Getting to 33% RPS through Comprehensive, State-wide Grid Planning: A Revised Straw Proposal

October 30, 2009
I. EXECUTIVE SUMMARY

The California Independent System Operator Corporation (the ISO) presents, for discussion with stakeholders, this revised straw proposal for an effective transmission planning process to obtain the transmission infrastructure needed to achieve California’s 33% Renewable Portfolio Standard (RPS) in a comprehensive and timely fashion. Based on stakeholder comments in response to the ISO’s September 15, 2009 straw proposal and issue paper,1 and further consultations within and outside the ISO, the ISO is now recasting its approach to 33% RPS transmission planning more clearly as a state-wide plan to be developed through coordination with the California Transmission Planning Group (CTPG), building on the work of the Renewable Energy Transmission Initiative (RETI), and supported by a substantial effort with state agencies and other parties to achieve a consensus approach to planning assumptions. Moreover, where the prior proposal presented a 33% RPS track within the context of the ISO’s transmission planning process (TPP), to be consistent with the planning flexibility and comprehensiveness sought in this new approach, the ISO now proposes that the 33% RPS transmission planning track should be conducted separately from the TPP with its own transparent stakeholder process and milestones.2

To achieve California’s ambitious environmental policy goals for the power sector through efficient transmission expansion, the ISO now proposes a three-phase approach to identify the specific renewable transmission projects to be submitted to the ISO and potentially other planning entities. The first phase will develop a state-wide 33% RPS conceptual transmission plan to be presented to the ISO Board for discussion in early 2010, followed by stakeholder review and proposals for amendment of the plan (but not to include consideration of specific projects). The second phase will refine the initial conceptual plan using transparent criteria,

1 Available at http://www.caiso.com/242a/242afa1d3c210.pdf

2 The ISO envisions that the process described here would be conducted in addition to, not in place of, the TPP. The latter would continue on its existing timeline and in accordance with existing tariff provisions, to consider transmission upgrades that do not require justification of need based on interconnecting renewable supply resources. The results of the TPP would then be counted towards meeting the 33% RPS to the extent they connect renewable resources to the grid. Thus economic, reliability, and LGIP-related projects entering through the TPP, but not independently justified as supporting renewable interconnection or the 33% RPS, would be considered as part of the “baseline” for use in the 33% RPS transmission plan.
including those described in the prior straw proposal but possibly with additional elements, to establish needs for the components of a final state-wide 33% RPS transmission plan. This final plan would be submitted to the ISO Board of Governors in late 2010 for approval of those elements that would be within the ISO Balancing Authority Area (BAA). In the third phase, this final plan would provide the need determination under which specific project proposals are submitted for approved transmission lines. Those projects within the ISO BAA would be submitted to the ISO Board for approval starting in March 2011. On an ongoing basis the ISO would work with the other parties to conduct an annual recalibration of the plan based on updated information.

As with the prior straw proposal, the comprehensive transmission plan delivered for ISO Board approval in late 2010, and the subsequent project approval process, would distinguish what we will call “Category 1” transmission lines that are consistent with RETI’s concept of least regrets or foundational lines, and which would be approved unconditionally, versus “Category 2” lines that would be approved conditionally subject to additional criteria including commercial interest expressed through generation development or contractual commitment. In conjunction with the third phase the ISO will also establish a process to address situations where competing project proposals are offered to construct the same approved transmission line.

Eager to help integrate the largest portfolio of renewable power in the country, the ISO intends to work with stakeholders to gather their input and recommendations before presenting a final 33% RPS planning process proposal to its Board of Governors for approval at their December 2009 meeting. The December Board decision would be to approve the design of the 33% RPS process and authorize ISO management to file the necessary tariff provisions to implement that process.

II. BACKGROUND

On September 15, 2009, the California Independent System Operator (ISO) launched its Getting to 33% RPS initiative by publishing an issue paper and straw proposal outlining a new tariff category for network upgrades to support renewable development, along with a framework for comprehensively planning the transmission upgrades that will be needed to reach California’s ambitious RPS targets. The issue paper was followed up with a stakeholder meeting on September 23, 2009. Interested parties also had an opportunity to submit written comments by September 30, 2009.
Stakeholders provided insightful comments and raised issues that required the ISO to reconsider how to proceed developing the 33% RPS transmission planning initiative. The ISO further considered the challenges associated with developing a reasonable, orderly build-out of California’s transmission infrastructure to meet the state’s 33% RPS goals under a least cost/best fit transmission planning principle. The ISO concluded that while the proposed commercial interest criteria received general support from stakeholders, there was also a need for a state-wide supported process and that any commercial interest criteria must be applied within that context.

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

The ISO also believes that most would agree that to achieve a reliable and cost effective transmission solution to meet the state’s 33% RPS goal will require consensus among all stakeholders on two foundational planning components: fundamental planning assumptions, and a coordinated planning forum that contains a broad spectrum of transmission owners/operators and technical experts in reliability. These two components are the necessary ingredients to developing the 33% RPS transmission plan.

Based on these considerations the ISO concluded the following:

- Regarding coordinating and developing consensus around key planning assumptions, there are substantial efforts underway to resolve many state-wide resource and policy issues relevant to transmission planning. These include, among others, the evolving schedule for replacement or repowering of once-through cooling (OTC) plants and state air quality objectives. Sufficient consensus on these and similar state policy drivers are needed to establish planning assumptions before a comprehensive state-wide 33% RPS transmission plan can be developed.
• Coordinated planning among all relevant state transmission planning entities is needed. The ISO believes that this charge should rest with the CTPG. This group’s primary challenge is to coordinate transmission planning across the state and, as such, is uniquely qualified to assume the coordinated planning responsibility for the 33% RPS initiative.

• The scope of the RPS planning effort, including the state-wide dimension, requires more flexibility in terms of timelines and milestones than is afforded by the ISO’s Order 890 TPP. This will necessarily require a separate but parallel process from the TPP to meet the policy timeline that is currently in place. The ISO’s TPP will continue to address the reliability and non-renewable related economic proposals within the ISO’s balancing authority; however, all transmission expansion that is driven by the need to interconnect renewable generation, including those transmission components identified by the ISO’s LGIA process and associated with renewable resources, will be addressed within this parallel process.

Based on the above discussion, this revised straw proposal departs from the ISO’s original proposal by creating an initial step using coordinated assumptions and planning via the CTPG to facilitate state-wide consensus around a state-wide transmission plan capable of meeting the 33% RPS initiative by 2020. The result is the three-phase process outlined in the first section of this paper and described in further detail below.

In order to bring the new 33% RPS planning framework to the ISO Board of Governors for approval at the December 2009 Board meeting, the ISO proposes the following updated schedule for the stakeholder process:

- October 30, 2009 – ISO posts revised straw proposal
- November 6 – Conference call to discuss revised straw proposal
- November 13 – Stakeholder comments due on revised straw proposal
- November 20 – ISO posts draft final proposal
- November 30 – Conference call to discuss draft final proposal
- December 7 – Stakeholder comments due on draft final proposal
- December 15, 16 – ISO Board of Governors meeting
- January, 2010 – Tariff stakeholder process and tariff filing
III. REVISED 33% RPS PLANNING PROPOSAL

A. Phase 1 – State-wide 33% RPS Conceptual Transmission Plan

The ISO will work with the CTPG to develop a comprehensive state-wide conceptual transmission plan, including the transmission elements required to achieve 33% RPS. The CTPG was formed as a result of discussions facilitated by FERC to address the State’s transmission needs in a manner that would be coordinated and would respect various business models. The CTPG includes transmission owners with an obligation to serve and transmission operators, and these parties have the technical capability to perform detailed transmission planning. Although final rules and procedures have not been established, the CTPG process is intended to be Order 890 compliant and include a stakeholder process. In addition the ISO intends to conduct its own stakeholder process as part of this and the other phases of the proposed process, consistent with the requirements of its tariff. One key CTPG objective is to identify opportunities for joint transmission development projects (i.e., ownership, operational control, tariffs), which the ISO believes is an important aspect of developing a consensus state-wide 33% RPS plan as envisioned in this proposal.

Under the current scope of the CTPG, this first annual California plan would incorporate the needs of the CTPG participants while addressing broad needs of transmission for the State, including renewable energy access (building on RETI work) and integration with system reliability and operational needs. The state-wide 33% RPS plan will build on the RETI Phase 2A report and the conceptual transmission analysis already done by the ISO with respect to transmission within its footprint, and will include input from the other stakeholder members of CTPG, as well as coordination with state agencies. As discussed above, significant efforts will be needed by all parties to achieve consensus on planning assumptions.

This state-wide 33% RPS plan will be presented to the ISO Board in approximately March 2010 for informational purposes and guidance. This will be the starting point for stakeholders and the ISO to begin evaluation of the infrastructure within the ISO-controlled grid that should move forward to approval.

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and permitting based on the need to interconnect renewable generation to meet the 33% RPS target.

The ISO envisions that the process described above would be conducted in parallel to the ISO’s Order 890 TPP, but with its own timeline and milestones. The latter would continue on its existing timeline and in accordance with existing tariff provisions, to consider transmission upgrades that do not require justification of need based on interconnecting renewable supply resources. The results of the TPP would then be counted towards meeting the 33% RPS to the extent they connect renewable resources to the grid. Thus economic, reliability, and LGIP projects entering through the TPP, but not independently justified as supporting the 33% RPS, would be considered as part of the “baseline” for use in the 33% RPS transmission plan.

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

Following release of the Phase 1 conceptual plan, stakeholders will have a three month opportunity to evaluate the plan and propose amendments, including potential interstate lines. Although specific renewable transmission projects (submitted through the LGIP or TPP, for example) will not be analyzed at this stage, the ISO will work through its stakeholder process to ensure that the infrastructure alternatives that are considered in Phase 2, including those submitted through the TPP, represent a broad consensus on efficient and robust conceptual transmission facilities that could provide benefits to the grid using the criteria developed in this initiative.

Following the stakeholder input on the Phase 1 conceptual transmission plan, that plan and the proposed adjustments to that plan will be subject by CTPG (and by the ISO for the plan components in its territory) to economic, environmental, commercial and other criteria to arrive at an efficient, reliable, and operationally sound final 33% RPS transmission plan. The ISO expects that this will entail narrowing the set of potential transmission upgrades comprised of the Phase 1 conceptual plan elements as well as stakeholder-proposed enhancements, and that the criteria for doing so will be similar to, and perhaps broader than, those presented in the prior straw proposal. For this Phase 2 process, some transmission planning entities may adopt criteria that address their specific concerns but are not necessarily adopted by all of the CTPG entities. The ISO recognizes, however, that given the differences in the planning processes between the prior paper and this proposal, further clarification is needed to describe how particular criteria will be used in refining the conceptual plan. The
ISO will be seeking further stakeholder input on this element in response to this paper. More discussion on this topic follows below.

On the basis of the criteria, the Phase 2 process will distinguish the two categories of lines: Category 1 lines where are considered foundational and approved without further conditions; and Category 2 lines that are approved conditionally as supporting achievement of the 33% target, but whose final approval will be subject to future development of generation or demonstrations of commercial interest. As noted above, in this phase the ISO does not envision evaluating specific projects.

The ISO has adopted the above nomenclature in order to clarify the concepts behind these two categories of transmission projects. Although ISO Category 1 conceptual projects will be roughly consistent with the intent of the RETI concept of “least regrets” transmission projects – what the RETI called “renewable foundation” and “renewable delivery” – they will not necessarily be identical with the projects identified through that process. 4

In addition to participating in CTPG, the ISO intends to conduct its own stakeholder process in accordance with its tariff requirements. The Phase 2 plan will be targeted for completion by December 2010 and presented to the ISO Board of Governors for approval of those plan elements that are part of the ISO controlled grid.

Analytical Process for Establishing the Final 2010 Plan

In Phase 2, the ISO, in coordination with CTPG, will utilize all relevant information to establish a proposed final plan for the ISO-controlled grid (as part of the state-wide plan) based on transparent criteria that can be used for need determination. As noted, ISO expects that the ranking criteria used in Phases 2 and 3 of the 33% RPS transmission planning process could include an appropriately revised application of the commercial interest criteria proposed in the prior proposal, as well as other criteria that remain to be developed.

The ISO proposes that information from the LGIP/GIPR (network upgrades in LGIAs) will first be counted towards the renewable energy objectives for each particular renewable energy zone. The overall planning process will then determine whether such upgrades need to be “oversized.” As with the prior

4 See RETI, Phase 2A Draft Report, June 2009, pp. 1-6 to 1-7.
straw proposal, the difference between Category 1 and Category 2 transmission lines could be determined in part by a commercial interest threshold, defined as a percentage of the potential energy in the zone accounted for by signed and approved power purchase agreements and/or interconnection agreements from generation projects proposing to interconnect to the grid from a particular renewable energy zone.

The ISO is also open to other criteria to be used for determining the boundary between Category 1 and Category 2 transmission lines, and between alternative lines that could enter Category 2. For example, these could include the potential capacity and potential energy of renewable resources in particular zones, the cost supply function of the renewable resources in particular zones, the integration costs of the renewable resources in particular zones, the projected cost of the planned transmission facility, whether and to what extent the planned transmission facility provides additional reliability and economic benefits to the CAISO Controlled Grid, and whether the facility would create a risk of stranded costs. Some of these criteria could be more appropriate than others in the context of a state-wide planning approach. Moreover, there are obvious limitations to the scope of the analysis, both due to information that may not be complete in the timeframe under consideration and also due to the limits of existing planning methods. For example, there are some difficult challenges related to modeling storage. The ISO seeks comment on the appropriate criteria and analytical scope in light of the revised straw proposal.

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

Following the approval of the ISO control area elements of the final state-wide 33% RPS transmission plan by the ISO Board, the next phase of the process will focus on project planning and approval, plus a process for annual comprehensive plan recalibration to reflect new developments. Here the process is likely to be similar to that delineated in the ISO’s previous proposal, but with some modifications to account for the new planning process proposed here.

5 Some of these criteria were adopted by the ISO to evaluate the projected costs and benefits of transmission facilities to support locationally constrained resource interconnection. See ISO Tariff, section 24.1.3.

6 Initial straw proposal and issue paper, p. 8.
A New Annual Request Window

Following Board approval at the end of 2010 of those elements of the state-wide 33% plan that would be under ISO operational control, the ISO will provide an opportunity for participants to submit project proposals that respond to the specific needs identified in the segments of the 33% plan in the ISO-controlled grid and that would be turned over to the ISO’s operational control. This window will be open for three months.

Evaluation of Competing Projects for Approved Transmission Facilities

Immediately following the close of the request window, in instances where multiple project proposals were offered to address the same need, the ISO will facilitate an opportunity for the project proponents to collaborate with each other to arrive at a single proposal that meets the need for which the projects were offered. In the event of failure to achieve such collaboration, the ISO will refer the projects to the relevant regulatory authorities for review and final determination.

Project Approval by the ISO Board

The ISO will recommend projects for Board approval that are consistent with the conceptual elements that have been evaluated through the evaluation process and approved by the Board as part of the final state-wide plan in December 2010. These projects will be presented to the ISO Board for approval in March 2011. Category 1 projects that have been given final approval can proceed with siting and permitting. The ISO is aware of stakeholder concerns that conditionally approved projects will not proceed due to the risk of incurring unrecoverable costs. At the same time, because there are expectations that IOU contracts and shortlists for renewable projects will achieve or exceed the 33% RPS requirement within the coming year, especially given changes to the 2020 demand forecast, it would be imprudent to grant final approval to projects that may ultimately lead to underutilized capacity. Hence, it is appropriate to condition project approval upon further market and regulatory developments to ensure that infrastructure development is efficient. To mitigate the risks to project developers of incurring unrecoverable costs, the ISO would support approval of cost recovery for activities undertaken upon conditional approval for project that do not ultimately receive final approval.
Annual Recalibration of the 33% Plan and Final Approval of Conditionally Approved Projects

As proposed in the prior issues paper, the state-wide 33% plan will be evaluated each year to determine whether the conditional projects should receive final approval, and whether any new projects should be evaluated and conditionally approved. It is anticipated that the annual recalibration study will provide the information required by project proponents to determine whether the triggers identified in the three criteria have been met, although other information may be provided to the ISO in support of a final approval application. Again, the exact timing of this recalibration process and whether this process unfolds within the framework of CTPG is a topic for further consideration.

7 In comments on the prior paper, there was broad support for an annual recalibration study. Stakeholders suggested that the 33% RPS study be updated to include information on renewable generation, PPAs and commercial viability, load and generation forecasts, LGIP/GIPR and regional information from TEPPC/WECC/CTPG, energy policy developments and major market uncertainties.