



**California ISO**  
Your Link to Power

---

# **Revised Transmission Planning Process**

## **Complete Final Proposal**

**May 7, 2010**

# Revised Transmission Planning Process

## Complete Final Proposal

### 1. Introduction and Summary

In this document the ISO provides a complete description of its revised transmission planning process proposal (revised TPP). The revised TPP proposal described here encompasses and supersedes the initiative known as the “renewable energy transmission planning process” (RETPP), which the ISO has conducted with stakeholders over the past several months. As indicated in the ISO’s April 28 supplement on the revised TPP, the change in title of this initiative reflects the successful combination of the process for planning transmission to access renewable resources to meet the state’s renewable portfolio standard (RPS) with the activities and objectives of the ISO’s existing transmission planning and generator interconnection processes. Under the revised TPP proposed here the unified planning effort will produce a single, annual, comprehensive transmission plan for the ISO balancing authority area that includes the transmission additions and upgrades driven by environmental policy goals as well as those driven by the other needs and objectives transmission planning must address.

The primary objective of the revised TPP proposal is to enhance the existing transmission planning and generation interconnection processes to promote the development of infrastructure needed to achieve the state’s 33 percent RPS by 2020. To this end, the revised TPP will:

- (1) Develop a statewide conceptual transmission plan through collaboration with other transmission providers and owners in California;
- (2) Finalize that plan for the ISO balancing authority area (BAA) with sufficient detail both to establish needs and to elicit specific proposals to build the needed transmission elements;
- (3) Establish, in the ISO tariff, the category of “policy-driven” transmission additions and upgrades to plan and approve the transmission needed to achieve the state’s environmental goals;
- (4) Integrate the planning and approval of policy-driven transmission into the ongoing activities of the ISO’s existing Order 890 compliant transmission planning process and the generation interconnection process;
- (5) Enable transmission infrastructure development to move forward expeditiously and efficiently to support the state’s environmental goals;
- (6) Provide opportunities for stakeholder participation and input to the process; and

- (7) Provide opportunities for qualified independent transmission developers to build and own elements of the ISO plan that are not covered under the transmission categories that the tariff assigns to the participating transmission owners (PTOs) to build.

This complete final proposal retains, with some important modifications, the three-phase structure described in the ISO's prior proposals. Figure 1 below illustrates and summarizes the entire process.

In Phase 1 the ISO in collaboration with the California Transmission Planning Group (CTPG) will produce by July 2010 a statewide conceptual transmission plan aimed at achieving the 33 percent RPS goal. In Phase 1 the ISO will also conduct its own stakeholder process to develop the unified planning assumptions and study plan that comprise the first part of the ISO's existing annual transmission planning process (now completed for the 2010/2011 planning cycle).

In Phase 2 the ISO will develop a comprehensive transmission plan for the ISO BAA. In this phase the ISO will perform the studies specified in its study plan and will, with stakeholder input, incorporate the statewide conceptual plan developed by the CTPG and refine that portion of it that applies to the ISO BAA. In Phase 2 the ISO also will receive and evaluate proposals for reliability projects in response to the ISO's reliability study process, and may receive and evaluate proposals for merchant transmission projects, projects required to maintain the feasibility of long-term congestion revenue rights (CRRs) and location-constrained resource interconnection facilities (LCRIF). Phase 2 will also include economic analysis to assess needs for and identify additional transmission that will provide economic benefits. For the 2010/2011 cycle of the revised TPP this economic assessment will focus on the economic projects that were submitted to the ISO's 2008 and 2009 request windows.

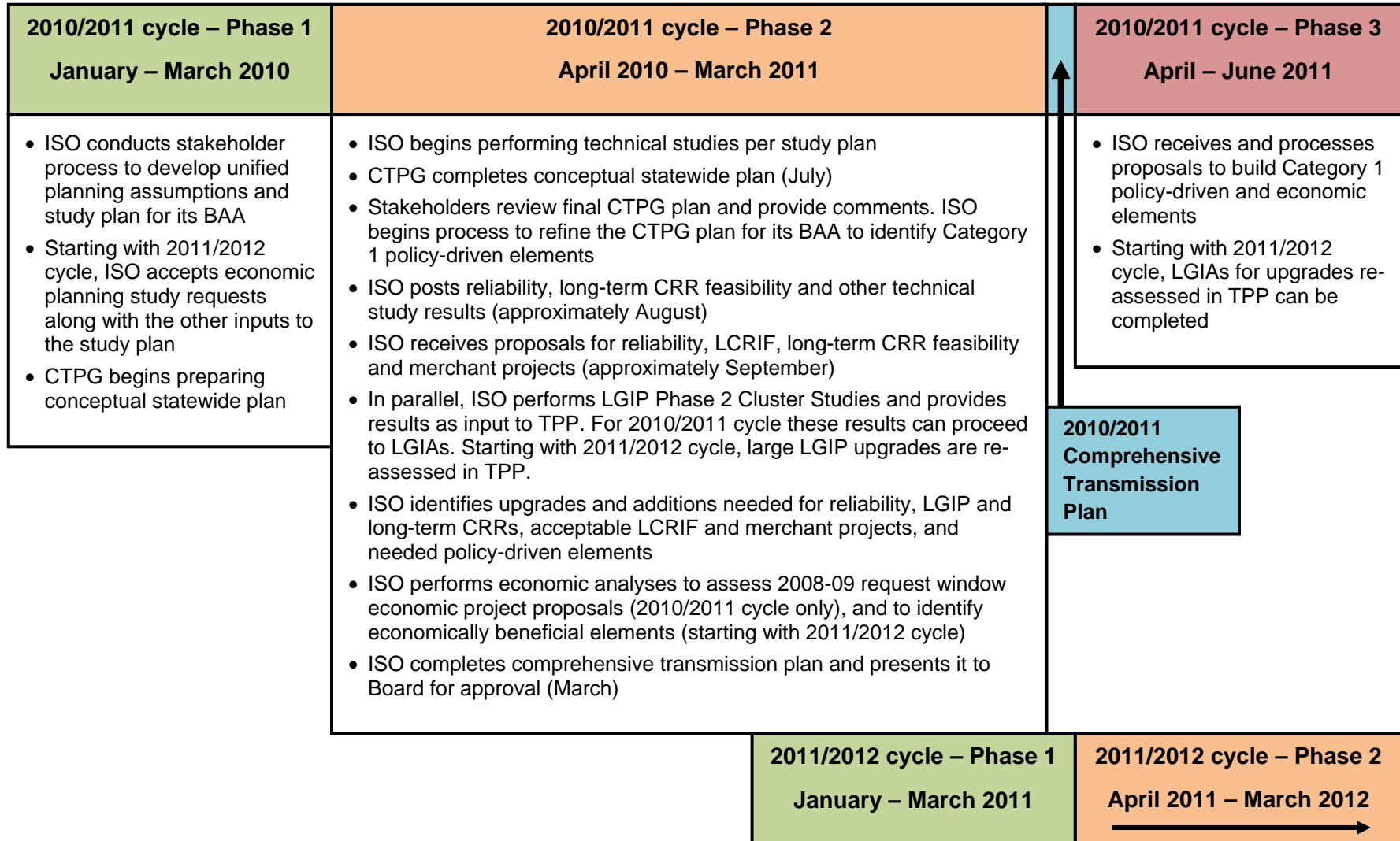
The comprehensive transmission plan developed at the conclusion of Phase 2 will be presented to the ISO Board in March 2011 and will contain (1) proposals for reliability, long-term CRR-driven, merchant and LCRIF projects, (2) specific transmission upgrade or addition elements found to be needed for access to renewable energy resources to meet the state's 33 percent RPS target and therefore proposed for unconditional approval (referred to as "Category 1" or "least regrets" elements); (3) specific transmission upgrades or additions found to be needed based on economic cost-benefit criteria; and (4) specific transmission upgrades or additions that may be needed depending on the future course of renewable generation development but require further consideration before they can be approved (referred to as "Category 2" elements). The Board will be asked to approve the first three groups of projects and needed upgrades, whereas the fourth group will be identified as potentially needed to be revisited in the second annual cycle beginning in 2011.

In Phase 3 the ISO will receive proposals to build the renewable access and the economically beneficial transmission upgrades or additions that were approved in the final Phase 2 plan. Within this category, those upgrades not assigned to PTOs to construct under existing tariff categories will be open to proposals to build from both PTOs and non-PTOs. The categories assigned to the PTOs to build are the reliability projects, LCRIF projects, projects to maintain the feasibility of long-term CRRs, and LGIP projects resulting from completed Phase II cluster studies that were used as inputs to Phase 2 of the revised TPP. Approved merchant projects will be built and owned by their project sponsors provided those entities are qualified. Therefore the projects open to all qualified parties to submit proposals in Phase 3 will be the Category 1 elements of the plan that are approved either as policy-driven elements or economically beneficial elements. The exception to the last provision for the 2010/2011 cycle is that for any economic project proposals submitted into the 2008 and 2009 request windows that are approved as part of the comprehensive plan, the project sponsor that submitted the project and is determined to be qualified will be allowed to build and own those project elements.

The ISO will review the proposals received in Phase 3 to determine whether they are technically consistent with the specifications in the final Phase 2 plan and whether the project sponsors are qualified to build and own the facilities. Where there is one acceptable project sponsor, that sponsor may proceed to the CPUC or other appropriate siting authority. In cases where two or more acceptable project sponsors submit proposals to build the same element and the sponsors intend to seek siting approval from different siting authorities, the ISO will determine which proposal should go forward based on criteria specified in the tariff. Where two or more acceptable project sponsors would apply to the same siting authority, that authority will make the determination.

The next section of this proposal provides the schedule of activities for the next several weeks, leading up to the filing of this proposal at FERC on June 1. Subsequent sections provide first a review of the main design principles that shaped this proposal, followed by more detailed descriptions of the three phases of the revised transmission planning process.

Figure 1. Revised Transmission Planning Process



## 2. Schedule of Activities

The following are the dates of key activities leading up to the ISO's filing of this proposal at FERC on June 1.

- Tuesday, May 4, 2:30-4:00 – Stakeholder Conference call to discuss April 28 Supplement
- Wednesday, May 5 – ISO posts first draft of tariff language and market notice on tariff schedule
- Thursday, May 6 – Stakeholder comments due on April 28 Supplement
- Friday, May 7 – ISO posts comprehensive final proposal
- Tuesday, May 11 – Stakeholder comments due on draft tariff language
- Wednesday, May 12 – Stakeholder conference call on draft tariff language
- Monday, Tuesday, May 17, 18 – Board meeting to consider revised transmission planning process proposal
- Wednesday, May 19 – ISO posts second draft of tariff language
- Tuesday, May 25 – Stakeholder comments due on second draft of tariff language
- Wednesday, May 26 – Stakeholder conference call on second draft of tariff language
- Tuesday, June 1 – ISO files revised transmission planning process proposal at FERC.

## 3. Design Principles and Features

**Statewide assessment of transmission needs.** As evidenced in the RETI process, a statewide renewable transmission plan, along with mechanisms for coordination among planning entities, are needed to enable efficient development and delivery of state and regional renewable energy resources. Under the present proposal the ISO's annual transmission planning process will include ISO collaboration with the California Transmission Planning Group (CTPG) in developing a conceptual statewide plan for access to renewable resources and then updating that plan for the ISO BAA.

**A “policy-driven” transmission planning criterion based on access to resources needed to support policy objectives.** The state's 33 percent RPS target was the initial motivation for considering changes to the ISO's existing transmission planning process. Early in this initiative the ISO recognized the need to create an explicit criterion for planning and approving transmission additions and upgrades to support such policy

initiatives. The ISO's current TPP has reliability and economic criteria for approving the need for an upgrade, whereas the LGIP provides for reliability and deliverability network upgrades to accommodate new generation resources that satisfy the requirements of the ISO interconnection queue. Accordingly, the ISO is proposing to establish a new criterion for evaluating and approving "policy-driven" transmission elements.

**Integration and consolidation of ISO planning processes.** In the initial September 15 issue paper, the ISO sought to address RPS needs simply by modifying the current TPP to incorporate a renewable access planning criterion. The ISO and stakeholders quickly recognized, however, that the current TPP and the companion LGIP were not suited for the comprehensive, yet targeted, planning approach required to meet state policy goals. Then in later straw proposals the ISO developed a separate renewable energy planning track that would parallel the current TPP and LGIP with certain linkages between the tracks at designated milestones. In response, stakeholders pointed out and the ISO agreed that the three-track process would be too fragmented and would not achieve the ISO's stated objective to do comprehensive planning. The current proposal therefore integrates the policy-driven assessment along with the elements of the existing TPP and the LGIP into a single comprehensive planning process.

**Shift from a project proposal approach to a comprehensive plan approach.** The revised TPP proposal departs from the existing TPP where parties can submit any project proposals into a request window regardless of whether they meet previously-identified ISO needs. Instead, under the revised TPP the ISO will provide a comprehensive plan that specifies the actual transmission elements needed for access to renewable energy supply resources to meet 33% RPS as well as specific elements that have been identified to provide economic benefits, to which parties can respond by submitting proposals to build the elements of that plan. The exceptions to this new paradigm are the ability in Phase 2 of parties to submit merchant transmission proposals (i.e., projects not seeking cost recovery through the transmission access charge) and LCRIF proposals, which would be evaluated in accordance with existing provisions. Similarly the current proposal does not propose any change to the existing rules and procedures for reliability projects and projects needed to maintain the feasibility of long-term CRRs.

**Economic project proposals submitted into the 2008 and 2009 request windows.** The ISO's April 2 proposal stated that the ISO would assess the economic benefits of these proposals against the baseline of the final Phase 2 plan, and if any of them were found to offer sufficient economic benefits, the ISO would approve the need for those transmission elements and allow all qualified parties to submit proposals in Phase 3 to build them.

The current proposal differs in two ways. First, the end point of Phase 2 is extended so that Phase 2 now includes the ISO's economic study process and the assessment of the 2008-2009 request window economic projects. This means that when the ISO finalizes the comprehensive transmission plan at the end of Phase 2 in March 2011, that final

plan will reflect the ISO's economic assessment and any decisions to accept any of the request window projects. Second, under the current proposal the ISO will allow a party who submitted a 2008 or 2009 request window economic project the right to build and own its proposed project provided:

- (1) The transmission facilities comprising the project are approved as needed in the ISO's revised transmission planning process and do not fall under the tariff transmission categories to be built by the PTOs;
- (2) There is only one project sponsor proposing the same transmission facilities in the 2008-2009 request windows; and
- (3) The project proponent is determined by the ISO to be physically, technically and financially capable of completing the project in a timely and proper manner, and operating and maintaining the facilities consistent with good utility practice and all applicable requirements.

This policy will apply to the 2008 and 2009 request window economic project submissions that were indicated by their sponsors to support access to renewable energy resources and that correspond to facilities approved as needed under the new "policy-driven" tariff category, as well as to submissions that were indicated to provide economic benefits such as congestion relief and are approved as needed through the ISO's economic analysis and evaluation.

In the event that more than one of the 2008 and 2009 request window projects would provide the same transmission facilities approved as needed in the final Phase 2 plan, the procedure for deciding between competing projects, as described below in the section on Phase 3, will apply.

**Economic transmission additions and upgrades in future planning cycles.** Starting with the second annual cycle of the revised TPP, which will commence in January 2011, the ISO will:

1. Accept economic planning study requests from participants in the Phase 1 stakeholder process in which the ISO establishes the unified planning assumptions and study plan. The ISO will follow the existing tariff and BPM guidelines in determining how many and which economic planning studies it will perform and will include these in its study plan.
2. Perform, during the Phase 2 process, sufficient economic analyses to enable the ISO to identify potential areas of the grid for economic additions and upgrades. Thus, in addition to the economic planning study requests submitted in Phase 1, the ISO may identify and perform its own economic planning studies to ensure that opportunities for economically beneficial additions and upgrades are identified in each annual cycle of the revised transmission planning process.
3. Based on these analyses the ISO will incorporate into the final Phase 2 plan those economic additions and upgrades it determines will provide economic benefits that justify their costs. Thus, in contrast to the current request window provisions, the ISO



will identify the optimal transmission elements to include in the comprehensive transmission plan to realize economic benefits, rather than allowing participants to submit economic project proposals.

4. The needed economic additions and upgrades identified by the ISO will be included as elements of the final Phase 2 plan and, upon approval of the plan by the ISO Board, will be open to both PTOs and non-PTOs to submit proposals to build in Phase 3, except for those additions and upgrades that the PTOs build in accordance with other existing tariff categories. If multiple eligible parties propose to build the same plan element in this category, the procedure described elsewhere in this proposal for deciding between competing proposals will apply.

**Category 1 and Category 2 Transmission Elements.** The comprehensive Phase 2 transmission plan presented to the ISO Board for approval will identify policy-driven transmission elements proposed for approval based on sufficient, demonstrated commercial interest on the part of new generation that will utilize the new transmission capacity, as well as elements found to be economically beneficial based on the ISO's economic analyses. These elements proposed for approval will be referred to as "Category 1" elements. Thus the Category 1 facilities will reflect the "least regrets" concept to minimize the risk of building under-utilized transmission capacity. In Phase 3 the ISO will accept proposals from PTOs and non-PTOs to build those Category 1 facilities that are not assigned to PTOs under existing tariff categories.

The comprehensive plan will also identify other policy-driven upgrades and additions that may be needed but whose need ultimately depends on how new renewable generation development occurs. These "Category 2" upgrades will not be authorized to proceed further as a result of their inclusion in the comprehensive plan, nor will they be formally approved by the ISO Board. The ISO's April 2 draft final proposal indicated that these upgrades would be authorized under a "conditional approval" concept to proceed with pre-construction activities with a guarantee of recovery of expenditures by the project sponsor for projects that are ultimately rejected. Upon further consideration the ISO has decided to revise this approach. Under the current proposal, the Category 2 upgrades identified in the Phase 2 comprehensive transmission plan will be re-evaluated in the next annual planning cycle. The re-evaluation process will consider any new information regarding commercial interest by new generation that would be served by these upgrades, as well as any alternative upgrades stakeholders may identify, in order to decide whether any additional renewable-access facilities should receive Category 1 approval in the next annual comprehensive transmission plan.

In evaluating potential transmission additions and upgrades for inclusion in Category 1 the ISO may consider the following criteria:

1. Commercial interest in the zone(s) accessed by the transmission element, as evidenced by signed and approved power purchase agreements and interconnection agreements;

2. The expected cost of the transmission element compared to the expected costs of other transmission elements;
3. The qualifying capacity (MW) and expected energy (MWh), as well as the supply cost function of renewable resources in particular zones;
4. The extent to which the transmission element will provide additional reliability or economic benefits to the ISO grid;
5. Potential future connections to other renewable resource areas and transmission elements;
6. Renewable integration requirements and costs associated with the resources in particular zones;
7. 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
8. The effect of uncertainty associated with the above criteria, and any other considerations, that could affect the risk of stranded investment.

Category 2 elements will need to be identified in the comprehensive transmission plan if the renewable resource target is not achieved by the renewable resources made deliverable by the Category 1 transmission elements. The ISO will evaluate potential transmission additions and upgrades for Category 2 designation based on the objective of minimizing potential stranded investment, using the same criteria set forth above for Category 1, except that:

1. Transmission elements eligible for conditional approval must be designed to access renewable resources in at least one identified renewable resource area;
2. 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.

**Order 890 compliance.** The ISO will ensure that the key decision-making phases of the revised TPP for the ISO balancing authority area (i.e., Phases 2 and 3) will, like the current TPP, be Order 890 compliant.

#### 4. Revised TPP Phase 1

Phase 1 consists of two parallel activities. One activity is a collaborative effort among the various transmission providers in California under the structure of the California

Transmission Planning Group (CTPG)<sup>1</sup> to develop a conceptual statewide transmission plan to achieve the state's 33 percent RPS goal. For 2010 the work of the CTPG actually began in 2009, and will result in early July of this year in the first such conceptual statewide transmission plan, which will be a key input to the ISO's Phase 2 process described below. An important qualification of the CTPG process and the July 2010 conceptual plan is that CTPG will not make decisions or otherwise determine the outcomes of any decisions regarding approval of specific projects or allocation of project costs. The CTPG participants will make such decisions for their own planning areas in accordance with their own processes and standards for such decisions. Thus, the July 2010 statewide plan is intended to be truly conceptual, not prescriptive, and CTPG thus functions as a vehicle for statewide collaboration on planning, not a decision making body. At the same time, the ISO and the other CTPG participants are making every feasible effort to ensure that the July 2010 plan will provide a meaningful and useful basis for further refinement by them as they develop the refinements needed for their own BAAs.

The second activity that comprises Phase 1 of the revised TPP is the ISO's annual stakeholder process to develop the unified planning assumptions and study plan for the ISO balancing authority. This ISO activity, which is part of the ISO's existing TPP, will typically be conducted over the first quarter of each calendar year, as it was this year.<sup>2</sup> Starting with the 2011/2012 annual planning cycle the Phase 1 stakeholder process will provide the opportunity for participants to submit economic planning study requests, which help to focus the ISO planners' efforts on areas of the grid where transmission upgrades may yield significant economic benefits. The result of this track of Phase 1 – the study plan – provides the basis for the ISO's reliability and other planning studies that mark the beginning of Phase 2.

## 5. Revised TPP Phase 2

Phase 2 begins as the ISO planners start to perform the technical studies specified in the study plan. The goal of Phase 2 is to develop a final comprehensive transmission plan for the ISO balancing authority area that includes the transmission additions and upgrades the ISO has concluded are needed to support the state renewable policy and to meet the other infrastructure needs of the grid.

To arrive at the final Phase 2 plan the ISO will refine the portion of the CTPG statewide conceptual plan that applies to the ISO balancing authority area to identify the most cost-

---

<sup>1</sup> CTPG materials are available at [www.ctpg.us](http://www.ctpg.us).

<sup>2</sup> Documents related to Phase 1 of the ISO's 2010/2011 TPP are available at the following link: <http://www.caiso.com/2734/2734e3d964ec0.html>.

effective transmission additions and upgrades needed to achieve 33 percent renewable energy. Phase 2 will provide opportunities for stakeholders to submit comments on the CTPG conceptual plan, which the ISO will consider in developing the final Phase 2 plan. During this period the ISO will also accept, and integrate into the final Phase 2 plan, proposals to build reliability projects to meet needs identified in the ISO's reliability studies, as well as merchant transmission projects (for which the developer is not seeking cost recovery through the transmission access charge), upgrades needed to maintain the feasibility of long-term CRRs, and interconnection projects identified through the Large Generator Interconnection Process (LGIP) or proposed under the Location Constrained Resource Interconnection Facilities tariff provisions. Phase 2 concludes with the presentation of the final comprehensive transmission plan for Board approval in March of each year, fifteen months after the start of Phase 1.

A crucial component of the ISO's infrastructure development process is the large generation interconnection process (LGIP). For large network upgrades originally identified in the Phase II interconnection studies performed under the LGIP, the proposal contains a provision that allows further evaluation of these upgrades within the Phase 2 transmission study process. Large network upgrades will be defined for this purpose as those that either: (a) consist of new transmission lines requiring new rights of way, are 200 kV or above, and have capital costs of \$50 million or greater; or (b) are 500 kV substation facilities that have capital costs of \$50 million or greater. Evaluating these LGIP-driven upgrades within the revised TPP ensures a more comprehensive assessment of whether these identified upgrades are the best solution or whether there are better alternatives.

For the 2010/2011 cycle, however, in recognition of the urgency surrounding certain generation projects that are in the current LGIP study process (such as projects eligible for stimulus funding under the American Recovery and Reinvestment Act (ARRA)), the ISO will exempt the identified network upgrades for these projects from assessment in the TPP so that the project developers can complete their interconnection agreements in a timely manner. Moreover, the LGIP Phase II study process uses a group study approach that groups generators that whose interconnections are electrically related and identifies the transmission additions and upgrades needed for each study group as a whole. In cases where such study groups contain generation projects seeking ARRA stimulus funding, the ISO will allow the interconnection agreements for all generators in those groups to move forward without waiting for the comprehensive transmission plan at the end of TPP Phase 2.

The revised process also provides that the ISO will conduct economic studies in Phase 2 and use these to identify transmission elements that provide cost-effective economic benefits such as congestion cost reduction to be included in the final Phase 2 plan. For the 2010 cycle, the ISO will use these studies as the basis for evaluating the economic project proposals that were submitted in the 2008 and 2009 transmission planning request windows. The parties who submitted projects that the ISO finds to be needed

based on an economic assessment will be allowed to build and own the approved facilities, subject to the following conditions:

1. The ISO finds the project is needed as a Category 1 element;
2. The party meets certain minimum qualifications;<sup>3</sup>
3. Only one party submitted a proposal for the project through the 2008 and 2009 request windows (if more than one party have submitted proposals to build the same transmission elements, the ISO will apply the Phase 3 procedure described below for deciding between competing proposals); and
4. The elements of the project are not under existing tariff transmission categories that assign the project to another party (i.e., PTO) to build.

At the end of Phase 2, the ISO will produce a final comprehensive transmission plan for the ISO balancing authority area that includes the transmission additions and upgrades the ISO has concluded are needed to support renewable access as well as the other infrastructure needs of the grid. The comprehensive plan will include both transmission projects and transmission elements. Transmission projects will be those additions and upgrades for which an approved project sponsor has been identified in the final plan that is submitted to the Board. This group of additions and upgrades will include reliability projects, LCRIF projects, projects needed to maintain the feasibility of long-term CRRs, and LGIP projects resulting from completed Phase II cluster studies that were used as input to Phase 2 of the revised TPP, all of which represent transmission project categories that are assigned to the participating transmission owners to build. Besides these PTO projects, the comprehensive plan will also include any approved merchant transmission projects, which will be built by their project sponsors.

In contrast to the projects just described, transmission elements will be those additions and upgrades for which no project sponsor has been approved when the comprehensive transmission plan is presented to the Board. The elements will be either policy-driven or economically beneficial additions and upgrades, and each will be designated as either a Category 1 or Category 2 element, as defined earlier in this document. In Phase 3 the ISO will accept proposals from prospective project sponsors to build and own the Category 1 elements, as discussed below.

---

<sup>3</sup> Such minimum qualifications will be identified in the ISO tariff and will include determination that (1) the project proposal satisfies applicable reliability criteria and ISO planning standards, (2) the sponsor is financially, technically and physically capable of completing the project in a timely manner, (3) the sponsor has a track record of successfully completing projects of comparable magnitude and scope, and (4) the sponsor is capable of operating and maintaining the facilities consistent with good utility practice and applicable reliability criteria for the life of the project.

## 6. Revised TPP Phase 3

Phase 3 will start after the ISO Board approves the comprehensive transmission plan in March 2011 and will continue for a minimum of 90 days. In Phase 3 the ISO will receive project proposals from project sponsors desiring to build and own the Category 1 elements identified in the plan. The ISO will evaluate such proposals for completeness and consistency with the technical details specified in the comprehensive transmission plan, and will assess the physical, technical and financial capability of the project sponsor. For proposals that are found to be acceptable on this basis and where there are not multiple project sponsors proposing to build the same element of the plan, the ISO will approve the proposal to proceed to the appropriate state or local authority for siting approval. In cases where multiple project sponsors propose to build the same plan element, the ISO will, if the sponsors request it, facilitate an opportunity for the sponsors to develop a collaborative proposal. If this effort results in a collaborative proposal among the sponsors, the ISO will then evaluate the collaborative proposal as indicated above.

If there is no successful collaborative effort and all prospective sponsors are subject to the same governmental siting authority, the ISO will defer to that governmental authority to determine which project should proceed to obtain siting approval. In cases where multiple project sponsors propose to build the same plan element and they are subject to different governmental siting authorities, the ISO will determine which project shall be approved to receive cost recovery through the transmission access charge based on criteria specified in the tariff, and will approve the selected proposal to proceed to its appropriate governmental siting authority. If at the end of the three months of Phase 3 there is a Category 1 transmission element for which the ISO has not received an acceptable proposal, the ISO may require one of the PTOs to build it. Alternatively, if the ISO receives and accepts a proposal for a Category 1 transmission element but the approved project sponsor is subsequently unwilling or unable to build the element, the ISO may, depending on the circumstances, either issue a new request for qualified sponsors to submit proposals or require a PTO to build the transmission element.