Integration of Transmission Planning and Generation Interconnection Procedures

(TPP-GIP Integration)

Revised Straw Proposal

September 12, 2011

Market and Infrastructure Development

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1 Introduction

The present initiative continues the effort begun in 2010 to better integrate the transmission planning process ("TPP") and the generation interconnection procedures ("GIP"). Until 2010 these two processes were essentially separate and parallel, each having its own study processes and assumptions, criteria for determining which transmission additions and upgrades should be built, and project funding and cost allocation provisions. Yet both processes have been vehicles for developing and ultimately constructing substantial amounts of costly grid infrastructure, with little provision for coordination between the two. Having two separate tracks has been workable in the context for which they were designed, where the TPP and GIP only needed to respond to relatively steady, predictable growth in load and incremental changes to the supply fleet. But these design assumptions have been overturned in recent years with California's adoption of ambitious environmental policy mandates. The state's renewable energy requirements call for dramatic changes to the supply fleet within a decade, and have thus triggered a wave of commercial activity to build renewable resources and exposed the need to revise the TPP and the GIP to enable the ISO to plan grid infrastructure most effectively and efficiently to support the new policy mandates.

The ISO originally proposed to address the present topic in the context of the GIP-2 initiative,[1] in which Work Group 1 was formed to address two issues: (1) consideration of an economic test for GIP-driven network upgrades whereby interconnection customers could be required to pay a share of the upgrade costs without reimbursement by ratepayers, and (2) clarification of an interconnection customer's cost and credit requirements when GIP-driven network upgrades are enhanced through the TPP. The ISO and the GIP-2 participants soon realized, however, that addressing these issues effectively would require more time than the GIP-2 schedule provided, and a broadening of the topic as indicated by the title of the present paper. The ISO therefore decided to create a separate stakeholder initiative, with an expanded but still aggressive timetable, to integrate aspects of the TPP and GIP to form a more comprehensive, holistic approach to transmission development that would address the two issues just mentioned and would achieve the other objectives stated in section 4 of this paper.

[1] The ISO's Issue Paper beginning the GIP-2 initiative was released on February 24, 2011 and can be found here: http://www.caiso.com/Documents/IssuePaper-GenerationInterconnectionProceduresPhaseII.pdf

The ISO intends to complete this stakeholder initiative during the fourth quarter of this year and present a proposal to its Board of Governors for approval in December. Toward that end the ISO released an initial straw proposal on July 21, 2011, held a stakeholder meeting to discuss that proposal and received a round of written comments from stakeholders. Based on the discussion of that straw proposal, additional review of the practices of the other ISOs and further deliberation within the ISO, the ISO now offers this "revised straw proposal" to continue the effort toward a final proposal for presentation to the Board in December. Like the previous straw proposal, this revised straw proposal is not worked out in all details, and does not conclusively address all the issues stakeholders raised in their comments. It does, however, move the effort forward substantially by addressing many of the practical and policy concerns raised previously, by offering what the ISO believes is a workable structure for the more integrated TPP-GIP process, and by expanding both the scope and the assessment of design options in particular areas where potentially viable alternative approaches exist.

The rest of this paper is organized as follows. Section 2 lays out a timetable for the initiative, with dates for key stakeholder activities. Section 3 provides background on the issues, drawing on the discussion of these issues earlier this year in the GIP-2 initiative and responding to some of the stakeholder comments on the previous straw proposal. Section 4 states the objectives for the initiative. Section 5 lays out the revised straw proposal, including design options in some key areas, and begins to assess the relative merits of the options. Section 6 offers a transition approach whereby the new TPP-GIP might be applied to existing GIP clusters 1-4. Finally, section 7 provides an overview of the approaches used by the other ISOs.

2 Stakeholder Process

- July 21 – ISO posts Straw Proposal – COMPLETED
- July 28 – stakeholder meeting at ISO – COMPLETED
- August 4 – stakeholders' written comments due – COMPLETED
- September 12 – ISO posts Revised Straw Proposal – COMPLETED
- September 19 – stakeholder meeting at ISO
- September 26 – stakeholders' written comments due
- October 18 – ISO posts Draft Final Proposal
- October 25 – stakeholder meeting at ISO
- November 1 – stakeholders' written comments due
- December 15-16 – ISO Board meeting
- Early January 2012 – File proposal and tariff revisions at FERC.

To meet the schedule objective of filing this proposal with FERC early in January 2012, the ISO will begin in December to develop the required tariff language, and will provide a schedule for stakeholder participation in that process in the near future.

3 Background

This initiative grew out of two topics originally identified for Work Group 1 of this year's GIP-2 initiative, which were intended as a continuation of the effort begun in 2010 to better integrate the ISO's generation interconnection procedures ("GIP") and the transmission planning process ("TPP"). Until 2010 these two processes were essentially separate and parallel with little coordination between the two. This did not present a problem in the context of relatively steady, predictable growth in load and incremental changes to the supply fleet. But with California's adoption of ambitious environmental policy mandates that called for dramatic changes to the supply fleet within a decade, developers of new generation launched a wave of renewable project activity which quickly exposed the need to revise both the GIP and the TPP to enable the ISO to plan transmission efficiently to accommodate these rapid changes.

Two important developments occurred during 2010 that recognized these new needs and made substantial progress towards integrating the GIP and TPP. First, the ISO conducted the revised transmission planning process ("RTPP") initiative, which culminated in FERC's December 16, 2010 order approving the ISO's filed RTPP proposal. The ISO's newly approved TPP features three new elements explicitly relevant to GIP-TPP integration.

- The new TPP created a "public policy-driven" category of transmission elements that enables the ISO to identify and approve additions and upgrades needed to meet state and federal policy requirements and clearly delineates these upgrades from the existing categories of transmission. This TPP innovation derived from the recognition that the driver of the majority of new transmission over the next decade would be California's mandate to meet 33 percent of its electricity demand from renewable resources by 2020 (the "33% RPS"), and that the traditional reliability and economic project categories would not provide a sufficient basis for planning needed upgrades. Notably, in its order on the RTPP FERC expressed the view that the policy-driven category could and should obviate the need for many GIP-driven upgrades.
- The new TPP provides explicit provisions to reevaluate significant network upgrades that are identified in GIP Phase 2 cluster studies but not yet set forth in executed LGIAs, to determine whether enhanced or alternative transmission facilities could meet the needs of the interconnection customers more cost-effectively while addressing other grid needs at the same time.

- The new TPP requires the ISO to produce an annual comprehensive plan that addresses all categories of needs for the ISO balancing authority area ("BAA"), including the new public policy-driven transmission needs in addition to the traditional reliability and economic needs. Once the comprehensive plan goes to the ISO Board and receives Board approval, the ISO conducts a competitive solicitation process for independents and incumbents to build and own rate-based policy-driven and economic projects.

The second key development was the ISO's 2010 GIP stakeholder initiative (now referred to as "GIP-1" since the recently-concluded 2011 initiative was called "GIP-2"). Among other reforms to streamline the GIP, the GIP-1 initiative created a multi-year timeline with specific interface points between the GIP and the TPP. Specifically, the GIP-1 established an annual cycle for the next several rounds of cluster windows for submission of interconnection requests and the associated GIP Phase 1 and Phase 2 cluster studies, such that the Phase 2 cluster studies would feed into the TPP each year approximately in August, and transmission upgrades and additions approved by the Board in the comprehensive transmission plan would feed into the assumptions of the GIP cluster study process each year approximately in March. One result of the coordination of GIP and TPP timing developed in the GIP-1 is that it will support the further integration of the GIP and the TPP as described below.

Prior to the decision to create the present initiative on its own track, the GIP-2 initiative identified two interrelated topics to be the focus of GIP-2 Work Group 1: (1) consideration of an economic test for GIP-driven network upgrades whereby interconnection customers could be required to pay a share of the upgrade costs without reimbursement by ratepayers, and clarification of an interconnection customer's cost; and (2) specifying an interconnection customer's cost and credit requirements when GIP-driven network upgrades are enhanced through the TPP (a new capability that was adopted in the ISO's 2010 revised TPP).

In the tariff filing submitted in compliance with Order 2003, the ISO proposed, on an interim basis, to reimburse interconnection customers on a cash basis until such time as its nodal market was implemented and the market for financial transmission rights (i.e., CRRs) was established. The ISO further proposed, in order to encourage efficient generation location decisions and efficient transmission planning during this interim period, an economic test for GIP-driven network upgrades that would enable the ISO to allocate some costs of the upgrades above a certain threshold to interconnection customers. In its order on the ISO's filing FERC rejected the proposed economic test on the grounds that the ISO did not provide sufficient details for the Commission to evaluate it. FERC's rejection was "without prejudice," meaning that the ISO could resubmit, and FERC would consider, an economic test as an amendment to the LGIP at a later time based on the ISO's provision of additional details and specificity.

Importantly, FERC's order did not indicate any fundamental disagreement with the need for or appropriateness of an economic test.[2]

Some parties commenting on the previous straw proposal asserted that a proposal to require interconnection customers to bear costs for network upgrades and not be reimbursed by transmission ratepayers would be in conflict with FERC's Order 2003. The ISO's assessment of this question has determined, however, that requiring interconnection customers to pay all or a portion of the costs of network upgrades without reimbursement by ratepayers is consistent with Order 2003 and with the approaches taken by other ISOs/RTOs (described in section 7 of this paper). In Order 2003 the Commission recognized that ISOs/RTOs should be given an "independent entity variation" from the general requirement imposed on non-independent transmission owners to reimburse generators on a dollar for dollar basis for network upgrades that provide benefits to all customers. Because ISOs/RTOs, as independent entities, have few incentives or opportunities to discriminate against generators, the Commission gave them flexibility to design alternative cost recovery mechanisms, such as PJM's firm transmission rights (FTRs) that were being given to interconnection customers as compensation for network upgrades at the time Order 2003 was issued.[3]

FERC has reiterated this point in its recent order accepting MISO's Multi Value Project (MVP) generation interconnection amendment. FERC noted that:

> Several parties challenge the GIP cost allocation methodology on the ground that the benefits of the Network Upgrades are not commensurate with the costs that the parties must bear. We disagree. The Commission explained in Order No. 2003 that independent system operators such as Midwest ISO have discretion to propose an appropriate cost allocation methodology for interconnection-related network upgrades, including providing interconnection customers with capacity rights made feasible by such projects. *We note that Filing Parties' [Midwest ISO and others] proposal does not alter the Tariff provision regarding an interconnection customer's entitlement to Financial Transmission Rights for costs not repaid.*[4]

Now that the ISO's nodal market and CRR process have been implemented, the ISO proposes to replace its "interim" reimbursement mechanism with a permanent network upgrade cost recovery mechanism that will provide ratepayer funding for certain network upgrades consistent with policy determinations made in the transmission planning process, and CRRs for network upgrades needed in addition to facilities in the comprehensive plan to be funded by

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[2] See Order Accepting in Part and Rejecting in Part Order Nos. 2003,2003-A, and 2003-B Compliance Filings, California Independent System Operator Corporation 112 FERC ¶ 61,009 at P 102-115 (July 1, 2005).

[3] *Standardization of Generation Interconnection Agreements and Procedures*, Docket No. RM02-1-000: "Order 2003"; 104 FERC ¶ 61,103 at Par. 700 (2003).

[4] *Midwest Independent System Operator, Inc.* 133 FERC ¶ 61,221, at P 333 (2010)[Italics added.]

interconnection customers. The ISO's current revised straw proposal on this topic, like the previous straw proposal, does not follow the structure of the economic test proposed in the ISO's Order 2003 compliance filing. At that time, the ISO proposed to limit ratepayer exposure to potentially excessive GIP-driven network upgrade costs by setting a cap on the costs ratepayers would reimburse to the interconnection customer (IC) and requiring the IC to be responsible for costs above the cap. The ISO and the stakeholders did not, at that time, anticipate the new drivers of change described above and the need to integrate the GIP more closely with the TPP. But now, in view of the impacts of the state's environmental policies and the reforms completed thus far, the ISO believes that more is needed than simply to renew the 2006 proposal concept and try to refine it to address the concerns FERC expressed in its order rejecting that proposal. Instead, the ISO intends this initiative to create a GIP and TPP framework that can meet the requirements of the new policy context in a holistic manner while at the same time providing some bounds to ratepayer exposure for large network upgrades driven by generation interconnection requests. As such, section 5 of this revised straw proposal describes a workable framework for a more integrated process, and provides some options for how certain specific elements of that process might be designed.

Clearly, the implementation of a significant change in the cost allocation paradigm for GIP-driven network upgrades as is proposed here requires that we address the transition to the new paradigm. Section 6 of this revised straw proposal presents the ISO's current thinking regarding how the new framework might apply to the existing GIP queue. The ISO intends to provide additional discussion of its transition proposal at the September 19 stakeholder meeting.

4 Objectives

In the previous straw proposal the ISO identified six key objectives for this initiative, plus a seventh objective comprised of a tentative list of open issues from prior GIP initiatives that may be suitable for inclusion in the current scope.

In their written comments parties generally supported the listed objectives, although some expressed a desire to clarify stated objectives or add new objectives. For example, some parties stated that the costs of overbuilding transmission are outweighed by the benefits, which led them to question the merits of objective 4 (i.e., to limit the potential exposure of ratepayers to the costs of inefficient or under-utilized transmission). Many parties sought additional clarity on how objective 5 could be achieved, i.e., how the coordination between the CPUC and the ISO under this initiative would be able to increase the certainty of siting approval for network upgrades at the CPUC. Numerous parties stated that the ISO should include as an additional objective the development of a method by which non-viable projects are removed from the

interconnection queue. (The ISO agrees that there is need for focused activity in this area, and is conducting a parallel effort to remove non-viable and non-active interconnection projects from the queue in accordance with existing tariff provisions. This parallel effort is not within the scope of the present initiative, however.) Lastly, numerous parties argued that the ISO needs to create a path to expedite the interconnection process, particularly for projects with PPAs, and should make this an explicit objective.

With regard to the list of previously-identified open GIP issues, parties seemed to agree that items 7a-g need to be resolved. Parties disagree, however, about the priority level that should be applied to each of these issues. For example, several parties support resolving these issues only if doing so does not slow the TPP-GIP integration initiative. Parties differed on the relative importance of modifying the restudy process within this initiative, whereas there was extensive support for enabling interconnection customers to resize their projects. Lastly, as noted above, there was a great deal of support for removing generation projects from the queue that are not making progress towards completion.

Based on the comments received and the underlying purpose and intent of this initiative, the ISO has retained objectives 1-6, added some clarifying language to objective 5, and reduced the list of open GIP issues under objective 7 and clarified the language for the remaining ones.

1. Integrate the GIP and the TPP as far as possible so that decisions to approve new rate-based transmission can be based on a comprehensive planning approach that addresses all the needs of the transmission system holistically and thereby makes most cost-effective use of ratepayer funding.
2. Rely more on the TPP and less on the GIP as the venue to identify and approve new rate-based transmission. (FERC highlighted this objective in its transmission planning NOPR and its 2010 decisions on the ISO's RTPP filing and the Midwest ISO's transmission planning filing, specifically in the context of its discussion of the public policy-driven category of transmission projects.)
3. Provide incentives through appropriate cost allocation for developers of new resources to select the most cost effective grid locations for interconnection.
4. Limit the potential exposure of transmission ratepayers to the costs of building transmission additions and upgrades that are inefficient or under-utilized.
5. Provide greater certainty to developers of new generation resources that the network upgrades they need will be approved for siting by the CPUC or other siting authorities, by utilizing the ISO's collaboration with the CPUC on portfolio development and the TPP study process to support the need for these upgrades, rather than relying solely on the GIP study process to justify the need for GIP-driven network upgrades. One key aspect of the revised TPP that is relevant to this objective is the least regrets approach for identifying policy-

driven upgrades, which is based on finding the upgrades needed to support multiple feasible resource scenarios.

6. Provide greater transparency for all stakeholders regarding transmission upgrade decisions.
7. Resolve several previously identified GIP issues. The ISO expects that the following list of issues will be addressed in the course of developing the final proposal for this initiative.
    a. Clarify how an IC's funding and posting requirements will be affected when transmission additions and upgrades approved under the TPP provide some or all of its interconnection needs or GIP-driven upgrades are modified through the TPP.
    b. Allow for a plan of service re-study process whereby network upgrade needs can be re-evaluated when earlier ICs drop out of the queue. A related issue is whether the GIP Phase 1 cost cap for an IC should be over-ridden in cases where the re-study results in increased cost of network upgrades.
    c. Design a study process that will yield meaningful results (particularly Phase 1 cost caps) when the volume of MW in the cluster is drastically excessive.
    d. Consider whether to allow additional opportunities in the new TPP-GIP process for ICs to downsize their projects before executing the generation interconnection agreement (GIA).

5 Straw Proposal

5.1 Central Design Concepts

1. As part of the annual TPP the ISO will adopt several alternative resource portfolios for the purpose of identifying policy-driven transmission additions and upgrades. The ISO will develop these portfolios in collaboration with the CPUC and, where appropriate, other state agencies and non-CPUC jurisdictional LSEs that are subject to the same public policy mandates (e.g., the state's 33% RPS by 2020 mandate).
2. The ISO's annual comprehensive transmission plan will include Category 1 and Category 2 policy-driven transmission elements. Once the ISO Board approves the plan, the Category 1 elements to be paid for by transmission ratepayers through TAC and will be built and owned either by a PTO or by an independent transmission developer, pursuant to existing tariff provisions adopted as part of the ISO's 2010 revised TPP.
3. To the extent that transmission approved in the annual TPP comprehensive plan (or previously approved) provides or obviates some or all of the needed transmission upgrades to meet the interconnection request of an IC's project, that project will not be required to fund or post for those TPP approved network upgrades.

4. To the extent the interconnection request of an IC's project cannot be met through the TPP plan and requires additional network upgrades, the IC will be required to fund a share – or potentially all – of the additional network upgrade costs and will not be reimbursed by ratepayers. Comparable to the existing merchant transmission model in the tariff, such funding by the IC would entitle the IC to an allocation of congestion revenue rights (CRRs) reflecting the incremental capacity added to the ISO grid by the upgrades.
5. In the case of "over-subscription" in a GIP study area – i.e., where transmission approved in the TPP comprehensive plan or previously approved partially meets the interconnection needs of projects in a GIP study area but the total MW volume of interconnection requests in that area requires additional upgrades – this proposal specifies a process for determining the extent to which each project in the area will benefit from the ratepayer-funded transmission and will be responsible for a share of the costs of the additional upgrades.
6. In the case where the IC-funded network upgrades in a particular area provide more transmission capacity than is needed to meet the interconnection needs of the current cluster study group, this proposal specifies a process for recovering appropriate shares of the upgrade costs from subsequent IC projects that benefit from the same upgrades and compensating the IC that originally paid for the upgrades for any costs of funding network capacity beyond its interconnection needs.

5.2 Description of the Integrated Process

In the previous straw proposal the ISO presented a three-stage framework: Stage 1 included the GIP request window and study process; Stage 2 included the TPP process to develop the annual comprehensive transmission plan and identify any additional network upgrades needed for the most recent cluster of IC projects that had completed their GIP studies; and Stage 3 included the allocation of the benefits of ratepayer-funded transmission to the interconnection needs of individual IC projects and the allocation of costs for the additional upgrades to specific projects.

In commenting on this structure many stakeholders were supportive of an approach where the TPP is performed first, so that ICs have the results of the TPP to inform key decisions such as where to submit an interconnection request or whether to modify a project in moving from Phase 1 to Phase 2. Some stated the view that this would facilitate generation development in the preferred areas of the grid. Many stakeholders also recognized, however, that the GIP and the TPP are both annual, iterative processes and if timed correctly, GIP and TPP will inform each other. The ISO considered these comments carefully in structuring this revised straw proposal.

Also in the previous straw proposal, the ISO presented two options for how to structure the Stage 1 GIP study process, one along the lines of today's two-phase process (Option 1A), and another with a condensed one-phase process (Option 1B). When asked which of these options best achieves the objectives of better integrating GIP and TPP, many stakeholders favored 1B

based on the anticipated shortening of the total process timeline, while others favored 1A because it offered ICs more decision points. Some pointed out that developers need the ability to right size their projects after getting the Phase I study results. Some stakeholders suggested that we look at ways to separate the deliverability studies from the reliability studies. One common theme to the comments was that no one wants to compromise the accuracy and effectiveness of the study process. In this regard the ISO also considered these comments in developing the present revised straw proposal.

Based on comments from stakeholders and further consideration of the practical mechanics and logistics of the interconnection process, the ISO now offers a revised straw proposal which is based on the existing two-phase GIP study process. This is similar to Option 1A described in the prior straw proposal, with one important process modification. Instead of completing two phases of GIP studies before linking with the TPP as in the Option 1A design, the current proposal is structured so that a TPP cycle is completed during the interval between Phases 1 and 2 for the current cluster, and the final TPP comprehensive plan would inform the decisions of ICs that participated in Phase 1 whether to continue to Phase 2 and would also be assumed in the Phase 2 study.

Thus, under the proposed process the annual comprehensive transmission plan provides a key input between Phase 1 and Phase 2, which we expect each IC would want to consider, along with its Phase 1 results, in deciding whether to continue to Phase 2 at the same project size and deliverability status, or to reduce the project size or downgrade its deliverability status, or drop out of the queue. The Phase 2 study results would then identify the incremental network upgrades needed, beyond the transmission approved in the latest annual comprehensive plan or previously approved, to meet the interconnection needs of the Phase 2 participants, and would provide the cost estimates for those upgrades.

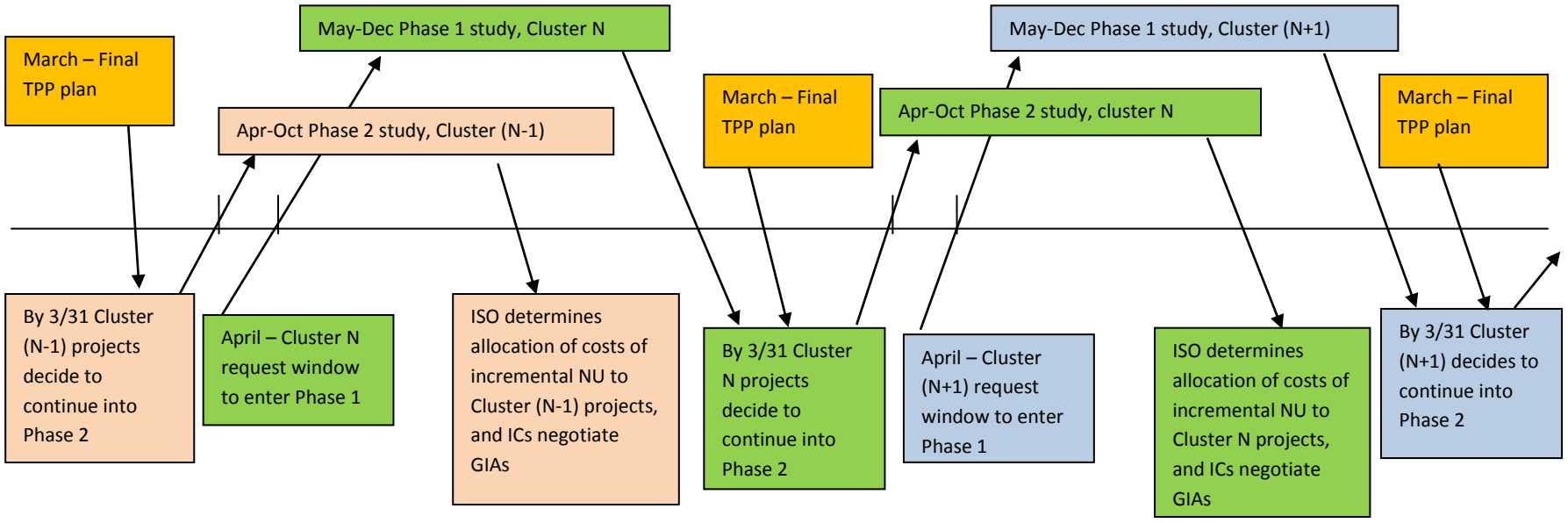
The present revised straw proposal retains for further discussion the options that were identified as 3A, 3B and 3C for “stage 3” of the prior straw proposal and also adds a new option 3F for consideration, as it is not yet clear to the ISO which of these options is preferred. Depending on how this question is resolved, the ISO may need to conduct an additional process step after Phase 2 study results are released to determine how the costs of the incremental network upgrades will be allocated to the IC projects that benefit from those upgrades.

Thus, to align the current proposal with the three stages described in the previous proposal, Stage 1 would consist of the GIP interconnection request window and Phase 1 study process, Stage 2 would consist of the GIP Phase 2 study process, and Stage 3 would be the process for determining the allocation of the benefits of ratepayer funded transmission and cost shares for any IC-funded upgrades for each of the IC projects, as in the previous proposal. The TPP elements of the process would occur in parallel to the GIP, with the completion of the annual

comprehensive TPP plan occurring prior to the decision point for ICs in the current cluster to move from Phase 1 to Phase 2.

The revised straw proposal process and timeline are illustrated in the following diagram.

Proposed Timeline for Integrated TPP-GIP



GREEN boxes indicate the complete GIP cycle for Cluster N, from interconnection request to GIA negotiation

5.2.1 *Main features of the proposed process*

The revised straw proposal tries to change today's GIP and TPP requirements and procedures as efficiently as possible, i.e., to propose changes where needed to meet the objectives of this initiative, but not to redesign the processes any more than necessary to meet the objectives. In particular, the ISO believes that the transmission planning process should not be modified from the RTPP approved by FERC last year, except where clearly necessary to achieve the objectives of this initiative.

1. Two significant changes from today's processes are:
    a. The Phase 2 results will specify the incremental upgrades needed for each study group in addition to the transmission in the final TPP plan that was approved the prior March, and will provide cost estimates for these upgrades. These will be the costs to be paid by ICs without reimbursement.
    b. Subsequent to the Phase 2 study results, the ISO will conduct the procedure for determining which IC projects in each study group will have some or all of their interconnection needs met by ratepayer-funded TPP transmission, as well as the allocation of the costs for the incremental upgrades to the various IC projects that benefit from those upgrades.
2. To describe the assumptions that will go into a Phase 1 study, which starts in May of each year, refer to the diagram and consider the Phase 1 study for cluster (N+1) – the light blue box at top right. Under today's GIP, the Phase 1 study assumes all GIP-driven transmission that has been included in executed GIAs, plus transmission modeled or identified in the most recent prior Phase 1 study that are still needed and the generation projects that require that transmission, plus transmission from the latest comprehensive transmission plan. Under the new approach, however, with ICs responsible for funding some of the incremental transmission coming out of the GIP studies, the ISO believes there will be greater risk that some of this transmission will not be built, and therefore we need somewhat more stringent criteria for including previously identified IC-funded transmission in subsequent cluster studies. The ISO intends this to be a topic of further discussion. This revised straw proposal suggests that the Phase 1 study will assume:
    a. Transmission approved in the most recent comprehensive plan from the TPP;
    b. NU identified in the recently-completed Phase 1 study for cluster N and the associated generation projects, if the NU are still required for the corresponding ICs that have committed to continue to Phase 2 and made the required postings; and
    c. NU identified in the Phase 2 studies for clusters up through (N-1) or in System Impact or Facilities Studies for serially-studied generation projects, and the associated generation projects, if those NU are included in executed GIAs and the corresponding ICs have made all required postings.
3. The Phase 1 study will determine cost caps for IC projects that are somewhat "soft" in the following sense. If Phase 2 results indicate that an IC's cost responsibility for incremental NU is greater than its Phase 1 cost cap, the additional cost of the NU will be covered by

transmission ratepayers up to the point where ratepayers are covering 20 percent of the total cost of the NU. If the total cost of the NU exceeds the Phase 1 cost estimate by more than 20 percent, then ratepayers and ICs will split the total cost in a 20-to-80 percent ratio.

To illustrate, consider the following example. Suppose the Phase 1 study (or Phase 2 study, whichever cost estimates are lower) determines that NU to be paid for by two ICs in a study area will cost $10 million. Thus each IC has a cost cap of $5 million for this NU. As long as the actual final NU construction cost is not greater than $12.5 million, then the cost caps for these customers can be maintained and any cost between $10 and $12.5 million will be allocated to ratepayers. Suppose however that the actual final NU construction cost comes out to be $15 million. In this case, 20 percent or $3 million will be allocated to ratepayers, and each IC will be responsible for $6 million.

4. The Phase 2 study, which begins in April of each year, will assume the transmission approved in the most recent comprehensive plan from the TPP, as well as any IC-funded network upgrades that are included in executed GIAs and for which the IC has made all required postings.

5.2.2 *Allocation of ratepayer-funded transmission and cost shares for IC-funded network upgrades among IC projects*

Following the GIP Phase 2 study process for the current cluster, Stage 3 will implement the procedures and rules for determining the cost responsibility of each IC in the current cluster and for specifying the other related terms and information required for the IC to negotiate and execute its GIA. This revised straw proposal discusses two specific areas: allocating the benefits and costs among IC projects in the current cluster, and compensation by later ICs for shares of the costs of transmission paid for by earlier ICs. The revised straw proposal offers some options for discussion in both of these two areas.

1. Allocation of deliverability among IC projects in the same cluster study area

For purposes of comparing the options, consider an example in which the latest comprehensive transmission plan provides deliverability for 800 MW of new generation in a study area, and there are 1400 MW of IC projects in that area in the current cluster. The question is how to allocate the 800 MW of deliverability among the 1400 MW of IC projects that want to interconnect as full capacity in the same area, and the corollary question, how to allocate the costs of the additional upgrades required to provide the full 1400 MW of deliverability among these projects. This revised straw proposal provided some further discussion of the three possible approaches identified in the previous straw proposal and adds one more option for discussion.

Option 3A. Allocate the 800 MW on a first-come-first-served basis according to each IC's completion of pre-established milestones. If the first, second and third projects to achieve the milestones were 350 MW, 300 MW and 250 MW, respectively, then the first two would receive full capacity deliverability status and the third would receive 150 MW

deliverability as a result of the TPP-approved ratepayer-funded upgrades. The third project would have to fund 16.7% (i.e., 100/600) of the cost of the additional network upgrades to obtain full capacity deliverability status on its 250 MW facility, and other IC projects in the same study area would also have to fund pro rata shares of these costs.

For this approach the ISO requests stakeholder input on how to define appropriate milestones. Milestones will need to be clearly defined and specified to maximize the probability that the projects will be built. For example, it is not clear that having a PPA is a sufficient benchmark to signal "first come" status, because it may not provide sufficient certainty that the project will achieve commercial operation. Though not many stakeholders suggested milestones the ISO should consider if this option is utilized, most of those that did pointed to having a PPA, while others also suggested that generators be able to demonstrate control of the land. Because the goal of this approach would be to create clear determinations of which ICs would have access to the ratepayer-funded portion of the network upgrades and would therefore have significant cost implications for ICs, even with well defined milestones such an approach could prove controversial and subject to debate over which IC customers reached the milestones first. Additionally, this approach requires ICs to pursue further development of their projects in order to achieve the specified milestones, before the IC has any certainty about its ultimate cost exposure for NU.

Option 3B. Allocate pro rata shares of the 800 MW, based on load flow studies, to all IC projects in the study group. Under this approach each project would pay a pro rata share of the cost of the additional network upgrades needed for full capacity deliverability for all 1400 MW in the group. This approach allows all IC customers on a network upgrade to have some portion of their needs met through the ratepayer funded network upgrades. However, if a study area is over-subscribed, it also means that no IC will have all of its upgrade costs covered. Using this approach will benefit some IC projects and harm others. For example, an IC that cannot be built economically unless some portion of the network upgrades are subsidized would benefit, since all IC projects in each study area would obtain some benefit (assuming the TPP identifies transmission to serve that study area). An IC that would not be economical unless all the networks upgrades are subsidized would be harmed, because if there is any over-subscription in the area the IC would have to fund some portion of the upgrades. This approach does not seem to inherently favor or harm any given technology. Additionally, while this approach will likely lead to projects dropping out to avoid paying for network upgrades, it is unclear whether the most viable projects or the least viable projects will drop out first. In order to ensure that viable projects are not the first projects to drop

out, the ISO may need to consider additional deposit requirements from all IC customers in an over-subscribed study area.

Option 3C. Conduct an auction for shares of the 800 MW among IC projects in the study group. The auction payment for each winning project would be held by the ISO until that project achieved commercial operation, and then would be refunded in full plus interest much as we reimburse ICs today for their up-front funding of network upgrades. If a winning IC fails to reach commercial operation, however, then it forfeits its auction payment. All forfeited monies would first be used to reduce the cost of the rate-payer funded portion of the network upgrades. In the unlikely event that forfeited funds exceed the cost of the ratepayer funded network upgrades, then the excess funds would be used to reduce the cost to other ICs in the cluster study area for the incremental IC-funded upgrades. Once a bid is submitted to the auction, it is considered financially binding and therefore each bidder will need to post appropriate security to cover its bid. The auction will occur after Phase 2 GIP studies are completed, but before ICs are asked to make the 30 percent postings normally required after Phase 2. The ISO is also considering, and seeks stakeholder input on, whether there should be a two-tier auction, one tier for smaller IC projects and another for larger projects.

This option allows the ICs to assess the value to their projects of obtaining the use of ratepayer funded transmission to meet their deliverability needs, and should lead to those that projects that are most viable to submit higher bids. However, there is no guarantee there will be sufficient bids in any given study area to result in a competitive auction.

Option 3F. Allocate the deliverability associated with TPP-identified transmission to LSEs and allow the LSEs to select the projects that fill the 800 MW of capacity created by the TPP identified network upgrades. This approach can be seen as analogous to the process whereby LSEs are allocated import capacity on interties for use in meeting their resource adequacy requirements.[5] In that context, it is up to the LSEs to determine how this transfer capacity is utilized to provide deliverability for out-of-state RA resources. TPP-identified network upgrades could be handled in an analogous manner. Further, because a generation project's viability may depend on obtaining a PPA with an LSE, this approach may be comparable in outcome to option 3A based on milestones but much simpler, because the LSEs can directly take account of the availability of capacity for RA deliverability in their PPA decisions. In other words, because a PPA with an LSE will likely be a key determinant of an IC's ability to obtain financing, allowing an LSE to utilize deliverability from ratepayer funded transmission capacity for a particular PPA indicates

[5] See ISO Tariff Section 40.4.6.2.1.

greater commercial viability of the selected project and thereby reduces the potential complication of allocating ratepayer funded transmission to specific IC projects that later fail to achieve commercial operation. It also sends a signal to IC projects that are not chosen that the LSE is unlikely to pursue a PPA.

This approach puts a high weight on an LSE's ability to determine which IC projects are most viable. However, the current success rate of IC projects that have signed PPAs is not completely unambiguous and some might argue that the LSE is not the best party to determine the viability of a project

Stakeholders provided comments on the three options offered in the July 21 straw proposal. Question 5a-d asked stakeholders to offer a preference for option 3A, 3B, or 3C. While not every stakeholder answered these questions, there was still not a consensus regarding which option provided the most reasonable solution. The most stakeholder support was offered for 3A, with 3C as the next most popular. However, fewer than half of the stakeholders that submitted comments expressed a preference for a particular option.

2. Compensation by later ICs that utilize the benefits of upgrades paid for by earlier ICs

For those cases where the IC pays for network upgrades without ratepayer reimbursement through the TAC, the ISO expects that such upgrades would fit the merchant transmission model in the existing ISO tariff. Under this model the upgrades are turned over to ISO operational control, and become part of an existing PTO's system for physical operation and maintenance purposes, while ownership remains with the IC that paid for the upgrades. In return, the IC receives an allocation of "option" CRRs in a quantity that reflects the incremental capacity added to the ISO grid by the upgrades.

Most parties that commented on the issue in the original straw proposal suggested that CRR, though needed, were insufficient to properly compensate merchant transmission investment because CRR do not accurately capture the benefits provided by the new upgrades.

Additionally, there may be situations where network upgrades paid for by one IC in an earlier cluster provide excess capacity that benefits an IC in a later cluster. (This is the "first-mover, late-comer" situation discussed in the context of the MISO approach.) Most parties that commented on this item felt the ISO needs put a mechanism in place that ensures that an investor that pays for network upgrades is properly compensated if later IC customers utilize these network upgrades for interconnection.

As a result of the stakeholder comments and further consideration of this design issue, the ISO agrees that it is appropriate for the proposal to include provisions whereby later-queued generation projects that benefit from IC-funded upgrades compensate the party that originally paid for capacity in excess of its needs. The ISO now offers for further discussion two options,

eliminating Option 3D which limited IC compensation to CRRs, retaining Option 3E and adding a new Option 3G which considers an approach suggested by some stakeholders.

Option 3E. This option assumes that the ICs in a particular study group that requires incremental IC-funded NU will be required to pay the full incremental costs of these NU, even when the NU provide more network capacity than the current study group needs. In this case, later ICs whose projects utilize the transmission capacity of network upgrades paid for by the earlier ICs will reimburse the earlier ICs for a pro rata share of the network upgrade costs.

Option 3G. This option provides for up-front ratepayer funding for a share of the NU costs commensurate with the amount of capacity created by the NU that is in excess of the capacity needed by the IC projects in the study group. In this case, the ICs in the group are required to pay only their pro rata shares of the incremental NU costs that reflect the network capacity actually needed for their interconnection requirements. Then when later-queued projects are found to benefit from this excess capacity, they will be required to reimburse ratepayers for their pro rata shares of the capacity.

5.3 The Logic of the Proposed TPP-GIP Framework

The logic of the proposed end-state framework can be summarized in the following steps. Most of what is described in the first few steps is already specified under the new TPP that was approved by FERC in December 2010 (section 24 of the ISO tariff), but summarized here to provide the planning context for the additional TPP-GIP framework elements described in the later steps.

1. Efficiency in planning new transmission infrastructure will be achieved by identifying and approving new transmission primarily through the TPP, and much less through the GIP than is done today. This change will rely on using the public policy-driven category to its fullest benefit, based a chain of causality that runs from (a) the environmental policy mandate (i.e., 33% RPS), to (b) the development of potentially hundreds of renewable resource projects representing thousands of MW of capacity, to (c) the need to upgrade the transmission system to accommodate the energy output of sufficient resources to meet the RPS target. Importantly, whether one views the driver to be the interconnection requests of the new resources (b), or the underlying public policy (a), the implication is still (c).
2. A crucial step in the new integrated process is the formulation of the resource portfolios that are anticipated, since the identification and approval of policy-driven transmission under the new TPP is driven by the need to enable these portfolios to deliver energy to meet the 33% RPS for load-serving entities (LSEs) within the ISO BAA. Several potentially feasible resource portfolios are formulated at this stage, to reflect the many

uncertainties about how the pattern of resource development will unfold over the next decade. For purposes of this straw proposal we will not discuss the formulation of resource portfolios in any detail – that topic has recently been discussed with stakeholders in the context of the 2011/2012 TPP (i.e., in a public meeting at the ISO on July 8). For now, suffice it to say that this will necessarily involve collaboration of the ISO with the CPUC and potentially other regulatory authorities that govern procurement by their jurisdictional LSEs. The need for such collaboration was evident during the RTPP stakeholder initiative last year, prompting the ISO and CPUC to develop and sign a memorandum of understanding (MOU)[6] to foster collaboration in transmission planning, including the development of resource portfolios.

3. The ISO then conducts a multi-month process, including several phases of stakeholder activity, to develop its annual comprehensive transmission plan. Partway through this process the GIP will complete a Phase 1 study for the current interconnection cluster, assuming the transmission additions and upgrades that were approved in the final comprehensive plan of the prior TPP cycle. The current TPP cycle may consider the results of the Phase 1 cluster study in developing the most cost-effective upgrades to meet the current public policy objectives, but the existing tariff TPP language does not specify any requirements within the TPP with regard to GIP Phase 1 GIP study. Currently the TPP tariff does provide for TPP review of GIP Phase 2 upgrades when they meet tariff-specified thresholds of significant size or cost, but under the new structure proposed in this paper whereby Phase 2 GIP-driven upgrades beyond transmission in the comprehensive plan will be paid for by ICs, it is not clear whether further review of these upgrades in the next TPP cycle would be useful or appropriate.

4. The final TPP plan may include both Category 1 and Category 2 policy-driven transmission elements. This two-category construct is based on having multiple resource portfolios representing potentially feasible patterns of resource development leading to achieving the 33% RPS by 2020. Under this construct, Category 1 policy-driven elements will go to the ISO Board for approval in the current cycle, while Category 2 will be carried over to the next TPP cycle for reconsideration in light of new information about the actual pattern of resource development. The point of creating these two categories is to allow the TPP to balance the competing objectives of developing enough transmission in the right places by the time it is needed to achieve the 33% RPS mandate, and not over-building transmission and causing ratepayers to bear the cost of under-utilized facilities. To accomplish this objective it may be appropriate to modify the current TPP tariff provisions that specify Category 1 and Category 2 elements, to allow

[6] The MOU is available at http://www.caiso.com/2799/2799bf542ee60.pdf

some of the early, low-cost development work on Category 2 elements to begin before it is determined in a subsequent TPP cycle whether the element should be re-classified as Category 1.

5. Once the current TPP cycle is completed with Board approval of the final comprehensive plan and ICs in the current cluster have received their Phase 1 study results and have decided whether to proceed to GIP Phase 2, the Phase 2 study process will assess the extent to which transmission in the comprehensive plan or previously approved obviates the need for some GIP-driven upgrades. Because GIP upgrades will typically be driven by an electrically-related subset or "study group" within a cluster of ICs, any such upgrades that are obviated by transmission plan elements would tend to be needed to serve all ICs within that study group. Also, because policy-driven elements in the plan will typically be designed to achieve the given policy objective efficiently and not to provide much excess capacity (e.g., to achieve 33% RPS but not 40%, unless the state formally adopts a higher target), the ISO expects that for a large cluster (such as current Cluster 4) the TPP plan elements will not obviate all of the network upgrades identified in the Phase 2 study. Thus the ISO expects that in general the Phase 2 study will reveal the comprehensive plan will meet the reliability and potentially the deliverability needs of some portion but not all of the capacity represented by ICs in the current cluster. Therefore an additional outcome of the Phase 2 study will be to identify the additional network upgrades needed to meet the interconnection needs of all Phase 2 participants, and to estimate the costs of those upgrades to be paid by IC without ratepayer reimbursement.
6. Finally, in cases where transmission approved in the comprehensive plan or previously approved provides capacity to meet the interconnection needs of a portion of the generation in the study group that participated in Phase 2 but not the entire group, the ISO will implement some of the procedures described in Options 3A, 3B, 3C, 3E, 3F and 3G above to determine the allocation of the use of ratepayer funded transmission and cost shares for the incremental upgrades to the IC projects in each study group.

6 Transition to the New TPP-GIP Process

Section 5 above described an end-state proposal for a more integrated TPP-GIP. Given the volume of IC projects currently in the ISO's interconnection queue, it is necessary to address the transition to the new framework. In the previous straw proposal the ISO suggested that the new framework would not apply to IC projects up to and including those in cluster 2, and would apply to IC projects in cluster 5 and beyond. With regard to cluster 3-4 projects the ISO was considering applying the new framework by means of a decision point for these projects prior

to the decision whether to enter the GIP Phase 2 study process, with financial compensation (to be determined) to those IC projects that decide to drop out of the queue due to the imposition of the new rules.

In comments on the initial straw proposal, most parties agree that ICs that have the new framework applied to them after they entered the queue under the existing rules should have an opportunity to drop out and have their deposits (separate from study costs) refunded by the ISO. Many of the generation developers suggest that, should the new rules apply to clusters 3 and 4, not only should they be eligible to have all deposits refunded, but the ISO should also pay for other costs, including damages, they have incurred since they made their initial applications. Additional comments offered by stakeholders include: (1) there is no need to provide any form of compensation; (2) ICs should be allowed a one-time opportunity to downsize their projects; (3) cluster 3 projects should receive some sort of priority treatment over cluster 4; (4) the new rules should not apply to cluster 3 or energy only projects in cluster 4; and (5) due to the high volume of projects in the current queue, the ISO should consider applying the new framework to clusters 1 and 2 in addition to subsequent clusters.

The ISO now proposes to maintain the view presented in the previous straw proposal that (1) clusters 1-2, for which the GIP Phase 2 studies have already been completed, would continue under the current rules to sign GIAs, subject to the existing timing deadlines and posting requirements, and (2) cluster 5, whose request window is scheduled to open in March 2012, would start off and proceed completely under the new rules as approved by FERC.

Regarding potential application of the new TPP-GIP framework to IC projects in clusters 3-4, the ISO is still discussing this question internally and will be prepared to offer its current proposal for discussion at the stakeholder meeting on September 19.

7 Transmission Planning and Generation Interconnection Procedures of Other ISOs

These summaries are provided based on the ISO's best understanding of the other ISO/RTO processes. These summaries are subject to further confirmation, and to that end the ISO plans to have additional discussions with representatives of these other entities. Additionally, if stakeholders know that some aspect of the ISO's account below of other ISO/RTO cost recovery approaches is incorrect or incomplete, then the ISO invites correction.

7.1 ISO-NE

In ISO New England (ISO-NE), the costs of direct interconnection and network upgrades are allocated 100 percent to the IC. The IC additionally is responsible for covering the ongoing costs that are allocated to the Generator Interconnection Related Upgrade. A caveat to this

rule is that if ISO-NE determines the network upgrade provides system-wide benefits, then costs are allocated through the Transmission Cost Allocation (TCA) provisions of the ISO-NE tariff in the same manner as ISO-NE's Reliability Upgrades. This cost treatment is not automatic, however; the IC must specifically submit a TCA application. In ISO-NE, all parties that fund transmission upgrades without ratepayer reimbursement that increase ISO-NE's grid transfer capability and thus make it possible to award more FTRs will be awarded Incremental auction revenue rights (ARRs). This includes ICs who fund interconnection network upgrades.

7.2 PJM

Interconnection costs (for both attachment facilities and network upgrades) are borne by the IC. Interconnection requests are considered as part of Regional Transmission Expansion Plan (RTEP). The costs that ICs bear are those costs that would not have been incurred under the RTEP but for the interconnection request. ICs can request "Capacity Resource Service" or "Energy Resource Service." In PJM, if an IC funds network upgrades that are used by subsequent ICs within five years, the initial developer receives some level of reimbursement from the subsequent developer. In PJM, project developers receive Incremental ARRs for any incremental system capacity created by their interconnection-related upgrades. The incremental ARRs have a life of 30 years or the life of the facility, whichever is shorter.

7.3 MISO

Under the MISO Transmission Expansion Plan (MTEP), analogous to the ISO's TPP, MISO identifies all projects that (a) are required to maintain reliability, (b) provide economic benefit to the system or part of the system, or (c) are required to meet state or federal policy objectives. MISO refers to the third category of projects as Multi Value Projects or MVPs. Projects falling into any of these three categories receive ratepayer funding.

For IC projects to be eligible for their interconnection needs to be met fully by ratepayer-funded network upgrades, the cumulative capacity seeking interconnection cannot exceed the capacity of the facilities approved under the MTEP. If the cumulative capacity of the IC resources exceeds that capacity, then each resource must pay for a portion of whatever additional network upgrades are required to interconnect the whole cluster.

Projects that require network upgrades not identified though the MTEP are eligible for, at best, minimal cost recovery from ratepayers. MISO ICs are required to pay for 90 percent of all high-voltage (345 kV and above) network upgrades and 100 percent of lower voltage upgrades required to interconnect their resources. Developers that fund network upgrades and are not granted cost recovery are eligible for FTRs to the extent the network upgrades increase system transfer capability.

For generation projects that must fund network upgrades, MISO permits developers to collaborate to build a network upgrade that would benefit all parties involved. These are referred to as Common Use Upgrades. Thus a Common Use Upgrade enables project developers to pool their resources and build a single network upgrade at a lower per generator cost for each generator than if each developer separately built the network upgrades necessary for its respective project.

Where an IC funds a network upgrade that is utilized by a subsequent IC to interconnect another project within five years of the in-service date of the upgrade, the subsequent IC must reimburse the initial IC a pro-rata share of the upgrade costs. MISO selected five years because that corresponds to the MTEP planning horizon.

7.4 NYISO

In the New York ISO (NYISO) ICs generally cover 100 percent of the upgrades required by their project. If a facility is necessary for grid reliability irrespective of whether a particular project gets built then the project developer is not responsible for the cost. NYISO offers two types of interconnection: (1) Energy Resource Interconnection Service (ERIS); and (2) Capacity Resource Interconnection Service (CRIS). For CRIS projects, total cost of all network upgrades (but not attachment facilities) in a class year are shared pro rata. CRIS projects have a Highway/Byway distinction. This distinction is based on whether a line crosses an internal NYISO zone and is not a voltage-based distinction. For byway projects (which are internal to a zone), the developer must pay 100 percent of upgrade costs. In cases where multiple developers are jointly responsible for costs of a byway, then the developers share the costs amongst themselves in a pro rata fashion. For highway projects, if less than 90 percent of the MW capacity of a highway upgrade is attributable to a particular project, then the developer covers the proportionate share of the project (*i.e.*, the estimated MW capacity of transmission needed to serve the project as a percent of the total capacity of the upgrade). The ISO's understanding is the LSEs are required to cover the balance.

For both types of upgrades (highway or byway), developers get TCCs based on the incremental system capacity created. Any incremental TCCs attributed to LSE-funded upgrades will be sold by the NYISO with proceeds credited to the LSEs. In NYISO, project developers can build additional upgrades beyond bare minimum necessary to create "headroom." Future interconnecting parties making use of that headroom in the following ten years must reimburse the initial party that funded it.

7.5 SPP

In the Southwest Power Pool (SPP), generator interconnection upgrades are funded 100 percent by the IC. The interconnection customer gets credited for the transmission charges

collected by SPP as a result of the new transmission facilities. This revenue crediting lasts for 20 years or until the costs are recovered. This mechanism does not provide a guarantee of full cost recovery.

An exception is that projects approved through SPP's Integrated Transmission Plan are granted a different cost recovery mechanism. This is accomplished through a highway/byway method. Transmission facilities above 300 KV are assigned 100 percent to the regional postage stamp rate. Facilities between 100 KV and 300 KV are assigned 33 percent regional and 67 percent zonal. Projects below 100 KV are assigned 100 percent zonal.

Generator interconnections qualify for regional cost recovery if:

1. The generator commits to being a network resource (as that term is defined in Order 2003) for five years minimum;
2. In the first year, the capacity of the generator is no more than 125 percent of the LSE's capacity obligation (*i.e.*, the new plant is not significantly larger than it needs to be); and
3. The costs don't exceed the Safe Harbor Cost Limit, which is established through a formula (*i.e.*, the plant is not too expensive).