



California ISO
Your Link to Power

**ISO Renewable Energy
Transmission Planning Process
(RETPP):
Second Revised Straw Proposal**

December 2, 2009

I. EXECUTIVE SUMMARY

The California Independent System Operator Corporation (the ISO) presents, for discussion with stakeholders, this second revised straw proposal for an effective transmission planning process to develop the transmission infrastructure needed to achieve California's 33% Renewable Portfolio Standard (RPS) in a comprehensive and timely fashion. This revision provides further clarification and details of the ISO's proposal in response to stakeholder comments and questions on the ISO's initial straw proposal and issue paper¹ and first revised straw proposal (October 30 proposal).² In addition this revision extends the stakeholder process to support an ISO Board decision and FERC filing in February 2010 instead of the original December 2009 target.

Consistent with the ISO's October 30 proposal, the present revision retains the central objective of the renewable energy transmission planning process ("RETPP") to develop a state-wide transmission plan through the California Transmission Planning Group (CTPG), building on the work of the Renewable Energy Transmission Initiative (RETI), and supported by a substantial effort with state agencies and other stakeholders. At the same time, the ISO proposal envisions that any specific transmission projects would be subject to final approval by the respective Balancing Authorities (BAs) according to their own planning and approval procedures.

In this second revision, the ISO continues to maintain that the RETPP track should, at least for its first iteration in 2010, be conducted separately from the ISO's existing Order 890 transmission planning process ("TPP") with its own transparent stakeholder process and milestones.³ This approach has received significant support from stakeholders.

¹ Posted on September 15, 2009 and available at <http://www.caiso.com/242a/242afa1d3c210.pdf>

² Posted on October 30, 2009 and available at <http://www.caiso.com/2457/2457e0ea6a860.pdf>

³ The ISO envisions that for 2010 the RETPP described here would be conducted in addition to, not in place of, the TPP. The latter would continue on its existing timeline and in accordance with modified tariff provisions, to consider reliability, but not economic, transmission upgrades that do not require justification of need based on delivering energy from renewable supply resources. Evaluation of economic transmission projects in the TPP will not proceed while the ISO evaluates the impact of the

The present revision retains the three-phase approach described in the October 30 proposal. Stakeholders are generally supportive of the three phase design of the RETPP, but have requested a number of clarifications and have proposed several modifications, several of which are reflected in this proposal.

In the first phase, the ISO in collaboration with the CTPG participants and through a stakeholder process will develop a state-wide 33% RPS conceptual transmission plan to be presented to the ISO Board for discussion in draft form in March 2010 and to be finalized in May 2010. The draft conceptual plan is expected to reflect the results of analysis currently underway within CTPG as well as information from the ISO's 2010 TPP and Transition Cluster Phase II that is available at the time. The draft and final conceptual plans would identify specific facilities to be added to the transmission system or upgraded, including new lines at specific voltage levels between designated points of interconnection, substation upgrades, etc., but would not include all the engineering details required to develop accurate cost estimates for proposals to build the facilities.

In the second phase, there will be a three month period for stakeholder review and comment beginning with the release of the draft conceptual plan. During this period stakeholders may also suggest modifications to the conceptual plan, such as new interstate lines, but any such elements would need to be conceptual in nature because there will be no consideration of specific project proposals in this second phase. Following this opportunity for stakeholder input, the ISO in collaboration with CTPG will refine the initial conceptual plan using transparent criteria, including those criteria described in the prior straw proposals and possibly others, to establish needs for the components of a final state-wide 33% RPS transmission plan. The final plan would provide sufficient engineering

renewable transmission build-out and tries to resolve other operational and planning uncertainties relevant to economic assessment. However, certain transmission elements that provide economic benefits may be considered in the RETPP. More details on this change are in Section III.D. The results of the TPP would then be counted towards meeting the 33% RPS target to the extent they enable the delivery of renewable energy to meet that target. Similarly, upgrades undertaken pursuant to the Large Generation Interconnection Process (LGIP) would proceed in accordance with existing design and timetable of that process, and these upgrades would also be counted as contributing to the 33% RPS target as appropriate. Thus economic, reliability, and LGIP-related projects would be considered as part of the baseline for use in the RETPP. In subsequent years, however, the ISO may consider further refinements that might include merging the TPP and the new RETPP into a single process.

details for the participating transmission owners (PTOs) or other parties to develop accurate cost estimates and construction schedules as part of their proposals to build specific elements of the plan. This final plan would be submitted to the ISO Board of Governors in December 2010 for approval of need for those elements that would be within the ISO Balancing Authority Area (BAA).

In the final plan, individual elements of the plan could receive Category 1 (final or unconditional) approval or Category 2 (conditional) approval. The Category 1 designation would be similar to RETI's concept of least regrets or foundational lines that could be approved without conditions related to future developments, whereas Category 2 lines would be approved conditionally subject to updated information, including commercial interest evidenced through generation development or contractual commitment. In addition to commercial interest criteria, this revised proposal offers some other potential criteria for determining Category 1 and Category 2 designations, such as the total potential renewable installed capacity and delivered renewable energy in a zone, any environmental issues associated with the proposed generation location, and the aggregated supply cost function of resources in the zone.

In the third phase, the final plan would provide the need determination under which specific project proposals may be submitted for transmission facilities approved in the Phase 2 plan. A significant change to the October 30 proposal is that under this revised proposal, a PTO with a service territory and an obligation to build under the ISO tariff to address transmission needs identified by the ISO (an "eligible PTO" for purposes of this proposal) will have both a right of first refusal to propose to build the projects identified in the final plan that are within its service territory, as well as an obligation to build such projects in the event that no other party offers a proposal. The right of first refusal would be limited to the 60-90 day Phase 3 time period. If an eligible PTO does not submit a project proposal for a specific element of the final plan within the Phase 3 period, such PTO loses any right of first refusal with respect to such element, and other transmission developers may then submit and the ISO may approve their proposals to build the project. If neither the appropriate eligible PTO nor another party proposes to build a specific element of the final plan, then the PTO in whose service territory the transmission facility would be located would have an obligation to build the facility.

Those project proposals within the ISO BAA would be submitted to the ISO Board for approval starting in March 2011. Projects approved for facilities that received Category 2 approval by the ISO Board at the end of the second phase would be able to proceed with engineering and other needed pre-construction work with the assurance that the project developer would be able to recover the costs of these activities in the event the project does not receive final approval. On an ongoing basis the ISO would work with the CTPG and stakeholders to conduct an annual recalibration of the plan to reflect updated information and determine whether any Category 2 plan elements and projects should move to Category 1.

Finally, as stated in the October 30 proposal, the new RETPP will require that the ISO establish in its tariff a new criterion for approving transmission upgrades based on the need for such upgrades to support delivery of energy from renewable supply resources to meet the state's RPS targets.⁴ Thus the ISO intends that the new RETPP will lead to approval under this new criterion of elements of the comprehensive statewide plan and specific projects that would not necessarily qualify for approval based on existing reliability and economic criteria.

The ISO also proposes some other changes to the coordination among transmission planning processes. In the prior straw proposal, the ISO stated that any proposals by PTOs to enhance or "right-size" generation interconnection projects under the LGIP would be evaluated and approved through the new RETPP. At the same time, the ISO assumed that any other LGIA-related projects of any size could be approved within LGIP. The ISO now proposes that project approvals within the LGIP would be limited to those right-sized and other LGIP-related network upgrades that are determined by the ISO to be able to proceed without needing evaluation within the comprehensive statewide plan. Criteria the ISO will consider for making this determination include the MW amount of

⁴ This would include transmission upgrades for providing sufficient access and transfer capability to renewable generation as well as transmission upgrades needed for addressing any operational needs arising from higher levels of renewable integration. For example, the new criterion would also enable the ISO to approve transmission upgrades that provide greater access to any resources (dispatchable load, generation, storage) that can support reliable operation by compensating for the variability of renewable generation.

transmission capacity that would be added to the grid, the amount of generation potentially being accessed by the upgrade, and the cost. When upgrades are approved within the LGIP, the results would be placed into the baseline of the RETPP. The ISO believes that allowing approval of such projects within the LGIP would address the concerns expressed by stakeholders that such projects would be subject to excessive delay if they had to wait until Phase 3 of the new process. To facilitate this approach the ISO proposes that the new RPS project approval criterion mentioned above would apply to these LGIP projects as well as to the RETPP. The ISO believes that it is necessary to limit the scope of this provision based on the criteria noted above in order to ensure that all projects of significant size and impact that are justified based on access to renewable energy will be assessed in the context of the comprehensive statewide renewable energy plan.

Further, the ISO now proposes tariff revisions to remove proposed economic projects from consideration within the TPP and instead evaluate the transmission elements that would meet economic objectives within the RETPP. This change is necessary to meet the primary objective of creating the RETPP, namely to have a transmission planning process that is truly comprehensive and that supports project approvals that are consistent with a statewide assessment of infrastructure needs driven by renewables policy and other environmental policies.

Another area where stakeholders expressed concern about the October 30 proposal was about the viability and transparency of the CTPG as the planning entity for Phase 1. To partially address these concerns, the ISO proposes to conduct additional stakeholder activities during Phase 1, complementary to its work within CTPG, to begin consideration of analysis that will be needed in the Phase 2 process. The ISO intends to provide further clarification about these activities and about the CTPG process in a subsequent iteration of this proposal. Stakeholders also expressed concern about the feasibility of the prior proposal's March 2010 date for the CTPG to complete the Phase 1 conceptual plan. The present revised proposal allows the March 2010 plan to be a draft conceptual plan, with the final version to be completed by May 2010.

The ISO intends to work with stakeholders to gather their input and recommendations before presenting a final RETPP proposal to its Board of Governors for approval at their February 2010 meeting. The February Board

decision would be to approve the design of the RETPP and the new RPS criterion for project approval, and authorize ISO management to file the necessary tariff provisions for approval by FERC.

II. BACKGROUND

On September 15, 2009, the California Independent System Operator (ISO) launched its *Getting to 33% RPS* initiative by publishing an issue paper and straw proposal outlining a new tariff category for network upgrades to support renewable development, along with a framework for comprehensively planning the transmission upgrades that will be needed to reach California's ambitious RPS targets. The issue paper was followed up with a stakeholder meeting on September 23, 2009. Interested parties then had an opportunity to submit written comments by September 30, 2009.

Stakeholders provided insightful comments and raised issues that required the ISO to reconsider how to proceed developing the 33% RPS transmission planning initiative. The ISO further considered the challenges associated with developing a reasonable, orderly build-out of California's transmission infrastructure to meet the state's 33% RPS goals under a least cost/best fit transmission planning principle. The ISO concluded that in addition to the proposed commercial interest criteria, which received general support from stakeholders, there was also a need for a state-wide collaborative planning process and that any commercial interest criteria must be applied within that context.

Further, over the last year, through its Order 890 transmission planning process (TPP) the ISO concluded that the state could fail to reach its 33% RPS target if the transmission system is upgraded in a piecemeal fashion, project by project, as defined by the ISO's Order 890 TPP. This does not mean that the TPP is failing to work properly; rather, it recognizes that the TPP was not designed to accommodate the condensed timing required by the policy driven infrastructure needs of the state's 33% RPS initiative. As such, the ISO concluded that a planning process that is separate from and parallel to the TPP was needed to address the much shorter policy-driven timeframe of the 33% RPS initiative.

The ISO also believes that to achieve a reliable and cost effective transmission solution to meet the state's 33% RPS goal will require broad agreement among

all stakeholders on two foundational planning components: the fundamental planning assumptions, and a coordinated planning forum that contains a broad spectrum of transmission owners and operators and technical experts in reliability. These two components are the necessary ingredients for developing the statewide renewable energy transmission plan.

Based on these considerations the ISO concluded the following:

- Regarding coordinating and developing agreement around key planning assumptions, there are substantial efforts underway to resolve many state-wide resource and policy issues relevant to transmission planning. These include, among others, the development of renewable resource portfolios under the state's Renewable Portfolio Standard (RPS), the evolution of the CPUC's Long-Term Procurement Plan (LTPP) and Resource Adequacy program (RA), the evolving schedule for replacement or repowering of once-through cooling (OTC) plants and the impact on generation development of state air quality objectives and policies. Sufficient working agreement on the expected outcomes of these and related state policy drivers are needed to establish planning assumptions before a comprehensive state-wide renewable energy transmission plan can be developed.
- Coordinated planning among all relevant state transmission planning entities is needed. The ISO believes that this charge should rest with the CTPG. This group's primary mission is to coordinate transmission planning across the state and, given its composition⁵ and with appropriate opportunities for review and input by other stakeholders, the CTPG is uniquely situated to assume the coordinated planning responsibility for the 33% RPS initiative.

⁵ The members of the CTPG are: California Independent System Operator (CAISO), Imperial Irrigation District (IID), Los Angeles Department of Water and Power (LADWP), Pacific Gas and Electric (PG&E), Southern California Edison (SCE), Southern California Public Power Authority (SCPPA), San Diego Gas and Electric (SDG&E), Sacramento Municipal Utility District (SMUD), Transmission Agency of Northern California (TANC), Turlock Irrigation District (TID), Western Area Power Administration (Western)

- The scope of the RETPP, particularly its state-wide dimension, requires more flexibility in terms of timelines and milestones than is afforded by the ISO's Order 890 TPP. This will necessarily require a separate but parallel process from the TPP, along with modifications to the LGIP and TPP, to identify and approve infrastructure needed to meet the 33% RPS policy timeline currently in place.

These considerations resulted in a revised straw proposal issued on October 30, 2009, which departed from the ISO's original proposal by creating an initial step using coordinated assumptions and planning via the CTPG to facilitate state-wide consensus around a state-wide conceptual transmission plan capable of meeting the state's 33% RPS initiative by 2020. The addition of this initial step resulted in the three-phase process which is retained in the present revision and is described in further detail below. A stakeholder conference call on the October 30 proposal was held on November 6 and stakeholders subsequently submitted written comments.⁶ These stakeholder comments will be referenced in the text of this second revised proposal (all stakeholder comments cited below will refer to comments on the October 30 proposal, unless otherwise indicated). In general, stakeholders supported the ISO's revised proposal, but offered many recommendations for revisions and clarifications. This paper thus continues to follow the basic design of the process defined in the October 30 proposal, but with some significant modifications.

In order to bring this RETPP proposal to the ISO Board of Governors for approval at the February 2010 Board meeting, the ISO proposes the following updated schedule for the stakeholder process:

- December 8 – Stakeholder meeting to discuss second revised straw proposal
- December 15 – Stakeholder comments due on second revised straw proposal
- December 31 – ISO posts draft final proposal
- January 6 – Stakeholder conference call to discuss draft final proposal
- January 13 – Stakeholder comments due on draft final proposal

⁶ Available at <http://www.caiso.com/242a/242abe1517440.html>.

- February 11-12, 2010 – ISO Board of Governors meeting
- Late February 2010 – Tariff stakeholder process and tariff filing

III. REVISED 33% RPS PLANNING PROPOSAL

The present revision retains the three-phase structure of the October 30 proposal but extends slightly the time frame for completing Phase 1. The ISO now proposes that the March 2010 conceptual statewide plan be delivered as a draft, with a final version to be completed by May 2010. Dates for the other phases would not change: Phase 2 would be completed by the end of 2010 or early 2011, and Phase 3 would begin in early 2011 to allow approval of specific project proposals starting in March 2011. However, the ISO would open the period for stakeholder comment based on the March 2010 draft conceptual plan so as to facilitate timely completion of the Phase 2 process.

A. Phase 1 – State-wide Renewable Energy Conceptual Transmission Plan

As the central objective and deliverable of Phase 1, the ISO will work with the CTPG to develop a comprehensive state-wide conceptual transmission plan, focusing on the transmission elements required to achieve the 33% RPS. The CTPG was formed as a result of discussions facilitated by FERC to address the State's transmission needs in a manner that would be coordinated state-wide and would respect various business models. The CTPG includes transmission owners with service territories and transmission operators, and these parties have the technical capability to perform detailed transmission planning. One key CTPG objective is to identify opportunities for joint transmission development projects, which the ISO believes is an important focus and potential benefit of developing a consensus state-wide 33% RPS plan as envisioned in this proposal.

Under the current scope of the CTPG, this first annual California plan would incorporate the needs of the CTPG participants while addressing broad needs of transmission for the State, including renewable energy access (building on RETI work) and integration with system reliability and operational needs. The state-wide 33% RPS plan will build on the RETI Phase 2A report and the conceptual transmission analysis already done by the ISO with respect to transmission

within its footprint,⁷ and will include input from the other stakeholders as well as coordination with state agencies. As discussed above, initial efforts will be needed by the CTPG parties to agree on planning assumptions.

In general, conceptual transmission planning is performed to efficiently consider numerous upgrade alternatives. After the conceptual analysis, the alternatives can be ranked and then the most promising alternatives can be analyzed in more detail or published for informational purposes. The level of detail in the conceptual analysis is determined by the objectives of the study. For example, RETI's Phase 2A conceptual plan, which sought to identify transmission elements to support access to a large number of possible renewable zones, did not conduct power flow analysis, but rather used generation shift factors to identify transmission elements impacted by renewable energy projects at particular locations. The ISO's September 15 study using the RETI data did conduct power flow analysis to evaluate transmission alternatives, but was still conceptual in nature. Similarly, CTPG will conduct power flow studies and stability studies to support an initial state-wide conceptual plan. The conceptual plan would identify specific facilities to be added to the transmission system or upgraded, including new lines at specific voltage levels between designated points of interconnection, substation upgrades, etc., but would not include all the engineering details required to develop accurate cost estimates for proposals to build the facilities.

Coordination with CTPG and Stakeholder Participation

Many stakeholders are concerned about the coordination of the ISO's RETPP with the planning process of the CTPG. They note the nascent state of the CTPG process, and are concerned that, despite the intentions of some CTPG members, it cannot be Order 890 compliant and will lack fairness, accountability and transparency.⁸ There is concern that CTPG will not place sufficient weight

⁷ California Independent System Operator, "2020 Renewable Transmission Conceptual Plan Based on Inputs from the RETI Process: Study Results," September 15, 2009; available at <http://www.caiso.com/242a/242ae729af70.pdf>.

⁸ See, e.g., comments by CPUC at 3-6; eSolar at 1; Large-scale Solar Association at 4-5; Solar Millennium at 1; California Wind Energy Association at 1; NCPA at 1; Green Energy Express LLC at 1; IEP at 1-2; Pattern Energy at 1; DayStar Farms at 2

on the RETI results,⁹ and that it excludes key stakeholders in that process, including state agencies, generators, and independent transmission developers.¹⁰

The ISO recognizes that many of these stakeholder concerns cannot be definitively answered at this point because the CTPG process is still under development. As a member of CTPG, the ISO, along with other CTPG members¹¹ are working to address these concerns and have the expectation that over time, although the CTPG process will likely not be established as its own Order 890 process, it will become more transparent and allow for additional input by stakeholders, either directly or through the ISO's own stakeholder process that will be established.

The ISO has its own interest in making sure the Phase 1 CTPG results have credibility and support among ISO stakeholders and state agencies. Absent sufficient support for the Phase 1 results, the Phase 2 effort will face a much heavier workload and possible delays if it has to re-examine all the Phase 1 results. To address this concern the ISO has delayed the schedule for taking the RETPP proposal to the Board from December 2009 to February 2010, to allow two additional months for further development and clarification of each phase, and has extended the time for finalizing the Phase 1 conceptual statewide plan to May 2010.

The additional time proposed for the Phase 1 period should provide for at least two iterations of Phase 1 draft study results, either through CTPG sponsored stakeholder meetings or ISO sponsored meetings. During these Phase 1 stakeholder meetings, participants can review and comment on the draft Phase 1 study results and input assumptions and recommend consideration of alternative transmission projects, including inter-state projects.

⁹ A process for CTPG-RETI coordination is underway.

¹⁰ See, e.g., comments by CPUC at 5-6.

¹¹ See, e.g., comments by PG&E at 3.

In addition to the CTPG study scenarios, the ISO expects to conduct additional scenario analysis in Phase 1 using, and possibly modifying, the CTPG base-case assumptions. These scenarios could examine the impact of regulatory, technological and economic drivers on renewable resource development.¹² They may also include consideration of transmission enhancements that are based on operational needs stemming from renewable integration, such as greater access to dispatchable resources with fast ramp capabilities. The ISO will develop these scenarios in consultation with state agencies and stakeholders. The results from these additional scenarios will be shared with stakeholders and with CTPG and will ultimately help shape the CTPG statewide plan.

Coordination of ISO transmission planning processes

The ISO envisions that the Phase 1 process described above would be conducted in parallel to the ISO's Order 890 TPP, but with its own timeline and milestones.¹³ The latter would continue on its existing 2009-10 timeline to consider transmission upgrades for reliability that do not require justification of need based on delivering energy from renewable supply resources. One change the ISO now proposes to the existing TPP is to remove proposed economic projects from consideration within the TPP and address those proposals within the RETPP, where the need for the proposed new facilities or upgrades would be considered in the context of the comprehensive statewide plan. The results of the

¹² Such analysis could reflect, for example, the scenarios being studied in the ISO's current 33% RPS operational study, which is evaluating the operational impacts of renewable integration (e.g., ramping, load following, and regulating reserve requirements) of alternative renewable resource scenarios based on the CPUC's renewable implementation analysis and adjusted for updated 2020 CEC load forecasts reflecting different levels of demand side policies. A number of stakeholders propose ideas on the use of planning scenarios to determine the core set of lines that would be unconditionally approved. See, e.g., PG&E at 2-3; California Wind Energy Association, Sept. 30, at 5-7. The ISO has not yet determined at this stage how to structure any specific scenarios to be evaluated for 33% RPS transmission planning, but intends to be responsive to stakeholder comments and resource planning processes at the state agencies (see, e.g., CPUC comments at 7-8).

¹³ There was substantial stakeholder support for the separate track. See, e.g., PG&E at 3; Large-scale Solar at 1; Independent Energy Producers at 1; SDG&E at 1; CPUC at 9.

TPP would be counted towards meeting the 33% RPS to the extent they enable renewable energy delivery either directly or by providing access to complementary resources needed to support renewable integration. Thus reliability projects entering through the TPP and not requiring independent justification as supporting the 33% RPS, as well as relevant LGIP projects, would be considered as part of the “baseline” for use in the RETPP.

ISO Board Review

The draft conceptual state-wide 33% RPS plan that results from Phase 1 will be presented to the ISO Board in March 2010 for informational purposes and guidance. Depending on the nature and extent of any revisions to this draft when the conceptual plan is finalized in May 2010, the ISO will consider whether another discussion with the Board would be appropriate.

B. Phase 2 – Identifying the Specific Infrastructure Needed to Reach 33% RPS

The objective of Phase 2 will be to develop, starting from the CTPG’s statewide conceptual plan produced at the end of Phase 1, a refined, cost-effective plan that will be submitted for formal determination of need to the ISO Board and the corresponding decision makers of the other CTPG transmission operators.

Following release of the Phase 1 draft conceptual plan in March 2010, stakeholders will have a three month opportunity to review and comment on the plan, and at that time may suggest amendments, including potential interstate lines. This comment period should be long enough to allow ample opportunity for additional stakeholder comments on any plan modifications that appear when the conceptual plan is finalized in May 2010. The ISO will work through its stakeholder process to ensure that the infrastructure alternatives that are considered in Phase 2 reflect broad agreement on the efficient and robust transmission facilities that best support the state’s 33% RPS goal in accordance with the criteria developed in the present initiative.

Following the stakeholder input on the Phase 1 conceptual transmission plan, that plan and the proposed adjustments to that plan will be subject by the ISO (for the plan components in its territory), in continued coordination with CTPG, to

economic, environmental, commercial and other criteria to arrive at an efficient, reliable, and operationally sound final 33% RPS transmission plan.

On the basis of the criteria to be specified for the RETPP, the Phase 2 process will distinguish three categories of specific transmission elements. Category 0 will be comprised of baseline network reliability upgrades that are approved within the LGIP according to criteria discussed below. Category 1 will be comprised of plan elements that are considered foundational and can be approved without further conditions, whereas Category 2 elements will be those that are approved conditionally as supporting achievement of the 33% RPS target, but whose final approval will be subject to future development of generation or demonstrations of commercial interest.¹⁴

The ISO has adopted the above nomenclature in order to clarify the concepts behind these categories of transmission projects. Although ISO Category 1 conceptual projects will be roughly consistent with the intent of the RETI concept of “least regrets” transmission projects – what the RETI called “renewable foundation” and “renewable delivery” – they will not necessarily be identical with the projects identified through the RETI process.¹⁵ In addition to participating in CTPG, the ISO intends to conduct its own stakeholder process in accordance with its tariff requirements. The Phase 2 plan will be targeted for completion by December 2010 and presentation to the ISO Board of Governors for approval of those plan elements that are part of the ISO controlled grid.

¹⁴ A number of stakeholders have raised concerns about conditional approval status, in particular that such approvals will not provide sufficient certainty for making logistical and financial commitments for generation project development and construction. See, e.g., Solar Millenium at 1; IEP at 3. Other stakeholders have endorsed the concept of unconditional versus conditional approval for transmission projects, while providing their own ideas on how to determine the unconditional set. See, e.g., PGE&E at 2-3; Comments of the California Wind Energy Association, Sept. 30 at 5-7. At this stage, ISO believes that the guiding concept of “least regrets” infrastructure development should remain integral to the planning process, while acknowledging that it needs to be further elaborated.

¹⁵ See RETI, Phase 2A Draft Report, June 2009, pp. 1-6 to 1-7.

Analytical Process for Establishing the Final 2010 Plan

In Phase 2, the ISO, in coordination with CTPG, will utilize all relevant information to establish a proposed final plan for the ISO-controlled grid (as part of the state-wide plan) based on transparent criteria that can be used for need determination. As noted, ISO expects that the ranking criteria used in Phases 2 and 3 of the RETPP would include the commercial interest criteria discussed in the prior proposal, with similar or different thresholds. Proposed criteria for ranking projects in Phase 2 according to risk of stranded investment are set forth below. The ISO is open to other criteria to be used for distinguishing between Category 1 and Category 2 transmission elements, and between alternative elements that could enter Category 2.

Category 0 – Baseline Network Upgrades

The ISO proposes that information from the LGIP (network upgrades in LGIAs), including any decisions to approve PTO-proposed “right-sized” upgrades made in that process, will be incorporated into the RETPP as baseline network upgrades and the renewable resources accessed by these network upgrades will be counted towards the 33% RPS target. Under the current tariff, there is no provision to require that significant transmission upgrades driven through the LGIP, whether right-sized or not, are subject to evaluation in the comprehensive state-wide transmission planning process under the RETPP. The ISO proposes to develop some threshold criteria by which such significant transmission needs created by LGIP are placed in the RETPP, and not approved only through the LGIP. Criteria the ISO will consider for making this determination include the MW amount of capacity that would be added to the grid, the amount of generation potentially being accessed by the upgrade, and the cost. Certain LGIA-related upgrades and PTO-proposed enhanced network upgrades will be evaluated within the LGIP, i.e., those right-sized LGIP-related network upgrades that are determined by the ISO to be able to proceed without needing evaluation within the comprehensive statewide plan. This revision to the October 30 proposal is discussed in more detail in Section D below.

Category 1 – Transmission Upgrades or Additions Eligible for Final Approval

Category 1 transmission elements will be eligible for final ISO approval and will be designed to facilitate access to renewable generation with a high commercial interest level in multiple resource areas under various resource location and

integration assumptions. Transmission elements will be ranked, using the following criteria:

- (a) commercial interest in the zone(s) accessed by the transmission element, as evidenced by signed and approved power purchase agreements and interconnection agreements.
- (b) the cost of the transmission element;
- (c) the qualifying capacity (MW) and expected energy (MWh), as well as the supply cost function of renewable resources in particular zones;
- (d) the extent to which the transmission element will provide additional reliability or economic benefits to the ISO grid;
- (e) potential future connections to other renewable resource areas and transmission elements:
- (f) renewable integration requirements and costs associated with the resources in particular zones;
- (g) the potential for a particular transmission element to provide access to generation and non-generation resources needed to support renewable integration (e.g., pumped storage); and
- (h) the effect of uncertainty associated with the above criteria, and any other considerations, that could affect the risk of stranded investment.

Category 2 – Transmission Upgrades or Additions Eligible for Conditional Approval

If the renewable resource target is not achieved by counting the capacity of renewable resources made deliverable by Category 0 and 1 transmission elements, the ISO will rank transmission elements that are eligible for conditional approval, in order of risk of stranded investment, using the same criteria set forth above in Category 1, except that:

- (a) transmission elements eligible for conditional approval must be designed to access renewable resources in at least one renewable resource area;

(b) there must be some level of commercial interest in the capacity of the transmission element as evidenced by signed and approved power purchase agreements and interconnection agreements.

Status of the Transmission Upgrades in the Final Plan

As noted above, the ISO will not consider proposals from project developers to build the projects identified in Phase 2 until Phase 3. The ISO does intend, however, that its transmission planning evaluation during Phase 2 will result in transmission needs identified in the final Phase 2 plan that will be sufficiently refined and detailed to serve as the basis for Phase 3 submission and approval of proposals to construct the facilities in the plan.

There are often many transmission alternatives for meeting a particular transmission need, each of which can have trade-offs in terms of reliability, economic, and possibly operational benefits. The ISO's intention is to address these considerations and trade-offs in its Phase 2 planning process such that the final plan will be extremely specific and not subject to further consideration of comparable alternatives. The final plan would provide sufficient engineering details for the PTOs or other parties to develop accurate cost estimates as part of their proposals to build specific elements of the plan. Some of the detailed information to be included in the Phase 2 plan with the help of the PTOs would identify, in addition to other specifications, conductor size and line impedance, series compensation levels, substation bus and breaker design, breaker clearing times, transformer characteristics (capacity, impedance, tap range), shunt capacitor and reactor sizes, FACTS device specifications, SPS requirements, and so on. In addition, an expected construction schedule would be included along with a timetable for building the overall plan in phases to minimize the risk of stranded assets.

C. Phase 3 – Project Evaluation and Approval, and Plan Recalibration

Following the approval of the ISO BAA elements of the final state-wide 33% RPS transmission plan by the ISO Board at the conclusion of Phase 2, the next phase will focus on project planning and approval, plus an ongoing process for annual recalibration of the comprehensive statewide plan to reflect new developments as well as to determine if any Category 2 projects should move into Category 1

or be aborted. The Phase 3 process is mostly similar to that delineated in the ISO's previous proposal, but with some modifications to align with the other changes proposed here.¹⁶

A New Project Submission Period

Following Board approval at the end of 2010 of those elements of the state-wide 33% plan that would be under ISO operational control, the ISO will provide an opportunity for parties to submit project proposals to build the specific transmission elements identified in the 33% plan that are within the ISO controlled grid and that would be turned over to the ISO's operational control. Submission of such proposals will be structured in three steps. In the first step the eligible PTOs as defined above will have the first opportunity to submit proposals to build plan elements. The ISO will evaluate these proposals and, after determining which ones can be approved, in the second step the ISO will allow other parties to submit proposals to build plan elements that are not accounted for by the approved PTO proposals. In the third step, after evaluating the third-party proposals submitted in the second step, the ISO will identify those plan elements that are not addressed in any of the submitted proposals and assign these to the appropriate PTO to build. The ISO expects that the first two steps of this proposal submission window will take three to four months.

Evaluation of Competing Projects for Approved Transmission Facilities and Right of First Refusal

In the October 30 proposal, the ISO proposed that any transmission developer, including third party developers, could in Phase 3 submit proposals to build the transmission elements identified in the final plan. This approach raised the very likely scenario of having multiple project proposals offered to address the same need. The ISO proposed to address such instances by providing an opportunity for the project proponents to collaborate with each other to arrive at a single proposal that meets the need for which the projects were offered, after which, in the event of failure to achieve such collaboration, the ISO would refer the projects to the relevant regulatory authorities for review and final determination.

¹⁶ Initial straw proposal and issue paper, p. 8.

In response to stakeholder concerns about this approach,¹⁷ the ISO has reconsidered and now proposes the approach described above to avoid the possibility of competing proposals to build the same plan elements. Under this new approach, the PTOs that have service territories will have both a right of first refusal to build plan elements, and an obligation to build those elements for which no acceptable proposal is submitted in the first two steps of the Phase 3 submission window.

On this issue, the ISO has recently submitted initial comments in response to a FERC Notice of Request for Comments regarding the development and implementation of the Order 890 transmission planning process.¹⁸ As noted there, the ISO believes that a right of first refusal mechanism for eligible PTOs is appropriate and provides the right incentives for PTOs to join or retain membership in the ISO.¹⁹

Under the ISO tariff, these PTOs have an obligation to build certain facilities found to be needed by the ISO,²⁰ and the ISO views the obligation proposed here

¹⁷ See, e.g., CPUC comments at 6-7; BAMx/CMUA at 2; Pattern Energy at 1; Green Energy Express LLC at 3.

¹⁸ California ISO, "Initial Comments of the California Independent System Operator," FERC Docket No. AD09-8-000, November 23, 2009. For the reasons set forth in its comments, the ISO supports a narrow, carefully crafted right of first refusal for projects primarily designed to support achievement of the 33% RPS goal and the effective and reliable integration of renewable resources. The ISO's comments can be found at <http://www.caiso.com/246f/246fd23976c0.pdf>.

¹⁹ The eligible PTOs are or are affiliated with load serving entities with an obligation to serve the load in their service territory. If these PTOs were not members of the ISO, they could build new transmission projects to serve their load by simply obtaining a certificate of public convenience and necessity from the state regulatory commission. They would not encounter the competition to build transmission projects that would result from being a member of the ISO absent a right of first refusal for such PTOs. Thus, the absence of a right of first refusal mechanism would serve as an unnecessary and inappropriate disincentive for PTOs to join or retain membership in the ISO. Not providing for a right of first refusal would result in unfair and unduly discriminatory treatment of PTOs that are participating members of an ISO or RTO.

²⁰ See Section 24.1.2

to be an appropriate application of the existing obligation. A right of first refusal is an effective way to ensure that transmission needed to provide access to renewable energy to meet the 33% RPS target will be built. Imposing an obligation to build on a PTO without including a right of first refusal is unreasonable considering the treatment of third parties that do not have an obligation to build and can therefore propose to build only those projects that align with their current business interests. Also, to the extent the LSE affiliates of PTOs are subject to penalties for failure to meet RPS goals, they could be penalized due to the failure of third parties to construct transmission facilities in a timely manner.

In light of this modification, the ISO now proposes that the Phase 3 process be limited initially to eligible PTOs. In the event an eligible PTO fails to submit a proposal to build a transmission element identified in the final plan and in its service territory within the Phase 3 timeline, the right of first refusal for that project will expire and the ISO will allow other project developers (including independent third parties) to submit proposals to build the project.

The ISO believes that the right of first refusal mechanism proposed here is sufficiently narrow and transparent that it will not chill or delay the development of needed transmission. Moreover, it will not unduly preclude third-parties from building transmission. The final plan will identify the transmission elements that need to be built to meet 33% RPS goals, as well as related requirements. To the extent eligible PTOs do not submit specific projects to meet the necessary elements of the approved plan, non-PTO entities will be given the opportunity to submit projects to build transmission to meet the needs identified in the plan. This approach will ensure that multiple parties will not be incurring similar expenses in preparation to propose and build projects to meet the same transmission needs. If no party submits a project to build the transmission element, the PTO will be required to build it under its obligation to build. This revised proposal thereby ensures that necessary transmission will be built and the incurrence of duplicative costs will be avoided.

Project Approval by the ISO Board

The ISO will recommend for Board approval transmission project proposals addressing the needs identified in the final state-wide plan. The ISO will evaluate

the proposed transmission upgrades or additions submitted during the Phase 3 request window to determine whether the project proposal:

- (a) is consistent with a Category 1 or Category 2 transmission element;
- (b) satisfies Applicable Reliability Criteria and ISO Planning Standards;
and
- (c) is a cost effective means by which to deliver the renewable resource capacity associated with the transmission element identified in the final renewable resource transmission plan for the ISO Balancing Authority Area or annual update to the final plan.

These project proposals will be presented to the ISO Board for approval beginning in March 2011. Category 1 projects that have been given final approval can proceed with siting and permitting. The ISO is aware of stakeholder concerns that the Category 2 conditionally approved projects will not proceed due to the risk of incurring unrecoverable costs. At the same time, because there are expectations that IOU contracts and shortlists for renewable projects will achieve or exceed the 33% RPS requirement within the coming year, especially given changes to the 2020 demand forecast, it would be imprudent to grant final approval to projects that may ultimately lead to underutilized capacity. Hence, it is appropriate to condition project approval upon further market and regulatory developments to ensure that infrastructure development is efficient. To mitigate the risks to project developers of incurring unrecoverable costs, the ISO proposes that Category 2 projects be eligible for abandoned cost recovery for activities undertaken based upon conditional approval for a project that does not ultimately receive final approval.

Annual Recalibration of the 33% Plan and Final Approval of Conditionally Approved Projects

As proposed in the October 30 proposal, the state-wide 33% plan will be evaluated each year based on new developments to determine whether the Category 2 projects should receive final approval, and whether any new plan elements or projects should be evaluated and conditionally approved.²¹ It is

²¹ In comments on the prior paper, there was broad support for an annual recalibration study. Stakeholders suggested that the 33% RPS study be updated to include information on renewable

anticipated that the annual recalibration study will provide the information required by project proponents to determine whether the triggers identified in the criteria have been met, although other information may be provided to the ISO in support of an application for final approval.

Specifically, the ISO proposes a process for the annual recalibration of the 33% RPS plan that replicates the three-phase RETPP on an annual cycle. Thus there would be a Phase 1 revised conceptual plan targeted for June 2011, a Phase 2 revised final plan targeted for September 2011, followed by the Phase 3 proposal submission window leading to approval of project proposals by December 2011.

Phase 1 would be a CTPG process beginning in the first quarter of 2011, and would consider and adopt modifications to the 33% RPS statewide conceptual plan adopted in the previous cycle.

Following the release of the revised statewide conceptual plan the ISO would establish a two-month period during which the ISO and interested parties may propose updates to the revised conceptual transmission plan for the ISO Balancing Authority Area. Such updates may include, but are not limited to:

- (a) Information from the LGIP and the ISO Interconnection Queue;
- (b) The status of projects approved in the prior annual renewable resource transmission plan;
- (c) System operational information and the need for transmission projects to provide access to resources providing renewable integration capabilities;
- (d) Technological changes; and
- (e) Resource procurement information from the California Public Utilities Commission long term procurement proceedings.

The ISO will evaluate the new information against the existing 33% RPS plan for the ISO BAA and post recommended updates on the ISO website. Such updates may include, but are not limited to:

generation, PPAs and commercial viability, load and generation forecasts, LGIP and regional information from TEPPC/WECC/CTPG, energy policy developments and major market uncertainties.

- (a) Final approval for projects conditionally approved in prior plans;
- (b) Elimination of the need for projects conditionally approved in prior plans;
- (c) Identification of needs for transmission upgrades or additions not included in prior plans.

The ISO will hold, at a minimum, one stakeholder meeting to discuss the updated renewable resource transmission plan and provide an opportunity for stakeholder comment. The updated plan, and the stakeholder comments, will then be submitted to the ISO Board of Governors for approval.

Following approval of the updated plan, the ISO will follow the process described above for Phase 3 of the RETPP to solicit projects and designate project sponsors to meet needs not previously identified in prior renewable transmission plans for the ISO Balancing Authority Area.

Following the RETPP design on an annual basis, the CTPG and the ISO will annually update the 33% RPS Plan until the transmission upgrades and additions needed to achieve the state RPS targets have been finally approved.

Cost Allocation

The capital costs of specific transmission projects that receive final ISO Board approval at the conclusion of Phase 3 are eligible for recovery as part of the applicable PTO's transmission revenue requirement through the ISO transmission access charge. If a non-PTO specific project is approved by the ISO Board, the non-PTO is eligible to become a PTO and to recover the capital costs of the project through the ISO transmission access charge, or may elect merchant transmission status, forego regulated recovery of the project costs and receive congestion revenue rights commensurate with the capacity the project adds to the ISO controlled grid.

D. Relationship of 33% RPS Transmission Planning Process, the ISO Transmission Planning Process (TPP) and the LGIP

In the October 30 proposal, the ISO proposed that information from the LGIP (i.e., network upgrades specified in LGIAs) would first be counted towards the renewable energy objectives for each particular renewable energy zone. Then, in the event a PTO proposes to enhance or "right-size" any such upgrades, ISO's

Order 890 TPP would determine whether such proposals should be approved. The ISO has reconsidered this approach and now proposes that the determination whether to approve such enhanced LGIP upgrades would take place either within the LGIP itself or within the new RETPP, depending on whether each of those upgrades needs to be considered in the context of the comprehensive statewide plan. For those upgrades that are assessed to have no or minimal impact on the state-wide plan, this approach will enable them to move forward without depending on the timelines of either the TPP or the RETPP. Any network upgrades or enhanced network upgrades approved within the LGIP will be included in the Category 0 baseline infrastructure and taken into account in determining the need for additional facilities in the RETPP. This change to the October 30 proposal will be a more practical and timely approach for addressing LGIP upgrades and will allow for the ISO to approve any such projects, where appropriate, in advance of the final Phase 2 RETPP plan.

The ISO's existing Order 890 TPP will continue on its current schedule for 2009-10 with one significant change. The ISO proposes tariff revisions to remove proposed economic projects from consideration within the TPP and instead consider them within the RETPP. This change is necessary to meet the primary objective of creating the RETPP, namely to have a transmission planning process that is truly comprehensive and that supports project approvals that are consistent with a statewide assessment of infrastructure needs.

The electricity industry in California is undergoing fundamental changes as the result, *inter alia*, a proposed 33% renewable portfolio standard and other climate initiatives. This fact raises significant uncertainty for transmission planning purposes as a result of the following, among other factors:

- (a) which resources in the existing fleet will remain operational;
- (b) where will the renewable resources needed to meet a 33% RPS standard actually be built;
- (c) how new resources will be effectively integrated into the grid;
- (d) what the new congestion patterns will be as a result of the changes in the resources fleet;
- (e) what renewable energy areas show sufficient commercial interest for generation necessary to ensure achievement of the 33% goal;
- (f) what specific transmission facilities will be needed to ensure that these goals are achieved in a cost-effective and reliable manner; and

- (g) what generation and transmission interconnected, non-ISO Balancing Area Authorities are interested in building to meet a 33% RPS requirement.

The transmission build-out necessary to achieve the State's initiatives in an integrated, reliable and cost effective manner will depend on the assumptions made about these factors and a host of others. Because any strategy for implementing a 33% RPS and other climate initiatives will affect the economics of both resource integration and congestion relief, the ISO believes that economic projects must be studied further in the context of the development of such strategy and the facts/assumptions regarding where generation intended to meet these goals is likely to be located.

IV. APPENDIX – REVIEW OF ORDER 890 COMPLIANCE REQUIREMENTS

In Order No. 890, the Federal Energy Regulatory Commission identified the following nine principles that must be satisfied for a transmission provider's planning process to be considered compliant with Order No. 890: coordination; openness; transparency; information exchange; comparability; dispute resolution; regional participation; economic planning studies; and cost allocation for new projects. The ISO's transmission planning process (TPP) reflects these nine principles, and the Commission has found it to be compliant with Order No. 890.

The ISO's proposed 33% RPS planning process will include coordination with the California Transmission Planning Group (CTPG), as well as an ISO-specific process that runs parallel to and separately from the CTPG process. The ISO expects that many, though not all, of the nine transmission planning principles adopted in Order No. 890 will be reflected in the CTPG planning process. The dispute resolution and cost allocation principles, for example, are not applicable to CTPG because the ISO does not believe CTPG will have any final decision making authority regarding which transmission lines will be approved and built. Ultimate findings of need for a specific transmission line will occur in the separate transmission planning processes of the individual transmission operators such as the ISO and in the processes of the regulatory agencies that have siting authority.

On the other hand, the ISO anticipates that the certain key Order No. 890 principles such as transparency, coordination, and information exchange will apply to the CTPG process. Transmission providers will share information

necessary to ensure effective coordination and develop any plans and base cases. CTPG's assumptions, results and recommendations will be transparent and available. Transmission providers will coordinate to identify potential joint projects and other lines that might be needed to achieve the State's RPS and other goals in a reliable, cost-effective manner, based on the assumptions utilized in the CTPG process.

Even though the CTPG process may not fully reflect all of the Order No. 890 principles, the ISO will be conducting its own separate and parallel planning process. That process will be fully compliant with all of the Order No. 890 principles. Thus, all of CTPG's assumptions, results and recommendations will ultimately be vetted in the ISO's Order No. 890-complaint process, along with other assumptions, results and proposals that the CTPG process may not have addressed. This structure will ensure maximum coordination among the transmission operators in the State, while also ensuring satisfaction of all the Order No. 890 principles. The ISO's parallel process, compliant with Order No. 890, will test the CTPG inputs and determine whether they are sustainable and appropriate for the ISO footprint. Also, it will be the ISO, not CTPG, that determines whether a specific project within the ISO footprint is needed and the project's costs should be included in the ISO's transmission access charge.