California ISO
Shaping a Renewed Future

ISO Responses to Stakeholder Comments
Draft 2013-2014 Study Plan
February 28, 2013 Stakeholder Meeting
2013-2014 Transmission Planning Process

No	Submitter (Name & Company)	Comment Submitted	ISO Response
1	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**1. In Order to Minimize Ratepayer Impacts, the CAISO Should Only include in its Base Cases Transmission Projects that Have Been Shown to be Needed to Economically meet State RPS Goals and Should Explore Low Cost Alternatives to Meet System Needs** The CAISO must seek to minimize ratepayer impact as it plans for the transmission needed to achieve the State's policy goals, including the RPS. We recognize that the CAISO needs to interconnect renewables to meet State policy goals and FERC requirements, but it should determine the least-cost method of doing so. The CAISO continues to include in its Base Cases, network upgrades identified during the Generator Interconnection process (GIP) that have not been shown to be economic or needed to meet the particular CPUC resource portfolio being assessed. The CAISO should model only those GIP-driven network upgrades (NU)[1] that have been shown to be "needed" to achieve the specific CPUC resource portfolio being assessed. The CAISO has already taken steps in this direction. For example, GIP-driven NUs such as, the *Llano-Kramer 500 kV*, *Kramer Inyokern 230 kV*, *Bishop-Inyokern 230 kV* lines were not found to be needed in any of the four CPUC resource portfolios, and therefore were not modeled in the 2010-11 transmission plan. Similarly, the CAISO did not model the *Lugo-Pisgah 500kV* transmission project in the Base Cases for the 2012-13 planning	The ISO has a consistent process for modeling transmission upgrades associated with generation interconnection studies. If generation included in the base case requires transmission upgrades to be deliverable, based on previously completed studies, then those upgrades are modeled. The ISO demonstrated the need for the West of Devers and Coolwater-Lugo transmission projects in the 2010-2011 ISO Transmission Plan based on the base and sensitivity portfolios. The base and sensitivity renewable portfolios in subsequent ISO Transmission Plans have continued to support the need for these two projects. In addition, the ISO has counted on these projects as part of the transmission plan needed to achieve the 33% RPS by the year 2020. The Coolwater-Lugo project has been evaluated and continues to be evaluated against alternative transmission projects to ensure that it is the most cost effective project. In addition, the West of Devers project has had routing challenges and the ISO has discussed other options with SCE. However, none of the other options were expected to be more cost effective than West of Devers. Therefore, the ISO disagrees that these projects should not be part of the transmission planning models.

[1] These NUs are neither approved by the CAISO Board of Governors nor permitted by the CPUC. However, they are part of the 2012/2013 CAISO Transmission Plan Supporting Renewable Energy Goals. See Table 1 of CAISO 2012/13 Draft Transmission Plan dated February 1, 2013.

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		cycle. However, CAISO proposes to model in the 2013-2014 Base Cases, NUs that have not been shown to be economic, such as the *Coolwater-Lugo 230kV* and the *West of Devers Reconductoring*, even when it is assessing a CPUC resource portfolio that does not trigger a need for the project. These NUs should only be included in an assessment of a CPUC resource portfolio if it is needed to mitigate deficiencies that exist to deliver the renewables represented in that specific portfolio. This approach would provide important information to State siting authorities and Stakeholders in proceedings on proposed new GIP-driven projects that have never received CAISO Board approval and have not been subjected to any cost effectiveness criteria. In addition, in the Study Plan, the CAISO staff has indicated that they would, in coordination with Participating TOs and other Market Participants, consider lower cost alternatives to the construction of transmission additions or upgrades, such as, demand-side management, interruptible loads and storage facilities. This approach is critical, and has become all the more important as transmission costs continue to escalate. Nonetheless, the CAISO has made similar claims in the past but has never seriously considered these low cost alternatives. For example, in the 2012-13 transmission plan, the CAISO assessed installation of a total of 650 MVAR of dynamic reactive support (i.e., static VAR compensator or synchronous condensers) in the vicinity of SONGS and at the Talega or San Luis Rey Substations in order to provide compensation. The CAISO undertook reliability studies to identify the sufficiency of MVAR dynamic reactive support to maintain reliability. However, the	

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		CAISO did not study any alternatives to achieve the needed compensation. MVAR dynamic reactive support is not the only way to provide compensation; for example, compensation needs can be met in certain cases with lower cost regular or fast-switched capacitors. Thus, the CAISO should describe the compensation needs, by location, and consider competitive proposals to address the needs. At a minimum, the CAISO should perform a separate reactive power optimization study to select the least-cost method of providing compensation. We note also that in the past PG&E has provided a benefit-cost analysis for certain reliability transmission upgrades. BAMx and CCSF support such assessments to justify transmission investment. We request that the CAISO and PTOs develop similar assessments in the 2013-14 transmission planning cycle for transmission investments intended to avoid the loss of load for Category C events.	
2	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**2. The CAISO Should Maximize Transparency and Promptly Provide to Stakeholders its HV TAC Forecasting Tool. In addition, the CAISO Should Consider Developing and Sharing with Stakeholders a Low Voltage Transmission Access Charge Forecasting Tool.** BAMx and CCSF appreciate that the CAISO has developed a HV TAC forecasting tool. The tool will help the CAISO and Stakeholders understand the cost implications of different transmission planning scenarios. The tool helps to illustrate how much transmission costs are increasing and how transmission costs are no longer a small portion of consumer electricity costs. In the 2012-13 transmission planning cycle, the CAISO provided its HV TAC projections at the end of the cycle. We urge the CAISO to	The ISO is working to vet the HV TAC model with PTOs to provide the best possible base for future estimates, and will make the model available upon completion of that exercise. As the Low Voltage TAC is only part of the cost end use customers see (with the various utilities also having other low voltage transmission costs recovered from customers within their own service areas, the ISO considers the utilities to be the best source of more comprehensive low voltage cost information.

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		provide to Stakeholders early in the 2013-14 transmission planning cycle both its projections of the HV TAC and the HV TAC forecasting tool itself. In this way, Stakeholders can themselves assess and verify the CAISO's results. In addition, we have observed that the PG&E area specific Low Voltage Transmission Access Charge (LV TAC) has gone up recently and is expected to increase further due to new capital and maintenance projects. We urge the CAISO to develop a LV TAC forecasting tool and to provide both its LV TAC projections as well as the tool itself as part of the 2013-14 planning cycle.	
3	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**3. The CAISO Should Include Reasonable Assumptions about Demand Response and Incremental Energy Efficiency in its Study Cases.** BAMx and CCSF support the CAISO's proposal to incorporate incremental uncommitted energy savings in its transmission planning scenarios with the CEC's energy demand forecast. However, without adequate justification, the CAISO has proposed using the CEC's "Low Savings" scenario identified in the Energy Efficiency (EE) adjustments.[2] The *CPUC/CEC's resource portfolios Base Case and Alternative Renewable Resource Portfolios* recommended that the CAISO employ, in the 2013-2014 Transmission Planning Process[3], the Renewable Net Short (RNS)	As indicated in the study plan the ISO will be incorporating the low savings of incremental uncommitted energy efficiency developed by the CEC in to the Demand and Energy Forecast. As indicated there is significant uncertainty as to the location of where the incremental energy efficiency will occur. The ISO will be utilizing either the methodology developed by the CEC staff as a part of the AB1318 analysis or bus-level allocation by the PTOs. With the current allocation methodologies, there are limitations due to issues such as climate zones and nature of uncommitted savings and associated customer classes which are not fully taken into account which results in the uncertainty. The ISO will continue to work with the CEC as a part of IPER 2013, which will be utilized in the 2014-2015 Transmission Planning Process, to manage the

[2] **Source:** Estimates of Incremental Uncommitted Energy Savings Relative to the California Energy Demand Forecast 2012-2022, dated September 14, 2012.
[3] Joint Agency Letter to CAISO dated February 7, 2013.

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		amounts that are based on the "Mid-Savings" incremental EE assumptions.[4] Therefore for consistency, the CAISO should instead use the "Mid-Savings" incremental EE. The CAISO has not provided an adequate justification for using the "Low-Savings" scenario. The CAISO has argued that it will use the "Low-Savings" incremental EE because the CEC does not provide specific location predictions for EE. However, CEC staff has indicated to CCSF/BAMx consultants that it has developed the ability to allocate incremental EE amounts at the bus-level as part of their AB1318 efforts. BAMx and CCSF strongly urge the CAISO to coordinate their modeling of incremental EE efforts with the CEC staff in order to model the "Mid-Savings" incremental EE scenario. Further, during the February 28th Stakeholder meeting, the CAISO indicated that it would not model the CPUC's expected demand response (DR) programs in local capacity areas. Instead the CAISO will consider DR one of the many potential mitigation measures available to address constraints in its reliability, policy-driven and economic studies. The CAISO does not adequately justify why it fails to model expected DR programs in local capacity areas. The CAISO should consult with relevant regulatory and industry sources prior to finalizing the 2013-14 transmission plan study cases and jointly agree on reasonable assumptions on DR that should be incorporated into the cases. We also encourage the CAISO to look at other regions such as PJM that have experience with extensive DR programs.[5] We	uncertainty in the development of the forecasts and bus level allocation. The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs Modeling event-driven Demand Response as a mitigation rather than reducing demand forecasts in advance enables explicit understanding of the reliance on demand response, and in no way disadvantages consideration of demand response as a preferred resource. This is particularly important as programs are being reviewed to determine if many of the demand response programs designed initially for system-wide resource balancing in fact have the appropriate characteristics for addressing transmission contingency mitigation needs. Please note the response to comments received from the CPUC staff as well.

[4] See Section VIII. Base Scenario in the assigned commissioner's ruling setting forth standardized planning scenarios for comment, Rulemaking 12-03-014, September 20, 2012.
[5] See the presentation "PJM Capacity Market Overview," by Andrew Ott, Senior Vice President, Markets, PJM,

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		support the CAISO's plan to work with the CPUC, LSEs, and POUs to address the controllability and flexibility attributes of the DR resources. However, we request the CAISO to make that assessment as transparent as possible to have meaningful Stakeholder participation.	
4	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**4. The CAISO Should Undertake a Long Term Assessment of the San Francisco Peninsula and Oakland/Alameda Area** In 2009, CCSF proposed the *Newark –Alameda Point-Potrero* project to improve the reliability of the San Francisco peninsula and the Alameda/Oakland transmission systems by establishing a transmission connection between San Francisco and 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 has proposed to undertake a long-term assessment of the San Francisco peninsula as part of the 2013-2014 transmission planning process. BAMx and CCSF support such an assessment and intend to participate actively in the process. We urge the CAISO to develop a separate stakeholder process to address this issue. In addition, or potentially in combination with the San Francisco study, a long-term assessment of the East Bay transmission system is needed. Over the past several planning cycles, there has been a patchwork of small, incremental improvements to the East Bay transmission system. A long-term vision is required to put such upgrades in context.	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. Depending upon the results, this issue may be brought forward for consideration at a future Board of Governors meeting. The ISO will continue to assess the East Bay transmission system as a part of the Greater Bay Area planning studies in the 2013-2014 Transmission Planning Process.

Long-Term Resource Adequacy Summit, dated February 26, 2013.

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5	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**5. The CAISO Should Immediately Begin a New Stakeholder Process to Evaluate the Deliverability Criteria** The CAISO plans to follow the same methodology as used in GIP to perform deliverability assessments in the 2013-14 transmission planning cycle. As BAMx, CCSF and other key Stakeholders such as the CPUC Energy Division have indicated in their comments on the 2012-13 Draft Transmission Plan, renewable resource deliverability has been driving substantive transmission additions even though the modeled RPS portfolios are based on "Energy" not "Capacity Delivery." An example of over restrictive deliverability criteria is representation of a wind generator at half its maximum output when its potential Resource Adequacy (RA) credit is only 10% of its maximum output. This can result in approval of a transmission upgrade to ensure deliverability at 50% of the maximum output under a very restrictive level C outage criteria when the resource can only be sold or counted for RA at 10% of maximum output. As BAMx and CCSF have indicated several times in their past comments, the CAISO's deliverability assessment process needs to be reformed. A Stakeholder initiative to review the deliverability assessment should begin immediately. There is no State policy to prioritize Resource Adequacy acquisition from renewable generation needed to meet the RPS. Thus, it is incorrect to justify transmission elements as policy driven, based upon the application of the deliverability criteria to all RPS renewable projects. To allow Stakeholders to better assess the transmission planning scenarios, the CAISO should also make it clear in the studies of the various portfolios, which upgrades are needed to meet the energy based RPS goal.	The California ISO has posted responses to stakeholder comments on the Generator Interconnection and Deliverability Study Methodologies training. Based on stakeholder comments, the ISO will post a technical paper on the deliverability methodology in July 2013. The ISO provided a Generator Interconnection and Deliverability Study Methodologies training session on December 4, 2012. The training provided a forum for market participants and other interested parties to gain an understanding of the ISO generation interconnection and deliverability study methodologies. Stakeholders were given an opportunity to provide written comments on the Interconnection and Deliverability Study Methodologies. ISO responses to those comments are available on its website at http://www.caiso.com/Documents/ISOResponses-Comments-DeliverabilityMethodologyTraining.pdf The ISO is preparing a technical paper in response to stakeholder comments that will provide detailed, realistic examples of applying the deliverability methodology and elaborate on the training presentation. The paper will be available in July 2013 and presented during a subsequent stakeholder meeting. The first criterion listed in Tariff section 24.4.6.6 for Policy Driven upgrades 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 the ISO must consider the deliverability of generation among other transmission need drivers in the development of its comprehensive

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			transmission plan. In the 2012/13 Transmission Plan only two minor reconductoring upgrades were driven exclusively by deliverability and those two upgrades are needed by thousands of MWs of generation in the Fresno area.
6	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**The CAISO Should not Assume the Need to Provide Resource Adequacy from Intermittent Resources in All Resource Portfolios** Currently the CAISO BAA has a system capacity surplus, i.e., nearly 144% planning reserve margin, well in excess of the required 115-17% planning margin.[6] Despite this excess supply, California will be building local as well as flexible resources to accommodate the development of increasing intermittent resources. Given this likely outcome, it is inappropriate to assume that all the intermittent renewable resources contained in each resource portfolio will be deliverable and therefore justify "policy-driven" transmission. Using this approach, the CAISO is in essence, building transmission to allow renewables to provide RA without undertaking the supporting cost-benefit analysis needed to demonstrate that it is economically justified, potentially maximizing costs to ratepayers. Instead, the CAISO should pursue an integrated approach that seeks to ensure grid reliability and renewable resource development at the lowest possible cost to ratepayers.	Load serving entities and generation developers have the option to develop and procure energy only generation. However, the ISO has observed in numerous instances that commercial interest is focused on deliverable generation. The ISO does not agree that it should not consider deliverability among other transmission need drivers in the development of its transmission plan under the assumption that restricting deliverability is the best approach towards achieving the lowest possible cost to ratepayers.

[6] Source: "Briefing Paper: A Review of Current Issues with Long-Term Resource Adequacy," CPUC Energy Division, February 20, 2013.

7	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**6. The CAISO Should Explain its Methodology to Allow Out-of-State Resources, Including Renewables, to Provide Resource Adequacy.** BAMx and CCSF support finding ways for out-of-state (OOS) resources including renewables to count towards RA requirements. As the CAISO has indicated in the Study Plan, the current rules do not provide a means for resources outside the CAISO to obtain RA deliverability status. However, the CAISO has indicated that it will address this concern. Suppliers from areas outside the ISO that are rich in renewable energy potential and have been included in the ISO's 33% supply portfolios have raised concerns that they will be unable to develop their projects if they are unable to offer RA capacity to their potential LSE buyers. To address these concerns, the CAISO has proposed a RA deliverability study approach in the Study Plan that is different from the one they have implemented in the past.[7] The CAISO needs to elaborate on this proposed study approach, as it is not clearly described in the Study Plan. It is particularly unclear how the CAISO expects to blend the import allocation proposal that relies on RA allocations to LSE's, with the existing in-State approach that assigns RA capacity to generators. Furthermore, BAMx and CCSF propose that such a study approach should be assessed in the Stakeholder process that reviews the deliverability criteria. It is therefore even more important that this Stakeholder initiative begin immediately so that its results can be incorporated into the 2013-14 transmission plan.	At this time the ISO is not proposing to change the RA accounting or deliverability rules for internal or ISO external resources. Section 3.1.2 refers to the forward looking MIC (Maximum Import Capability) that the ISO has implemented about 2 years ago through a public stakeholder process, whereas the ISO will make sure that the main portfolio has enough RA import capacity available on each intertie in order to assure its deliverability as a whole. For detail description of the process please read section 5.1.3.5 in the ISO Reliability Requirements BPM http://bpmcm.caiso.com/BPM%20Document%20Library/Reliability%20Requirements/BPM_for_Reliability_Requirements_V15_clean.docx. The results of this process have been published every year under section 3.2.2 of the Board approved Transmission Plan. For 2012-2013 see: http://www.caiso.com/Documents/BoardApproved2012-2013TransmissionPlan.pdf .

[7] See Section 3.1.2 of the CAISO Draft 2013-14 Study Plan.

8	Barry Flynn & Pushkar Wagle, Bay Area Municipal Transmission Group (BAMx) and the City and County of San Francisco (CCSF)	**7. The CAISO Should Provide More Data than it Has in Past Annual Planning Processes and Reevaluate the Economic Benefit of Major Projects That Can Import Power from Out of State.** We appreciate the comprehensive study approach outlined in the Study Plan to perform the Economic Planning Studies. However, in the 2013-14 transmission planning cycle, we request the CAISO to provide more data and information than they have provided in the past. Such data should include, but not be limited to, identifying the level and location of renewable curtailments with and without the identified but not yet approved Delivery Network Upgrades under the multiple RPS portfolios identified in the production cost studies. This information and data is needed for Stakeholders to adequately participate in and assess the planning process. Further, in its comments on the Draft 2012-13 Transmission Plan, BAMx cited several reasons for the CAISO to delay approval of economically driven projects with benefits that fluctuate dramatically from year to year while it continues its study of their potential benefits, including certain projects that can import power from other States, such as the *Delany – Colorado River 500 kV line* project. Both BAMx and CCSF encourage the CAISO to take a fresh look at projects whose benefits seem to vary greatly from one annual transmission plan to the next. We especially see a need to evaluate how much of their benefits are dependent on the completion of other projects whose construction is uncertain.	The ISO is performing additional analysis and review on economically-driven transmission projects identified in the 2012/2013 transmission plan.
9	Ron Dickerson, California Consumers Alliance	On December 19, 2012, as the initial step of its 2013/2014 transmission planning cycle, the CAISO informed its Market Notice recipients that it was *seeking stakeholder input on demand response assumptions and generation or other non-transmission alternatives for consideration in the draft unified planning assumptions and 2013/2014 study-plan, in accordance with tariff Section 24.3.3(a).*	The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs.

		We note that nothing in tariff Sections 24.3.2(a) or; 24.3.3(a) excludes the consideration of incremental increases in demand response programs, generation, or other resources that impact transmission planning, for use in the baseline planning assumptions. We are disappointed that CAISO staff has decided to limit consideration to *specific existing programs that can be relied upon at present*--this is not a reasonable or justified decision in setting forth to increase the consideration of non-transmission alternatives. Consumers expect that decision-making processes that the CAISO carries out on their behalf will fully account for and maximize the value of both legacy and new investments in energy resources. Limiting consideration to existing program levels essentially discounts any further implementation of state policy priorities that provide direct benefits to consumers. It is incumbent upon CAISO to not only identify resources that have a material impact on transmission for utilizing in its baseline planning assumptions, but CAISO must also consider the full scope of public policy priorities affecting the provision of energy. Moreover, CAISO planning assumptions and analyses typically include incrementally increasing proxy levels of conventional resources--thus there is no legitimate reason why demand response, distributed generation or other resources that impact transmission planning are treated differently. As it stands, we recognize that the data CAISO seeks from stakeholders regarding demand response, generation or other resources is geographically specific and sufficiently detailed to warrant inclusion in a highly conservative subset of the baseline planning assumptions. However, the February 28, 2012 presentation, *Unified Planning Assumptions & Study Plan Transmission Planning Process,* and CAISO staff's discussion with stakeholders indicate that a number of obstacles and limitations	The ISO will also be working with the CPUC to ensure that confidentiality issues regarding data is not a barrier to transparent planning or the consideration of demand response as potential transmission issue mitigations.

		are undermining the incorporation of stakeholder submissions into the unified planning assumptions--not the least of which is how to go about relying upon stakeholder submitted information that is characterized as confidential. The opportunity that the CAISO provided stakeholders on December 19, 2012 is suffering from a fundamental flaw, illustrated by the CAISO treating submitted comments as proprietary information, similar to request window submissions, and exemplified by the fact that CAISO has not posted the comments submitted for broad stakeholder review--as outlined in tariff Section 24.3.3(d): *…All comments on the draft Unified Planning Assumptions and the Study Plan will be posted by the CAISO to the CAISO Website.* Furthermore, unless the opportunity the CAISO has provided stakeholders results in an accurate accounting for resources that have an impact on the transmission planning process, it cannot even be relied upon as the means to account for existing resources in 2013/2014 planning assumptions. We urge CAISO to refocus on a transparent method to identify and incorporate realistic resource assumptions in its 2013/2014 study-plan. As an alternative to the status quo, or punting the comparable treatment of transmission and non-transmission resources into future planning cycles, we urge the CAISO staff to coordinate with their colleagues at CEC and CPUC who have worked diligently to develop publicly reviewed, validated forecasts and goals for demand response, energy efficiency, combined heat and power, and customer sited distributed generation. The CAISO should note and take advantage of the Commissions' publicly available analyses, findings, and reports to the greatest extent practical--especially those works that contain information specifically intended for the purpose of utilizing in statewide electricity and transmission infrastructure planning processes. We are encouraged by slide 22 of the presentation titled, *Unified*	

		Planning Assumptions & Study Plan Reliability Assessment Assumptions & Methodology where the CAISO acknowledges it *shall consider lower cost alternatives to the construction of transmission additions or upgrades, such as: acceleration or expansion of existing projects, demand-side management, special protection systems, generation curtailment, interruptible loads, storage facilities; or reactive support.* The CCA has repeatedly called for the CAISO to assess lower cost alternative(s) whenever a reliability standard violation is identified. In particular, we request that CAISO explicitly add *pre-contingency generation dispatch* to its list of lower cost alternatives to the construction of transmission additions or upgrades. The CCA also seeks additions to relevant Sections 4.1.19 (Study Methodology) and, 4.5 (LT CRR) of the 2013/2014 draft study plan; we request that CAISO consider additional language indicating that in each case where the reliability and long term congestion revenue rights assessments results in identified mitigation plan(s), the CAISO will present and or post the lower cost alternative(s) considered, and the results of CAISO determination, for stakeholder review. CCA continues to hope that the comparable treatment of operational solutions and preferred resources will move forward in earnest; we see it as an opportunity to identify, examine and ultimately promote the most economically efficient, needed solution(s). In addition to developing realistic resource planning assumptions, it would be helpful and instructive if the draft study plan removes vagaries, and clarifies for stakeholders what the CAISO expects of advocates in order for resources to be considered viable solutions to identified needs.	

10	John Yarbrough or Aseem Bhatia, California Department of Water Resources - State Water Project (CDWR-SWP)	Treatment of RAS as a Non-wire Alternative Treatment of non-wire transmission alternatives must be fairly and adequately addressed. CAISO already recognizes energy storage resources as non-wire transmission alternatives and provides a clear path toward consideration in the TPP along with a clear implementation path under the GIP process where such projects may be eligible for certain tariff-based cost recovery. CAISO also recognizes Demand Response programs as a non-wire alternative. A RAS, which is an automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability, also functions as a non-wire transmission alternative, which benefits CAISO by increasing certain transmission path ratings, improving state-wide transmission reliability and deliverability, including that needed to support economic and policy-driven projects. RAS mechanisms should receive comparable treatment in the planning process, including a path toward implementation if selected. It is equally important that CAISO's base plan recognize the contributions of existing RAS mechanisms, and take into account any pending retirements, since these could easily change assumptions as to existing capacity. CDWR currently participates in a RAS under a contract with PG&E which is slated to terminate in 2014. As noted below, changes in assumptions could result from the termination of this arrangement.	The ISO will assess potential mitigation solutions to address constraints on the transmission system that are identified in the studies. The ISO will consider transmission development, special protection schemes and non-wire alternatives based upon the need identified in the studies and the characteristics of the mitigation required As noted by CDWR, the CDWR-RAS under contract to PG&E will terminate in 2014. The ISO will take this into consideration when conducting the planning assessment and future mitigation plans beyond 2014. .
11	John Yarbrough or Aseem Bhatia, California Department of Water Resources - State Water Project (CDWR-SWP)	RAS-supported Path 66 Rating CDWR agrees with CAISO that TPP studies must be open and transparent. Slide 8 of the February 28 presentation "Unified Planning Assumptions & Study Plan Reliability Assessment Assumptions & Methodology" included a table that identified major backbone transmission ratings in California. CDWR understands that the levels of these ratings, specifically the peak capacity rating of 4800 MW for Path 66 (N-S), are partly due to participation of	As noted by CDWR, the CDWR-RAS under contract to PG&E will terminate in 2014. The ISO will take this into consideration when conducting the planning assessment and future mitigation plans beyond 2014. In addition the ISO has added a note to Table 4-4 of the Study Plan to indicate the termination of the contract with PG&E beyond 2014.

		CDWR's pumping and generation facilities in PG&E's RAS program under an existing contractual arrangement scheduled to expire at the end of 2014. Given that pending expiration date, CAISO should quantify the reduction in major backbone transmission ratings, such as the ratings for Path 66, which may occur if CDWR's participation in the RAS program is discontinued after 2014. Otherwise, the base assumptions may be inaccurate.	
12	John Yarbrough or Aseem Bhatia, California Department of Water Resources - State Water Project (CDWR-SWP)	Continuation of Soon to Expire RAS Because CDWR's participation in the RAS will terminate at end of 2014 if no other means are in place to continue and fairly compensate for RAS, and because CAISO and other entities have relied on RAS-supported path ratings in their operational, planning, and interconnection studies, it is critical that CAISO provide clear direction regarding the future of this soon to expire RAS. Any studies or proposed projects relying on the RAS-supported Path 66 rating beyond 2014 would be problematic without a new contract or replacement mechanism through which CDWR could continue to participate in the RAS program. CDWR strongly encourages the CAISO to begin discussion on and address as early as possible the critical issue of RAS-supported major transmission paths, particularly where a RAS is scheduled to expire but could be continued if CAISO were to provide a clear implementation path.	As noted by CDWR, the CDWR-RAS under contract to PG&E will terminate in 2014. The ISO will take this into consideration when conducting the planning assessment and future mitigation plans beyond 2014.
13	John Yarbrough or Aseem Bhatia, California Department of Water Resources - State Water Project (CDWR-SWP)	Impact on Long-term CRRs Long-term CRRs (LT-CRR) have a term of ten years and are allocated and awarded based on Simultaneous Feasibility Tests (SFT) to ensure that existing LT-CRRs remain feasible over their full term. In the current and previous CRR SFTs used to support LT-CRR allocations and awards, what Path 66 rating or other assumptions supported by the Path 66 rating has the CAISO applied in order to ensure that LT-CRRs will remain feasible after 2014?	Data related to constraint limits used for running the CRR markets, including the Long-term CRR are considered restricted data and are only available to entities that have executed the CRR FNM non-disclosure agreement. These limits are similar to the limits used for the ISO Day-Ahead Market. However, for the CRR process, the enforced interfaces and paths are adjusted to account for historical derates, encumbered Transmission Ownership Rights (TORs) and Existing Transmission Contracts (ETCs).

14	John Yarbrough or Aseem Bhatia, California Department of Water Resources - State Water Project (CDWR-SWP)	Other Clarifications The February 28 presentation included Corrective Action Plans on slide 22 with CAISO recommendations to consider feasible transmission alternatives for operational mitigation measures to the construction of transmission additions or upgrades, such as demand-side management, special protection scheme, generator curtailment, interruptible loads, storage facilities, and reactive support among other alternatives. CAISO should work to establish clear treatment for these alternatives along with RAS, including cost recovery and compensation in order to be incentivized to offer such services that provide value to transmission reliability. CAISO should be more specific and consistent in its explanation of operational mitigation measures. If generation curtailment is envisioned, for example, what type of generation would need to be curtailed and under what circumstances? CAISO should also explain under what circumstances loads are allowed to be interrupted? The 2013/2014 draft study plan indicated that CAISO would perform an Economic Planning Study as part of the current planning cycle to identify the above mentioned mitigation plans. If not already included, the CAISO should consider inclusion of RAS/SPS as part of the economic study analysis.	The ISO will assess potential mitigation solutions to address constraints on the transmission system that are identified in the studies. The ISO will consider transmission development, special protection schemes and non-wire alternatives based upon the need identified in the studies and the characteristics of the mitigation required
15	Keith White and William Dietrich, California Public Utilities Commission	1. CPUC Staff Supports the Inclusion of Future Energy Efficiency (EE) Programs with a Reasonable Expectation of Attainment. CPUC Staff is encouraged that the CAISO is including incremental savings from EE programs yet to be funded or designed but with reasonable expectation of attainment. In particular, CPUC Staff is encouraged that the CAISO is already moving forward with the steps detailed in the CPUC-CEC-CAISO response to Senators Padilla and Fuller regarding the future use of energy efficiency in planning. Specifically, CPUC staff recommends that the California Energy	The ISO appreciates the comment. As indicated there is uncertainty as to the location of where the incremental energy efficiency will occur. The ISO will be utilizing either the methodology developed by the CEC staff as a part of the AB1318 analysis or bus-level allocation by the PTOs. With the current allocation methodologies, there are limitations due to issues such as climate zones and nature of uncommitted savings and associated customer classes which are not fully taken into account which results in the uncertainty. The ISO will continue to work with the CEC and the CPUC and support their efforts to develop more

		Commission's (CEC) approach for locational disaggregation of forecast savings is the best approach given the currently available data. This method was adopted in the 2012 LTPP. The incremental energy efficiency forecast was based on the CPUC's 2011 Potential Study, which does not include a locational breakout of EE potential, although it does break out energy savings by sector. In response to the CEC's and the CAISO's requests for greater disaggregation of EE potential, the CPUC's 2013 Goals and Potential Study is expected to break out EE potential by climate zone and building type, enabling a more locationally refined EE forecast for the next planning cycle. This change aligns with the 2013 IEPR where the CEC has indicated that forecasts will be disaggregated by climate zone. CAISO plans to develop its base case using the CEC's low savings case scenario for the incremental EE forecast. CPUC staff recognizes that this decision reflects reluctance to use a more optimistic EE forecast due to lack of more granular EE locations that would help assign EE to specific transmission constrained areas. CPUC Staff expects that with improved data in the next planning cycle, the CAISO will use the mid-case EE scenario, consistent with the CPUC's LTPP forecast.	robust methodologies to address the locational issues associated with these forecasts. The ISO notes that the current expectation to rely on the low energy efficiency savings forecast is based both on the current limitations in methodology to address the locational breakouts, and the requirement contained in mandatory planning standards to study the full range of possible demand. The ISO is also therefore optimistic that future efforts to improve the forecasting of energy efficiency overall combined with better locational granularity will enable even further consideration of energy efficiency in future planning cycles.
16	Keith White and William Dietrich, California Public Utilities Commission	2. The CAISO Should Include Demand Response (DR) as a Base Case Assumption as well as a Reliability Mitigation Measure, and there Should be a Stakeholder Process to Identify Relevant Operational Attributes for Inclusion of DR in Studies No Later Than the 2014-15 TPP. CPUC Staff has several recommendations for the CAISO's plan for including DR in the transmission planning process. First, CPUC Staff encourages the CAISO to consider all DR programs as potential to reduce the base case load forecast and serve as mitigations to reliability concerns, as explained in further detail below. Second, we request the CAISO to identify in formal written	The ISO appreciates the comments. The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs. The DR programs will need to be allocated to the applicable bus-level to assess the impact of the DR on the transmission system under the condition requiring the DR as well as the characteristics of the DR program as a means of mitigating constraints on the system.

		documentation the metrics for determining the amount of DR that would count towards reliability. Third, we would like to work with the CAISO to develop a mutually agreeable method of getting the full value of available DR performance data at the bus-bar level while protecting confidentiality. First, CPUC Staff encourages the CAISO to consider all DR programs as potential to reduce the base case load forecast and serve as mitigations for identified reliability concerns. In the context of local reliability studies, 1 in 10 peak load conditions do not appear suddenly but rather after a multi-day heat buildup. Under such conditions, slower responding DR programs such as Day-Ahead and slower Day-Of programs can be dispatched for the purpose of reducing peak load, thus potentially avoiding reliability concerns in the base case. Reduced peak loads have significant impact on power flow and stability assessments and hence identification of local capacity requirements. Alternatively, if not considered as a reduction in the base case load forecast, slower responding DR programs can still be considered as a potential mitigation to a reliability need, similar to how the CAISO would dispatch long-start generation to meet the forecast need. DR programs with quick response times can be considered as potential mitigations for any remaining reliability concerns. For example, DR programs that respond in about 30 minutes can mitigate thermal overloads while DR programs that respond within 5 minutes can mitigate voltage stability issues. The aggregate capacity of these types of DR programs are forecasted to total 1,771 MW in 2022, as CPUC Staff indicated in the previous round of comments on the CAISO 2013-14 TPP. CPUC Staff will continue to work with the CAISO to address any concerns with the use of DR programs to meet reliability needs. As such, CPUC Staff intends to provide the CAISO with bus-level forecasts of all DR program capacity including quick and slow	

		response programs. In the 2012 LTPP, the CPUC identified a low DR value of 2,249 MW and a high value of 2,857 MW in 2014 across the CAISO system for resource planning purposes. These values are based on the CPUC's load impact protocols which include ex ante and ex post estimates and assessments of program performance. In addition, CPUC Staff requests the CAISO to formally identify in written documentation the requisite metrics or characteristics for DR to be counted in reliability studies. In order to fully account for the potential of DR to meet reliability needs, CPUC Staff asks that the CAISO work with our staff, the CEC, and the Investor-Owned Utilities to clearly identify the necessary DR program characteristics required to meet reliability needs. CPUC Staff recommends that the CAISO initiate a stakeholder process to clearly identify the relevant operational attributes for DR to reduce peak load and serve as reliability mitigations in powerflow and stability modeling. This process should commence as soon as possible so that the full potential of DR to meet reliability needs can be counted in the 2014-15 TPP cycle. Finally, the draft study plan states that confidential information such as bus-level DR forecasts cannot be relied upon in the CAISO's planning process. Since some bus-level information is confidential, CPUC Staff requests that the CAISO clarify if bus-level granularity is required in every study or if limited aggregation of some data points (which can make the DR data non-confidential) would be acceptable. If limited aggregation is not possible, CPUC Staff will work with the CAISO to explore ways to protect confidentiality while retaining enough granularity for reliability studies, such as the use of Non-Disclosure Agreements.	

17	Keith White and William Dietrich, California Public Utilities Commission	3. The CAISO Should Clarify Intent to Refresh SONGS Outage Studies, and Should Run "No SONGS" Sensitivities in Alignment with Cases Adopted for the CPUC's 2012 LTPP. At this time, CPUC Staff believes that SONGS should be modeled online in the long-term, but that sensitivities should be run where the only changed circumstance is one or both SONGS units offline. While this recommendation may change in the future based on the ongoing analysis by the Nuclear Regulatory Commission or policy changes at the State level, CPUC Staff believes that the CAISO's current approach of modeling SONGS online as a base case is reasonable based on currently available information. CPUC Staff also requests the CAISO clarify in the Study Plan the exact scope and timing of its proposed refresh of the 2012-13 TPP nuclear outage studies (as well as OTC studies as noted below). The scope should cover the SONGS online case with the SONGS offline case treated as a sensitivity, and the study definition should clearly describe the amount of DR and incremental uncommitted EE included in each case. In order to align with planning assumptions adopted by the CPUC in December 2012, and to align with ongoing operating flexibility/renewable integration studies expected this year, we recommend that the CAISO model cases consistent with the CPUC's LTPP base case and No SONGS cases, but adjusted to meet demand levels appropriate for local area analysis. CPUC Staff looks forward to continued development and process alignment over the coming months and years among the CPUC, CEC and CAISO to further refine the resource planning process. However, CPUC Staff is concerned that other planning efforts that rely on TPP study results will be hampered if the SONGS refresh is deferred beyond the summer in the current TPP cycle. For example, by the end of 2013, there will be a procurement decision in the LTPP proceeding that will identify operational flexibility and	The comment referred to by CPUC Staff relates to potentially delaying the nuclear study local capacity analysis (with and without SONGS) in the 2013/2014 planning cycle so that the load forecast from the 2013 IEPR process can be available and utilized in those studies. This would enable ISO input into the 2014 LTPP proceeding to be consistent with input from other parties, who will be also relying on the 2013 IEPR forecast. However, the ISO is also aware of the CPUC's interest in further consideration of analysis "without SONGS" in the 2012 LTPP proceeding, and the ISO expects to support that effort. That effort would be expected to build on and continue from the analysis developed in the 2012/2013 planning cycle as a separate body of work, as opposed to being incorporated into the 2013/2014 transmission planning cycle. The ISO will expect to work with the CPUC and industry to determine additional study requirements to properly inform additional tracks in the 2012 LTPP proceeding.

		any residual LCR need stemming from an extended SONGS outage. Hence, there is a more immediate need for a refresh of the nuclear outage studies using TPP planning assumptions that are aligned with CPUC-adopted scenarios that will be used in the CAISO's operational flexibility studies	
18	Keith White and William Dietrich, California Public Utilities Commission	4. The CAISO Should Clarify Plans to Refresh the OTC Studies and Should Provide More Detailed Documentation Regarding Assumed OTC Units' Status in Each Study Period. CPUC Staff requests that the CAISO clarify the exact scope and timing of their refresh of the OTC studies since the last analysis was in the 2011-2012 TPP. Staff further recommends that the OTC studies coincide with the refresh of the SONGS outage studies as noted above. CAISO's clarification should include better documentation regarding which OTC units are assumed retired in each of the study periods, the specific resources assumed as replacement, and the efficacy of other potential resources (such as demand-side load reductions) in meeting identified needs. While the draft study plan states that OTC generation retirements will be modeled according to the State Water Resources Control Board (SWRCB) schedule, the draft study plan Appendix A3, Retired Generation, does not provide an exhaustive list of the retirements expected per the SWRCB schedule. The CAISO should clarify why this discrepancy exists between the SWRCB retirement schedule and Retired Generation list. The 2013-2014 TPP studies also need to identify the effectiveness of alternative locations in meeting any needs associated with the retirement of OTC generation and what types of resources are assumed as replacements. Finally, as discussed under Topic 9 below, the CAISO should reconsider certain planning assumptions regarding base case generating unit additions in the Southern California coastal area.	The ISO is seeking to coordinate our transmission planning efforts and assumptions with the planning efforts and assumptions of the CPUC and CEC. This requires that the ISO remain flexible with respect to the exact scope and timing of the studies to determine OTC replacement needs and the impacts of Nuclear generation unavailability. The ISO provided significant documentation regarding which OTC units are assumed retired, and was looking for more specific comments from stakeholders that could be specifically addressed. The ISO is not aware of any discrepancies between its retirement assumptions and the SWRCB schedule and none have been identified in these comments.

19	Keith White and William Dietrich, California Public Utilities Commission	5. For Economic Planning Studies, the CAISO Should Document Major Changes from the Underlying TEPPC Database and from Previous CAISO Studies, and Should Provide a More Detailed Explanation of Benefits for Projects Found to Have Benefits Potentially Justifying Approval. By analyzing a range of interacting system conditions and scenarios, the Economic Planning Studies illuminate not only particular transmission solutions, but also system conditions and issues more generally. So that we can best understand the drivers and implications of these studies, the CAISO should document in the Transmission Plan and public documents leading up to it not only the major economic study assumptions generally, but also the most important changes in assumptions relative to the underlying TEPPC west-wide database and relative to the CAISO's previous studies, particularly from the previous year. More comprehensive documentation of the full set of data changes should be provided in an Appendix or other separate document. We expect that besides being relevant to the CAISO's own studies, these changes may clarify the relationship of CAISO studies to a variety of west-wide planning studies such as those used by TEPPC and the other planning regions. CPUC Staff very much appreciate the robust sensitivity analysis for key factors that was included in the CAISO's 2012-2013 Economic Planning Studies. For studied transmission solutions calculated to produce high benefits potentially justifying approval, it is important to go one step further and provide a deeper explanation of the sources of benefits so that consequential positive benefits represent more than a "black box" outcome. This not only gives increased confidence in the results, it also greatly increases the valuable insights we obtain from these studies. We can use the recent 2012-2013 TPP economic study of the Delaney-Colorado River transmission project to illustrate the kind	Thank you for the comments. The ISO presented the major changes to the model at the stakeholder session for the 2012-2013 Transmission Plan. The ISO will continue to look for ways to improve how assumptions within the economic model are presented. In regards to the Desert Southwest – California (SWC) assessment in the 2012-2013 Transmission Planning process, as indicated in the Transmission Plan further analysis is required. The ISO will continue to conduct robust sensitivity analysis for major study subjects, as appropriate. The sensitivity analysis is an important mechanism to facilitate better understanding of the quantified economic benefit. In addition to the sensitivity analysis, the ISO strives to provide comprehensive information to facilitate better understanding of the quantified economic benefits. Currently, the ISO provides the following information to explain the economic benefits: a breakdown of the computed benefit, changes of power flows, and changes of congestion hours. The ISO will continue to enhance the information by providing more in-depth information including incremental LMP changes and incremental generation changes among different utility areas. With such comprehensive information and by viewing the results from several different angles, it will help to better understand the economic benefits that are computed from a complex simulation model based on a multitude of study assumptions.

		of more detailed explanation that would be valuable. The draft 2012-2013 Transmission Plan appears to indicate that substantial Desert Southwest-California congestion was not observed before simulating addition of this project, so that addition of the project did not greatly reduce modeled congestion, although it did redirect power flows by altering impedances along the relevant paths. This leaves it unclear what exactly was the basis of California consumers' energy cost savings that was the dominant source of calculated benefits. If the CAISO would report which locational prices were substantially reduced (with versus without the project) by location and time, and which categories of generators were dispatched significantly more (or less) at these times, our understanding and support would be greatly enhanced, not only regarding these particular benefit results, but also regarding system planning issues more generally. For example, perhaps there was surplus Arizona gas-fired generation that was more heavily dispatched to replace California gas-fired generation, during particular off-peak (and even peak?) hours after the Delaney-Colorado River project was added, but this is only conjecture until we have additional information.	
20	Keith White and William Dietrich, California Public Utilities Commission	6. For Each RPS Portfolio (by Location), the CAISO Should Report the Amount of MWs that Would Not be RA (Capacity) Deliverable without Identified "Policy" Upgrades, as Well as 8760-hour Energy Deliverability. Provision of RA deliverability to generators, especially renewables distant from loads, has been a major driver of transmission upgrades and the associated costs and permitting challenges. However, not every MW of generation, especially intermittent renewable generation, needs to be fully RA-deliverable to meet system reliability requirements, and RA deliverability at any cost is both unnecessary and untenable. Furthermore, California's 33% renewable energy goal, is just that, an energy (not capacity) goal. Therefore, to more fully inform transmission and resource	For major upgrades driven entirely by RA deliverability, the ISO will provide estimates of incremental deliverability. Please see response to BAMx on the deliverability methodology.

		planning, especially planning for the state's renewable energy goals, the CPUC Staff requests that the CAISO's studies for the 2013-2014 Transmission Plan provide two important kinds of information not provided in the draft 2012-2013 Transmission Plan: a) For each resource area and each RPS portfolio the CAISO should report not only what transmission upgrades are needed to provide full RA deliverability, but also how many MW of generation (in that area and portfolio) are calculated to be RA deliverable (and not deliverable) without adding the identified deliverability upgrades (but including identified reliability upgrades). b) For each resource area and RPS portfolio the CAISO should report the 8760-hour energy deliverability without the identified RA deliverability upgrades. This kind of information was provided in conjunction with production simulation studies in previous TPP cycles. Furthermore, there has been concern and incomplete understanding among a number of stakeholders (CPUC Staff included) regarding the rationale and appropriateness of the methodology and particularly the level of conservatism, in the CAISO's deliverability assessment methodology. This situation persists following a stakeholder meeting and round of comment on this topic, a few months ago. Therefore, we look forward to the CAISO's upcoming technical paper and stakeholder meeting on this topic, which we hope will among other things result in enhanced BPM documentation. In addition to hoped-for assessment and understanding of the appropriate statistical level of reliability required for "RA deliverability" summarized in the previous paragraph, it is important for planning purposes that we have a better understanding of how much RA and energy deliverability we would be getting for marginal transmission upgrades, as supported by requested TPP	

		reporting enhancements (a) and (b) above.	
21	Keith White and William Dietrich, California Public Utilities Commission	7. Reliability Studies Should Report the Amount of Avoided Load Drop Resulting From Large Reliability Upgrades of $50 Million and Above. The 2012-2013 Plan is slated to approve over $1.3 billion of reliability upgrades. With very few exceptions, the Plan gives no indication of the amount and probability of load drop, or associated economic loss, avoided by approved reliability upgrades. NERC and WECC reliability standards, and also CAISO planning standards do allow for controlled load drop under certain conditions, particularly where the probability is very low and the magnitude and duration of load drop are limited. The CAISO should strive in the upcoming 2013-2014 Transmission Plan to report estimated magnitudes of load drop avoided by major reliability transmission upgrades being considered for approval, as well as approximate probabilities of the contingencies (N-1, N-2, etc.) precipitating the load drop absent the upgrade. For the purpose of this request, major reliability upgrades are those estimated to cost $50 million or more. It would also be helpful if estimates of the economic cost of load drop were included in the report.	The ISO assesses potential mitigation solutions to address constraints on the transmission system that are identified in the studies to satisfy the performance requirements of the Reliability Standards. The Reliability Standards are deterministic in nature with specific associated performance requirements. As indicated, shedding or generation through an SPS may be an alternative considered as mitigation; however there may be limitations to SPS application that do not make it a viable technical solution where expected costs are not relevant. The ISO considers transmission development, special protection schemes and non-wire alternatives based upon the need identified in the studies and the characteristics of the mitigation required. The risk of load loss is not tied exclusively to the limiting contingencies tested in through application of the deterministic criteria, but is a much more complex exercise that would need to account for all of the potential combinations of events that can take place on a transmission system. While this exercise is manageable when considering supply resources or a very small number of transmission elements, such as radial supplied stations, the level of detail and complexity prohibit effective analysis across a complete transmission network.
22	Keith White and William Dietrich, California Public Utilities Commission	8. CPUC Staff Requests Special Study of Reliability Needs for San Francisco During the 2013-2014 TPP Cycle. The Draft 2012-2013 Transmission 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, for which high-cost mitigations have been proposed. If the CAISO is concerned about reliability in San Francisco, CPUC Staff would benefit by a comprehensive,	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. Depending upon the results, this issue may be brought forward for consideration at a future Board of Governors meeting.

		transparent special study of reliability for San Francisco and the San Francisco Peninsula as part of the 2013-2014 Transmission Plan. In particular, the CPUC is actively considering a PG&E Application to build a line from Embarcadero to Portrero. It would be helpful if the CAISO is able to provide timely and comprehensive information about the San Francisco peninsula's reliability requirements such as via a special study to aid the CPUC's consideration of the PG&E application.	
23	Keith White and William Dietrich, California Public Utilities Commission	9. TPP Assumptions Should Not Prejudge Regulatory and Market Outcomes by Including Carlsbad and Pio Pico as Online Units from 2016 Onward. In Table A2-1 of the draft study plan, CAISO assumes that both the Carlsbad Energy Center and the Pio Pico project come on line in 2016. CPUC Staff recommends that CAISO revise these assumptions and not include them as part of the base case analysis. Carlsbad does not have a proposed Power Purchase Agreement (PPA). The CPUC is currently considering a Proposed Decision and Alternate Proposed Decision in Application 11-05-023, both of which reject the proposed Pio Pico PPA. The CAISO should not prejudge these outcomes by assuming these two plants are online, but rather should identify reliability problems and the subsequent effectiveness of resource locations that address the problems.	Thanks for the comments. The ISO will perform sensitivity studies as appropriate to address scenarios without projects that are uncertain.
24	Keith White and William Dietrich, California Public Utilities Commission	10. Assumptions for Reactive Resources Should be Clarified. In Table A4-1 of the draft study plan, CAISO lists key reactive resources to be considered in reliability studies. The Final Study Plan would be more informative if this table also listed the types of devices providing the megavars. Where more than one substation is listed, e.g., the last row, "Suncrest (expected in 2012)" and, on a separate line "Penasquitos 230 kV," the CAISO should clarify whether the listed megavars are to be provided at one or the other substation as alternatives, or by a combination of equipment at both substations collectively.	There are 126 MVARS at Penasquitos and 126 MVARS at Suncrest. This missing information has been added to the final study plan. Also the reference to "expected in 2012" will be removed because the facility is in-service. All of the facilities listed are shunt capacitors except for the items with the asterisk indicating dynamic resources are required — these are SVCs. Key simply denotes large installations on the bulk transmission

		At page 21, the reactive resources listed in Table A4 are described as "key reactive power resources." CPUC Staff request clarification of the criteria or considerations that make these particular reactive resources "key."	system.
25	Valerie Seymour, Clean Coalition and Aram Shumavon, Distributed Energy Consumer Advocates	**II. Discussion** **a. The ISO should model Non-Transmission Alternatives in each scenario** The Joint Stakeholders applaud the ISO for acknowledging the need to model NTAs in its draft study plan. Going further, however, the ISO should as a matter of practice include in each evaluation of alternatives modeled an example of how NTA could address demand and system performance needs. While the SONGS outage has undoubtedly created a great deal of uncertainty at the ISO and elsewhere, one thing it has provided clarity on is the ability of the ISO to model NTA and non-generation alternatives that can and do play an important role in grid stability. The ISO, as part of the TPP, should similarly consider the ability of resources such as capacitors, synchronous condensers, static VAR compensators, and advanced inverters associated with DG or energy storage to address grid needs to the extent such infrastructure is practical and cost-effective. The TPP should support the use of preferred resources and these NTA practices are consistent with the state's Loading Order, compatible with the ISO's tariff, and have proven both cost-effective and rapid in their deployment when compared to new transmission and transmission-dependent generation alternatives. The full cost of the least-cost transmission upgrade may be greater than the cost of a comparable solution involving one or more elements of a distributed generation and intelligent grid (DG+IG) system, including demand response, energy efficiency, and energy storage, especially when the cost of acquiring such facilities as an	The ISO will assess potential mitigation solutions to address constraints on the transmission system that are identified in the studies. The ISO will consider transmission development, special protection schemes and non-wire alternatives based upon the need identified in the studies and the characteristics of the mitigation required The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs.

		NTA is understood to only be the cost of any pricing or market incentive required to result in deployments consistent with a programmatic NTA. For example, a 10% addition to existing compensation rates for any preferred resource that contributes to an NTA's planned capacity may be more than sufficient to ensure such resources are committed and deployed in the locations necessary to meet system requirements; the cost of this approach is not the cost of the facilities, but only the incentive required to influence their location. Such an approach would be consistent with the locational costs and benefits evaluations currently being undertaken at the CPUC.2 These preferred resource solutions address not only demand, but also contribute to preferred procurement, current and future RPS goals and emission targets, and satisfy the state's Loading Order. In addition, such distributed solutions reduce the scale of risk associated with loss of large individual facilities, enhancing grid resilience. In cases where NTA could be used at equal or lesser cost, policy and procurement should be developed to achieve this preferable alternative. For these reasons, the Joint Stakeholders recommend that the ISO more fully consider the ability of NTA to mitigate transmission needs. Because such NTA represent programmatic responses that would be met by numerous individual projects in aggregate, it would be appropriate for the ISO to model a preferred solution that could then be fulfilled, rather than relying upon submission of individual NTA facility proposals.	
26	Valerie Seymour, Clean Coalition and Aram Shumavon, Distributed Energy Consumer Advocates	**b. CAISO should include additional policy objectives in the TPP** The Joint Stakeholders feel that policy objectives in the draft proposal are incomplete and do not reflect the clear priorities of the Governor and other state energy agencies. While the 33% RPS and Resource Adequacy (RA) for renewables outside ISO's control area are important, and we fully support their inclusion in TPP,	The ISO portfolios include distributed generation assumptions provided by the CPUC and are assumed to be aligned with the DG policies of the State.

		other related energy policy objectives should also be included. Specifically, Governor Brown's 12,000 MW of distributed generation goal should be included as a policy objective, as the CPUC recognized in its recent LTPP Track I, Local Capacity Requirements, decision (D.13-02-015). Additionally, the state goal of reducing greenhouse gas emissions by 80% below 1990 levels by 2050, set by Governor Schwarzenegger in Executive Order S-21-093 and supported by Governor Brown, should be included as a policy objective in TPP modeling. By 2023, we must be well on the way to achieving this reduction if California hopes to do its part in reducing the effects of climate change and remain competitive in a changing world. As the RPS is the primary mechanism for achieving GHG emissions reductions in the electricity sector, and renewable deployments are unlikely to suddenly cease in 2020, further increases in the share of generation derived from renewables should be included in planning. The current minimum 33% step occurs well before the current study horizon, and while there is uncertainly on exact numbers, a continuation of the current annual trajectory represents an appropriate default assumption. Finally, when considering the role of DG and other preferred resources, the 1,400 to 1,800 MW of local capacity requirement (LCR) the CPUC recently required SCE to procure should be included in all TPP modeling.	
27	Valerie Seymour, Clean Coalition and Aram Shumavon, Distributed Energy Consumer Advocates	**c. Demand response and energy efficiency should be treated equally** The Joint Stakeholders are very pleased to see the inclusion, for the first time, of incremental uncommitted efficiency in the 2013/14 TPP. However, despite the uncertainty of where energy efficiency will come into the grid, which was cited as the reason for only including the lowest estimate, the ISO should consider the full amount of uncommitted energy efficiency forecast by the CEC in its modeling. In previous comments, the Clean Coalition has	The ISO appreciates the comment. There is uncertainty as to the location of where the incremental energy efficiency will occur. The ISO will be utilizing either the methodology developed by the CEC staff as a part of the AB1318 analysis or bus-level allocation by the PTOs. With the current allocation methodologies, there are limitations due to issues such as climate zones and nature of uncommitted savings and associated customer classes which are not fully taken into account which results in the uncertainty. The ISO will continue to work with the CEC and the CPUC and support

		recommended that "programmatic proposals", in addition to specific projects, require consideration under FERC 1000.6 These would include geographically targeted efficiency programs, which could direct the expected levels of energy efficiency to areas of most need. Once potential benefits are modeled and quantified, the ISO can create the necessary market incentives based on the offset cost of transmission. Following the same rationale used for inclusion of realistic levels of uncommitted energy efficiency, the ISO's modeling should also utilize the full expected contribution from other preferred resources. Demand response (DR) should be incorporated into planning in the same way energy efficiency is now included in the TPP. "Negawatts" of DR can provide flexibility and reliability equivalent to or better than megawatts of generation, and DR is equally capable of meeting fluctuating demand requirements. Therefore, the Joint Stakeholders are pleased to see the following in the draft study plan: *ISO is working with the utilities, and intends to consult with industry through the course of the summer, to finalize the complete set of characteristics demand response programs need in order to be viable transmission mitigations. The ISO will work with the utilities to identify those programs that have the appropriate characteristics such that they can be considered when alternatives are developed and compared once the study results testing system reliability have been completed, and options are being explored. (p.24)* The numbers currently listed in table 4-7 for DR programs from the IOUs are, according to the Joint Stakeholders' estimates, low and show a minimal increase over the ten-year period. According to testimony at the CPUC, SCE alone will have 1,900 MW of DR by 2014, more than is listed for all IOUs combined.7 Hopefully, the deeper investigation the ISO plans to undertake this summer will demonstrate that additional DR capacity is available. We also	their efforts to develop more robust methodologies to address the locational issues associated with these forecasts. The ISO notes that the current expectation to rely on the low energy efficiency savings forecast is based both on the current limitations in methodology to address the locational breakouts, and the requirement contained in mandatory planning standards to study the full range of possible demand. The ISO is also therefore optimistic that future efforts to improve the forecasting of energy efficiency overall combined with better locational granularity will enable even further consideration of energy efficiency in future planning cycles. The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs.

		recommend that the ISO create, for modeling purposes, DR subgroups based on response time and other relevant characteristics. By lumping all 30-minute-or-less capacity together, rapidly deployable automated demand response (ADR) is overlooked, or greatly undervalued. ADR is controlled directly by the utility or ISO and can respond almost instantaneously to fluctuating demand and supply, thus greatly increasing its value. While considerable effort has been made to improve the geographic specificity of DR and EE in recent years, the ISO should seek to design and utilize bus bar level DR and EE projections in the TPP and other ISO planning efforts. These assumptions should be consistent with those utilized by the CEC and the CPUC in the IEPR and LTPP processes and should be considered as potentially scalable as sensitivities so that they can provide the appropriate signals to policymakers throughout the state.	
28	Valerie Seymour, Clean Coalition and Aram Shumavon, Distributed Energy Consumer Advocates	**d. ISO assumptions about SONGS availability should be transparent and justified** The ISO's inclusion of SONGS in the base case scenario was questioned during the stakeholder meeting, due to the uncertainties surrounding its future operability and uncertain relicensing in 2022. While it is too soon to state with any certainty whether SONGS will come back online, in whole or in part, and when, the Joint Stakeholders request that the ISO thoroughly explain its assumptions on SONGS' role in the generation portfolio, both for 2018 and 2023. The sensitivity case in which SONGS is assumed not to be operational will be of great importance in contingency planning, particularly since the best evidence available today suggests that SONGS Unit 2 is unlikely to return to service in the near future and possibly never. This sensitivity analysis should prioritize NTA options that incorporate preferred resources to meet California's energy needs at the least cost	As stated in Section 4.6 of the study plan, as part of the 2012-2013 transmission planning cycle, two studies related to the nuclear generation backup plan were performed. One addressed the extended outage scenario of the nuclear generation in the intermediate time frame. The other considered the reliability concerns and potential mitigation options in the long term. The mid-term study is considered contingency planning for future unplanned long-term outages. The study addressed a request from the CEC 2011 IEPR. The study also incorporates once-through cooling policy implications for generating units that have compliance schedules. The long-term study was undertaken as part of the Study Plan 2013-2014 Transmission Planning Process utilities' relicensing assessments. The ISO will update and refine these studies and mitigation plans in the 2013-2014 transmission planning cycle. Please refer as well to the response to comments received from CPUC staff.

		possible while providing the best fit to all state energy policies.	
29	Susan Schneider, Consultant to Eagle Crest Energy	Specifically, Eagle Crest's comments address the portion of the CAISO's intent in the next TPP cycle to continue studies of contingency plans related to the potential absence of the San Onofre Nuclear Generating Station (SONGS) and measures to replace the capacity and flexibility provided by Once-Through Cooling (OTC) generation projects slated for retirement under directives from the California State Water Resources Control Board (SWRCB). The needs that were expected to be met by these resources are in very specific locations. The final draft 2012-2013 Transmission Plan identifies the need for thousands of MWs of repowered or added generation in the LA Basin and San Diego Local Capacity Areas (LCAs) to meet the Local Capacity Requirements (LCRs) of those areas in the absence of SONGS and key OTC plants. There is expected to be more than enough generation to meet system capacity needs overall. Among other things, the 33% RPS Portfolios in the Plan provide for addition of thousands of MWs of renewable generation in areas like the Riverside East CREZ. However, this generation cannot meet or offset LCR needs of areas to the west because of transmission constraints, and they cannot provide the flexibility and grid-integration services needed to maintain reliable service to load. The CAISO, the CPUC, and the larger Load-Serving Entities (LSEs) have sought to meet a portion of these needs through a combination of ad-hoc retention of older gas-fired generation projects and procurement/construction of new gas fired generation in the affected areas, combined with small transmission upgrades.1 The CAISO is also hopeful that some portion of the existing gas-fired generation base in these areas will be repowered.	Thank you for the comments. As transmission needs are identified in the planning horizon, the ISO will keep these ideas in mind.

		However, the economics of repowering those gas-fired units are unclear at best, and there has been considerable local resistance to investments that prolong their useful lives. Moreover, as discussed at the recent Resource Adequacy symposium2, these and the other incremental, stop-gap measures studied thus far will be inadequate to achieve the ambitious California green-house gas (GHG) reduction goals3. Meeting such targets will require a more fundamental transformation of resources used to deliver energy and related services to consumers. This transformation will likely require both an electricity resource mix above 33% renewables4 and use of non-fossil-fueled resources (such as large-scale pumped storage) to replace large gas-fired plants in providing integration and reliability services. Eagle Crest recommends that the CAISO look beyond the smaller, incremental measures considered thus far. Instead, the CAISO should consider a larger vision for long-term replacement of nuclear and OTC resources by a combination of: • The thousands of MWs of large-scale renewable (largely solar) resources that LSEs are already procuring from promising renewables areas in eastern California, and additional potential procurement from those areas (and possibly other states) to meet higher renewable-energy targets; • Integration resources to firm up those renewable resources (ideally, without curtailments that would reduce their RPS and GHG value) – e.g., pumped-storage resources, or surplus capacity from newer and more efficient already-existing fossil resources in Arizona and similar areas – that could also firm up in-LCA preferred resources like demand-side resources; and	

		• New policy-driven transmission projects from those resource-rich areas directly into one or both major population centers to the west (LA and San Diego) that bypass congestion "choke points" like Devers. These could include connections through the proposed TE/VS line that would connect SCE and SDG&E, enhancements to existing lines like the Sunrise Project or Southwest Powerlink, or new lines through new rights-of-way. The Study Plan for the 2013-2014 TPP should include a long-term analysis of these options. This analysis would compare the effectiveness in meeting state energy-policy goals, and the incremental cost and benefits (including LCR and GHG reduction benefits), to those under the other, more fossil-centered options that the CAISO has been studying. Eagle Crest believes that, when all the relevant factors are considered, these alternatives will prove to be both more effective and more cost-effective to ratepayers in the long run.	
30	Mark Etherton, Eldorado Valley Study Group/SWAT	Our overarching comments are related to coordinating the planning assumptions that are to be included in the 2013-2014 Unified Planning Assumptions and Study Plan. The EVSG participants have expressed the desire to work closely with the CAISO in developing the study assumptions and study plan details (and base cases) associated with the EVSG area and delivery within the WestConnect and CAISO areas. We would request that a specific Study Plan discussion be held to determine the details of base case development, potential scenarios, new facility configurations, etc. The EVSG would be willing to host and facilitate this meeting. Subsequent meetings should also be held as the study efforts proceed to coordinate preliminary results, etc. I would also offer the following detailed comments related to the Draft Study Plan (dated February 22, 2013):	Thank you for your comments. ISO will continue to coordinate and cooperate with the other interconnected regions, as indicated WestConnect. Regarding section 3.1.2, the determination of MIC is described in details in section 5.1.3.5 in the ISO Reliability Requirements BPM located on the ISO website at the following link: http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability Requirements All transmission facilities are assumed operational, however RA import allocation is only provided for transmission that can be scheduled upon in the ISO BAA. Transmission and resource contracts are treated as specified in ISO Tariff section 40.4.6.2.1 and a 10 year advisory estimate of future RA import capability is

		• **Section 3.1.2** deals specifically with Resource Adequacy and deliverability for renewable resources outside of the ISO BAA. As stated, the maximum import capability (MIC) is determined at each interface, assuming an interface exists from the EVSG area towards southern CA area: ▪ How is the MIC determined for the EVSG area to southern California? Does it include all transmission facilities including non-CAISO operated facilities? ▪ How are the contractual issues included for the LADWP/SCPPA owned facilities related to RA and MIC? ▪ If new injections are being proposed that are terminated via HVDC facilities in the EVSG area through a wires-to-wires interconnection, how would the associated resources be treated for full deliverability RA?	posted at: http://www.caiso.com/Documents/AdvisoryEstimates-FutureResourceAdequacyImportCapability_Years2013-2022.pdf . If the injections of new resources are within the ISO BAA then they need to go through the ISO resource interconnection process and resources must choose FC status in order to receive deliverability. If the injections of new resources are outside the ISO than MIC may be increased as specified above and described in section 5.1.3.5 of the ISO Reliability Requirements BPM.
31	Mark Etherton, Eldorado Valley Study Group/SWAT	• **Section 3.2** deals with CTPG and continues to include plans specifically for California: ▪ How will CTPG coordinate with WestConnect/SWAT to develop coordinated base cases, expanded study scenarios, planning assumptions, etc. as anticipated by FERC Order 1000 Interregional Coordination? Unilaterally or Collaboratively?	The ISO expects that the referenced processes will be developed collaboratively between the ISO and its neighboring regional planning entities, building on the coordination and cooperation that has been fundamental to developing the FERC Order 1000 interregional planning compliance filings.
32	Mark Etherton, Eldorado Valley Study Group/SWAT	• **Section 4.2.3** Discusses coordination of potential infrastructure from the Phase 2 of the GIP: ▪ What process will be followed specifically to screen the infrastructure that will be examined in more detail for this analysis?	The screens provided in Section 4.2.3 will be used to identify projects from the Cluster 5 Phase II study, and these projects will be considered for potential modification to address needs identified in the 2013/14 planning process that are beyond the Cluster 5 Phase II study needs.
33	Mark Etherton, Eldorado Valley Study Group/SWAT	• **Section 4.4** states that Economic Projects can be submitted to the CAISO during the comment period for the development of the 2013-2014 Study Plan, and specifically ones that are received and determined to have a "High Priority Study Request": ▪ What evaluation criteria will be specifically used for determining the priority?	The ISO selects the high priority economic studies based on the requests received and its own analysis of congestion and other potential benefits. Additional studies can be provided as comments on ISO analysis – the ISO does not require stakeholders to provide studies. The ISO's consideration of planning scenarios in landing on

		▪ Can stakeholders provide analysis in parallel with the CAISO efforts using the same base case assumptions and details; with potentially additional scenarios for consideration for the longer-term benefits (beyond the Ten-Year timeframe)? Additional background related to the projects and concepts that have been continued to be evaluated for the EVSG area are included on the following pages. [see their comment submission for additional information)	recommendations in its transmission plan is based on the framework established and set out in the ISO's tariff, so studies of scenarios outside of that framework may have limited usefulness in developing the transmission plan.
34	Sandeep Arora & Lawrence Willick, LS Power Development, LLC	**(1) Out of State Resource Assumptions** Section 4.2.1 of the Study Plan states that Step 1 in the 33% renewable resource analysis methodology is: "Establish renewable portfolios to be studied that are aligned closely with the portfolios developed by CPUC and used by the ISO in its renewable integration studies. In accordance with tariff Section 24.4.6.6, the renewable portfolios will reflect such considerations as environmental impact, commercial interest and available transmission capacity, among other criteria. Multiple portfolios have previously been developed, but may need to be updated." In addition, Section 4.2.1 states: "The CPUC and CEC provided the ISO with the RPS portfolios to be used in the 2013-2014 transmission planning process on February 8, 2013. The RPS portfolio submission letter is located on the ISO website at the following link: http://www.caiso.com/Documents/2013-2014RenewablePortfoliosTransmittalLetter.pdf " However, there is a contradiction in the CPUC and CEC RPS portfolios in that such portfolios do not recognize the potential for out of state resources. Specifically, the February 7, 2013 submission letter does not even include consideration of out of	The comments relate to the CPUC portfolio development process, which the CPUC conducted stakeholder consultation on prior to providing to the ISO for use in the 2012-2013 Transmission Planning Process. The ISO will confirm with the CPUC the accuracy of the information regarding the PPA's and ensure that they are accounted for appropriately in the renewable modeling. As a reminder, the portfolios represent future generation projects to satisfy the net short. Existing projects already meeting the RPS are modeled in the power system planning models but are not identified in the portfolios since they are already producing. The ISO notes that the CPUC and ISO portfolios do include out-of-state resources. For many of these resources, no further transmission upgrades are necessary to access them. In those instances where additional transmission may needed to access levels of out-of-state renewable resources identified in the RPS portfolio, the ISO stands ready to assess such need.

		state resources with **existing Power Purchase Agreements approved by the CPUC** and which **are currently in operations delivering energy**. Clearly these out of state resources are viable and should be given consideration in the Transmission Plan. For example, the following out of state resources have existing Power Purchase Agreements with CAISO members which have been approved by the CPUC, but do not appear to be listed as in any of the renewable resource portfolios: • 845 MW Shepherds Flat project in Oregon • 125 MW Goshen project in Idaho • 189 MW Glacier project in Montana These resources are an indication that additional out of state resources could be economic and merit evaluation, such as Wyoming wind.	
35	Sandeep Arora & Lawrence Willick, LS Power Development, LLC	**(2) Economic Study Requests** LS Power requests two transmission segments for economic studies in the 2013/14 Transmission Plan: (a) Harry Allen – Eldorado 500 kV Line (b) Harry Allen – Eldorado 500 kV Line in conjunction with Robinson Summit to Harry Allen ("ON Line") and Midpoint to Robinson Summit 500 kV line In the 2012/13 Transmission Plan, Harry Allen-Eldorado was found to be economic. As of the 3/13/13, this project is not being taken to the March board meeting for approval due to other ongoing studies. While we recommend CAISO to take this project to the Board later this year after the ongoing studies are complete. However, in the event this project cannot attain Board approval this year, we request that this be a high priority economic planning study for the 2013/14 Transmission Plan. Also, in addition to the energy saving benefits that were quantified in 2012/13	As indicated in the ISO 2012-2013 Transmission Plan approved by the ISO Board of Governors, the ISO is in the process of evaluating transmission options and alternatives in the region, including the Eldorado to Harry Allan line. One example is an ongoing study between the ISO and Nevada Energy regarding potential upgrades in the area. The ISO intends to continue this analysis and provide any recommendations upon the completion of its comprehensive assessment.

		Transmission Plan, 2013/14 studies should also quantify capacity benefits that this project will provide. Given existing out of state resources with power purchase agreements identified above, as well as existing transmission system congestion evidenced by the high price differential between market prices at the Mid-Columbia hub and South Path-15 hub, incremental regional transmission between these markets is likely to be economic. We request consideration of Phase 2 of the Southwest Intertie Project as an economic planning study. The Southwest Intertie Project consists of a new single-circuit 500 kV transmission line from the Midpoint substation in Idaho to the Robinson Summit Substation in Nevada to the Harry Allen Substation in Nevada to the Eldorado Substation in Nevada, which is owned by Southern California Edison. Phase 1, the segment from Robinson Summit to Eldorado is known as the One Nevada Transmission Line or ON Line and is currently in construction. The southern-most portion of the project, from Harry Allen-Eldorado, was found to be economic on a stand-alone basis in the 2012/13 Transmission Plan. The last section, from Midpoint to Robinson Summit, represents a relatively small incremental investment to complete a much larger path. Together with the Boardman-Hemingway project in development by Idaho Power, Bonneville Power Administration, and PacificCorp, Phase 2 of the Southwest Intertie Project provides significant incremental deliverability from the Mid-Columbia hub to South Path-15. Besides offering Economic benefits to CAISO ratepayers, the two transmission segments also bring several additional benefits: help meet policy objectives, improve reliability & operational flexibility and offer a potential solution for SONGS shutdown scenario. Therefore, more detailed technical studies (in addition to economic studies) should be conducted by CAISO staff to assess these additional benefits in the 2013/14 Transmission Planning cycle.	

36	Sandeep Arora & Lawrence Willick, LS Power Development, LLC	**(3) Status of Under Construction Projects** CAISO's Draft Transmission Plan provides a list of Planned Generation projects, under Appendix A-2, Table A2-1, page A-23. This list is incomplete. There are several additional generation projects that are currently under construction and will be online in the near term but are not on this list. LS Power's Centinela Solar Energy Facility connecting to Imperial Valley substation is one such example. CAISO should review this list for completeness and update. Also, CAISO should ensure that these resources are modeled on line in the study basecases. CAISO typically relies on CPUC, CEC for Construction status of new generation projects. In addition to this, we suggest that CAISO Planning staff should also seek updates from its New Resource Interconnection (NRI) team on project construction statuses. A new generation resource that is under construction (and is delivering to CAISO BAA, regardless of whether it is located in or out of state) is required to start the Pre-Sync coordination process with CAISO's NRI team at least 6 months prior to its Initial Synch Date. This additional piece of information should be captured in developing the study basecases.	As specified in pages 16-17 of the study plan Table A2-1 was only intended for thermal or solar thermal resource projects with valid CEC license. The rest of the new resources that do not require a CEC license will be modeled based on the description provided 4.1.9. Centinela Solar Energy falls under Level 1 – units under construction and will be modeled based on the latest available in-service date. Once posted please check the base case for accuracy and provide further comments if necessary.
37	Kerry Hattevik, NextEra Energy Resources	<u>The Highwinds to Windhub 230 kV Circuit</u> As part of the CAISO 2011-2012 Transmission Plan, dated March 23, 2012, the CAISO approved the Highwinds LCRIF to radially connect the Highwinds Substation to the Windhub Substation in order to access renewable resources in the Tehachapi area (Segment 3B of the Tehachapi Renewable Transmission Project). Conditional approval was originally granted by the CAISO Board of Governors on May 18, 2009. NextEra operates two projects interconnecting to the LCRIF. The phased North Sky River wind project totals 292 MW of capacity. The initial phase is currently online and constitutes 163 MW of capacity. NextEra has until 2015 to complete the second phase. In addition, NextEra's 77 MW Sky River wind facility also interconnects to Segment 3B.	Thanks for the comments. To the extent that the ISO identifies transmission expansion needs in the vicinity of High Winds we will keep in mind options that take advantage of the capacity available in the LCRIF line if it were networked with additional lines.

		Section 24.3.4.1(b) states that the CAISO's assessment of whether an Economic Planning Study request should receive High Priority will consider: *Whether the requested Economic Planning Study addresses delivery of Generation from Location Constrained Resource Interconnection Generators or network transmission facilities intended to access Generation from an Energy Resource Area or similar resource area assigned a high priority by the CPUC or CEC.* Segment 3B of the Tehachapi transmission project provides 1,150 MW of capacity to access a high priority renewable energy resource area. Accordingly, NextEra requests that the CAISO consider studying the prospect of networking Segment 3B to encourage broader utilization not only of the transmission capacity of the LCRIF, but also the entire ratepayer investment in the Tehachapi renewable energy zone.	
38	Kerry Hattevik, NextEra Energy Resources	<u>Locational Constrained Resource Interconnection Facilities and Network Facilities</u> Even if NextEra's request to network the LCRIF does not qualify as a High Priority Economic Planning Study, the CAISO should nevertheless clarify the means by which the LCRIF can be converted to a network facility. Section 24.6.3.1(d) requires that any application to construct a LCRIF include a plan to ultimately network that facility. Proposals must include: *An assessment of the potential for the future connection of further transmission additions that would convert the proposed facility into a network transmission facility, including conceptual plans;* Furthermore, in the CAISO evaluation of the whether the proposed facility met the requirements of Section 24.4.6.3.2, the CAISO	The ISO has reviewed plans that include networking the LCRIF line as options during generation interconnect cluster studies. However, at this time there is not an identified need for such a plan.

		must have evaluated the capability and prospect for ultimately networking the LCRIF. Section 24.4.6.3.6(b) required the CAISO to determine: *Whether, and if so, the extent to which, the facility has the capability and flexibility both to interconnect potential LCRIGs in the Energy Resource Area and to be converted in the future to a network transmission facility.* Conditional approval of the LCRIF was granted by the CAISO Board of Governors at its May 18, 2009 meeting. (See http://www.caiso.com/Documents/Board6)DecisionforConditionalApprovaloftheHighwindLocationConstrainedResourceInterconnectionFacilityProject(LCRIF). Since Segment 3B was constructed and went into commercial operation in December 2012, it clearly passed the eligibility and evaluation screens established to assess the potential for the facility to convert to a network transmission facility. However, the discussion in the approval memorandum does not address these criteria. NextEra believes it would be beneficial for the CAISO to disclose and revisit the analysis that supported the determination that these elements of the tariff were satisfied. Moreover, from the tariff criteria, it seems clear that it was not intended that such facilities remain radial facilities in perpetuity. Since Segment 3B passed the threshold that included the capability of LCRIF's to ultimately convert to a network facility, it seems reasonable to reassess the merits of the original plan. These comments, therefore, request that the CAISO revisit the original proposal for networking Segment 3B and study the ability to convert the facility to network facilities.	

39	Kerry Hattevik, NextEra Energy Resources	**Conclusion** NextEra appreciates the opportunity to request that the CAISO's study the prospect for converting Segment 3B of the Tehachapi to a network facility either through an Economic Planning Study or, alternatively, as part of its obligation in approving an LCRIF to define potential mechanisms for such conversion.	Thank you for the comments.
40	Mark Higgins, Pacific Gas & Electric	**Public Policy Objectives (Sections 3, 4, 4.2)** PG&E believes that the CAISO's draft study plan criteria and objectives should be broadened to take a more comprehensive look at the capability of the transmission system to meet public policy and renewable resource integration objectives by making a number of minor modifications to the plan language. PG&E has attached our suggested changes addressing this objective in Appendix A, Sections 3, 4, and 4.2.	The ISO as has made some changes throughout the Study Plan; please refer to the final study plan.
41	Mark Higgins, Pacific Gas & Electric	**OTC Generation (Section 4.1.9, page 17)** The CAISO has proposed in Table 4-3 that Pittsburg 5 and 6 be modeled on-line for 2013-2017 and for 2018 and beyond. Pittsburg 7 is proposed to be modeled off-line for 2018 and beyond. PG&E recommends that Pittsburg 5, 6 and 7 all be modeled as on-line for 2013-2017 and then off-line for 2018. In determining when "new" generation is considered in the base case of studies, the CAISO had generally considered generation that is under construction or has received regulatory approval to be modeled as on-line. Because the current proposed plans for Pittsburg 5 and 6 have not met this threshold, PG&E believes that all three Pittsburg units should be modeled as off-line at the end of 2017.	Based on information provided by GenOn to the ISO, the ISO concurs with PG&E's suggestions to model these units as unavailable beyond 2017.
42	Mark Higgins, Pacific Gas & Electric	**Demand Forecast (Section 4.1.11, page 18)** PG&E supports the CAISO proposal to incorporate incremental uncommitted energy savings. Reducing demand commensurate with the CEC's Low-Savings identified in the *Energy Efficiency Adjustments for a Managed Forecast: Estimates of Incremental Uncommitted Energy Savings Relative to the California Energy Demand Forecast 2012-2022*, dated September 14, 2012 is	Thank you for your comment.

		appropriate for the 2013-2014 TPP studies.	
43	Mark Higgins, Pacific Gas & Electric	**Local Area Studies (Suggested location: 4.1.20, page 28)** PG&E believes that a number of unique and critical long term transmission concerns are developing in focused areas of PG&E's service territory that are not currently being fully evaluated using normal study criteria. These issues are as follows: • **Kern Area Load** The Kern area is experiencing an increase in load interconnection requests on the outlying boundaries primarily served by long mostly radial 70 kV transmission lines. In order to address reliability issues identified in the 2012-2013 TPP, in addition to potential local transmission limitations caused by new load interconnections, PG&E requests that the CAISO complete a detailed study of the Kern area to include forecasted load interconnections. • **Humboldt Area Generation & Extreme Events** As a part of the Reliability Assessment study, defined in Section 4.1 of the Study Plan, PG&E recommends the CAISO include an analysis of the transmission supply issues and reliability impacts to the Humboldt area under extreme events. PG&E asks that the CAISO consider adding additional language to the study plan to capture the evaluation of these localized concerns as part of the Reliability Assessment. Recommended language is contained in Appendix A as Section 4.1.20.	As a part of the assessments for the planning areas identified in the Study Plan, which include Humboldt and Kern, assessments will be made based upon the study assumptions and performance requirements of the Reliability Standards. If in the Humboldt area, PG&E has specific extreme events as defined in the Reliability Standards which PG&E feel need to be assessed that have not already been done the ISO would appreciate the details of such which will be studied as a part of the area planning assessment. As identified in the study plan, the ISO relies upon the PTOs to provide forecast allocation to the bus level based upon the CEC Demand and Energy Analysis. If the PTO has received specific load interconnection requests which are proceeding, the interconnection proposal is submitted to the ISO with the PTOs proposed mitigation solutions. The ISO reviews the interconnection proposal to ensure that it fits into the long term area plans and does not propose any reliability constraints. If so, the ISO provides will concur with the interconnection proposal with in the Transmission Plan.
44	Mark Higgins, Pacific Gas & Electric	**RPS Study Methodology (Section 4.2.1, page 29)** As part of its proposed methodology the CAISO states that it will "establish renewable portfolios to be studied that are aligned closely with the portfolios developed by CPUC and used by the ISO in its renewable integration studies." PG&E requests that the CAISO communicate to stakeholders early in the process if and when the CAISO's RPS portfolios deviate from the portfolios	During the past ISO planning processes we have provided details on the modeling of the CPUC portfolios, including the renewable production levels, and we will continue this practice. The CPUC will provide the bus locations for the DG as it has done in the past. Please contact the CPUC for information on their methodology for determining these locations.

		developed by the CPUC. PG&E requests that the CAISO provide to stakeholders the dispatch level to be considered for different renewable technologies. PG&E also requests the CAISO provide details on its methodology as to how it will assign the Distributed Generation portion of its RPS portfolios to specific buses for use in its power flow studies.	
45	Mark Higgins, Pacific Gas & Electric	**Local Capacity Requirement (Section 4.3, page 31)** PG&E suggests that the load forecast used for the local capacity studies also include the effects of incremental uncommitted energy savings. These incremental uncommitted energy savings should be consistent with the CEC Low-Savings level identified in the demand forecast outlined in the *Energy Efficiency Adjustments for a Managed Forecast: Estimates of Incremental Uncommitted Energy Savings Relative to the California Energy Demand Forecast 2012-2022*, dated September 14, 2012.	On a going forward bases the ISO intends to use the same load forecast with the same incremental uncommitted energy savings for LCR studies as used in the transmission assessment studies. Base cases for the LCR studies were built in December 2012 and posted for comments on January 2013 before the decision to move to a CEC forecast that contains incremental energy savings was implemented.
46	Mark Higgins, Pacific Gas & Electric	**Economic Planning Study (Section 4.4, page 32)** In 2012, CAISO markets experienced substantial congestion due to the projected thermal loading on the Table Mountain 500/230 kV transformer following a Table Mountain South (TMS) Double Line Outage (DLO) contingency, which was modeled in the CAISO market as binding element 6110_TM_BNK_FLO_TMS_DLO_NG. PG&E requests that the CAISO complete an Economic Planning Study to evaluate the congestion associated with the above mentioned binding element.	In the 2012/2013 Transmission Plan, CAISO proposed to modify the existing SPS for the Table Mountain South DLO. This modification is expected to significantly reduce or even eliminate congestion on the Table Mountain transformer. Table Mountain transformer congestion with the modified SPS will be evaluated in the 2013/2014 Transmission Plan.

47	Mark Higgins, Pacific Gas & Electric	**Nuclear and Once Through Cooling (Section 4.6, pages 32-33)** Based on our understanding, the CEC requested the DCPP absence studies that CAISO performed in the 2012-2013 TPP cycle. Because the CAISO's Nuclear Absence Studies performed in the 2012-2013 TPP cycle addressed the CEC's request, additional studies for DCPP are unnecessary in the 2013-2014 Transmission Planning Process. We therefore request that the CAISO exclude any studies related to DCPP from the 2013-2014 Transmission Planning Process. In addition, because the objective of the 2012-2013 CAISO nuclear generation backup plan was to evaluate potential transmission reliability concerns in the absence of DCPP, PG&E requests that the CAISO remove the reference to the "utilities' relicensing assessments" as an objective of the study. Studies required to support DCPP relicensing efforts are outside the scope of CAISO studies. A complete redline of our suggested changes to Section 4.6 are provided in Appendix A.	As indicated the absence of DCPP was studied in the 2012-2013 Transmission Planning Process as a part of the Nuclear Generation Backup study. The ISO will remove references to relicensing within the study plan as well as has made additional changes to the scope of the OTC and Nuclear study scope.
48	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**Introduction and Summary** Pathfinder is in the development stages of a large-scale wind generation project that will be located in southeast Wyoming and plans to interconnect to the CAISO Balancing Authority Area ("BAA") at the Eldorado Substation via a high-voltage direct current ("HVDC") transmission line being developed by Zephyr Power Transmission, LLC ("Zephyr"). As with the 2012/2013 Transmission Planning Process ("TPP"), Pathfinder remains concerned with the assumptions used to develop the generation portfolios as part of the CAISO's Draft Study Plan, as well as the narrow focus of scenarios that excludes meaningful consideration of out-of-state renewable resources. Specifically, the Study Plan should seek to accommodate a range of possible future resource development scenarios rather than	Please see the responses below (Nos. 49 to 53) to Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC specific comments.

		limiting the CAISO's comprehensive transmission planning efforts to three specific scenarios. Incorporating such flexibility into its transmission planning activities appropriately recognizes the uncertainty that is inherit in generation development and will promote generation options and competition that will reduce total ratepayer costs even if not producing the lowest cost for transmission. Among the scenarios that the CAISO should plan for is one that assumes a substantial increase in renewable energy imported into California. This is consistent with the Federal Energy Regulatory Commission ("FERC") requirements that require consideration of out-of-state resources in the transmission planning process. The Western Electricity Coordinating Council's ("WECC") 10-Year Study should also be considered by the CAISO in its transmission planning process. Lastly, in accordance with Section 24.3.4 of the CAISO Tariff, Zephyr requests that the CAISO perform an Economic Planning Study. The request is more fully described below.	
49	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**The CAISO Must Consider At Least One Scenario with Significant Out-of-State Imports and Options** To help ensure that reliability and other policy goals are served at the least overall cost, the CAISO should incorporate in the 2013/2014 TPP generation scenarios that include economical renewable resources from outside of California. In particular, the CAISO should again consider increased out-of-state renewable resources being imported to the CAISO through the Eldorado Valley and delivered to southern California, specifically considering out-of-state wind resources such as wind resources from southeastern Wyoming delivered to California via HVDC transmission. WECC's Transmission Expansion Planning Policy Committee ("TEPPC") findings in its 10-Year Regional Transmission Plan and the Federal Energy Regulatory	The ISO's planning methodology is set out in its tariff, and the ISO's use of portfolios that are developed by the CPUC or identified by other local regulatory agencies is an efficient and effective means of coordinating input assumptions and identifying which renewable resources LSEs will likely be procuring as part of their CPUC- or LRA-regulated procurement activities, as well as determining the resource priorities of the CPUC and any LRAs. Please refer to the responses to comments received from TransWest Express. Consideration of transmission needs to enable development of new renewable resources is addressed in the ISO's policy-driven analysis as reflected in tariff section 24.4.6.6. The ISO notes that its portfolios do include a material quantity of out-of-state resources. Concerns and comments regarding renewable generation potential in or outside of

		Commission's ("FERC") Order 1000 further support recognition of out-of-state imports and options as part of the CAISO's transmission planning effort. **A. The WECC Transmission Plan Has Independently Demonstrated the Value of Out-of-State Imports for California and the West** In developing its 2013-2014 Transmission Plan, the CAISO should carefully consider "TEPPC" findings in its 10-Year Regional Transmission Plan – 2020 Study Report ("2020 Study Report"). Among the scenarios considered in the 2020 Study Report were two involving 25,000 GWh increases in Montana and Wyoming wind production and associated transmission to convey the energy to California. The WECC conclusion on the impact of increasing wind production was: Based on the capital cost estimates prepared for the aggressive wind cases as shown below in Table 4, all of the aggressive wind cases have a cost benefit compared to the PC1 SPSC reference case. The savings are mostly related to the estimated capital costs of the resources. A closer review of the 2020 Study Report reveals the magnitude of the identified savings is substantial, in particular for the Wyoming high wind scenario – a scenario that aligns with Pathfinder's proposal to deliver high quality wind energy to California. For that scenario, the Report found a net reduction in regional production costs of $1,556 million per year compared to the base case scenario—the lowest production cost of any of the scenarios studied. In consideration of the work and findings by WECC and TEPPC, the CAISO should carefully consider one or more scenarios assessing the impact of a significant increase in renewable imports.	California, or arguments that the CPUC should direct its jurisdictional load serving entities to procure more out-of-state generation to meet RPS goals should be provided into the CPUC-led process developing these critical assumptions and forecasts feeding into the planning process. The ISO cannot dictate to the CPUC, LRAs, or their various jurisdictional load serving entities what specific resources they should procure to meet RPS goals. The ISO notes that it determines the need for policy-driven transmission upgrades that efficiently and effectively meet applicable policies under a variety of location and integration assumptions, while mitigating the risk of stranded investment. Key factors in this determination are commercial interest in resources in the geographic area and priorities and study results provided by the CPUC and LRAs. If there is not sufficient, or any, demonstrated commercial interest in an area, and the CPUC does not identify the area as a priority for purposes of LSE procurement (and does not direct its utilities to procure energy from the area), there will be a high risk of stranded investment -- and that is a result which the ISO tariff expressly seeks to avoid.

50	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**B. FERC Order 1000 Provides an Independent Basis for Considering Out-of-State Generation Imports** Another reason for the CAISO to include at least one scenario with significant increases in out-of-state imports (or, more specifically, wind from Wyoming per the WECC 2020 Study Report) is that it may be legally required. FERC Order 1000 requires transmission planning efforts to look beyond a transmission provider's borders and evaluate regional generation and transmission scenarios. The Order "requires each public utility transmission provider to participate in a regional transmission planning process that produces a regional transmission plan and complies with existing Order No. 890 transmission planning principles." The Order also ensures that: …transmission needs driven by Public Policy Requirements are considered in local and regional transmission planning processes…to ensure that public utility transmission providers in every transmission planning region, in consultation with stakeholders, evaluate proposed alternative solutions at the regional level that may resolve the region's needs more efficiently or cost-effectively than solutions identified in the local transmission plans of individual public utility transmission providers." Order 1000 concludes: …that it is necessary to have an affirmative obligation in these transmission planning regions to evaluate alternatives that may meet the needs of the region more efficiently or cost-effectively. The Order continues that without such a regional approach: …transmission providers may not adequately assess the potential benefits of alternative transmission solutions at the regional level	See response to # 49. The ISO tariff does not require the ISO to consider a scenario based on significantly increased levels of out-of-state renewables. The ISO notes that the CPUC and CEC recommended four possible RPS scenarios. None of them was a scenario involving significantly increased levels of out-of-state renewables. Similarly, there was no demonstration of commercial interest in a significant quantity of renewable resources from Wyoming. To the extent these factors change relevantly in the future, the ISO stands ready to consider potential transmission upgrades to access renewable resources in Wyoming. The ISO also points out that, under its tariff, even if the ISO were to develop a high import sensitivity scenario, unless that scenario becomes the base case scenario, the ISO lacks any authority to base any policy-driven transmission upgrades on such scenario. Under current circumstances, the ISO is relying on a reasonable set of resource assumption scenarios. Finally, the ISO notes that FERC has not yet acted on the ISO's Order No. 1000 regional compliance filing, and the ISO and its neighbors have not yet filed their Order No. 1000 inter-regional compliance filings.

		that may meet the needs of a transmission planning region more efficiently or cost-effectively than solutions identified by individual public utility transmission providers in their local transmission planning process. Additionally, Order 1000 describes the importance of a regional plan for meeting renewable procurement requirements. The Order finds that regional transmission planning is vital to identify solutions to cost-effectively integrate "location-constrained renewable energy resources needed to fulfill…the renewable portfolio standards adopted by many states." Order 1000 points out that "some transmission planning processes do not consider transmission needs driven by Public Policy Requirements," resulting in a struggle to "address transmission expansion necessary to…comply with renewable portfolio standards." Therefore, CAISO's transmission planning process should conform to the intent of Order 1000 by studying and considering generation scenarios with substantial increases of out-of-state renewable resources.	
51	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**The 2013/2014 Plan Should Conduct a Sensitivity Analysis to Model High Out-of-State Imports** The 2012/2013 TPP conducted a sensitivity study for high out-of-state imports of renewable energy, looking specifically imports into California at the Eldorado 500 kV bus. Pathfinder and Zephyr greatly appreciate the CAISO's effort and inclusion of this sensitivity analysis in the 2012-2013 ISO Transmission Plan, and request that the CAISO continue to include this study effort in this current planning cycle. Inclusion of this sensitivity analysis is important as the CAISO should consider a broad range of planning scenarios, versus being confined to a narrow set of scenarios for resource development. Conducting a sensitivity analysis that considers high out-of-state imports is an important effort for building upon the limited set of scenarios developed by the	See comments to # 50. The ISO has studied over a dozen different renewable portfolios during the last three planning cycles. Further, the ISO plans to study three new portfolios in the 2013-14 planning cycle. The ISO notes that the amount in the resource portfolios for which commercial interest has not been demonstrated is approximately 1500 MW. The ISO has approximately 30,000 MW of renewable generation in its interconnection queue. Also, as indicated above, there has been no demonstration of commercial interest in Wyoming wind by California LSEs, and such resources have not yet been identified as a resource priority by either the CPUC< CEC, or LRAs. Any suggestion that there has been no consideration of out-of-state resources for purposes of meeting RPS goals is incorrect.

		California Public Utilities Commission ("CPUC").	California expects to meet its renewable needs in part by importing over 5000 MW of renewable generation. Given these current facts the ISO does not believe it is reasonable at this time to repeat the High out of State sensitivity scenario that it performed in the last planning cycle.
52	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**Request for Economic Planning Study** Pursuant to Section 24.3.4 of the CAISO Tariff, Pathfinder and Zephyr are submitting a request for an Economic Planning Study. This request follows Zephyr's request in the 2012-2013 TPP, which although rejected, was a contributing factor in the CAISO conducting a sensitivity study for a high out-of-state import scenario. One reason given for the rejection was that the prior request did not identify project congestion. However, the sensitivity study conducted as part of the prior planning cycle identifies congestion at the El Dorado 500 kV bus from generation imports from other states, and therefore Zephyr's Economic Planning Study request is renewed as it seeks to have the CAISO assess congestion identified by the CAISO in the prior cycle. The sensitivity study conducted as part of the 2012-2013 planning cycle used the "Commercial Interest portfolio" as the base case, assumed 3,000 MW of renewable generation importing into California at the El Dorado 500 kV bus, and was conducted on the peak load scenario. The study resulted in overloads over multiple transmission lines as the lines exceeded emergency ratings. "With the assumption that all additional out of state renewable generation would be injected at the El Dorado 500 kV bus, expanding the transmission system from El Dorado to the load centers was found to be needed." An additional option to mitigate congestion includes "[u]pgrades on other branches of the North branch group of West of River." Accordingly, it is clear that congestion associated with	In review of this Economic Planning Study Request and as the ISO has discussed on previous occasions the current RPS portfolios do not support the renewable resources at the sending end of the proposed transmission line. As a result, and as detailed in the 2012-2013 transmission plan, without this proposed inter-regional transmission project, all California RPS resources are delivered without curtailment. In this situation, the policy and economic needs of this proposed transmission project would not be justified.

		renewable resource imports has been identified, and this request should qualify as a High Priority Economic Planning Study for consideration in this TPP cycle. Pathfinder and Zephyr understand the desire of the CAISO to use the recommended generation portfolio developed by the CPUC as one necessary option to study for its planning purposes, but in order to undertake a comprehensive transmission planning effort, the CAISO should study other potential generation portfolios as well. The High Out-of-State Import Sensitivity analysis that was conducted in the 2012/2013 planning cycle was a helpful start and provides the foundation to expand and pursue more meaningful analyses of out-of-state import scenarios in this current 2013/2014 planning cycle. The 2013/2014 TPP is the proper forum to go the next step and evaluate the total cost of delivering cost effective renewable resources to California customers, and reflecting the costs for both generation and transmission. The generation portfolios developed by the CPUC do not allow the CAISO to study the broad range of resource development that may occur over the planning horizon and may not reflect the necessary information to fully evaluate the total cost of energy from out-of-state resources. The TPP provides an opportunity and process for the CAISO to enhance and expand upon the resource portfolios provided by the CPUC, and conduct a more meaningful analysis of the value of out-of-state renewable resources to California. Without this analysis, it is not possible for California to give a fully informed determination on what the lowest cost solution will be for consumers in the state. Based on the above, Pathfinder and Zephyr hereby request the CAISO to conduct an Economic Planning Study to identify the most cost effective method of relieving the congestion between Southern Nevada and the major load centers in Southern California so that queued generation located in the Southern	

		Nevada area or interconnected with the CAISO grid in the area can be cost-effectively delivered to markets in Southern California. This Economic Planning Study request is intended to address the following items: • The expected increases in transmission congestion over Path 46 (with a particular focus on the Northern System as discussed above) during the planning horizon used in the CAISO TPP; and • A potential reduction in the need for Local Capacity Resources in the eastern portion of the Los Angeles Basin. Pathfinder and Zephyr are fully committed to working with the CAISO, as well as WECC and other regional planning groups as necessary, to accurately model this high import scenario, including capital costs, capacity factors, and other relevant information that may be necessary for the CAISO to accurately model out-of-state renewable resources. It is important to note that Pathfinder and Zephyr are not requesting the CAISO to identify or recommend a transmission project for inclusion in the next Transmission Plan; rather, the request is to fully study the economic benefits of cost-effective out-of-state renewable resources to California, so that this information may better inform the stakeholder process.	
53	Chase Kappel on behalf of Pathfinder Renewable Wind Energy, LLC and Zephyr Power Transmission, LLC	**Conclusion** Pathfinder and Zephyr appreciate the opportunity to submit these comments on the CAISO's 2013/2014 TPP and the Draft Study Plan. For the reasons articulated herein, the CAISO should consider generation scenarios that include meaningful out-of-state resources as part of its comprehensive transmission planning efforts. The CAISO is requested to perform an Economic Planning Study to identify the most cost effective method of relieving the congestion between Southern Nevada and the major load centers in Southern California.	See response to # 52.

54	Huang Lin, San Diego Gas & Electric	**Regarding the published CAISO 2013-2014 Transmission Planning Process Unified Planning Assumptions and Study Plan, SDG&E has following comments:** 1. Page 6, 3.1: Public Policy Objectives section, does not discuss the nuclear backup studies or the risk of an early SONGS retirement in the public policy objectives. This is inconsistent with the treatment of the Sycamore-Penasquitos 230Kv line and the reactive support projects identified in the 2012/2013 ISO TPP process.	The study plan addresses the need to study the impacts of OTC and Nuclear generation retirement.
55	Huang Lin, San Diego Gas & Electric	2. Page 6-7 3.1.2: Are there concerns that the State RPS goal of 33% will fall short if external renewables procurements are not considered part of the RA deliverables?	The CPUC has identified the Imperial County as a cost effective location for developing renewable to meet the 33% RPS goal. The ISO and CPUC have determined that these renewable needed to meet the 33% RPS goal will not be developed if the deliverability from this area is not increased.
56	Huang Lin, San Diego Gas & Electric	3. Page 11, 4.1.3.3: If ISO will be using Benefit Cost Ratio as a driver of identifying the reliability projects (under the CAISO planning standard section), the study plan should outline the methodology and clarify the selection criteria	Within the ISO Planning Standards information required for conducting BCR calculations is provided on page 14.
57	Huang Lin, San Diego Gas & Electric	4. Page 15, Table 4-2. ISO identified the "seed cases" for SDG&E case building. SDG&E has following recommendations: a) For the 2015 summer peak case ISO specified the 2013 HS2 case. This case could be used, however, the 2015 HS3 case is going to be approved this week and it would be more up to date than the 2013 HS2 case, which was approved back on 11/30/2012. b) ISO listed the 2017 HS1 case which was approved on 10/7/2011 as the one to use for making the 2018 summer peak case. There is a much newer 2018 HS2 case that should be used. This 2018 HS2 case was approved on 7/19/2012. c) ISO listed the 2017 HW2 case as the one to use for making 2018 light summer case, which was approved on 4/26/2012. This is a fairly recent case, however, SDG&E suggest avoid substituting	CAISO concurs with SDG&E's recommendations, which basically propose to utilize the latest and up-to-date "seed cases" in the TPP study.

		a winter case for a summer case as the winter cases have significantly different flows than summer cases. Instead of the 2017 HW2 case we suggest use the 2018 HS2 case to make the 2018 light summer case. For the same reason, the 2015 summer off-peak case we suggest start with 2015HS3 as well. d) For the 2023 summer peak case ISO specified the 2023 HS1 case and we concur that this is the one which should be used, as it was approved on 10/22/2012. e) Lastly, for the 2023 summer off-peak case ISO specified the 2022 LS1 case, and we concur since the case was approved on 5/23/2012.	
58	Huang Lin, San Diego Gas & Electric	5. Page 16, 4.1.9: This section states that using generic dynamic data for modeling planned generation is acceptable. SDG&E notes that most of the dynamic data that is furnished to the generator interconnection (GI) team from generation developers uses proprietary EPCLs. However, the WECC does not allow these EPCLs to be contained in any dynamic data sent to the WECC. This forces SDG&E (and presumably the other PTO's) into the odd position of providing generic data to the WECC case-building process when specific data is available.	The latest version of the GE PSLF software that is used in dynamic simulations has dynamic stability models for renewable generation, including models for solar PV with various types of inverters. CAISO encourages generation developers to provide the data for their projects utilizing the models included in the GE PSLF manual. Since the standard models are now available, proprietary EPCLs are no longer needed. The existing models can accommodate specific data without using generic data. Generic data may be provided only if specific data for future projects (such as which type of inverters will be used) is not available.
59	Huang Lin, San Diego Gas & Electric	6. Page 18, 4.1.10, Transmission Projects: "…The transmission projects that the ISO has approved will be modeled in the study. This includes existing transmission projects that have been in service and future transmission projects that have received ISO approval in the 2012-2013 or earlier ISO transmission plans…" How do we treat the projects that ISO deemed "needed" but not "recommended for board approval" in the 2012/2013 draft transmission plan"?	The ISO board approved transmission plan clarified which projects were approved and which were not. Only the approved projects will be modeled.

60	Huang Lin, San Diego Gas & Electric	7. Page 26, 4.1.19, Power Flow Contingency Analysis: It is not clear in the study plan: 1) if ISO's outage / contingency list includes the outages of major WECC interties outside of the ISO controlled grid; 2) if ISO contingency processor monitors the neighboring system to identify the impact of the major transmission element outage within ISO controlled grid.	The studies of the CAISO bulk transmission system include outages of major WECC interties outside of the ISO controlled grid if these outages impact the ISO. Contingency processor for the bulk system studies also monitors the neighboring systems.
61	Huang Lin, San Diego Gas & Electric	8. Page 30, 4.2.3: Has the ISO considered possible disparities in the cost estimates generated in the TPP vs. the GI process? It may be difficult to have a true apples-to-apples comparison between a TPP project with a detailed cost estimates versus a GI project estimate generated using unit costs.	The ISO applies due diligence to obtain comparable cost estimates.
62	Huang Lin, San Diego Gas & Electric	9. Page A-20/21, Table A1-3 lists existing generation and the unit's maximum capacity; the values do not match up with the PMAX in our cases for the smaller units. This is probably due to the fact that we use LCR values and these values may be derived from other data, such as NQC. Ocotillo Express is listed in A1 at 299 MW, which matches the PMAX as modeled in PSLF.	The ISO intended to give the reader an overall feel for available resource within each area. The ISO has not intended to exactly match either the Pmax in the base cases, Pmax in the ISO Master file, the NQC list or any other resource interconnection documentation.
63	Huang Lin, San Diego Gas & Electric	10. Page A-25 Table A4-1 Reactive Resources – there's a typo in the name, and we should have 4-63 cap banks at Penasquitos 230Kv bus.	Thank you for your comment. The ISO has changed the Penasquitos 230 kV capacitor banks to 126 MVAr in Table A4-1 to represent the currently installed capacitor banks.
64	Huang Lin, San Diego Gas & Electric	11. Page A-28: Shouldn't the list of SDGE SPSs be a bit more inclusive: a. 5.1 230 kV TL23040 OMEC-TJI SPS b. 5.2 230 kV OMEC Gen SPS c. 5.8 CFE SPS d. 5.9 Miguel Bk80/81 SPS e. 5.10 500 kV TL50001 Gen Drop SPS f. 5.11 500 kV TL50003 Gen Drop SPS g. 5.12 500 kV TL50005 Gen Drop SPS h. Path 44 South of SONGS Safety Net	Five of the eight SPSs have already been included. Per TMC1505, the 230kV TL 23040 Otay Mesa – Tijuana SPS is currently disabled and will be watched if there is any implications for CFE to reactive this scheme. CAISO will add the rest of three SPSs below to the study plan. 5.1. 230kV TL 23040 Otay Mesa – Tijuana SPS (This SPS is currently disabled and will be watched if there is any implications for CFE to reactive this scheme) 5.11. 500kV TL 50003 Gen Drop SPS 5.12. 500kV TL 50005 Gen Drop SPS

65	Huang Lin, San Diego Gas & Electric	12. Regarding the Generation modeled in the base case scenario, SDG&E urges the ISO to make sure all the bases with and without the SONGS or Encina generation are covered.	Section 4.6 of the study plan addresses this concern.
66	Huang Lin, San Diego Gas & Electric	**Regarding the CAISO Feb 28 Stake Holder meeting, SDG&E has following comments:** 1. In discussion with CAISO regarding the study plan for next cycle's reliability assessment, ISO had indicated that both SONGS unit will be modeled and dispatched for the base cases; while one case dispatches a single SONGS unit at 70% output and another case with no SONGS units, to be tested as sensitivities, presumably all as part of reliability analysis. However, in 02/28 stakeholder meeting, CAISO "Unified Planning Assumptions & Study Plan Once Through Cooling/Nuclear Generation Absence Studies" presentation indicated that "…*ISO is considering deferring the updates and refinement to the nuclear generation absence and once-through cooling generation to mid November 2013 through May 2014 time frame in order to Incorporate the CEC's 2013 IEPR demand forecast, including up-to-date information on uncommitted energy efficiency assumptions… If this path is pursued, the updated studies would become separate from the 2013/2014 transmission plan and be released as a separate study*". SDG&E urges the CAISO to refrain from further delay of the study to address these critical and immediate southern California system concerns as the problem is with us today, and any resulting transmission upgrades are most likely to be long lead time projects. The uncertainty of study assumptions regarding the demand forecast and / or uncommitted energy efficiency can be addressed by analyzing the range of data via a "book-end" approach. With the SONGS licenses up for renewal in 2022/2023 time-frame and the application for a license extension on indefinite hold, SDG&E considers it is more realistic to study a case with no SONGS units as a base case scenario instead of sensitivity in the study year of 2023.	Thank you for the comments. The ISO performed studies with and without SONGS in the last planning cycle and in the last two LCR studies. We are currently working on another sensitivity study without SONGS. Please refer to the response to CPUC staff comments.

67	Huang Lin, San Diego Gas & Electric	2. On presentation "Unified Planning Assumptions & Study Plan Transmission Planning Process" slide #6, ISO indicated the scope of the 2013/2014 technical study cycle include"…33% by 2020 renewable resource analysis to identify needed policy-driven elements". CAISO's reliability study from last year indicated that the existing transmission in construction / in pipeline is sufficient to fulfill the need for year 2020 RPS?	Maintaining the 33% RPS goal after 2020 includes an annual growth in the need for renewable generation based on load growth. The ISO needs to continue to update and fine tune the current transmission plan and ensure renewable transmission needs after 2020 are met.
68	Huang Lin, San Diego Gas & Electric	3. There appears to be too much uncertainty in this study plan: DR Characteristic, Energy Efficiency committed / uncommitted incremental energy savings, OTC, and treatment of SONGS. For example, presentation "Unified Planning Assumptions & Study Plan Transmission Planning Process" slide #13, presentation "Unified Planning Assumptions & Study Plan Reliability Assessment Assumptions & Methodology" slide #18, regarding demand response it was mentioned repeatedly that "programs that have the appropriate characteristics" and "CPUC's expectations for demand response programs". What exactly are the referred "appropriate characteristics" and "CPUC's expectations"? Please clarify.	The ISO will be working with the CPUC, PTOs and industry to establish the criteria of the existing and potential future DR programs so as to appropriately incorporate in to the planning assessment. The characteristics of the various demand response, such as how they are to be triggered, limitations to the usage such as how often and when they can and when they cannot be triggered need to be clarified for existing and potential new programs. With this the ISO will consider the existing DR programs when assessing the mitigation solutions along with potential future programs after further assessment of the programs. .
69	Huang Lin, San Diego Gas & Electric	4. On presentation "Unified Planning Assumptions & Study Plan Reliability Assessment Assumptions & Methodology" slide #14, ISO indicated "Conventional generation in pre-construction phase with executed LGIA and progressing forward will be modeled off-line but will be available as a non-wire mitigation option", then on slide #15 "New CEC approved resources" listed Carlsbad and Pio Pico Energy center both as "Pre construction status" with the "first year to be modeled" in 2016. Does it mean that these units will be modeled, but offline for 2016? Please clarify.	Yes. The subject units will be modeled off-line.
70	Huang Lin, San Diego Gas & Electric	5. On presentation "Unified Planning Assumptions & Study Plan 2013-2014 ISO LCR Studies" slide #4, it indicated that "Units under long-term contract turned on first". Please provide a list that identifies such units.	ISO does not maintain such list in a public manner rather it relies on local regulatory agencies for status of such contracts. Specifically for San Diego local area the only local regulatory agency, California Public Utilities Commission, would be able to publically provide such list.

71	Garry Chinn, Rabindra Kiran, Mark Minick & Karen Shea, Southern California Edison	*Economic Project Model* SCE recommends and appreciates further discussion regarding recent CAISO's model updates for economic modeling. SCE also looks forward to working with the CAISO to provide input on assumptions. For example, SCE will provide the CAISO follow up and is interested in understanding the CAISO's modeling of many operating protocols as well as other input assumptions. Also, SCE understands that the CAISO utilized a modeling database that is called the "TPP" case. This case may appropriately be used for transmission modeling as it uses a peak load that is a "one-in-five" load which is about 4% higher than a normal "one-in-two" load forecast. However, the "one-on-two" forecast (known as the expected load forecast) is normally used by resource planners for economic analysis. SCE recommends the CAISO migrate to the "one-on-two" forecast for its economic analysis. There may also be some other assumptions used in this "TPP" case that also need further review. Also, assumptions need to be adjusted, or there may need to be other sensitivity cases, to incorporate expected levels of incremental EE, DR, CHP, and localized generation in the future. The assumptions need to be adjusted or there will be a significant increase in the anticipated energy requirements. SCE understands the CAISO is working on this and SCE is available to discuss.	In the economic planning model, the ISO uses the"1-in-2" load forecast, not "1-in-10". In the ISO 2012/2013 Transmission Plan, use of 1-in-2 load forecast was documented in Section 5.5.2 (Load Demand) as follows: "As a norm for economic planning studies, production simulation models 1-in-2 heat wave load in the system to represent typical or average load conditions." In prior ISO transmission plans, there were similar documentations in the section of economic planning studies.
72	Garry Chinn, Rabindra Kiran, Mark Minick & Karen Shea, Southern California Edison	*Gas Prices* For economic projects, we recommend a further discussion regarding gas prices. *Table 2-1 Schedule for the 2013-14 Planning Cycle (page 3)* For the policy driven and economic planning projects, SCE recommends that the CAISO involve PTO's early on in the process	As stated on Page 8 of the Feb 18th presentation "Unified Planning Assumptions & Study Plan – Economic Planning Studies", the ISO will use natural gas prices developed from the CEC's NAMGas model. The ISO policy and economic planning studies build upon the reliability study results. The policy and economic analysis will be

		to ensure that all new proposed transmission projects are adequately reviewed and agreed to by both parties. In order for a timely review, in the future SCE would strongly recommend the ISO post the preliminary policy driven & economic planning study results earlier than November 13, 2013.	presented at the November is stakeholder session.
73	Garry Chinn, Rabindra Kiran, Mark Minick & Karen Shea, Southern California Edison	*CEC Portfolio* There seems to be a discrepancy between the amounts of generation indicated in the CEC's renewable portfolio and actual executed GIA's in the SCE area. Unless the CEC portfolio is reconciled to reflect the latest data, there will continue to be a question in the validity of the results.	GIA's are not the most reliable data that can be used to predict actual generation development. The CPUC and CEC portfolios consider commercial arrangements between generators and LSE's and permitting information and other information which is considered more reliable that GIAs for predicting generation development.
74	Mark Etherton, Southwest Transmission Partners, LLC	We are coordinating closely with APS as the sponsor for the Hassayampa-North Gila #2 (HANG2) Project, as well as with the IID and SDGE as the existing transmission owners in the southern WECC region to complete Phase 1 of the WECC Three Phase Rating Process in 2013. The most recent WECC Progress Report is included with these comments. The permitting for the NGIV2 Project is progressing with the Draft Environmental Impact Statement to be completed in 2014. We are encouraged that the CAISO will also continue to evaluate the benefits to the region of the NGIV2 Project for the 2013/14 Planning Cycle as discussed at the February 28, 2013 meeting. As submitted with the comments to the 2012/13 Economic Studies, 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. We believe this estimate is conservative and will work with the CAISO during the 2013 Study Cycle to discuss the details of this Capital Cost as well as additional scenarios to increase the Benefit/Cost ratio well above the CAISO threshold for approval. There are also significant	Thank you for the comments. We continue to monitor this portion of the system for reliability, policy and economic transmission needs. The ISO will continue to assess the economic benefit of the proposed North Gila – Imperial Valley 500 kV line #2 and will reassess the cost estimate during the process.

		reliability benefits of the NGIV2 Project to the region that can be explored in more detail over the 2013/14 Planning Cycle.	
75	Sean O'Reilly, Chetty Mamandur and Les Guliasi, Trans Bay Cable, LLC	Trans Bay's comments to the Draft Study Plan are limited: Trans Bay believes that (1) the CAISO should expand the scope of the "state or federal requirements or directives" that may be used to identify a policy-driven transmission element beyond what the current Draft Study Plan identifies; and (2) the CAISO should include a statement in the Draft Study Plan that, in the future, transformers, synchronous condensers, and static var compensators ("SVCs") may be placed outside of a Participating Transmission Owner's ("Participating TO") substation, and therefore may be eligible for competitive solicitation. 1. Policy-Driven Upgrades Section 23.3.2 of the Tariff provides that the Study Plan shall provide, among other things, "[i]dentification of state or federal requirements or directives that the CAISO will utilize, pursuant to Section 24.4.6.6, to identify policy-driven transmission elements." (emphasis added). In the Draft Study Plan, the CAISO stated, The objectives of the unified planning assumptions and study plan are to clearly articulate the goals of, and agree upon assumptions for, the various public policy and technical studies to be performed as part of Phase 2 of the TPP cycle. These goals and assumptions will in turn form the basis for ISO approval of specific transmission elements and projects identified in the 2013-2014 comprehensive transmission plan at the end of Phase 2. Draft Study Plan, at p. 1. Thus, the state or federal "policy-related" laws identified in the Study Plan appear to be the only ones eligible to drive policy transmission upgrades.	The ISO's determination of transmission needs as reliability-driven, policy-driven or economically-driven is based on the ISO's tariff, and is not driven by whether the resulting projects would be eligible for competitive solicitation or not. The ISO considers transmission implications of retired generation, for whatever cause, to be a reliability issue as any number of parameters and considerations may play a part in the retirement decision. Also, the state requirements for addressing once-through cooling generation do not require generators to retire; other compliance options are also available to the owners of those generators. With respect to SONGS, the ISO is not aware of any state or federal policy directive at this time regarding SONGS that would require the ISO to assess the need for policy-driven upgrade to meet such policy. In addition, the ISO noted that in its Order No. 1000 regional compliance filing which is pending at FERC, all regional transmission projects greater than 200 kV, including reliability projects, are eligible for open solicitation unless they are modifications to existing facilities. As a point of clarification, the ISO has not specified that SVCs and synchronous condensers must be placed inside existing substations.

		Under the current Draft Study Plan, the CAISO has identified only two state directives that would qualify to determine a policy driven upgrade – the Renewables Portfolio Standards and import Resource Adequacy deliverability status. Draft Study Plan, at p. 6. Trans Bay believes that this list is too narrow, and that other worthwhile policy objectives should be considered. Specifically, Trans Bay believes that upgrades necessary to ameliorate the effects of Once-Through Cooling (OTC) retirements and the potential absence of the San Onofre Generating Station (SONGS) must also be eligible to be analyzed as potential policy-related upgrades. Clearly, the retirement of OTC units is a "state or federal requirements or directive[]" that might lead to the identification of additional reliability transmission upgrades, and the CAISO hasn't provided a justification for omitting OTC from its list of policy-related objectives. According to the CAISO's website: The once-through cooling policy approved by the State Water Resources Control Board became effective on October 1, 2010. This policy calls for the retirement or modification of 16 power plants within the ISO balancing authority that are critical for system and local reliability and to ensure sufficient availability of ancillary services to support renewable resource integration. . . . The ISO will study the reliability impacts of the policy implementation as part of its annual transmission planning process and will join with the California Energy Commission [CEC], California Public Utilities Commission [CPUC], California Coastal Commission [CCC], State Lands Commission [SLC], California Air Resources Board [CARB] and the State Water Resources Control Board [SWRCB] to form the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS). The organizations will work together to implement the new policy in a manner that	

		does not threaten the reliability of the state's power supply. See http://www.caiso.com/1c58/1c58e7a3257a0.html. Thus, there is no doubt that the CAISO is studying the impacts of OTC at the direction of the State Water Resources Control Board, and in conjunction with the CEC, CPUC, CCC, CARB, and other related government agencies to solve policy-related issues created by the OTC policy. Similarly, transmission solutions needed due to the potential retirement of SONGS may be policy driven. In the 2012-13 Draft Transmission Plan, the CAISO noted that it prepared studies assessing the impacts on the transmission system of "future unplanned and long term outages to the two nuclear generating stations in California, as well as the impacts of future retirement of both stations" at the direction both the CEC and CPUC (see Revised Draft 2012-13 TPP, at p. 33). The CAISO itself stated "several mitigations identified in these studies may provide benefit in addressing the current and potential future outage of the San Onofre Nuclear Generating Station." The mitigation of a potential long-term SONGS outage clearly has state and federal policy-related benefits, and again the CAISO has not explained why this "state policy directive" does not warrant inclusion in the Draft Study Plan. Trans Bay is concerned with narrowly limiting potential policy-related upgrades in the Study Plan because under the currently-effective CAISO Tariff, a reliability project is not eligible for competitive solicitation unless it is a policy or economic upgrade.1 There is no provision of the Tariff that requires the relevant "policy" to be related to renewables or resource adequacy capacity. In fact, the Tariff uses broad language that allows the CAISO to consider any number of policy considerations. By narrowly limiting the "policies" considered, without justification, the CAISO is	

		artificially and arbitrarily limiting which projects may be subject to competitive solicitation.	
76	Sean O'Reilly, Chetty Mamandur and Les Guliasi, Trans Bay Cable, LLC	2. Methodology for Placement of Facilities Although the Draft Study Plan does not directly address the issue, Trans Bay believes that the final Study Plan should include a methodology for determining when certain facilities, such as SVCs, transformers, and synchronous condensers, are required (or not required) to be placed in the footprint of a Participating TO's substation. As Trans Bay expressed in comments to the 2012-13 plan, it is concerned that the CAISO is artificially excluding certain reliability projects from being eligible for competitive solicitation by placing them within a Participating TO's footprint. There is no reason that these projects should not be open to competitive solicitation.	See response to #75. The ISO has responded to the comments related to the 2012-2013 Transmission Planning Process as a part of that process. The ISO will continue to apply the applicable Tariff requirements for selection of eligible projects for competitive solicitation as a part of the alternative assessment and recommendations included in the draft 2013-2014 Transmission Plan developed as a part of this process.
77	David Smith, TransWest Express LLC	**I. Comments on Draft Study Plan Policy Driven Objectives** The CAISO's 2013-2014 Transmission Planning Process (TPP) will be of considerable significance to consumers in the CASIO Balancing Authority. The TPP, correctly executed, will identify the projects and investments needed to assure a reliable and economically efficient transmission grid for consumers who are served by CAISO and the Participating Transmission Owners. The Draft Study Plan lays out an extensive set of studies to evaluate and assure the continued reliability of the CAISO transmission grid. However, TransWest believes the Draft Study Plan falls short in its approach to considering economic issues. As further explained in the comments that follow, TransWest believes that CAISO should be evaluating future additions to the grid based on three primary policy objectives: 1. Providing the lowest delivered cost of power to consumers considering a reasonable range of feasible alternatives. The	Please see the responses below (Nos. 78 to 86) to TransWest specific comments. The ISO notes that it evaluates the need for reliability, economic, and policy-driven upgrades and additions in accordance with the standards and criteria set forth in its tariff. With respect to item #3, that discussion relates more to the contents of a transmission plan, not a Study Plan, which is the purpose of the instant comments.

		delivered cost of power in this context includes generation capital costs, transmission capital costs and variable operating costs. 2. Providing a sufficiently robust grid so that vigorous competition can take place among generators to cost-effectively serve the needs of consumers. 3. Providing sufficient optionality within any transmission plan that clearly states both (i) the primary targeted transmission investments incorporated into the plan and (ii) a set of contingency or secondary investments that have sufficient flexibility to become the primary investments if certain assumptions that formed the basis for the primary investments change materially, e.g., delays in transmission plan projects and/or project failure of planned generation resources. TransWest recommends that these objectives be included in Section 3.1 of the Draft Study Plan in addition to the policy objectives currently listed in that section. In addition, the CAISO should consider additional policy objectives such as energy diversity from renewable resources and reliability of supply.	
78	David Smith, TransWest Express LLC	**Supporting RA Deliverability Status for Resources Outside the ISO Balancing Authority Area** TransWest applauds CAISO's commitment in Section 3.1.2 of the Draft Study Plan to reassess its approach for determining deliverability of imported resources to qualify for Resource Adequacy (RA) status. CAISO's prior approach of limiting RA for imports based on historic imports under peak load conditions was not a sound approach to assessing transmission deliverability. There are still flaws to the CAISO's proposal in the Draft Study Plan that should be remedied before the plan is finalized. CAISO's claim that RA deliverability is integral to achieving the 33% Renewable Portfolio Standard (RPS) policy is inaccurate, and its	The ISO has provided detailed responses to the concerns expressed in this comment in response to previous comments. Please see response to comments from Pathfinder, CPUC Staff, and BAMx/CCSF.

		proposal to only consider RA deliverability for projects included in a very limited number of potential resource portfolios is too limiting. RA deliverability for imports should be available for all resources seeking to provide RA capacity utilizing the full capacity of the interties as determined using applicable reliability standards. The CAISO should not constrain itself when considering deliverability over California import lines of RA capacity to any pre-selected set of resource portfolios. It is likely that other resource mixes will be able to meet the public policy objectives and the RA capacity obligations, perhaps with separate resources, at a lower all-in delivered cost. The 33% RPS policy goal does not require LSE buyers to select only projects that offer RA capacity. RA capacity and the transmission costs for deliverability of the capacity need to be considered by load-serving entity buyers; however, certain projects may not require RA capacity payments to develop their projects. CAISO should remove or correct any inaccurate statements that link RA deliverability to the 33% RPS policy objective. Instead the CAISO should focus on determining whether there are ways to expand existing import capability in a way that would satisfy all applicable requirements (e.g. public policy, RA capacity obligations, etc.) at the lowest cost to consumers.	
79	David Smith, TransWest Express LLC	**Policy Driven 33% RPS Transmission Plan Analysis** <u>Resource Portfolios</u> Section 4.2 of the Draft Study Plan outlines a process for developing sufficient transmission to enable compliance with California's 33% RPS. This process relies exclusively on resource portfolios developed by the California Public Utilities Commission (CPUC) and California Energy Commission (CEC). While TransWest respects the roles played by CPUC and CEC in California energy policy matters, we believe CAISO is obligated through Section 24.4.6.6 of the CAISO Fifth Replacement FERC Electric Tariff (Tariff) to not rely exclusively on CPUC and CEC as	The ISO works with the CPUC and CEC in the development of the portfolios, and considers that the portfolios (which are developed specifically for the transmission planning process) address the requirements set out in the tariff. The ISO tariff also contemplates that the ISO will consider the results and identified priorities of the CPUC and other regulatory agencies. On that basis, the ISO is appropriately utilizing the portfolios for its analysis. The comments note the need to consider the value of resources in other resource areas. Costs of out of state resources are made available through WECC and other studies, but are not the sole determinant. Transmission costs as well as the risk of

		the only sources for resource portfolios. There are a number of specific elements CAISO must consider within the process as outlined in Section 24.4.6.6 of the Tariff, not all of which are required within the CPUC process. For example, Section 24.4.6.6 provides, among other things, that the CAISO will consider: (d) the potential capacity (MW) value and energy (MWh) value of resources in particular zones that will meet the policy requirements, as well as the cost supply function of the resources in such zones; . . . . (f) potential future connections to other resource areas and transmission elements; . . . . (i) the effect of uncertainty associated with the above criteria . . . The CAISO's Draft Study Plan too narrowly relies on the CPUC and CEC resource portfolios to evaluate transmission upgrades and additions needed to meet state or federal policy requirements or directives, and needs to consider the above, and other, criteria set forth in Section 24.4.6.6.	development (both of the large amounts of resources necessary to make a major development to a remote state viable, and the transmission development itself) must also be taken into account, and also balanced with the procurement interest and priorities and other criteria. Also, one of the express standards in the ISO tariff is to mitigate the risk of stranded investment. While these resources have not yet generated sufficient interest to overcome the other considerations weighing against them, the ISO will evaluate the transmission needs if the situation changes in future portfolio evaluations.
80	David Smith, TransWest Express LLC	<u>Economic Efficiency</u> A missing key element in the process outlined in the Draft Study Plan is the lack of an assessment of delivered power costs to consumers. The process seems to assume that the resources included in the resource portfolios develop by CPUC and CEC combined with whatever transmission CAISO determines is necessary to deliver these resources will result in an optimal solution. However, this will not necessarily be the result. In developing its resource portfolios, CPUC and CEC make assumptions about what transmission is needed for delivery of certain resources. In the past, CPUC's models have primarily selected resources that are assumed to need little or no new	See response to ## 49, 79. The ISO's distinction between policy and economic analysis is set out in its tariff. The identification of resources necessary to achieve state RPS goals and any necessary transmission upgrades is assessed the policy driven needs analysis, which does take into account cost considerations. The economic study phase in the ISO's transmission planning process is a separate and distinct analysis focusing on economic efficiency considerations. It is not intended to duplicate policy-driven analysis or to imply that the policy-driven analysis has not considered certain cost factors.

		transmission investment. To the extent these resources actually do require new transmission investments, the original assumptions under which they were selected for the resource portfolio are incorrect. This is a foreseeable occurrence, given the timing mismatch between the CPUC and CEC processes for developing resource portfolios, and the CAISO's TPP. Within this year's response to stakeholder comments, the CPUC and CEC stated that 'unfortunately the timing of the two processes do not allow for integrating the results of the 2012/2013 TPP portfolios2 into the 2013/2014 portfolios. Without a transparent exchange of transmission data between the CAISO TPP and the development of portfolios by the CPUC and CEC, it is very difficult if not impossible to ensure that the objective of providing the lowest delivered power cost to consumers is being achieved. CAISO should perform its own independent total delivered cost analysis rather than deferring to CPUC and CEC in this critical area.	
81	David Smith, TransWest Express LLC	**High Out-of-State Import Scenario Impacts on High Voltage System in California** Within the 2012 – 2013 TPP, the CAISO performed an information-only sensitivity study to evaluate the required upgrades to accommodate a high out-of-state import scenario into the CAISO system at the Eldorado Substation in Nevada. TransWest appreciates that the CAISO prioritized this work to elevate it into the 2012 -2013 as an information-only, sensitivity study. TransWest has reviewed the results from this study and has been engaged with the CAISO, the impacted California utilities and numerous other entities in the WECC Path Rating Process for the TWE Project and numerous other upgrades within the area. TransWest provided comments to the CAISO on the apparent inconsistencies used by the CAISO for this analysis and other similar analysis performed in the 2012 – 2013 TPP and within	The ISO has had subsequent discussions with TransWest and we believe their concerns have been addressed. As discussed above in the ISO's response, the ISO does not see a need at this time to pursue additional studies on the High Out of State scenario that was considered in the 2012-2013 TPP.

		WECC Path Rating studies currently in progress. To the extent that the CAISO cannot reconcile these inconsistencies prior to finalizing the 2012 – 2013 CAISO Transmission Plan or if the CAISO determines upgrades would be required based on the results of the information-only, sensitivity study, TransWest strongly suggests that the CAISO elevate the high out-of-state import study to full consideration within the CAISO 2013 - 2014 TPP and re-examine the potential need for upgrades. The results of this study can then be employed within TransWest's Economic Planning Request, described in Part II below, consistent with other Economic Planning Studies utilizing previously conducted CAISO reliability assessments from the same TPP.	
82	David Smith, TransWest Express LLC	**Economic Planning Studies** Section 4.4 of the Draft Study Plan takes a very narrow view of economic transmission studies. The suggested approach within the Draft Study Plan would compare the total cost (capital and operating) of new transmission projects to savings in production (operating) costs resulting from the new transmission facilities. The highest value for long-distance transmission investment results from the financial certainty that is provided to prospective consumers who are concerned with the possibility of physical curtailment or the adverse economic consequences of congestion if the interregional transmission were not in place. In other words, an economic test that compares (i) a case with new remote generation and new long-distance transmission, to (ii) a case with new remote generation but without new long-distance transmission, is of limited usefulness since the second case is essentially infeasible. For the renewable resources needed to meet the 33% RPS, the costs are predominantly capital costs. Capital costs and performance of new renewable generators at different locations can and do vary considerably. But these capital cost and	The study plan is based on the use of economic studies as set out in the ISO's tariff, as discussed above.

		performance differences never come into play in the congestion analysis contemplated by the Draft Study Plan since the economic test assumes exactly the same mix and location of new renewable resources in both cases; i.e. the only differences between the cases is the new long-distance transmission. TransWest's study request, described later in this document, relies on the economic study methodology developed by CAISO with additional consideration of the difference in resource capital costs and resource performance at different grid locations. These factors must be included to provide a complete economic picture. Furthermore, the CAISO should repeat the Economic Planning Studies for Desert SouthWest Area performed in 2012 – 2013 TPP with consideration/sensitivity of the impacts to the stated operational benefits if varying amounts of renewable resources utilize the project capacity. Some commenters within the CPUC and CEC portfolio development process have already suggested that resource areas be added in Arizona given the fact that CAISO has recommended for approval, a transmission line based on the production costs savings found by the CAISO in the 2012 – 2013 TPP. Although these comments could not be incorporated by the CPUC and CEC due in part to the timing between the two processes as outlined earlier, the likelihood of alternative uses for transmission capacity needs to be factored into the CAISO's economic planning studies, along with the total electric supply cost impacts.	
83	David Smith, TransWest Express LLC	**Regional Transmission Planning** Except for a discussion of the Conceptual Statewide Transmission Plan in Section 3.2, the Draft Study Plan makes no mention of coordination with regional transmission planning efforts being undertaken by WECC and other regional transmission planning groups in the Western Interconnection. The absence of any discussion about regional coordination in the Draft Study Plan is	The ISO tariff specifies certain regional coordination activities in which the ISO must engage in each planning cycle. The Planning Assumptions for each planning cycle also contemplate inputs from WECC and interconnected BAAAs. The ISO has complied with and intends to comply with these tariff in the future. In addition, further more comprehensive and detailed coordination efforts with neighboring planning entities will be developed as the processes

		especially disappointing in light of the interregional coordination requirements incorporated in FERC Orders 890 and 1000. In addition, TransWest is a member of the WestConnect/SWAT–led Eldorado Valley Study Group (EVSG) along with CAISO. To the extent that CAISO can better coordinate with the EVSG on planning assumptions within this region, the CAISO TPP could be made more effective.	and procedures to implement Order No. 1000 interregional requirements. The ISO and its neighbors have not yet made their inter-regional compliance filings. The consideration of out of state resources in achieving renewable energy objectives of the state are achieved through the ISO's portfolio development process.
84	David Smith, TransWest Express LLC	**II. TransWest Economic Planning Study Request** In accordance with Sections 24.3.3 (d), 24.3.4.1 and 24.4.6.7 of the Tariff, TransWest respectfully submits to the CAISO an Economic Planning Study Request to examine the benefits of a new inter-regional transmission project to provide California consumers with access to new cost-effective generation resources on a regional basis, specifically prospective renewable resources being developed in south central Wyoming (Study Request). The anticipated benefits from such an investment would be derived from the reduction in electric supply costs (considering generation capital costs, transmission capital costs and system operating costs) resulting from improved access to cost-effective remote generating resources whose capital cost and operating performance is superior to resources built within California.	In addition to discussion elsewhere in this response, in its review of this Economic Planning Study Request, and as the ISO has discussed with TransWest Express on previous occasions, the ISO notes that the current RPS portfolios do not support the renewable resources at the source end of the proposed transmission line. In particular, no commercial interest has been demonstrated in this area, and the procurement of resources from this area have not been identified as a priority or in any scenario developed by the CPUC, CEC, and LRAs. As a result, and as detailed in the 2012-2013 transmission plan, without this proposed inter-regional transmission project, all California RPS resources are delivered without curtailment. Under these circumstances, the ISO does not believe that it is reasonable to undertake the requested economic study at this time. To the extent circumstances change in the future, the ISO will reassess this determination.
85	David Smith, TransWest Express LLC	**Background** In 2011, an analysis of the benefits of integrating renewable resources from Wyoming through new long-distance transmission to California was conducted by the Western Electricity Coordinating Council (WECC) and the results published within the 2011 10-Year Regional Transmission Plan (WECC Plan). Accessing these high quality renewable resources in Wyoming was found to be the most cost-effective alternative to meet California policy needs (i.e., 33% RPS) within the 10-year planning horizon.	Conducting the economic study as requested by TransWest is not warranted by the two factors it cites and for the reasons discussed elsewhere in these comments. First, based on the applicable definitions and requirements in the tariff and the facts that exist today, a line from Wyoming to California would not be accessing Location Constrained Resource Interconnection Generators or energy from an Energy Resource Area, as that term is defined in the tariff, or from a resource area assigned a high priority by the CPUC or CEC. Those are the requirements that must be satisfied to even qualify as a potential economic study request under that specific factor. As indicated elsewhere herein, neither the CEC nor

		The WECC Plan, in discussing long-distance transmission alternatives, suggested that decision-makers "keep an open mind regarding transmission infrastructure investment and resource procurement options. Accessing some of the most potentially productive renewable resources by developing viable transmission projects in the Western Interconnection may provide lower-cost, environmentally preferred options for LSEs and consumers." As the WECC Plan found, the benefit drivers for such an Economic Planning Study rely heavily on the comparative capital cost for transmission and generation and the production levels (or capacity factor) of various renewable resources. As the CAISO is aware, in the preceding TPP, TransWest submitted an economic study request which the CAISO declined to perform. TransWest, however, believes granting this economic study request is fully consistent with Section 23.3.4.1 of the Tariff, and would reflect sound and prudent planning practices under the TPP. Section 24.3.4.1 of the Tariff sets forth five factors that the CAISO will consider in determining whether an economic study request shall be designated a High Priority Economic Planning Study for consideration in the development of the CAISO's comprehensive transmission plan. TransWest submits that the study request discussed in detail below is warranted under at least two of those five factors. Importantly, the Tariff does not require that any single request be evaluated for its relevance to all five factors—on the contrary, the factors listed in Section 24.3.4.1 are set forth as alternative criteria, any one of which can be relied upon by the CAISO to designate a study request as a High Priority Economic Planning Study. The CAISO has discretion – which it should exercise here - to expand its consideration of projects that may deliver substantial economic and environmental benefits to California, even if the project benefits are not framed in terms of congestion relief or narrowly-drawn "resource areas" already	the CPUC has designated Wyoming wind as a high priority resource area. With respect to the second factor, the ISO's transmission planning process is a holistic approach that looks to build transmission in the most efficient and effective manner possible. Also, as discussed elsewhere herein, the IOS looks to mitigate the risk of stranded investment. The "integration if of new generation resources on a regional basis" stems from Order No. 890. The purpose there was to avoid multiple individual requests for interconnection or transmission service to integrate new resources from the same resource area and instead promote the alleviation of congestion and integration of such resources through larger scale projects that would benefit a larger number of customers. The ISO's planning process has achieved this more holistic planning process by creating a separate policy-driven category of transmission (which did not exist at the time of Order No. 890) in its RTPP filing and by furthering that holistic integration approach via the GIDAP amendment approved by FERC. The underlying purpose of that criteria is not to evaluate every possible resource scenario option, but to identify areas where there is sufficient commercial interest or priority that merits the holistic planning of an upgrade that will meet everyone's needs, as opposed to assessing individual service or interconnection requests. The ISO's planning process achieves this goal. As discussed elsewhere, there is no demonstrated commercial interest at this time by LSEs in procuring 3,000 MW of Wyoming resources, and such resources have not been deemed a priority by state regulators. Under these circumstances, there is no large quantity of resources that needs to be "integrated" into the grid in a holistic manner rather than through individual service requests etc.

		identified by the CPUC or CEC. In this case, the Economic Planning Study requested is intended to encompass upgrades required "to integrate new generation resources or loads on an aggregated or regional basis" consistent with Section 24.3.4.1(e) of the Tariff. Approximately 3,000 MW of high quality wind resources are being developed in south central Wyoming and the aggregate of these new generation resources, if integrated into the CAISO, can be expected to provide substantial economic benefit. This type of Economic Planning Study is needed to review the integration of these resources. Moreover, the requested Economic Planning Study is consistent with the intent of Section 24.3.4.1(b) of the Tariff, as it addresses delivery of generation from an otherwise location-constrained resource area (south central Wyoming) to allow high-quality renewable resources being developed there to be accessed in California. TransWest acknowledges that the Tariff at Section 24.3.4.1(b) refers to resource areas "assigned a high priority by the CPUC or CEC" and TransWest's understanding is that the CAISO has looked in particular to the CPUC's Long-Term Procurement Plan proceeding (LTPP) to determine whether a certain resource area is one that has been assigned a high priority. The CPUC's LTPP has not, to date, indicated out-of-state resource areas as having a high priority, but TransWest is concerned that the CPUC's LTPP is not intended to be used for transmission planning and may focus too narrowly on in-state generation without having more open consideration for the benefits of efficient out-of-state resources. In fact, several stakeholders commented within the joint CPUC/CEC process to develop portfolios for the CAISO 2013 - 2014 TPP that the assumptions about out-of-state renewables are out-of-date and not consistent with assumptions about in-state renewables. The CPUC/CEC response to these comments was	

		that they recognize there are inconsistencies between in-state and out-of-state processes and they will update these in the next round of portfolios. The CAISO has responsibility to administer an open, non-discriminatory TPP and that process should not be unduly constrained to the CPUC and CEC resource development scenario process. The Economic Planning Study being requested here addresses delivery of up to 3,000 MW of generation from an area in Wyoming that is 'location constrained' and this Study Request addresses network transmission facilities intended to access generation from an energy resource area. The CAISO should find that the requested study would encompass study of upgrades needed to integrate new generation resources on a regional basis for reliable and efficient delivery within California and the CAISO Balancing Authority Area. TransWest submits that the CAISO's determination to reject past requests for study of inter-regional projects that would provide for reliable and economic delivery of clean, renewable resources should not be repeated in another planning cycle. It is inconsistent with the Tariff to refuse to undertake a robust economic study consistent with this request, where the request involves analysis of upgrades to integrate resources on an aggregated/regional basis, from a location-constrained resource area that should (consistent with WECC's 2011 Study) be viewed as "high priority" (even if it has not been designated as such by the CPUC). There is no sound policy rationale for CAISO to ignore planning scenarios with the potential to provide billions of dollars of benefits to California consumers.	
86	David Smith, TransWest Express LLC	**Details of Economic Planning Study Request** 1) Calculate the benefits associated with reduced Electric Supply costs from improved access to approximately 11,500 GWh/yr of cost-effective renewable resources in south central Wyoming	Please see response to comment #84 above, as well as responses.

		through investment in a 730-mile, 3,000 MW HVDC transmission line. Compare the Electric Supply costs and transmission investment with other alternative resource and transmission cases utilizing the Transmission Economic Assessment Methodology augmented with an accounting of differences in capital costs between cases (both generation and transmission capital costs). 2) The CAISO should also examine the additional integration benefits derived from a geographically diverse resource that is much less correlated with other California based resources and more correlated with CAISO load shapes. The Wyoming wind profile is unlike California wind and solar profiles and would provide significant diversity benefits. 3) A deliverability assessment for RA capacity utilizing the existing system would be warranted for this Economic Planning Study. However, the CAISO would not need to consider any potential transmission upgrades to deliver RA capacity as it is highly unlikely the cost for transmission upgrades could be absorbed by the RA values derived from wind energy projects. 4) To the extent required, the CAISO should consider whether existing and/or new gas generation would be required to provide the equivalent RA value that other resource and transmission alternatives would provide so the cases are more comparable. The deliverability of RA capacity for the alternative resource/transmission cases will also need to be established to make these comparisons. 5) The following transmission solutions should be considered to access these cost-effective resources: a) Consider a 730-mile, 3,000 MW, two-terminal, bi-pole configured, HVDC transmission system between interconnected to the Wyoming transmission system and the 500 kV substations located within the Eldorado Valley near Boulder City, NV. The	

		project would be placed in service in 2017 at 1,500 MW and 2018 at an additional 1,500 MW. The capital cost estimate for this infrastructure investment is $3.0B in 2013 dollars. b) Consider a portion (e.g. 50%, 1,500 MW) of the costs of the transmission system project above will be recovered through the CAISO Transmission Access Charge (TAC) mechanism, assuming remaining portion of infrastructure is included in other transmission tariff(s) through Participant funding and/or other interregional cost allocation methods. This would involve a proportional capital investment (approximately $1.5B). c) Reduce HVDC transmission system described above in item 1 to a capacity of 2,600 MW as a sensitivity to explore the potential impacts of the on-going Phase 2 WECC Path Rating Process item outlined in the CAISO's 2012 -2013 Transmission Plan for the High Out-of-State Import Study. This would involve a $2.8B capital infrastructure investment. d) Investigation of other solutions to access these resources may be warranted as well. 6) The Economic Planning Study should consider the Wyoming wind resources within the high capacity area of Wyoming with particular focus on the Wyoming wind resource projects that have received advanced standing within their respective permitting processes. Note that there are wind energy projects in Wyoming with well advanced stages of permitting, including the 3,000 MW Chokecherry and Sierra Madre Wind Energy Project. 7) To develop comparative alternative cases to consider the potential reduction in electrical supply costs to reach the cost-effective resources, the CAISO should consider the various portfolios under consideration within the Policy Driven portion of the TPP, including the following cases. If necessary, due to timing considerations, the CAISO should use the results from the 2012 - 2013 TPP to inform these alternative cases. The alternative cases	

		to consider should include at a minimum the following four alternatives: a) Remove 11,500 Gwh/yr of the lowest ranked resources from the bottom of the Commercial Interest (CI) portfolio. This scenario would be similar to the one used within the CAISO 2012 - 2013 ISO Transmission Plan Sensitivity Study for high out-of-state import of renewables. b) Remove 11,500 GWh/yr of resources from the Commercial Interest portfolio that would require transmission upgrades to provide RA deliverability. To the extent that there is less than 3,000 MW of renewables in the CI portfolio, the remaining MWs should be removed from the bottom of the portfolio. Similar to the 2012 - 2013 ISO Transmission Plan Sensitivity Study for high out-of-state import of renewables. c) Remove 11,500 GWh/yr of the lowest ranked resources from the bottom of the Environmental portfolio. d) Remove 11,500 GWh/yr of the lowest ranked resources from the bottom of the High Distributed Generation portfolio. These alternative cases, which are derived from the portfolios being examined in the 2013 – 2014 TPP Public Policy analysis, would represent a proxy for the extent of potential economic benefits that could be derived under a number of different planning assumptions (e.g. increased load forecasts, increased deployment of electric vehicles, distributed generation targets not being met, Demand-Side Management targets not being met, contracted projects failing to meet development milestones, increases in transmission cost assumptions used to develop portfolios, extended planning horizons, 40% RPS considerations, etc.). The amount of energy in each of the four cases above would need to be adjusted for the three different capacity levels of the mitigation solutions listed above. 8) As suggested in our draft Study comments above, the CAISO should also consider further study of the High Out-of-State Import	

		Study to ensure this Economic Planning Study reflects an accurate assessment of the required CAISO upgrades to accommodate the imports into California through the 500 kV substations located in the Eldorado Valley. TransWest has conducted similar economic planning analysis, has worked with other organizations that have conducted very similar analysis and has been supporting the regional economic planning work at WECC and in other forums. TransWest appreciates that the CAISO has most recently focused on congestion mitigation analysis within its Economic Planning Studies. However, it is critical that the CAISO expand beyond this focus of congestion mitigation, and designate as a High-Priority Economic Planning Study the evaluation of benefits associated with high-quality, low cost resources from out of state, consistent with the above request.	