DRAFT FINAL PROPOSAL

Deliverability of Resource Adequacy Capacity on Interties

May 5, 2011

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1. Executive Summary

The California Independent System Operator ("ISO") publishes this draft final proposal regarding changes to the methodology for calculating the maximum import capability ("MIC") for resource adequacy ("RA") purposes. This draft final proposal is the next step in a stakeholder process that was initiated with the ISO's issue paper posted on March 15, to which stakeholders submitted comments on March 29, 2011.[1]

The MIC, which the ISO calculates annually, is the maximum megawatt ("MW") amount of import capacity that will be available to load serving entities ("LSEs") for procuring resources outside the ISO balancing authority area ("BAA") to meet their RA requirements for the upcoming year. Several stakeholders have raised concerns that the current MIC methodology, because it determines the MIC based on the amount of energy the ISO BAA has imported historically during peak system load hours, results in excessively low MIC values for a few selected ties. As a result, these stakeholders assert, the use of external resources to meet RA requirements is unnecessarily limited at these selected ties, resulting in increased costs of procuring RA capacity and barriers to the timely development of external renewable resources due to the inability of these resources to provide RA capacity.

In response to these concerns, the ISO initiated this stakeholder process and now publishes this draft final proposal to revise the MIC calculation methodology so as to make it possible to yield larger MIC values than the current historically-based approach allows, without compromising the fundamental requirement that all RA capacity be simultaneously deliverable to the ISO BAA to meet peak load conditions.[2]

The proposed revisions to the MIC methodology are one part of a two-part approach in which the ISO proposes to expand the amount of import capacity available to LSEs for obtaining RA capacity from external resources. The second part focuses on the transmission in the ISO BAA required to support the expanded RA import capacity. Utilizing new provisions in the ISO's transmission planning process ("TPP") that were approved by the Federal Energy Regulatory Commission ("FERC") in December 2010 – particularly the new public policy-driven category of transmission elements – the ISO proposes to identify any transmission additions or upgrades that will be needed to maintain the additional RA import capacity in support of the state's renewable energy requirements.

Thus the ISO's approach to expanding RA import capacity has two major elements: (1) the TPP component, in which targeted resource areas and associated interties that require expanded RA import capacity are identified, along with any required transmission needed to ensure deliverability; and (2) the MIC methodology component, in which the annual MIC methodology will be revised to expand MIC capacity on identified interties beyond historically-determined amounts based on existing transmission or subject to the completion of required upgrades. The MIC methodology is the focus of this paper; in addition, the paper provides an explanation of the TPP component to set forth the broader solution.

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[1] See Deliverability of RA Capacity on Interties initiative, http://www.caiso.com/2b42/2b42b9378530.html.

[2] It is important to note that this initiative is limited in scope to the MIC calculation itself; at this time the ISO does not intend to consider any changes to the current procedures for allocating shares of the annual MIC to LSEs for their use in meeting their RA requirements.

The approach starts with the transmission planning component. In the TPP, the ISO will establish target expanded MIC capacity MW values for each intertie that will be sufficient to support RA deliverability for the MW amount of resources behind each intertie that is included in the ISO's base case policy driven portfolio. In other words, the ISO will first establish the base case policy driven portfolio, which at this time includes renewable resources that will be sufficient to meet the state mandate of 33% renewable energy on an annual basis by 2020. Next, the ISO will determine the needed MIC MW quantities to support RA deliverability for the quantity of external resource capacity in the policy driven portfolio that will utilize each intertie for scheduling imports into the ISO BAA. For those interties where there are no external resources included in the policy driven portfolio, the ISO will assume that no additional MIC is needed beyond the historically-determined level under the current methodology.

The next step in the TPP will be to assess whether any additional transmission facilities or upgrades are needed to support the target expanded MIC values. Some expanded MIC values on certain interties may require associated network upgrades to ensure the deliverability of power from targeted resource areas indentified in the TPP. The ISO will then incorporate these upgrades into its annual comprehensive transmission plan in accordance with the provisions of the revised TPP. In addition, once the comprehensive transmission plan, including these upgrades, is approved by the ISO Board of Governors, the expanded MIC values and associated transmission upgrades will be incorporated into the assumptions for the interconnection studies performed under the ISO's generator interconnection procedures ("GIP"). As these new facilities are constructed and put into service on the ISO grid, the facilities will enable the ISO to make the expanded MIC values available to LSEs in the annual RA deliverability assessment using the revised MIC methodology that is the main subject of this draft final proposal.

On March 31, the ISO posted the *2011/2012 Transmission Planning Process Draft Unified Planning Assumptions and Study Plan.*[3] Publication of this document is one of the first steps in the development of the 2011/2012 Comprehensive Transmission Plan. Section 3.1.2 of the document discusses supporting RA deliverability status for needed renewable resources outside the ISO BAA. The ISO held a stakeholder meeting on April 7 to discuss the document and development of the 2011/2012 plan.

The expanded MIC methodology that the ISO now proposes will continue to utilize the current approach based on historical energy schedules during peak load conditions, and will expand those historically-determined values for specific interties based on the TPP assessment described above. Such an expansion will depend, of course, on the completion of the associated TPP-identified and approved transmission additions and upgrades. Specifically, the ISO proposes that the annual MIC determination, which is conducted in May and June of each year, will assume that transmission scheduled to be in service prior to the start of the upcoming RA compliance year will be in service for that year.

In the following sections, the draft final proposal provides a timetable for the stakeholder process, a brief background, an overview of comments received on the straw proposal and the ISO's response to those comments, a draft final proposal for stakeholder review and comment, and an outline of next steps. Additional background information is contained in the issue paper.

[3] The document can be found at http://www.caiso.com/2b52/2b52e70dca70.pdf.

2. Stakeholder Process

This draft final proposal will be discussed during a stakeholder conference call on May 12. The ISO believes that an expanded MIC methodology, used to establish expanded MIC values in the TPP, can be adopted under existing tariff authority; therefore the proposal will not require Board of Governors' approval or a FERC filing. The ISO will conduct its usual stakeholder process with a series of papers and stakeholder discussions to develop the expanded MIC methodology. It will then incorporate the new MIC methodology into the Reliability Requirements Business Practices Manual ("BPM") through the established BPM change management process. The schedule for the stakeholder process and the BPM change management process is shown in Table 1.

Table 1

Stakeholder Process	
Mar-15	*Post Issue Paper*
Mar-22	*Hold Stakeholder Conference Call, 3:00 p.m. to 4:30 p.m.*
Mar-29	*Receive Comments on Issue Paper*
Apr-6	Post Straw Proposal
Apr-13	Hold Stakeholder Meeting, 1:00 p.m. to 5:00 p.m.
Apr-20	Receive Comments on Straw Proposal
May-5	Post Draft Final Proposal ("DFP")
May-12	Hold Stakeholder Conference Call
May-19	Receive Comments on DFP
BPM Change Management Process	
Jun-9	Submit BPM Proposed Revision Request ("PRR")
Jun-10 - Jun-23	Open Comment Period on PRR, 10-business days
Jun-28	Hold BPM Monthly Management Meeting
Jul-5	Post PRR Recommendation
Jul-6 - Jul-19	Open Comment Period on PRR, 10-business days
Jul-26	Hold BPM Monthly Management Meeting
Aug-2	Post Final PRR Decision, effective immediately or on a date specified

A web page has been established for this initiative that provides access to meeting materials, proposals, and stakeholder written comments. This information can be found at http://www.caiso.com/2b42/2b42b9378530.html.

3. Background

The current MIC methodology is part of the ISO deliverability assessment process. Simultaneous deliverability of energy from all RA capacity to meet peak load conditions is an essential element of the RA program. To meet their RA requirements, LSEs must procure capacity that has been demonstrated to be deliverable through the ISO's deliverability assessment process.

The ISO deliverability assessment process is set forth in *Tariff Sections 40.4.6.1, Deliverability Within the CAISO Balancing Authority Area,* and *40.4.6.2, Deliverability of Imports,* and *Reliability Requirements BPM Sections 5.1.3.4, Deliverability to Aggregate of Load, and 5.1.3.6, Deliverability of Imports*. The foregoing provisions specify the process for establishing, on an annual basis, deliverability for internal supply resources and imports. Once the deliverability of resources is established through the ISO's deliverability assessment, LSEs are able to count the deliverable capacity toward their respective year-ahead and month-ahead RA requirements.

For RA capacity procurement purposes, the import capability of the ISO system is determined by the ISO and then allocated to LSEs in accordance with the detailed 13-step process set forth in Tariff Section 40.4.6.2. In Step 1 – which is the subject of this initiative – the MIC for each intertie is determined by the highest actual historical energy import quantities during peak system-load hours of the most recent two years. The current import capability values were posted to the ISO website in July 2010.[4]

The methodology for determining the MIC at each intertie is described in the Reliability Requirements BPM with additional technical details set forth in two additional documents, which were developed in the 2005 RA Initiative on Deliverability.[5] Below are the key excerpts from those two documents.

- *Preliminary Deliverability Baseline Analysis Study Report*[6]

    - Historical Import Scheduled Deliveries Methodology. The methodology to establish historical import scheduled deliveries is described in the Appendix 2 document. Specifically, the prior two years of historical import schedule data is examined during high load periods. The sample hours are selected by choosing hours with the highest total import level when peak load was at least 90% of the annual system peak load (Appendix 2, p.1).

    - Screening for Abnormally Low Historical Import Values. To prevent the use of abnormally low historical import schedule values for a particular branch group, the ISO has applied the following screening test to identify significantly abnormal data for a particular branch group. Two tests are performed on branch group data to screen for significantly abnormal data. The first test is applied to all branch groups and the second test is applied to branch groups identified in the first test. The first test is based on calculating the average and standard

[4] *California ISO Maximum RA Import Capability for Year 2011*, http://www.caiso.com/27c6/27c675b81c230.pdf.
[5] Resource Adequacy Initiative on Deliverability, http://www.caiso.com/181c/181c902120c80.html.
[6] Appendix 2: Initial CAISO Import Level for the Deliverability of Imports Assessment, CAISO, 4/12/2005, http://www.caiso.com/docs/2005/05/03/200505031710356864.pdf.

deviation for each set of branch group data. Then if the minimum Scheduled Net Interchange value for a branch group deviated significantly from the average value for that branch group then the second test was applied to that branch group. It is assumed that the data fit a normal distribution and that 95% of the samples should be within two standard deviations of the average. Therefore, a significant deviation from the average would be at least two standard deviations. However, because of the small number of samples a less restrictive test was applied, and a significant deviation from the average was assumed to be a deviation of more than 1.3 standard deviations from the average (80% of the samples should be within 1.3 standard deviations of the average). (Appendix 2, p.2)

- *Supplemental Deliverability Study*[7]
  - This study describes three refinements to the initial import level (established in Appendix 2 above). The Supplemental Study addresses consideration of existing resource contracts, the effect of expiring Existing Transmission Contracts, and the effect of East of River short-term upgrades. These changes result in MIC increases at certain interties relative to the initial import levels determined in the prior steps.

The ISO deliverability assessment process is also described in the *ISO On-Peak Deliverability Assessment Methodology for Resource Adequacy Purposes.*[8] In addition, the following report provides detailed information about this process: *Preliminary Deliverability Baseline Analysis Study Report*, Appendix 1: *Generation and Import Deliverability to the Aggregate of Load (Baseline) Study Methodology, Executive Summary, April 8, 2005.*[9]

Revising the RA import capability methodology was previously identified in the ISO's market initiatives roadmap process as a desirable market enhancement and is currently listed in the Revised Catalogue of Market Design Initiatives dated October 18, 2010. The excerpt from the catalog is shown below.

> *9.9* ***Allocation of RA Import Capacity (D)***
>
> *The allocation of RA Import Capacity among market participants is currently prioritized by the allocation made in the prior year. This approach, similar to CRR allocations, is illogical because it locks in such allocations based on past data without requiring ongoing support to demonstrate the going-forward merit of these allocations. Over time, this process disadvantages market participants who wish to acquire out-of-state resources that could otherwise lower the cost of energy supply into the CAISO, since the RA capacity value may not be realized. SDG&E proposes that the CAISO implement a process whereby RA Import Capacity is allocated among market participants based on demonstrable need or benefit to the overall market.*

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[7] *September 23, 2005 -- Import Levels for RA Planning Purposes, Explicit Consideration of Existing Resource Contracts, Expiring Transmission Contracts, and East of River Short-Term Upgrades, http://www.caiso.com/docs/2005/09/23/20050923165719616.pdf.*

[8] *ISO On-Peak Deliverability Assessment Methodology for Resource Adequacy Purposes, Updated April 10, 2009, http://www.caiso.com/23d7/23d7e41c14580.pdf.*

[9] See http://www.caiso.com/docs/2005/05/03/20050531708566410.pdf.

Advisory Estimates of Future Resource Adequacy Import Capability. The ISO recently published "Advisory Estimates of Future Resource Adequacy Import Capability for Years 2011-2020" to its website at http://www.caiso.com/1c44/1c44b2dd750.html. The Advisory Estimates document shows the estimated future year-to-year changes in resource adequacy remaining import capability at each branch group resulting from the expiration of ETCs and Pre-RA Import Commitments.

4. Issues Addressed

Under the current MIC methodology, some interties to the ISO BAA currently have very low or even zero MIC values. Some stakeholders contend that an unnecessarily low MIC value can prevent LSEs and renewable developers from negotiating bilateral contracts for energy and capacity from projects outside the BAA. For example, a zero MIC value on an intertie means that no LSE will be able to use that intertie for the delivery of RA capacity in the next compliance year, and therefore no RA revenue streams are available to generation projects that would schedule energy at those interties, even though the generation projects might otherwise be more desirable than some generation projects located inside the ISO BAA that are able to offer RA capacity. Moreover, some of these external projects are located in areas rich in renewable energy potential, which could be used by LSEs to meet the requirements of the state of California's renewable portfolio standard ("RPS"),[10] including the 20% and 33% energy goals. Through this initiative, the ISO has developed an improved MIC methodology that will allow for increased import capability where warranted. With increasing renewable development expected outside the ISO BAA, the ISO expects increased interest in such expansion of RA import capability beyond the levels determined by the current historical-based MIC methodology.

5. Comments on the Straw Proposal

Comments on the issue paper were due on April 20, 2011. Twelve sets of comments were submitted on the straw proposal: CalEnergy Operating Corporation ("CalEnergy"), California Wind Energy Association ("CalWEA"), Imperial County Board of Supervisors ("Imperial County"), Imperial Irrigation District ("IID"), Imperial Valley Renewable Energy Task Force ("IV Task Force"), Imperial Valley Renewable Generation Coalition ("IVRGC"), Noble Americas Energy Solutions ("Noble Solutions"), Pacific Gas & Electric Company ("PG&E"), San Diego Gas & Electric Company ("SDG&E"), Southern California Edison ("SCE"), Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California ("Six Cities"), and ZGlobal.

PG&E, SCE, SDG&E, IID, and CalEnergy stated that they generally support the ISO's proposal to expand maximum import capability values. Nine stakeholders offered various questions and comments aimed at refining the proposal (CalEnergy, CalWEA, IV Task Force, Noble, PG&E, SDG&E, SCE, Six Cities, and ZGlobal). Seven stakeholders (CalEnergy, CalWEA, Imperial County, IID, IVRGC, IV Task Force, and ZGlobal) expressed interest in the IID area generally, or with the Imperial Valley Intertie, specifically. Four stakeholders (CalWEA, IVRGC, IV Task Force, SDG&E) stressed the importance of MIC increases in the interim or the short-term, prior to the completion of required transmission upgrades. Three stakeholders (CalEnergy, PG&E, SDG&E) either sought clarification, or stressed the importance of the resource portfolio

[10] RPS Program, http://www.cpuc.ca.gov/PUC/energy/Renewables/

development process between the ISO and CPUC.

5.1. Resource Portfolios

Three stakeholders (CalEnergy, PG&E, SDG&E) either sought clarification, or stressed the importance of the resource portfolio development process between the ISO and CPUC. In the *2011/2012 Transmission Planning Process Draft Unified Planning Assumptions and Study Plan*, the ISO explained on page 33 that the goal of the 33% renewable resource analysis is to identify the transmission needed to meet the 33% renewable resource target by 2020. In the last planning cycle, the ISO developed and analyzed renewable policy driven portfolios that were aligned closely with the portfolios developed by CPUC for use in the current long term procurement proceeding. As was done in the prior cycle, the ISO, in coordination with the CPUC, will develop renewable policy driven portfolios for the 2011/2012 cycle using the tariff criteria set forth in tariff Section 24.4.6.6. Thus, the renewable policy driven portfolios developed for 2011/2012 will reflect such considerations as environmental impact, commercial interest, and available transmission capacity, among other criteria. The ISO will publish these updated policy driven portfolios in the May/June 2011 timeframe as part of the 2011/2012 TPP process.

PG&E stressed the need for the present initiative to acknowledge the early signals of real development in order to avoid what it characterizes as the chicken and egg problem that this stakeholder process is attempting to solve. Specifically, PG&E recommended that the ISO maintain sufficient flexibility in its resource portfolio assumptions to accommodate resources that achieve certain concrete development milestones, such as an executed and approved power purchase agreement, permitting or interconnection.

PG&E proposes that the ISO expand and fully incorporate into its planning assumptions existing contracts into its consideration of determining an expanded MIC. PG&E proposes that this flexibility extend beyond just renewable resources to all technology types.

- **ISO Response**: The ISO will review and update the resource portfolios annually in the context of the TPP, in consultation with the CPUC as appropriate, and such updating will reflect the real development referred to by PG&E. The PPA status is one of the considerations in building the updated portfolios. With regard to extending this process beyond just renewable resources to all technology types, as stated in the proposal, on a looking forward basis, the ISO will expand MIC for any resource types that are needed in order to meet state and federal policy objectives.

SDG&E stressed the importance of transparency in the resource portfolio selection process, and would like stakeholders to have notice and a meaningful opportunity for input and comment prior to the ISO and CPUC selecting a particular resource portfolio. SDG&E noted that when questioned about the portfolio selection process at the recent stakeholder meeting, the ISO indicated the process would occur in close consultation with the CPUC, and that stakeholders would have an opportunity to comment.

- **ISO Response**: The ISO has, in consultation with the CPUC, reviewed and refined the renewable resource portfolios (developed in the CPUC LTPP proceeding) for use in the 2011/2012 TPP. The ISO will issue the portfolios for stakeholder review and comment as part of the TPP process in the May/June timeframe. At that time, stakeholders will

have an opportunity to provide feedback to the ISO and CPUC through the ISO TPP stakeholder process.

CalWEA recommends that the ISO consider expanding MIC/RIC across interties that currently have no identified policy-driven imports. According the CalWEA, the process of identifying policy-driven imports from an external BAA can be somewhat arbitrary and unclear, which can cause this process to fail particularly in those cases where significant development activities are taking place in an external BAA, in the absence of a policy-driven import mandate. Thus, CalWEA recommends that the ISO consider defining the circumstances for expanding MIC/RIC on certain interties that may not be carrying policy-driven imports.

- **ISO Response:** The foundation for the current proposal is to utilize the public policy-driven category in the TPP as the basis for identifying – and approving for cost-recovery from transmission ratepayers – transmission additions and upgrades needed to support expanded MIC on particular interties, in areas where the resources that would utilize those interties to import into the ISO are needed to meet the 33% RPS mandate. The policy-driven transmission category rests on the formulation of the 33% RPS resource portfolios. Apart from this approach, the ISO would have no basis for approving rate-based transmission to support MIC expansion.

5.2. Imperial Valley

The ISO has two interties with the IID system: IID-SCE_BG and IID-SDGE_BG. These intertie points are also referred to as branch groups. The IID-SCE_BG intertie is located at the northwest corner of the IID system and has a current MIC value of 600 MW. The IID-SDGE_BG intertie is located at the southwest corner of the IID system, is also referred to as the Imperial Valley or IV intertie, and has a current MIC value of zero MW. MIC values for all ISO interties for Year 2011 are posted on the ISO website, http://www.caiso.com/27c6/27c675b81c230.pdf

Four stakeholders strongly commented in favor of resource development in Imperial Valley. While IID, Imperial County, IVRGC, and the IV Task Force are supportive of ISO efforts in this initiative to raise MIC values on the interties, they would specifically like to see the IID-SDGE_BG intertie increased well beyond its current zero value.

IID stated that it is critical that the Straw Proposal address the short-term needs for expanding MIC values, in addition to a comprehensive long-term solution, to allow Imperial Valley development to move forward with some level of certainty. IID also seeks to confirm its understanding that, under the current historical methodology, an external resource that schedules at a particular branch group can increase the MIC by the virtue of its schedules during those test hours, up to the physical limitation of that branch group.

The Imperial County Board of Supervisors requests that the ISO continue to work on resolving this matter in a timely fashion, in order to allow projects being developed in the Imperial Valley to compete effectively in the RPS market. Imperial County finds the straw proposal to be a workable basis to address the problem, provided that the RA value for IID exports is established at the soonest possible date.

IVRGC urges the ISO to adopt an approach that: (1) calculates MIC at the interties using a prospective approach based upon a reasonable expectation of the amount of resources that can be delivered to the ISO BAA at an intertie; and (2) puts a new methodology in effect before the

2013 RA compliance year. IVRGC members have several projects in the IID interconnection queue scheduled to go on-line in the third and fourth quarter of 2012 and would like the ISO to accommodate any projects that might be deliverable before 2013.

The IV Task Force states that the straw proposal goes a long way toward addressing the problem. However, the IV Task Force is concerned with both the short-term and long-term issues of importing RA capacity from the IID BAA to the ISO BAA. According to the IV Task Force, the Straw Proposal seems to address the long-term issues by providing necessary upgrades to the ISO system through the TPP, but it may take several years for MIC increases to materialize which may result in short-term gaps. The IV Task Force understands that the portfolio analysis described in the Straw Proposal will examine realistic scenarios that include Imperial Valley generation, and may result in an expanded MIC for ISO/IID intertie points, commencing with the 2013 RA compliance period. The IV Task Force claims that it is critical that the Straw Proposal address the short-term needs for expanding MIC values, in addition to a comprehensive long-term solution, to allow Imperial Valley development to move forward with some level of certainty.

- **ISO Response**: The ISO understands the importance of moving expeditiously to revise the MIC methodology, and has established a workable time line that will enable the ISO to apply the new approach in the annual RA Import Allocation process performed in 2012 for the 2013 RA compliance year. The ISO must emphasize, however, that any near-term expansion of MIC on any intertie must be demonstrated via an ISO deliverability study to be feasible. Absent such a finding the ISO would not be able to utilize all of the designated RA capacity when needed to meet peak load conditions, which would undermine the effectiveness of the RA program.

  With regard to IID's request for clarification, IID is correct that under the current historical methodology, the MIC at a particular branch group may be expanded by increased net schedule exports from the neighboring BA to the ISO, assuming that the net scheduled exports to the ISO are captured in the test hours utilized. This can result in an increased MIC value for the intertie, where the MIC rating will not exceed the physical limitation of the branch group.

5.3. Interim Expansion of MIC in the Short-Term

CalWEA contends that, given the conservative methodology used by the ISO in deliverability assessments, expanding the MIC/RIC values on any intertie to their target levels will most likely trigger transmission upgrades which will result in MIC/RIC expansions that are several years out. CalWEA, therefore, recommends that the ISO modify the proposal to allow for some interim expansion of MIC/RIC while the identified transmission expansion necessary to allow Target MIC/RIC levels proceeds through the planning and development process. Specifically, CalWEA recommends that the ISO use a three-step process for processing the MIC/RIC expansion for an intertie.

Base MIC/RIC on ATC, Step 1. According to CalWEA, the ISO should identify and study the highest MIC/RIC value that could be accommodated on the intertie based on the available transmission capacities in the system. This maximum import value, if greater than zero, would then be added to the historically calculated MIC/RIC for that intertie. The approach to implement this step is essentially the same method that the ISO recently adopted for its partial deliverability analysis for transition cluster Phase II projects as presented in the ISO Technical Bulletin on the same topic on August 30, 2010, http://www.caiso.com/2802/2802860e49b50.pdf In contrast, SDG&E does not share the view that all MIC/RIC increases will require network upgrades, but does raise the issue of interim MIC and Remedial Action Schemes. SDG&E observes that some interties may not need any transmission upgrades to obtain expanded MIC values, so MIC can be increased immediately and be available for the 2013 RA compliance year. SDG&E claims that other interties may need transmission upgrades to reach expanded MIC values, but some MIC increase may be possible before the upgrades are finished; especially if Remedial Action Schemes are feasible as an interim measure to support expanded MIC values.

- **ISO Response**: CalWEA's proposal here seems to depart from the essential TPP-based approach of the ISO's proposal, and therefore the ISO has some concerns about CalWEA's proposal. First and foremost, the 2010 partial deliverability analysis was explicitly intended to be advisory only, given that its results depended on assuming the historically-based MIC values and the stated CODs for all resources in the queue up to and including the transition cluster. If we were to apply a similar analysis in the annual RA deliverability assessment, it is likely that MIC values allocated in one year would actually decrease in the following year as additional resources in the queue achieve commercial operation. The ISO understands that parties would not want to be exposed to potential reductions in MIC values from year to year. Second, even if some expanded MIC could be demonstrated through a deliverability study for a particular year, it would not be appropriate to *add* this amount to the historical value because the same historical net imports would need to be accommodated *within* the expanded MIC. The ISO therefore believes that it is not appropriate to break the linkage with the TPP to try to expand MIC values as CalWEA suggests.

Use SPS-Type Measures, Step 2. According to CalWEA, the ISO should implement temporary operational measures (including SPS) that can be expeditiously accomplished in the interim to expand the MIC/RIC on an intertie towards their target values. CalWEA believes this interim solution would be most applicable for those conditions when deliverability for the Target MIC/RIC values cannot be reached under the N-2 study condition.

- **ISO Response:** In the straw proposal, in response to SDG&E's comment regarding a contingency-based power flow analysis, the ISO stated that it can consider the potential use of lower cost mitigation, such as expanding a Remedial Action Scheme ("RAS") in the deliverability study process to assure the physical, simultaneous deliverability of the TPP main portfolio which will include expanded MIC values at certain interties.

Network Upgrades in ISO Proposal, Step 3. CalWEA's recommended third step in the MIC/RIC process is essentially the same as the ISO straw proposal which involves upgrading transmission to attain the Target MIC/RIC values.

- **ISO Response:** The ISO agrees as set forth in this draft final proposal.

5.4. Identification of Excess MIC

During the April 13 stakeholder meeting, CalWEA and Phoenix Consulting postulated that some interties may have excess MIC, meaning the import capability at those particular interties may exceed the LSE nominations at those interties. It was suggested the ISO reduce import capability at those interties, and bestow the reduced amount on interties with zero or low historical MIC values. By generating import capability at affected interties, this redistribution would ostensibly address the issue this process is attempting to resolve. Importantly, by simply redistributing the current total MIC, that is currently deemed deliverable by the ISO, this approach might not trigger system upgrades.

CalWEA, in comments, called for a fundamental overhaul of the current historical approach for MIC/RIC calculation. Specifically, CalWEA recommends that the ISO consider fundamentally addressing the underlying reasons that have caused the calculation of MIC/RIC to be conducted based on historical schedules. CalWEA suggests that it may be more economical and more expeditious to identify and deploy solutions that partially or fully eliminate the simultaneous import limits into the ISO footprint so that the maximum import capabilities on interties more closely track with their OTC limits. CalWEA states that while it is not confident that reasonable cost solutions exist for this purpose, it does believe that such an analysis is warranted as the outcome might still be less onerous than one which would involve expanding the grid to allow all policy imports to attain deliverability. In addition, CalWEA states that it is critical that the ISO update all the simultaneous import limits into the entire or parts of the ISO footprint by accounting for all the major transmission upgrades have been recently deployed or are under development in California.

SDG&E, in comments, stated that it appreciates the potential efficiency that the excess MIC approach is designed to achieve, but questions whether it could be implemented quickly enough to reduce the contracting uncertainty this proceeding is designed to address. From an operational standpoint, SDG&E doubts the ISO would be willing to implement such an approach without first determining through studies that the changed distribution of MIC would be simultaneously feasible. SDG&E notes that current ISO proposal requires only changes to the Business Practice Manual, while revising the remainder of the 13 step RA import allocation process that is outside the scope of this initiative would likely require lengthy tariff changes.

SDG&E recommends that, in the interest of quickly implementing a useful change to the current RA import process, SDG&E's previous comments accepted the limited parameters of the ISO's initial proposal. SDG&E understands that changes to the MIC allocation process would likely require significant revisions of tariff sections 40.4.6.2.1, slowing this process and further delaying resource development in California. Accordingly, SDG&E continues to support the CAISO's decision to isolate and remedy the discrete barriers to purchase power contracting that initiated this process.

- **ISO Response:** The ISO does not believe it is appropriate to pursue the suggestions to reallocate some MIC capacity away from some interties to other interties, or to develop an entirely new approach to assessing the simultaneous import capability of the ISO grid, as either of these efforts would defeat the objective of getting new MIC BPM provisions in place within the next few months and would thus impede the near-term

enhancements many stakeholders are seeking. Through deliverability studies performed under the TPP for the main resource portfolio, the ISO may increase MIC on a going-forward basis, where warranted, based on all the approved and under construction transmission projects.

5.5. Questions and Proposed Refinements

Nine stakeholders offered various questions and comments aimed at refining the proposal (CalEnergy, CalWEA, IV Task Force, Noble, PG&E, SDG&E, SCE, Six Cities, and ZGlobal).

Counter-Scheduling. ZGlobal posed the following question on counter-scheduling: Is the maximum amount of RA available (ignoring the potential need for network upgrades) on the IID-SDGE intertie equal to the OTC of 239 MW or will the ISO take advantage of counter-scheduling and be able to count MIC as 398 MW (239 MW + 159 MW)? ZGlobal notes that the net import capability on this intertie is negative 159 MW, MIC of 0 MW, and OTC of 239 MW.

- **ISO Response**: The MIC for RA purposes (as established currently through the historical methodology) on any intertie cannot be greater than the OTC of that intertie, which is currently 239 MW for the IID-SDG&E intertie. If the ISO determines through the proposed process that additional RA import capability is needed beyond the current OTC, that would require expansion of the OTC and cannot be accommodated by counterflows.

Clarification of Target MIC and Expanded MIC. ZGlobal seeks clarification on the relationship between Target MIC and Expanded MIC. ZGlobal asked whether it is correct to assume that a MIC MW value that is less than the rating of the intertie can be counted MW-for-MW or could it conceivably be limited to something less than the intertie rating due to the impact of generation from downstream generators; and if it is the latter, then is the intertie rating compromised based on the output of the generators.

- **ISO Response**: Under the current methodology, the amount of maximum RA available on an intertie – the MIC – is the sum of net imports into the ISO (based on historical data) plus unused import ETC capacity. (In the case of the IID/SDG&E Branch Group Intertie, the current zero MIC value results from zero net imports into the ISO plus unused import ETC capacity.) Under the ISO's proposal the ISO could calculate an expanded MIC (or target MIC) value that is needed to enable LSEs to obtain RA capacity from external resources that will utilize that intertie. The ISO would then have to determine whether the expanded MIC value is feasible without any network upgrades. If the expanded MIC value is greater than the OTC of the intertie, it would not be feasible without upgrades to expand the OTC. Moreover, even if the expanded MIC value is within the existing OTC, it still may not be feasible due to downstream constraints within the ISO system, in which case the ISO would identify transmission upgrades needed to make the expanded MIC value feasible.

Verification of Network Upgrades. Six Cities is concerned that, for purposes of establishing the MIC values for a given RA compliance year, the ISO would assume that transmission upgrades scheduled to be in service prior to the start of that RA compliance year would simply be in-service without the establishment of some sort of verification and status update procedures.

- **ISO Response:** The ISO verifies the actual status of transmission upgrades in the planning or construction phase of development. The ISO actively participates in numerous planning forums and tracks the progress of upgrades under construction. The ISO will review and verify the scope of work for the upgrade projects and associated status reports, and will include the network upgrades in the annual MIC calculation process only if the upgrades are on track to meet their scheduled in-service dates prior to the start of the upcoming RA compliance year. Stakeholders are also encouraged to provide any relevant information to the ISO on the status of network upgrades.

Adjustments to RA Import Allocation. Six Cities also recommends that if a network upgrade assumed to be in service for purposes of an annual MIC determination is delayed, the ISO should revise the MIC allocations on the affected intertie(s) on a pro rata basis (excluding assignments for ETCs, TORs, and grandfathered RA resources) and provide the reduced MIC allocations to affected LSEs at least thirty days prior to the due date for the initial monthly RA showings. Six Cities claims that this will provide an opportunity for LSEs to replace the RA resources affected by the delayed upgrade and assign responsibility for any required backstop capacity to the LSEs that purchased the resources for which deliverability is reduced by the delay in completion of the upgrade.

- **ISO Response:** The ISO understands Six Cities' point about allocating the costs of any needed backstop capacity to those LSEs that procured RA capacity utilizing an intertie whose associated upgrades have been delayed. However, the proposal by Six Cities to revise MIC allocations after the annual RA import allocation process is outside the scope of this initiative

Reject Pre-RA Import Commitments. Noble requests that the ISO review all Pre-RA import commitment contracts and develop a process that incorporates a step to reject, on a going–forward basis, all current pre-import contracts signed before 2005 that do not meet TPP its current policy objectives. Nobel claims this additional step will expand the RIC and allow all load serving entities the opportunity to receive a more equitable share of the RA import allocation on the interties.

- **ISO Response:** The proposal by Noble, regarding the rejection of Pre-RA Import Commitments, is outside the scope of this initiative.

Coordination with Other Initiatives. SCE's comments refer to related issues and objectives being considered by the ISO in several other on-going stakeholder processes, including the Resource Transitions and Renewable Integration initiatives. SCE strongly urges the ISO to ensure that these initiatives (and any others with related issues) are thoroughly coordinated to mitigate duplication of effort and unintended consequences.

- **ISO Response:** The ISO has provided for the coordination of the developments of this initiative with the Resource Transitions initiative by establishing specific eligibility

requirements for resource transitions strictly linked to the RA Import Allocation process and done in parallel. Regarding coordination with any of the Renewable Integration initiatives, the ISO is not aware of the need for specific coordination provisions at this time but will certainly consider any specific recommendations.

5.6. Evaluation of Resources in the CPUC RFO Process

CalEnergy, while supportive of the overall proposal, remains concerned that there is too much ambiguity between the CPUC 2011 request for proposals (RFP) process and the associated monetary values attributed by load serving entities to generators regarding MIC. Specifically, CalEnergy seeks clarification that, in the 2011 RFP process, the CPUC and its LSEs would be able to evaluate resources which would utilize the new Expanded MIC import capability through their RFP process, against other generation directly connecting to the ISO system, without penalty attributable to the MIC value (or lack thereof).

- **ISO Response**: On April 14, 2011, the CPUC issued Decision (D.) 11-04-030 in the Rulemaking 08-08-009, which conditionally approved renewable energy procurement plans for PG&E, SCE, and SDG&E for use in the upcoming Summer 2011 RPS solicitations, subject to a compliance filing. Parties seeking clarification regarding how renewable bids will be evaluated in the 2011 RPS solicitations should pursue these questions with the CPUC.

6. Draft Final Proposal

This draft final proposal focuses on revisions to the MIC calculation methodology. The complete solution for increasing the RA import capability should also consider a second component that is implemented through the ISO's TPP.

6.1. Establish Target MIC Values and Supporting Network Upgrades via the TPP

The process starts in the TPP, where the ISO will first establish target expanded MIC MW values for each intertie that will be sufficient to support RA deliverability for the MW amount of resources behind each intertie that are included in the base case policy driven resource portfolio that will be used in the current TPP cycle. The ISO first establishes the resource portfolio in collaboration with the CPUC, and this portfolio includes renewable resources that will be sufficient to meet the state mandate of 33% renewable energy on an annual basis by 2020. Next, the ISO will determine the needed MIC MW quantities to support RA deliverability for the quantity of external resource capacity in the policy driven portfolio that will utilize each intertie for scheduling imports into the ISO BAA. For interties where there are no external resources included in the policy driven portfolio, the ISO will assume that no additional MIC is needed beyond the historically-determined level under the current methodology.

The following definitions will be helpful for the following discussion. These definitions were included in the ISO's April 13 presentation for the stakeholder conference call. In the annual RA import deliverability assessment these values are calculated for each intertie to the ISO system.

1. Current Maximum Import Capability (MIC based on current methodology) = (Scheduled net energy imports from historical data) + (Unscheduled ETC and TOR import capacity)

2. Current Remaining Import Capability (RIC based on current methodology) = Current MIC – (Total ETC and TOR import rights) – (Pre-RA import commitments)

3. Expanded RIC = Max{(Current RIC), (Prospective RIC based on TPP resource portfolio)}

4. Expanded MIC = Expanded RIC + (Total ETC and TOR import rights) + (Pre-RA import commitments).

In terms of the above definitions, if for a particular intertie the current RIC is sufficient to cover the expanded RIC (line 3 above), there is no need for further assessment of deliverability in the TPP. The MIC calculation for that intertie will continue to utilize the current historically-based approach. Alternatively, if the result of line 3 is that the expanded RIC is greater than the current RIC (and therefore the expanded MIC is comparably greater than the current MIC) the ISO will perform deliverability studies under the TPP to determine whether any network upgrades are needed on the ISO system to support these target MIC values, i.e., to ensure that the total amount of RA capacity resulting from these MIC values will be able to provide energy to the ISO system to meet peak load conditions. If the TPP deliverability studies indicate that no further network upgrades are needed to support the target expanded MIC value on a particular intertie, then the ISO will make the expanded MIC quantity available to the LSEs gradually between 2012 and 2020. The ISO will post the projected annual values on the ISO web site in conjunction with the TPP. The increased MIC values in each year will be conditioned on assumptions made in the deliverability studies (e.g., that future transmission additions and upgrades are placed in service, and that new generating resources that were assumed in the studies have achieved commercial operation), as well as status of PPAs for resources needed to meet the public policy requirements used in the TPP.

In the event there is not sufficient RIC on one or more interties electrically connected to the external resource areas included in the policy driven base case portfolio, the ISO will propose transmission additions or upgrades in accordance with the ISO tariff to enable the external resource quantities in these areas to become deliverable on one or more interties.

Network upgrades identified in this manner will typically be categorized as policy-driven elements under the provisions of the TPP, and once they are approved by the ISO Board in the annual comprehensive transmission plan, will proceed through the tariff-specified process for identifying the entities that will build and own them, and will then proceed through the permitting process of the appropriate siting authority.

Because transmission often takes several years to be completed, the TPP activities described above will result in a multi-year plan that indicates the expected years when the target MIC amounts will become available. In contrast, the tariff-based deliverability assessment process determines MIC values annually for one year at a time, typically in July of each year for the upcoming RA compliance year. Thus, although the TPP will lay out a multi-year time line that indicates when the target MIC values are expected to be available, these values are formally available for LSEs to use in their annual RA resource plans only upon completion of the annual deliverability assessment process, and then only for the upcoming RA compliance year. In other words, although the TPP will adopt the target MIC values for planning purposes and will identify and approve transmission elements to support those values, the present proposal does

not alter the current tariff provisions for confirming MIC quantities and allocating them to LSEs on an annual basis.

The methodology for expanded (target) MIC values is described below, and is illustrated in the diagram in Figure 1.

1. **MIC Baseline**. Use the existing historically-based MIC methodology to establish a baseline set of values on for each intertie.

   The latest MIC values for the 2011 RA compliance year are posted at http://www.caiso.com/27c6/27c675b81c230.pdf

2. **Assess RIC Relative to TPP Policy Goals**. For each intertie or a sum of interties electrically connected to a resource area identified in the TPP main policy resource portfolio, the ISO will determine whether the RIC available (after Step 4 in ISO tariff section 40.4.6.2.1) is sufficient to achieve stated TPP policy goals relative to the total capacity attributed to resources modeled.

   a. **Sufficient**. If sufficient RIC exists in order to accommodate the resources modeled in the portfolios, the ISO will continue to use the historically-based MIC methodology for that intertie for the annual RA import allocation process.

   b. **Insufficient.** In the event there is insufficient RIC in order to accommodate the resources modeled in the main portfolio, the ISO will estimate the targeted expanded RIC based on the estimated Qualifying Capacity for each type of resource modeled in the main portfolio that require deliverability to the ISO grid.

3. **Preliminary Expanded MIC**. The new preliminary expanded MIC value, for each intertie or sum of interties electrically connected to an identified resource area, equals the sum of the following:

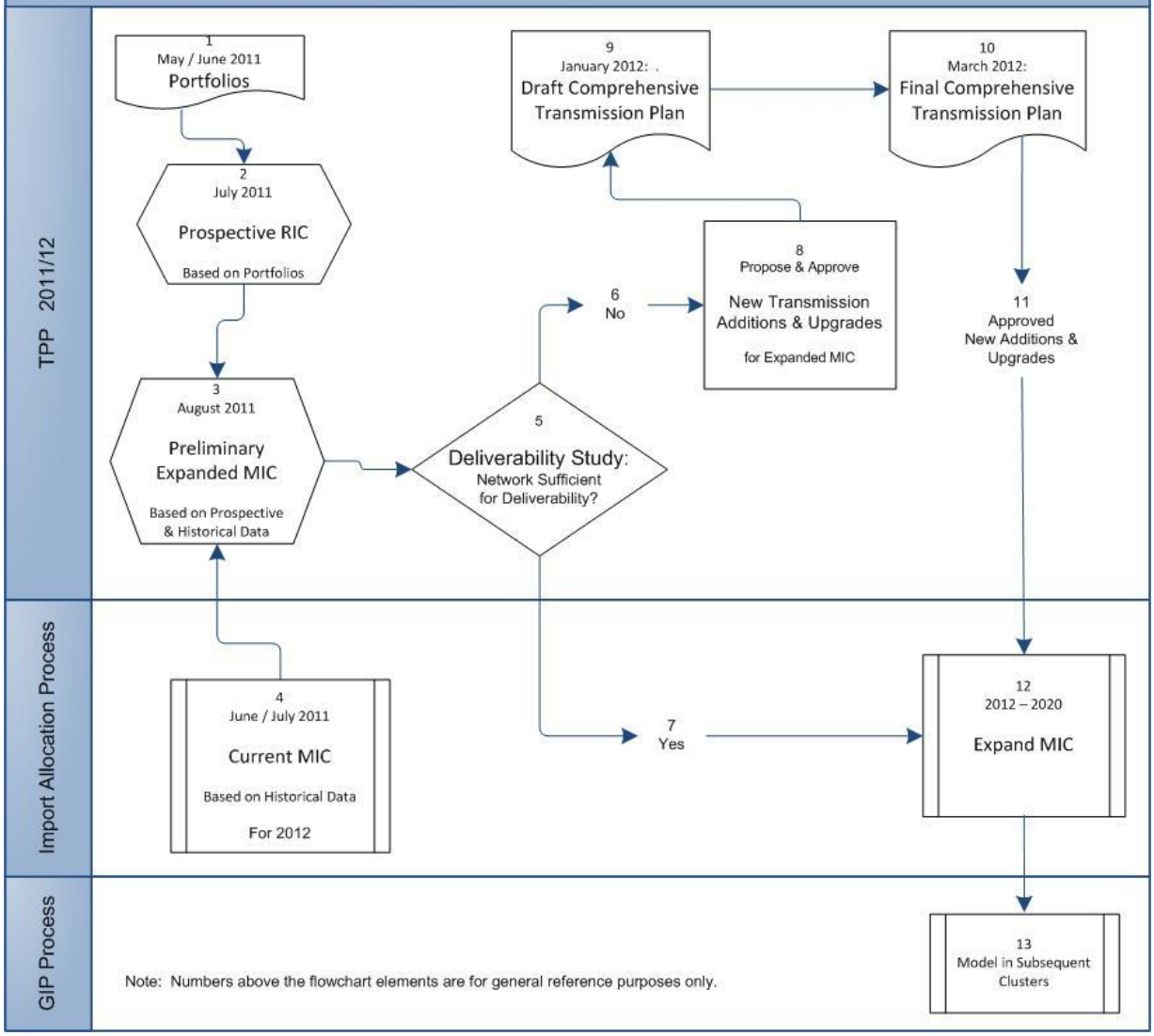
   a. The targeted expanded RIC;

   b. Applicable Existing Transmission Contract ("ETC") rights and Transmission Ownership Rights (TOR) for the years of interest; and

   c. Pre-RA Import Commitments still under contract in the years of interest.

4. **Deliverability Study**. Once the new preliminary expanded MIC has been established for the main policy resource portfolio developed in the TPP, and during the same TPP cycle, the ISO will conduct a deliverability study for this intertie(s), in order to assure simultaneous deliverability of the main portfolio. Any transmission additions required in order to maintain deliverability of the main portfolio resources may be justified as policy-driven transmission as allowed under the ISO tariff section 24.4.6.6.

Figure 1: TPP, Import Allocation, and GIP Overview Diagram



5. **Multiple Interties to One Targeted Resource Area**. If more than one intertie electrically connects the area affected by the new expanded MIC; then the split of the expanded MIC should be done as follows:

   a) Pre-RA import commitments and available ETCs should be maintained on the same branch groups as historical data provides.

   b) The expanded target for RIC shall be split in a way that closely mimics actual flow split between the involved ties (electrically connected to this area).

c) Once one of these ties reaches its OTC the allocation is stopped and the remaining capacity will be split between the remaining ties in the same fashion as in (b) above.

d) The final split should be checked through deliverability assessment and further adjustments may be done in order to minimize the required new transmission to achieve the policy-driven goal.

6. **Publish Expanded MIC Values.** Once established, the appropriate expanded MIC values will be published in the annual ISO transmission plan, including annual values up to 2020 to reflect the expected in-service dates of any needed transmission additions and upgrades.

6.2. Expanded MIC Methodology

The second major component of the proposed solution, then, is the expanded MIC methodology, which will expand the historically-determined MIC quantities for each targeted resource area as the associated network upgrades to support the expanded quantities are completed and in service.

The expanded MIC methodology the ISO now proposes will continue to utilize the current approach based on historical energy schedules during peak load conditions, and will expand those historically-determined values for specific interties based on the TPP assessment described in the prior section. Such an expansion will depend, of course, on the completion of the associated TPP-identified and approved transmission additions and upgrades. Specifically, the ISO proposes that the annual MIC determination, which is conducted in May and June of each year, will assume that transmission scheduled to be in service prior to the start of the upcoming RA compliance year will indeed be in service for that year. Although scheduled in-service dates for transmission should be reasonably accurate by this time, the ISO recognizes that in some instances they could be delayed, resulting in the non-deliverability of some RA capacity the ISO was expecting to have available. In such cases, the ISO may need to request that LSEs identify additional capacity in their month-ahead RA plans to compensate for any shortfall, or if necessary, the ISO may utilize its Capacity Procurement Mechanism to procure additional capacity on a monthly basis.

Therefore the new MIC used in the annual RA import allocation process should be the maximum between the historically determined MIC and the policy-based expanded MIC to the extent such expanded value is supported by transmission in service and is needed to support the deliverability of resources that have achieved commercial operation in the resource areas included in the TPP portfolios.

6.3. Model Expanded MIC Values in GIP

The ISO proposes to model the expanded MIC values and associated TPP-identified transmission in the GIP. These expanded MIC values and elements will be modeled in lieu of, and only if they are higher than the previous historically established MIC values, in the Phase 1 and Phase 2 GIP deliverability studies for GIP clusters. The ISO is already incorporating the TPP approach described above into its 2011/2012 TPP unified planning assumptions and study

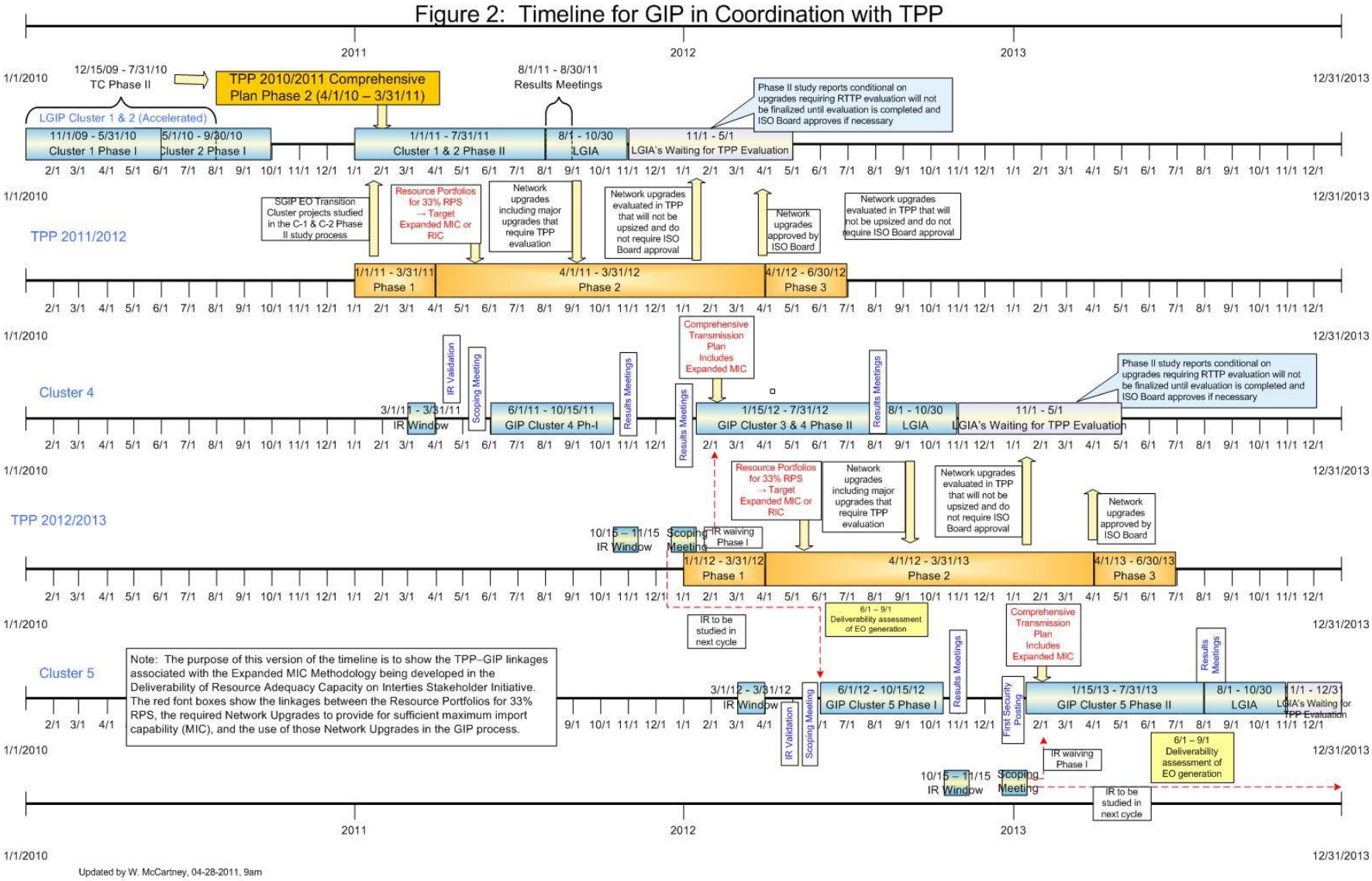
plan,[11] and expects to identify any transmission required to support the expanded MIC values in its 2011/2012 comprehensive transmission plan to be finalized in March 2012.

In the first iteration of the present proposal, the results of the 2011/2012 TPP will likely lead to RA import quantities in the GIP Phase II cluster studies for clusters 3 and 4 that are larger, at least for some interties, than the import quantities assumed in the GIP Phase I studies for these clusters. In the event that this creates a need for additional transmission beyond what was identified in the Phase I studies, the new transmission additions required in order to maintain deliverability of the expanded MIC may be justified as policy driven transmission as allowed under the ISO tariff. Any such additional network upgrades that come out of GIP Phase II studies due to the expanded MIC values will be evaluated in the next TPP cycle.

The timeline in Figure 1 below illustrates the linkages between the TPP and GIP.

[11] 2011/2012 California ISO Transmission Planning Process http://www.caiso.com/286e/286e7bed428f0.html. See the *2011/2012 Transmission Planning Process Unified Planning Assumptions and Study Plan* posted on March 31, 2011, http://www.caiso.com/2b52/2b52e70dca70.pdf.

Figure 2: Timeline for GIP in Coordination with TPP



Updated by W. McCartney, 04-28-2011, 9am

7. Next Steps

The ISO will host a meeting on May 12 from 1:00 to 3:00 p.m. to discuss this draft final proposal and answer any questions that stakeholders may have. Stakeholders are encouraged to submit written comments on the draft final proposal to ResTrans@caiso.com by close of business May 19. Prior to the May 12 meeting, the ISO will post a template for stakeholders to use when submitting written comments. The ISO will post the written comments that it receives to the following web address by May 20 http://www.caiso.com/2b42/2b42b9378530.html. The ISO will consider stakeholder comments as it prepares a draft BPM language, which is scheduled to be submitted to the BPM Change Management Process on June 9.