



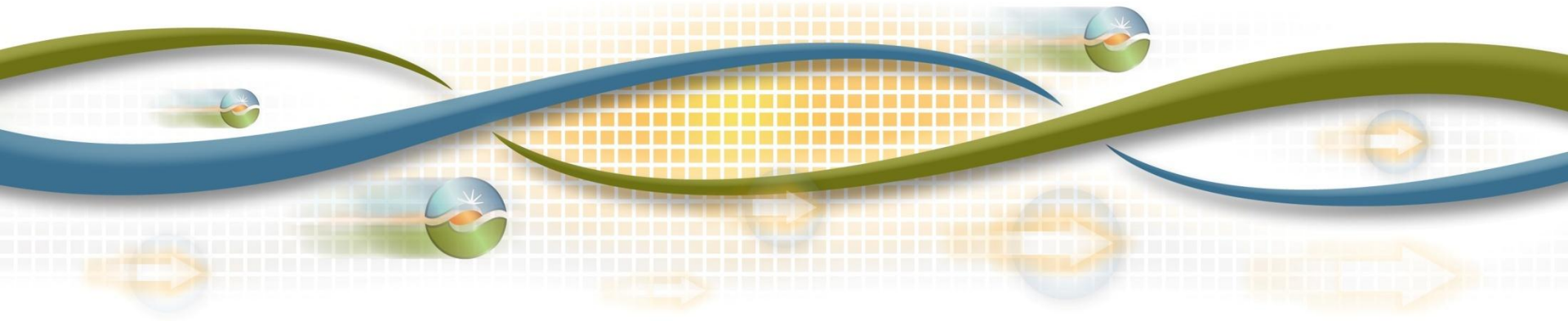
California ISO
Shaping a Renewed Future

Integration of Transmission Planning and Generator Interconnection – Revised Straw Proposal

Lorenzo Kristov, Principal, Market and Infrastructure Policy

Karl Meeusen, Market Design and Regulatory Policy Lead

Stakeholder Meeting, September 19, 2011



Introduction, Stakeholder Process

Mercy Parker-Helget

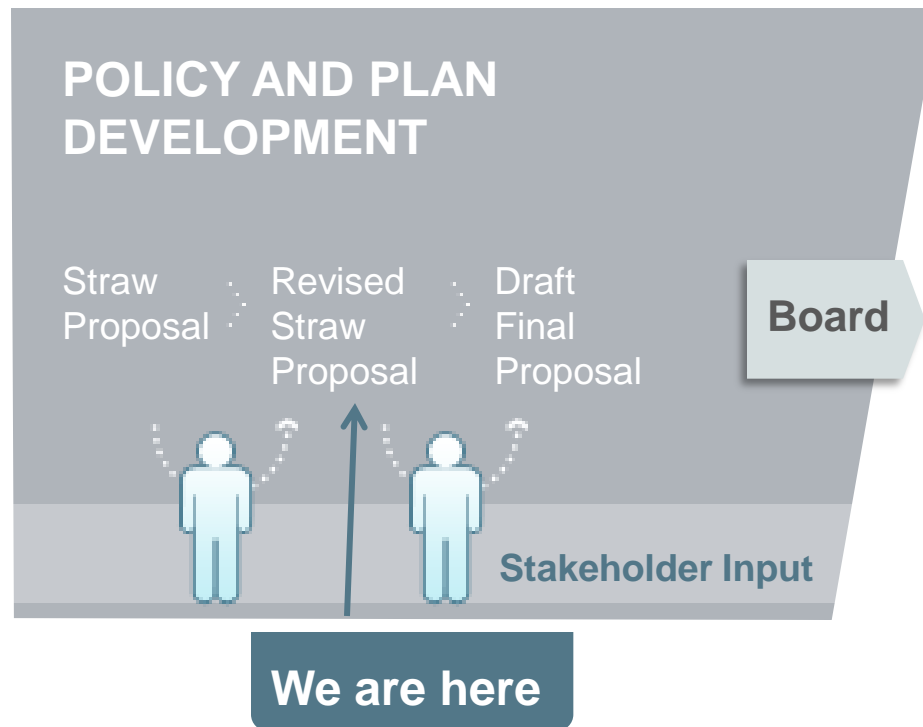
Senior Stakeholder Engagement and Policy

Specialist

Agenda

Time	Topic	Speaker
10:00-10:15	Stakeholder Process, Agenda	Mercy Parker Helget
10:15 -10:45	Objectives of TPP-GIP Integration Initiative	Lorenzo Kristov
10:45-12:15	Revised Straw Proposal: The Integrated Process	Lorenzo Kristov
12:15-1:00	Lunch – All are welcome to use ISO's cafeteria	
1:00-2:00	Revised Straw Proposal: The Integrated Process (cont.)	Lorenzo Kristov
2:00-3:15	Revised Straw Proposal: Allocation of Network Upgrades	Karl Meeusen
3:15-3:30	Transition to New TPP-GIP	Lorenzo Kristov
3:30-3:50	Survey of other ISOs	Karl Meeusen
3:50-4:00	Next Steps	Mercy Parker Helget

ISO Stakeholder Initiative Process



Proposed Stakeholder Process

Date	Event
July 21	ISO posts Straw Proposal - Completed
July 28	stakeholder meeting at ISO - Completed
August 9	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 24	Revised Date - ISO posts Draft Final Proposal
October 31	Revised Date - stakeholder meeting at ISO
November 7	Revised Date - stakeholders' written comments due
December 15-16	ISO Board meeting

Objectives of this Initiative

Lorenzo Kristov

Principal, Market & Infrastructure Policy

Objectives

1. Develop ratepayer-funded transmission for the ISO grid in a comprehensive planning process
2. Rely primarily on the TPP as the venue for developing ratepayer-funded transmission
3. Provide incentives for resource developer location decisions to make most efficient use of transmission
4. Limit potential ratepayer exposure to costs for under-utilized or excessive transmission upgrades
5. Provide greater certainty that transmission approved by ISO will be permitted by siting authority (CPUC)
6. Create greater transparency to transmission upgrade decisions.

Objectives – continued

7. Resolve open GIP issues related to initiative scope

- 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 their interconnection needs or GIP-driven upgrades are modified through the TPP.
- b. Allow for a plan of service re-scoping 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 GIA.

The Revised Straw Proposal: The Integrated Process

Lorenzo Kristov

Principal, Market & Infrastructure Policy

Central design concepts

Provide a reasonable, transparent basis for determining customer cost responsibility for interconnection-driven upgrades

1. Within the TPP, the ISO identifies public-policy objectives for planning, and alternative resource portfolios that can meet the policy objectives.
2. The TPP determines transmission elements needed to support each resource portfolio, and then selects Category 1 elements based on “least regrets” criteria.
3. Latest GIP cluster is overlaid on comprehensive plan, and where customers’ interconnection needs are met by the plan, their upgrade costs are covered by rate-based transmission.

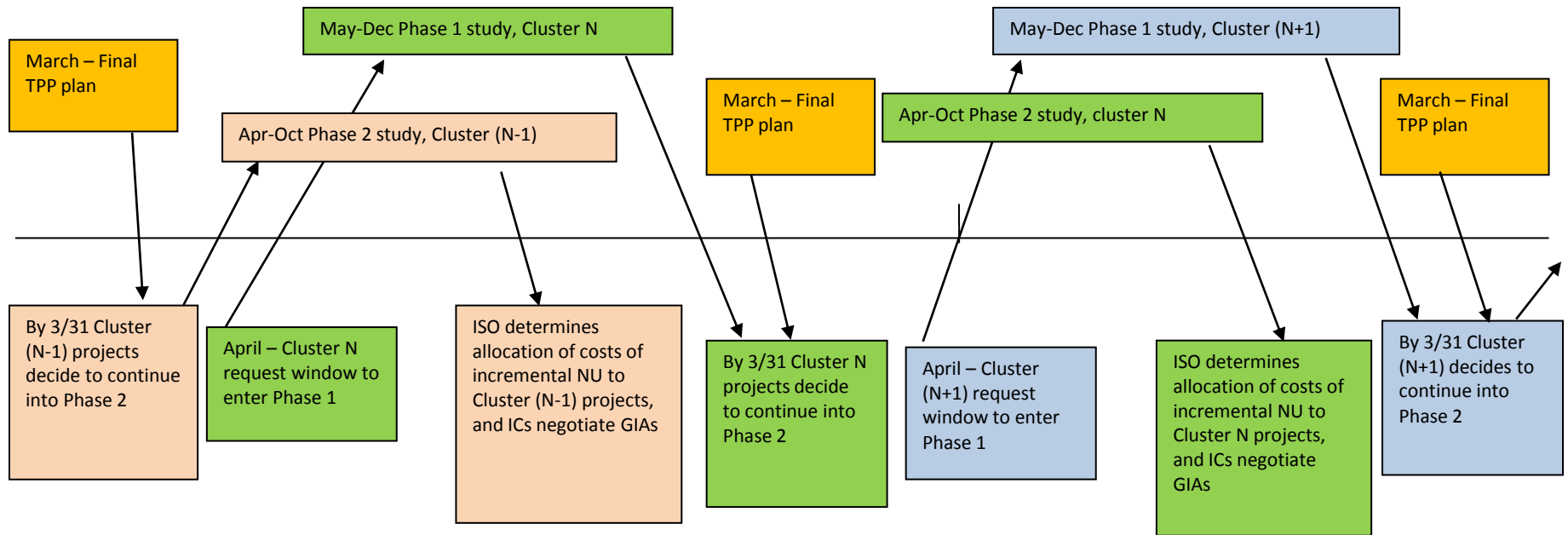
Central design concepts – continued

4. To the extent customers require incremental upgrades beyond the comprehensive plan, customers will be required to pay costs without ratepayer reimbursement.
5. In the case of over-subscription in a study area, ISO will apply an equitable process for determining the extent to which each project in the area will benefit from ratepayer-funded transmission and will be responsible for a share of costs of incremental upgrades.
6. If incremental IC-funded upgrades provide excess capacity, the ISO will apply provisions for recovering a share of the upgrade costs from later-queued projects that benefit from the excess capacity.

What's new in this revised straw proposal?

- Retains today's 2-phase GIP study process
- ISO will conclude annual TPP cycle between GIP phases 1 & 2, so ICs can decide to proceed to phase 2 based on:
 - Phase 1 study results
 - Transmission approved in latest TPP comprehensive plan
 - Any updates to public policy objectives for next TPP cycle
- An additional option for how to allocate ratepayer-funded transmission in an over-subscribed study area
- Two options for how later-queued projects will reimburse earlier ICs that pay for excess transmission capacity
 - ISO has dropped “CRRs only” option (Option 3D)
- New time line illustrating the integrated process
- Details on proposed GIP study process and cost caps

Proposed Time Line for the Integrated TPP-GIP



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

The GIP component retains today's 2-phase study process – Phase 1

- Maintain today's posting requirements for submitting interconnection requests
- Phase 1 study will assume:
 - Transmission approved in the most recent TPP plan
 - Upgrades identified in the most recent prior Phase 1 study and associated generation projects, if the upgrades are required for the ICs that have posted to enter Phase 2
 - Upgrades identified in all prior Phase 2 studies (or in System Impact or Facilities Studies for serial projects) and associated generation projects, if those upgrades are included in executed GIAs and the ICs have made all required postings.
- For discussion: How to structure study assumptions to reflect uncertainty around IC-funded transmission

TPP cycle proceeds in parallel, producing final comprehensive plan prior to start of GIP Phase 2

- TPP follows existing provisions to identify reliability, policy-driven, economic elements, other tariff categories
- ISO and CPUC collaborate to specify resource portfolios to meet policy objectives
- TPP addresses interconnection needs of portfolio MW in each study area, not needs of specific customers
- ICs decide whether to enter Phase 2 based on approved comprehensive plan and Phase 1 study results
- Planners compare projects that enter Phase 2 against final TPP plan to determine project MW amount in each area that can be served by final plan
 - Optimal transmission upgrades in plan may serve more MW than resource portfolios specified

The GIP component retains today's 2-phase study process – Phase 2

- Maintain today's posting requirements for participation in Phase 2
- Phase 2 study will assume:
 - Transmission approved in the most recent TPP plan
 - Upgrades – including IC-funded – specified in executed GIAs and for which ICs have made required postings
- Phase 2 determines incremental network upgrades needed to meet needs of total MW of projects that enter Phase 2, and estimates costs of such upgrades
 - Each ICs share of IC-funded costs is determined by one of the options discussed in next section
- As today, an IC project's cost cap will be the lower of its Phase 1 and Phase 2 cost caps, but...

GIP Phase 1 and Phase 2 cost caps will not be as firm as they are today

- Costs caps will be maintained, unless ultimate costs of network upgrades exceed cap by more than 25%
 - Cost increase up to 25% will be allocated to ratepayers
 - Cost increase beyond 25% will be shared 80-20 between ICs and ratepayers
- Example (from posted paper)
 - Upgrade costs based on studies = \$10 M, split evenly between two IC projects
 - ICs' cap of \$5 M each is maintained as long as upgrade costs do not exceed \$12.5 M
 - If final upgrade cost = \$15 M, then ICs pay \$6 M each and ratepayers cover \$3 M.

Revised Straw Proposal: Allocation of Ratepayer Funded Network Upgrades

Karl Meeusen

Market Design and Regulatory Policy Lead

Options to Allocate Rate Payer Funded Network Upgrades

- The questions
 - How to allocate rate payer funded transmission identified in TPP when there are more MWs in the queue than in the TPP renewable scenario?
 - How to allocate costs of the additional upgrades required to provide deliverability among these projects on an over-subscribed line?
- Four Options
 - Option 3A: First Come First Serve
 - Option 3B: Pro Rata
 - Option 3C: Auction
 - Option 3F: LSE chooses

Setting up an Example

- The latest comprehensive transmission plan provides deliverability for 800 MW of new generation in a study area,
- There are five IC projects totaling 1400 MW in that area in the current cluster.
 - Project 1 = 350 MW
 - Project 2 = 300 MW
 - Project 3 = 250 MW
 - Project 4 = 400 MW
 - Project 5 = 100 MW

Option 3A: First Come First Serve

- Allocate the 800 MW on a first-come-first-served basis according to each IC's completion of pre-established milestones.
- Milestones will need to be clearly defined and specified
 - What are appropriate milestones?
 - Stakeholder suggestions
 - having a PPA
 - demonstrate site control

Option 3A: First Come First Serve – Pros and Cons

- If milestones are set properly, first projects to reach them will likely successfully reach COD.
- “First comers” will have all network upgrades covered
 - All others must pay for their own upgrades
- Even with well defined milestones, could prove controversial and subject to debate
- 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 network upgrades

Option 3A: First Come First Serve – An Example

- Assume PPA is the only milestone:
 - Projects 2, 4, and 5 all receive PPA at the same time
 - No problem
 - Projects 1, 2, and 3 all receive PPA, in that order
 - Projects 1 and 2 receive full network upgrades, Project 3 pays for 150 MW of Network Upgrades
 - Projects 1, 2, and 3 all receive PPA at the same time
 - Uncertain

Option 3B: Pro Rata

- Allocate pro rata shares of rate payer funded network upgrade, based on load flow studies, to all IC projects in the study group
- Each project would pay a pro rata share of the cost of the additional network upgrades needed for full capacity deliverability

Option 3B: Pro Rata – Pros and Cons

- All IC projects in study area would obtain some benefit
 - All ICs in over-subscribed area pay for some portion of network upgrades
- Benefits ICs that cannot be built economically unless some portion of the network upgrades are subsidized
 - Harms ICs that would not be economical unless all the networks upgrades are subsidized
- Does not seem to favor or harm any given technology
- Will likely lead to projects dropping out to avoid paying for network upgrades
 - In order to keep most viable projects from dropping out first, ISO may need to consider additional deposit requirements

Option 3B: Pro Rata – An Example

- Assume all 1400 MW wish to proceed
- Each project receives the following portions of the ratepayer funded network upgrades:
 - Projects 1 receives 25%
 - Projects 2 receives 21%
 - Projects 3 receives 18%
 - Projects 4 receives 29%
 - Projects 5 receives 7%

Option 3C: Auction

- Conduct an auction for shares of the ratepayer funded network upgrades
 - each bidder will need to post appropriate security to cover its bid
- Auction will occur after Phase 2 GIP studies, but before ICs make the 30 percent postings normally required after Phase 2
- The auction payment for each winning project would be held by the ISO until that project achieved commercial operation
- Auction payment would be refunded in full, plus interest, when IC reaches COD
- If a winning IC fails to reach commercial operation, then it forfeits its auction payment

Option 3C: Auction – Pros and Cons

- Allows ICs to assess the value and viability of their projects and the benefits from gaining access to the ratepayer funded network upgrades
 - Projects that are most viable to should be able to submit higher bids
- The ISO could conduct a two-tier auction, one tier for smaller IC projects and another for larger projects
- All forfeited monies would first be used to reduce the cost of the rate-payer funded portion of the network upgrades
- No guarantee there will be sufficient bids in any given study area to result in a competitive auction

Option 3C: Auction – An Example

- Assume all 1400 MW bid into auction
- Projects submit the following bids
 - Projects 1 bids \$1,000/MW
 - Projects 2 bids \$900/MW
 - Projects 3 bids \$800/MW
 - Projects 4 bids \$700/MW
 - Projects 5 bids \$600/MW
- Projects 1 and 2 are fully funded
- Project 3 receives 100 MW and pays for the remainder

Option 3F: LSE Chooses

- Allocate the deliverability associated with TPP-identified transmission to LSEs and allow the LSEs to select the projects to fill capacity
- Analogous to the process whereby LSEs are allocated import capacity on interties
 - LSEs determine how this transfer capacity is utilized to provide deliverability for out-of-state RA resources.

Option 3F: LSE Chooses – Pros and Cons

- May be comparable in outcome to option 3A based on milestones but much simpler,
 - LSEs can directly take account of the availability of capacity for RA deliverability in their PPA decisions.
- Sends a signal to all IC projects regarding the LSE's likelihood of pursuing a PPA
- Puts a high weight on an LSE's ability to determine which IC projects are most viable.

Merchant Funded Network Upgrades: The “First Comer-Late Mover” Problem

- How should the ISO ensure a merchant transmission developer is properly compensated for network upgrades used by later ICs?

Option 3E: Compensation for “First Comer”

- Assumes that the ICs in a study area that requires incremental IC-funded network upgrades will pay the full incremental costs of these network upgrades, even when the network upgrades provide more network capacity than the current study group needs.
- 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: Compensation for “First Comer”

- Provide up-front ratepayer funding for a share of the network upgrade
- Rate payer funds commensurate with the amount of capacity in excess of the capacity needed by the IC projects in the study group.
- Initial ICs are required to pay only their pro rata shares of the incremental network upgrade costs
- Later-queued projects found to benefit from this excess capacity, will be required to reimburse ratepayers for their pro rata shares of the capacity.

Transition to the New TPP-GIP Framework

Lorenzo Kristov

Principal, Market & Infrastructure Policy

Transition to new framework is based on planned timeline for Board and FERC approvals.

Assuming:

- Board approval December 2011
- FERC filing January 2012
- FERC approval March 2012
- Clusters 1-2 would not be affected by new framework
- Cluster 5 would open and proceed completely under new framework
- ISO will discuss its proposal regarding applicability to Clusters 3-4 at the 9/19 stakeholder meeting.

Survey of Other ISOs

Karl Meeusen

Market Design and Regulatory Policy Lead

ISO-NE

- The costs of direct interconnection and network upgrades are allocated 100 percent to the IC
- If ISO-NE determines the network upgrade provides system-wide benefits, then costs are allocated through the Transmission Cost Allocation (TCA)
 - IC must specifically submit a TCA application
- All parties that fund transmission upgrades will be awarded incremental auction revenue rights (ARRs)

PJM

- Interconnection costs (for both attachment facilities and network upgrades) are borne by the IC
- ICs bear costs that would not have been incurred under the RTEP but for the interconnection request
- Initial developer receives some level of reimbursement from the subsequent developer for five years
- Project developers receive incremental ARR for any incremental system capacity

MISO

- Interconnection cannot exceed the capacity of the facilities approved under the MTEP.
 - Excess capacity must pay for a portion of additional network upgrades
- For projects not identified in MTEP
 - ICs pay for 90 percent of 345 kV and above
 - 100 percent of lower voltage
- Developers are eligible for FTRs
- The initial developer receives reimbursement from the subsequent developer for five years

NYISO

- ICs generally cover 100 percent of the upgrades required by their project
 - Unless the facility is necessary for grid reliability
- Developers get TCCs based on the incremental system capacity created
- Project developers can build additional “headroom”
 - ICs using the headroom in the next ten years must reimburse the initial party that funded it

SPP

- Network upgrades are funded 100 percent by the IC
- Projects approved through SPP's Integrated Transmission Plan are granted a different cost recovery mechanism.
 - above 300 KV -100% percent to the regional
 - 100 KV - 300 KV - 33% regional and 67%zonal
 - Below 100 KV are assigned 100 percent zonal
- IC gets credited for the transmission charges collected by SPP
 - lasts for 20 years or until the costs are recovered.

Next steps

Mercy Parker Helget
Senior Stakeholder Engagement and Policy
Specialist

Comment Template Information

- A template will be posted for your use in providing comments on this initiative. Please fill it out and return to the TPP-GIP@caiso.com mailbox by September 26.
- The template indicates specific questions on which we are seeking your input, and provides additional space for you to comment on any other aspects of this initiative.

The next near-term milestones are shown below

REVISED DATES

Date	Milestone
September 26	Stakeholder Comments Due
October 24	Post Draft Final Straw Proposal
October 31	Stakeholder Meeting on Draft Final Straw Proposal
November 7	Stakeholder Comments Due on Draft Final Straw Proposal
December 15-16	ISO Board Meeting
Early January 2012	File Tariff at FERC