWh in 2012. The CAISO's February 2013 HV TAC forecast indicates the rate will go up further to $13/MWh in 2022 taking into account the projects approved in the 2012-13 transmission planning cycle, which means a HV TAC increase of more than an order of magnitude in only two decades. While some of the HV TAC increases result from projects that are needed to maintain reliability or support the RPS, others projects that contribute to the increase are not adequately justified. In the remaining portion of these comments, we probe the need to approve some major transmission projects in the current transmission planning cycle.	All decisions have to be properly supported, whether there being more or fewer other projects identified in the same year's plan. While the ISO working to finalize its review of the PTOs input data with the PTOs before releasing the model, the ISO does not agree that stakeholder review of the model is necessary to approve the transmission plan - each project must stand on its own merits.

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		The CAISO needs to make its HV TAC forecasting tool available to the stakeholders as soon as possible, so that the stakeholders could have the opportunity to review the underlying assumptions and mechanics and provide meaningful input accordingly. We urge the CAISO to make this forecasting tool available prior to its presentation at the Board of Governors' meeting in March 2013.	
5	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	**Transmission Infrastructure Assumptions under Base Cases** We have observed from the CAISO 2012-13 transmission analyses that the CAISO Base Cases did not include some LGIA-driven transmission projects such as, the Pisgah-Lugo 500kV project and the Coolwater-Lugo 230kV project. However, it did include some of the other LGIA-driven projects such as the West of Devers project. We do not believe the CAISO should have included LGIA-driven upgrades that have not been approved by the CPUC in the Base Cases. BAMx had made these comments during the development of the 2012-13 transmission study plan. BAMx urges the CAISO to also reconsider its decision to include the LGIA-driven transmission among the elements of the 2012-2013 CAISO Transmission Plan supporting renewable energy goals.	The West of Devers and Coolwater-Lugo projects were identified as needed to meet the 33% RPS goal. Coolwater-Lugo was left out of the base case in order to evaluate the AV Clearview project as an alternative.
6	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	**Reliability-Driven Transmission Project Needs & Recommendations** The draft plan includes a large number of reliability projects totaling over $1.3 billion in new capital expendtures. Given the cummlative cost of these projects in addition to the long list of projects which have previously received CAISO approval, extra	The Midway-Andrew 230 kV Project has been recommended to address the power system reliability problems following the occurrence of the identified Category C5 (DCTL) and C3 (N-1-1) contingencies and per NERC Reliability Criteria, mitigation plans are

		scrunity is justified to ensure that the reliability projects are of proper scope and timing. Therefore BAMx requests additional consideration of the following projects. Midway-Andrew 230 kV Project This project would bring a new 230 kV circuit into the southern Los Padres Area with an estimated cost of up to $150 million. This project plus other projects approved in recent transmission plans reflect a major investment to serve an area with a load growth of only about 4 MW/year. Furthermore, the contingencies being mitigated are Category C events which are very rare and for which interruption to customers is permissible under NERC Standards. As noted in the draft report, there is already a load dropping SPS in place to ensure that the NERC Standards are met. Therefore, before approving this costly project additional analyses is needed to: 1. Address why the existing level of reliability to the area is inadequate with the SPS. 2. Identify the benefit-cost ratio (BCR) associated with the project because of the expected reduction in customer interruptions due to SPS action. 3. Identify the incremental benefit-cost ratio of the CAISO proposed plan over the less expensive PG&E proposal.	required. The existing SPS at Mesa and Santa Maria were approved only as a short-term measure to allow for the detailed area assessment undertaken as a part of the 2012-2013 Transmission Planning Process. The Mesa substation currently serves approximately 270 MW of load across a widespread area. The addition of a 230/115 kV source to the area provides for reliable supply to the area by removing the dependence on the single Mesa source for the area supply needs. In addition it addresses maintaining performance requirements of the reliability standards under Category B conditions under maintenance conditions of transmission facilities in the area at periods of time when load conditions are lower when such clearances are taken.. The Midway-Andrews 230 kV Project provides a long-term plan to reliably supply the area load as opposed to the originally proposed project by PG&E which would continue the area supply from the single source of the Mesa station.

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7	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	<u>Diablo Canyon Voltage Support Project</u> This project installs a 150 MVAr SVC or thyristor-controlled switched capacitor bank at an estmated cost of up to $45 million. The CAISO should clarify whether this project is still needed if a Midway-Andrew 230 kV Project or its alternative, a Midway-Mesa 230 kV project is constructed. This new source into the area should improve the post-contingency voltage perormance in the area, especially if the 230 kV line is terminated at Mesa 230 kV. If the voltage support is still found to be needed, then the facilities are required to meet the special requirements of Diablo Canyon Nuclear Power Plant and should be treated as a Special Facility. The cost of this project should be born by Diablo Canyon and excluded from the CAISO TAC.	The Diablo Canyon Voltage Support Project is still required if the Midway-Andrew 230 kV Project is constructed. The analysis identified that the Midway-Andrew 230 kV Project alone does not fully address the voltage concerns identified in the affected Los Padres area. It is not appropriate to treat the project as a Special Facility serving DCPP with the costs allocated to Diablo Canyon Nuclear Power Plant and excluded from the CAISO TAC. The load growth within the area (Mesa, Divide, etc.,) along with the existing load at the Diablo Canyon Nuclear Power Plant has necessitated the project.

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8	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	Gates-Gregg 230 kV Transmission Line The CAISO's Central California Study is quite enlightening. The incremental view of the transmission upgrades and the interaction with Helms operation provides valuable insights on the nature of the problem and solution. Two elements of the proposed solution should be further reviewed and explained before being presented to the Board for approval.1. The addition of a new 500/230 kV transformer at Gates Substation has an excessive cost of up to $85M. The cause of this high cost needs to be futher explained and justified. If the cost is associated with ancillary work (such as an extensive re-arrangement of the 230 kV switchyard), such costs must be separately justified and not be allowed to piggy-back on this project.2. The estimated date for the Gate-Gregg line is 2022. The envisioned cost for this project is reported to be $145M. The Helms Water Availability Assessment for Development Configuration 3 (no Gates-Gregg 230 kV line) shows only modest impacts in 2023-25. Therefore the approval of this element is not urgent for this planning cycle. Given that the water analysis is very sensitive to both the installed PV level and combustion peaker use in the Greater Fresno Area, the CAISO should continue to review the timing for this portion of the project in the 2013-2014 Transmission Planning Process with the new renewable portfolio assumptions to assess the robustness of the timing of the project need.	The need for the Gates 500/230 kV transformer addition as identified in the transmission plan is due to overloading of these facilities under the partial peak loading conditions. To facilitate the addition of the 500/230 kV transformer at the Gates substation, modifications are required to the 500 kV and 230 kV bus arrangements at the station. The water analysis identified the need for the Gates-Gregg 230 kV line in the 2023-2025 timeframe as indicated. The ISO notes that an earlier in-service date can be rationalized due to the benefits the project provides, but the 2022 date was based on the expectations of the incumbent PTO regarding timing. This can be explored in more detail in the competitive solicitation process.

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9	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	<u>BCR Calculations</u> We notice for the first time in this year's planning cycle that there are numerous projects justified based upon benefit to cost ratios (BCR) calculations. We re-iterate our request to see these calculations and to get a further clarification of when and how they are being applied. BAMx understands the CAISO wishes to limit their use to cases where the planning criteria are already being met but when loss of load occurs with radial loads. But we see these type of calculations as potentially failing to distinguish between times when load dropping is allowed for criteria Level C events and when it is not. In the past there has not seemed to be a clear criteria for when load dropping is allowed and when it is not. In any case, it is incumbent on the CAISO to share such calculations if it is to have an open and transparent planning process. We assume the many examples of elimination of radial load dropping in this year's plan have existed for many years, if not decades. So although we may ultimately be supportive of eliminating the radial feeds, the CAISO should not approve the many projects eliminating the historical conditions until the criteria are better understood.	The ISO has taken steps to improve visibility of the considerations taken into account in determining when load shedding is acceptable as mitigations for category C contingencies, including upgrades to the ISO Planning Standards. However, we agree that the methodology employed in the PG&E service area for reinforcements to eliminate consequential load loss on facilities less than 200 kV needs to be more visible. While this is the same methodology that PG&E has indicated it employs on its distribution facilities, and will be filing this methodology shortly in regard to its distribution facilities, the ISO has also attached that methodology to the response to comments. Please refer to Attachments A and B to the comment matrix.

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10	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	**Policy-Driven Transmission Project Needs & Recommendations** In the Draft Plan, the CAISO has recommended a couple of transmission projects for approval as category 1 policy-driven projects based on the deliverability assessments on the renewable portfolios, while the CAISO's reliability assessment on the same renewable portfolios did not indicate any need for those projects. In assuming that all renewable projects should be "fully deliverable", the CAISO is in essence building transmission to allow renewables to provide Resource Adequacy without undertaking any cost-benefit analysis to demonstrate that this approach is economically justified. BAMx does not believe that there is any state policy that renewable projects should provide Resource Adequacy irrespective of economics. Rather than designating transmission projects as policy driven solely to allow renewable projects to satisfy the Resource Adequacy needs, the CAISO should undertake a cost-benefit analysis to show that the proposed projects are economic. For example, BAMx suggests that the CAISO provide an economic justification for the approval of the Lugo – Eldorado 500 kV Line Re-route and the Warrenville – Bellota 230kV Line Reconductoring projects, that are classified as "policy-driven" transmission projects purely based on the deliverability assessment.	The Eldorado-Lugo 500 kV series capacitor replacement project was needed in both the production simulation based powerflow and deliverability assessments. The Eldorado-Lugo, Eldorado-Mohave line separation policy driven project was needed in both the production simulation based powerflow and deliverability assessments. The new Sycamore-Penasquitos line policy driven project was needed in both the production simulation based powerflow and deliverability assessments. The Warnerville-Bellota and Wilson-Legrand projects are minor upgrades to existing facilities to ensure deliverability. These upgrades were identified as needed in the generator interconnection process and would need to be ultimately by ratepayers, pursuant to the ISO Tariff. In order to commercially achieve the 33% RPS goal, these upgrades are needed.

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11	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	In Table 1, we provide an example of a comparison of the capital costs of the CAISO-proposed policy-driven transmission projects with RA capacity costs for procuring renewable resources presumably enabled by those transmission projects. The Draft plan as well as the CAISO's February 11th presentations have identified that without the proposed policy-driven projects listed in Table 1, certain amount of renewable generation will be deemed undelivered. However, the CAISO has not identified the amount of such undelivered renewable generation. In the absence of that information, we have estimated the amount of "fully delivered" exclusively solar or wind capacity that can be economically justified by the proposed policy-driven projects. For instance, if the Sycamore – Penasquitos Line 230kV project can incrementally allow the solar capacity of 589MW or the wind capacity 2,947MW from the claimed undeliverable renewable generation zones, then it can be potentially justified as a preferred solution to provide full capacity deliverability to the interconnecting renewable generation. The CAISO has not performed any such assessment.	The first criterion listed in section 24.4.6.6 is commercial interest in the generation. The ISO has observed in numerous instances that commercial interest is focused on deliverable generation. In order to maximize the chance of success of meeting the 33% RPS goal the ISO has identified a few low cost incremental upgrades to existing facilities and is recommending them as Category 1 policy upgrades.
12	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	The Sycamore-Penasquitos 230 kV line project, with an estimated cost of $111M-$221M, is identified in the potential policy driven solutions for a number of SDG&E area overloads. However, many of the overloads are relatively minor and all have multiple relatively inexpensive solutions. Therefore, the major expense of this line has not been sufficiently justified in light of these alternatives. From the CAISO's February 11th presentation, it appears that the Sycamore-Penasquitos 230 kV project is recommended as an insurance for SONGS shut down. While the	Sycamore-Penasquitos serves as both a mid-term and long-term mitigation for an extended or permanent outage of SONGS. At the same time it meets a Policy Driven transmission need with or without SONGS. The alternative upgrades do not meet the need without SONGS. As such Sycamore-Penasquitos it represents the most cost-effective alternative for meeting the policy driven need.

		return of SONGS is uncertain and planning for flexibility of the transmission system to continue to reliably serve load in the face of such SONGS uncertainty is an immediate challenge, considering the Sycamore-Penasquitos 230 kV line as forgone conclusion and simply advancing it to support the needed flexibility may be masking other, lower cost solutions than building this line in the first place. In other words, why buy the most expensive insurance policy when there is uncertainty whether it will be needed? Furthermore, as an insurance policy for the mid-term, a new 230 kV line through a congested area is frought with risk. The typical assumption provided by the utilities for permitting, engineering and construction of new 230 kV line on a new right-of-way is seven to nine years. The last major transmission line in the San Diego area, the Sunrise Project, had a lengthy permitting project in part due to highly engaged and concerned local stkeholders. It is likely that the Sycamore-Penasquitos 230 kV line will face similar issues and would not be available if needed. Therefore, as a mid-term insurance policy, it is a poor choice. Therefore, we request that the CAISO first determine whether the multitude of relatively less expensive upgrades will address the transmission capacity issue and this serve as the foundation of the assessment for any additional system flexibility needs to accommodate the SONGS uncertainty.	
13	Barry Flynn or Pushkar Wagle, Bay	**Economics-Driven Transmission Project Needs & Recommendations**	In the course of further reviewing the draft results

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	Area Municipal Transmission Group	The Draft plan has recommended the Delany – Colorado River 500 kV line project for approval and has recommended the Harry Allen – Eldorado 500 kV line project for further study in the ongoing CAISO-NVE joint study. We have noticed that the estimated benefits associated with these two projects have gone up significantly under multiple CAISO reporting since last year as shown in Figure 1 below. The CAISO has provided little documentation in the Draft Plan on the reasons for such major changes in estimated benefits associated with these transmission projects. We request that the CAISO provides justification for these changes as well as arguments, if any, on why the final benefits calculations that were presented in the February 11th stakeholder meetings should be trusted to approve transmission projects costing hundreds of millions of dollars. Furthermore, we find that the Net Present Value (NPV) calculations of the benefits of the candidate transmission projects to be questionable. For example, for the Harry Allen – Eldorado 500 kV line project, the CAISO calculated the total benefits in years 2017 and 2022 as $87M and $33M, respectively. Our understanding is that the CAISO interpolated these benefits for the intervening years and extrapolated the benefit of $33M in years 2023 onwards at 1% annual escalation. We question the CAISO's rationale for such extrapolation of economic benefit. The CAISO has estimated the NPV of benefits over 50 years discounted at 7% to be $637M. We have verified these calculations. However, when we apply a trend on the benefits to extrapolate them beyond 2022 taking into account a significant	included in the draft transmission plan, the ISO determined that the benefits for projects in the Desert Southwest (Delaney-Colorado River in particular) may have been overestimated, primarily due to the treatment of greenhouse gas emissions relating to imports, and that the second project (Eldorado - Harry Allen), requires additional analysis and consideration of alternatives. The ISO has therefore concluded that the Delaney-Colorado River transmission project requires further study and, depending on the results, may be brought forward later this year for Board decision.

		drop in the benefits from 2017 to 2022, we get a NPV of benefit of $327M over 50 years, nearly half as much as benefit calculated by the CAISO. This exercise demonstrates that the CAISO's calculation of the benefits based on only two years of data is highly susceptible to how the extrapolation of these benefits are calculated. BAMx believes that it is important to recognize why the benefit has dropped from 2017 to 2022, the likely reason being the increased buildup of the low variable cost renewables within the CAISO BAA. If the renewable buildup continues to go up within the CAISO in the later years, it is likely that the benefit of the out-of-state (OOS) transmission projects like Harry Allen – Eldorado 500 kV line will go down.	
14	Barry Flynn or Pushkar Wagle, Bay Area Municipal Transmission Group	During the February 11th stakeholder meeting, the CAISO claimed that most of the benefits of the OOS candidate transmission projects were attributed to lower impedances due to new lines that allow for redistribution of imports among the lines into California from the Southwest, and not necessarily by increasing the transfer capability of WOR & EOR interfaces. If lowering of impedances results in such major economic benefits, has the CAISO considered studying lower cost measures such as the sufficiency of series compensation schemes for the existing import lines into the CAISO BAA? If not, the CAISO needs to consider lower cost alternatives prior to approving a major new 500kV transmission project. It also is important to recognize the calculated benefits assume the completion of other projects whose construction is uncertain.	The suggestion was considered - the existing paths are already heavily series compensated.

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		We urge the CAISO to continue its study of the potential benefits of projects that can import power from other States but to not approve them in this transmission planning cycle.	
15	Keith White & William Dietrich, California Public Utilities Commission Staff	**1. CPUC Staff Is Pleased to See the Competitive Transmission Development Process Being Put into Action, and Emphasizes the Importance of Cost and Cost Management.** CPUC Staff is pleased that three transmission projects are identified as eligible for competitive solicitation in the Draft Plan. (One of these, the Sycamore-Penasquitos 230 kV transmission line, is undergoing further assessment.) Combined with the renewable energy-supporting Imperial Valley collector substation project recently made available for competitive solicitation on an expedited basis, this represents the first realization of promising competitive transmission reforms recently included in the CAISO's transmission planning process, after very active stakeholder involvement. This competitive approach will support innovation and efficiency in developing transmission to meet California's ambitious energy goals. We understand that other parts of the country look to California as a model in this regard. CPUC Staff understand the CAISO's decision to establish a temporal cutoff, such that if the CAISO's Order 1000 filing regarding "intraregional" transmission planning reforms was not approved by that cutoff date, then existing tariff provisions would apply regarding what transmission projects are eligible for competitive solicitation in the present TPP cycle. However, in	Thank you for the comments. The ISO's compliance filing addressing regional requirements of FERC Order 1000 increases eligibility for competitive solicitation for certain reliability projects greater than 200 kV, and places transmission less than 200 kV remaining with the incumbent PTO rather than being eligible for competitive solicitation.

		future planning cycles, we anticipate that a wider range of transmission projects, including 200+ kV reliability projects and inter-service territory projects, can be available for competitive solicitation. Thus, the present cycle will provide an important opportunity to deploy and test competitive solicitations before broader competitive opportunities emerge in the future. Furthermore, we hope that after sufficient experience with competitive development of 200+ kV projects, there might be consideration of making sub-200 kV projects available for non-incumbent development under some circumstances. A major benefit of competitive solicitations is better control of transmission costs, which have been substantial in recent years. As CPUC Staff have emphasized in connection with the CAISO's Order 1000 intraregional compliance filing, cost and cost management should play an important role when evaluating and selecting competitive solicitation winners. Contractual commitments regarding costs and cost containment provide important means of controlling costs and sharing cost risks between developers and ratepayers, before a project is submitted to FERC, where cost management options are more limited.	

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16	Keith White & William Dietrich, California Public Utilities Commission Staff	**2. CPUC Staff Appreciates the Robustness and Documentation of the Economic Studies that Identified an Important Competitive Transmission Project, and Hopes that the CAISO Can Provide Requested Additional Information from These Studies.** CPUC Staff appreciates the Draft Plan's expanded detail regarding the methodology and assumptions for the economic studies. Transmission investments have long economic and physical lives, and future conditions affecting an investment's value are quite uncertain, yet very important. Thus, CPUC Staff welcomes the economic study's sensitivity analyses of transmission project benefits across a range of key uncertainties. An additional key driver of value for the Delaney-Colorado River project that was selected for inclusion in the Draft Plan, as well as for other Southwest-California (SWC) projects studied, is the assumed amount and mix of generation additions east of the Colorado River. Some insight into implications of base case and alternative assumptions regarding these generation additions could be valuable. The dominant source of computed benefit for the Delaney-Colorado River project is consumer production benefit, i.e., lower Locational Marginal Prices ("LMPs") in the CAISO footprint on an annual aggregate basis. Since this large transmission project recommended for approval is estimated to cost ratepayers approximately $325 million, it is important to better understand how the estimated benefit arises. Such understanding also aids	Please refer to the response to comment 13.

		appreciation of how sensitive or robust benefits might be to changing circumstances. In particular, the economic studies identified little congestion on major facilities in the Desert Southwest-California area before adding the simulated Delaney-Colorado River project (Tables 5.6-1 and 5.7-18), and addition of this project apparently had limited impact in reducing simulated hours of congestion on Path 26 and other Desert Southwest-California area paths (Tables 5.7-18 and 5.7-19). Thus it is unclear, and should be clarified, which CAISO footprint locations were projected to experience significantly reduced LMPs when adding the Delaney-Colorado River project, in order to produce a large consumer benefit, and in which seasons and hours this occurred. The above information along with information on dispatch changes (with and without the Delaney-Colorado River project) would also indicate which low cost east-of-river generation was being made more available to California consumers as a result of the project, to produce the consumer production benefit. Since considerable new solar generation would be expected to already be injecting on the California side of the path from Arizona to Devers during midday hours, we might expect that the additional low-cost east-of-river generation being made available to CAISO area consumers would come largely from underutilized east-of-river fossil (or at least non-solar) generation. However, this is only conjecture, and it would be valuable to have this explicitly clarified in the final Plan, as useful information for understanding not only this particular project but also broader planning issues and options going forward.	

		The Delaney-Colorado River project was found to provide considerably greater benefit to CAISO footprint market participants than was determined for this same project in last year's study. As described in Chapter 5 of the Draft Plan, this year's economic studies incorporate significant modeling and data changes and enhancements relative to last year's studies, which may account for the increase in assessed benefits. For stakeholder understanding, and also to document the evolving study process and to inform future studies, this year's Plan should include some assessment of which methodology and data changes were most responsible for the significantly increased benefits attributed to the Delaney-Colorado River project, compared to last year's results. Two favorably evaluated economic projects, the Delaney-Colorado River project recommended for approval and the Harry Allen-Eldorado project recommended for continuing study, cross the interface between the CAISO area and adjoining planning areas. These projects could potentially benefit consumers and producers not only in the CAISO area but also in adjoining areas, and thus conceivably could be jointly funded by multiple planning areas. In fact, it appears that these projects would be assessed for joint funding based on principles being developed for FERC Order 1000 compliance filings by western transmission providers. Thus, CPUC Staff recommend that the CAISO and other parties studying these two transmission projects explicitly consider	

		consumer and producer benefits outside of the CAISO footprint.	

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17	Keith White & William Dietrich, California Public Utilities Commission Staff	**3. CPUC Staff Requests Examination of an Earlier In-Service Date for a SDG&E Synchronous Condenser Project.** CPUC Staff appreciates CAISO's attention to reactive power needs for voltage support in southern Orange County and San Diego, given the uncertain duration of the outage of the San Onofre Nuclear Generation Station ("SONGS"). CAISO had previously approved capacitors at three Southern California Edison ("SCE") substations (Santiago, Johanna, and Viejo), synchronous condensers at Huntington Beach units 3 and 4, and reconfiguration of the Barre-Ellis 230 kV transmission line. The Draft Plan indicates that CAISO is still considering approval of two additional reactive power projects. SCE has proposed Static Var Compensators near SONGS, to be on-line by the summer of 2014 (the Orange County SVC project). CAISO is still considering a San Diego Gas and Electric Co. ("SDG&E") synchronous condenser project at either the San Luis Rey or Talega substation, also relatively near SONGS. Given the possibility of an extended SONGS outage, in considering the SDG&E synchronous condenser project CAISO, should investigate bringing forward the in-service date from June 1, 2018 to June 1, 2015. CPUC Staff's understanding is that permitting and construction could occur by the summer of 2015. Assuming SDG&E could build the synchronous condenser project at a reasonable cost, CPUC Staff supports the idea of a reasonable amount of additional reactive power supply. We request consideration of a 2015 in-service date in the Final Plan.	Thank you for the comment. The ISO intends to seek Board approval of the SONGS area and Talega area dynamic reactive support, with a final determination of the technology choice taking place after approval has been obtained.

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18	Keith White & William Dietrich, California Public Utilities Commission Staff	**4. CPUC Staff Requests Special Study of Reliability Needs in San Francisco during the 2013-2014 Transmission Plan cycle.** The Draft Plan approves the Trans Bay Cable Dead Bus Energization Project, which is a relatively low-cost reliability improvement. The Draft Plan also states that CAISO is continuing to study reliability needs in downtown San Francisco under Extreme Event conditions. If CAISO is concerned about reliability in downtown San Francisco, CPUC Staff would like to see a comprehensive, special study of reliability for San Francisco and the San Francisco Peninsula as part of the 2013-2014 Transmission Plan. In this vein, CPUC Staff would encourage CAISO staff to not add a new (i.e., not in the Draft Plan), major, San Francisco reliability project in this year's Final Plan; rather, studying the issue in greater detail during the next cycle would be better.	Thank you for the comments. The ISO is continuing to assess the reliability need of the San Francisco Peninsula. The ISO will continue to engage stakeholders through the process of assessing the need and risks to the area and the assessment of alternatives along with the potential urgency to address the concerns based upon the identified need assessment.

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19	Keith White & William Dietrich, California Public Utilities Commission Staff	**5. Staff Appreciates Progress on Increased Consistency of Input Assumptions regarding Demand Side Management, and Requests Sufficiently Granular Assumptions for All Cases; CPUC Staff Requests a Case in the 2013-2014 Transmission Plan Cycle that Mirrors Standard Assumptions Made in the CPUC's Long Term Procurement Plan Base Case.** CPUC Staff appreciates progress on increased consistency of input assumptions between CAISO, CPUC, and the California Energy Commission ("CEC") regarding Demand Side Management results. For example, CPUC Staff appreciates CAISO planning to run the sensitivity analysis for the High Distributed Generation ("DG") case, using incremental uncommitted energy efficiency beyond the committed portion that was included in the CEC adopted demand forecast and potential incremental combined heat and power ("CHP"). CPUC Staff also appreciates CAISO's promise for proposed cooperation with CEC and CPUC on energy efficiency ("EE") and demand response ("DR") assumptions (generally, to result in more DR and incremental, uncommitted EE being assumed under all TPP cases). The combined expertise of the three agencies to develop common assumptions has, and will, help to improve the accuracy of assumptions.During the 2013-2014 Transmission Plan cycle, we suggest that TPP documentation should provide increased granularity of EE, DR, and CHP assumptions for all of the TPP cases. In addition, CPUC Staff requests a case in the 2013-2014 Transmission Plan cycle that mirrors standard assumptions made in the CPUC's Long Term Procurement Plan base case.	This comment should be submitted into the 2013/2014 Study Plan consultation process.

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20	Keith White & William Dietrich, California Public Utilities Commission Staff	**6. CPUC Staff Commends the CAISO's Effort in Conducting Special Studies of the AV Clearview Project that May Inform Future Decisions, and Looks Forward to the CAISO's Assessment of the Proponent's Recently Submitted Benefits Analysis.** CPUC Staff appreciate the CAISO's special study of the AV Clearview transmission project proposal as a possible alternative to the South of Kramer (i.e., the former Coolwater-Lugo) project for interconnecting and delivering renewable generation in the Kramer area. We understand that the CAISO's assessments of both projects, to date and going forward, may inform future permitting processes for transmission to meet objectives of the Coolwater-Lugo project. The CAISO's tariff provisions regarding policy-driven transmission approvals (for selection of "Category 1" elements) provide for consideration of publicly-available information regarding environmental factors. However, in practice it may be difficult to sufficiently assess and vet environmental information on large transmission projects within the confines and timeline of the CAISO's Transmission Planning Process, so that we anticipate that the relative environmental attributes of South of Kramer (Coolwater-Lugo) versus AV Clearview will be addressed during siting and permitting. We note that the proponents of the AV Clearview project have entered into the comment record of the 2012-2013 TPP an analysis by ZGlobal of the benefits of the AV Clearview and Coolwater-Lugo projects, including technical, reliability, economic	Thank you for the comment.

		and societal benefits indicating substantial advantages for the AV Clearview project. We look forward to the CAISO's evaluation of the ZGlobal study; however, we are concerned that a major change in the Draft Plan could occur without a full stakeholder vetting. If necessary, CAISO should take additional time to review the ZGlobal study, even after the 2012-2013 Plan is finalized. Finally, we note that the Coolwater-Lugo project was originally included in the 2010-2011 Transmission Plan as an LGIA-driven project. Under today's FERC-approved CAISO generator interconnection paradigm (Generator Interconnection and Deliverability Allocation – "GIDAP") plus the CAISO's Order 1000 compliance filing, such transmission needs are to be addressed in a more holistic (less LGIA-driven) and competitive manner with costs and cost containment playing significant roles. We hope that such eventual efficiencies can still be brought to bear in the current Kramer area situation involving prior interconnection agreements, through a combination of the CAISO's studies plus subsequent siting and permitting processes informed by those studies.	
21	Keith White & William Dietrich, California Public Utilities Commission Staff	**7. The Water Availability Assessment Tools and Methodology Appear to Play an Important Role in Analysis of Fresno Area Transmission Needs, and That Role, the Assessment Methodology and the Tools Themselves Should be More Fully Described Both in the Final 2012-2013 Transmission Plan and in Any Stand-alone Documentation.** The Helms water availability assessment appears to play a critical	Additional information on the Water Availability Assessment has been included in the revised draft of the 2012-2013 Transmission Plan.

		role in identification of Fresno area transmission needs in the 2012-2013 transmission planning process. Furthermore, as suggested in the Draft Plan, future needs for ancillary services and operating flexibility to integrate variable generation may increase the importance of pumping to fill Helms storage. Thus, CPUC Staff look forward to more complete and clear documentation of the Water Analysis Model and its application in the near future. Even before such full documentation may be available, the CAISO's final 2012-2013 Transmission Plan should provide greater clarity than the Draft Plan regarding several aspects of the Water Analysis Model and the water availability assessment. First, there should be clarification of the respective roles and interrelationship, in assessing Central California transmission needs, of: (a) conventional power flow and stability analysis addressing reliability standards for snapshot scenarios summarized in Table 3.3-1 and 3.3.2 versus (b) the Helms water availability assessment covering a broader, more continuous range of hours and conditions. The Final Plan should explain what transmission solution is found adequate to meet reliability standards under the most stressful snapshot powerflow conditions without considering the water availability analysis, such as the 2022 summer partial peak case, which apparently assumes Helms to be off-line (Table 3.3-2). Our understanding from the Draft Plan is that a more robust mitigation solution was required	

		beyond what was needed to meet reliability standards under selected snapshot stress conditions, because while Helms pumping could be avoided under such stress (contingency) conditions it could not be avoided over a longer period of time (hours) if sufficient water is to be maintained in Helms storage for overall reliability. This explanation, if correct, should be more clearly explained in the Final Plan. For the water availability assessment, key results appear to be reflected in Figures 3.3-4, 3.3-6, and 3.3-8. For these figures it should be clarified what "Minimum Reservoir Storage" represents. For example, for what period of time or set of hours does this amount of storage apply? In what way is it a "minimum?" The amount of storage MWh over the applicable period is apparently based on the number of hours during that period when Helms is calculated to be able to operate with 0, 1, 2 or 3 pumps, given the load forecast and the assumed transmission configuration (e.g., "configuration 3" or "configuration 4"). The CAISO should clarify in the Final 2012-2013 Transmission Plan which (and how many) hours of potential pumping (season, time of day) are reflected in Figures such as 3.3-6 and 3.3-7, and how the transmission constraints limiting such pumping were calculated or interpolated across the different varied hours and conditions considered, given that power flow and stability studies typically examine only selected snapshot conditions. It should also be clarified what frequency and impact of outage contingencies was assumed when determining the 0, 1-, 2- and 3-pump operating windows	

		over the applicable time period represented in Figures such as 3.3-6 and 3.3-7. Were N-0 conditions assumed for these energy calculations? The above questions reflect the more general need for greater clarity regarding the design and application of the Water Analysis Model.	
22	Keith White & William Dietrich, California Public Utilities Commission Staff	**8. The proposed in-service date for the Sycamore-Penasquitos 230 kV transmission line may be optimistic.** CPUC Staff appreciates the detailed study of nuclear plant outage scenarios. CAISO concluded that the Sycamore-Penasquitos 230 kV transmission line might both meet mid-term reliability needs under certain nuclear outage scenarios, and also have policy-driven benefits. CAISO recognizes there may be a long lead time to build the Sycamore - Penasquitos 230 kV transmission line, but CAISO and SDG&E assert a 2017 on-line date. CPUC Staff understands that CAISO's process does not include the analysis of environmental constraints and permitting. The Sycamore-Penasquitos line was part of the original Sunrise Powerlink proposal, and was not approved by the CPUC in the certification proceedings for Sunrise. CPUC Staff is concerned about the proposed 2017 on-line date for the Sycamore-Penasquitos project, in light of potential environmental review and permitting timeframes and potential obstacles. In CAISO's deliberations leading to the Final Plan, we suggest further consideration of these potential difficulties for the Sycamore-Penasquitos line versus the alternative projects (reconductoring and SPS projects) identified by CAISO to meet certain needs.	Sycamore-Penasquitos serves as both a mid-term and long-term mitigation for an extended or permanent outage of SONGS. At the same time it meets a policy-driven transmission need with or without SONGS. The alternative upgrades do not meet the need without SONGS. As such Sycamore-Penasquitos represents the most cost-effective alternative for meeting the policy-driven need.
23	Keith White & William	**9. Understanding of Transmission Cost Drivers Will Be**	

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	Dietrich, California Public Utilities Commission Staff	**Improved if TAC Impact Estimates Are Disaggregated into Several Requested Project Categories and if Avoided Loss of Load (Dollar Value or MW) Can Be Shown for Large Reliability Projects Wherever Feasible.** CPUC Staff welcome the CAISO's development of a tool to estimate future trends in the High Voltage Transmission Access Charge ("TAC") to provide an "estimation of the impact of the capital projects identified in the 10-Year Transmission Plan" and to provide a "high level understanding of the relative impacts of the different cost drivers." CPUC Staff understand that the CAISO is concerned that breaking transmission costs into discrete categories such as "policy driven" could create misunderstanding because transmission projects often address multiple objectives. Nevertheless, CPUC Staff ask that when the TAC impact results and the associated tool and data are posted, that there be some breakdown into categories of transmission, so that stakeholders may achieve understanding of the relative impact of the different cost drivers. In particular, we request that the transmission costs and TAC impact be broken down by timing (historical in-service year, and year of approval and of estimated completion for transmission not yet in service) and by PTO. Furthermore we strongly support at a minimum breaking out (separately identifying) costs for LGIA-driven transmission projects and for transmission projects identified solely for reliability purposes.	Transmission projects are identified in the ISO transmission planning process by the stage at which they were identified (e.g. reliability, policy, or economic) but projects defined at later stages generally address earlier issues as well, and therefore the classification for tariff purposes is not indicative of the whole function of the facility. For example, policy-driven projects often also address previously identified reliability concerns, but have been enhanced to address policy issues as well. The ISO is therefore unwilling to attempt to parse these cost impacts into more granular categories recognizing the risk of misinterpretation and misunderstandings that this would create. The ISO will continue to work towards finalizing its review of input data from the various PTOs such that the model may be made public, and stakeholders can explore analysis for their own purposes.

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24	Keith White & William Dietrich, California Public Utilities Commission Staff	Furthermore, the reliability-driven component of transmission costs is high in the aggregate, reliability study methods are complex, and controlled load dropping is allowed under certain conditions under NERC, WECC and CAISO standards. In this context, we have found the occasional inclusion of benefit/cost analysis for reliability projects, and even the simple reporting of the MW of load at risk of being dropped absent a mitigation measure, to be very helpful, especially for large reliability projects. We request that such information be included where possible for the larger (perhaps over $20-30 million) reliability projects, and request clarification of when it is (and is not) feasible to reasonably develop and post such useful information. Please explain the appropriate role and limitations of benefit/cost analysis, and of explicit identification of MW of load drop avoided (and associated probability), for large reliability projects.	The ISO does not consider it appropriate or a good use of resources to commit to performing specific analysis repetitively if the analysis, in the specific case, is not relevant to that particular case. The ISO instead encourages focused questions on a case by case basis. Also, a cost effectiveness analysis is appropriate for projects required specifically to meet mandatory standards and ensure the best mitigation is selected, but a cost/benefit analysis studying the cost of not meeting mandatory standards is not a reasonable undertaking.
25	Keith White & William Dietrich, California Public Utilities Commission Staff	**10. Renewable Resource Deliverability Drives Substantial Transmission Additions Even Though the Modeled RPS Portfolios are Based on Energy not Capacity Delivery, and the CAISO Should Aim to Clarify What Capacity and Energy Delivery Are Expected with and without Particular "Full Deliverability" Transmission Upgrades, and to What Extent a High DG Case Results in Reduction of Identified Deliverability Upgrades.** CPUC Staff appreciates CAISO's use of CPUC-generated RPS portfolios in the transmission planning process. Policy-driven transmission needs identified in the Draft Plan appear to arise from deliverability assessment of the base case (Commercial	The question appears based on the premise that not all renewable resources require RA, and that therefore additional facilities may be identified above and beyond an "energy only" requirement that would be sufficient for these projects to proceed. The ISO's understanding supported by recent procurement experience is that virtually all renewable generation is seeking full capacity delivery status, and this is needed to obtain a PPA with a load serving entity. Further, the CPUC staff have mixed several concepts in

		Interest portfolio) assuming that all of the renewable generation will have RA deliverability. Since the RPS portfolios are intended to meet the 33% energy target without any specified RA capacity target, it would be helpful to understand what would be the renewable resources deliverability if each identified policy-driven transmission upgrade were not built. Determining transmission needs related to deliverability of renewable or other resources' output appears to depend strongly on three separate but interacting questions: 1. What overall level of RA capacity is needed systemwide and locally? 2. What transmission is needed to support that RA capacity? 3. What amount of transmission is needed to provide a high level of annual (8,760 hour) energy deliverability? Question (1) is a broad energy policy matter of concern to all energy agencies and stakeholders. Question (2) directly focuses on the CAISO's deliverability assessment methodology and its level of conservatism. CPUC Staff hope and understand that CAISO plans to clarify and discuss its deliverability assessment methodology in the near future, since that methodology drives identification of substantial transmission needs and appears to many stakeholders to be overly conservative. A better mutual understanding of this methodology and the rationale for its statistical level of conservatism is needed. Question (3) requires other kinds of analyses addressing 8,760-hour conditions and uncertainties affecting delivery of resources'	the last question. A category 1 project must be required in the base scenario and some number of other scenarios, or in the base scenario with some other compelling reason. Failing to be required in ALL scenarios by only missing one is not grounds for rejecting an otherwise-needed Category 1 project. However, the ISO notes that the documentation provided in the transmission plan identifies for each scenario what upgrades were needed to meet that scenario.

		energy over a range of conditions, but not under the extreme (and rare) stress snapshot conditions assumed to test RA deliverability. This question was at least partly addressed in past TPP cycles via 8,760-hour production simulations for the RPS portfolios, but was apparently not addressed in the present cycle. Given that full RA deliverability of 100% of renewable resources may not be necessary or economically desirable, it is important to have an assessment of not only what RA deliverability is achievable without certain incremental "policy driven" deliverability upgrades (as noted above) but also whether a high percentage of energy output would be deliverable without those upgrades. These are important questions for coordinating resource and transmission planning. As noted above, not all renewable resources may ultimately need to have full RA deliverability. In addition, identification of Category 1 (for approval) policy-driven transmission entails considering conditions beyond a single base case. Therefore, we would like to understand which identified deliverability upgrades would, or would not, be needed under the high-DG case.	
26	Keith White & William Dietrich, California Public Utilities Commission Staff	**11. The CAISO Should Clarify the Out of State Renewables Study Regarding which California Renewables were Removed and the Additivity of Mitigations, and Should Consider Running Future Studies of This Type without Removing California Renewables Since RPS Development and Procurement Are so Far Advanced.** CPUC Staff understand that the high out of state sensitivity study	The ISO will clarify the identified concerns in the final draft transmission plan. The ISO's sensitivity case was prepared in accordance with the plan established at the beginning of the study process. CPUC staff suggestions regarding future

		was conducted within the Policy Driven Need Assessment for informational purposes only, and that the 3000 MW of imports assumed to inject at Eldorado do not correspond to actual California resource planning scenarios. The CAISO should clarify: (1) if the "potential mitigations" summarized under "Option 1" would be required all together in combination (not substituting for each other), (2) whether potential mitigations summarized under "Option 2" would substitute for Option 1 or would need to be combined (wholly or in part) with Option 1, and (3) whether resolution of the Pacific Northwest voltage instability issue would require additional measures beyond Options 1 and 2 and thus would be additive with Options 1 and/or 2. Also, CPUC Staff request that the CAISO list by technology, resource area and MW (not by individual resources) of the Commercial Interest portfolio resources that were removed for the sensitivity studies in which 3,000 MW of out-of-state renewable generation was assumed to be injected at Eldorado. Finally, CPUC Staff note that the status of renewable resource development and procurement for the 33% RPS goal is so far along at this point that it would be relevant and informative to study the impact of importing 3,000 MW of out of state renewable generation at Eldorado substation or elsewhere without removing California renewables from the Commercial Interest (or any other) resource portfolio.	studies of levels beyond 33% should be provided in the 2013/2014 study plan consultation process and in the development of the portfolios; this would raise other issues beyond the transmission system implications of substituting in state with out of state renewables. Options 1 and 2 are conceptually interchangeable. Upgrades for the Northwest voltage instability would be additive.

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27	Hannah Wang, Calpine Corporation	1. North Coast /North Bay area study: First, CAISO identified some reliability concerns around Eagle Rock-Cortina area for summer light load and offpeak scenarios in the study. The potential mitigation solutions CAISO proposed is to adjust the generation at Geysers. We urge PGE and CAISO to seek any other alternative such as SPS or uprating the line to resolve the local thermal overloading issues. Also, in the summer peak case, CAISO also proposed to adjust Geysers' generation as the potential solutions to mitigate the voltage violation under Category B contingency. Instead of adjusting generation, a voltage support device can also be installed to solve this problem. CAISO should consider these non-generation options to maintain the system reliability. Second, the description in Appendix B, section B2.2.2.1 from Page B25 to B27 is very confusing about the Middletown 115kV Project. Middletown project shouldn't be formatted as the thermal overloading element. Third, the Middletown 115kV project is the major project CAISO proposed to resolve the most reliability problems in the area. But it's not listed in the previously approved projects which are needed to mitigate the identified reliability concerns at the end of the section (2.5.2.3).	The ISO has performed the transmission planning analysis consistent with the NERC TPL standards under which adjusting/tripping generation for Category B and Category C contingencies is permitted as an acceptable mitigation solution and in the identified situation is what has been proposed. The Clear Lake 60 kV Reinforcement Project was referred to as the Middletown 115kV Project in the draft transmission plan. In the revised draft of the transmission plan the ISO has clarified the wording to reflect the previously approved Clear Lake 60 kV Reinforcement Project in section B2.2.2.1. The Clear Lake 60kV reinforcement project and is listed in Chapter 7, Table 7.1-1 page 369 under the list of previously approved projects costing less than $50M.

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28	Hannah Wang, Calpine Corporation	2. Table Mountain Transformer updates. In CAISO's 2011-2012 transmission plan, CAISO identified Table Mountain 500/230kV transformer will be overloaded during summer peak both in 2016 and in 2021. But in the 2012-2013 transmission plan, the thermal overload only occurs in the 2022 summer peak case. What's the major contributor to the difference? In the previous plan, CAISO proposed to re-rate the transformer, but this year CAISO changed the plan and proposed to modify the existing RAS. What are the reasons except the cost concerns?	Overload on the Table Mountain 500/230 kV transformer was identified in the 2011-2012 Transmission Plan with a Category C contingency - double outage of 500 kV lines south of Table Mountain (Table Mountain-Tesla and Table Mountain-Vaca Dixon) under peak load conditions in 2016 and 2021. Loading on the Table Mountain transformer with a South of Table Mountain 500 kV double line outage depends significantly on the RAS applied with this outage and on which generation units are tripped by this RAS, as well as on generation dispatch from Feather and Pit Rivers. The existing RAS trips generation in both the northwest (up to 2,400 MW, depending on the COI flow) and at Feather River, as well as irrigational pump load in Northern and Southern California. The RAS protects the Table Mountain 500 kV transformer, as well as the Table Mountain-Rio Oso 230 kV line. Power flow through the Table Mountain transformer in this case is from 500 kV to 230 kV. Since the South Feather River and Pit River generation is injected at the 230 kV Table Mountain bus, the higher is this generation, the lower will be flow through the Table Mountain 500/230 kV transformer. Tripping of Feather River generation was included in the RAS to protect the Table Mountain-Rio Oso 230 kV transmission line, but not the Table Mountain transformer, because while reducing loading on the 230 kV and 115 kV lines out of Table

			Mountain, it increases loading on the transformer. The Table Mountain-Rio Oso 230 kV transmission line was upgraded in June 2012, and after the upgrade the line is not expected to overload with the 500 kV double outage south of Table Mountain even if the Feather River generation is not tripped. However, if none of the Feather generation units are tripped with this contingency, it may cause overload on the 115 kV transmission lines in the Palermo-Rio Oso area. These transmission lines are planned to be upgraded in 2015 (South of Palermo 115 kV Reinforcement Project). Prior to this upgrade, some amount of Feather River generation needs to be tripped with the South of Table Mountain 500 kV double line outage, but the tripping doesn't need to be as extensive as in the current RAS. Therefore, the ISO proposed to modify the exisitng RAS. Another alternative is to upgrade or replace the Table Mountain 500/230 kV transformer, but this alternative will be more expensive than modifying RAS and will not be necessary after all the South of Palermo 115 kV Reinforcement project is completed. Re-rate of the transformer proposed in the 2011-2012 transmission plan appeared not to be technically feasible according to the information received from PG&E. The major contributor to the difference in the results

			between the 2011-2012 and 2012-2013 Transmission Plan was the difference in the generation dispatch from South Feather River and Pit River modeled in the power flow cases. In the 2012-2013 Transmission Plan, this generation was higher. Even if in the 2012-2013 Transmission Plan this Category C overload was identified only in 2022, the report stated that it was possible that the Table Mountain 500/230 kV transformer may overload sooner than 2022 with high COI flow and low hydro generation in Northern California. The ISO will continue to monitor in the 2013-2014 Transmission Planning Process.
29	Barry Flynn & Meg Meal, City and County of San Francisco	I. The CAISO Should Delay Approval of Projects that Could Adversely Affect the City's Transmission Facilities Until Issues Related to Potential Impacts are Resolved. The City is concerned about two projects included in the CAISO 2012-2013 Transmission Plan that could adversely affect City facilities: a policy driven project in the PG&E service area: the Warnerville – Bellota 230kV Line Reconductoring project; and a reliability driven project in the PG&E service area: Series Reactor on Warnerville-Wilson 230 kV Line. The CAISO contends that these additions will not adversely impact the City's Warnerville substation and its Hetch Hetchy- Newark 230 kV/115 kV transmission system. However, it has not supplied the City with the analyses to substantiate this claim. The City requires additional information to confirm this assessment. In response to a recent City request for	The ISO has run analysis on flows in the N-S and S-N direction on the lines. For flows in the S-N direction and the system under the new configuration (after the installation of the reactor and reconductoring) performs better through the CCSF system, lowering slightly the flows on all CCSF facilities. The ISO will continue to work with the City to assess any potential impacts or generation dispatch conditions to ensure any additional appropriate mitigation measure are developed such as area operating procedures or insertion and bypassing of the reactor under specific system conditions. The ISO believes that it is appropriate proceed with the approval of the project and continue to work with CCSF on further

		more information, the CAISO provided the City a very brief verbal description of its analyses. Since the CAISO has not provided the City its detailed study results on the potential impacts to the City system, the City must itself verify that there will be no adverse impacts on its facilities, including if necessary, running additional independent studies under alternative City system representations. The City is interested in working cooperatively with the CAISO to fully and accurately determine the potential impacts of the proposed projects and, if adverse impacts are identified, develop appropriate mitigation measures. In the meantime, however, the CAISO should delay the approval of the proposed projects until the City and the CAISO have resolved issues related to the potential impact of these two projects on the City's transmission facilities.	area assessments.

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30	Barry Flynn & Meg Meal, City and County of San Francisco	II. The City Supports the Reconfiguration of the Potrero Substation and the Dead-Bus Energization of the Trans Bay Cable. The CAISO is proposing approval of two minor projects that would improve the reliability in the San Francisco peninsula. These projects are 1) the Potrero 115 kV Bus Upgrade: a reconfiguration of the Potrero Substation, and 2) and the Trans Bay Cable Deadbus Energization project: installation of back-up generation at Trans Bay Cable's Potrero Converter station that would allow the Trans Bay Cable to assist in re-energizing San Francisco in the event of a San Francisco wide black-out. The City supports both of these projects as relatively inexpensive projects that can improve San Francisco peninsula reliability in a relatively short time-frame. As discussed below, however, approval of these projects does not eliminate the need for a longer-term study of San Francisco peninsula reliability needs.	Thank you for the comments. The ISO is continuing to assess the reliability need of the San Francisco Peninsula. The ISO will continue to engage stakeholders through the process of assessing the need and risks to the area and the assessment of alternatives along with the potential urgency to address the concerns based upon the identified need assessment.

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31	Barry Flynn & Meg Meal, City and County of San Francisco	III. The City Supports a Long-Term Assessment of the Reliability Needs of the San Francisco Peninsula. In 2009, the City proposed the Newark –Alameda Point-Potrero project to improve the reliability of the San Francisco peninsula transmission system by establishing a transmission connection to the East Bay and minimizing San Francisco's reliance on the Peninsula transmission lines and the Martin substation. Last year, PG&E proposed a Moraga-Potrero 230kV project with a similar objective. The CAISO 2012-2013 Transmission Plan approves only the modest Potrero 115 kV Bus Upgrade and Trans Bay Cable Dead Bus Energization projects. While the City recognizes that the Potrero 115 kV Bus Upgrade and the Trans Bay Cable Deadbus Energization projects address reliability needs in the near term, a longer term assessment is needed to explore alternatives to provide for robust reliability in the San Francisco Bay Area over the long term. The CAISO has proposed to undertake a long-term assessment of the San Francisco peninsula as part of the 2013-2014 transmission planning process. The City strongly supports such an assessment and intends to participate actively in the process. The City urges the CAISO to work closely with the City as it undertakes the assessment as the City is a critical stakeholder.	Thank you for the comments. The ISO is continuing to assess the reliability need of the San Francisco Peninsula. The ISO will continue to engage stakeholders through the process of assessing the need and risks to the area and the assessment of alternatives along with the potential urgency to address the concerns based upon the identified need assessment.

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32	Barry Flynn & Meg Meal, City and County of San Francisco	IV. The 2012-2013 CAISO Transmission Plan Should Address Two Outstanding Reliability Issues that affect San Francisco. The 2012-2013 CAISO Transmission Plan fails to address two reliability issues the City has previously raised with the CAISO as set forth below. The CAISO should follow up on these issues and report back to the City and other stakeholders in time for consideration of these issues in the 2013-2014 CAISO transmission planning process. • In the CAISO reliability assessments of both 2011-2012 and 2012-2013, the CAISO identified a Category C overload on the Potrero-Larkin 115kV cable. No solution has been proposed to this problem. The CAISO should explore and report on solutions to this problem. • The 2012-2013 CAISO assessment identified Trans Bay Cable run-back schemes as a solution for several potential overloads. The CAISO should provide more detailed information on any existing TBC run-back schemes, any planned TBC run-back schemes and any proposed expansion of existing TBC run-back schemes.	The ISO identified a Category C overload on the Potrero-Larkin 115kV cable (SF-SP-T-05) and indicated that the Run Back Scheme of the TBC HVDC system may not be a viable solution; and therefore has explored other possible solutions. In draft plan the ISO recommended approval of the Potrero 115 kV Bus Upgrade Project (with expected in service year of 2017) to upgrade the Potrero 115 kV bus by removing the tie-lines to the retired Potrero Power Plant, moving the location of two elements, and adding two sectionalizing breakers. With the loss of CB 102, opening AX and AY1, it will overload AY2. With this new project, AX will remaining in service after the contingency and hence prevents the overload of the Potrero-Larkin 115kV cable. Run-back schemes of the TBC HVDC facilities as mitigation alternatives utilize the capability that the HVDC facilities and as such may be incorporated into other mitigation plans.

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33	Barry Flynn & Meg Meal, City and County of San Francisco	V. The CAISO Must Stem the Unjustified and Exponential Growth of the TAC, Rejecting Projects that Have Not Been Shown to be Justified and Revising its Unduly Stringent CAISO Deliverability Criteria. As the City has pointed out repeatedly, the TAC is rising exponentially. The TAC has gone up from $1.40/MWh in 2001 to $8.70/MWh in 2012. The CAISO recently updated its TAC forecast, which now indicates the current TAC rate will go up further to $13/MWh in 2022 taking into account the projects approved in the 2012-13 transmission planning cycle, which means a TAC increase of more than an order of magnitude in only two decades. While some of the TAC increases result from projects that are needed to maintain reliability or support the RPS, others projects that contribute to the increase are not adequately justified. The City has stressed to the CAISO repeatedly two problems, which persist in the 2012-2013 CAISO Transmission Plan. First, the CAISO includes in its modeling cases transmission projects that 1) have not been shown to be needed for reliability, 2) have not been shown to be cost-effective, and 3) have not received a certificate of public convenience and necessity (CPCN). Two key such projects are the Coolwater-Lugo and the West of Devers projects that together are projected to cost ratepayers $1.2 billion (if current estimates hold). As the City has previously noted, identification of network upgrade projects in the	The ISO anticipates an increase in TAC, and that all projects have to be properly supported. The Coolwater-Lugo project and West of Devers project are reflected in executed LGIAs. If the projects are not approved and do not move forward, it will not impact rates regardless of being included in the modeling in this transmission plan. Further, the ISO has made significant changes, referred to as GIDAP, to its generator interconnection process to provide better interrelationship between the transmission planning process and the generator interconnection process, with the expectation that future major network upgrades recovered from ratepayers will be identified through the transmission planning process. The last concern blends two separate issues – the deliverability methodology itself, and the need for renewable resources to be deliverable. The ISO is undertaking additional documentation and explanations of the admittedly complex deliverability methodology, as indicated in the market notice of March 5, 2013. As for the need for deliverability, please refer to the response to comments from CPUC staff above.

		context of generator interconnections requires more robust analysis by the CAISO to ensure that projects that will ultimately be paid for by ratepayers offer ratepayers commensurate benefits. Second, the CAISO's deliverability criteria are unduly stringent and improperly assume that all renewable projects should be fully deliverable, even though the RPS requirements relate purely to energy and not all RPS project developers seek full deliverability status. In assuming that all renewable projects should be fully deliverable, the CAISO is in essence building transmission to allow renewables to provide Resource Adequacy without undertaking a cost-benefit analysis to demonstrate that this approach is economically justified. There is no state policy that renewable projects should provide Resource Adequacy irrespective of economics. Before designating projects as policy driven solely to allow renewable projects to satisfy the Resource Adequacy needs, the CAISO should undertake a cost-benefit analysis to show that the proposed projects are economic. For example, the City opposes CAISO approval of the Lugo – Eldorado 500 kV Line Re-route and the Warnerville – Bellota 230kV Line Reconductoring projects, as "policy-driven" transmission projects without an economic justification.	

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34	Robert Jenkins or Orville Plum, City of Santa Clara, dba Silicon Valley Power (SVP)	The draft Transmission Plan finds the PG&E proposed project "NRS-Scott No. 1 115 kV Line Reconductoring" to be needed to mitigate identified reliability concerns. SVP strongly supports this project. Furthermore, as noted at the stakeholder meeting, SVP believes that the scope of work should include both circuits of this critical transmission line.The PG&E proposed project upgrades one of the two circuits of the approximately two-mile double circuit line 115 kV that terminates at Silicon Valley Power's Northern Receiving Station (NRS) and Scott Receiving Station (SRS). The CAISO's Annual Assessment indicates Category B loading violations for multiple single contingencies beginning in 2014. Additionally SVP has identified Category C contingencies that result in heavy overloads on this line. Such Category C contingency violations lend further support for the need to upgrade this facility. However it must be noted that the difference in loading on the two circuits is driven by the system configuration and switching on the 115kV system. To maintain the flexibility to balance load flows on the two 115kv lines and enhance overall system reliability, SVP desires to be able to close the 115kv bus tie breaker at NRS as determined by future operational needs. Closingthis breaker would potentially increase the flows on the NRS-Scott No. 2 115 kV circuit and reduce the effectiveness of solely reinforcing the No.1 circuit. This double circuit line has already been reconductored in 2005	The ISO will continue to review the identified overload concerns of the NRS-Scott No. 2 155 kV line in the 2013-2014 Transmission Planning Process and have further discussions with PG&E, SVP and NRS. The conditions identified relate to potential changes to operating practices of NRS facilities and contingencies on SVP facilities. The in-service date identified for the NRS-Scott No. 1 155 kV line reconductoring is based upon the date identified by the incumbent PTO as to when the reconductoring can be completed.

		with 477 ACSS conductor. As such, installing a higher capacity conductor may involve significant tower work. Additionally this line transverses a congested urban area and crosses Highway 101. Given the continued increase in line loading that has resulted in the need for new reinforcements so soon following the completion of the last upgrade and the challenging conditions surrounding this line, SVP highly recommends that the No. 2 circuit be upgraded at this time as well. Furthermore, given the overloads identified in the 2014 CAISO base case associated with this line, SVP recommends that the operative date for these upgrades be advanced to Summer 2014.Lastly, SVP has been working with PG&E concerning potential improvements to the SVP transmission facilities in this area. The transmission studies with PG&E support considering a higher emergency conductor rating than 1,500 amps. We look forward to continued cooperation with both PG&E and the CAISO in the final conductor selection and coordinating the upgrades to both systems.	
35	Wayne Stevens, Critical Path Transmission (February 12, 2013)	**Preliminary Comment 1** Critical Path Transmission ("Critical Path") has commissioned economic and reliability studies to evaluate the AV Clearview Transmission Project as an alternative to the Coolwater-Lugo LGIA Project (also referred to by the PTO as the South of Kramer Upgrade). These studies were conducted in parallel to those conducted by the CAISO and indicate significantly greater benefits than found by the CAISO. The AV Clearview	The ISO has conducted a review of the study supplied by Critical Path Transmission, and concluded that the study did not properly reflect current ISO planning standards. As a result, undue limitations were placed on generation in studying the Coolwater Lugo project that led to the additional financial benefits being incorrectly attributed to the AV Clearview project.

		Transmission Project can: provide between $267 and $302 million in total annual benefits to ratepayers – approximately five to seven times the estimated $44 to $54 million in total annual ratepayer benefits from the South of Kramer Upgrade; accommodate the interconnection and delivery of approximately three times the new renewable generation of the South of Kramer Upgrade (1,370 MW vs. 435 MW); provide significant reliability benefits the South of Kramer Upgrade cannot, including VAR support, relief to potential congestion on Path 26 and relieve longstanding N-2 contingencies in the Kramer area; can be in service two years before the South of Kramer Upgrade. The CAISO has agreed to review the technical studies commissioned by Critical Path. The primary purpose of these preliminary comments is to make the Comparative Economic and Reliability Study Final Report (attached) available for posting in order to provide the stakeholder community the opportunity to review and comment on the alternate Western Mojave transmission solutions.	Consistent with the ISO's analysis documented in the February 1, 2013 DRAFT 2012-2013 Transmission Plan, the ISO does agree that the AV Clearview project provides access and deliverability to additional renewable generation beyond the levels established for the area by the CPUC renewables portfolios developed for transmission planning purposes. The ISO's review of the supplied study report is provided as Attachment C to the comment matrix. As well, the ISO has provided additional comment on the study in the ISO's study results documented in Chapter 3 of the 2012-2013 Transmission Plan.
36	Wayne Stevens, Critical Path Transmission (February 12, 2013)	**Preliminary Comment 2** The 2012-2013 ISO Transmission Plan states on Page 1 that "no new major transmission projects are required to be approved by the ISO at this time to support achievement of California's 33%	Questions 1-7: The renewable generation that the Pisgah Lugo project would enable was not included in the CPUC portfolios designed to achieve the 33% RPS goals, and

		RPS goals given the transmission projects already approved or progressing through the California Public Utilities Commission approval process…" Table 1 (Elements of the 2012-2013 ISO Transmission Plan Supporting Renewable Energy Goals) of the Draft Plan indicates that both the Pisgah-Lugo and the Coolwater-Lugo are counted as part of the transmission elements that are required to meet the 33% RPS needs. Could the CAISO please provide the following information to stakeholders and also in the Final Transmission Plan: 1. How many megawatts of renewable generation are deliverable by the Pisgah-Lugo line and included in the calculation to meet the state RPS goal? 2. Are all of the megawatts interconnected by the Pisgah-Lugo line deliverable under N-1 conditions (without RAS or SPS)? 3. What is the status of the permitting of the Pisgah-Lugo line? 4. Given the delay in the CPCN application, is the 2017 in service date for Pisgah-Lugo still considered realistic by the CAISO? 5. Given that the developer of the original generation project that triggered the LGIA has gone into bankruptcy, the PPA has expired and the current project sponsor is facing challenging environmental permitting challenges, at what point does the CAISO intend to conclude that the LGIA is no longer viable and terminate the agreement for default? 6. If the Pisgah-Lugo line is deleted from the CAISO assumptions for meeting RPS goals, how many megawatts short of the 33% goal would the Transmission Plan be?	the Pisgah-Lugo project was not included as a planning assumption. Question 8: SPS is utilized within the parameters of the ISO Planning Standards to connect generation as part of the Coolwater-Lugo development. Question 9: SCE has indicated to the ISO that a 2018 in-service date is considered achievable.

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		7. How many megawatts of renewable generation are deliverable by the Coolwater-Lugo line and included in the calculation to meet the state RPS goal? 8. Are all of the megawatts interconnected by the Coolwater-Lugo line deliverable under N-1 conditions (without RAS or SPS)? 9. Given the delay in the CPCN application, is the 2018 in-service date for Coolwater-Lugo still considered realistic by the CAISO?	
37	Wayne Stevens, Critical Path Transmission (February 12, 2013)	**Preliminary Comment 3** Could the CAISO please provide the following information to stakeholders and also in the Final Transmission Plan: Given the extraordinary deviations of the actual cost of the TRTP and Devers-Colorado River projects from the PTO's original estimates, what is the CAISO's position regarding the use of the PTO's unusually modest Coolwater-Lugo 2010 cost estimate as a basis for comparison with the AV Clearview Transmission Project, whose cost estimate is based on recent input from qualified suppliers? Does the CAISO consider the Coolwater-Lugo cost estimate to be credible? Would the CAISO consider requesting updated Coolwater-Lugo cost information to be used in any comparative analysis?	The ISO has based its analysis on the cost estimates supplied by the various parties, and expects that cost estimates will be explored in the future CPCN proceeding.
38	Wayne Stevens, Critical Path Transmission (March 4, 2013)	**Comment 1 – Phasing of the AV Clearview Project** Based on a more complete understanding of the nature of comparative analysis conducted by the CAISO in determining inclusion of transmission elements in the Transmission Plan, Critical Path Transmission proposes to construct AV Clearview in phases, with the first phase (for inclusion in the 2012/2013 CAISO Transmission Plan) accomplishing every quantified benefit of	The ISO did not have adequate time to comprehensively review the latest proposal prior to finalizing its 2012/2013 Transmission Plan for the March Board meeting and our results in this plan will be limited to the alternatives initially submitted. However, we intend to review the latest proposal after the March Board meeting, and will make

		Coolwater-Lugo (and many more not currently valued) at a **significant savings to ratepayers.** **Additional benefits from subsequent phases** can be evaluated through the 2013/2014 Transmission Planning Process. The phases, as depicted on the next page, consist of the following: • Phase 1: Interconnection of the existing Windhub and Kramer substations via the new Yeager substation which includes a 640 kV HVDC back-to-back converter station as well as the 115 kV connection to the Edwards substation. • Phase 2: Interconnection of the DC converter of the Yeager substation via a 640 kV HVDC circuit to the new Tucker converter station / substation, which loops into the two existing Vincent-Lugo 500 kV lines. The advantages of this Phased approach are that AV Clearview can provide: • **A Lower Cost Alternative.** The ratepayers, the CAISO and the LGIA generator have an immediate option of a Coolwater-Lugo alternative (AV Clearview Phase 1). This alternative provides, according to CAISO analysis, 100% of the transfer capability required for the CPUC generation scenarios driving the current transmission planning cycle without requiring any special protection schemes or curtailment. [see Critical Path Transmission comments for full comment]	our conclusions and supporting analysis publicly available for consideration by interested parties. We note that the inclusion of a "back to back" HVDC converter at Yeager separating the AC lines to Windhub from the AC lines to Kramer is a new configuration. This and other details will have to be explored, and the ISO will look at these issues in preparing for the future CPCN proceeding as set out in the transmission plan. We also note the concerns expressed with cost estimates, and consider that these concerns are best explored in that same CPCN proceeding.

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39	Wayne Stevens, Critical Path Transmission (March 4, 2013)	**Comment 2 – Operations and Planning Benefits of AV Clearview** The AV Clearview Phase 1 elements consist of east-west 500 and 230 kV AC lines that will connect the Tehachapi and Kramer renewable resources areas (via the Windhub and Kramer substations respectively) and through a 640 kV HVDC link at the intermediary Yeager substation. The HVDC back-to-back link will provide operational control to an area with major renewable resource penetration and growth potential. The ability to manipulate real and reactive flows in an area with a high amount of variable generation will be a valued tool for CAISO system operators . Additionally, the link is close (electrical proximity) to the important Path 26 line. The project provides the ability to shift or transfer power away from Path 26 and on to the AV Clearview infrastructure, which provides congestion management or relief during periods of high north-south flows. The following discussion elaborates on those benefits of AV Clearview Phase 1 that are traditionally difficult to quantify, but deserve consideration in the CAISO comparative analysis. The benefits are broken down into two groups: operations/congestion management and RPS/planning. [see Critical Path Transmission comments for full comment]	Please refer to the response to comment 38.

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40	Wayne Stevens, Critical Path Transmission (March 4, 2013)	**Comment 3 – Miscellaneous Cost and Schedule Issues** The CAISO has not publicly provided the basis for the revised Coolwater-Lugo cost estimate of $480 million. SCE claims the cost of the Coolwater-Lugo Project is $542 million. SCE has given no indication that it plans to not build the 3rd transformer at Lugo included in the Coolwater-Lugo Project that the CAISO has deducted from the Coolwater-Lugo estimated cost. In fact, it has been reported widely in the industry that the 3rd transformer at Lugo is indeed required for Coolwater-Lugo to meet its anticipated interconnection requirements. Critical Path suggests that the SCE estimate of $542 be used as the base "estimate of record" for the Coolwater-Lugo Project. Critical Path also again suggests that the CAISO consider at least a confidence interval on the $542 million cost estimate in its comparative analysis of the Coolwater-Lugo Project and AV Clearview Phase 1, in light of the extraordinary variance between the actual cost of the both the TRTP and Devers-Colorado River projects from the PTO's original estimates. Finally, given the delay in the submission of the Coolwater-Lugo CPCN application to the PUC, Critical Path recommends that that the CAISO reevaluate the assumed timelines of the Coolwater-Lugo Project in its comparative analysis between the alternate solutions in the South of Kramer area.	Please refer to the response to comment 37.

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41	Liz Kirkley, Electric Department of the City of Lodi	Lodi appreciates the work PG&E and the CAISO have devoted to the study of the transmission infrastructure of the Central Valley. We are very supportive of the Lockeford-Lodi Area 230kV Development Project ("Project") as described in the Draft Plan. We are confident that the Project will mitigate NERC Category B & C overloads, Category B voltage deviations and Category C low voltages. This Project also provides a solution to capacity and reliability constraints on the transmission interconnection to Lodi's distribution system. The City of Lodi supports the timely implementation of the Project as envisioned.	Thank you for the comments.

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42	Sandeep Aroroa, LS Power	**(1) Harry Allen – Eldorado Transmission Project should be included in 2012/13 Transmission Plan and recommended for CAISO Board Approval:** CAISO's Economic Analysis identifies $637mm in economic benefits for CAISO ratepayers for a new 500 kV transmission line from Harry Allen – Eldorado ("Project"). These benefits are significantly greater than the capital cost for the project of $240mm and the estimated Total Revenue Requirement of $348mm, thereby resulting in a Benefit-to-Cost-Ratio ("BCR") of 1.83. This high BCR of 1.83 clearly meets the economic threshold per CAISO Transmission Planning procedures outlined in the CAISO Tariff & Business Practice Manual (BPM). It should be noted that the $637mm benefits can be considered conservatively low because it only considers Production Benefits (to CAISO ratepayers) and does not include several additional benefits that this Project offers to CAISO ratepayers, as noted in (2) below: Capacity benefits, Policy benefits, Operational Flexibility and offers a transmission planning solution for SONGS shutdown. In addition, if the Project is approved by the CAISO Board in March 2013 it could be brought on line as early as 2015 (two years sooner than CAISO's assumptions) resulting in earlier and more substantial economic benefits (estimated at $84 million per year or a total of $168 million over two years) not accounted for in CAISO's analysis. LS Power understands that despite meeting the tariff and BPM requirements, CAISO Management's draft recommendation is to	In the course of further reviewing the draft results included in the draft transmission plan, the ISO determined that the benefits for projects in the Desert Southwest may have been overestimated, primarily due to the treatment of greenhouse gas emissions relating to imports, and that the second project (Eldorado - Harry Allen), requires additional analysis and consideration of alternatives.

		not take this project to CAISO Board for approval in March 2013. LS Power disagrees with this recommendation and strongly encourages CAISO Management to seek CAISO Board approval for the Project. CAISO's studies show that this project brings much more economic benefits in the earlier years of operation; therefore delaying the approval process for this Project by one year will deny CAISO ratepayers tens of millions of dollars in savings – savings which cannot be recouped. Per CAISO's Draft Transmission Plan, it appears CAISO Management's reluctance in seeking Board approval is because of the confidential CAISO/NVE Joint studies. LS Power encourages CAISO to consider this alternate approval approach, rather than postponing the approval decision to next year's planning cycle. If not a complete Board approval, CAISO Management should at least seek a conditional approval for the Project at the March 2013 Board meeting, based on the Economic Studies results conducted by CAISO staff in the 2012/13 Transmission Plan. This conditional approval can be made subject to either CAISO staff's completion of the Joint Study or CAISO Management's completion of due diligence that the Project is still Economic under all study scenarios that are currently being analyzed under CAISO/NVE Joint Study. Delaying the approval to next year's Transmission Planning cycle will cost CAISO rate payers tens of millions of dollars and deprive CAISO of several additional benefits from the Project.	

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43	Sandeep Aroroa, LS Power	**(2) Additional benefits exist from Harry Allen - Eldorado line that are not captured in CAISO's Economic Analysis:** CAISO's economic analysis focused on only quantifying production benefits to CAISO ratepayers. This Project offers several additional benefits and hence the decision to send the Project to CAISO Board should be reviewed in totality. (a) Capacity Benefits: This Project will allow more Resource Adequacy Capacity to become available for CAISO markets, which will overall bring incremental Capacity Benefits to CAISO ratepayers. The Project will provide System RA benefits as the new transmission line will lead to a reduction of CAISO system resource requirements since out-of-state resources are less expensive to procure than in-state resources. (b) Policy Benefits: The Project offers several Policy benefits – (i) Most of this Incremental Capacity can potentially be "Flexible Capacity" which CAISO requires for 33% RPS Integration, (ii) The new transmission line will overall help reduce emissions in California by allowing less polluting out of state resources displace the in state resources and (iii) The new transmission line will allow more renewables to gain access to CAISO markets thereby helping drive down the renewable procurement costs and help California achieve its RPS goals. (c) Operational Flexibility: The new line will also improve overall Operational Flexibility by significantly relieving several existing operating constraints on various CAISO intertie paths including Path 66 (COI), Path 26 (Midway-Vincent) and Path 49 (East of River).	Please refer to the response to comment 42.

		(d) SONGS shutdown: CAISO studies show that new transmission will likely be needed in combination with more internal generation in the LA Basin area to plan for a SONGS shutdown scenario. This Project offers benefits by allowing for an increase in import capability into CAISO under SONGS shutdown scenario. With SONGS shutdown, several of the existing Category B & C contingencies, especially the ones where one element is a CAISO import line will become much more critical. Having another import line into CAISO, such as this Project will help address these contingency conditions. (e) Benefits for Delany – Colorado River line are higher with this Project in service: CAISO studies show that both Delany – Colorado River line and Harry Allen – Eldorado line projects are complementary and overall economic benefits to CAISO ratepayers are higher if both projects get built.	
44	Sandeep Aroroa, LS Power	**(3) CAISO should perform additional benefit analysis for the combination of Midpoint – Robinson Summit & Harry Allen – Eldorado line:** When CAISO presented Draft Economic studies in Dec 2012, the combination of Midpoint Robinson - Summit + Harry Allen – Eldorado line showed some economic benefits, but thesewere not enough to recoup the total cost. Since then CAISO has implemented several modeling enhancements which has resulted in significant increase in Harry Allen – Eldorado line benefits. CAISO has not rerun the combination study with these enhancements. LS Power recommends CAISO rerun the economic study with the recent modeling enhancements for this	Please refer to the response to comment 42.

		combination of projects to determine if it is economic. Also, LS Power asks that this project combination be rerun with SONGS offline, as was recently done for Harry Allen – Eldorado line. The combination in conjunction with ONLINE project (500 kV line from Robinson Summit – Harry Allen), which is under construction, brings a major parallel path to CAISO's PDCI, Path 26 & Pacific AC Intertie interfaces. Power flow studies show that this significantly offsets the flows on these interfaces, including reduction of about 700 MW for the Pacific AC Intertie. An assessment of these further benefits to the CAISO system should also be performed and quantified.We commend CAISO on the Economic Analysis conducted during the development of the 2012/2013 ISO Transmission Plan. Consistent with the Tariff and BPM, we encourage CAISO to approve Harry Allen – Eldorado to be included as an element in the plan for board approval. To the extent the benefits may be different due to the CAISO/NVE Joint Studies, it would be reasonable for Board approval of the project to be contingent on the outcome of such studies. It is not reasonable, however, to withhold or delay approval of an otherwise beneficial project.	

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45	Carl A. Zichella, Natural Resources Defense Council	The Plan could be improved by including an analysis of: **a.** How the recommendations from North American Electricity Reliability Council and Federal Energy Regulatory Commission in the aftermath of the September, 2011 southwest blackout can help address long term planning for a contingency in which both SONGS and/or Diablo Canyon may not be available help to address and implement, including i. Better coordination between BAAs ii. Better information sharing between BAAs iii. Better situational awareness across multiple BAAs. **b.** The Mid-term Study should also include an analysis of the impact of distribution-grid improvements and the potential for distributed generation zoning on bulk grid operations and renewable energy integration. In particular harmonizing CAISO needs and utility demand response protocols would provide a valuable system benefit that could open the door to a substantially greater contribution of demand response resources to meeting local and system needs. **c.** Moving up the in-service date for the Gates-Gregg transmission upgrade from 2022 to 2017. This would encourage rather than discourage renewable development being considered for the Westlands CREZ. **d.** Sizing proposed lines for the Central Valley to meet future reasonable expected renewable energy development needs. A 500 kV upgrade should be considered in addition to the proposed 230 kV proposal.	The following responses are provided to each of the specific comments below: (a) We'll be interested in the particular issues you feel could or should be addressed in the 2013/2014 plan development. (b) Demand response has been explored in both summer preparedness plans and in preparation for the 2013/2014 analysis refreshing and updating the nuclear contingency studies. (c) The water analysis identified the need for the Gates-Gregg 230 kV line in the 2023-2025 timeframe as indicated. The ISO notes that an earlier in-service date can be rationalized due to the benefits the project provides, but the 2022 date was based on the expectations of the incumbent PTO regarding timing. This can be explored in more detail in the competitive solicitation process. An earlier date will be sought if viable. (d) The Central California analysis has thoroughly examined drivers for transmission under current load forecast and state policy objectives. The ISO will revisit the analysis if any of the underlying assumptions in this year's analysis change materially.

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46	David Kates, The Nevada Hydro Company	Nevada Hydro has reviewed the Draft Plan, and participated in the February 11, 2013 stakeholder meeting (Meeting). Nevada Hydro noted that the CAISO presented, as an important element of the Draft Plan, the system reliability implications for Southern California's future without the San Onofre Nuclear Generating Station (SONGS). Like others, Nevada Hydro was shocked that SONGS has apparently been so mismanaged and that ratepayers are now facing huge bills and risk of outage while officials determine what to do about the facilities and how the grid is to be managed in the interim. However, Nevada Hydro was disappointed to see that once again, the CAISO has ignored Nevada Hydro's two proposed projects; projects that the CAISO knows (or should know) could have alleviated this disastrous situation.So, rather than simply providing its comments on this Draft Plan, Nevada Hydro once again is required to reiterate that: 1. The CAISO has been well aware of the vulnerability of this region for years, a situation now magnified by the loss of SONGS; 2. The CAISO has studied Nevada Hydro's projects and is (or should be) aware of the benefits they provide, particularly in the situation we are now facing; and, 3. The CAISO would apparently feign ignorance and let the region go dark rather than work cooperatively with Nevada Hydro on these cutting-edge projects, which will not only dramatically enhance the reliability of the grid in Southern California, but which will also provide a state-of-the art resource to facilitate the integration of large amounts of new renewable resources for use in meeting Southern California's energy and capacity needs.	The ISO's study presented in the special study section of the draft transmission plan sets out the basis for the studies. These studies indicate the range of options without specifying specific resources, which would ultimately be competitively procured, to meet the mid term and long term needs of the system without SONGS. However, the ISO agrees that Nevada Hydro's projects are reasonable candidates to be considered as further analysis is performed on specific alternatives.

		Moreover, with the permanent shutdown of SONGS, which in the light of recent revelations appears likely to occur, the benefits of Nevada Hydro's proposed projects can be demonstrated to be far greater than was the case even a year ago, when the future of SONGS was not in question. Therefore, these comments will describe for the CAISO's benefit (once again) Nevada Hydro's projects, their present status, and the benefits they can provide to the grid, particularly with the loss of SONGS [please refer to Nevada Hydro's comments document for additional comments].	

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47	Mark Higgins, Pacific Gas & Electric	**Nuclear Generation Backup Plan Studies** PG&E respectfully submits the following comments and request for changes to Nuclear Generation Backup Plan Study report (Executive Summary and Section 3.5): • While Section 3.5 of the Plan includes details of the study assumptions and the need for a more complete assessment, the Executive Summary section does not capture the need for additional studies beyond transmission planning reliability study. PG&E requests that a short description of the need for additional studies be included in the Executive summary. Please refer to Appendix A for PG&E's suggested addition to Executive Summary section [refer to PG&E's comments for full comment]. • Since the objective of the CAISO study was to evaluate the potential transmission reliability concerns in the absence of DCPP, PG&E requests the CAISO to remove the reference to the "utilities' relicensing assessments" as an objective of the study (refer to Section 3.5.1 of the Plan). Studies required to support DCPP relicensing efforts are outside the scope for the CAISO's studies. The proposed changes to address the above comments are included in Appendix A of this document.	The ISO has addressed this concern in the revised draft transmission plan.

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48	Mark Higgins, Pacific Gas & Electric	<u>Lockeford-Lodi Area 230kV Development</u> PG&E agrees with the CAISO's reliability assessment and the need for a project in the Lockeford-Lodi 60 kV area to address reliability concerns. However, PG&E does not support the proposed plan of service detailed in the Draft 2012-2013 Transmission Plan. As referred to in the Draft 2012-2013 Transmission Plan, the "PG&E Lockeford-Lodi Area Study: Alternative 2" project submittal by the City of Lodi includes the following scope: 1. Construct a 230 kV Double Circuit Transmission Line from Eight Mile substation to Lockeford substation; 2. Construct a new 230 kV bus at Industrial substation and loop one of the new Eight Mile-Lockeford 230 kV lines into this bus.This alternative would tie the Eight Mile and Lockeford 230 kV systems together and would require a thorough analysis of steady state and transient stability issues. Additionally, the CAISO refers to a PG&E submitted Special Protection Scheme (SPS) project on page 64 of the draft Transmission Plan. As PG&E has not formally submitted any SPS projects for this, please clarify what SPS project the CAISO is concurring with. **PG&E Preferred Alternative to the CAISO Recommended Proposal** On a conceptual basis, PG&E prefers the option to install two new	The Eight Mile and Lockeford 230 kV systems are not widely isolated systems. These two corridors originate from common point at Rio Oso in north and are connected at Tesla-Bellota about 10 miles south from Lockeford. Connecting these two corridors at Lockeford doesn't create any significant change in the overall 230 kV flow in Rio Oso-Tesla-Bellota loop. The ISO has conducted steady state analysis that did not identify this project to cause any reliability concerns. In addition the ISO performed transient stability analysis and did not find any transient stability criteria violations. Also there were no noticeable differences in response from nearby hydro units between pre and post project cases. The alternative of installing two new 230 kV circuits from Lockeford provides less reliable service to the City of Lodi if build as DCTL. Two separate circuits in different right-of-way is not expected to have significant cost difference compared to the recommended alternative. Furthermore, the PG&E preferred alternative will have much lower load serving capability due to week voltage at Lockeford and also doesn't support future growth in the Stagg area 60 kV system. The reference of SPS on page 64 is for Kasson SPS that follows the section and not for the Lodi project. The ISO

		230 kV circuits from Lockeford Substation to Industrial (see Figure 1 below). This is a more straight forward solution to the identified reliability concerns. [figure in PG&E comments] By serving the Industrial substation from one source, Lockeford Substation, this alternative eliminates PG&Es concerns with tying the Eight Mile and Lockeford 230 kV substations.General Electric Positive Sequence Load Flow (GE-PSLF) modeling data for this conceptual alternative is available upon request.	will clarify this in the revised draft of the transmission plan to make it clearer.
49	Mark Higgins, Pacific Gas & Electric	<u>Mosher 60 kV Transmission</u> The Hammer-Country Club 60 kV Line serves approximately 14,000 customers, or 70 MW, in San Joaquin County of Stockton Division. This line feeds the majority of these customers radially through UOP, Mettler, and Mosher Substations. Mosher Substation alone serves approximately 12,000 customers, or 55 MW. An outage of the Hammer-Country Club 60 kV line, a NERC Category B contingency, would result in the interruption of all 12,000 customer served at Mosher Substation. PG&E's proposed Mosher 60 kV Transmission Project would create a second circuit to improve service reliability. The scope of work for this project is: • Reconductor 11.5 miles of the Lockeford No. 1 – 60 kV Line• Add two circuit breakers and SCADA at Mosher • Operate Mosher circuit breaker to Lockeford normally open and	The overload of the Lockeford #1 60 kV line is due to the automatic pick-up of the radially served Mosher substation following the loss of the normal source, Hammer-Country Club 60 kV line. Disabling the automatics at Mosher will mitigate the overload. The project is also evaluated for sufficient back-up tie per ISO Grid Planning Standards "Planning for New Transmission versus Involuntary Load Interruption Standard" and was found that the back-up tie, Lockeford #1 60 kV line, has sufficient capacity to serve 50% of the yearly peak load at Mosher substation and to accommodate the load 80% of the hours in a year. Furthermore, the proposed project is not sufficient to normally serve Mosher substation from two sources. As such, Mosher substation will remain radially served even after the project. Additionally, ISO believes that other possible alternatives need to be looked at in comparison to the proposed Mosher 60 kV

		automatically restore substation following Hammer-Country Club 60 kV Line outage. While this project was not included in the Draft 2012-2013 Transmission Plan, in accordance with the CAISO's Transmission Planning Standard section 6 item 3, PG&E provided Benefit to Cost Ratio (BCR) calculations for this projects which exceeded 1.0 BCR. PG&E recommends that the CAISO approve this project in the 2012-2013 Transmission Plan to improve reliability to Mosher substation.	Transmission project including, but not limited to, additional 60 kV line from Stagg, utilizing 60 kV lines from Lockeford that currently serve Lodi, new 230/60 kV substation around Metller-Mosher area to off-load Mosher substation. The ISO will continue to assess these alternatives in the 2013-2014 Transmission Planning Process.
50	Mark Higgins, Pacific Gas & Electric	<u>Valley Springs No.1 60 kV Line Reconductoring</u> The Valley Springs No. 1 60 kV Line is located in Calaveras County, Stockton Division. This line normally serves New Hogan Powerhouse and Corral distribution substation. It also serves Linden distribution substation following an outage of the Weber – Mormon Jct 60 kV Line. Including Linden, the Valley Springs No. 1 60 kV Line serves approximately 40 MW, or 8,600 customers. When Linden Substation is being served by the Valley Springs No. 1 60 kV Line, the line will be overloaded by 137%. The Valley Springs No. 1 60 kV Line Reconductoring project would increase the line capability and eliminate the overload. The scope of work for this project is: • Reconductor 12.8 miles of the Valley Springs No. 1 60 kV Line from Valley Springs to Corral.	The overload of the Valley Springs #1 60 kV line is due to the automatic pick-up of the radially served Linden substation following the loss of the normal source, Weber-Mormon Jct. 60 kV line. Disabling the automatic pick-up at Linden will mitigate the overload. The project is also evaluated for sufficient back-up tie per ISO Grid Planning Standards "Planning for New Transmission versus Involuntary Load Interruption Standard" and was found that the back-up tie, Valley Springs #1 60 kV line, has sufficient capacity to serve 50% of the yearly peak load at Linden substation and to accommodate the load 80% of the hours in a year. Furthermore, the proposed project is not sufficient to normally serve Linden substation from two sources. As such, Linden substation will remain radially served even after the project. Furthermore, the normal overload on the Weber-Mormon Jct. 60 kV line is

		While this project was not included in the Draft 2012-2013 Transmission Plan, PG&E recommends that the CAISO approve this project in the 2012-2013 Transmission Plan to improve reliability to Linden substation.	only in 2022. The line rating on this line is limited by equipment rating which can be replaced at lower cost for the line to have full conductor rating. In addition no supporting information has been provided per ISP Planning Standard, Section VI – 4 demonstrating the reduction of load outage exposure through a BCR above 1.0. The ISO will continue to assess in future planning cycles with respect to satisfy reliability standard requirements or submissions to support the reduction of load outage exposure.
51	Mark Higgins, Pacific Gas & Electric	<u>San Francisco Peninsula Reliability Concerns</u> The San Francisco Peninsula reliability concerns identified by the CAISO are inclusive of the entire City and County of San Francisco, not just "in supply to the downtown San Francisco area". PG&E requests that the CAISO revise this paragraph accordingly. To mitigate reliability concerns in the San Francisco Peninsula area PG&E submitted the Moraga-Potrero 230 kV Line project in the 2012 request window. PG&E supports the CAISO's intention to continue to assess the risk and consequences of an extreme event on the San Francisco Peninsula. PG&E urges the CAISO to engage stakeholders and complete the necessary assessment including PG&E's proposed Moraga-Potrero 230 kV Line Project proposal as part of this 2012-2013 Transmission Planning Process (TPP).	Thank you for the comments. The ISO is continuing to assess the reliability need of the San Francisco Peninsula. The ISO will continue to engage stakeholders through the process of assessing the need and risks to the area and the assessment of alternatives along with the potential urgency to address the concerns based upon the identified need assessment.

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52	Mark Higgins, Pacific Gas & Electric	Trans Bay Cable Dead Bus Energization Project PG&E supports the Trans Bay Cable Dead Bus Energization project as described in the draft Transmission Plan. However, this project alone is inadequate to fully restore all customers in the City and County of San Francisco following an extreme event. PG&E believes its proposed Moraga-Potrero 230 kV Line project is needed to provide a total solution.	Thank you for the comments. As indicated above, the ISO will continue assess the reliability needs of the San Francisco Peninsula.
53	Mark Higgins, Pacific Gas & Electric	City of Palo Alto Supply The City of Palo Alto supply reliability concerns have not been resolved in the draft Transmission Plan. PG&E understands the CAISO is waiting on additional "pertinent information" to complete its analysis. PG&E urges the CAISO to complete its analysis as soon as possible to allow the necessary upgrades to be permitted and constructed in time to meet NERC reliability standards.	Palo Alto submitted a mitigation plan through the request window indicating their intention to proceed with upgrades on their system to address the identified reliability concerns. The ISO will continue to work with the PG&E and the City of Palo Alto to assess any interactions between their system and the ISO controlled grid. In addition, the ISO recommends PG&E to install an SPS at Palo Alto substation to address the reliability constraints in the interim and has updated the draft plan to reflect this.
54	Mark Higgins, Pacific Gas & Electric	Amazon A100 Data Center PG&E understands the CAISO concurs with PG&E's proposed Amazon A100 Data Center project to connect a PG&E customer. PG&E urges the CAISO to indicate its concurrence in the 2012-2013 Transmission Plan.	The ISO has clarified this in the revised draft of the transmission plan.

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55	Mark Higgins, Pacific Gas & Electric	Kearney-Kerman 70 kV Line Re-conductor The Kearney-Kerman 70 kV line is located in Fresno County, and primarily serves Kerman substation which serves about 6,300 customers. While this project was not included in the Draft 2012-2013 Transmission Plan, the Kearney-Kerman 70 kV line reconductor project is needed to reliably serve customers at Kerman Substation. The scope of work for this project is: • Reconductor 11 miles of the Kearney-Kerman 70 kV Line PG&E recommends that the CAISO approve this project in the 2012-2013 Transmission Plan to improve reliability to Kerman substation.	The proposed project was not recommended for approval as there were no constraints identified with respect to satisfying the Reliability Standard requirements or the ISO Planning Standard Planning for New Transmission versus Involuntary Load Interruption Standard. No supporting information has been provided per ISP Planning Standard, Section VI – 4 demonstrating the reduction of load outage exposure through a BCR above 1.0. The ISO will continue to assess in future planning cycles with respect to satisfying reliability standard requirements or submissions to support the reduction of load outage exposure.
56	Mark Higgins, Pacific Gas & Electric	**Chapter 3: Special Reliability Studies and Results** 3.3: Central California Study PG&E supports the CAISO's proposed solutions to address system reliability for the Greater Fresno Area and provide local and statewide economic and policy driven benefits. PG&E also recommends further study in the 2013-2014 planning cycle to evaluate the potential economic benefit of constructing the Gates-Gregg 230 kV line with both circuits initially strung versus the proposed single circuit.	The need for the second circuit of the Gates-Gregg 230 kV line was not identified within the planning horizon. In addition deferring the stringing of the second circuit, as indicated in the transmission plan, allows for flexibility for the installation of the circuit at a potential future switching station at Raison City Junction and then from Raison City Junction to either the proposed North Fresno 230/115kV station or the existing McCall station.

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57	Mark Higgins, Pacific Gas & Electric	**Chapter 4: Policy Driven Need Assessment** 4.2.5: Southern PG&E Policy Driven Deliverability Assessment Results and Mitigations PG&E appreciates the CAISO management's intent to approve policy driven mitigation elements costing less than $50 million following the February 11, 2013 stakeholder meeting, and the CAISO's continued work to better integrate the generator interconnection and transmission planning processes for the benefits of California's ratepayers. We respectfully encourage the CAISO to use its best efforts to provide updated interconnection study results to interconnection customers as quickly as possible due to the approval of these policy driven elements.	The ISO has provided addendum's to the individual reports for the generator interconnection projects that identified mitigations plans consistent with the approved projects that were less than $50 million in the transmission plan.
58	Christopher T. Ellison on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**II. Restrictions on Planning Alternatives to the CPUC and CEC Resource Portfolio Recommendations** In response to Economic Planning Study requests that were previously submitted by Zephyr and TransWest Express, LLC, the CAISO indicated in the Draft Plan that the scope of transmission projects considered is in part dependent on renewable portfolios that are originally identified by the CPUC and the CEC. 2 In other words, the CAISO determined that it could not perform the economic studies that were requested by Zephyr due to the fact that the underlying out-of-state resources were not identified in the renewable portfolio standard model implemented by the CPUC and CEC at the outset of the 2012/13 TPP. In comments previously submitted during the CAISO's 2012/2013 TPP, Zephyr and Pathfinder expressed concerns with the	The portfolios developed by the CPUC are developed predominantly for the purpose of transmission planning; it is incorrect to assume that the portfolios are developed exclusively for the purpose of supporting decisions in the LTPP process without consideration of their use in the transmission planning process. As the CPUC-led process is not restricted to developing portfolios strictly for application in LTPP process but are also meant to consider the broader transmission planning needs, we continue to encourage Pathfinder and Zephyr (and others) interested in developing out of state resources to participate more meaningfully in the CPUC process. A duplicative process led by the ISO will, in the

		CAISO's reliance on a limited set of resource portfolios for its transmission planning purposes, as the resource portfolios developed by the CPUC and CEC may not reflect the inherent uncertainty associated with the location where renewable generation resources may be developed over the long-term planning cycle. The CPUC's Long- Term Procurement Plan ("LTPP") proceeding is not employed for transmission planning purposes, but is rather designed to approve plans for utility purchases of energy in amounts adequate to meet the demands of customers. Transmission planning should be focused on the needs of the regional wholesale marketplace, in which actual generation outcomes aredetermined from a competitive process that includes both in-state and out-of-state resources. As such, these scenarios should have been subject to more transparent review and comment to ensure that the CPUC/CEC recommendations serve transmission planning purposes, versus merely procurement planning purposes. Based on comments submitted by stakeholders, requests for Economic Planning Studies provide a meaningful venue and opportunity for the CAISO to consider and study a more diverse set of resource development options than those defined by the CPUC and CEC, and otherwise adopted as part of the Unified Planning Assumptions and Study Plan. Requests for Economic Planning Studies should provide for more scenario planning and not be restricted to the assumptions and study approach defined in the Unified Planning Assumptions and Study Plan. This will	ISO's view, detract from the successful coordination with state agencies that the planning process is enjoying and lead to greater uncertainty and inefficient use of technical resources.

		assist in allowing the CAISO to conduct more robust transmission planning that considers potential resource development scenarios and their potential impacts on the transmission system controlled by the CAISO. Additionally, consideration of a broader range of generation scenarios supports the development of a more robust and flexible transmission system, ensuring reliability at the lowest total cost to ratepayers. To ensure that the TPP provides for the necessary flexibility in transmission planning that can accommodate the inherent uncertainty in the development of new generation resources, the TPP should not be confined to a narrow set of scenarios for resource development. In particular, the TPP scenarios should have been expanded to include the contribution of out-of-state resources, which are underrepresented in the current set of scenarios actually considered. CAISO's objective with regards to the TPP should be to promote interstate competition for wholesale power in order to produce the lowest delivered cost of renewable power. The CAISO's Draft Plan is heavily influenced by the original portfolio recommendations as provided by the CPUC and CEC, and while these recommendations should certainly be considered, the CAISO is not limited to consideration of these limited portfolios. The absence of certain resources in the original portfolio recommendations and the continued consideration afforded to the CPUC and CEC resource portfolios, even in the	

		Economic Planning Studies aspect of the TPP, preclude the CAISO from conducting more robust transmission planning studies than that supported by the Unified Planning Assumptions and Study Plan. In effect, a self-fulfilling prophecy is created in which the resources not identified in the original portfolio recommendations cannot be studied, even through a request for an Economic Planning Study. The CAISO should reevaluate the criteria for evaluating Economic Planning Studies to ensure that adequate opportunities exist to consider the merits of resources that are not included in the originally recommended portfolios. Such an approach would better reflect the dynamic nature of renewable resource development and increase the likelihood that the CAISO's transmission planning studies reflect the necessary flexibility in the transmission system to accommodate a range of renewable resource development.	

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59	Christopher T. Ellison on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**III. Retain Sensitivity Analysis for the High Out-of-State Import Scenario** The Draft Plan provides a brief summary of the CAISO's sensitivity analysis to study a High Out-of-State Import Scenario and identifies key contingencies and violations that occur on the 500-kV transmission system within California. Although the CAISO has explained that the sensitivity analysis was for informational purposes only, Pathfinder and Zephyr are pleased that the CAISO undertook the study as it provides important information to better understand and evaluate the transmission impacts of developing and importing out-of-state renewable resources to help California meet its renewable and environmental goals. Furthermore, Pathfinder and Zephyr believe that the CAISO's High Out-of-State Scenario sensitivity analysis represents a great starting point in establishing a more meaningful and robust analysis in future cycles of its TPP. This aspect of the CAISO's overall TPP should be retained and expanded upon to provide additional detail in the future.	Thank you for the comment – this should be provided as input into the development of the 2013/2014 study plan.

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60	Christopher T. Ellison on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**IV. Need for Meaningful Engagement with the CAISO on Development and Implementation of Resource Portfolios** This cycle of the CAISO's TPP provided little opportunity for stakeholders to have meaningful engagement on the development of the generation scenarios and resource portfolios that were prepared by the CPUC and adopted by the CAISO as part of the Unified Planning Assumptions and Study Plan. Recognizing the importance of the resource portfolios in establishing the foundation for the CAISO overall transmission planning studies, TPP itself should provide adequate time for stakeholders to review and comment on the CPUC's resource portfolios. Since the CAISO is responsible for the transmission planning function for its Balancing Authority Area ("BAA"), the CAISO's TPP should provide the CAISO and its stakeholders with a chance to modify the recommended resource portfolios developed by the CAISO. This is particularly relevant during the years when the CPUC does not address Long Term Procurement Plans ("LTPP") for California's investor-owned utilities.	As noted above, the CPUC process developing renewable portfolios is for the purpose of supporting the ISO's transmission planning process; it would be duplicative and wasteful to run two separate and parallel processes.

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61	Christopher T. Ellison on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**V. Conclusion** Pathfinder and Zephyr recognize and appreciate CAISO's efforts throughout the 2012/2013 TPP process to provide stakeholders an opportunity to review and comment on the planning process, and Pathfinder and Zephyr appreciate the CAISO's consideration and efforts to respond to our comments. However, Pathfinder and Zephyr believe that additional measures should be taken to ensure prudent transmission planning that will encourage the transmission development that provides optimal reliability, flexibility, and economic benefits to California in the long-run. These comments on the Draft Plan, and our comments throughout the 2012/2013 TPP process, have been aimed to assist the CAISO in establishing a framework for transmission system development that ensures system reliability at the lowest total cost to ratepayers. Accordingly, Pathfinder and Zephyr encourage CAISO to expand the planning alternatives to the CPUC and CEC portfolio recommendations, and to give such alternatives the same weight afforded to the CPUC/CEC recommendations.	The ISO encourages Pathfinder to provide these comments into the development of future generation portfolios and ISO study plans.

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62	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	1) SCE Supports CAISO's Efforts for Summer 2013 and 2018 SCE appreciates the CAISO's action to approve SCE's proposed projects for summer 2013 whose costs are estimated to be under $50 million (Barre–Ellis 230 kV reconfiguration, 80 MVAR capacitor banks at Johanna and Santiago 230 kV substations, and 160 MVAR capacitor banks at Viejo 230 kV substation). SCE is moving forward expeditiously on these projects. In addition, SCE supports the CAISO seeking approval for SONGS Static VAR Compensator (400 to 500 MVAR) at March Board of Governors Meeting pending the status of Huntington Beach synchronous condensers with an objective to meet a 2014 operating date, although that 2014 operating date is now unlikely.	Thank you for the comment.

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63	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	2) Coolwater-Lugo Remains the Most Cost Effective Project The following is a summary of SCE's key points regarding ZGlobal's "Comparative Economic and Reliability Study Final Report" (AV Clearview and Coolwater-Lugo projects) that was included in Critical Path Transmission's comments submitted to the CAISO on February 11, 2013. • Windhub Cannot Accommodate AV Clearview without Substantial Additional Costs and AV Clearview Project would create Significant Short Circuit Duty Concerns – ZGlobal's Report assumes that the AV Clearview Project can be interconnected at SCE's Windhub Substation. Based on current generator interconnection requests, there are no open positions at Windhub to accommodate the interconnection of the AV Clearview Project. Furthermore, the connection of the two proposed transmission lines to Windhub under the AV Clearview Baseline alternative would result in significant short-circuit duty issues at Windhub Substation. Specifically, the alternative would exceed SCE's maximum open-air short circuit duty design at Windhub Substation necessitating significant and costly actions, such as the complete demolition of the existing 220 kV switchrack and the construction of new Gas Insulated Switchgear (GIS) 220 kV facilities with increased rating. Upgrading Windhub for short-circuit duty issues would require extremely long-term curtailment of recently interconnected generation resources. These curtailments could potentially cause significant monetary losses associated with the lack of renewable production adversely	Thank you for the comments. The ISO will note the concern regarding short circuit levels in its report included in the 2012/2013 transmission plan. Regarding the other stated concerns, the ISO has reviewed the report submitted by Critical Path Transmission in this process a preliminary stakeholder comments, and has provided its concerns as responses to the comments submitted by Critical Path Transmission.

		impacting the RPS target goals, as well as significant cost of unnecessary work to convert the station to GIS. .• ZGlobal Used Incorrect SPS Assumptions, Resulting in Misstated Deliverability for Coolwater-Lugo 220kV Project - ZGlobal's study incorrectly assumed that SCE's SPS for the loss of the Lugo-Jasper 220 kV line would only trip 136 MW of generation in the Kramer area. Consistent with the CAISO's SPS guidelines, SCE's SPS is able to trip up to 1,150 MW of generation and thus the Coolwater-Lugo 220kV project provides for the delivery of approximately 1,000 MW of renewable generation, not 435 MW. • CAISO Reliability Criteria is met with Coolwater-Lugo 220kV Project - ZGlobal claims that the AV Clearview project provides "significant reliability" benefits that Coolwater-Lugo 220kV cannot provide. However, ZGlobal's assertion ignores the obligation of the CAISO to identify the least cost solution to meet reliability criteria. Pursuant to Section 24.4.6.2 of the CAISO Tariff, the CAISO is obligated to identify projects needed to ensure system reliability and consider lower cost alternatives to meet those needs. Conversely, the CAISO tariff does not provide an open-ended invitation for the CAISO to approve projects (resulting in higher costs to customers) in order to meet a reliability standard beyond what is required by Applicable Reliability Criteria. The CAISO's studies have shown that the NERC, WECC and CAISO Reliability Standards are met with the Coolwater-Lugo 220kV	

		project. The CAISO should ensure reliability requirements are met at a reasonable cost. • Unfounded Path 26 Congestion Relief Benefits - ZGlobal states that the AV Clearview project provides potential congestion relief benefits on Path 26. However, the AV Clearview Project does not change the Path 26 rating, thus the AV Clearview Project itself does not provide congestion relief. If ZGlobal's assertion is that the AV Clearview Project allows additional dispatch of generation in South of Path 26, thereby lowering the cost of relieving potential congestion on Path 26, the same "benefit" would be attributable to the Coolwater-Lugo 220kV project as well. • Conclusion – Despite the issuance of ZGlobal's additional analysis, the CAISO's original conclusion still holds – "the ISO found that the AV Clearview project did not produce economic transmission benefits that would offset the higher costs of the project relative to the Coolwater-Lugo 230 kV project costs." There has not been sufficient justification to revise the course approved by the CAISO over two years ago in the generator interconnection process and codified through a signed Large Generator Interconnection Agreement . That course is to continue pursuing the Coolwater-Lugo transmission projects as any course changes at this stage could introduce uncertainty for this project.	

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64	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	3) Delaney-Colorado River ProjectSCE appreciates the additional information provided by the CAISO as part of its stakeholder process. While SCE is still in the process of reviewing the economic analysis for the Delaney-Colorado River project, SCE would appreciate the CAISO's response to the following questions: • Backloading of Benefits - It appears that approximately half of the overall benefits of the project are derived from escalation of last year (i.e., 2022) benefits 45 years into the future. Please see Appendix A below which shows that half of the benefits are from future escalation of the 2022 benefits. Given the uncertainty of variables like gas price forecasts, distribution generation penetration levels, demand response, other environmental factors, SCE requests the CAISO to confirm how much of the benefits are from the time period 2022 and beyond. • What is the generation mix in the WECC with and without the project? How much of the generation being imported to California is fossil versus renewable generation? • What has been modeled for the split of renewables in California and out of California? It appears that CAISO's production simulation results include approximately 20 TWH less generation for the California in-state RPS according to CAISO assumptions. SCE would appreciate clarification of this inconsistency, as an additional 20 TWH of California RPS could significantly reduce	Please refer to the response to comment 13.

		future imports. • Path 49 and 46 Rating Increases Due to the Devers-CR Project - SCE began the WECC 3-phase rating process for the California portion of DPV2 (i.e. Devers-CR Project) to achieve 300 MW increase on Path 49 and 577 MW increase on Path 46, which is expected to be completed by mid-year 2013. Did the CAISO assume these rating increases in the economic analysis?	
65	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	4) Eldorado-Lugo Upgrades Require Additional Studies and Consideration of Additional Alternatives Before Obtaining Board Approval Additional studies and consideration of potential alternatives to the Draft Transmission Plan's recommendations should be pursued before CAISO seeks Board approval of the policy upgrades needed to accommodate the deliverability of additional renewable generation. • Lugo-Eldorado Series Cap and Terminal Equipment Upgrade - SCE believes that an additional reliability related study must be conducted before this project can be recommended for Board approval. This upgrade was originally studied through the interconnection study process which focused strictly on thermal loading issues. Since the line would be operated at full compensation (70%), subsynchronous resonance (SSR) studies are required to evaluate potential impacts to generators and transmission equipment and systems. SCE requests that	The ISO considers that approval of these projects is necessary both to provide sufficient support for additional study expenditures by SCE, and also to provide industry certainty regarding the treatment of these upgrades as the parallel generation interconnection studies are finalized for Clusters 3 and 4 and LGIAs are negotiated. The ISO notes that both upgrades have also been identified as mitigations in Cluster 3 and 4 generator interconnection study results. Regarding the Lugo-Eldorado Series Cap and Terminal Equipment Upgrade, we expect that these studies can be conducted with more certainty once approval is obtained. Further, the ISO recognizes that detailed engineering and siting is rarely if ever completed when projects are approved at a planning stage, and detailed engineering and siting considerations can always necessitate

		additional time be granted to allow for these studies and ensure that these upgrades would be installed reliably. In addition to completing the studies, SCE needs to further evaluate whether a 2016 operating date for this project is feasible. • Reroute Lugo-Eldorado 500kV Line – SCE's believes that there are alternatives to rerouting the Lugo-Eldorado 500 kV line that should be further studied by the CAISO prior to the Board approving this project. SCE believes these alternatives would meet the same objective, have a shorter lead time, have less of an environmental impact, and could potentially be completed at a lower cost. SCE recommends these projects be moved to the CAISO 2013/14 Transmission Planning study to allow time to perform the additional evaluation.	revisiting a need if the original project is no longer viable. The ISO will look forward to continuing to work with SCE on these initiatives as we move forward.

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66	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	Detailed Comments on ZGlobal's Analysis SCE offers the comments below after reviewing the AV Clearview Analysis performed by ZGlobal and submitted along with Critical Path Transmission's comments submitted to the CAISO on 2/11/31.l. Ratepayer Benefits Assertion: Provide between $267 and $302 million in total annual benefits to ratepayers – approximately five to seven times the estimated $44 to $54 million in total annual ratepayer benefits from the Coolwater-Lugo 220kV Project; Response: The basis for ZGlobal's estimated benefits is unclear: Is the ZGlobal Economic Benefit Analysis limited to the proposed transmission infrastructure (the AV Clearview Project or "Project") or does it also take into account assumed new renewable resources? The two proposed transmission lines connecting the proposed Yeager Substation to the existing Windhub Substation are not justified as discussed below [refer to SCE's comments for full comment]. A more comprehensive report detailing exactly what is included in the analysis as well as how the results were determined needs to be provided.	Please refer to the above initial response to SCE's concerns.

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67	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	II. RenewablesAssertion: The AV Clearview Project can accommodate the interconnection and delivery of approximately three times the new renewable generation of the Coolwater-Lugo 220kV Project (1,370 MW vs. 435 MW); Response: ZGlobal incorrectly assumed that the associated SCE Special Protection System (SPS) for Lugo-Jasper 220 kV T/L N- would only trip up to 136 MW. • This assumption is incorrect, as the CAISO SPS guideline, ISO SPS3, allows up to 1,150 MW of generation to be tripped as part of an N-1 outage; therefore, the Coolwater-Lugo 220KV Project will be able to deliver approximately 1,000 MW of new renewable generation. • As stated in the CAISO's Draft 2012-2013 Transmission plan, the Coolwater-Lugo 220KV Project ensures the deliverability of the 750 MW of renewable generation in the Kramer zone and the 106 MW in the Lucerne zone, in the Commercial interest portfolio.	Please refer to the above initial response to SCE's concerns.

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68	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	III. Reliability and Congestion Relief Assertion: The AV Clearview Transmission Project provides significant reliability benefits that the Coolwater-Lugo 220kV Project cannot itself provide, including: VAR support, reliving potential congestion on Path 26, and relieving longstanding N-2 contingencies in the Kramer area; Response: The current system in place is adequate to support all existing load demand and installed generation. In particular, SCE address the following three areas: VAR support, Path 26 congestion relief, and N-2 contingencies in the Kramer area.[refer to SCE's comments for full comment]	Please refer to the above initial response to SCE's concerns.
69	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	IV. TimingAssertion: Critical Path asserts that the AV Clearview Project can be in service two years before the Coolwater-Lugo 220kV Project. Response: SCE will have to permit all work needed within the Windhub and Kramer Substations as well as the 500 kV switchrack required to loop the existing Lugo-Vincent 500 kV transmission line at the proposed Tucker Substation. Additionally, new facilities, such as telecomm infrastructure, will be needed to support the new Yeager and Tucker Substations. Therefore, AV Clearview's timeline is uncertain.	Please refer to the above initial response to SCE's concerns.

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70	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	V. Cost Assertion: SCE has extraordinary cost deviations from the original estimates on the TRTP and Devers-Colorado River projects, thus CAISO should update cost estimate for Coolwater-Lugo project. Response: SCE is reviewing cost data for the Coolwater-Lugo 220KV Project and will further address this issue in its February 25 comments. It should be noted that the upper bound of the AV Clearview Project cost went from $800 million in the CAISO 12/11/12 Stakeholder Presentation to $1.19 billion in the 02/01/13 Draft 2012-2013 Transmission Plan.	Please refer to the above initial response to SCE's concerns.

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71	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	VI. General SCE Transmission Planning Comments • The ZGlobal reliability assessment was not performed according to NERC Reliability Standards, WECC Regional Business Practices, and CAISO Planning Standards and is therefore inadequate. In addition, no base cases, power flow plots, or stability plots were provided to justify the ZGlobal report findings. • Regarding environmental disturbance, the AV Clearview Project would require at least 78 miles of new ROW (using straight line distances only), while the Coolwater-Lugo 220KV Project would only need approximately 40 miles of new ROW. In addition, the AV Clearview would require land for two AC/DC substations (Yeager and Tucker) and one AC Substation (rebuilding SCE's Edwards 115 kV Substation), while the Coolwater-Lugo 220KV Project would only require land for one AC Substation (Desert View). • The AV Clearview Project will be constructing part of their project underground, which creates more environmental disturbance, has longer outage and repair times, and has a shorter life expectancy than overhead construction.	Please refer to the above initial response to SCE's concerns.

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72	Dave Schiada, Karen Shea, Dana Cabbell & Jorge Chacon, Southern California Edison	Detail Comments on Appendix B of Draft Transmission PlanThe Mitigation section provides three solutions (Install shunt reactor in Control area, SPS to shed load at Control 55 kV, and installing shunt capacitors at the Tortilla substation) for ambiguously stated problems. The recommended step of a new SPS to shed load at Control 55 kV to address the potential reliability concern for the simultaneous outage of the two Control 115/55 transformers is unjustified as the N-2 situation is unlikely to occur. Other alternatives should be considered. Furthermore, installing shunt reactors in the Control area to mitigate the voltage concerns for the outage of Casa Diablo-Control 115 kV #1 and Casa Diablo-Sherwin-Control 115 kV #1 transmission lines would adversely impact Fish Lake Valley and surrounding areas, as there are known low voltage concerns in the area. This mitigation should be further evaluated jointly between SCE and the CAISO before a recommendation is made.	Thank you for the comments. The ISO will continue work with SCE on considering other alternatives.

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73	Bob Woods, Dana Cabbell, Jorge Chacon & Kevin Richardson, Southern California Edison (March 12, 2013)	On March 12, SCE provided additional stakeholder comments responding to the revised proposal contained in Critical Path Transmission's February 25, 2013 comments. The SCE comments have been included with the stakeholder comments posted on the ISO website and, being quite extensive, have not been inserted into this matrix	Thank you for the comments. The ISO is not responding to each of the issues identified by SCE at this time, as we have not had an opportunity to comprehensively review the latest proposal from Critical Path Transmission that is the subject of these comments. Please refer to the above ISO response to comments submitted by Critical Path Transmission.

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74	Mark L. Etherton, Southwest Transmission Partners, LLC	Our specific comments are related to the economic analysis that was conducted for the NGIV2 Project. We are encouraged that the latest analysis includes a benefit to consumers of $378M compared to the $93M benefit from the 2011/12 CAISO Plan (we should note here too that the 2012/13 Draft Transmission Plan should be updated to match the numbers presented at the February 11, 2013 Stakeholder Meeting). The Capital Cost however may still be overly inflated (by approximately 40%) as the Project Participants examine the methodology for cost recovery and annual revenue requirements. The majority of the NGIV2 Project (approximately 60%) will be constructed using lattice structures on public (mostly desert) lands, paralleling the existing North Gila – Imperial Valley #1 500kV line and greatly reduce the expected capital construction costs of the Project, with the remainder of the line to be constructed on tubular steel structures. The latest 2012 cost estimates for the NGIV2 Project for a single-circuit 500kV line and associated terminations is $295M including permitting, ROW, EPC costs, and contingency.	Please refer to the response to comment 13.

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75	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	TBC also commends the CAISO for approving TBC's "Dead Bus Energization Project." This project would allow for the energization of the TBC High Voltage Direct Current (HVDC) Potrero 115 kV bus and to energize the HVDC cable to supply power from Pittsburg to Potrero in order to speed the restoration of service to the load in the City of San Francisco. Once placed into service, in 2015, this project will realize the full potential of TBC's initial investment in our advanced technology. TBC looks forward to working in collaboration with CAISO staff and other stakeholders on project engineering, planning, and implementation soon after obtaining management approval. While TBC is pleased that this year's Plan has identified projects eligible for competitive solicitation, we believe the Plan falls short in several respects. First, TBC recommends that the CAISO reconsider its plan for addressing reliability to the San Francisco peninsula. As detailed below, TBC recommends that the CAISO, in collaboration with TBC and PG&E, jointly perform a comprehensive analysis of the reliability conditions in the San Francisco peninsula to determine the optimal solution as part of the 2013-2014 transmission planning cycle. In addition, while TBC supports the Gates - Gregg 230 kV Transmission Line, we recommend that the CAISO revert to a 2017 in-service date to support deliverability of renewable generation in a timely fashion. Finally, as detailed herein, TBC requests that the CAISO reevaluate and recommend for competitive solicitation for the following projects:	Thank you for the comments; we have provided responses to each issue in turn below.

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		• South Orange County (SONGS vicinity) Static Var Compensator (SVC); • Talega area SVC or similar reactive support; and • Gates #2 500/230 kV Transformer Addition. The CAISO inappropriately determined that it need not conduct an economic or policy benefits analysis for these projects because the upgrades are located inside a PTO's existing substation. However, the CAISO has not provided any evidence that these projects must, or even should, be located within the substation perimeter. Under the CAISO's tariff, if the facilities are placed outside of the substation, the CAISO would be required to perform an economic or policy benefits test. TBC believes that these projects would likely provide economic and/or policy benefits, and that a competitive solicitation would be beneficial to ratepayers by ascertaining the "least-cost, best-fit" solutions. By failing to consider whether the facilities could be placed outside the substation, the CAISO, without proper justification, has foreclosed the potential for competitive solicitation.	

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76	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	1. San Francisco Peninsula Reliability The Plan recommends further evaluation to address the risks and consequences of an extreme event, per the reliability criteria, in assessing modifications to the existing transmission system in the San Francisco Bay Area. In this planning cycle, TBC proposed two projects which, we believe, are needed to address reliability issues in the City of San Francisco. Neither of these projects was recommended for approval in Transmission Plan. TBC believes that the run back scheme the CAISO has relied upon does not adequately address the Mission and Larkin overloads, and the reliability issues that will result once the proposed Embarcadero to Potrero project is placed into service. At the February 11, 2013, stakeholder meeting, CAISO staff reported that it is coordinating with PG&E to study reliability in the San Francisco peninsula. Moreover, CAISO staff reported that further analysis would become available at a later stage in this planning cycle or in the next cycle. As a PTO in the region, TBC deserves a place in this collaborative effort and offers to contribute its technical expertise and full participation. TBC recommends that the CAISO, in collaboration with TBC and PG&E, jointly perform a comprehensive analysis of the reliability conditions in the San Francisco peninsula to determine the optimal solution as part of the 2013-2014 transmission planning cycle. TBC also recommends that the CAISO give further consideration to the proposals TBC offered in this planning cycle and, in particular, to adopt the comprehensive solution for the peninsula offered by TBC.	The ISO is continuing to assess the reliability need of the San Francisco Peninsula. The ISO will continue to engage stakeholders through the process of assessing the need and risks to the area and the assessment of alternatives along with the potential urgency to address the concerns based upon the identified need assessment.

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77	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	2. Gates - Gregg 230 kV Transmission Line TBC is pleased that the Gates - Gregg project is being recommended for adoption and will be eligible for competitive solicitation. The CAISO's recommendation mirrors the project design proposed by TBC in the open request window. This project will address reliability needs in the Fresno and Central California area, provide flexibility for the Helms Pump Storage facility, and enable renewable resource development in the Central Valley, particularly in the Westlands CREZ. TBC is pleased that the CAISO has determined that this line is open to competitive solicitation; however, TBC recommends that the estimated in-service date be reset to 2017, (the in-service date proposed by TBC), rather than 2022, as stated the Plan (p. 143). This in-service date is more reasonable to develop the necessary transmission infrastructure to enable renewable resource development in Westlands, which would promote the California's policy goal of achieving 33 percent renewable energy by the year 2020.	Please refer to the response to PG&E's comments; the ISO notes that an earlier in-service date can be rationalized due to the benefits the project provides, but the 2022 date was based on the expectations of the incumbent PTO regarding timing. This can be explored in more detail in the competitive solicitation process.

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78	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	3. Gates #2 500/230 kV Transformer Addition The Plan recommends adding a 500/230 kV transformer at the Gates substation in the Fresno area of Central California. The cost of this project is estimated to be $75-$85 million (p. 376). At the February 11, 2013, Stakeholder Meeting, CAISO staff explained that the overall cost of this project includes the cost of the transformer as well as the cost of upgrading the Gates substation to a breaker-and-a-half scheme, but provided no justification for recommending this project in its current configuration. The CAISO should decouple the transformer addition from the substation upgrade and evaluate the two projects independently. This change would enable the CAISO to recommend placing the transformer outside the perimeter of the substation and perform an economic and policy analysis, thus making the project eligible for competitive solicitation. There is sufficient land available to place the transformer outside or adjacent to the substation. This least regrets approach may prove to be most cost effective by deferring or possibly avoiding the cost of the substation upgrade until a determination is made that it is needed, and, more importantly, by subjecting the transformer project and its costs to the rigor of an open competition as a further means to mitigate rate shock to consumers.	The ISO considers that placing the new transformer inside the existing substation is appropriate given the existing system and substation design and configuration in the area. Further, creating a new substation adjacent to the existing substation solely to house the transformer (as the high voltage equipment cannot simply be safely located "outside of the existing substation") will create the need for additional buswork modifications, construction activity, and challenges in ensuring coordination of protection and control. For these reasons, the ISO considers it reasonable for substation additions addressing the primary function of the substation to be inside the existing substation.

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79	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	4. Sycamore - Penasquitos 230 kV Transmission Line The Plan recommends this project as a "least regrets" mitigation solution to address grid reliability in the absence of SONGS, as well as for policy considerations. TBC is pleased that this project is eligible for competitive solicitation. The Sycamore - Penasquitos transmission line was originally part of the Sunrise Power Link Project, approved by the CAISO in 2006; this segment was subsequently removed from the Sunrise Project. TBC performed an analysis to compare power flow impacts of this facility to the impacts of placing a 600 MW or a 1200 MW underground HVDC cable from the Sycamore to the Penasquitos substations. TBC believes an HVDC line would address the policy needs met by the Sycamore - Penasquitos 230 kV Line and provide the following additional benefits: • With a +/- 300 kV HVDC system, the 600 MW line would only require two cables compared to four cables in the 230 kV AC system. A 1200 MW HVDC line would require four cables compared to nine cables in the 230 kV AC transmission line. • An underground HVDC system would mitigate the siting risk previously encountered with the Sycamore - Penasquitos 230 kV overhead Line. • An HVDC cable would eliminate the magnetic fields associated with an AC cable, and it would eliminate electric fields with the use of the cable insulation, sheathing, and grounding. • An HVDC system would provide fast responding reactive	Thank you for the comment; we will consider the possibility in reviewing the final description and functional specifications for the project.

		support at both of the 230 kV buses. A converter station may be built at the Penasquitos 230 kV substation, thus providing an option to develop the remainder of the project. The CAISO studied installing synchronous condensers at the Penasquitos and Sycamore 230 kV substations as part of No-SONGS scenario. • HVDC flow is easily controllable. For example, the flow may be reduced to 300 MW and eliminate rerouting of power, if and when required. Thus, overloads or congestion on the Bay Boulevard - Miguel 230 kV line and the Bay Boulevard - Silver Gate 230 kV bus may be controlled within their rated capabilities. • Finally, an HVDC system would significantly enhance the delivery of renewable generation from the Arizona, Imperial, San Diego South, and Baja CREZ.	

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80	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	5. Projects to Provide Reactive Support to Southern California In its assessment of long-term grid reliability in the absence of SONGS, the Plan identifies the need for approximately 700 MVAR of reactive support in both the LA Basin and the San Diego Area (p.189). The Plan further recommends actions to provide the needed reactive support by adding Synchronous Condensers at the Talega 230 kV Substation and by commencing with the Orange County Static VAR Compensator project. TBC believes that these upgrades may be classified as policy-driven upgrades because they are needed, at least in part, to mitigate the impact of the SONGs outage, and are thus fulfilling a directive of the NRC, NERC, and the CPUC. The CAISO Tariff provides that if a reliability-driven upgrade also serves, even in part, to meet state and federal policy requirements or directives, it will be eligible for competitive solicitation (CAISO Tariff 24.1, 24.4.6.2). The CAISO has not provided any explanation for why these projects could not be considered policy-driven upgrades, and in the absence of such justification, TBC believes that the projects should be eligible for competitive solicitation. Moreover, the Plan recommends placing SVC or similar reactive support inside the fence of the incumbent utility's property without any stated justification. The implicit assumption is that locating equipment within the incumbent utility's property is the only place such equipment could be placed. The CAISO has provided no evidence to support this position. Land acquisition is a relatively	The ISO's tariff sets out the concepts and the parameters by which reliability, policy, and economically driven projects are assessed. On that basis, we have reviewed the circumstances that would lead to approving the dynamic reactive support, and see it providing specifically a reliability benefit in the absence of SONGS. As such, we do not see a "policy-driven" rationalization applicable to the dynamic reactive support being referred to. As noted in the February 11th presentation, the ISO expects that dynamic reactive support such as an SVC or synchronous condenser would be operated under normal circumstances at or near zero output, so that the full dynamic range is available to respond to system contingencies. Given this anticipated mode of operation, we do not see a basis for the claim that there may be economic benefits beyond the reliability benefits driving the potential projects, nor has TransBay Cable indicated what policy objectives or economic benefits it believes may exist. Further, by way of clarification, the ISO has not suggested that the SVC or similar dynamic reactive support must be placed inside the fence of the incumbent utility's property. As the February 11 presentation indicated, the ISO reviewed the circumstances, concluded the projects, if

		small component of the overall cost of such a project. Project equipment could be located on property outside or adjacent to an existing substation and an interconnection agreement put in place. The same tacit assumption is made with respect to the Gates #2 500/230 kV Transformer Addition discussed above. A further weakness is the Plan's assertion that "operational requirements negate economic benefits" (p. 5 of Neil Millar's handout presented at the February 11, 2013 Stakeholder Meeting). TBC believes that, prima faice, there may be economic benefits associated with either the Telega or the SONGS reactive support projects, identified by the ISO as reliability-driven; further analysis to substantiate or invalidate the Plan's contention is warranted. Should such an analysis demonstrate sufficient economic benefits, the projects would then be eligible for competitive solicitation. A solicitation would attract competing ideas and enable the CAISO to choose the best option at the most attractive cost -- the least-cost/best-fit solution.	approved, would be reliability projects, and does not see a basis for additional policy or economic benefits that would result in the projects being eligible for competitive solicitation.
81	Sean O'Reilly, Chetty Mamandur & Les Guliasi, Trans Bay Cable, LLC	TBC is disappointed that the CAISO did not give greater weight to either of the proposals we submitted which are designed to solve for long-term grid reliability, as well to provide reactive support in the short run. Either of TBC's projects -- SONGS to South Bay or Huntington Beach to South Bay -- could satisfy the needs identified in the Plan. Moreover, either of these projects could deliver the needed MVAR support while providing a cost effective option to add additional transfer capacity in the future when needed.	The ISO's preliminary review of the proposed mitigation of loss of SONGS being an HVDC line from SONGS to South Bay concluded that the proposal is not effective, which also led to the lack of identifiable benefits in pre-building converters to provide reactive power support.

		Placing a converter station in the vicinity of SONGS would provide the necessary MVAR support in the short run and provide a cost effective means to develop a HVDC line at a later stage when additional transfer capacity is needed. TBC is uniquely positioned to build, own, and operate such facilities; the company has the technical knowhow, experience, spare parts and equipment, and operations systems and staff to develop and manage such facilities. We encourage CAISO staff and management to take a second look at the projects we proposed with these factors in mind. TBC offers its expertise and assistance to the CAISO and recommends that a joint effort be commenced to evaluate TBC's proposals, to determine the best solution to provide MVAR support for SONGS, and to evaluate an expanded project at a future date.	

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82	David F. Smith, TransWest Express	**High Out-of-State Import Scenario** Section 4.5 of the Draft Plan describes a sensitivity study for importing 3000 MW of renewable energy delivered to the Eldorado Valley in southeastern Nevada. TransWest requested this study in early 2012 and appreciates the CAISO's effort in conducting this important work. TransWest believes such a study, if based on proper assumptions and criteria, could provide valuable information to policymakers and other stakeholders. However, the study conducted by CAISO (the "Study") is significantly flawed and the results reported in Section 4.5, if left uncorrected, will leave readers with a serious misimpression of CAISO transmission investments necessary to accommodate these imports.The Study included a classification of contingencies that is inconsistent (overstated) with other similar analyses set out in Section 4. This inconsistency has resulted in the Study overstating potential mitigation requirements in connection with importing 3000 MW delivered to the Eldorado Valley. The Study also failed to take into account certain mitigation measures that were previously identified and recommended for approval in other sections of the Draft Plan, therefore further overstating the mitigation associated with the Study. [refer to Transwest Express for full comment].	Transwest provided detailed comments on their concerns on the December 11 and 12th stakeholder presentation. Please see ISO responses to those comments.

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83	David F. Smith, TransWest Express	**Economic Studies** TransWest believes that CAISO's Economic Studies are fundamentally flawed because these studies focus on the economic benefits of congestion relief while ignoring the potentially much larger benefits of providing access to the lowest cost renewable energy resources in the Western Interconnection. The following language appears on page 312 of the Draft Plan: [refer to Transwest Express for full comment].	The ISO's planning methodology is set out in its tariff, and the ISO's use of portfolios that are developed led by the CPUC is established as an efficient and effective means to coordinate input assumptions. Consideration of transmission needs to enable development of new renewable resources is addressed in the policy-driven analysis. Concerns and comments regarding renewable generation potential in or outside of California should be provided into the CPUC-led process developing these critical assumptions and forecasts feeding into the planning process. Please refer to the response to Pathfinder & Zephyr, above, for a more complete response.
84	Joshua Martin, Westlands Solar Park	• Westlands recommends the following changes to this current 2012-2013 draft transmission plan: - The identified Gates-Gregg 230kv line was shown with an in service date of 2022; this should at minimum be amended to a date prior to 2020 with a target date of 2017 - Not allowing this upgrade to occur prior to 2020 could significantly limit the potential policy benefits that this project can bring to the state. Specifically this may disallow renewable generation in the greater Fresno area and within the Westlands CREZ from being able to interconnect in time to meet the policy goals of the state.	The water analysis identified the need for the Gates-Gregg 230 kV line in the 2023-2025 timeframe as indicated. The ISO notes that an earlier in-service date can be rationalized due to the benefits the project provides, but the 2022 date was based on the expectations of the incumbent PTO regarding timing. This can be explored in more detail in the competitive solicitation process. An earlier date will be sought if viable.

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85	Joshua Martin, Westlands Solar Park	• Westlands recommends the following considerations for future transmission planning cycles: - Consider larger solutions to address path 15 and path 26 congestion issues including potentially developing a new 500kv line in the region - Consider under long term planning scenarios the potential for RPS standards above and beyond 33% - Considering the significant in state resources California has to offer with geothermal, wind, solar PV and solar thermal, we suggest the ISO, PUC and CEC consider scenarios where the quantity of out of state renewables in resource planning assumptions are reduced. Current renewable portfolio standards require the prioritization of in state resources; Westlands alone has been identified by RETI stakeholders as having up to 5,000 MWs of solar PV generation potential.	Thank you for the comments; these should be provided as input into the 2013/2014 study plan process.
86	John Jontry, San Diego Gas & Electric	1. Page 10 Table 2, Summary of Needed Reliability Driven Transmission Projects in the ISO 2012-2013 Transmission Plan: ISO identified about $1.343B of reliability based projects. Approximately $1.168B of these projects, or 87% of the total projects identified in the Draft Plan, are located in PG&E's service territory. SCE has about $75M or 5.5%, and SDGE $100M or about 7.4%. Note that the actual recommended approvals for SDG&E only amount to $28M as the $100M total includes one synchronous condenser project (cost $72M) that is "not recommended for approval" although identified as "needed". SDG&E does not question the need for the projects approved for the other PTO's; however, we do note that it's not clear what's	Projects which were found to be "not needed", either mitigate a concern which can also be mitigated by available generation or the concerns that start showing up very late in the study horizon. Most of the projects approved in PG&E area do not have any generation mitigation available. Projects which have been approved based on the involuntary load interruption standard are all triggered by involuntary load drop for a category B contingency. We did not see any such issue in SDG&E system. The ISO concurs with the need to fix reliability issues which start showing up in 2022-2023 timeframe and

		"Needed" or "Not Needed" for reliability purposes. The CAISO appears to approve some reliability projects on the basis of potential NERC Category C or D contingency violations, or to address the risk of consequential loss of load for Category C contingencies; those projects are summarized in Table 1 below:[refer to SDG&E comments for full comment)	cannot be mitigated by generation re-dispatch. Most of these overloads were of the order of 1% or 2% and the ISO feels that it is prudent to re-examine these issues and all the potential mitigations in future planning cycles. For the two loop-in projects (Mesa Rim and Granite Tap), the ISO did not observe any category-B overload which cannot be mitigated by available generation. A consequential loss of load would occur for N-1-1 contingencies. Per ISO Grid Planning standards such an upgrade may be justified by eliminating or reducing the load outage exposure through calculations showing BCR>1. The ISO encourages SDG&E to submit any such analyses.
87	John Jontry, San Diego Gas & Electric	2. The ISO has identified the Sycamore-Penasquitos (SX-PQ) 230 kV line as a mitigation for numerous thermal and voltage violations on a long list of affected facilities in the Reliability, Nuclear Back up, Policy, Deliverability, and LCR studies. This project was identified by the CAISO as an element of the "Least Regrets" transmission plan for a "no-SONGS" scenario. The CAISO has indicated that this project may be treated as a policy-driven project. SDG&E's position is that this project meets the four criteria for being a reliability project as defined in section 4.7.1 of the CAISO's Transmission Planning Process document, to wit: a. It is a needed project to address multiple Category B violations across a wide range of	Thank you for the comment. The ISO is recommending this project as a Category 1 policy driven transmission project.

		study scenarios, b. The data bear out that it is needed, as documented by the CAISO's own studies, c. It is clearly a technically feasible project (as discussed further below), and d. This project is cost-effective. SDG&E proposed this project in the 2012/2013 Reliability Project Window and is committed to permitting and constructing this project with the goal of a 2017 in-service date. SDG&E wants to make several critical points about this project clear to the CAISO management and staff: a) SDG&E firmly believes that the SX-PQ line is a reliability project (albeit with significant policy and economic benefits), and should be approved as a reliability project instead of as a policy-driven project. Note that the SX-PQ line was approved by the CAISO as a reliability project as a part of the original plan of service for the Sunrise Powerlink in 2006. b) As noted above, SX-PQ will have policy and economic benefits. However, it's important to note that previous CAISO studies did not indicate the need for this project in order to meet the 33% renewables goal by 2020. The need for this project, as currently identified, is driven by the possible	

		unplanned early retirement of SONGS and the continued reliable operation of the transmission system. c) The SX-PQ project as submitted by SDG&E in the Reliability Project Window can be located on ROW that is currently 100% utility-owned. There will be little or no ROW obtained by SDG&E for this project. d) A significant portion of this project can be located on existing utility-owned structures (i.e. the portion between Sycamore Canyon substation and Chicarita Junction, representing about half of the total length of the new line). e) The SX-PQ line is a critical upgrade for a no-SONGS future; delays in approval and permitting are highly undesirable. The critical need of this upgrade, coupled with the risk of a long-term no-SONGS scenario, and SDG&E's inherent advantages of owning a clear ROW for the project, are particularly well suited for PTO construction as a reliability upgrade. SDG&E notes that the CAISO does retain the option to approve separately and at a later date any of the mitigations not recommended for approval in the draft study findings.	
88	John Jontry, San Diego Gas & Electric	3. Page 152, paragraph 2 - It appears that SDGE was not contributory to the 2011 or 2013 IERP?	The excerpts were copied directly from the CEC 2011 Integrated Energy Policy Report (IEPR). Apparently the

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			CEC was making references to the operators of the two California nuclear power plants (i.e., PG&E and SCE). It is by no means an omission of the contribution of SDG&E in providing support for mitigation of transmission reliability concerns for the SONGS absence scenario.
89	John Jontry, San Diego Gas & Electric	4. As regards the SONGS Absence Study, could CAISO comment as to why, in terms of immediate southern California system criticality, i. One reactive power support project, Diablo Canyon Voltage Support Project, was identified as needed and recommended to mitigate local voltage concerns, ii. While only **considering** the Mid-Term Alternative #1 or #2 proposals? Two SDG&E reactive support projects directly address SONGS related voltage stability concerns. The problem is with us today and there is no clear indication of the very near term NRC disposition. All sites for the listed SDG&E projects have been thoroughly researched and are in an advanced stage of design.	The Diablo Canyon Voltage Support project, described on page 88 of the Draft ISO 2012/2013 Transmission Plan, was determined to be needed to address voltage support at Diablo Canyon Power Plant related to the NERC NUC-001-2 and TPL Standard Category C contingencies resulting in low voltages below 0.90 per unit. This voltage support is not meant for mitigation of low voltage related to the SONGS absence scenario. The configuration of the Diablo Canyon facility is markedly different than the interconnection of the SONGS plant to the grid. Further, the ISO is recommending for approval the SONGS and Talega area dynamic reactive support.
90	John Jontry, San Diego Gas & Electric	5. Page 166, SONGS Absence Study identified that for both Mid-term alternatives the dynamic reactive support at SONGS (or its proximity) and San Luis Rey Substations are in addition to the "Common mitigations" (Huntington Beach synchronous condensers and Sycamore-Penasquitos 230 kV transmission line). Page 189 however, indicated: "Given the	Based on its studies, the ISO envisions the dynamic reactive support at SONGS to be 400 MVAR for the midterm, with provision to be expanded to 500 MVAR for the long term. This assumption relies on other dynamic reactive support as well as generation development as

		uncertainty regarding the Huntington Beach synchronous condensers, the ISO has identified that an SVC located in the vicinity of SONGS would provide equivalent reactive support, and is also considering this option as a backup project to the Huntington Beach synchronous condenser project"--- what exactly does ISO envision the dynamic reactive support project at SONGS site to be?	summarized in Tables 3.5-10 and 3.5-11 of the Draft ISO 2012/2013 Transmission Plan report. This amount of dynamic reactive support may be subject to change upwardly the resources were to be developed less than identified amount for the LA Basin and San Diego LCR areas.
91	John Jontry, San Diego Gas & Electric	6. Page 277, the draft report indicates overloads for ML-BB and OMEC-ML #1/#2. SDG&E suggests clarification of the following: a. The line ratings used for the Bay Boulevard-Miguel 230 kV line (i.e. does this take into account the planned 1175 MVA normal/emergency ratings once the Bay Boulevard project is completed?) b. Whether or not the reliability upgrades for the Product 2 generation (i.e. the OMEC-Tijuana series reactor) were included in the base case, or were considered as possible mitigations. c. Is the CAISO considering a second Miguel-Bay Boulevard 230 kV line? SDG&E also recommends consideration of the Imperial Valley Flow Control project as a potential mitigation.	The rating used for Miguel – Bay Blvd 230kV line does not take into account the planned 1175 MVA normal/emergency rating. The OMEC-Tijuana reactor was included in the policy-driven base case The ISO will consider all viable mitigations to mitigate the overload on Miguel – Bay Blvd 230kV line.
92	John Jontry, San Diego Gas & Electric	7. Recently we learned that the pipeline for additional	The ISO concurs with the need for dynamic reactive

		conventional generation inside the San Diego Import Cut-Plane (ICP) is quite thin. The CAISO is in essence indicating a need for more generation as well (see page 277 as it relates to ML-BB or OMEC-ML #1/#2, or ML-MS #1/#2 and MS-OT thermal issues). All of this portends more congestion management in the future, thus impacts to consumer rates. In addition to thermal issues, in the Policy section we see more indications for additional dynamic reactive power support. SDG&E believes this indicates that there is a solid technical justification for approving at least one synchronous condenser installation.	support in the No-SONGS scenario. The synchronous condenser project would not really bring much benefit for any thermal issues mentioned in the comment.
93	John Jontry, San Diego Gas & Electric	8. Page 306, Chapter 5 Economic Planning Study, Table 5.5-3, Policy-driven network upgrades added to the database model: ISO included the Sycamore-Penasquitos 230 kV line as a "policy driven projects" in the base case network model for economic production cost simulation, although in earlier chapters ISO indicated this project was "not recommended for approval"? Given the significant congestion relief this project will provide for San Diego load area, a comparison of "pre-" and "post-" project production cost simulation would demonstrate additional economic benefits **on top of** all the reliability benefits.	Thank you for the comment. The ISO is recommending this project as a Category 1 policy driven transmission project. Please see the revised report.
94	John Jontry, San Diego Gas & Electric	9. Page 110, discussion of the San Diego import capability. The import capability across the San Diego Import Cut Plane (ICP) is stated here as 3400 MW. Note that powerflow study	The import capability of 3,400 MW quoted on Page 110 in the 'Area Description' section, is based on the ISO

		work supporting the need for the Sunrise Powerlink indicated that a simultaneous import capability of 4200 MW is feasible assuming a load shedding RAS is in place to mitigate the Category D N-2 contingency of Sunrise/SWPL, with both SONGS units in service. The G-1/N-1 import capability under similar conditions was established by the same load flow studies at 3500 MW following the worst G-1/N-1 contingency.	Operating Procedure 7820. This is the existing import capability and in future scenarios, the import capability may be higher.
95	John Jontry, San Diego Gas & Electric	10. Section 3.2.2, Pg. 123 discussed the MIC available from IID; however, it is not clear if the system modeling for IID includes the "S" line upgrades or the IV-Dixieline 230 kV line.	The expanded MIC from the IID area is to accommodate expected new renewable generation in the IID area that would be sold to serve ISO area load. It is also expected that the interconnection of this generation will trigger transmission upgrades to ensure that it is deliverable to the ISO boundary, such as the "S" line upgrades or the IV-Dixieline 230 kV line, and similar upgrades were assumed in the model.
96	John Jontry, San Diego Gas & Electric	11. Section 3.5.6, Pg. 163 discusses the assumptions of the no-SONGS study. It is not clear (but it is reasonable to assume) that all of the generation at Encina is included in the base case for this study.	Encina generation models were included in the study base case. However, Encina generation was assumed to be initially off-line in the starting study case for 2018 and 2022 due to deadlines associated with compliance with the State Water Board's policy on OTC plants. If additional generation was needed during the assessment process, either Encina or electrically equivalent generation was assumed to be available. This assumption is included in Tables 3.5-10 and 3.5-11 as generation replacement or new generation in the northwest San Diego area.
97	John Jontry, San	12. Section 3.6, P. 194 discusses the review of existing SPS in	The ISO does not design the high voltage transmission

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	Diego Gas & Electric	the CAISO footprint. SDG&E would like to know if there are currently any operating SPS that shed load for N-1-1 Category C contingencies?	system to rely on load shedding for N-1-1 in high population density load areas. The ISO has some special protection schemes that drop load: Most are needed for subtransmission contingencies and generally drop a small amount of load in low population density areas, and some drop pump load only. None of these SPS are relied upon in the long-term transmission plan in order to serve load in high population density areas from the high voltage transmission system.
98	John Jontry, San Diego Gas & Electric	13. Table 4.1.3.3 – Pio Pico should be included in the list of conventional resource assumptions.	The regulatory approval of the Pio Pico project is uncertain and this change to the transmission plan at this point in time is not warranted.
99	John Jontry, San Diego Gas & Electric	14. Table 4.1-7 – The list of IID upgrades in this table may not be sufficient to get to the MIC shown in section 3.2.2.	The expanded MIC from the IID area is to accommodate expected new renewable generation in the IID area that would be sold to serve ISO area load. It is also expected that the interconnection of this generation will trigger transmission upgrades to ensure that it is deliverable to the ISO boundary, such as the "S" line upgrades or the IV-Dixieline 230 kV line, and similar upgrades were assumed in the model.
100	John Jontry, San Diego Gas & Electric	Additional minor corrections: 15. Table 2.8.1 – Ocotillo Express is a wind generator, not solar. 16. Pg. 168 – typo in title 17. Appendix G, regarding technical spec of the Sycamore-	15 and 16. Thank you for pointing out these typos. They will be corrected for the final version. 17. The ISO does not see need for an 1175 MVA rating for the overhead portion while it is in series with a 912

		Penasquitos 230 kV Line, Functional Specifications: Overhead Line Construction- Minimum Continuous Ampacity Summer/ Winter should be 1175 MVA instead of 912 MVA.	MVA underground segment.