

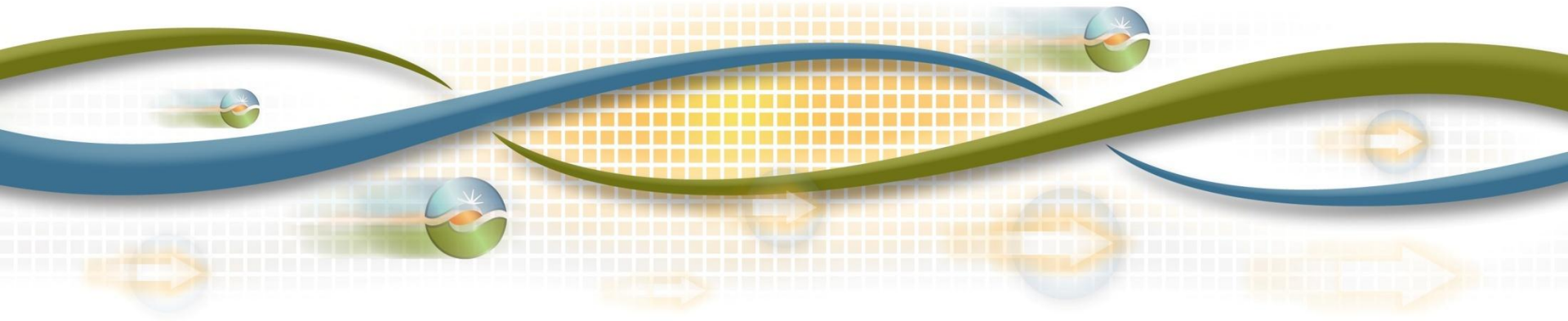


California ISO  
Shaping a Renewed Future

# Integration of Transmission Planning and Generator Interconnection (TPP-GIP Integration)

## Second Revised Straw Proposal

Stakeholder Meeting, January 19, 2012

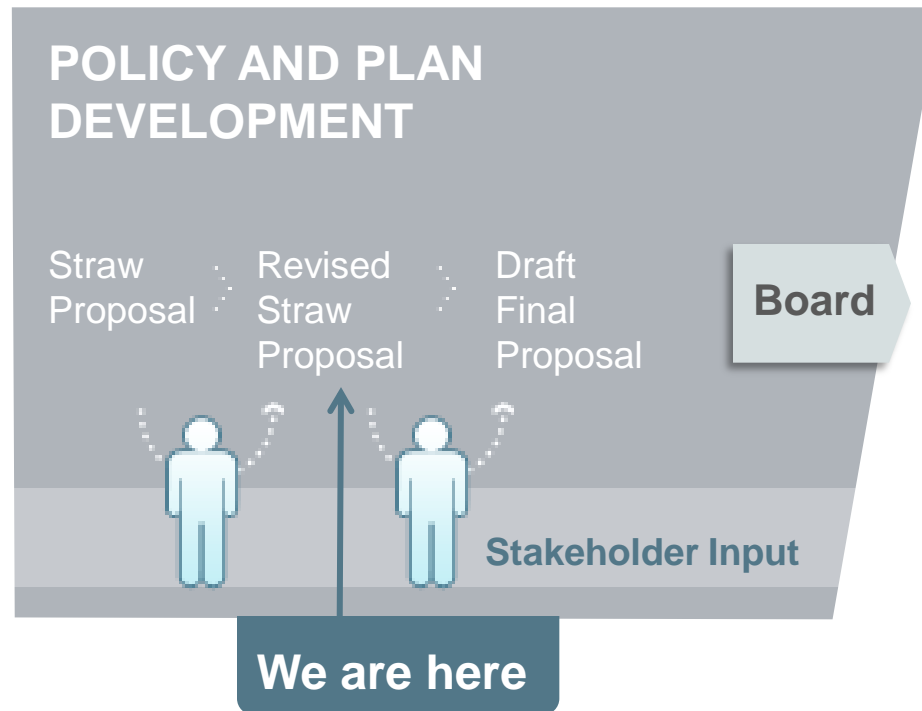


# Introduction, Stakeholder Process

Mercy Parker Helget

Senior Stakeholder Engagement and Policy  
Specialist

# ISO Stakeholder Initiative Process



# Schedule for stakeholder process

Date	Event
July 21	ISO posts Straw Proposal
July 28	Stakeholder meeting at ISO
August 9	Stakeholders' written comments due
September 12	ISO posts Revised Straw Proposal
September 19	Stakeholder meeting at ISO
September 26	Stakeholders' written comments due
November 23	ISO posts Discussion Paper
December 1	Work group meeting at ISO
January 12	ISO posts Second Revised Straw Proposal
January 19	Stakeholder meeting at ISO
January 31	Stakeholders' written comments due
February 15	ISO posts Draft Final Proposal (new date)
February 22	Stakeholder meeting at ISO (new date)
March 1	Stakeholders' written comments due
March 22-23	ISO Board meeting

# Agenda

Time		Speaker
10:00-10:10	Stakeholder Process, Agenda	Mercy Parker Helget
10:10-10:30	Proposal Overview & Objectives	Lorenzo Kristov
10:30-12:00	Second Revised Straw Proposal	TPP-GIP Team
12:00-1:00	Lunch – All are welcome to dine at ISO café	
1:00-3:45	Second Revised Straw Proposal	TPP-GIP Team
3:45-4:00	Next Steps	Mercy Parker Helget

# Proposal Overview & Objectives

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 generation project location decisions to make 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
6. Create greater transparency to transmission upgrade decisions.

# Objectives – continued

## 7. Resolve open GIP issues related to initiative scope

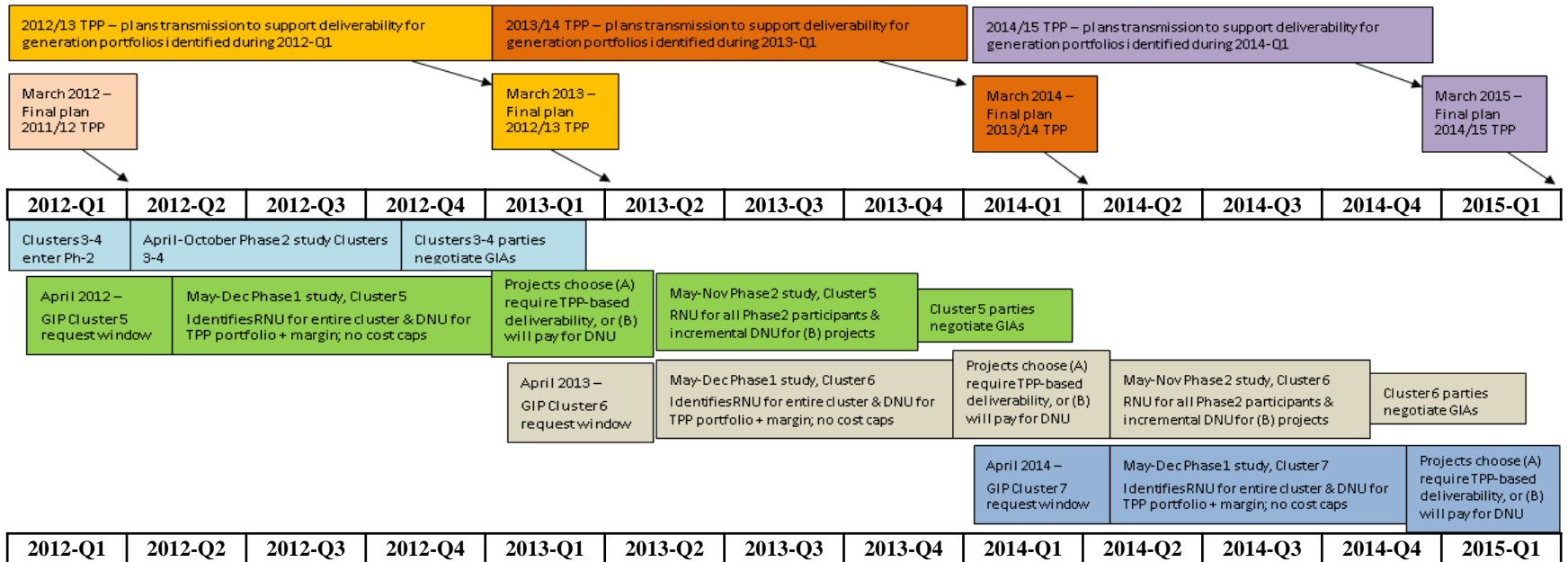
- a. Clarify IC funding and posting requirements.
- b. Provide for re-study process to re-evaluate needed upgrades and plan of service due to status changes of queue projects.
- c. Modify GIP study process to yield meaningful results even when the volume of MW in the queue is extremely large.
- d. Consider whether to allow additional opportunities for projects to downsize before executing the GIA.

## 8. Allocate TPP-based deliverability to eligible generation projects in a manner that:

- a. Selects projects with high likelihood of successful completion
- b. Limits the ability of non-viable projects to retain TPP deliverability without progressing to commercial operation
- c. Provides sufficient certainty for viable projects to obtain financing.



# Timeline for Integrated TPP and GIP



## What's new in this proposal

- Allocation of TPP-based deliverability to generation projects will occur after phase 2.
  - With related changes to GIP phase 1 & 2 study approaches
- Requirements for obtaining TPP-based deliverability:
  - project completes all permitting required to begin construction, plus either
  - a power purchase agreement (PPA) approved by regulatory authority, or
  - suitable evidence of committed project financing
- Projects must complete development milestones by GIA-specified dates to retain TPP-based deliverability status.

## What's new – 2

- Between phases 1 and 2, a generation project moving to phase 2 indicates either
  - (A) it is viable only with TPP-based deliverability status, or
  - (B) it is willing to pay for delivery network upgrades (DNU) to obtain its desired deliverability status.
- The new TPP-GIP cost allocation approach is intended to apply only to delivery network upgrades.
  - GIP provisions for reliability network upgrades and cost responsibility for the project's interconnection facilities do not change.

## What's new – 3

- In response to concerns about impacts of the extremely large existing interconnection queue:
  - ISO issued January 10 discussion paper on revised approach for identifying DNU needed for cluster 1-2 projects, with implications for clusters 3-4.
  - Approach reduces DNU requirements for existing queue to align with realistic development amounts
  - Revised approach for existing queue is intended to facilitate transition to new TPP-GIP provisions.

# TPP-GIP Integration

## 2<sup>nd</sup> Revised Straw Proposal

# Second Revised Straw Proposal

1. Cluster N request window closes at end of April.
2. GIP phase 1 study is designed to minimize impacts of extremely large cluster size

The GIP phase 1 study will identify:

- Reliability network upgrades (RNU) for all projects in cluster N, and
- Delivery network upgrades (DNU) for a “GIP phase 1 study portfolio”

3. For GIP phase 1 study portfolio, the MW studied for deliverability in each study area depends on
- the amount of deliverability provided by the current final transmission plan (“TP deliverability”)
  - the amount of full capacity generation projects in the queue, and
  - the size of the largest generation project in the study area.

Phase 1 will study a reasonable margin of generation above TP deliverability amount

4. Provides information for the possible situation where a particular grid area develops more than expected under the TPP base case portfolio, while another area develops less

5. Remains within the structure of the GIP, so that current roles of the ISO and PTOs would not change from today.
6. As a result of the phase 1 study, each IC project would know its RNU and associated costs, plus either
  - Its expected DNU and associated cost share, if the cluster study group total MW amount was not so large as to exceed the MW modeling limit as described above, or
  - In the case of a large cluster study group, the DNU and costs to provide deliverability to the MW limit specified for the GIP phase 1 study portfolio.



(6 – continued) For grid areas where phase 1 study amount < queue size, resulting DNU cost will be converted to \$/MW rate for estimating each project cost responsibility for DNU.

7. GIP phase 1 results will

- Provide each generation project with a cost cap for its reliability network upgrades (RNU)
- Retain today's GIP provisions regarding posting and reimbursements for RNU
- Not provide a cap to the exposure of generation projects to DNU costs.

8. Between phase 1 results and the deadline for posting for phase 2, the project must decide whether to remain in queue for phase 2 under one of two options:
  - (A) the project requires TPP-based deliverability to be able to continue to commercial operation, or
  - (B) the project is willing to pay for DNU without cash reimbursement by ratepayers.

If the project elects (A) it must make the normal GIP phase 2 posting related to RNU, but does not have to post for DNU. If it elects (B) it must also post for DNU.

9. Required posting amounts for phase 2 would be based on the phase 1 study results. For RNU this remains as it is today.
10. DNU posting requirements for (B) projects would be calculated from the phase 1 results by assuming that the “TP deliverability” is fully utilized by (A) projects, so that the (B) projects would fully fund the incremental DNU required by these projects. Each project would post for DNU cost estimated by  $\$/\text{MW}$  “rate” x (project MW deliverability).

11. A project that elects (B) would be fully responsible for the actual cost of the DNU required for its requested deliverability status.
- GIP study cost estimate for DNU is not a cost cap
  - The interconnection customer would be able to select its preferred developer to build the DNU, in accordance with qualifications and restrictions comparable to existing tariff provisions regarding eligibility of non-PTO entities to build transmission.

12. The ISO may add a baseline re-study process at the beginning of each GIP phase 2 to assess impacts, on previously identified network upgrade needs, of
- Project withdrawals from the queue since the ISO completed the last phase 2 study
  - Generation project status on meeting milestones
  - Transmission additions and upgrades approved in the most recent TPP cycle
  - New awards of TPP deliverability to projects.
  - The re-study would include deliverability and reliability assessments, may modify RNU or DNU requirements for some projects and lead to revision of some GIAs.

13. The phase 2 study will determine RNU requirements for all generation projects participating in phase 2.
- For determining needed DNU, the ISO would model (A) projects at their requested deliverability status, up to an amount of new generating capacity that is deliverable without further network upgrades and that fully uses up the available “TP deliverability.”
  - The ISO would then add all the (B) projects at their requested deliverability levels to determine the required incremental DNU.

14. Once phase 2 study results are provided both (A) and (B) projects will be eligible for TPP-based deliverability.
- To be eligible the project must have
    - All its required permits to begin project construction, plus
    - Either an approved PPA or demonstration of secured project financing
  - The (A) projects that qualify by 120 days after receiving phase 2 results will obtain TPP-based deliverability, reflected in their GIAs.
    - The (B) projects that qualify in this time frame may or may not obtain TPP-based deliverability, depending on how much TP deliverability is utilized by the qualifying (A) projects.

15. It is possible that the amount of (A) and (B) projects that meet the eligibility requirement for could exceed the amount of TP deliverability available in the study area.

- Comparable to situation addressed in Jan. 10 ISO discussion paper on cluster 1-2 deliverability.
- LSEs and regulatory authorities will have information to assist procurement decisions
  - Amount of TP deliverability in each study area without further DNU
  - GIP study results on cost of incremental DNU in each study area



16. The first response to over-building is through the TPP.
- Total amount in study area of cluster N group (A) projects that qualify for TPP-based deliverability, plus existing queue projects successfully progressing to commercial operation, exceeds the amount of TP deliverability
  - Incorporate this information into base portfolio for current TPP cycle to identify public policy-driven transmission elements to provide the needed deliverability.

## 17. The second response could occur through the annual net qualifying capacity (NQC) assessment.

- Needed if the amount of full capacity generation in an area that reaches commercial operation by the start of a given resource adequacy compliance year is greater than the total amount of NQC the grid can support in that area.
- If the situation arises the ISO would apply NQC adjustments on an annual basis, as needed, to all “new” generation projects in the constrained area, where “new” would include generation projects in clusters 1 through 4 that have not achieved specified development milestones by a certain date, and to all generation projects in cluster 5 and beyond that elect option (A).
- NQC reductions would reflect each resource’s flow impacts on constraining transmission facilities.

18. A category (A) project that does not obtain TPP-based deliverability within the current cluster time frame may
- Defer execution of its GIA for one more GIP phase 2 study cycle, or
  - Execute a GIA based on energy only deliverability status (EO).
  - If it defers the GIA and does not obtain TPP-based deliverability within the next GIP phase 2 cycle, it must either
    - Withdraw from the queue, or
    - Go forward as an EO project and meet all requirements associated with an EO GIA.
  - Later conversion of EO to deliverability would be governed by existing tariff (sec. 8.2)

19. A category (B) project that does not obtain TPP-based deliverability within the current cluster time frame must
- Proceed to execute a GIA that includes its funding of the incremental DNU and make the required postings within the normal time frame, or
  - drop out of the queue.
    - If the (B) project drops out at this time, it will forfeit some portion of its financial posting.

20. Once a project of either type (A) or (B) obtains TPP-based deliverability

- The GIA will specify development milestones which, if not met, will cause the project to lose its TPP-based deliverability (without terminating the GIA).
- Such project would be able to continue, if desired, under a GIA amended to reflect EO deliverability status.

## 21. The ISO proposes to retain the earlier proposal that:

- (a) incremental DNU required for (B) projects must be fully funded by the projects that utilize the DNU
  - If a (B) project receives TPP deliverability or drops out after phase 2 and the needed DNU do not change, remaining (B) utilizing the same DNU would have to pay larger shares
- (b) such DNU would be incorporated into the ISO controlled grid as merchant transmission facilities
- (c) later generation projects that receive deliverability benefits from DNU funded by earlier projects will reimburse the funding parties in proportion to the benefits received (i.e., flow impacts on the DNU).

22. If TP deliverability in a study area for a GIP cycle is not fully utilized by eligible generation projects
- The ISO will model the deliverability as fully utilized, if there are sufficient generation projects in the queue that could become eligible.
  - In areas where the TP deliverability has not been fully utilized by specific generation projects, the ISO will model generating capacity at specific locations to reasonably reflect the locations and resource types in the queue that could qualify at a later date.

23. If a generation project that was allocated TPP-based deliverability loses the allocation due to missing a milestone specified in its GIA
- the project would not be modeled at full capacity deliverability status in subsequent GIA studies
  - The associated deliverability would then be available for other projects in the next GIP cycle.



# Examples

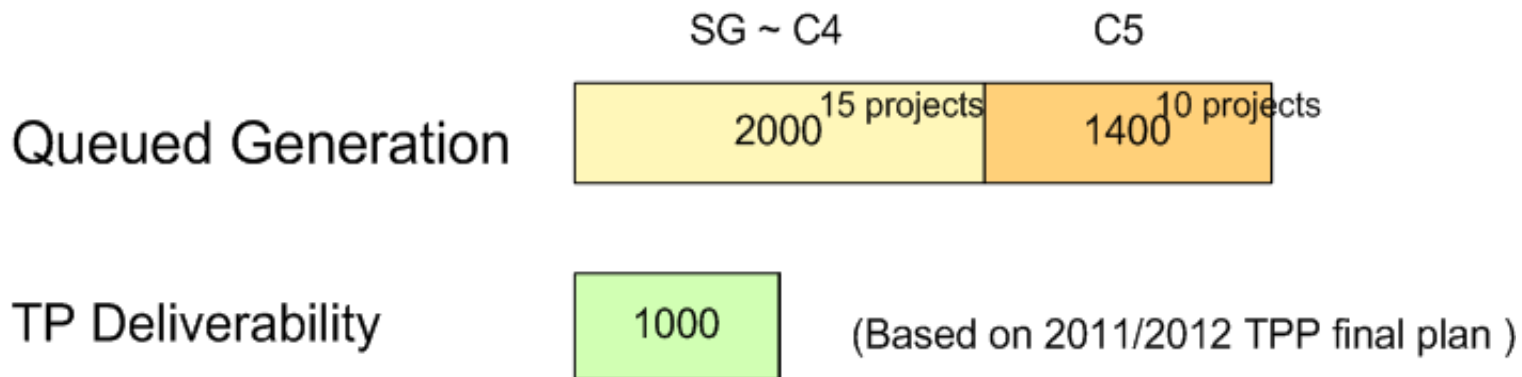
Robert Sparks

Manager, Regional Transmission

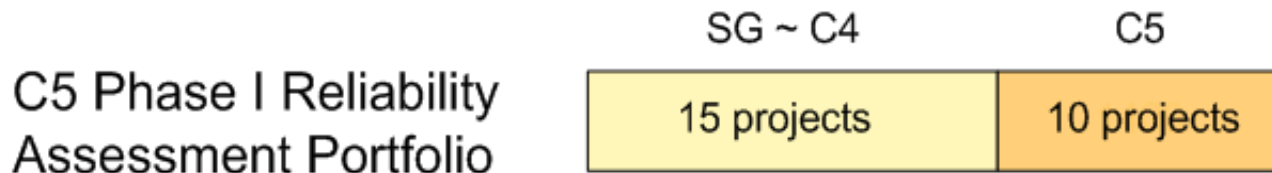
Songzhe Zhu

Senior Regional Transmission Engineer

# Example – Cluster 5 Phase I Study Portfolio



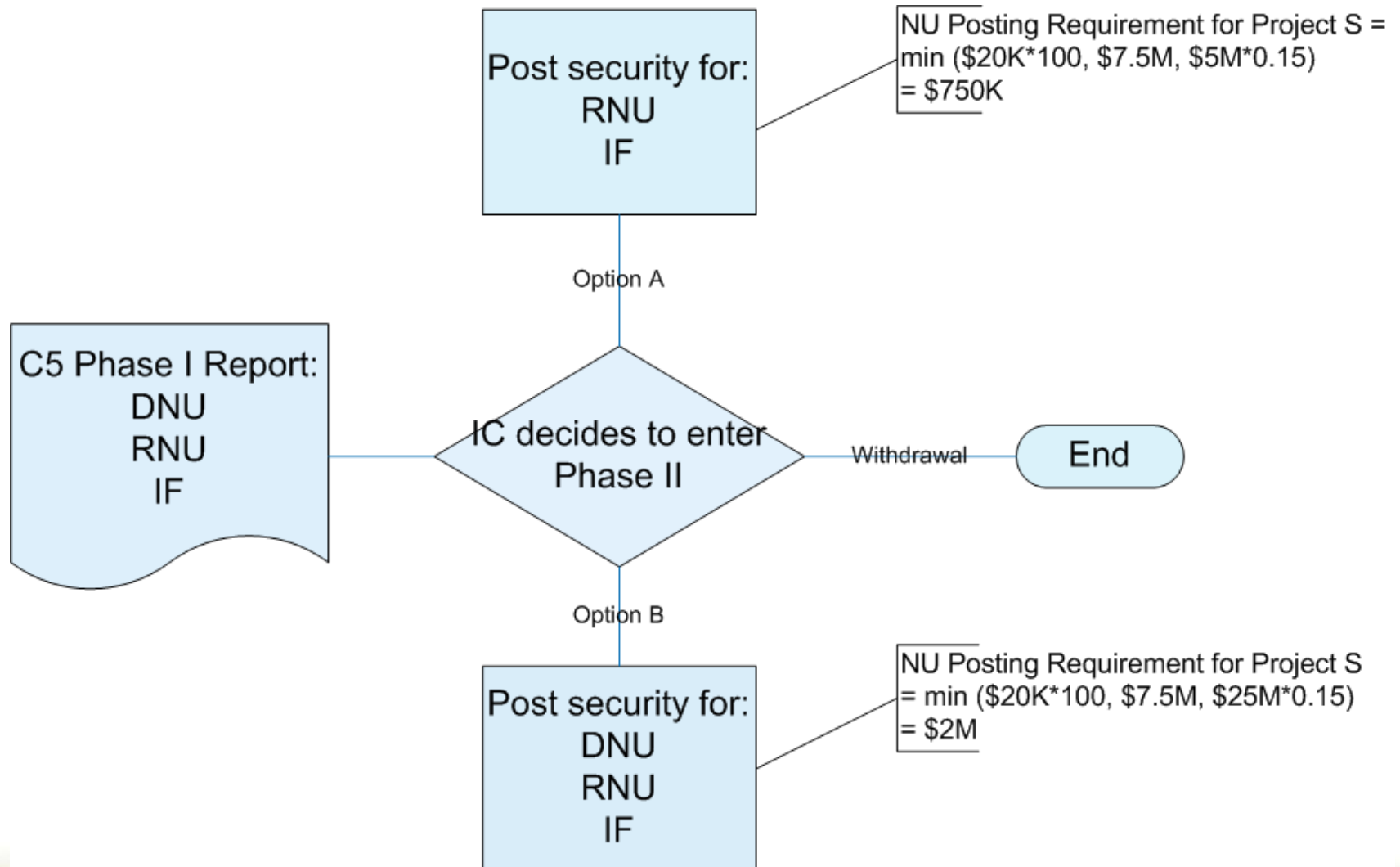
C5 Phase I Deliverability Assessment Portfolio: 1500 (e.g. 1.5 x TP Deliverability)



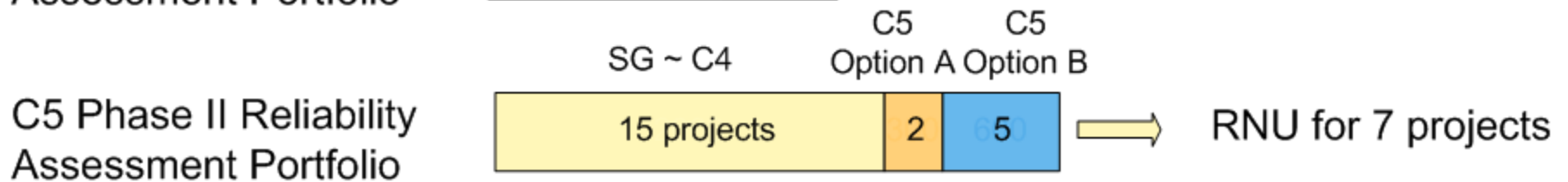
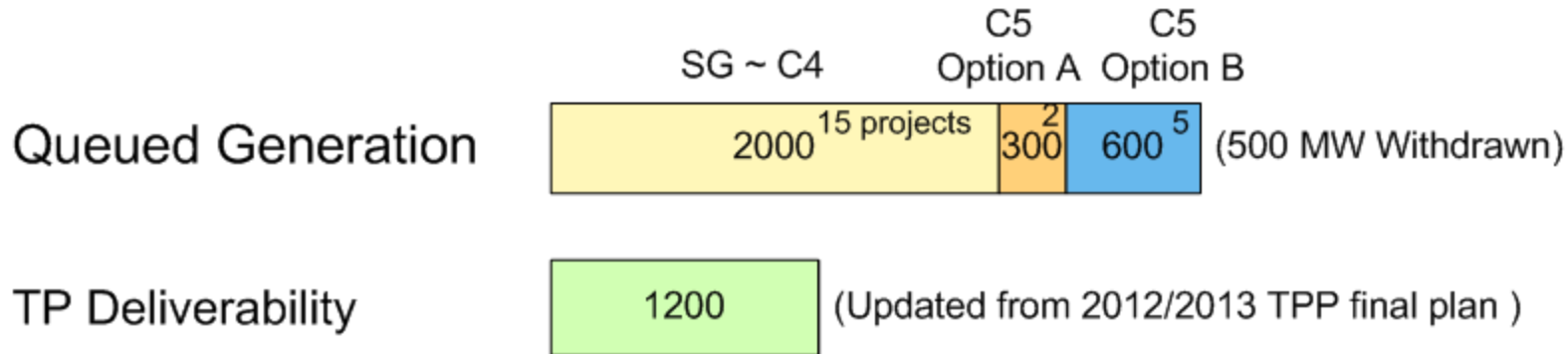
## Example – Cluster 5 Phase I Network Upgrades and Cost Estimates

- Incremental Delivery Network Upgrades cost \$100M for 500 MW generation (1500 MW studied – 1000 from TP)
- DNU cost rate =  $\$100\text{M} / 500 \text{ MW} = \$200\text{K}/\text{MW}$
- Reliability Network Upgrades and costs for 1400 MW C5 projects are determined the same way as today.
- For Project S, a 100MW solar project requesting FC:
  - DNU =  $\$200\text{K}/\text{MW} * 100\text{MW} = \$20\text{M}$  (estimate)
  - RNU \$5M

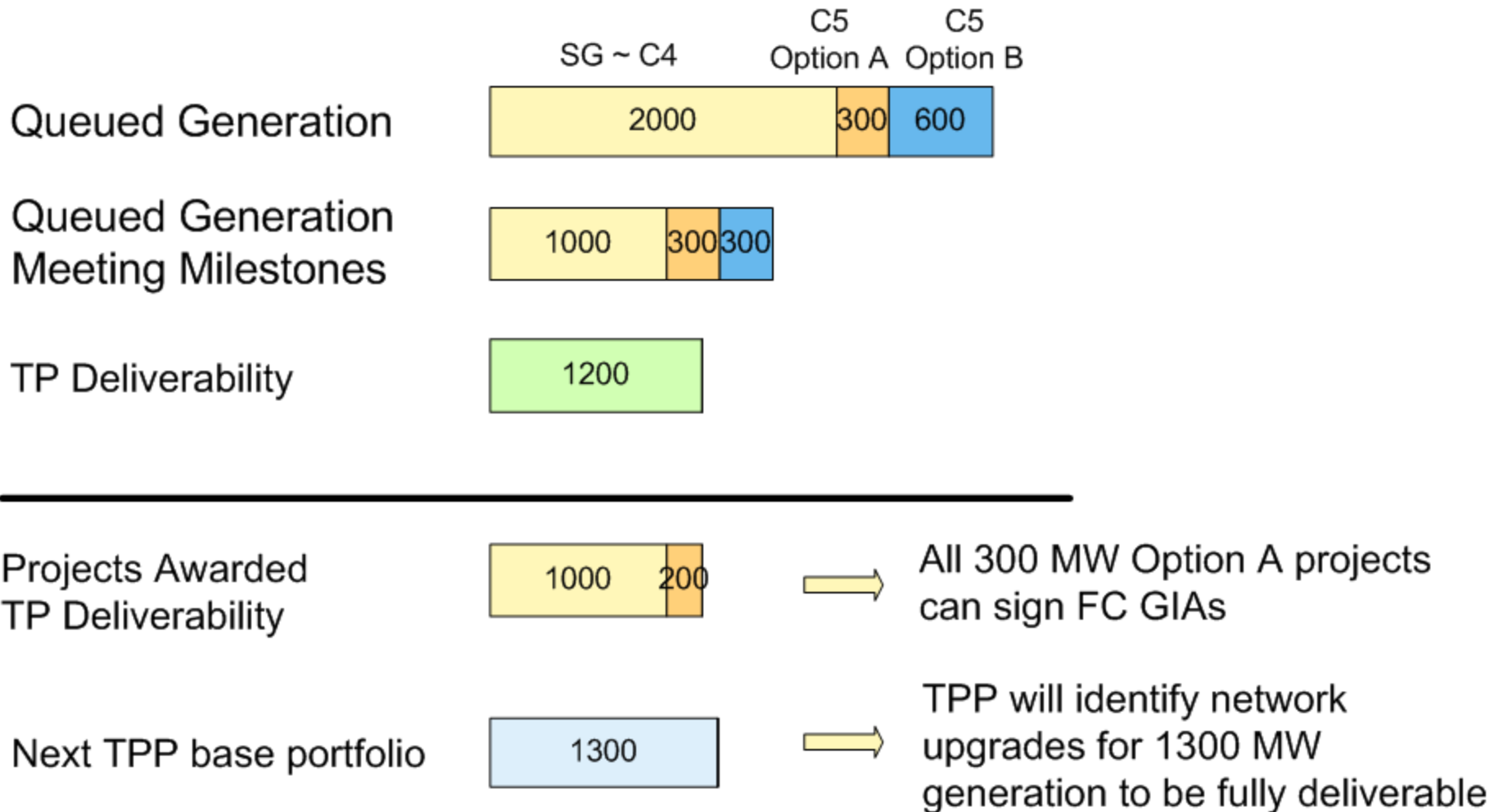
# Example – Posting Requirement to Enter Cluster 5 Phase II Study



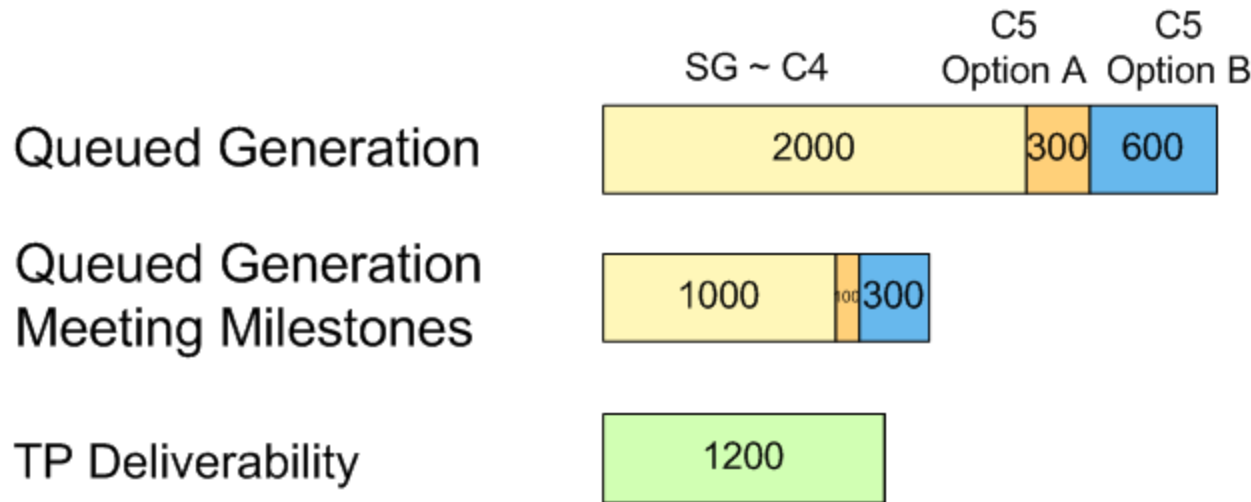
# Example – Cluster 5 Phase II Study



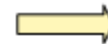
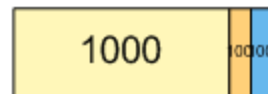
# Example – Allocation of TP Deliverability after Cluster 5 Phase II Study: Scenario 1



# Example – Allocation of TP Deliverability after Cluster 5 Phase II Study: Scenario 2



Projects Awarded TP Deliverability



100 MW Option A projects can sign FC GIAs;  
 100 MW Option B projects will have updated network upgrade requirement

# 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](mailto:TPP-GIP@caiso.com) mailbox by January 31.
- 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 –

Date	Milestone
January 31	Stakeholder comments due
February 15	ISO posts Draft Final Proposal
February 22	Stakeholder meeting on Draft Final Proposal
March 1	Stakeholder comments due
March 22-23	ISO Board Meeting