



# Business Practice Manual for the Transmission Planning Process

**Order 890 Compliance**

Version ~~8~~7.0

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3	03-6-2009	Revised Version Released
2	10-31-2008	Revised Version Released
1	12-21-2007	Initial Version Released

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## 1. Introduction

Welcome to the California ISO's (ISO) **BPM for the Transmission Planning Process**. In this Introduction, you will find the following information:

- The purpose of ISO BPMs, in general
- What you can expect from this specific ISO BPM

### 1.1 Purpose of California ISO Business Practice Manuals

The Business Practice Manuals (BPMs) developed by the ISO are intended to contain implementation details consistent with, and supported by, the ISO tariff — including instructions, rules, procedures, examples and guidelines for the administration, operation, planning, and accounting requirements of the ISO and the markets. Table 1-1 lists the currently available ISO BPMs.

Table 1-1 List of ISO BPMs

Title
BPM for Candidate CRR Holder Registration
BPM for Change Management Process for MRTU BPMs
BPM for Compliance Monitoring
BPM for Congestion Revenue Rights
BPM for Credit Management
BPM for Definitions and Acronyms
BPM for Managing Full Network Model
BPM for Market Instruments
BPM for Market Operations
BPM for Metering
BPM for Outage Management
BPM for Reliability Requirements
BPM for Rules of Conduct Administration
BPM for Scheduling Coordinator Certification and Termination
BPM for Settlements and Billing
BPM For the Transmission Planning Process

## 1.2 Purpose of this Business Practice Manual

This BPM explains the ISO Transmission Planning Process (TPP), as well as the annual Transmission Plan produced by this process. Together with corresponding ISO tariff provisions in Section 24 describing the BPM, serves to fulfill the requirements of the Federal Energy Regulatory Commission's (FERC) Final Rule on *Preventing Undue Discrimination and Preference in Transmission Service, Order No. 890* ("Order No. 890"). Among other things, Order 890 requires all transmission providers, including independent system operators, to implement and document, through open access tariffs and other public postings, a coordinated, open, and transparent TPP that complies with the planning principles and other requirements articulated in Order No. 890.

The provisions of this BPM are intended to be consistent with the ISO tariff. If, however, the provisions of this BPM conflict with the ISO tariff in any way, the ISO is bound to operate in accordance with the ISO tariff. Any provision of the ISO tariff that may have been summarized or repeated in this BPM is only to aid understanding. Even though every effort will be made by the ISO to update the information contained in this BPM and to notify Market Participants of changes, *it is the responsibility of each Market Participant* to ensure that he or she is using the most recent version of this BPM and to comply with all applicable provisions of the ISO tariff.

Any reference in this BPM to the ISO tariff, a given agreement, or any other BPM or instrument, is intended to refer to that tariff, agreement, BPM or instrument as modified, amended, supplemented or restated in the most current version.

The captions and headings in this BPM are intended solely to facilitate reference and not to have any bearing on the meaning of any of the terms and conditions of this BPM.

## 1.3 Specific Topics Covered by this BPM

In this BPM, the following general topics will be covered:

- Overview of the TPP that covers the schedules and scope of each stage of the process.
- The "phases" that form the TPP, such as:
  - Development of Unified Planning Assumptions, Study Plan, and the conceptual statewide plan
  - Performance of technical studies, and the development of the comprehensive ISO Transmission Plan
  - Project sponsors selection for the identified transmission elements
- A description of the contents in the Study Plan, opportunity for submitting data, comments, and Economic Study Requests
- A description of the types or categories of transmission upgrades or additions identified through the TPP, including:
  - Reliability transmission projects
  - Location Constrained Resource Interconnections Facilities (LCRIF)
  - Long-term Congestion Revenue Rights (Long Term CRRs) Projects
  - Policy driven elements

- Economically-driven elements
- A description of a project sponsors selection for the identified policy driven elements and economically-driven elements.
- The availability of planning information provided by ISO and accessibility of that information
- Compliance with NERC reliability standards
- The ISO's involvement in regional and sub-regional transmission planning with neighboring entities, and sub-regional and regional planning groups

## 2. Overview of ISO's Transmission Planning Process

The ISO annual comprehensive TPP consists of three phases covering a 22-month period starting from January of year one through October of the following year. At least four public stakeholder meetings will be held, one at each major step of the process to discuss the draft study plan, technical studies results, updated information on the preliminary comprehensive Transmission Plan, and the draft comprehensive Transmission Plan and seek input from stakeholders. The overview of each phase is described below.

➤ **Phase I: Development of Unified Planning Assumptions, Study Plan and Conceptual Statewide Plan.**

In Phase 1, the ISO will develop and complete the Unified Planning Assumptions and Study Plan which articulate the scope and details of technical studies to be conducted in each planning cycle. In parallel, the ISO will begin development of a conceptual statewide plan that will be used as an input into the ISO comprehensive plan. The Phase I encompasses a 3-month period between the month of January through March of every year.

➤ **Phase II: Conducting technical studies and development of the comprehensive Transmission Plan**

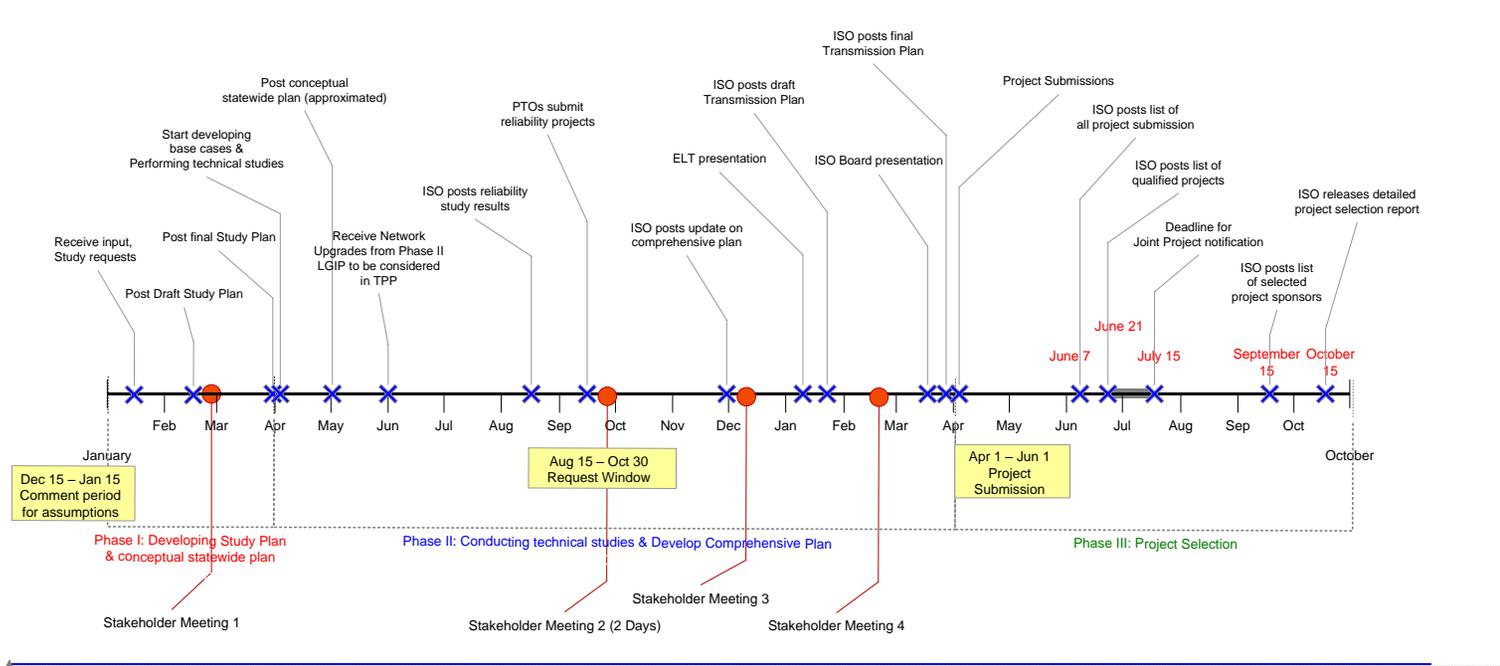
Phase 2 starts in April of the first year through March of the following year. In this 12-month period, the technical studies will be conducted to determine the needs for transmission additions and upgrades. At the end of this phase, the comprehensive Transmission Plan, which describes the study results and identifies transmission projects and transmission elements, will be developed. Phase 2 is completed when ISO management presents the comprehensive Transmission Plan to the ISO Board of Governors for approval and the Board approves the plan.

➤ **Phase III: Evaluating transmission element proposals for economically driven and policy driven transmission elements**

Phase 3 starts approximately in April of the second year when the ISO opens a project submission window for the entities who propose to sponsor the identified transmission elements. At the close of this submission window, the ISO will evaluate the proposals and, if there are multiple eligible projects submitted for the same elements and these projects are subject to siting by different governmental agencies, the ISO will select the project sponsor to construct and own the transmission upgrades or additional elements. Single proposed project sponsors who meet the eligibility criteria, as well as multiple eligible project sponsors whose projects are subject to the same governmental siting authority, can move forward to project permitting and siting.

Figure 2-1 provides an overview of the three phases of the ISO transmission planning process.

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Figure 2-1: Overview of the scope and timelines of Phase 1-3 in the ISO Transmission Planning Process

In addition to four stakeholder meetings where stakeholders can participate in the ISO TPP, there are six additional opportunities for stakeholders to provide input, comments, or recommendations on the upgrades to the ISO study results. The schedules of these opportunities, stakeholder meetings, along with other major milestones are listed in table 2-1

Table 2-1: Transmission Planning Process Schedule

No	Due Date	Activity	Phase
1	2nd week of December	The ISO sends the letter and market notice to neighboring Balancing Authorities, sub-regional, regional planning groups requesting planning data and stakeholders, asking for related information to be considered in the development of the Study Plan	I
2	2nd week of January	PTOs, neighboring balancing authorities, regional/sub-regional planning groups, and stakeholders provide ISO the information	I
3	2nd week of February	The ISO develops the draft Study Plan and post it on the public website	I
4	February	The ISO hosts public stakeholder meeting #1 to discuss the contents in the Study Plan with stakeholders	I
5	2nd week of March	Comment period for stakeholders to submit comments on the Study Plan and for the interested parties to submit Economic Planning Study Requests to the ISO	I
6	End of March	The ISO selects the High Priority Studies for the Economic Planning Study, finalizes the Study Plan and post it on the public website	I
7	One month after the conceptual statewide plan is complete	ISO posts the conceptual statewide plan on the website	I
8	Two weeks after posting	Stakeholder comments on the conceptual statewide plan due	I

Table 2-1: Transmission Planning Process Schedule (Cont)

No	Due Date	Activity	Phase
9	August 15	Request Window opens	II
10	August 15	The ISO posts the reliability study results	II
11	September 15	PTOs submit reliability projects to the ISO	II
12	In approximately September	The ISO hosts public stakeholder meeting #2 to discuss the study results and PTO's reliability projects with stakeholders	II
13	October 30	Request Window closes	II
14	End of November	The ISO posts an update on comprehensive plan study results on the website	II
15	2nd week of December	The ISO hosts public stakeholder meeting #3 to provide the updates on comprehensive plan	II
16	4th week of December	Comment period for stakeholders to submit comments on the comprehensive plan updates	II
17	January	The ISO posts the draft comprehensive Transmission Plan on the public website	II
18	February	The ISO hosts public stakeholder meeting #4 to discuss the transmission project approval recommendations, identified transmission elements, and the content of comprehensive transmission plan	II
19	March	Comment period for stakeholders to submit comments on the comprehensive Transmission Plan	II
20	End of March	The ISO finalizes the comprehensive Transmission Plan and presents to the ISO Board of Governors	II
21	April 1	Project submission period for the identified economically and policy driven elements opens	III
22	June 1	Project submission period closes	III
23	Beginning of June	The ISO posts the list of project submissions it receives from submission period	III
24	End of June	The ISO posts the list of qualified projects	III
25	July 15	Deadline for joint project notifications	III
26	September 15	The ISO posts the list of selected project sponsors	III
27	October 15	The ISO releases detailed project selection report	III

### 3. Phase 1 of the Transmission Planning Process

Phase 1 consists of two parallel processes: 1) the development of the Unified Planning Assumptions and Study Plan; and, 2) initiation of the development of the statewide conceptual Transmission Plan. The timeframe for Phase 1 development is January through March.

The development of Unified Planning Assumptions and Study Plan starts in January of each year when the ISO compiles applicable information it receives from PTOs, neighboring Balancing Authorities, regional and sub-regional planning groups and state agencies who respond to the data request issued by the ISO and engage in the first stage of the TPP to create the draft Study Plan. In addition, TPP participants will be given an opportunity to provide comments regarding demand response programs requested to be included in the base case, as well as generation and non-transmission alternatives proposed for consideration and inclusion in the draft study plan. The objective of this process is to determine the goals, agree on data assumptions and inputs for creation of a base case, identify necessary modifications to the base case for individual technical studies, identify the technical studies to be performed as part of the TPP cycle, and allow TPP Participants to review and comment on the scope of the upcoming technical studies. Following the publication of the draft Study Plan, the ISO will open a comment window to receive stakeholder comments regarding the Study Plan and for interested parties to submit the Economic Planning Study Requests. After the closing of the comment window, the ISO will review stakeholder comments, evaluate Economic Planning Study Requests, select the High Priority Studies and publish the final Study Plan.<sup>1</sup>

Meanwhile, the ISO will also initiate the development of the statewide conceptual plan and may coordinate this effort with neighboring balancing authority areas or sub-regional planning groups or entities. As discussed in further detail in Section 4 below, the output from the statewide conceptual plan will be used as an input into the Phase 2 development of the comprehensive Transmission Plan for the ISO Balancing Authority Area.

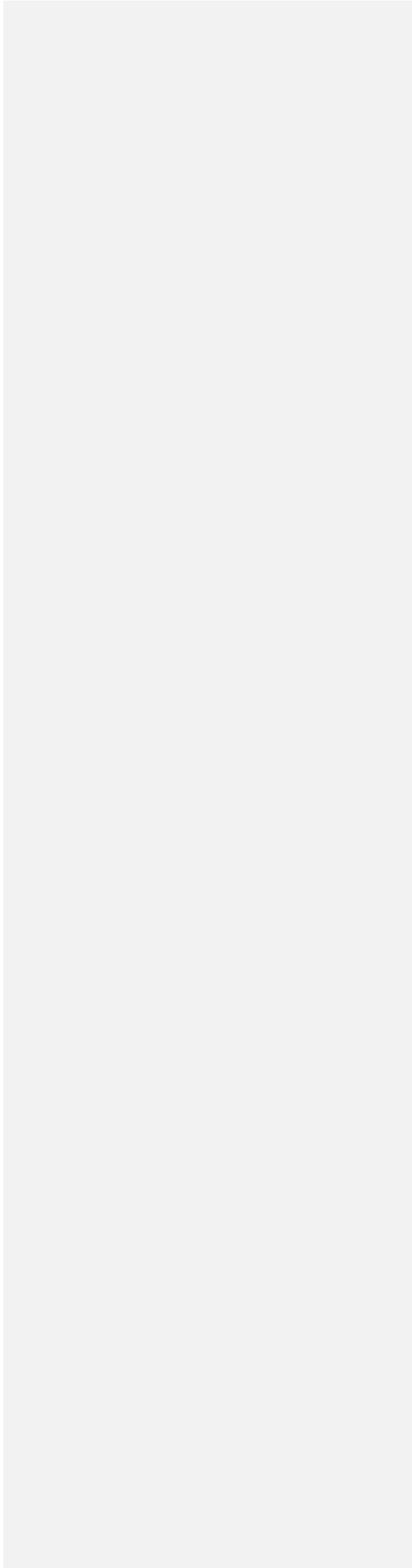
~~Once the ISO has selected the High Priority Economic Studies and address applicable comments, the Study Plan which contains the Unified Planning Assumptions will be finalized and posted on the ISO website. The Unified Planning Assumptions contained in the final Study Plan will be used to create base cases for reliability assessments (NERC compliance) and other technical studies conducted by the ISO and PTOs<sup>2</sup>. Although the conceptual statewide plan and identification of the LGIP Network Upgrades eligible for consideration in the TPP likely will not be available until after the Study Plan is posted, information from these sources. Consequently, the information from conceptual statewide plan and network upgrades is may not be required for the development of the base cases for these technical studies.~~

~~However, the study assumptions for the ISO comprehensive plan may include this additional information from the conceptual statewide plan and LGIP Network Upgrades and therefore may be different from the Unified Planning Assumptions since they include additional information from conceptual statewide plan and network upgrades generation interconnection that generally are made available after the finalization of the Unified Planning Assumptions. Further details about the comprehensive transmission plan study assumptions are set forth in Section 4 below.~~

<sup>1</sup> High priority economic studies are economic planning studies performed by the ISO and included in the comprehensive transmission plan for which the ISO assumes cost responsibility.

<sup>2</sup> ~~Results from these studies will be posted on August 15 of every year.~~

A summary of activities in Phase 1 is shown in Figure 3-1 below.



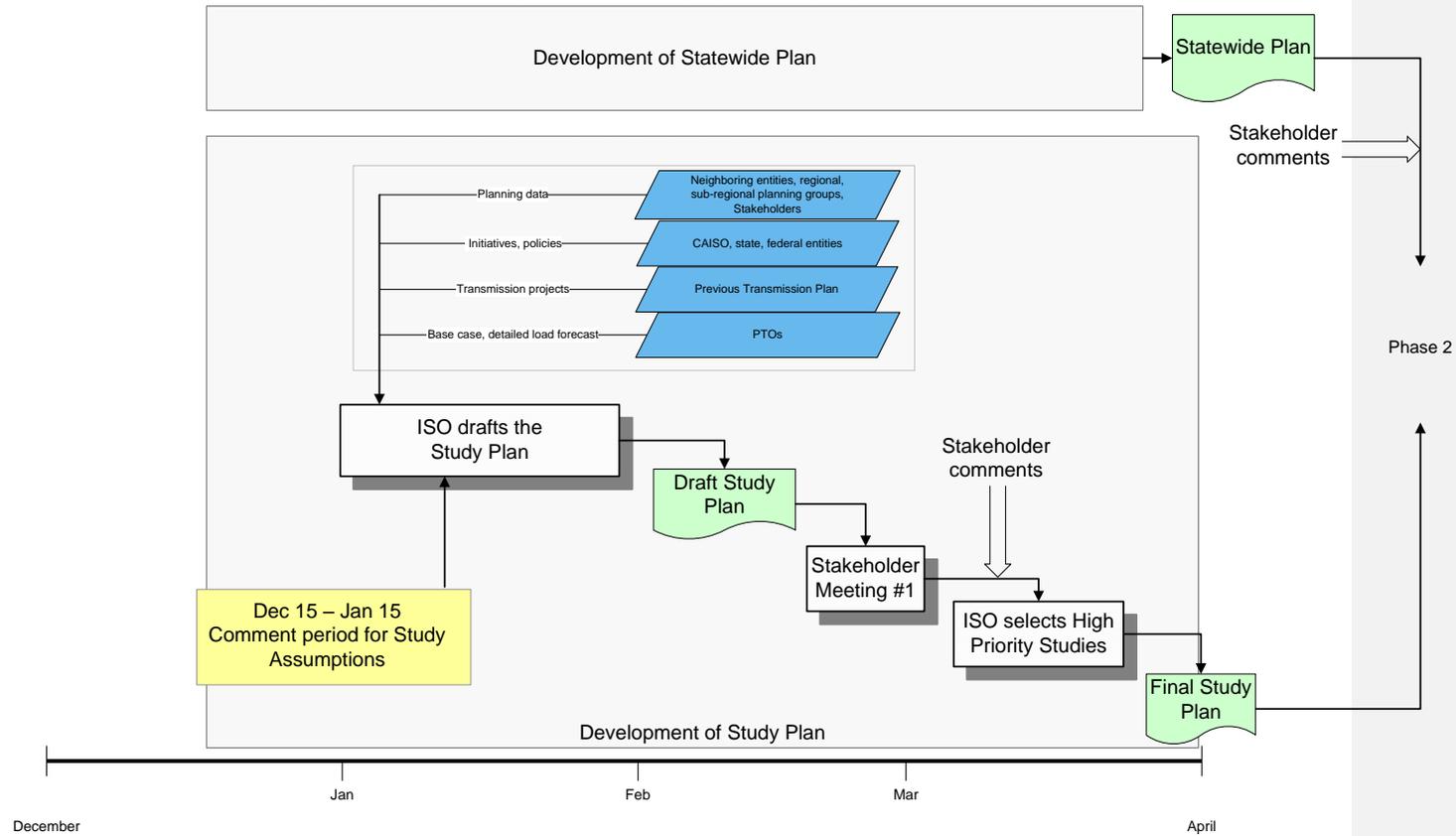


Figure 3-1: Overview of Phase 1 of the ISO Transmission Planning Process

### 3.1 Unified Planning Assumptions and Study Plan

Sections 3.1.1 and 3.1.2 below describes the inputs to the Unified Planning Assumptions development as well as the development and minimum contents of in the Study Plan.

#### 3.1.1 Inputs to the Unified Planning Assumptions & Study Plan

Tariff Section 24.3.1

The ISO will compile applicable information it receives from PTOs, neighboring Balancing Authorities, regional and sub-regional planning groups, state agencies, and TPP participants who engage in the first phase of the TPP to develop the Unified Planning Assumptions that will be documented in the Study Plan. The following information will be considered in developing the unified planning assumptions:

- (a) WECC base cases, as may be modified for the relevant planning horizon;
- (b) Transmission upgrades and addition projects and elements approved by the ISO in past planning cycles as part of the comprehensive Transmission Plan for that cycle;
- (c) Category 2 policy-driven transmission upgrade and addition elements from a prior planning cycle as described in tariff Section 24.4.6.6;
- (d) Location Constrained Resource Interconnection Facilities (LCRIF) conditionally approved under tariff Section 24.4.6.3;
- (e) Network Upgrades identified pursuant to tariff Section 25, Appendix U, Appendix V, Appendix Y or Appendix Z relating to the ISO's Large Generator Interconnection Procedures (LCRIF/GIPR) and Appendices S and T relating to the ISO's Small Generator Interconnection Procedure (SGIP) that were not otherwise included in the comprehensive Transmission Plan from the previous annual cycle;
- (f) Operational solutions validated by the ISO in the Local Capacity Technical Study under tariff Section 40.3.1;
- (g) Policy requirements and directives, as appropriate, including programs initiated by state and federal regulatory agencies;
- (h) Energy Resource Areas or similar resource areas identified by Local Regulatory Authorities;
- (i) Demand response programs that are proposed in comments for inclusion in the Unified Planning assumptions;
- (j) Generation and other non-transmission projects that are proposed in comments on the draft Unified Planning Assumptions and Study Plan for inclusion in long-term planning studies as alternatives to transmission additions or upgrades;
- (k) Beginning with the 2011/2012 planning cycle, Economic Planning Study requests;
- (l) Planned facilities in interconnected Balancing Authority Areas.

### 3.1.2 Contents of the Unified Planning Study Assumptions and Study Plan

Tariff Section 24.3.2,

The Study Plan describes the unified planning assumptions and details about the studies that will be conducted during Phase 2. At minimum, the Unified Planning Assumptions and Study Plan will include:

- (a) The planning data and assumptions to be used in the TPP, including, but not limited to, those related to Demand Forecasts and distribution, potential generation capacity additions and retirements, and transmission system modifications;
- (b) A description of the computer software, methodology and other criteria used in each technical study performed in the TPP cycle;
- (c) A list of each technical study to be performed in the TPP cycle and a summary of each technical study's objective or purpose;
- (d) A description of significant modifications to the planning data and assumptions as allowed by tariff Section 24.3.1(a) and consistent with tariff Section 24.3.2;
- (e) If applicable, the identification of any entities directed to perform a particular technical study or portions of a technical study;
- (f) A proposed schedule for all stakeholder meetings and the means for notification of any changes thereto, the location on the ISO Website of information relating to the technical studies, and the name of a contact person at the ISO for each technical study;
- (g) To the maximum extent practicable, and where applicable, appropriate sensitivity analyses, including project or solution alternatives, will be performed as part of technical studies;
- (h) Descriptions of the High Priority Economic Planning Studies as determined by the ISO under tariff section 24.3.5; and
- (i) Identification of state or federal requirements or directives that the ISO will utilize, pursuant to tariff Section 24.4.6.6, to identify policy-driven elements

### 3.2 Stakeholder Input and Comments on the Unified Planning Assumptions and Study Plan

Phase I provides two time periods during which stakeholders may submit information to the ISO. First, there will be a "stakeholder input" period for approximately one month starting in mid December. During this time the ISO will send a market notice to all interested parties and a letter to neighboring balancing authority areas and planning entities requesting certain planning information that the ISO might consider when developing the unified planning assumptions and the draft Study Plan. Second, there will be a "stakeholder submission and comment" period two-weeks after the first stakeholder meeting in the TPP cycle during which stakeholders may provide comments to the contents in the draft Study Plan or submit Economic Planning Study Request for the ISO consideration. Sections 3.2.1 and 3.2.2 provide more details of these two periods.

### 3.2.1 Stakeholder Input

#### Tariff Section 24.3.3(a)

The ISO will solicit two proposed inputs to the unified planning assumptions during the stakeholder input period: demand response and generation or other non-transmission alternatives. These proposals may be submitted to the ISO mailbox identified in the market notice during a thirty day period beginning in mid-December and ending in mid-January, as specified in the market notice. A summary of stakeholder input submissions will be documented in the draft Study Plan.

In order for the ISO potentially to be able to use this input in transmission planning studies, the submitter must provide sufficient data. Sections (a) and (b) below describe the minimum requirements for the input to be considered in the unified study assumptions and study plan. The ISO may request additional information later if it is required for the technical study evaluation in Phase 2.

- Demand response assumptions: The submitter must be able to provide a bus-level model of demand response assumptions for power flow or stability studies and associated planning level costs. In addition, ~~the~~ submitters must provide satisfactory evidence showing that the proposed demand response will be reliably operated and controllable by the ISO, as well as having received appropriate regulatory approval as part of the Resource Adequacy or other similar program such as the CPUC's long term procurement process (LTPP).
- Generation or other non-transmission alternatives: At minimum, the submitter must be able to provide the information the necessary for these alternatives to be modeled in the planning studies. This information includes, but is not limited to, project location, project costs, size, power flow and dynamic models, project scope and detailed descriptions of the characteristics or how it will be operated.

### 3.2.2 Stakeholder Submissions and Comments

#### Tariff Section 24.3.3(b)

- Study Plan Comments

Within two weeks after the first stakeholder meeting, stakeholders may submit comments on the Study Plan. The ISO will provide the details of the submission process at the stakeholder meeting or in a market notice. TPP participants may submit comments on the scope and contents of the draft Study Plan discussed during the first stakeholder meeting. The ISO will post these comments on its website, evaluate these comments, and provide responses no later than one month after of the posting of the final Study Plan is posted.

- Economic Planning Study Requests

#### Section 24.3.3

Requests to perform an Economic Planning Study must be submitted to the ISO within 2 weeks after the first stakeholder meeting at the same time that the Study Plan comments

are due. Economic Planning Study Requests must identify the congested transmission element (binding constraint) or limiting facilities to be studied. The request should also include other information supporting the potential for increased future congestion on the binding constraint. Requests may also include potential mitigation plans for the identified congested element.

As discussed below with respect to the ISO assessment of Economic Planning Study Requests, such planning study requests can include attributes in addition to congestion mitigation such as reducing long term local reliability needs (which are only evaluated on an annual basis at this time), increasing the value of certain reliability projects.

### 3.2.3 ISO Assessment of Requests for Economic Planning Studies

#### Tariff Section 24.3.4.1

The ISO will evaluate each Economic Planning Study Request and prioritize these requests based on the significance and frequency of congestion and other economic attributes in order to determine which Economic Planning Study Requests will be selected as high priority for the purposes of consideration in the comprehensive Transmission Plan. High Priority Economic Planning Studies will be selected based on consideration of at least one of the following:

- Whether the requested study seeks to address transmission congestion identified by the ISO.
- Whether the requested study seeks to reduce or address the need for Local Capacity Area Resources in a Local Capacity Area
- Whether resource and demand information indicate that congestion described in the request is projected to increase over the planning horizon used in the TPP and the projected magnitude of the congestion.
- Whether the Economic Planning Study is intended to encompass the upgrades necessary to integrate new generation resources or loads on an aggregated or regional basis

### 3.2.4 Selection of High Priority Economic Planning Studies

#### Tariff Section 24.3.4.2

In each planning cycle, the ISO will perform a maximum of five High Priority Economic Planning Studies<sup>3</sup>. However, the ISO retains discretion to perform greater than five High Priority Economic Planning Studies if study time permits. In each High Priority Economic Planning Study, up to three congestion mitigation plans will be developed analyzed by the ISO. If more than three mitigation plans (i.e. alternatives) are proposed, three least cost mitigation plans will be selected. High Priority Economic Planning Studies will be included in the final Study Plan. To the extent the ISO determines particular study requests under the High Priority category might impact multi controlled areas, these study requests will be submitted to TEPPC or the sub-regional planning group for potential study in the regional or subregional level.

<sup>3</sup> If more than five Economic Planning Study Requests were submitted, the ISO will select the five High Priority Economic Planning Studies based on congestion data and guidelines defined in section 3.2.3. However, there could be no High Priority Economic Planning Studies performed if the ISO receives no Economic Planning Study Requests and there is no significant and recurring congestion issues identified by the ISO.

### 3.2.5 Notification to Economic Study Submitters

Within three (3) business days after the closing of the comment window, the ISO will publish a summary list of Economic Planning Study Requests it received on its website. Submitters must notify the ISO by email within one (1) week after the posting of the list to communicate any error or discrepancies in their applications.

The ISO will publish the list of accepted Economic Planning Study Request (High Priority Economic Planning Studies) in the final Study Plan along with a short description of the basis for selecting each request.

### 3.3 Initiating the Conceptual Statewide Plan

Tariff Section 24.4.4

In parallel with the development of the Unified Planning Assumptions and the Study Plan in Phase I, the ISO will develop, or, in coordination with other regional or sub-regional transmission planning groups or entities, including interconnected Balancing Authority Areas, will participate in the development of a conceptual statewide Transmission Plan that may identify potential transmission upgrades or additions elements needed to meet state and federal policy requirements and directives. The conceptual statewide Transmission Plan will be an input into the ISO's Phase 2 evaluation process leading to the development of the comprehensive Transmission Plan. The ISO will include a description of the conceptual statewide plan development process in the Study Plan, [including the extent to which the ISO intends to utilize conceptual plans developed by other planning groups, entities or neighboring Balancing Authority areas.](#)

The ISO will post the conceptual statewide plan to its website once it has been developed, [and at the same time,](#) will issue a market notice advising parties of its availability. The market notice will advise stakeholders of the availability of such plan and [the dates for a twenty day,](#) comment period [that will take place in the next calendar month.](#) [During the comment period](#) interested parties [may](#) submit comments and recommend modifications to the conceptual statewide Transmission Plan, [propose](#) ~~propose~~ alternative transmission elements, including potential interstate transmission lines and submit proposals for access to resources located in areas not identified in the conceptual statewide Transmission Plan, and non-transmission elements. Within one (1) month after the comment period, the ISO will post the comments and their responses on its website.

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## 4. Phase 2 of the Transmission Planning Process

Phase 2 of the ISO TPP starts in April of the first year through March of the following year. In this 12-month period, the technical studies will be conducted to determine the needs for transmission additions and upgrades. At the end of this phase, the comprehensive Transmission Plan, which describes the study results and identifies transmission projects and transmission elements, will be developed. Figure 4-1 provides the overview of Phase II ISO TPP.

### 4.1 Overview of the Phase 2

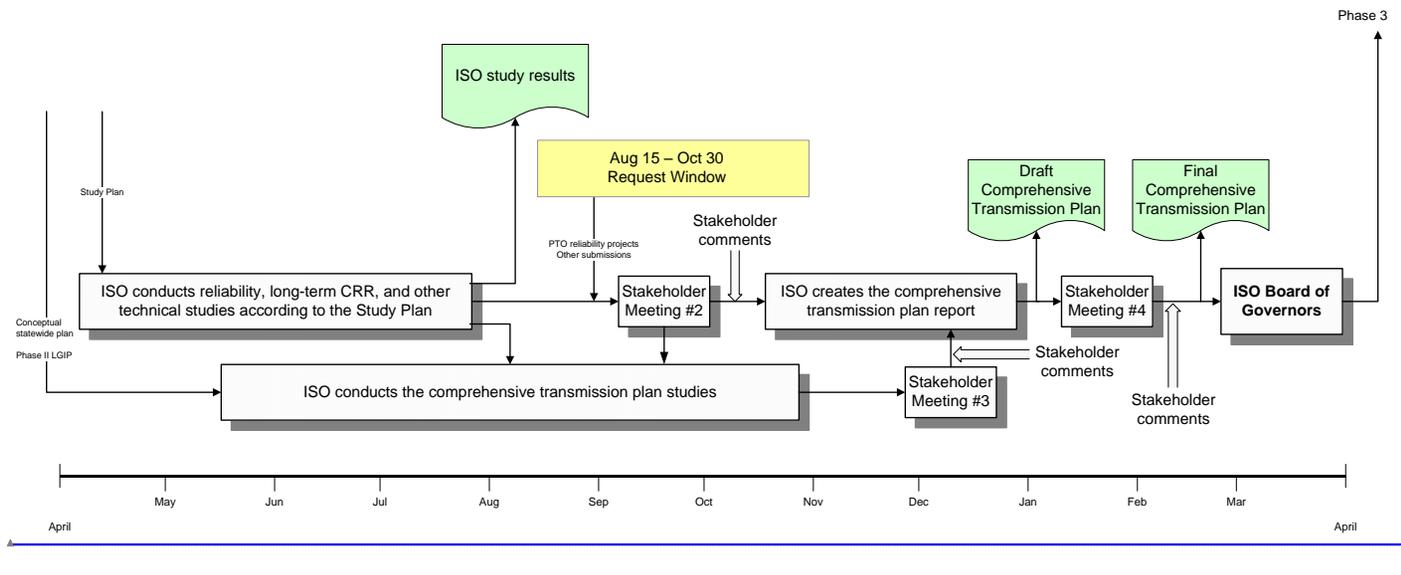


Figure 4-1: Overview of Phase II of the ISO Transmission Planning Process

## 4.2 Technical Studies Conducted by the ISO or at the Direction of the ISO

As described in the Study Plan, during each TPP annual cycle the ISO will conduct a number of technical studies to meet planning objectives. The technical studies provide the basis for identifying potential physical and economic limitations of the ISO Balancing Authority Area and potential upgrades to maintain or enhance system reliability, promote economic efficiency, or maintain the feasibility of Long Term CRRs for the length of their terms, while also seeking to promote other policy objectives.

The technical studies are required, to the maximum extent practicable, to utilize the Unified Planning Assumptions and any deviations must be documented in the preliminary results of the technical study. Results from the technical studies will be measured against the following planning standards to quantify system performance and justify transmission upgrades:

- NERC Planning Standards
- WECC Planning Standards
- ISO Planning Standards

Since there are a number of technical studies being conducted in each planning cycle, the ISO conducts the technical studies in a sequential manner as part of the effort to create the most optimum upgrades. First, reliability, long-term CRR, and LCR studies are conducted to determine the basic upgrades, as well as the evaluation of LGIP Network Upgrades that might be eligible for modification in the comprehensive plan (starting with the 2011/2012 cycle). These upgrades then are included in the comprehensive study assumptions as inputs for potential expansion or modifications to accommodate corporate, state, or federal initiatives. As the final step, the upgrades from the first step- are evaluated by economic planning studies to explore potential congestion and identify mitigation plans that might be needed.

### 4.2.1 Reliability Studies

The ISO will perform certain reliability studies to identify upgrades to maintain or enhance system reliability. These reliability studies will be performed predominately through the following analyses, although other types of analysis may be used from time to time to ensure that at TPP objectives are met:

- Power Flow Analysis – The study focusing on equipment thermal loadings and voltage magnitudes in the system at a specific study scenario
- Stability Analysis – Assessments of system responses during the transient period after disturbances or small signal stability of the system under various scenarios
- Voltage Stability Analysis – Analysis of reactive power sufficiency to ensure reliable system operations under different system conditions and disturbances. Power flow and stability are primary technical studies in reliability assessment

On an annual basis, technical studies must be performed to ensure that all transmission facilities in the ISO Balancing Authority Area can be operated in a manner consistent with the conditions identified in the Applicable Planning Standards. These technical studies will address short-term needs- (up to five years) and long-term needs (six through ten years or more) under various stress conditions (e.g., summer peak, off-peak). Where system performance criteria is not met, the

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ISO will propose mitigation plans to address the identified system performance issues, and will consider alternative mitigation plan proposals submitted through the Request Window by PTOs and other interested parties if in compliance with the ISO's Request Window submission requirements,

Reliability assessments also may be performed by PTOs with a PTO Service Territories as a component of their roles as NERC designated Transmission Planners. Unless otherwise justified to the ISO and documented in the Study Plan, all studies performed by a PTO(s) must be completed in accordance with ISO established planning methodologies and assumptions documented in the Study Plan.

#### 4.2.2 Long Term Congestion Revenue Rights Feasibility Studies

The ISO is obligated to ensure the continuing feasibility of Long Term CRRs (LT-CRRs) that are allocated by the ISO over the length of their terms. As such, the ISO, as part of its annual TPP cycle, shall test and evaluate the simultaneous feasibility of allocated LT-CRRs, including, but not limited to, when acting on the following types of projects: (a) planned or proposed transmission projects; (b) Generating Unit or transmission retirements; (c) Generating Unit interconnections; and (d) the interconnection of new Load. While the ISO expects that released LT-CRRs will remain feasible during their full term, changes to the interconnected network will occur through new infrastructure additions and/or modifications to existing infrastructure. To ensure that these infrastructure changes to the transmission system do not cause infeasibility in certain LT-CRRs, the ISO shall perform an annual Simultaneous Feasibility Test (SFT) analysis to demonstrate that all released CRRs remain feasible. In assessing the need for transmission additions or upgrades to maintain the feasibility of allocated LT- CRRs, the ISO, in coordination with the PTOs and other Market Participants, shall consider lower cost alternatives to the construction of transmission additions or upgrades, such as acceleration or expansion of existing projects, demand-side management, Remedial Action Schemes, constrained-on Generation, interruptible loads, reactive support, or in cases where the infeasible LT- CRRs involve a small magnitude of megawatts, ensuring against the risk of any potential revenue shortfall using the CRR Balancing Account and uplift mechanism in Section 11.2.4 of the ISO tariff.

#### 4.2.3 Short Term Planning Studies

On balance, the TPP is a complex but robust process that is designed to identify and/or anticipate infrastructure needs for the ISO's Balancing Authority Area across a long time horizon (at least ten years). To be consistent with NERC planning standards, the ISO has established two planning time frames that will be assessed as part of the TPP; short term planning which will cover years one through five; and long term planning which will cover years six through at least ten. Because the certainty of planning variables and assumptions is greater in the short term time frame, the ISO will perform a planning analysis on each of the first five years of its annual plan. This will appropriately capture key information on certain types of projects such as short lead time projects, operational issues, siting process adjustments, local capacity changes (as part of LCT analyses), and LGIP integration of generators that are under construction and have commercial operational dates within this time frame, among others.

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#### 4.2.4 Short -Term Local Capacity Requirement (LCR) Study

Consistent with the objectives underlying the short term plan, the ISO shall also perform a short term LCR study to provide stakeholders visibility of local capacity requirements across a five year time horizon. This LCR study is distinct from the annual Local Capacity Technical Study which establishes effective Local Capacity Area Resource requirements for the next Resource Adequacy Compliance Year. The short term LCR study is intended to provide visibility of LCR needs so that longer lead time transmission projects can be programmed into the TPP for operation, resulting in an overall reduction in LCR needs.

To this end, the ISO will conduct technical studies in each planning cycle to evaluate Local Capacity Area Resource needs under the following scenarios:

- Local Capacity Technical Study – Determines the Local Capacity Area Resource needs for the next Resource Adequacy Compliance Year.
- Long-Term Local Capacity Requirements (LCR) Study – Evaluates Local Capacity Area Resource needs on a three and five year planning horizon.

Local Capacity Technical Study methodology and assumption development was extensively vetted through the ISO stakeholder process as well as the CPUC's resource adequacy development process. Commensurate with that process, the study is used to implement that assignment of Local Capacity Area Resource responsibility to load serving entities under Section 40.3 of the ISO tariff. In contrast, the Short-Term LCR Study provides Market Participants with information to utilize in the TPP or in their individual procurement activities but is not used to assign responsibility for local capacity area resource procurement. Both studies assess the minimum level of capacity needed to ensure reliable ISO Balancing Authority Area operation under peak Demand conditions consistent with NERC and WECC standards and ISO Planning Standards. The studies also evaluate the definitions of the existing local areas and may potentially identify the changes in local areas or sub-areas definitions due to the impacts of system topology changes. Both studies utilize a similar methodology, but evaluate different time horizons. Detailed study assumptions, methodology, tools, and other information necessary for the studies are found in the Local Capacity Technical Study Manual posted to the ISO Website at Transmission Planning.

#### 4.2.5 Other Studies

From time to time, other specific technical studies may be included in the comprehensive Transmission Plan to address special issues in addition to the normal scope of the TPP studies. Such studies could include long-term plans for certain sub-areas within a PTO's service territory, renewable resource integration studies, [once through cooling generation availability studies and other environmental assessments](#), among others.

### 4.3 Technical Study Results: Posting and Presentation

As discussed in this BPM, section 4, during each TPP cycle the ISO will conduct a number of technical studies to meet planning objectives as defined in the Study Plan. Based on resource considerations, technical expertise, and the roles of PTOs with PTO Service Territories as NERC Transmission Planners, the ISO may assign technical studies or portions of technical studies to Project Sponsors or the PTOs to perform. Similarly, the ISO may seek the voluntary commitment of other Market Participants to perform technical studies or portions thereof. Preliminary results of

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technical studies conducted by the ISO as well as those conducted by the PTOs or others at the direction of the ISO as described above will be posted by August 15 of each year. As described in section 4.4.1.1, PTOs must submit reliability transmission project proposals through the Request Window within thirty days after the study results have been posted to allow sufficient time for the ISO and TPP participants to review such project proposals.

Commensurate with this requirement, the ISO will host its 2<sup>nd</sup> annual public meeting in approximately September to present and discuss the results of its analysis and proposed mitigation solutions that it has determined as being needed to meet the Applicable Planning Criteria or other system needs. The information presented to the TPP Participants shall, at a minimum, include:

- Summary of findings ( identifications of need)
- PTO -proposed mitigation solutions for the ISO-identified problems.

Once the ISO has reviewed the comments provided by TPP Participants, the ISO will post, or will direct the posting of, responses to the stakeholder comments and the final study results.

Finally, the ISO may hold additional public meetings to discuss results and potential solutions of system performance assessment studies conducted by the ISO and the PTOs, or other parties at the direction of the ISO. As required by the ISO's stakeholder process policy, all meetings will be noticed by the ISO through a Market Notice and will be coordinated with the ISO's calendar, located on the ISO website.

## 4.4 Request Window

The ISO's TPP includes a "Request Window" in Phase 2 as a centralized, transparent, and organized method to solicit and manage submission of project proposals for certain categories of transmission needs, project-related data and demand response or generation proposals submitted as alternatives to reliability mitigation solutions. The Request Window will open following the publication of the technical study results, *on August 15<sup>th</sup> and will close on October 30<sup>th</sup>*. TPP Participants may submit project proposals, and other necessary data related to those projects and studies into the Request Window. The ISO will evaluate all submissions against defined screening criteria that will be administered by the ISO. The screening criteria ~~is~~<sup>are</sup> further discussed in Section 4.4.2 below.

The screening process functions to:

- Ensure sufficient information is provided to the ISO to allow consideration of the submission in the TPP
- Establish whether other threshold criteria have been met, as described in this BPM.

Submissions that satisfy the screening process (discussed below) may be considered in the current year approval process or may be included within the scope of the following year's Study Plan. In general, project proposals for which all necessary technical studies have been performed and have been [included with the Request Window submission will be considered in the current year approval process.](#) [The ISO will provide an explanation of deficiencies to Project Sponsors whose projects were not selected because the project information requirements were not met.](#)

The major components of the Request Window are:

- Categories and Scope of the proposals and projects that may be submitted
- Submission process

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- Data included in submission process
- Screening process

#### 4.4.1 Categories and Scope of Transmission Projects Accepted in the Request Window

##### 4.4.1.1 Reliability Submissions

- PTO Submissions of Reliability Project Proposals

PTOs must submit reliability transmission project proposals through the Request Window within thirty days after the study results have been posted to allow sufficient time for the ISO and TPP participants to review such project proposals. Reliability transmission projects that address needs identified by the ISO shall be submitted through the Request Window for the TPP cycle in which the needs were identified. These needs may be ISO-proposed solutions with which the PTO agrees or other solutions that have been developed by the PTO in whose service territory the need have been identified.

- TPP Participant Submission of Reliability Alternative Proposals

Based on the preliminary technical study results, the ISO, CEC, CPUC and other interested parties may submit into the Request Window alternative reliability-driven transmission upgrade or addition projects needed to meet reliability needs identified by the ISO. Alternative solutions should set forth a sufficient description of the upgrades, costs, schedules, impacts on the grid and other information, consistent with the Request Window project submission requirements set forth in this BPM. As discussed below, should the ISO approve such a project proposal, the PTO with the service territory in which the project is needed will have the responsibility to own, construct and finance the project.

##### 4.4.1.2 Merchant Projects

Transmission upgrades or additions for which the Project Sponsor will seek Merchant Congestion Revenue Rights under tariff Section 36.11, rather than seeking project cost recovery through the ISO's Transmission Access Charge, may be submitted through the Request Window.

##### 4.4.1.3 Location Constrained Resource Interconnection Facilities (LCRIF)

Transmission projects proposed to connect Location Constrained Interconnection Resource Generators (LCRIGs) in designated Energy Resource Areas may be submitted through the Request Window.<sup>4</sup>

##### 4.4.1.4 Demand Response or Generation Alternatives

Parties may submit through the Request Window demand response programs ~~that have been approved by the CPUC or any other local area regulatory agency~~ and other resources as

<sup>4</sup> ISO Tariff Appendix A defines an Energy Resource Area as:

A geographic region certified by the California Public Utilities Commission and the California Energy Commission as an area in which multiple LCRIGs could be located, provided that, for the interim period before those agencies certify such areas and for LCRIFs that are proposed to connect LCRIGs located outside the State of California, an Energy Resource Area shall mean a geographic region that would be connected to the CAISO Controlled Grid by an LCRIF with respect to which the CAISO Governing Board determines that all of the requirements of Section 24.1.3 are satisfied, except for the requirement that the LCRIGs to which the LCRIF would connect are located in an area certified as an ERA by those agencies.

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alternatives to needs identified in the ISO technical studies. Minimum information about the demand response proposals, as described in section 3.2.1 of this BPM, must be included with the proposals. Upon receiving this information, the ISO may consider these proposals as alternative to address issues identified by ISO technical studies. The ISO may request more information regarding these proposals if it is needed as part of the evaluation process.

Information regarding proposed generating units may be submitted as proposed alternative solutions to identified reliability needs, but specific generation projects must go through the ISO's generation interconnection process in order to interconnect to the ISO grid. Generation project costs are not recovered through the ISO's Transmission Access Charge. Similar to the demand response proposals, parties proposing generation projects as alternatives to transmission solutions must submit sufficient information to the ISO as outlined in Section 3.2.1 of this BPM.

#### 4.4.2 Screening Request Window Submissions

In order to ensure that the TPP proceeds in an efficient and timely manner, transmission project proposals are subject to screening criteria as set forth below:

- All data and other requested information must be complete. The ISO will determine whether the proponent has provided sufficient information to evaluate the transmission proposal or other resource. If the data or information is deemed to be insufficient, the Project Sponsor will have a brief period of time to supplement the submission. Failure to fully complete the appropriate data templates after the period allowed for supplemental submissions will constitute a failure to satisfy this requirement.
- A proposed transmission project must connect to the ISO Balancing Authority Area .
- Duplication –Proposals submitted during the Request Window must not duplicate benefits from or needs addressed by transmission projects that have previously been approved by the ISO.

If a proposed transmission project is sub-regional or regional in nature, the submitter must provide information on whether their proposal is being or has been included or considered by other sub-regional and/or regional entities. In particular, the ISO requires data and information consistent with the requirements outlined in the first bullet above.

Proposals submitted through the Request Window will be considered in the development of the comprehensive Transmission Plan, provided that the following process steps are satisfactorily completed:

- Initiation – Data forms which specify the details of the project proposals necessary to allow an initial evaluation by the ISO must be completed and submitted to the ISO. These data forms can be found at <http://caiso.com/1f42/1f42d6e628ce0.html>. The ISO will assign responsibility for each project to its staff and acknowledge receipt of the project information to the submitter within three (3) business days.
- Validation/Selection – Within ten business days after receiving the submission, the ISO will apply the screening test discussed above to validate the transmission proposals as complete. At that time, the ISO will inform submitters by e-mail whether the proposed project satisfies the screening criteria. Submitters whose data or information is deemed incomplete will have five business days to supplement their proposal and re-submit it to the ISO.

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- **Secondary Validation** – Submitters whose data or information is deemed incomplete by the ISO as part of the initial validation in step 2 above, will have five business days to supplement their proposals (if the fifth day falls on a weekend or holiday, the deadline will be the following business day). Within ten business days after receiving the supplemental proposal, the ISO will inform the project proponent via email if the supplemental proposal(s) have been accepted and will be further evaluated in the TPP. If the supplemental proposal(s) are rejected, the submitter will be notified via email that their supplemental proposal(s) have been rejected and will not be evaluated by the ISO along with a brief explanation of the reasons that the proposal will not be evaluated.

#### 4.4.3 Data Requirements for Request Window Submissions

The data requirements necessary to initiate the Request Window process will be described further in this section with respect to different categories of projects and other submissions. Data templates and accompanying instructions for submission to the Request Window may be found under the Request Window Forms and Instructions link.

##### 4.4.3.1 Reliability Submissions and Merchant Project Submissions

Any reliability-driven or merchant transmission project, whether submitted by a PTO, non-PTO or sponsor of a Merchant Transmission Facility, must submit the following project information before the project will be considered by the ISO:

###### General Data

- Description of the proposal such as the scope, interconnection points, proposed route, the nature of alternative (AC/DC) or expected benefits
- A diagram showing the geographical location and preferred project route

###### Technical Data

- Network model for power flow study in GE-PSLF format. In some cases, dynamic models for stability study in GE-PSLF format may also be required

###### Planning Level Cost Data

- Project construction costs estimate, schedule, anticipated operations, and other data necessary for the study.

###### Miscellaneous Data

- Proposed entity to construct, own, and finance the project
- Planned operator of the project
- Construction schedule and expected online date

##### 4.4.3.2 Location Constrained Resource Interconnection Facilities

Any party proposing an LCRIF project shall include the following information in accordance with Section 24.4.6.3 of the ISO tariff:

- A description of the proposed facility, setting forth:

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- Transmission study results demonstrating that the transmission facility meets Applicable Reliability Requirements and ISO Planning Standards
  - Identification of the most feasible and cost-effective alternative transmission additions, which may include network upgrades, that would accomplish the objectives of the proposal
  - A planning level cost estimate for the proposed facility and all proposed alternatives
  - An assessment of the potential for the future connection of further transmission additions that would convert the proposed facility into a network transmission facility, including conceptual plans
  - The estimated in-service date of the proposed facility, and
  - A conceptual plan for connecting potential LCRIGs, if known, to the proposed facility.
- Information showing that the proposal meets the criteria outlined in Section 24.4.6.3.1(a) of the ISO tariff. This information permits the ISO to conditionally approve the LCRIF if the following criteria are met:
- The transmission facility is to be constructed for the primary purpose of connecting two or more (LCRIG) in an Energy Resource Area, and at least one of the LCRIG is to be owned by an entity or entities not an Affiliate of the owner(s) of another LCRIG in that Energy Resource Area
  - The transmission facility will be a High Voltage Transmission Facility
  - At the time of its in-service date, the transmission facility will not be a network facility and would not be eligible for inclusion in a Participating TO's Transmission Revenue Requirements other than as an LCRIF
  - That there is a need for the proposed facility. ISO will consider the factors set forth in tariff Section 24.4.6.3.6 to evaluate compliance with tariff Section 24.4.6.3.2(a):
    - The extent to which the facility meets or exceeds ISO Planning Standards;
    - The extent to which the facility has the capability and flexibility to interconnect LCRIGs in the energy resource area and to be converted to a network transmission facility;
    - Whether the projected cost of the facility is reasonable in light of its projected benefits, in comparison to the costs and benefits of other alternatives for connecting generating units or otherwise meeting a need identified in the ISO TPP, including alternatives that are not LCRIFs. In making this determination, the ISO shall take into account (among other factors):
      - The potential capacity of LCRIGs and the potential energy that could be produced by LCRIGs in each ERA;
      - The capacity of LCRIGs in the ISO's interconnection process for each ERA;

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- The projected cost and in-service date of the facility in comparison with other transmission facilities that could connect LCRIGs to the ISO Balancing Authority Area; and
  - Whether, and if so, the extent to which, the facility would create a risk of stranded costs
- For final qualification as an LCRIF project, the proponent must provide the information required by Section 24.4.6.3.2(b), which, in addition to all of the above information required for conditional approval, includes a showing that the following requirements have been met:
- The addition of the capital cost of the project will not exceed the 15% aggregate TRR net investment cap, calculated at the time of ISO's evaluation of the facility; and,
  - The demonstration of commercial interest requirement set forth in tariff section 24.4.6.3.4 has been met.

#### 4.4.3.3 Demand Response or Generation Alternatives

Demand management resources (e.g., amount of load impact, location, cost of the program) may be submitted into the Request Window for consideration in its TPP provided they have been approved by the CPUC or appropriate local regulatory agency. Accordingly, appropriately validated demand management programs shall be included in the ISO's Unified Planning Assumptions.

Proposed Generating Facilities may also be submitted to the ISO but only for purposes of evaluating the effect of such generation on resolving previously identified grid concerns, including congestion, voltage support, etc. Proponents of proposed generating facilities that seek to interconnect with the ISO Controlled Grid must follow the LGIP procedures to obtain such interconnection. Proponents of generation projects that are being proposed as an alternative to projects for consideration in the TPP need to provide the following information if not already provided through the LGIP a similar set of project data that is required by the LGIP process:

- Basic description of the project, such as fuel type, size, location, etc.
- Description of the issue sought to be resolved by the Generating Facility, including any reference to results of prior technical studies included in published Transmission Plans.
- Network model of the project for power flow study
- Geographical location
- Dynamic models for stability study
- Short-circuit data
- Protection data
- Other technical data that may be required for specific types of resources, such as wind generation
- Detailed project construction, heat rate, and operation costs
- Any additional miscellaneous data that may be applicable

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## 4.5 The Conceptual Statewide Plan & Comment Period

In Phase 1 of the TPP, the ISO will initiate the development of a conceptual statewide plan that will be used as an input into Phase 2 development of the comprehensive Transmission Plan for the ISO footprint. This plan may be developed in coordination with other regional or sub-regional transmission planning groups or entities, including interconnected Balancing Authority Areas.

### 4.5.1 Market Notice and Posting the Conceptual Statewide Plan

As discussed in BPM Section 3, the ISO will provide information about the initiation of the conceptual statewide plan development in the Study Plan. Once the conceptual statewide plan has been completed, it will be posted on the ISO website. At the time the plan is posted~~Subsequent to this posting~~, the ISO will issue a Market Notice advising interested parties of its availability and that, in the month immediately following this posting, the ISO will provide a minimum of 20 days for interested parties to submit comments and recommendations for consideration during Phase 2. The Market Notice advising TPP Participants that the conceptual statewide has been posted to the ISO website will also contain the schedule for submitting comments and recommendations for that planning cycle; the month in which the comment period is scheduled may vary from planning cycle to planning cycle depending on when the plan is finished.

### 4.5.2 Comments and Recommendations on the Conceptual Statewide Plan

TPP participants may submit comments and make recommendations to modify the statewide conceptual plan for the purposes of informing the ISO's TPP. Proposed modifications may include alternative transmission elements needed to access resources in locations not included in the statewide conceptual plan (e.g. sub-regional or regional interstate transmission elements) and non-transmission elements providing alternative solutions to transmission upgrades and additions needed to meet state policy initiatives. Such modifications shall not be specific projects but rather electrical solutions to address transmission needs identified in the conceptual statewide plan. Proposals should contain sufficient detail to enable the ISO to evaluate the proposed modification within the TPP. Submitting proposed modifications to the statewide conceptual plan does not confer Approved Project Sponsor status on any party whose recommendation is selected as part of the comprehensive Transmission Plan.

### 4.5.3 Additional Sensitivity Base Cases

Once the comment period on the conceptual statewide plan closes, the ISO may develop additional base cases for sensitivity studies to be used in developing the comprehensive statewide plan that include modeling assumptions recommended by TPP participants or based on information not available during Phase 1. These base cases will be posted to the ISO secure website and made available to stakeholders as soon as practicable.

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## 4.6-Large Generator Interconnection Process (LGIP) Network Upgrades

Beginning with the 2011/2012 planning cycle, the ISO may coordinate the TPP with the LGIP by evaluating Network Upgrades and associated generation identified during the LGIP Phase II Interconnection Studies or Interconnection Facilities Studies as part of the TPP. The details of this process are described below.

### 4.6.1 LGIP Network Upgrade Criteria for TPP Assessment

Beginning with the 2011/2012 planning cycle, LGIP Network Upgrades may be considered for potential modification in the TPP if the Network Upgrade:

- Consists of new transmission lines 200 kV or above and have capital costs of \$100 million or more;
- Is a new 500 kV substation that has capital costs of \$100 million or more; or
- Has a capital cost of \$200 million or more.

### 4.6.2 Notification of Network Upgrades being assessed in the TPP

In approximately June of each planning cycle, the ISO will publish the list of LGIP Network Upgrades that meet at least one of these criteria set forth in Section 4.6.3 above and have been selected for consideration in TPP Phase 2. The comprehensive Transmission Plan will contain the results of the ISO's evaluation of the identified LGIP Network Upgrades. LGIP Network Upgrades evaluated by the ISO but not modified as part of the comprehensive Transmission Plan will proceed to Large Generator Interconnection Agreements (LGIAs) through the LGIP and will not be further addressed in the TPP. Similarly, LGIP Network Upgrades that meet the tariff criteria but were not evaluated in the TPP will proceed to LGIAs through the LGIP.

### 4.6.3 Analysis of LGIP Network Upgrades

All generation projects in the Phase II cluster study have the potential of causing the need for LGIP Network Upgrades described in Section 4.6.1. As a result, there may be a need to model some or all of these generation projects and their associated transmission upgrades in the TPP base cases for the purpose of evaluating alternative transmission upgrades. However, these base cases will be considered sensitivity base cases in addition to the base cases developed under the Unified Planning Assumptions. These base cases will be posted on the ISO protected web-site for stakeholder review in approximately July of each planning cycle. Study results and recommendations from these cases will be incorporated in the comprehensive transmission plan following the process shown in figure 4-1.

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## 4.7 Determining Needed Projects

### 4.7.1 Determining Reliability Projects

The ISO relies on the following guidelines for approving proposals as the appropriate solution to be constructed and owned by the PTO with a service territory in which the solution is needed:

- **Need** – The analysis demonstrates that mitigation is needed to be in place to ensure compliance with Applicable Planning Criteria.
- **Sufficient Data** – Sufficient information is required to be provided on each of the mitigation proposals to allow for a comparable assessment against other alternatives. The data requirements are defined in greater detail in section 4.3.3.
- **Technically Sound** – The suggested alternatives must demonstrate an ability to eliminate the identified system performance issue(s) based on a technically sound approach. This requires that the proposed alternatives utilize technology and innovation that has been accepted by the industry. In cases where a new technology has been proposed as a preferred alternative, sufficient proof demonstrating that the alternative will work reliably, efficiently, and comply with all applicable planning standards will be required as part of the approval process.
- **Cost-Effective** – The preferred alternative shall be an economically efficient approach to resolve the identified system performance issue(s). Generally, this requires a least-cost solution; however, in some circumstances, least-cost solutions may not be selected or recommended if the ISO finds that another approach appears to be a more prudent overall solution for the system. For example, if the analysis identifies that several system performance issues in the same vicinity can be anticipated in the future, the ISO may recommend transmission upgrades or additions to eliminate all system performance issues at the same time rather than incrementally addressing each system performance issues in a potentially piece-meal fashion.

### 4.7.2 Determining Merchant Transmission Facility Projects

Currently, any Market Participant, group of Market Participants or PTO may act as a Project Sponsor to identify a possible transmission upgrade and seek its incorporation into the ISO TPP for ultimate approval and construction as a Merchant Transmission Facility. A Merchant Transmission Facility is a transmission upgrade or addition that is part of the ISO Balancing Authority Area where the Project Sponsor does not seek cost recovery through the ISO's transmission access charge, but rather funds the project itself and recovers its costs through an allocation of incremental Merchant Transmission CRRs. A Merchant Transmission Facility will be deemed "needed" by the ISO upon satisfaction of three elements:

- Mitigation of operational concerns
- Mitigation of any impact from the [proposed Merchant Transmission Facility](#) project that impairs the continuing feasibility of allocated Long Term CRRs over the length of their terms; and
- Proof that the Project Sponsor is financially able to pay the construction and operating costs of the Merchant Transmission Facility by requiring (1) a demonstration of creditworthiness (e.g. an appropriate credit rating), or (2) sufficient security in the form of

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an unconditional and irrevocable letter of credit or other similar security sufficient to meet its responsibilities and obligations for the full costs of the transmission addition or upgrade.

Accordingly, the ISO and affected PTO will perform technical studies to determine whether and how the project can be safely and reliably integrated with the ISO Balancing Authority Area. Further, detailed Facilities Studies are performed by the PTO with PTO Service Territories who own the existing transmission facilities to which the new project would interconnect. These studies will be performed at the expense of the Project Sponsor pursuant to provisions of the Transmission Owner tariff of the applicable Participating TO.

#### 4.7.3 Determining Location Constrained Resource Interconnection Facilities (LCRIF)

The requirements for approval or conditional approval of a LCRIF are set forth in detail in 24.4.6.3 of the ISO tariff and in Section 4.4.3.2 of this BPM.

#### 4.7.4 Determining Transmission Needed to Maintain the Feasibility of Long-Term CRRs

The PTO's proposed transmission mitigations for Long-Term CRRs issue must address Long-term CRRs issues that were identified from the ISO study results.

#### 4.7.5 Preservation of Generation Deliverability

The ISO uses the deliverability analysis embodied in its Interconnection procedures to ensure that new Generation that is interconnected to the ISO controlled grid does not degrade the deliverability of existing resources currently connected to the system. This mechanism is intended to maintain the stability of Net Qualifying Capacity (NQC) ratings for a given existing resource. Generally, economically and reliability driven transmission upgrades will enhance generation deliverability. However, a new transmission project associated with new generation interconnection could potentially degrade the deliverability of one or more existing generation projects. During the development and review of transmission project proposals, the ISO will assess the potential for adverse impacts on generation deliverability and will consider the estimated cost associated with mitigating any identified reduction in NQC that may result from new generation being interconnected with the ISO's system.

### 4.8 Determining Policy Driven Elements

Once the Request Window is closed and comments on the conceptual statewide plan have been received, the ISO will develop a preliminary comprehensive Transmission Plan for the ISO footprint which will identify all projects needed to maintain reliability, LCRIF projects, projects to maintain LT-CRRs, qualified Merchant Transmission Facility projects, and needed LGIP Network Upgrades.

Further evaluation of the preliminary comprehensive Transmission Plan may yield the need for additional transmission upgrades and addition elements needed to meet state or federal policy requirements or directives as specified in the Study Plan. The development of the draft, and ultimately the final comprehensive Transmission Plan will be based on the preliminary

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Transmission Plan and on additional analysis that may identify certain policy-driven elements as well as the inclusion of an economic analysis of the preliminary plan. However, alternatives that would be justified primarily by their expected economic benefits must be evaluated further in the second step of this process as described in Section 4.9 below. Once the policy-driven elements have been determined, the ISO will revise its preliminary comprehensive Transmission Plan to include identified policy driven elements.

#### 4.8.1 Criteria for Determining Policy-Driven Elements

As described in ISO tariff section 24.4.6.6, the ISO will determine the need for policy-driven transmission upgrade or addition elements using the following criteria, in conjunction with the methodology described in the next section 4.8.1 below:

- (a) Commercial interest in the resources located or planning to locate in the applicable geographic area (including renewable energy zones) accessed by potential transmission elements including, but not limited to, those that are-as evidenced by signed and approved power purchase agreements and interconnection agreements;
- (b) The results and identified priorities of the CPUC's or California Local Regulatory Authorities' resource planning processes;
- (c) The expected planning level cost of the transmission element as compared to the potential planning level costs of other alternative transmission elements;
- (d) The potential capacity (MW) value and energy (MWh) value of resources in particular zones that will meet the policy requirements, as well as the cost supply function of the resources in such zones. This criterion in combination with (c) contributes to the assessment of cost-effectiveness of a potential transmission element, for example by providing for an estimate of the cost of the element per MW of renewable capacity or MWh of renewable energy;
- (e) The environmental evaluation, using best available public data, of the zones that the transmission is interconnecting as well as analysis of the environmental impacts of the transmission elements themselves;
- (f) The extent to which the transmission element will be needed to meet Applicable Reliability Criteria or to provide additional reliability or economic benefits to the ISO grid;
- (g) Potential future connections to other resource areas and transmission elements;
- (h) Resource integration requirements and the costs associated with these requirements in particular resource areas designated pursuant to policy initiatives;
- (i) The potential for a particular transmission element to provide access to resources needed for integration, such as pumped storage in the case of renewable resources;
- (j) The effect of uncertainty associated with the above criteria, and any other considerations that could affect the risk of stranded investment. This criterion allows for consideration of any factors that could negatively affect the likelihood of particular renewable projects

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being permitted or substantially delayed, which would in turn increase the risk of stranded investment; and

- (k) The effects of other additions or upgrades being considered for approval during the planning process.

The ISO will use publicly available sources for the data to support these criteria, and will seek to align its data sources with the relevant resource planning processes, such as those conducted by the CPUC. Some of these data, such as environmental and economic assessments of resource zones, may be aggregated into “scores” for particular zones or areas within zones, allowing for a high level comparison with other zones. For example, for renewable resources, such as scores have been promulgated, and updated periodically, by the California Renewable Energy Transmission Initiative (RETI) and by the CPUC under its long-term procurement planning process. The ISO will utilize these various ~~these~~ scores and rankings as appropriate to facilitate its planning decisions, but may also seek to modify such assessments for particular locations as appropriate.

#### 4.8.2 Category 1 and Category 2 Policy-Driven Elements

The comprehensive Transmission Plan will designate the policy-driven elements as either Category 1 or Category 2. Category 1 elements are those that will be recommended to the ISO Board for approval of need. Category 2 elements are identified in the plan, but are not recommended for approval, because they will be re-assessed in the next planning cycle as candidate Category 1 facilities based on new information regarding generation development and other factors related to the need for policy-driven transmission elements.

The analytical approach for identifying Category 1 and Category 2 policy-driven elements will be to assess all candidate transmission elements, individually and/or within scenarios, according to the criteria described in Section 4.8.1 above, and then to compare each candidate element’s assessment on the criteria against standards that an element must meet to qualify for Category 1.

The standards will be developed and promulgated by the ISO in part through consideration of the latest data on each criterion with respect to the policy objective creating the need to plan for additional transmission infrastructure. The ISO will weight its consideration of these criteria in certain ways. For example, with respect to the commercial interest criteria and assuming that the policy goal is the implementation of renewable energy portfolio standards, a preferred set of resources for long-term procurement planning could be developed as a priority set for TPP consideration. This preferred set of resources could be based on consideration of power purchase agreements, interconnection agreements, permitting status, and other factors, including the environmental assessment of the resource locations. Additionally, the ISO will have completed LGIP Phase II interconnection studies for the current interconnection cluster (for the 2010-2011 cycle, these will be the studies for projects in the Serial Group and Transition Cluster of the generation interconnection queue), and the network upgrades identified in these studies which will become part of the “baseline” set of transmission additions and upgrades already determined to be needed (along with reliability and LT-CRR projects) baseline transmission assumptions before identifying any additional transmission needed to achieve planning towards the designated policy goals. Hence, transmission elements needed to interconnect and deliver the preferred set (or an alternative set of high ranked commercial projects developed through other criteria) over and above the baseline generation interconnection transmission upgrades would become the starting point for determining Category 1.

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Starting from that initial set of elements that provide access to resources meeting certain commercial criteria (and are also located in highly ranked zones by other measures), the ISO will make further determinations to modify the specifications of the transmission elements, and add additional elements as needed, to account for resource development potential in the locations already identified through this initial set of resources. For example, if a 230 kV transmission line has been identified to interconnect resources with high commercial interest in zone A, and zone A has substantial additional resource development potential as represented in the remainder of the generation interconnection queue and studies, then the ISO will consider whether there is sufficient certainty over the expansion of zone A, and other zones that will be interconnected through the transmission element, to merit increasing the size of the proposed transmission element to 500 kV. These determinations will take account of the rankings of resource locations and other evaluations according to the criteria in Section 4.8.1.

The ISO may also consider the available environmental assessment information of the transmission lines themselves as well as trade-offs between the criteria as needed. For example, trade-offs might be needed to determine whether additional upgrades are appropriate to access a location that is highly ranked by ~~economic measures~~ [commercial interest or economic criteria](#) but low ranked in environmental assessments. Other factors will also be considered, such as whether a particular transmission element is supporting access to multiple high-ranked resource zones.

A component of the transmission planning for renewable portfolio standard policy goals is ensuring access to the operational capabilities needed to integrate variable energy resources. This can be accounted for in two ways. First, operational studies will provide estimates of the potential additional operational requirements for ramp, ~~R~~regulation and load-following, and other factors, from generation and non-generation resources. To the extent that reservation of generation capacity to fulfill those additional requirements on a locational or system basis will affect the simulated power flows and dispatch, it may alter the resulting determination of needed transmission upgrades, including those in Category 1. Second, given the expected additional operational requirements, transmission may be needed to access some specific resources, such as pumped storage, that can provide such integration capabilities. To support such transmission upgrades as being in Category 1, the ISO will demonstrate that they support integration of resources from the highest ranked resource zones.

Those candidate elements that meet the standards discussed above will be designated Category 1; the highest ranking elements that fail to meet Category 1 standards but could be needed to achieve policy goals will be assessed for Category 2.

Because the policy-driven elements must be identified under considerable uncertainty regarding the location and timing of new generation coming onto the ISO grid, the ISO may further clarify the Category 2 candidate transmission policy-driven elements across multiple resource development scenarios and in conjunction with other candidate elements needed to support each scenario, in order to reflect each candidate transmission element's value in fulfilling the relevant state or federal policy (e.g., interconnecting particular Competitive Renewable Energy Zones). As such, the ISO may use scenarios that vary the emphasis on the criteria listed in Section 4.8.1 to evaluate alternative transmission elements.

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## 4.9 Economic Studies & Mitigation Solutions

Once the ISO has developed the preliminary comprehensive Transmission Plan, the ISO will conduct economic planning studies to meet planning objectives as defined in the Study Plan. Additional economic studies will be performed, as needed, to determine whether additional transmission upgrade or addition elements should be added to the preliminary comprehensive plan, or whether initially identified projects or elements should be modified. The preliminary plan referred to here is the same preliminary plan that will be used as the starting point for identifying needed policy-driven elements as described in section 4.8. Thus, the policy-driven elements and the economically-driven elements will be developed in an integrated fashion, not sequentially, although the logic and criteria for identifying these elements is described in BPM sections 4.8 and 4.9, respectively.

Based on the results of these studies, the preliminary comprehensive Transmission Plan will be revised to include any identified economically driven transmission elements that mitigate congestion or address other economic needs as identified by the ISO's economic planning studies. For the 2010/2011 cycle, the ISO will use these studies as the basis for evaluating the economically driven project proposals that were submitted into the 2008 and 2009 Request Windows under the TPP in place at the time.

### 4.9.1 Conducting Economic Studies and Determining Economic Elements

The primary focus of the ISO Economic Planning Studies is to identify expected transmission congestion in the ISO Controlled Grid ensure that based on the additions and upgrades specified in the preliminary comprehensive Transmission Plan. Thus these studies will provide the basis for identifying additional cost-effective transmission elements to mitigate such congestion. appropriately identifies and addresses expected transmission congestion on the ISO Controlled Grid This will be accomplished by simulating future system conditions and ~~as well as~~ considering historical congestion occurrences, Local Capacity Area resource requirements, other expected grid conditions consistent with the Unified Planning Assumptions, as well as other data submitted through the Request Window, such as the long-term power supply plans for Long-Term CRR purposes. The studies will utilize production simulation cost software using Security-Constrained Unit Commitment (SCUC) and Security-Constrained Economic Dispatch (SCED) approaches to provide a viable framework for realistic market conditions. The quantification of potential benefits will be consistent with ISO's Transmission Economic Analysis Methodology (TEAM) approach.

The ISO's will perform the High Priority Economic Planning Studies as identified in the Study Plan beginning with the 2011/2012 planning cycle. These studies will consider:

- Expansion or acceleration of previously approved transmission projects, and
- New proposed upgrades or conceptual projects that can relieve the constraint.

In order to efficiently manage requests for economic studies, the ISO intends to maximize the use of a batch or cluster approach to perform the High Priority Economic Planning Studies.

The ISO intends to coordinate High Priority Economic Planning Study efforts with sub-regional planning groups and where appropriate, TEPPC at the regional planning level. For example, congestion observed in the ISO Balancing Authority Area may impact multiple entities within and adjacent to the ISO and should be addressed on a sub-regional basis.

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Economically-driven elements which the ISO determines to be needed as mitigation solutions using the economic study methodology described above will be described in the comprehensive Transmission Plan using the engineering details discussed in Section 4.11.2.2 of this BPM.

#### 4.9.2 2008 and 2009 Request Window Submissions

Proposed projects submitted into the Request Windows open during the ISO's 2008 and 2009 planning cycles, and not approved or rejected in the 2008 and 2009 Transmission Plans, will be evaluated during the 2010/2011 planning cycle. A list of the projects that will be considered during the 2010/2011 planning cycle will be posted to the ISO website after this BPM becomes effective and prior to the second stakeholder meeting. Proposed projects that are found to be needed as policy-driven elements will be included in the preliminary plan. The ISO will then determine whether any of the other proposed projects are needed and will be identified in the 2010/2011 comprehensive Transmission as economic elements, using the methodology described in Section 4.9.1 above.

Project Sponsors submitting 2008 or 2009 Request Window projects that are determined by the ISO to be needed may construct and own such projects, unless there were multiple projects submitted through the 2008 and 2009 Request Windows that address the same needs. Under such circumstances, the Approved Project Sponsor will be determined during Phase 3 based on the project sponsor criteria described in Section 5.

#### 4.10 Third Stakeholder Meeting

During the fourth quarter of each calendar year<sup>5</sup> and before the draft comprehensive Transmission Plan is posted, the ISO will conduct a third public meeting to provide updates on the development of the preliminary comprehensive Transmission Plan and any policy-driven elements that have been identified at that time. The ISO also will provide TPP participants with updates as to the status of the economic studies and will provide economic study results, if available. Meeting details will be provided via Market Notice, including the time and date of the meeting and other information.

#### 4.11 Comprehensive Transmission Plan

##### 4.11.1 Stakeholder Consideration of the Draft Comprehensive Transmission Plan

The ISO will develop a draft comprehensive Transmission Plan based on the technical and economic study results, evaluation of the projects submitted through the Request Window, the results of the ISO's evaluation of LGIP Network Upgrades, comments and proposed recommendations regarding the conceptual statewide plan and the criteria for determining policy-driven transmission upgrade or addition elements. The draft comprehensive Transmission Plan will be posted on the ISO website and presented to TPP Participants for review and comment during the 4<sup>th</sup> public meeting which will be held in the first quarter (approximately February) of

<sup>5</sup> [Approximately in late November or early December, depending upon the availability of results from the comprehensive plan.](#)

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each year. The ISO will independently provide the draft comprehensive Transmission Plan to representatives from neighboring transmission providers or interconnected Balancing Authority Areas and sub-regional and regional planning groups for input and to facilitate transmission expansion coordination. After collecting TPP Participant comments, the comprehensive Transmission Plan will be finalized and presented to the ISO Governing Board for approval. Presentation of the comprehensive Transmission Plan to the ISO Governing Board will occur in March of each year. Once approved, the ISO will post the final comprehensive Transmission Plan on the ISO Website and advise interested parties of the website location.

#### 4.11.2 Contents of the Comprehensive Transmission Plan

##### 4.11.2.1 Transmission Upgrade or Addition Projects

The draft comprehensive Transmission Plan will contain a description of all transmission projects that are needed to address the objectives that are defined in the study plan. Specific projects and Project Sponsors will be described according to the following categories:

- Projects with capital costs of \$50 million or more for which the ISO has completed all necessary studies.
- Projects with capital costs of less than \$50 million that have been approved, or will be approved, by ISO management and may proceed to permitting, siting and construction.
- Projects with capital costs of \$50 million or more that are approved solutions for identified needs but for which the ISO has not completed all necessary studies. These projects will be presented to the Board for approval according to the time schedule set forth in the Plan.

Projects with capital costs less than \$50 million for which the ISO evaluation is complete and which have been recommended for approval will be presented to ISO Executive Management in February. However, ISO Executive Management may consider approval of a project at an earlier time during Phase 2 if the circumstances surrounding the project necessitate a different approval date and the ISO is able to complete its evaluation on an expedited basis. If Project Sponsors anticipate that certain projects in this category will be submitted through the Request Window and will require approval dates earlier than February, the ISO must be fully informed of these circumstances and must be provided with all necessary study information at the time that the project is submitted. Under these circumstances, projects for which a management approval date earlier than February is found to be needed by the ISO will be presented for stakeholder review at the 2d stakeholder meeting.

##### 4.11.2.2 Transmission Upgrade and Addition Elements

The draft comprehensive Transmission Plan will include a detailed description of needed transmission upgrade and addition elements such that during Phase 3 Project Sponsors will be able to submit complete proposals to build the facilities (Category 1 policy-driven elements and, beginning with the 2011/2012 cycle, economically driven elements). Information about the Phase 3 Project Sponsor solicitation process is set forth in Section 5 of this BPM. Descriptions of transmission upgrade or addition elements will include, but not be limited to:

- Minimum conductor ampacity,
- Approximate line impedance;

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- Approximate series compensation levels;
- Substation bus and breaker configuration;
- Breaker clearing times;
- Transformer characteristics (capacity, impedance, tap range);
- Minimum shunt capacitor and reactor sizes;
- Minimum FACTS device specifications;
- SPS requirements;
- Planning level cost estimates; and
- Projected in-service date.

#### 4.11.2.3 Other Information

The draft comprehensive Transmission Plan also may include:

- The results of technical studies performed under the Study Plan;
- For the 2010/2011 planning cycle, the 2008 and 2009 Request Window project evaluation results;
- Results of Economic Planning Studies and other studies conducted by ISO during the TPP cycle;
- Updates on the status of transmission upgrades or additions previously approved by the ISO, including identification of mitigation plans, if necessary, to address any potential delay in the anticipated completion of an approved transmission upgrade or addition;
- System Outlook – Provides information on future system conditions to facilitate transmission planning decisions, including, but not limited to:
  - New generation from ISO Interconnection Queue and CEC licensing process
  - Generation retirement analyses from CEC
  - Other factors, such as economic trends, fuel prices outlook, activities from other entities in the region that should be considered, future technologies and impact from climate changes, etc.
  - Category 2 transmission upgrade and addition elements recommended for approval in other planning cycles; and
  - Information about LGIP Network Upgrades evaluated pursuant to Section 4.5 above (beginning with the 2011/2012 TPP Cycle).

#### 4.11.3 ISO Management and Board Approval Process

Once TPP participants have had an opportunity to submit comments on the draft comprehensive Transmission Plan, the ISO will make appropriate revisions to the draft Plan and present it to the ISO Governing Board for approval at the March Board meeting each year. With the exception of ISO management's approval of transmission elements with capital costs less than \$50 million transmission upgrade and addition projects and elements recommended for Board approval will

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be deemed approved once the Board has ruled on the draft Plan. Following Board approval, the ISO will post the final comprehensive Transmission Plan to the ISO website.

#### 4.11.4 Notification to Request Window Project Sponsors and Submitters

##### 4.11.4.1 Approved Project Notification

Projects with capital costs of \$50 million or more must be approved by the ISO Governing Board. Once the final comprehensive Transmission Plan is approved, these projects are considered approved and may move toward the development and permitting of those projects without further notification from the ISO. For projects with capital costs of less than \$50 million that ISO Management approves, the ISO will provide the Project Sponsor with a letter stating that the project(s) are a necessary and cost effective addition to the ISO Controlled Grid (assuming that the final capital costs of the project are consistent with the cost information used in the ISO studies) and that the Project Sponsor is directed to continue with the final design, licensing and construction of the project.<sup>6</sup>

##### 4.11.4.2 Denied Project Notification

Project Sponsors who have submitted projects through the Request Window for which alternatives have not been submitted but that are otherwise not recommended for approval will receive a letter detailing the basis for project rejection but this information will not be included in the comprehensive Transmission Plan.

### 4.12 Compliance with NERC Reliability Standards

The comprehensive Transmission Plan will be used by the ISO as part of the documentation of compliance with the NERC Reliability Standards applicable to the ISO as a Planning Coordinator. [The role and function of the Planning Coordinator is defined in the NERC Functional Model.](#)

Technical study results will be measured against the following planning standards to quantify system performance and justify transmission upgrades and additions:

- NERC Transmission Planning Standards, including Table I
- WECC Transmission Planning System Performance Criteria
- ISO Planning Standards

#### 4.12.1 NERC Reliability Base Cases Developed by the PTOs

PTOs within the ISO Balancing Authority Area, registered as Transmission Planners as defined by the NERC functional model, are responsible for developing the base cases that represent their systems for NERC compliance assessments, pursuant to the requirements of the applicable NERC Reliability Standards.

<sup>6</sup>[This notification will be appropriately modified if a project is jointly sponsored and a non-PTO Project Sponsor does not intend to turn its entitlement over to the ISO's Operational Control.](#)

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#### 4.12.2 NERC Reliability Assessments Performed by the ISO and PTOs

The ISO and the PTOs are each responsible for performing NERC reliability assessments using the base cases developed by the PTOs and integrated into the ISO Balancing Authority Area-wide base case. These assessments ~~must~~ should be conducted according to the Study Plan, the time schedule set forth in Section 2, and according to Attachment 2 of this BPM. These assessments begin upon the finalization of the Study Plan. The ISO performs the NERC reliability assessment for the entire Balancing Authority Area.

#### 4.12.3 Reliability Assessment Results

Results from the reliability assessments will identify facilities with thermal overloads, voltage concerns, stability concerns, or ensure that system performance can be met according to the requirements of the NERC Transmission Planning Standards, the WECC Transmission Planning System Performance Criteria, and the ISO Planning Standards over both the short-term (up to 5 years) and the long-term (10 years or longer). Study results will be measured against the applicable planning standards to determine if system performance criteria have been met. If system performance criteria have not been met, the ISO will identify the thermal overloads, voltage concerns, or stability concerns, and will propose mitigation solutions to address the identified reliability issues. ~~In accordance with Sections 4.4.1 and 4.4.1.1 in this BPM, the PTOs will be responsible for providing the detailed scope of potential solutions in accordance with the applicable reliability criteria and identifying potential reliability-driven transmission projects proposals that would resolve the transmission needs identified by the ISO shall be submitted through the Request Window for the TPP cycle in which the needs were identified.~~

#### 4.12.4 Reliability Study Results Provided by the ISO and PTOs

As described in Section 4 of this BPM, on August 15 of each annual cycle the ISO and the PTOs will publish the results of their preliminary reliability assessments, summarizing findings of any unmet performance requirements, identifying thermal overloads, voltage concerns, or stability concerns, and proposing solutions that will mitigate the identified reliability issues. The preliminary study results will contain the study results for the ISO's NERC reliability assessment, as well as the results of the other technical studies conducted by the ISO and the PTOs, including documentation of PTO NERC compliance, updates on the status of transmission projects previously approved by the ISO but are not yet in-service, and newly proposed transmission additions and upgrades with scheduled in-service dates. ~~Thirty days after the preliminary study results are posted, the PTOs must submit reliability transmission project proposals through the Request Window within thirty days after the preliminary study results have been posted, in accordance with Section 4.4.1.1 in this BPM. TPP Participants, which include interested parties, may submit into the Request Window proposed alternative reliability-driven transmission projects to mitigate meet identified reliability concerns needs, in accordance with section 4.4.1.1 in this BPM.~~

## 5.Phase 3 of the Transmission Planning Process

In Phase 3, the ISO will solicit proposals to finance, construct, and own **economically driven** and **policy driven transmission elements** included in the comprehensive Transmission Plan, evaluate whether the proposals meet the qualifications for consideration, and take the steps necessary for a determination of the Approved Project Sponsor according to the ISO tariff and this section.

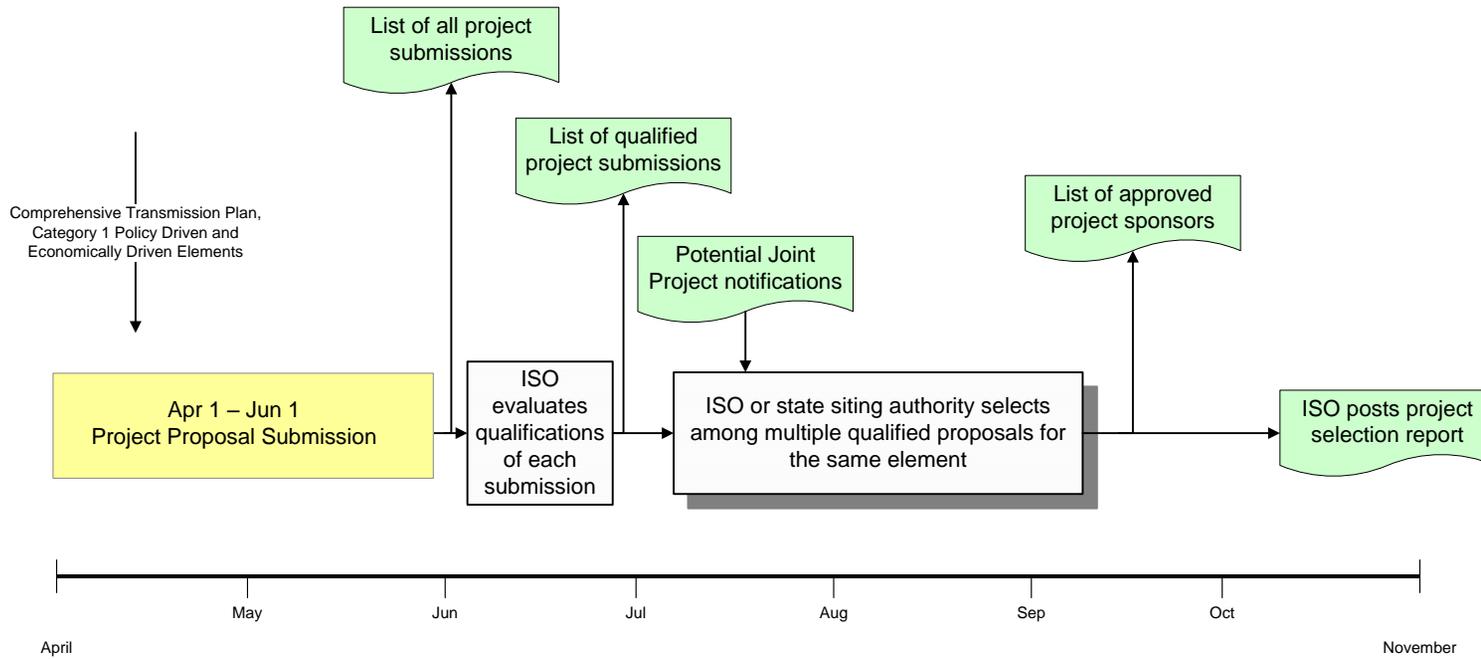


Figure 5-1: Overview of Phase II of the ISO Transmission Planning Process

## 5.1 Solicitation of Proposals

No later than April 1 following the publication of a final ISO-Board approved comprehensive Transmission Plan, the ISO will post a market notice soliciting proposals to finance, construct, and own economically driven and Category 1 policy driven elements included in that comprehensive Transmission Plan. The notice will specify that all proposals must be received by the ISO no later than the following June 1. The notice will provide the address to which proposals are to be provided, reference to the locations where the requirements for proposals are available, and a contact person for additional information.

## 5.2 Submission of Proposals

### 5.2.1 Process for Submitting Proposals

Proposals to finance, construct, and own economically driven and policy driven transmission elements submitted by June 1 will be considered if they are satisfactorily completed:

- **Initiation** – Project Sponsors shall start the process by submitting the appropriate forms to the ISO at [email address]. The appropriate forms, including instructions for submission and the information and data requirements, will be posted on the ISO website at [url]. The ISO will assign responsibility for each submitted project to its staff and acknowledge receipt of the project information to the submitter within three (3) Business Days.
- **Validation/Selection** – Within ten (10) business days after receiving the form and accompanying information on a proposal, the ISO will determine whether the proposals include the information necessary for the ISO's evaluation and ISO will inform the submitters by e-mail whether the proposal satisfies the screening criteria. A Project Sponsor that is notified that a proposal does not include all the necessary information will have five (5) business days from the date of such notification to supplement the submission. Any proposal that does not include all the necessary data and information at the expiration of the five business day period will not be considered.

### 5.2.2 Contents of Proposals

The Project Sponsor shall provide the following information for each project proposal to finance, construct, and own a transmission element identified in the comprehensive Transmission Plan. For each question, if the Project Sponsor is proposing to finance, construct, and own multiple transmission elements, the Project Sponsor should also indicate how its response would change depending on how many of its proposals are approved. For example, the Project Sponsor should describe how the projected in-service date of a project would be affected if two or more of the Project Sponsor's proposals are approved. To the extent a Project Sponsor considers any of the information submitted with its application to be confidential or proprietary, such information must be clearly identified and must include an explanation as to why the information should be handled by the ISO as confidential. The identity of Project Sponsors and basic information about proposed projects is not confidential information.

- (a) Identification of the authorized governmental body that will review the Project Sponsor's applications for siting approval for the project and site the project, as well as a description of the process that the Project Sponsor will use for the preparation of any required

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application for siting approval, including milestones and a description of supporting studies and other evidence.

- (b) For each project, a general description of the proposed structure types (lattice, monopole, etc.) and composition (wood, steel, concrete, hybrid, etc.), conductor size and type, and right-of-way (ROW) width.
- (c) The projected in-service date of each project
- (d) A description of the Project Sponsor’s proposed engineering, construction, maintenance, and management teams and a discussion of the types of resources, including relevant capability and experience (in-house labor, contractors, other transmission providers, etc.) contemplated for use by the Project Sponsor for the licensing, design, engineering, material and equipment procurement, ROW and land acquisition, construction, and project management related to the construction of each project.
- (e) A discussion of the types of resources contemplated by the Project Sponsor for operating and maintaining each project after it is placed in-service.
- (f) A discussion of the Project Sponsor’s previous record regarding construction, operation, and maintenance of transmission facilities, including facilities outside of the ISO controlled grid.
- (g) A discussion of the capability and experience of the Project Sponsor that would enable it to comply with all on-going scheduling, operating, and maintenance activities required for each project, including those required by the tariff, business practice manuals, policies, rules, guidelines, and procedures established by the *California Independent System Operator Corporation* or other transmission operator, if applicable.
- (h) Resumes for key management personnel that will be involved in obtaining siting approval and other required regulatory approvals and for constructing, operating, and maintaining each project.
- (i) A discussion of the Project Sponsor’s business practices that demonstrate that its business practices are consistent with good utility *practices for proper licensing, designing, ROW acquisition, constructing, operating and maintaining transmission facilities* that will become part of the ISO controlled grid. The Project Sponsor shall also provide the following information for the current calendar year and the previous five calendar years.
  - 1) A summary of law violations by the Project Sponsor found by federal or state courts, federal regulatory agencies, state public utility commissions, other regulatory agencies, or attorneys general.
  - 2) A summary of any instances in which the Project Sponsor is currently under investigation or is a defendant in a proceeding involving an attorney general or any state or federal regulatory agency, for violation of any laws, including regulatory requirements.
- (j) The Project Sponsor’s preexisting procedures and historical practices for acquiring ROW and land and managing ROW and land acquisition for transmission facilities. If the Project Sponsor does not have such preexisting procedures, it shall provide a detailed description of its plan for acquiring ROW and land and managing ROW and land acquisition.
- (k) Whether the Project Sponsor has any existing ROW or sub-stations on which all or a portion of the project can be built.

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- (l) The Project Sponsor's preexisting procedures and historical practices for mitigating the impact of transmission facilities on affected landowners and for addressing public concerns regarding transmission facilities. If the Project Sponsor does not have such preexisting procedures, it shall provide a detailed description of its plan for mitigating the impacts on affected landowners and addressing public concerns regarding the transmission element that it is seeking to build.
- (m) A proposed financial plan demonstrating that:
- (i) adequate capital resources are available to the Project Sponsor to allow the Project Sponsor to finance the transmission element, and
  - (ii) no significant negative impact on the creditworthiness or financial condition of the Project Sponsor, as demonstrated in its submission, will occur as a result of the Project Sponsor's construction, operation, and maintenance of the proposed project.
- (n) The Project Sponsor or its parent company or controlling shareholder or another company providing a bond guaranty or corporate commitment to the Project Sponsor must provide its credit rating from Moody's Investor Services and Standard & Poors. If the rating agency changes the credit rating, the Project Sponsor shall provide the new credit rating and update the financial information it provided to demonstrate that it has the financial capability to build the transmission element.
- (o) The Project Sponsor must provide the following financial information:
- (i) assets less any goodwill but including regulatory assets in excess of liabilities as a percentage of the projected total cost of the project on its most recent audited financial statements; and
  - (ii) the following financial ratios, adjusted to exclude transition bonds of subsidiaries, obtained from the Project Sponsor's most recent audited financial statements:
    - (I) funds from operations-to-interest coverage
    - (II) funds from operation-to-total debt;
    - (III) total debt-to-total capital; and
    - (IV) levels of the above ratios the Project Sponsor will maintain during and following construction of the transmission element.
- (p) To the extent a Project Sponsor is an electric utility and relies on an affiliated transmission and distribution utility for credit, investment, or other financing arrangements, it shall demonstrate that any such arrangement complies with applicable legal and regulatory requirements and restrictions related to affiliated entities.
- (q) The Project Sponsor shall provide a summary of any history of bankruptcy, dissolution, merger, or acquisition of the Project Sponsor or any predecessors in interest for the current calendar year and the five calendar years immediately preceding its submission of information under this section of the manual.
- (r) The Project Sponsor shall provide any information showing the Project Sponsor's cost containment capabilities and/or specific demonstrable advantages or benefits that the Project Sponsor provides with respect to building the transmission element. To the extent

the Project Sponsor is committing to agree to a binding cap on the costs of the project that it can recover through the ISO's transmission access charge, it should specify its agreement to a specified cap level.

- (s) The Project Sponsor shall provide any information showing the Project Sponsor's ability to assume liability for major losses resulting from failure of or damage to facilities.
- (t) The Project Sponsor shall demonstrate how it will comply with standardized maintenance and operation practices.
- (u) The Project Sponsor shall provide a plan setting forth how it intends to comply with all applicable reliability standards.
- (v) The Project Sponsor shall provide any additional information the ISO may reasonably request to evaluate the Project Sponsor's qualifications.
- (w) The Project Sponsor may provide any other evidence that the Project Sponsor believes supports its selection as an Approved Project Sponsor.

(x) The Project Sponsor shall include an affidavit by an officer of the Project Sponsor stating that the information in the submission is true and that the Project Sponsor will comply with the applicable requirements in this manual and with the requirements in the ISO tariff for building a transmission facility that will become part of the ISO controlled grid, as applicable.

(y) Proposed route and ROWS

(z) How to handle topography and problems encountered

(aa) Construction plan and timetable-how will you deal with problems that might be encountered

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### 5.3 Posting Results of Solicitation

No later than June 7 following the solicitation of proposals under section 5.1, the ISO will post on its website a list of the proposals that it received.

### 5.4 Evaluation of Proposals

#### 5.4.1 Criteria for Evaluation

Following receipt of a proposal to finance, construct, and own an economically driven or Category 1 policy driven transmission element identified in the a final comprehensive Transmission Plan that includes all the necessary information, the ISO will evaluate the proposal to determine

- Whether the proposed project is consistent with needed transmission elements identified in the comprehensive Transmission Plan;
- Whether the proposed project satisfies Applicable Reliability Criteria and ISO Planning Standards; and
- Whether the Project Sponsor is physically, technically, and financially capable of (i) completing the project in a timely and competent manner; and (ii) operating and

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maintaining the facilities consistent with Good Utility Practice and applicable reliability criteria for the life of the project.

## 5.4.2 Additional Information

If the ISO determines that it needs additional information to determine whether a proposal to finance, construct and own an economically driven or policy driven transmission element identified in the a final comprehensive Transmission Plan meets the criteria in section 5.4.1, the ISO may request the Project Sponsor to submit such information. The Project Sponsor must provide the information within 5 business days in order to remain eligible for consideration.

## 5.4.3 Posting Results of Evaluation

No later than June 21 following the publication of a final comprehensive Transmission Plan, the ISO will post on its website a list of the proposals to finance, construct, and own an economically driven or policy driven transmission element identified in that final comprehensive Transmission Plan that meet the criteria in section 5.4.1. For each proposal, the list will identify:

- The transmission element or elements that the Project Sponsor proposes to finance, construct, and own;
- The number of proposals to finance, construct, and own the same transmission element or elements that the Project Sponsor proposes to finance, construct, and own;
- The authorized governmental body identified by the Project Sponsor under section 5.2.2.

By June 21, the ISO will separately notify any Project Sponsors that did not meet the criteria in section 5.4.1 of the failure to meet the criteria and the reasons for that failure.

## 5.5 Disposition of Proposals

### 5.5.1 Elements for Which the ISO Received No Qualified Proposal

### 5.5.2 Single Project Sponsor

If only one Project Sponsor has submitted a proposal to finance, construct, and own an economically driven or policy driven transmission element identified in a final comprehensive Transmission Plan, and the ISO determines that the Project Sponsor is qualified to finance, construct, and own the project under the criteria set forth in section 5.4.1, the Project Sponsor must commence the process to seek siting approval, and any other necessary approvals, from the appropriate authority or authorities within sixty (60) calendar days of ISO approval. The Project Sponsor must provide the ISO with documentation that it has commenced the process to seek siting approval and other necessary approvals.

## 5.5.3 Multiple Project Sponsors

### 5.5.3.1 Collaboration

If two or more Project Sponsors submit proposals to finance, construct, and own the same economically driven or policy driven transmission element or elements under section 5.2, and the ISO determines that two or more of those Project Sponsors meet the criteria of section 5.4.1, the ISO will, upon timely request, delay further action upon the proposal in order to allow an opportunity for the Project Sponsors to collaborate with each other to offer a single proposal to finance, construct, and own such transmission element. The ISO will only delay consideration if two or more of the Project Sponsors that have submitted proposals to finance, construct, and own the same economically driven or policy driven transmission element or elements request the opportunity to collaborate with seven (7) calendar days of the ISO's posting of qualified proposals under section 5.4. If two or more of the Project Sponsors that have submitted proposals to finance, construct, and own the same economically driven or policy driven transmission element or elements provide the ISO with an executed agreement in principle to participating in a joint enterprise to finance, construct, and own said transmission element or elements by July 15 following the inclusion of the transmission element or elements in the final comprehensive Transmission Plan, the ISO will revise the list of qualified proposal posted under section 5.4 to include this joint proposal and eliminate the individual proposals by the parties to the joint proposal to finance, construct and own said transmission elements. In addition, if as a result of such agreement on a joint project, the joint project becomes the only remaining proposal to finance, construct and own such transmission elements, the ISO will proceed under section 5.2.2. Otherwise, the ISO will proceed under section 5.5.3.2 or 5.5.3.3 as appropriate.

#### 5.5.3.1.1. Same Authorized Governmental Body

If –

- Two or more Project Sponsors submit proposals to finance, construct, and own the same economically driven or policy driven transmission element or elements under section 5.2;
- The ISO determines that two or more of those Project Sponsors meet the criteria of section 5.4.1;
- The Project Sponsors identified under section 5.4.3 (including any revisions) have not requested an opportunity to collaborate or have not provided the ISO with a single executed agreement in principle to participate in a joint enterprise to finance, construct, and own the economically driven or policy driven transmission element or elements by July 15 following the inclusion of the transmission element or elements in the final comprehensive Transmission Plan and;
- The Project Sponsors have identified the same authorized governmental body under section 5.2.2;

Then the Project Sponsors identified under section 5.4.3 for such elements must seek siting approval within sixty (60) calendar days of the posting of results under section 5.4.3. The ISO will accept the Project Sponsor determination by that authorized governmental body. The Approved Project Sponsor selected by that governmental body must seek any other necessary approvals within sixty (60) Calendar Days of its selection. The Project Sponsor must provide the ISO with documentation that it has commenced the process to seek siting approval and other necessary approvals.

### 5.5.3.1.1 Different Authorized Governmental Bodies

If –

- Two or more Project Sponsors submit proposals to finance, construct, and own the same economically driven or policy driven transmission element or elements under section 5.2;
- The ISO determines that two or more of those Project Sponsors meet the criteria of section 5.4.1;
- The Project Sponsors identified under section 5.4.3 (including any revisions) have not requested an opportunity to collaborate or have not provided the ISO with a single executed agreement in principle to participate in a joint enterprise to finance, construct, and own the economically driven or policy driven transmission element or elements by July 15 following the inclusion of the transmission element or elements in the final comprehensive Transmission Plan; and,
- The Project Sponsors have identified different authorized governmental bodies under section 5.2.2.

Then the ISO will select an Approved Project Sponsor based on a comparative analysis of the degree to which each Project Sponsor meets the criteria set forth in section 5.4.1 and a consideration of the ~~additional~~additional-factors set forth in section 5.6.

## 5.6 ISO Selection of Approved Project Sponsor

### 5.6.1 Selection Criteria

In selecting an Approved Project Sponsor under section 5.5.2.3, the ISO shall consider the following criteria, in addition to the criteria set forth in section 5.4.1:

- (a) The current and expected capabilities of the Project Sponsor and its team to finance, license, and construct the facility and operate and maintain it for the life of the project;
- (b) The Project Sponsor's existing rights of way and substations that would contribute to the project in question;
- (c) The experience of the Project Sponsor and its team in acquiring rights of way, and the authority to acquire rights of way by eminent domain, if necessary, that would facilitate approval and construction;
- (d) The proposed schedule for development and completion of the project and demonstrated ability to meet that schedule of the Project Sponsor and its team;
- (e) The financial resources of the Project Sponsor and its team;
- (f) The technical and engineering qualifications and experience of the Project Sponsor and its team;
- (g) If applicable, the previous record regarding construction and maintenance of transmission facilities, including facilities outside the ISO Controlled Grid of the Project Sponsor and its team;

- (h) Demonstrated capability to adhere to standardized construction, maintenance and operating practices ;
- (i) Demonstrated ability to assume liability for major losses resulting from failure of facilities;
- (j) Demonstrated cost containment capability and other advantages the Project Sponsor and its team may have to build the specific project, including any binding agreement by the Project Sponsor and its team to accept a cost cap that would preclude project costs above the cap from being recovered through the ISO's Transmission Access Charge.

### 5.6.2 Posting Selection Results

No later than September 15 following the inclusion of economically driven or policy driving transmission element or elements in the final comprehensive Transmission Plan, the ISO will post a list of the Approved Project Sponsor for each economically driven or Category 1 policy driven transmission element in the final comprehensive Transmission Plan.

### 5.6.3 Siting Approval Requirements

Approved Project Sponsors selected by the ISO under section 5.5.3.3 must seek siting approval by the authorized governmental body identified under section 5.2.2, and any other necessary approvals, within sixty (60) calendar days of the posting of results under section 5.6.2. The Project Sponsor must provide the ISO with documentation that it has commenced the process to seek siting approval and other necessary approvals.

### 5.6.4 Report on Project Selection

No later than October 15 following the inclusion of economically driven or policy driving transmission element or elements in the final comprehensive Transmission Plan, the ISO will post a detailed report regarding the selection of the Approved Project Sponsors for the economically driven and policy driving transmission element or elements in the final comprehensive Transmission Plan.

## 5.7 Supplemental Solicitation

In cases where the Approved Project Sponsor is subsequently unable or unwilling to build the project, the ISO may, at its discretion, direct the Participating TO with a PTO Service Territory in which either terminus of the facility being upgraded or added is located to build the element or elements, or open a new solicitation for Project Sponsors to finance, construct and own the element or elements. The ISO shall establish a schedule for any additional solicitation that provides the same intervals between milestones as the initial Phase 3 solicitation.

## 6. Constructing, Owning and Financing Transmission Projects and Elements

ISO Tariff Sections 24.6, 24.4.6.4, 24.11, 24.11.1, 24.11.2, 24.11.3 and 24.16

### 6.1 PTO Responsibility

PTOs have the responsibility to construct, own and finance projects or elements determined by the ISO to be needed where the additions or upgrades to the transmission facilities are reliability-driven projects located within its PTO Service Territory (Section 24.4.6.2).

In addition, where the PTO with a PTO service territory in which either terminus of needed transmission addition or upgrade elements are located but for which there are no Approved Project Sponsors, or the Approved Project Sponsor is unable to secure all necessary approvals, shall be obligated to construct, own and finance the element. Before assigning the PTO with a service territory with the responsibility to construct, own and finance such elements, the ISO may conduct an additional solicitation. In considering whether to hold an additional solicitation, the ISO will consider such factors as the number of Project Sponsors who submitted proposals to finance, own and construct the element and the needed online date for the element. A Transmission Owner that is neither a PTO, nor seeking Merchant Transmission Facility treatment under the ISO tariff, retains any rights to construct and expand transmission facilities as those rights would exist absent any other obligations the Transmission Owner may have under the ISO tariff (Section 24.6).

Local Furnishing PTOs shall not be obligated to construct, own and finance needed projects or elements unless the ISO or Project Sponsor tenders an application under Federal Power Act, Section 211, which requests the FERC to issue an order directing the Local Furnishing PTO to construct such facilities. After receiving the Section 211 application, the Local Furnishing Participating TO is required to waive its right to request service under Section 213(a) of the Federal Power Act and to the issuance of a proposed order under Section 212(c) of the Federal Power Act. The obligation to construct arises after the FERC order, if granted, is no longer subject to rehearing or appeal (Section 24.16).

Similarly, to the extent that a transmission upgrade or addition constitutes the most efficient means to maintain the feasibility of allocated Long Term CRRs under Section 24.1.3 of the ISO tariff—apart from the expansion of, or acceleration of, an existing transmission project not sponsored by the PTO—the ISO will direct the appropriate PTO to sponsor the needed transmission project. This is consistent with the ISO's designation of PTO's with PTO Service Territories as the entity with the obligation to construct needed transmission upgrades or additions.

If the PTO, after making a good faith effort, cannot obtain all necessary approvals and property rights under applicable federal, state and local laws, the PTO shall notify the ISO and the ISO shall convene a technical meeting to evaluate alternative proposals. The ISO may take any action reasonably appropriate, after coordination with the PTO, or Project Sponsor if not the PTO, and other affected Market Participants, to develop and evaluate alternatives, including the discretion to confer the right to construct, own and finance the transmission addition or upgrade on a third party (Sections 24.11.1-24.11.3)

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## 6.2 Limitations on Transfer

Approved project sponsors shall not sell, assign or otherwise transfer their rights to construct, own and finance transmission upgrade or addition facilities before the project has been energized and turned over to the ISO's operational control unless the ISO approves such transfer (Section 24.6).

## 7. Regional and Sub-Regional Coordination

ISO Tariff Sections 24.12, 24.13, 24.13.1 and 24.13.2

To enhance the ongoing coordination efforts with neighboring transmission providers and regional and sub-regional organizations, as a component of the ISO's comprehensive TPP, the ISO acts as an initiator, organizer, and participant in relevant forums for sub-regional and regional transmission planning. This section explains the ISO's coordination with interconnected systems at both the sub-regional and regional levels.

### 7.1 Sub-Regional Coordination

Through the TPP, the ISO performs the transmission planning functions for its BAA. Ensuring regional coordination through a robust sub-regional planning process is an important objective of the TPP that includes specific requirements to exchange information with sub-regional planning groups and, in their absence, directly with interconnected transmission providers.

The ISO pursues a bifurcated approach to this objective. First, the TPP itself offers an open, transparent, and structured opportunity for interconnected neighbors to exchange planning information and objectives. Second, the ISO currently participates in the activities of the California Transmission Planning Group (CTPG), a planning group that encompasses most of the transmission systems in California. Through either of these means, the ISO satisfies the Order 890 requirement that transmission providers coordinate with neighboring systems to ensure simultaneous feasibility of their respective plans and assess the possibility of efficiencies through mutual cooperation.

The ISO also collaborates with representatives from adjacent transmission providers and other existing sub-regional planning organizations through existing processes. At a minimum, the ISO:

- Solicits the participation, whether through sub-regional planning groups or individually, of all interconnected Balancing Authority Areas in the development of the Unified Planning Assumptions and Study Plan and in reviewing the results of technical studies performed as part of the TPP in order to:
  - (1) coordinate, to the maximum extent practicable, planning assumptions, data and methodologies utilized by the ISO, regional and sub-regional planning groups or interconnected Balancing Authority Areas;
  - (2) ensure transmission expansion plans of the ISO, regional and sub-regional planning groups or interconnected Control Areas are simultaneously feasible and seek to avoid duplication of facilities.
- Coordinates with regional and sub-regional planning groups regarding the entity to perform requests for Economic Planning Studies or other congestion related studies;
- Transmits to applicable regional and sub-regional planning groups or interconnected BAAs information on technical studies performed as part of the TPP;
- Posts on the ISO Website links to the planning activities of applicable regional and sub-regional planning groups or interconnected BAA.

In order to effectively work together with neighboring transmission providers and other regional planning entities, the ISO also requests that interconnected transmission providers and other entities participate in reviewing study results and draft comprehensive Transmission Plans. Requests for participation will be sent directly through electronic means to identified transmission planning representatives of entities, including, but not limited to:

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- WestConnect Sub-Regional Groups
- Los Angeles Department of Water and Power
- ColumbiaGrid
- The Northern Tier Transmission Group
- The Northwest Transmission Assessment Committee of the Northwest Power Pool
- SWAT (Southwest Area Transmission)
- WATS (Western Arizona Transmission Studies)
- RETI (Renewable Energy Transmission Initiative)
- Arizona BTA (Biennial Transmission Assessment)

The ISO will also participate, as appropriate, in the planning activities of the foregoing entities and provide any information requested to facilitate those activities (subject to confidentiality limitations). The ISO may hold additional public meetings to discuss with, and solicit comments from, Transmission Planning Participants regarding study plans, study results and conceptual regional and sub-regional transmission plans developed by regional and sub-regional transmission planning entities and groups.

Through this interim collaboration, the ISO intends to:

- Exchange information such as the comprehensive Transmission Plan and other information
- Ensure transmission expansion plans from neighboring transmission providers and the ISO are simultaneously feasible and maximize the efficiency of infrastructure investment
- Communicate major activities that may impact respective Balancing Authority Areas

Coordinate requests for planning or economic studies that appear to impact more than one Balancing Authority Area

## 7.2 Regional Coordination

ISO actively participates at the WECC through various WECC committees such as the Board of Directors, Planning Coordination Committee, Operations Committee, and the Transmission Expansion Planning Policy Committee (TEPPC), among other subcommittees or workgroups.

Through this participation, the ISO seeks to:

- Exchange information, such as supplying data for the TEPPC data base and notifying WECC of potential projects that may impact multiple entities
- Participate in regional technical studies, such as the WECC path rating process
- Participate in the review of proposed reliability and economic projects that may have regional impact
- Potentially refer to TEPPC requests for economic studies that impact multiple sub-regions

- Cooperate in development and maintenance of the use in Transmission Planning analysis, including power flow, stability, dynamic voltage, and economic studies (*i.e.*, production cost simulation)
- Obtain policy guidelines and standards and software recommendations to maximize uniformity in the west-wide TPP.

Obtain path ratings for approved projects, when appropriate.

## 8. Cost Responsibility for Transmission Additions or Upgrades

Tariff Sections 24.4.6.3.2, 24.14, 24.14.1, 24.14.2 and 24.14.3

There are three general mechanisms by which a transmission owner can recover, or attempt to recover, its revenue requirement associated with transmission facilities turned over to the ISO's operational control. The selected mechanism will depend on whether the Project Sponsor is a PTO or not and, if a PTO, whether the transmission facility constitutes a network facility or an LCRIF. Figure 8-1 illustrates the three mechanisms.

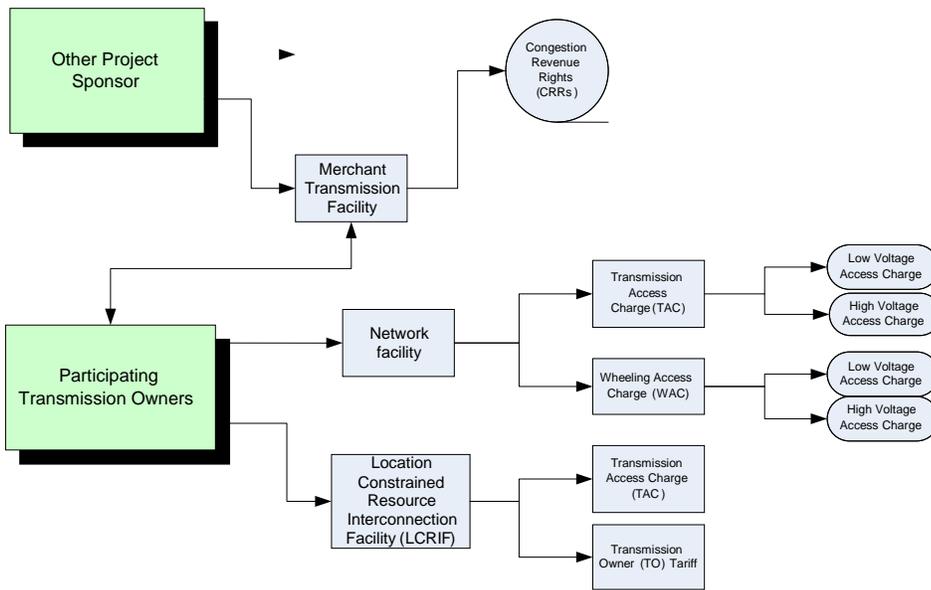


Figure 8-1: Mechanisms for Cost Allocation

## 8.1 Merchant Transmission Facility

ISO Tariff Section 24.14.3

A Project Sponsor may elect to fund and construct a Merchant Transmission Facility. In this case, the Project Sponsor does not seek to recover the cost of the Merchant Transmission Facility transferred to the ISO's Operational Control through the ISO's Access Charge and Wheeling Access Charge or other regulatory cost recovery mechanisms. Instead, the Project Sponsor of a Merchant Transmission Facility seeks an allocation, at the Project Sponsor's election, of either CRR Options or Obligations that reflect the contribution of the facility to grid transfer capacity. The conditions for receiving CRRs, for determining of the quantity of CRRs to be allocated, and for determining potential revenue from allocated CRRs, are set forth in Section 36.11 of the ISO tariff and the BPM for Congestion Revenue Rights, located at <http://www.caiso.com/1840/1840b23c226f0.html>.

## 8.2 PTO Transmission Facility

ISO Tariff Section 24.14.2

A facility found to be needed and constructed by a PTO for transfer to the ISO's Operational Control will be either a network transmission upgrade or addition, or a Location Constrained Resource Interconnection Facility.

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### 8.2.1 Network Transmission Facilities- PTO Cost Recovery

A PTO's recovery of costs for facilities turned over to the ISO Operational Control begins with its FERC-approved Transmission Revenue Requirement (TRR). The TRR is comprised of the total annual authorized revenue requirements associated with such network transmission facilities and Entitlements. The TRR includes the costs of transmission facilities and Entitlements and deducts Transmission Revenue Credits, credits for Standby Transmission Revenue, and the transmission revenue expected to be actually received by the PTO for Existing Rights and Converted Rights. The remainder of the PTO's Transmission Revenue Requirement is intended to be recovered through a combination of the ISO's Transmission Access Charge (TAC) or Wheeling Access Charge (WAC).

The TAC is a charge paid by entities serving Load on the transmission and distribution systems of the PTOs under the ISO's Operational Control. The TAC includes the High Voltage Access Charge for facilities at 200kV and above, the Transition Charge and the Low Voltage Access Charge. The Low Voltage Access Charge is collected by each PTO under its Transmission Owner tariff, based on the transmission revenue requirement associated only with its own low voltage transmission facilities and Entitlements. The details of the High Voltage Access Charge and Transition Charge are set forth in Section 26 of the ISO tariff and Appendix F, Schedule 3.

The WAC is a charge assessed by the ISO that is paid by a Scheduling Coordinator for Wheeling in accordance with Section 26.1. Wheeling can be in the form of a Wheel Out or Wheel Through. The former is defined as the use of the ISO Balancing Authority Area for the transmission of energy from a Generating Unit located within the ISO Balancing Authority Area to serve a Load located outside the transmission and distribution system of a PTO, except for Energy utilizing an Existing Contract. On the other hand, a Wheel Through is the use of the ISO Balancing Authority

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Area for the transmission of Energy from a resource located outside the ISO Balancing Authority Area to serve a Load located outside the transmission and distribution system of a PTO, except for Energy utilizing an Existing Contract. The WAC may also consist of a High Voltage Wheeling Access Charge and a Low Voltage Wheeling Access Charge. The details of the WAC are set forth in Section 26 of the ISO tariff and Appendix N, Part F.

### 8.2.2 LCRIF

PTOs finance the up-front costs of constructing LCRIF. The recovery of costs for such facilities comes from two sources. First, the costs of any unsubscribed capacity of qualifying LCRIFs will be rolled into the ISO's TAC, similar to a network transmission facility. As generation resources are developed in the area and connect to the LCRIFs, cost recovery will be transferred on a going forward, *pro rata* basis to those new generation owners, and the costs included in TAC will be reduced accordingly. Once the anticipated generation is fully developed and the capacity of the LCRIF fully subscribed, the going forward costs of the project will be borne entirely by generation developers and will not be included in the TAC. Thus, the costs associated with the unsubscribed portion of the LCRIF will be included in TAC, until additional generators are interconnected, at which time costs will be assigned to such generators.

## 9. TPP Public Processes

The ISO's costs of conducting its TPP and producing the annual comprehensive Transmission Plan are generally recovered through the ISO's Grid Management Charge (GMC). The GMC consists of charge codes assessed monthly to participating Scheduling Coordinators for the purpose of recovering all of the ISO's administrative and operating costs. GMC rates are calculated as set forth in Section 11 and Appendix F of the ISO tariff. The formula rate methodology provides Market Participants with the financial security of predictable GMC pricing, while ensuring that the ISO is able to recover its actual costs in a timely manner. The charges are shown as a monthly charge on the Settlements Statements for the last day of each month, with billable quantities being published on daily statements where applicable. A detailed discussion of GMC is beyond the scope of this BPM. For more information on GMC please see:

- Section 11 of MRTU Tariff - <http://www.caiso.com/1c40/1c407ff21c570.html>
- BPM for Settlements and Billing - <http://www.caiso.com/17ba/17baa8bc1ce20.html>
- Structure of GMC under MRTU - GMC <http://www.caiso.com/1872/18728fb96b370.html>

To the extent that a proposed transmission project, or High Priority Economic Planning Study, is accepted by the ISO for evaluation as part of the Study Plan, the costs of those activities will typically be borne, based on the division of responsibilities, either by the ISO and recovered through existing GMC procedures and practices or by the third party assigned or accepting responsibility for the study task under the Study Plan in accordance with that entity's tariff authority. Participants in the TPP will be financially responsible for costs incurred in participating in the TPP, including activities in support of the ISO or PTO evaluations. Further, the cost responsibilities of performing Interconnection Studies are governed by the ISO's LGIP or SGIP tariff language.

However, there is an exception to the foregoing. Where a requested Economic Planning Study is not selected for High Priority status, and therefore is not included by the ISO in the Study Plan, the study requestor may nevertheless conduct the study in coordination with the ISO. The ISO's costs of assisting the third-party requestor to conduct its own Economic Planning Study will be the responsibility of the study requestor, and such party will be asked to enter into a study agreement with the ISO. Further, the ISO intends to evaluate the need to develop terms and conditions under which participants of projects included in the Study Plan would be required to contribute or otherwise pay for the cost of specific tasks or elements of the TPP. If necessary, this cost recovery process is expected to be restricted to a "time and materials" basis.

## 10. The TPP Public Processes and Access to Information

### 10.1 TPP Public Processes

The ISO initiates and coordinates a minimum of four annual meetings that are open to the public as part of the TPP. The ISO may in its sole discretion arrange additional public meetings (e.g., a meeting to discuss preliminary study results). Meetings that are open to the public will be held to 1) facilitate development of the Unified Planning Assumptions and Study Plan; 2) review preliminary results of technical analyses and PTO reliability project request window submissions; 3) provide an update on the status of the preliminary comprehensive Transmission Plan and study results that have become available since the August 15 posting; and, 4) present the draft ISO comprehensive Transmission Plan and announce approved projects.

All public meetings are open to TPP Participants and other interested parties. In each case, notice of the meeting will be given a reasonable time prior to the scheduled meeting through Market Notices and will be included in the ISO event calendar found on the ISO Website. Entities can subscribe to Market Notices through the ISO Website at <http://www.caiso.com/docs/2005/10/12/2005101209381421288.html>. Teleconference and/or web conference services also will be provided for all meetings. Further, all interested parties will be allowed to subscribe to any ISO TPP e-mail service that also will provide notice of TPP activities, including the publication of draft and final Unified Planning Assumptions and Study Plans, technical study results, comprehensive Transmission Plans, and other transmission planning reports. Interested parties can subscribe to the ISO TPP e-mail service by contacting [regionaltransmission@caiso.com](mailto:regionaltransmission@caiso.com).

In addition, the ISO will include on the calendar of events maintained on the ISO Website a schedule of the public meetings conducted jointly between the ISO and any PTO or third party, as well as other relevant meetings of the CEC, CPUC, sub-regional, and regional planning groups.

For all events relating to the TPP, interested parties will have the opportunity to submit comments on documents relevant to the meeting, and upon the meeting itself. Generally, comments from TPP participants shall be submitted to [regionaltransmission@caiso.com](mailto:regionaltransmission@caiso.com). The ISO shall incorporate comments in subsequent planning activities and decisional items relating to those activities. In the case of decisional items (i.e. adoption of final a Study Plan or final comprehensive Transmission Plan), the ISO will indicate the manner in which it responded to such comments.

Established ISO public meeting process protocols and standard guidelines for market notices, document postings, and the format of the public meetings will be applied to all TPP public meetings.

- Market notices to announce the public meetings will be sent out at least 3 weeks prior to the meeting.
- The draft documents to be discussed during the public meetings will typically be posted no later than 1 week before the meeting. Consequently, interested parties can anticipate the posting of the draft Study Plan, ISO study results, and the draft comprehensive ISO Transmission Plan on ISO website at least 7 days before each public meeting

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## 10.2 Access to Transmission Planning Process Information

### ISO Tariff Sections 20.2 and 20.4

The ISO provides access to non-confidential information related to the TPP, including data, assumptions, decision criteria, study methodologies, and results to all TPP Participants through the Study Plan, interim study reports, study manuals, the comprehensive Transmission Plan, and relevant BPMs. Public documents related to the TPP will be posted to the ISO Website mainly under the regional Transmission webpage. The ISO webpage also will provide links to the websites of relevant transmission planning entities including, but not limited to, the CPUC, CEC, and those entities listed in Section 5.1 of this BPM.

The ISO will attempt to minimize the instances in which the TPP requires the use of confidential information that has been specifically designated as such by the provider of the information. Nevertheless, the ISO shall maintain the confidentiality of information when:

- The information relates to procurement of resources submitted by LSEs under Sections 24.2.3.2 and 24.2.3.3 of the ISO tariff (ISO tariff Section 20.2(h)(1))
- The release of such information may harm the competitiveness of wholesale markets, as determined by the ISO's Department of Market Monitoring (ISO tariff Section 20.2(h)(2))
- Release of such information may breach existing agreements and contracts, including previously executed Non-Disclosure Agreements (NDA) (ISO tariff Section 20.2(h)(3))
- The information involves third-party developed or other proprietary analysis tools, computer codes, or any other material that is protected by intellectual property rights (ISO tariff Section 20.2(h)(4))
- The information constitutes Critical Electric Infrastructure Information (CEII) in accordance with FERC regulations (ISO tariff Section 20.2(h)(5))

Apart from public information posted to the ISO Website at Transmission Planning, the ISO will post base cases relating to current initiatives the ISO is working on to the Regional Transmission secure webpage. More information on the instructions and qualifications to receive access to the secure webpage can be found at <http://caiso.com/1f42/1f42d6e628ce0.html>.

As part of the application process, entities will be required to comply with the following requirements to gain access to confidential planning information:

- Critical Energy Infrastructure Information may be provided to a requestor where such person is employed or designated to receive CEII by (1) a Market Participant; (2) electric utility regulatory agency within California to receive CEII; (3) an Interconnection Customer that has submitted an Interconnection Request to the ISO under the ISO's Large Generator Interconnection Procedure/Small Generator Interconnection Procedures (LGIP); (4) a developer having a pending or potential proposal for development of a Generation Unit or transmission additions, upgrades or facilities and who is performing studies in contemplation of filing an Interconnection Request or submitting a transmission infrastructure project through the TPP; or (5) a not-for-profit organization representing consumer regulatory or environmental interests before Local Regulatory Agencies or federal regulatory agencies. To obtain Critical Energy Infrastructure Information, the requestor submits a statement as to the need for the CEII, and the requestor executes and returns to the ISO the form of the non-disclosure agreement and non-disclosure statement available on the ISO website under Transmission Planning. The ISO may, at its sole

discretion, reject a request for CEII and upon such rejection, the requestor will be directed to utilize the FERC procedures for access to the requested CEII.

- Information that is confidential under Section 20.2(h)(1) or 20.2(h)(2) may be disclosed to any individual designated by a Market Participant, electric utility regulatory agency within California, or other TPP Participant that signs and returns to the ISO the form of the non-disclosure agreement, nondisclosure statement and certification that the individual is or represents a non-Market Participant, which is any person or entity not involved in a marketing, sales, or brokering function as market, sales, or brokering are defined in FERC's Standards of Conduct for Transmission Providers (18 C.F.R. § 358 et seq.) except that information provided to ISO pursuant to 20.2(h)(2) will be provided only in composite form so that information specific to individual LSEs will not be disclosed and
- Data base and other transmission planning information obtained from WECC may be disclosed to individuals designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder in accordance with the procedures set forth as follows:
  - A TPP Participant that is a member of WECC and that requests the WECC planning data base: (i) shall execute the Non-Disclosure Agreement which is available on the ISO website under Transmission Planning and (ii) shall provide to the ISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the TPP Participant and by each employee and consultant of the TPP Participant who will have access to WECC planning data base.

A TPP Participant who is not a member of WECC and requests the WECC planning data base: (i) shall execute the Non-Disclosure Agreement attached to this BPM, (ii) shall provide to the ISO a fully executed WECC Non-Member Confidentiality Agreement for WECC Data, and (iii) shall provide to the ISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the TPP Participant and by each employee and consultant of the TPP Participant who will have access to the WECC planning data base.

## 10.3 Additional Planning Information

ISO Tariff Section 24.8

### Information Provided by PTOs

In addition to information that must be provided to the ISO pursuant to the NERC Reliability Standards, PTOs shall provide to the ISO any information and data reasonably required by the ISO to conduct the TPP, including, but not limited to:

- Power flow modeling
- A description of total demand to be served from each substation, including energy efficiency programs
- Interruptible loads reflected in total demand
- Generating units to be interconnected to the distribution system
- Detailed power system models of PTO power systems

- Distribution system modification
- Transmission network information

#### Information Provided by Participating Generators

In addition to information that must be provided to the ISO pursuant to the NERC Reliability Standards, Participating Generators shall provide to the ISO on an annual or periodic basis any information and data reasonably required by the ISO to conduct the TPP, including, but not limited to:

- Modeling data for short circuit and stability analysis
- Data and status of any environmental or land use permits or agreements, the expiration of which may affect the operation of the Generating Unit

#### Information Provided by Load Serving Entities

In addition to information that must be provided to the ISO pursuant to the NERC Reliability Standards, the ISO shall solicit from Load Serving Entities, through their Scheduling Coordinators, any information and data reasonably required by the ISO to conduct the TPP, including, but not limited to:

- Long-term resource plans
- Existing long-term contracts for resources and transmission service outside the ISO BAA
- Demand forecasts, including energy efficiency and demand response programs

#### Information Provided by Planning Groups, BAAs and Regulators

The ISO shall solicit from interconnected BAAs, regional and sub-regional planning entities, the CPUC, CEC and Local Regulatory Authorities information and data reasonably required by the ISO to conduct the TPP, including but not limited to:

- Long term transmission system plans
- Long term resource plans
- Generation interconnection process information
- Demand forecasts
- Any other data necessary for the development of power flow, short-circuit and stability cases over the ISO planning horizon

#### Obligation to Provide Updated Information

If material changes occur to the information provided to the ISO pursuant to tariff Section 24.8, the providers must advise the ISO of such changes.

## 11. Dispute Resolution Process

### ISO Tariff Section 13

The Alternative Dispute Resolution (ADR) Procedures set forth in Section 13 of the ISO tariff apply to all disputes arising under ISO Documents, including those related to the TPP. The ADR Procedures can be found at <http://www.caiso.com/1bcc/1bcc775734780ex.html>. The ADR Procedures provide for a three-tier process, progressing from negotiation to mediation to arbitration. Both substantive and procedural disputes arising from the TPP will be addressed through the existing ADR Procedures.

## 12. Attachment 1

### *Template - Study Plan in ISO Transmission Plan*

#### **Section 1: Objectives**

- What this transmission planning effort attempts to achieve
- Roles and responsibilities of each entity contributing to each comprehensive Transmission Plan component.

#### **Section 2: Summary of ISO Planning Process**

- Overview of coordination process
- Schedules of all meetings open to the public and other related activities
- Scope of each meeting
- Options available for participation by interested parties in the meetings, such as in-person, conference call, Webcast, etc.
- Location where information such as planning assumptions or other related documents will be available for interested parties
- Instructions for interested parties to receive notifications or communicate or provide comments to ISO
- Contact persons and contact information of
  - Overall planning process
  - Subject matter experts (SME) for each technical study

#### **Section 3: Planning Data**

- Load forecast – Source of the load forecast, amount, and detailed methodology if original load is adjusted to the scope of each study
- Generation assumptions – Source of new generation data and list of new generation projects modeled in the study
- Generation retirement – Source of generation retirement data, list of generation retirement modeled in the studies
- Transmission projects – Source of transmission project information and list of transmission project modeled in the studies
- Import – Source of Import data, amount of import modeled, and methodology to determine the import (e.g., Import Allocation Methodology)
- Project proposals and study requests received during the Request Window

#### **Section 4: Planning Studies**

- List of all planning studies to be done in each comprehensive Transmission Plan
- Each study defines:
  - The objective the study tries to achieve
  - The study assumptions (e.g., study year, planning data applied to each study, or any modifications made to original planning data described in Section 4.1.3.)

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- Methodology – Describe how the study will be performed (this may refer to appropriate Business Practice Manuals or documents that have been produced and posted on the ISO website at *[URL to be determined]*)
- Criteria – Reliability or criteria applied to each study, such as NERC/WECC or other standards being used
- Software and Tools – List software and tools for each study
- Entity to perform the study
- Expected study results and location where interested parties may access pages dedicated to the study
- Public meetings or any major activities to be completed in addition to the regular schedules in ISO comprehensive Transmission Plan (if applicable)

**Section 5: Comments, Responses, and Disputes**

- Comments received from interested parties that need to be addressed in the study plan
- ISO responses to the comments
- Records of disputes ISO has received, particularly for the unified planning assumptions and the resolutions through the ADR process

The above template is based on the study plan for the 2008 Transmission Plan that ISO discussed during the meeting, June 11, 2007, available at <http://caiso.com/1f75/1f75d5ea40bd0.html>.

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## 13. Attachment 2

### Detailed NERC Reliability Assessment Studies

The current NERC Reliability Standards related to transmission planning (TPL-001 through TPL-004) define the scope of and deliverables from the technical studies for which each entity is responsible under its compliance obligations related to those standards applicable to the entity's registration. The requirements apply to the annual assessments to be conducted by the ISO and PTOs. These general requirements, such as types of technical studies, study scenarios, modeling in the base cases and the study results, are described in Sections A.1 through A. 7, below.

#### A.1. Types of Technical Studies

In each assessment, power flow, voltage stability, and transient stability studies must be conducted to demonstrate that system performance meet or exceed the criteria as identified in Table I of the effective TPL standards. The technical studies must evaluate impacts to the system under system normal and under Category B, C and D contingency conditions.

#### A.2. Study Areas

Due to the differences in load patterns and local area peaking, the technical studies will be performed on the following 11 study areas throughout ISO balancing authority area:

1. PG&E Humboldt peak (non-coincident peak)
2. PG&E North Coast and North Bay peak (non-coincident peak)
3. PG&E North Valley peak (non-coincident peak)
4. PG&E Central valley (non-coincident peak)
5. PG&E Greater Bay Area (non-coincident peak)
6. PG&E Central Coast and Los Padres (non-coincident peak)
7. PG&E San Joaquin Valley (non-coincident peak)
8. Entire PG&E area coincident peak (represents all of Northern California)
9. Entire SCE area coincident peak
10. Entire SDG&E area coincident peak
11. Entire Southern California (ISO Control Area) coincident peak

#### A. 3. Frequency of the Assessment

The assessment must be made annually.

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**A. 4. Study Years**

For the extreme contingency (Category D) studies, the study must be conducted for the near-term (each year: Years One through Five). For the study under system normal, Category B, and Category C contingencies, both the near term (each year: Years One through Five) and long-term (each year: Years Six through Ten) must be studied unless changes to system conditions do not warrant such analyses.

**A.5. Study Scenarios**

The technical studies must cover critical system conditions and be performed for selected demand levels over the range of forecasted system demand. In general, the summer peak scenarios with appropriate stressed -path flows must be studied for each study area. Additional scenarios can be studied if they are needed to ensure a complete planning analysis. The list of study scenarios, MW demand forecasts, and the stressed -path flows will be documented in the Study Plan of each year’s comprehensive Transmission Plan.

**A.6. Base Cases and Contingencies Being Studied**

The standards also require certain components must be included in the studies and need to be documented for auditing purposes. Table 1 lists these modeling requirements and descriptions of contingencies according to the current TPL 001 through TPL 004 standards.

**Summary of Modeling Requirements**

Requirements	Apply To
Have established normal (pre-contingency) operating procedures in place Category A study.	Category A Study
All Category B contingencies must be studied and mitigations proposed for those that would produce severe System results or impacts. The rationale for the contingencies selected for evaluation shall be available as supporting information. An explanation of why the remaining simulations would produce less severe system results shall be available as supporting information.	Category B Study
Consider all possible C contingencies. Perform studies and evaluate those Category C contingencies that would produce the more severe system results or impacts. The rationale for the contingencies selected for evaluation shall be available as supporting information. An explanation of why the remaining simulations would produce less severe system results shall be available as	Category C Study

supporting information.	
Consider all possible D contingencies but studies must be performed and evaluated only for those Category D contingencies that would produce the more severe system results or impacts. The rationale for the contingencies selected for evaluation shall be available as supporting information. An explanation of why the remaining simulations would produce less severe system results shall be available as supporting information.	Category D Study
Have all projected firm transfers modeled.	Category A, B, C and D Studies
Include existing and planned facilities; transmission facilities that have been approved by the ISO and applicable generation projects that have been approved by regulatory agencies.	Category A, B, C and D Studies
Include Reactive Power resources to ensure that adequate reactive resources are available to meet system performance.	Category A, B, C and D Studies
Include the effects of existing and planned protection systems, including any backup or redundant systems.	Category B, C and D Studies
Include the effects of existing and planned control devices Category B, C, and D studies.	Category B, C and D Studies
Include the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed.	Category B, C and D Studies

### A.7. Study Results and Mitigation Plans

The ISO and PTO must demonstrate that the portion of system under their respective responsibilities meets the requirements identified in the Table 1 of TPL reliability standards. Therefore, both the ISO and PTOs shall consistently document the following information in their respective study reports:

1. For the study under system normal and Category B and Category C contingencies, the study results list all study scenarios, identify where system performance criteria has not been met, and identify the associated mitigation plans.
2. For the studies under Category D contingencies, the study results must show the evaluation for the risks and consequences of each extreme contingency.

3. Where system performance criteria has not been met, the study results must elaborate on the conditions associated with the identified performance issue (e.g., study year occurs in, season, contingency that triggered the problem, special protection system that has been modeled, limiting facility or limiting conditions).
4. For the proposed mitigation plans, must provide:
  - a. A written summary of its plans to achieve the required system performance as described above throughout the planning horizon;
  - b. Schedule of implementation;
  - c. Discussion of expected required in-service dates of facilities;
  - d. Consider lead times necessary to implement plans. Review, in subsequent annual assessments where sufficient lead-time exists, the continuing need for identified system facilities. Detailed implementation plans are not needed.