

The complete set of stakeholder comments can be found at:

No	Submitter (Name & Company)	Comment Submitted	ISO Response
	Barry Flynn, BAMx	Complete comments can be found at: http://www.caiso.com/Documents/BAMxcomments_dr	aftcentralCAstudyscope.pdf
1	Barry Flynn, Bay Area Municipal Transmission Group (BAMx)	1. Importance of continuing stakeholder involvement We request the CAISO to provide further opportunity to comment on the CCS scope before the CAISO finalizes it. In particular, once the CAISO posts the preliminary Base Cases, Stakeholders should be given an opportunity to review these cases and provide meaningful comments on them before the CAISO finalizes/utilizes them.	The ISO will be conducting the analysis for the Central California study as a part of the 2012/2013 planning cycle. With this the ISO will be presenting the results available at the time at the September and December stakeholder sessions.
2	Barry Flynn, Bay Area Municipal Transmission Group (BAMx	2. Further explain purpose of study scenarios The CAISO must further explain its "evaluation of need" process and how the four base cases are major components of the assessment. In other words, what will determine whether a project is needed for the purposes of this study?	The scenarios identified in the study scope are to be used to assess the reliability of the system under a variety of system conditions to reflect the critical system conditions as required by the reliability standards.
3	Barry Flynn, Bay Area Municipal Transmission Group (BAMx	3. Emphasis on identifying needed transmission in the assessment process rather than justifying a specific project. In the CCS Draft Scope document issued on April 19th, the CAISO indicates that the "Summer peak base case" "will also be used to quantify the difference in Fresno area LCR with and without the project." Please identify "the project" the CAISO is referring to for purposes of this statement.  If a "project" is studied, we believe that more than one project should be studied as alternatives.	The reference was not to any particular project and was intended to reflect the existing system conditions and potential alternatives assessed to satisfy the performance requirements.
4	Barry Flynn, Bay Area Municipal Transmission Group (BAMx	4. Need to maintain consistency with the CPUC resource portfolios  There might be tremendous renewables potential in Central California, especially in the Westlands area. However, it might not be needed to meet the current State goal of 33% RPS. Modeling any higher generation in a particular study area for the Central California Study than is needed for 33% RPS would not only be inconsistent with the current policy goal, but	The ISO will be utilizing the finalized portfolios provided to the ISO by the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance. The ISO will do an assessment based upon the Base Case scenario and the three sensitivity scenarios provided by the CPUC and CEC.



The complete set of stakeholder comments can be found at:

		would also be discriminatory against renewables in other areas, which would not be given a similar opportunity. The CPUC renewable portfolios are currently being developed with Stakeholder input. Any arguments for	
		special treatment for an area should be made as part of that process.	
		BAMx suggests that the CAISO expand its economic planning study beyond the two portfolios to include all four CPUC portfolios.	
5	Barry Flynn, Bay Area Municipal Transmission Group (BAMx	<ul> <li>Investigate the Need Assessment Comprehensively         The CAISO needs to consider all possible mitigation measures to satisfy the transmission needs in Central California. They should not be restricted to large-scale capital projects, but should include other potential mitigation measures, such as,         <ul> <li>Utilize existing Helms RAS modification.</li> <li>Fully utilize the existing transmission line. Consider developing specific short-term ratings for the specific needs of the area. Consider line compensation and other alternatives like phase shifting transformers etc. to redirect flows if appropriate.</li> </ul> </li> </ul>	The ISO will be assessing the performance of the existing system and developing alternatives as required to address performance issues identified in the analysis.
	California Consumers Alliance (CCA) and Save the Foothills Coalition (STFC)	Complete comments can be found at: <a href="http://www.caiso.com/Documents/CC">http://www.caiso.com/Documents/CC</a>	A STFCcomments draftcentralCAstudyscope.pdf
6	CCA & STFC	California Consumers Alliance (CCA) and Save the Foothills Coalition (STFC) appreciate and support the CAISO Central California Study Plan. However, due to the complexity and numerous discrete issues involved, we are disappointed that the ISO now intends to limit the study. We were anticipating a fuller stakeholder process as we believe was proposed in the earlier development of the 2012/13 TPP Study Plan.	The ISO will be conducting the analysis for the Central California study as a part of the 2012/2013 planning cycle. With this the ISO will be presenting the results available at the time at the September and December stakeholder sessions.
7	CCA & STFC	Conference Call Comments  CAISO will perform or direct the performance technical studies and other assessments are necessary to identify transmission needs, and those	The ISO will be assessing the system needs in Central California based upon the study scope and do not have any predetermined alternatives or



The complete set of stakeholder comments can be found at:

<a href="http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx">http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx</a> under the 2012-2013 transmission planning process – stakeholder comments subheading.

studies must utilize Unified Planning Assumptions to the maximum extent practical...

At this point CCA and STFC object to Natural Resources Defense Council's (NRDC) suggestion that Midway-Tesla 500 KV transmission line is necessary for achieving a high level of 33% RPS eligible renewable generation in the San Joaquin Valley. We also disagree with Westlands Solar Park's (WSP) opinion that RETI's conceptual transmission identifications were sufficient for ISO approval of new transmission in Central California.

After numerous Path 15 related studies over the course of the last seven years, we are not aware of any technical transmission study validating high levels of renewables in the San Joaquin Valley requiring new bulk transmission, or, a 500 KV upgrade in Central California that is needed or economically justified. Conversely, while not a decision making authority, we note the California Transmission Planning Group (CTPG) recently performed a Central California Scenario Renewable Dispatch analysis and published their results in the Final 2011 CTPG California Statewide Transmission Plan. The CTPG concluded that nearly 5 GW of installed capacity from 33% RPS eligible resources located and injecting power at western San Joaquin Valley substations in the summer peak foundation case could be supported--without a Midway to Tesla 500 KV line.

We also object to NRDC's suggestion that a <u>reliability</u> upgrade of the magnitude of Midway-Tesla 500 KV proposal should be approved in order to support uncertain future policy driven projects.

In lieu of promulgating unsubstantiated transmission projects, we urge

specific projects. The ISO will assess potential alternatives based upon the planning assessment to satisfy the performance requirements.

<sup>&</sup>lt;sup>1</sup>Tehachapi Collaborative Study Group 2nd Report, California Independent System Operator (CAISO) Central California Clean Energy Transmission Project (C3ETP) initiative 2007-2009, Renewable Energy Transmission Initiative Phase 1-2 Final Reports, CAISO 2010/11 TPP Midway-Gregg PG&E request window proposal, WECC EC1A-1 Analysis, CAISO 2011/12 Adopted Comprehensive Statewide Plan, CTPG Final 2011 California Statewide Plan



The complete set of stakeholder comments can be found at:

http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx under the 2012-2013 transmission planning process – stakeholder comments subheading.

		890 compliant planning process that first determines need(s) as a reasonable way forward, and recognize that the ISO tariff and the law requires it.	
8 CC	CA & STFC	Draft Study Scope Comment  CCA and STFC request ISO clarify if the assessment will involve evaluating local and system wide <i>flexibility capacity</i> need? And, if a deficiency exists, we believe the most efficient solution to fulfill flexible capacity should be identifiedIt is not clear why the Helms Pumped Storage Plant is the only resource indicated in the draft study scope.  At that time, the ISO stated <sup>2</sup> that it intended to evaluate the need for a project utilizing updated results of its renewable integration studies. While significant time has passed, we have not seen any substantial utilization of results of renewable integration studies in the evaluation of transmission needs or the TPP in general. Nor have we seen any analysis that shows having three Helms units always available is justifiedit is not even clear that the operational characteristics, unit maintenance issues, and, seasonal and daily pumping constraints of Helms make it a sufficiently	The ISO will be analyzing the operation flexibility of the Helms facility with respect to the reliability and economic assessment to determine the appropriate potential alternatives to address any needs identified for the local or bulk system. The ISO will be doing the assessment in the Central California area, including the Helms facility, consistent and coordinated with the resource integration initiatives currently underway at the ISO.
Na Re De (Ni Ce En	arl Zichella, atural esources efense Council IRDC) and the enter for nergy fficiency and	"flexible" resource in integrating variable generation.  Complete comments can be found at: <a href="http://www.caiso.com/Documents/NR">http://www.caiso.com/Documents/NR</a>	DC_CEERcomments_draftcentralCAstudyscope.pdf
	arl Zichella, RDC and	General comment:  Conducting this study only using CPUC portfolios will result in	The ISO will be utilizing the finalized portfolios provided to the ISO by

<sup>&</sup>lt;sup>2</sup> PP.358 2010/11 CAISO Transmission Plan

,



The complete set of stakeholder comments can be found at:

	CEERT	underestimating or missing altogether many of the benefits the study is intended to identify and incorporate in planning. These include economic, reliability, operational flexibility, renewable integration, carbon reduction, land use and access to energy storage benefits. Therefore we are recommending the study take a "portfolio plus" approach in which a more reasonable scale of development is assumed, and system benefits realized are proportionate to that level of development are identified.	the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance.
		We further recommend accomplishing this by utilizing a multi-value approach such as that employed by the Midwest ISO MISO. MISO describes these multi-value projects (MVPs) as: "MVPs are one or more network upgrades that, when considered as part of a portfolio which provides widespread regional benefits, respond to documented public policy requirements and/or provide multiple	The ISO will be assessing the performance of the system based upon the RPS portfolios along with the identified critical system conditions to assess the performance of the system and identify potential alternatives to address any performance or economic issues identified in the analysis.
10	Carl Zichella, NRDC and CEERT	Portfolios are flawed  We believe there are fundamental flaws in portfolios assuming that only 70 MW of generation can be expected from the Central Valley (in all four study cases). In the proposed Westlands CREZ alone commercial interest, as evidenced by interconnection requests and offers to utilities was over 1 GW in the 2011 IOU RFO's with a build out capacity on approximately 33,000 acres on drainage impaired farmland scheduled for retirement of an estimated 3-5 GW. The existing portfolios rely on estimates of generation under RPS contract with utilities. But without transmission upgrades, Central Valley generation may never be offered for contract. Thus a "chicken and egg" situation exists that prevents development of one of the most promising RETI zones, and other similarly situated project areas in the Central Valley: no transmission, little generation investment, no transmission.	The ISO will be utilizing the finalized portfolios provided to the ISO by the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance. Within the finalized portfolios the generation identified in the Westlands area is 1500 MW in all but the DG scenario where it is 990 MW.
11	Carl Zichella, NRDC and CEERT	a. One of the system benefits unrecognized by the portfolios is that new transmission in the Valley, properly located in existing corridors,	The ISO will be utilizing the finalized portfolios provided to the ISO by the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance. Within the finalized portfolios the



The complete set of stakeholder comments can be found at:

<a href="http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx">http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx</a> under the 2012-2013 transmission planning process – stakeholder comments subheading.

	-		
		disturbed lands or on retiring agricultural land, provides a well-timed hedge against congestion. There is an estimated 600 – 1000 MW of existing system capacity in the Central Valley.	generation identified in the Westlands area is 1500 MW in all but the DG scenario where it is 990 MW.
	b.	Another unrecognized benefit of Central Valley transmission expansion is that new transmission would strengthen backbone needed for balancing energy both intrastate and import-export opportunities interstate.	
	c.	Opening Central Valley disturbed lands to generation has the further benefit of adding needed geographic diversity to the state's generation mix, aiding grid integration and operation and reducing costs.	
	d.	One of the most important benefits of enhanced transmission capacity in the Central Valley is increased potential to utilize the Helms pumped storage facility for regulation and balancing services.	
	e.	Non-electric benefits also come into play. Hundreds of thousands of acres of Westlands Water District lands must be retired which have strong solar generation potential. Though solar radiation in the Central Valley is not equivalent to the Direct Normal Insolation (DNI) recorded at desert locations, horizontal radiation in the Central Valley combined with excellent DNI make the Valley one of the finest photovoltaic energy zones in the world.	
	f.	As mentioned above an enormous amount of agricultural lands are in the process of being retired from production in the Central Valley. This region has been characterized as the Appalachia of the West in terms of its economic suffering and under-employment.	
	g.	One important additional consideration has to do with leveraging federal resources for transmission investments. The Western Area	



The complete set of stakeholder comments can be found at:

		Power Administration (Western) has considerable ability to fund transmission development under federal law (ARRA).	
	David Wolpa, Pacific Gas & Electric (PG&E)	Complete comments can be found at: <a href="http://www.caiso.com/Documents/PG">http://www.caiso.com/Documents/PG</a>	GEcomments_draftcentralCAstudyscope.pdf
12	David Wolpa, PG&E  David Wolpa,	<ul> <li>Continue to consider a broad range of alternatives that reflect the uncertainty of long-term planning</li> <li>As the CAISO has identified, a comprehensive evaluation must study multiple load scenarios, hydro conditions, and renewable energy profiles.</li> <li>Load forecast should account for diverse weather and demand side management scenarios. The CAISO should use the 1 in 10 load forecast for the Fresno area as developed by the California Energy Commission (CEC).</li> <li>Generation in the greater Fresno Area is closely tied to the amount of hydro generation that is available, which makes studying both wet and dry hydro years critical. For the Fresno Area reliability assessment, it will be very important to model local dry hydro conditions at peak as well as partial-peak periods. The CAISO should study a 1 in 5 hydro dry year as its base case and consider what may happen under more severe hydro conditions. PG&amp;E also suggests that the CAISO utilize the Transmission Expansion Planning Policy Committee (TEPPC) dry and wet hydro sensitivities that will give insights into the range of transmission flows through the Central California corridor.</li> <li>High penetration rates of renewable generation in southern California may require power transfer from south to north across Path 15. Therefore evaluating multiple renewable generation profiles along with load forecast scenarios is critical.</li> <li>Incorporate reasonable limits that are reflective of historical ramps</li> </ul>	The ISO will be assessing the performance of the system based upon the RPS portfolios along with the identified critical system conditions to assess the performance of the system and identify potential alternatives to address any performance or economic issues identified in the analysis.  As indicated in the Study Scope, the ISO will use:  • the CEC 1 in 10 year forecast for the local transmission system assessment and LCR assessment in the Fresno area and LCR stud local area load forecast in the Fresno area; and  • the CEC 1 in 5 year load forecast for the Bulk system studies and policy analysis.  In regards to the hydro dispatch the ISO will conduct sensitivities on the high and low hydro scenarios.
13	David vvoipa,	moorporate reasonable mints that are reflective of mistorical ramps	



The complete set of stakeholder comments can be found at:

	PG&E	<ul> <li>and flows on the amount of power that can be exported from California</li> <li>PG&amp;E encourages the CAISO to analyze the impacts on Central California transmission due to the increased penetration of intermittent renewables. For example, during off peak or partial-peak load scenarios combined with high renewables penetration it may not be possible to export power because of restrictions on the ability of-out-of state coal and must run gas generation units to back down.</li> <li>Realistic restrictions on generators in the Southwest and the Pacific Northwest should be incorporated into the Central California Study plan and into the long term valuation of Helms.</li> </ul>	The ISO will be studying a number of scenarios to simulate the critical system conditions per Table 4-1 of the Study Scope with sensitivity analysis related to the generation dispatch as identified in Section 4.2.4.
14	David Wolpa, PG&E	<ul> <li>Look beyond 2022 for the evaluation of relatively large capital projects that last substantially beyond that date</li> <li>Any significant new transmission project in Central California will take at least 10 years to develop and would provide reliability and other benefits for multiple decades. Therefore, CAISO should be evaluating transmission needs and potential benefits beyond 2022.</li> <li>We understand the limitations of running full production simulations for cases beyond 2022, but believe that the reliability and integration analysis should extend beyond 2022. The lack of a longer term analysis could easily lead to suboptimal band aid solutions. We are running out of available band aid solutions such as re-conductoring and special protection schemes (SPS). If we wait until the last minute to approve a transmission upgrade it may be too late to implement, forcing the use of solutions that are less optimal for the long-term, such as combustion turbines.</li> </ul>	The technical analysis will be assessed over the 10 year horizon of the current transmission planning cycle to determine the appropriate potential alternatives to address any needs identified for the local or bulk system. The economic assessment does look at potential economic benefits over a longer timeframe consistent with the ISO TEAM methodology.
15	David Wolpa, PG&E	Assure that your planning approach and evaluation methodology capture the increasing need and value for flexible resources like the	



The complete set of stakeholder comments can be found at:

		Helms Pumped Storage Plant as the penetration of intermittent renewables grows		
		The CAISO has conducted some preliminary studies identifying the need for flexible resources in its renewable integration analysis. Further, the CAISO has made extraordinary efforts to keep fossil plants such as Sutter available as a flexible resource. It does not make any sense for Helms Pumped Storage Plant operations to be limited in the future due to transmission limitations.	•	The ISO will be doing the assessment in the Central California area, including the Helms facility, consistent and coordinated with the resource integration initiatives currently underway at the ISO.
		Helms has 2,100 MWs of flexibility spanning from 1,200 MW in the generation mode to 900 MW of pumping demand. This flexibility provides renewable integration benefits such as regulation up and down, load following, operating reserves (backup), shaping, and management of system over-generation conditions that result from excess renewables generation during off-peak and partial-peak periods. The Central California Transmission Study should recognize how critical the Helms Pumped Storage Plant is and assume that no degradation of Helms will be allowed.	•	The ISO will be analyzing the operation flexibility of the Helms facility with respect to the reliability and economic assessment to determine the appropriate potential alternatives to address any needs identified for the local or bulk system.
	Doug Davie, Wellhead	Comments can be found at: http://www.caiso.com/Documents/Wellheadcor	nme	ents_draftcentralCAstudyscope.pdf
16	Doug Davie, Wellhead	<ul> <li>Simply evaluating another potential backbone-transmission upgrade without explicit consideration of the thousands of megawatts of potential local renewable generation resources that are close to load and could be made available with this investment seems very short-sighted and will not inform decisions makers as to the true value of these upgrades.</li> <li>Continuing to ignore the significant renewable potential the Central Valley can provide can do nothing but misinform decisions regarding transmission infrastructure that will allow California to meet it RPS goals at least total cost to consumers.</li> </ul>	the We	e ISO received the CPUC and CEC revised portfolios on May 16, 2012 d will be using these in the analysis for the Central California studies. In a renewable generation in the area has been revised and in particular the restlands generation has been increased to 1500 MW in all of the renarios with the exception of the High DG scenario which has 990 MW in a rea.
		In our earlier comments on the 2012-2013 TPP Portfolios, we provide		



The complete set of stakeholder comments can be found at:

		significant details about the resource potential this area provided that was not reflected. We refer you to those comments (which are attached hereto for convenience) rather than repeating them. We also note that this shortcoming was also pointed out in comments provided on the 2011-2012 TPP analysis.  A realistic Central Valley portfolio of solar resources needs to be developed and included in the Central Valley Study to ensure decision makers are properly informed of the value this area can provide in meeting California's RPS goals.	
	Daniel H. Kim, Westlands Solar Park (WSP)	Comments can be found at: <a href="http://www.caiso.com/Documents/WSPcomme">http://www.caiso.com/Documents/WSPcomme</a>	nts_draftcentralCAstudyscope.pdf
17	Daniel H. Kim, WSP	The key areas we focus on in our comments to the draft study plan are on the need to expand the study objectives, the inclusion of more items in the sensitivity analysis (4.2.4), and relying on the flawed inputs for generator assumptions (4.7). Furthermore, we understand that the CAISO is modeling the study years consistent with the 10 year planning cycle but we believe for foundation transmission upgrades in the Central Valley the study horizon should be longer to reflect the renewable integration needs that will be triggered by higher amounts of renewable generation beyond the 33 percent by 2020 RPS goal.	The technical analysis will be assessed over the 10 year horizon of the current transmission planning cycle to determine the appropriate potential alternatives to address any needs identified for the local or bulk system. The economic assessment does look at potential economic benefits over a longer timeframe consistent with the ISO TEAM methodology.
18	Daniel H. Kim, WSP	Expanding the Study Objectives     We would like to see the CAISO expand the study objectives of the draft study plan to include delivery of the thousands of megawatts of renewable generation in the Westlands CREZ and non-CREZ areas (i.e., Westlands).  Furthermore, as newer large scale renewable energy development in sensitive desert habitat becomes increasingly more difficult to permit and develop it will be necessary to focus towards resource regions like in Westlands as a means to help geographically balance	The ISO will be utilizing the finalized portfolios provided to the ISO by the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance. Within the finalized portfolios the generation identified in the Westlands area is 1500 MW in all but the DG scenario where it is 990 MW.



The complete set of stakeholder comments can be found at:

		California's in-state renewable generation portfolio and diversify away from higher risk development areas.	
19	Daniel H. Kim, WSP	The study plan should include more items in the sensitivity analysis. The sensitivity analysis for the Central Valley study should include higher renewable generation assumptions that are more in line with actual commercial potential in the Westlands area, as well as develop a study of the potential for lower line loss from generation and transmission in the Westlands area due to it being closer to load in comparison to some generation in the desert that have hundreds of miles of transmission required to bring their power to load.  Also, the study plan should analyze the likelihood that generation in the Westland area would have more predictable weather patterns and less intermittency in comparison to generation in the desert areas that might be affected by monsoonal storms that can impact system performance and result in greater intermittency.	The ISO will be assessing the needs in the area based upon the CPUC and CEC portfolios that the ISO received on May 16, 2012. The scenarios provide for a range of potential generation development in the area and on the around the system.  The analysis is based upon meeting the performance requirements that consider single, multiple and extreme contingency events on the system per the requirements of the Reliability Standards.
		Lastly, the sensitivity analysis should analyze the impacts from wildfires and the resulting outages that can be triggered in areas outside of the Central Valley and compare it to the benefits of transmission upgrades in the Central Valley where wildfire risk is negligible.	
20	Daniel H. Kim, WSP	WSP seeks to change the renewable generation assumptions from the 2012/13 TPP resource portfolios in the Central Valley study plan. The CV study plan should create its own resource assumptions or assume the maximum commercial potential based on the Westlands CREZ and non-CREZ figures in the June 1, 2011 CAISO queue.	The ISO will be utilizing the finalized portfolios provided to the ISO by the CPUC and CEC on May 16, 2012 in the assessment of the Central California system performance. Within the finalized portfolios the generation identified in the Westlands area is 1500 MW in all but the DG scenario where it is 990 MW.
		When the question was posed at the April 2nd stakeholder meeting as to why the Westlands CREZ generation was substantially reduced, the response was that there were no commercial projects in the Westlands CREZ that would warrant maintaining the 800 MW assumption from the 2011/2012 TPP, or that would justify increasing this generation assumption.	



The complete set of stakeholder comments can be found at: <a href="http://www.caiso.com/planning/Pages/TransmissionPlanning/2012-2013TransmissionPlanningProcess.aspx">http://www.caiso.com/planning/Pages/TransmissionPlanning/Pages/TransmissionPlanningProcess.aspx</a> under the 2012-2013 transmission planning process – stakeholder comments subheading.

Despite the significant number of GIAs in the Westlands region and other resource areas of the state, the reliance on GIAs to drive resource planning is inherently flawed because commercial interest is short term and project driven in comparison to resource planning for transmission	
that must consider the economic, reliability and policy needs of the state that will be in place well beyond the life of a standard PPA contract.	