September 27, 2018

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: California Independent System Operator Corporation
Docket No. ER18-___-000

Tariff Amendment to Implement 2018 Interconnection Process Enhancements

Dear Secretary Bose:

The California Independent System Operator Corporation ("CAISO") submits this tariff amendment to improve its generator interconnection process.[1] This amendment represents the tariff revisions resulting from the CAISO's most recent Interconnection Process Enhancements ("IPE") stakeholder initiative. The CAISO's proposed amendment comprises 13 distinct sets of revisions. Some are simple clarifications, while others are substantive enhancements. The instant proposed revisions are:

A. Incorporating the generator interconnection study process agreement in the interconnection request itself;

B. Allowing the CAISO to remove network upgrades from interconnection customers' financial security postings where the CAISO has determined they are no longer needed, even before the CAISO issues the next study results;

C. Exempting transmission owners[2] from needing to post financial security to themselves when they develop their own generator interconnection projects;

[1] The CAISO submits this filing pursuant to section 205 of the Federal Power Act, 16 U.S.C. § 824d. Capitalized terms not otherwise defined herein have the meanings set forth in the CAISO tariff, and references to specific sections, articles, and appendices are references to sections, articles, and appendices in the current CAISO tariff and revised or proposed in this filing, unless otherwise indicated.

[2] All references to transmission owners in the instant filing refer to the CAISO's Participating Transmission Owners.

D. Clarifying that interconnection customers must go through the new resource implementation process prior to synchronization;

E. Increasing the deposits required for customer-requested repowering studies and serial re-studies from $10,000 to $50,000;

F. Requiring interconnection customers to provide copies of their power purchase agreements when demonstrating commercial viability;

G. Clarifying that the CAISO will approve modifications for interconnection customers that have achieved their commercial operation dates where the modification does not increase capacity or substantially alter the generators' electrical characteristics at the point of interconnection;

H. Mitigating the impact of interconnection customers' suspensions;

I. Eliminating the demonstration interconnection customers currently must make to recover their refundable portion of financial security;

J. Including project names in the CAISO's public interconnection queue;

K. Prohibiting fuel-type modifications for interconnection customers that have lingered in queue beyond the anticipated tariff timelines (*i.e.*, seven or ten years);

L. Aligning the deliverability capacity allocation process with the current procurement landscape to place greater emphasis on viable projects, and allow projects that have achieved commercial operation to seek (or re-seek) deliverability more easily; and

M. Increasing opportunities for interconnection customers to convert to Energy Only deliverability status without shifting costs to other interconnection customers or the transmission owners.

Each enhancement is discussed in Section II, below. The CAISO notes that each set of revisions is separate and not dependent on the other, from both a substantive and an implementation perspective. The CAISO has filed them together because they were part of the same stakeholder process, because they represent enhancements to the generator interconnection process, and because a single filing promotes administrative efficiency.

I. The Interconnection Process Enhancement Initiative History

California's renewable portfolio standard[3] and the associated changes in the generation development marketplace have made it increasingly important over the past several years for the CAISO to identify ways to administer its generator interconnection queue more efficiently.[4] The CAISO's overriding goal has been to tailor its procedures to be grounded in efficiency, cost-causation, and non-discrimination. Because of the rapid evolution of generation development in California, achieving these goals has required the CAISO to engage in a process of continuous review and enhancement of its generator interconnection procedures.[5] After implementing significant generator interconnection reforms in 2008,[6] 2010,[7] and 2012,[8] the CAISO launched its first IPE initiative in 2013.[9] The 2013 IPE initiative resulted in interconnection enhancements to the CAISO tariff, business practice manuals, and procedures in 2013 and 2014.[10] The CAISO conducted another IPE initiative in 2015 that resulted in two more sets of enhancements.[11] In 2017 the CAISO conducted an expedited IPE initiative to implement two minor but critical sets of enhancements.[12]

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[3] *See* California Public Utilities Commission, "California Renewables Portfolio Standard," *available at* http://www.cpuc.ca.gov/PUC/energy/Renewables/.

[4] There were over 260 projects in the interconnection queue as of September 21, 2015. *See* http://www.caiso.com/planning/Pages/GeneratorInterconnection/Default.aspx (CAISO website page listing projects in the queue).

[5] The generator interconnection process and related provisions are set forth primarily in section 25 of the CAISO tariff. The interconnection procedures and *pro forma* generator interconnection agreements ("GIAs") are generally contained in appendices S through FF to the CAISO tariff.

[6] *California Independent System Operator Corp.*, 124 FERC ¶ 61,292 (2008) (approving revisions to move from a serial to a cluster process, and to establish project viability and developer commitment as soon as interconnection customers have an estimate of the costs of their projects).

[7] *California Independent System Operator Corp.*, 133 FERC ¶ 61,223 (2010) (approving revisions to harmonize the CAISO's Large Generator Interconnection Procedures ("LGIP") with its Small Generator Interconnection Procedures ("SGIP") by establishing integrated cluster study processes for small and large generators, and to expedite study processes for independent or otherwise adroit generators by implementing new independent study and fast track processes).

[8] *California Independent System Operator Corp.*, 140 FERC ¶ 61,070 (2012) (approving revisions to integrate the transmission planning and generator interconnection processes).

[9] Further background information on the IPE initiative is provided in the CAISO's September 30, 2013 tariff amendment filing in Docket No. ER13-2484 to implement the first set of tariff revisions to enhance the generation interconnection process for interconnection customers.

[10] *See, e.g., California Independent System Operator Corp.*, 149 FERC ¶ 61,231 (2014); *California Independent System Operator Corp.,* 148 FERC ¶ 61,077 (2014); *California Independent System Operator Corp.,* 145 FERC ¶ 61,172 (2013).

[11] *California Independent System Operator Corp*., 153 FERC ¶ 61,242 (2015); 154 FERC ¶ 61,169 (2016).

[12] *California Independent System Operator Corp.*, 162 FERC ¶ 61,207 (2018) (extending the deliverability parking period and reconfiguring the interconnection request window to allow more time for

After the success of the previous IPE initiatives, in 2018 the CAISO re-launched the IPE initiative. In doing so, the CAISO and stakeholders identified many enhancements that will improve the interconnection process for interconnection customers, ratepayers, transmission owners, and the CAISO. The vast majority of these enhancements constitute the instant filing. The CAISO also expects to submit additional enhancements from the final phase of the 2018 IPE initiative early next year.

II. Proposed Tariff Revisions

A. Incorporating the Generator Interconnection Study Process Agreement in the Interconnection Request

1. Current Process

Interconnection customers submit interconnection requests to the CAISO between April 1 and April 15 each year. Following the interconnection customer's scoping meeting, the CAISO sends *pro forma* generator interconnection study process agreements ("GISPA") to each interconnection customer with a valid interconnection request. The GISPA provides boilerplate provisions stating that the interconnection customer is responsible for the actual cost of all interconnection studies, and is subject to all requirements of the CAISO's interconnection procedures.[13]

Tendering, executing, and receiving GISPAs in an iterative process after interconnection customers submit their interconnection requests is burdensome and misleading. First, the iterative process and tariff timelines governing that process unnecessarily create work and compliance obligations for the interconnection customers and the CAISO. Second, the CAISO and its transmission owners use the interconnection request study deposit to validate the interconnection request as soon as they receive the interconnection request. Moreover, by submitting an interconnection request, interconnection customers are subject to a variety a provisions in the CAISO tariff. Executing the GISPA several weeks after submitting an interconnection request erroneously could suggest that interconnection customers are not subject to the CAISO tariff and are not responsible for actual costs spent until they have executed their GISPA.

2. Proposed Revisions

The CAISO proposes to consolidate the GISPA into the interconnection request. Interconnection customers will then simply submit their GISPA during the

corrections).

[13] Section 6.1.1 of Appendix DD to the CAISO tariff.

interconnection request window with the rest of their request materials.[14] In addition, the CAISO proposes to add express language that the CAISO may provide these forms electronically so interconnection customers can submit them online. (Interconnection customers could still submit them manually.) The CAISO also proposes to remove and clarify several provisions and references in the GISPA that were duplicative or have become outdated.[15] Finally, the CAISO proposes to add clarifying language that the submission of the interconnection request and study deposit must be provided in the interconnection request window rather than the validation/correction window. The CAISO and transmission owner rely on these deposits to validate interconnection requests. Although nearly all interconnection customers have submitted their deposit within the interconnection request window, the CAISO believes that reiterating this requirement for clarify will ensure that interconnection customers continue to do so.

These enhancements will reduce paperwork burdens significantly for interconnection customers and the CAISO, and will clarify the applicability of the tariff to interconnection customers.[16] All stakeholders supported these reforms.

B. Removing Posting Requirements for Upgrades no Longer Needed before the Phase II Report

1. Current Process

After interconnection customers receive their Phase I study results, they must post interconnection financial security to the interconnecting transmission owner toward their construction costs. This posting can take several forms, but generally consists of a letter of credit, used after the interconnection customer executes a generator interconnection agreement ("GIA") and the transmission owner begins engineering, procurement, and construction.[17] The interconnection customer's initial financial security posting is 15 percent of their assigned network upgrade costs. Interconnection customers must make this posting within 90 days of receiving their Phase I study.[18] This 90-day period allows the interconnection customer to evaluate its likely costs in deciding whether to continue or withdraw without incurring further cost. This is when the CAISO sees the vast majority of project withdrawals. These withdrawals sometimes make it obvious that the interconnection customers remaining in queue will not have to

[14] Proposed Sections 3.1, 6.1 and Appendix 3 of Appendix DD to the CAISO tariff.

[15] For example, Appendix A to the GISPA required interconnection customers to re-submit information provided in the interconnection request, which is also addressed in scoping meetings. The result was more paperwork without real gain.

[16] To the extent these revisions diverge from the generator interconnection procedures in Order No. 2003, the CAISO believes that they represent a needed improvement of the CAISO's current tariff. They will improve clarity and reduce customer burden without a change in interconnection policy.

[17] Section 11.2 of Appendix DD to the CAISO tariff.

[18] Section 11.2.2 of Appendix DD to the CAISO tariff.

construct an assigned network upgrade.

Interconnection customers are studied in clusters, and will share network upgrade responsibility based upon when they submit their interconnection request and where they request to interconnect. For example, if three customers in a study cluster propose to interconnect to the same substation, and two customers each propose to build 1,000 MW generators, and the third proposes to build a 10 MW generator, the combined 2,010 MW of new generation likely will require significant network upgrades for reliability. Each of these generators will share the cost of those upgrades generally based upon their capacity. If the two generators building 1,000 MW generators withdraw as soon as their Phase I study results reveal that their interconnections may require significant costs, they may withdraw, and the CAISO and transmission owner may know that the new upgrades were only required for new generation over 500 MW, which the remaining 10 MW generator would not trigger.

Currently, the CAISO tariff only gives the CAISO authority to remove network upgrades from initial financial security requirements where the remaining interconnection customer itself has reduced its capacity or its need for deliverability.[19] If neither of these have occurred, the interconnection customer most post its financial security based upon its Phase I study results, then await the CAISO's annual reassessment to remove the upgrades associated project withdrawals, update the Phase I study results, and allow the interconnection customer to reduce its posting accordingly.[20]

2. Proposed Revisions

The CAISO proposes tariff authority to allow interconnection customers to forego posting financial security for network upgrades the CAISO and transmission owner believe will no longer be required after they issue the Phase I study reports.[21] Moreover, the CAISO proposes that this tariff authority will not be limited to any triggering event, but simply depend on the CAISO and transmission owner's best engineering judgment. This authority will allow interconnection customers to avoid increased financial costs for network upgrades that clearly will not be assigned to that cluster. All stakeholders supported this enhancement.

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19 Section 6.7.3 of Appendix DD to the CAISO tariff.

20 Section 7.4 of Appendix DD to the CAISO tariff.

21 Proposed Sections 6.7.3 and 11.2.7 of Appendix DD to the CAISO tariff.

C. Exempting Transmission Owners from Posting Requirements

1. Current Process

As described in Section II.B.1 of this filing, interconnection customers must post financial security to the transmission owner to finance the network upgrades necessary to interconnect. In some cases, the transmission owner itself is an interconnection customer developing new generation in its service territory. Because there is no exemption for transmission owners qua interconnection customers, transmission owners in this situation generally seek waiver with the Commission to avoid the charade of posting financial security to themselves. To the CAISO's knowledge the Commission has always granted this waiver, finding that "the failure by the Interconnection Customer to provide security or funding will not result in undue discrimination inasmuch as the Customer and the Transmission Provider are the same entity."[22]

2. Proposed Revisions

The CAISO proposes to expressly exempt a transmission owner acting as an interconnection customer from the requirement to post financial security to itself.[23] This will avoid the need for transmission owners to request waivers to comply with the CAISO tariff. The CAISO also proposes to clarify that generation projects owned by transmission owners must post financial security required on other transmission owner's systems where required for interconnection; and (ii) must remit to the CAISO any non-fundable portion of the financial security that would have been required upon withdrawal or termination absent this exemption.[24] These clarifications ensure that transmission owners incur the same results as other interconnection customers if they withdraw their projects or trigger network upgrades on another transmission owner's system. All stakeholders supported this enhancement.

D. Clarifying that Interconnection Customers must go through the New Resource Implementation Process prior to Synchronization

1. Current Process

Safely and reliably synchronizing a new generator to the transmission grid is an incredibly complex process that requires precision and effort from a large host of skilled engineers among the interconnection customer, the transmission owner, and the CAISO. In California this process is called "New Resource Implementation," or "the NRI

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[22] *Pacific Gas and Electric Co.*, 128 FERC ¶ 61,175 at P 17 (2006); *San Diego Gas & Electric Co.*, 163 FERC ¶ 61,205 (2018); *Pacific Gas and Electric Company*, 163 FERC ¶ 61,025 (2018).

[23] Proposed Section 11.2 of Appendix DD; proposed Section 9.2.1 of Appendix Y to the CAISO tariff.

[24] *Id*.

process."[25] The NRI process begins 203 days prior to synchronization.[26] CAISO staff provide the interconnection customer with a detailed checklist of the final steps that must be taken to synchronize the new generator to the grid, including:

- Providing all necessary data to include the new generator in the CAISO's full network model;
- Providing one-line and three-line diagrams of the final constructed facility;
- Configuring meters and telemetry;
- Arranging the provision of forecasting data;
- Ensuring all forms and agreements have been executed;
- Ensuring that the interconnection customer has a scheduling coordinator;
- Conducting trial operations to verify metering and telemetry; and
- Coordinating among the CAISO control room, the generator, the transmission owner, and the scheduling coordinator to verify that all are prepared for synchronization.

Although the NRI requirements are consistent with express CAISO tariff requirements, the CAISO tariff is largely silent on the NRI process itself as a step toward synchronization.

2. Proposed Revisions

The CAISO proposes to include a simple provision in the CAISO tariff stating that generators synchronizing to the grid must comply with the CAISO's new resource implementation process to ensure compliance with the tariff and applicable reliability criteria. This provision will provide clarity and transparency for new developers that have not previously synchronized a generator to the grid.[27] All stakeholders supported this clarification.

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25 *See* http://www.caiso.com/participate/Pages/NewResourceImplementation/Default.aspx.

26 The CAISO is implementing enhancements to shorten this process to 84 days.

27 Because most of the NRI process itself consists of detailed operating procedures and guides consistent with existing tariff requirements, the CAISO and its stakeholders do not believe that detailing every step of the NRI process in the tariff is prudent or consistent with the Commission's "rule of reason." As such, the details of the NRI process will remain memorialized in GIA appendices, business practice manuals, and the CAISO's NRI guide, *available at* http://www.caiso.com/Documents/NewResourceImplementationGuide.doc.

Because the CAISO is revising Section 25 of the tariff to effect this clarification, the CAISO also is removing or updating several anachronistic cross-references in Section 25.[28] The revisions to these cross-references were put before stakeholders, who raised no objection.

E. Increasing the Repowering and Serial Re-Study Deposit Requirements to Cover Average Costs Incurred

1. Current Process

The CAISO offers interconnection customers several optional studies that they may request for unique needs. Consistent with Commission Order No. 2003,[29] interconnection customers provide a deposit to finance such studies, and are responsible for actual costs if the costs exceed the initial deposit.

Two types of optional studies have had the same $10,000 deposit requirement since their inception: (1) "repowering" studies for online generators; and (2) re-studies for generators under the CAISO's former serial re-study process. Repowering studies are for generators that have already achieved commercial operation and now wish to replace some of their generating equipment. The CAISO and transmission owner study the replacement to ensure that the "repowered" facilities do not increase the plant's capacity at the point of interconnection, nor substantially change the electrical characteristics of the plant in a way that would affect reliability.[30] Re-studies have become largely uncommon and anachronistic since the CAISO adopted a cluster study approach in 2008, and because nearly all of the interconnection customers that requested to interconnect under the CAISO's serial procedures have either achieved commercial operation or withdrawn. However, some remain in queue, and may require restudy due to topology changes since they were studied originally.[31]

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[28] Proposed Section 25 of the CAISO tariff. For example, Section 25.1.2.1 attempts to list several possible forms of the GIA: "the owner of the Generating Unit, or its designee, will be required to execute a Standard Large Generator Interconnection Agreement in accordance with Section 11 of Appendix U (the LGIP), a Large Generator Interconnection Agreement in accordance with Section 11 of Appendix Y (the GIP), a Small Generator Interconnection Agreement in accordance with Section 3.3.4, 3.4.5, or 3.5.7 and Section 4.8 of the SGIP, or an interconnection agreement in accordance with Appendix W, as applicable." These references are not helpful, and are better specified in the generator interconnection procedures themselves. The CAISO thus proposes to remove the references. In other places, the CAISO previously has tried to maintain lists of all past and present interconnection procedures, where new interconnection requests will be subject to Appendix DD only.

[29] *Standardization of Generator Interconnection Agreements and Procedures,* 104 FERC ¶ 61, 103 (2003) ("Order No. 2003").

[30] Section 25.1.2 of the CAISO tariff.

[31] Sections 6.4, 7.6, 8.5, 10.1, and 12.2.4 of Appendix U to the CAISO tariff.

Both studies' actual costs now frequently exceed the original $10,000 deposit. Since 2013, 82% of these studies have exceeded $10,000. This is burdensome to both the CAISO and transmission owner (which must submit additional invoices and await payment) and to the interconnection customer (which understandably expected that its original deposit was sufficient and now has to provide additional funds). Additionally, the deposit language used in the serial interconnection procedures does not contain the modern language used elsewhere that requires the CAISO and transmission owner to provide an invoice or refund on a timely basis.

2. Proposed Revisions

The CAISO proposes to raise the repowering and serial re-study deposits to $50,000.[32] This will dramatically reduce cases where the CAISO and transmission owner do not have sufficient funds and must submit additional invoices. The CAISO also proposes to add the tariff language used in its modern generator interconnection procedures to the serial generator interconnection procedures. This language will require that the transmission owner will provide the CAISO for any assessment work within 75 days of the assessment. The CAISO will then be required to issue a refund or invoice within 30 days. This will ensure that such interconnection customers receive refunds and invoices on a timely basis consistent with modern procedures.

Stakeholders generally supported these enhancements, although two stakeholders recommended setting the deposit amount at $25,000. The CAISO elected to use the $50,000 figure because nearly one third of these studies in recent years have exceeded $25,000, which means that raising the deposit amount would not reduce the need to submit further invoices to such customers.[33] Moreover, the CAISO anticipates repowering studies will continue to become more frequent as more generators seek to update technology, and using a lower figure now would only hasten the CAISO's need to re-raise the deposit soon. The $50,000 deposit ensures that refunds will far outnumber additional invoices for far longer, but without becoming exorbitant.

F. Requiring Interconnection Customers to Provide Copies of their Power Purchase Agreements when Demonstrating Commercial Viability

1. Current Process

Interconnection customers that seek to remain in queue beyond the seven years[34] anticipated by the CAISO tariff, and that want to keep their deliverability

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[32] Proposed Sections 6.4, 7.6, 8.5, 10.1, and 12.2.4 of Appendix U to the CAISO tariff; proposed Section 25.1.2

[33] In fact, nine percent of these studies have exceeded $50,000.

[34] Ten years for interconnection customers under the CAISO's serial interconnection process (*i.e.*,

allocation must demonstrate that they are commercially viable.[35] Part of this demonstration requires "providing proof of having an executed and regulator-approved power purchase agreement, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing."[36] Currently the CAISO's business practice manual for generator management states that interconnection customers should provide copies of their power purchase agreements so the CAISO can verify that the agreement matches the developer's project that has exceeded the anticipated time in queue (rather than another project in its portfolio). Since the commercial viability criteria were established, the CAISO and stakeholders believe that it is prudent to encapsulate this "matching" requirement in the tariff to ensure that interconnection customers accurately represent their viability.

2. Proposed Revisions

The CAISO proposes to add a provision to the commercial viability criteria stating that power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the interconnection customer demonstrating its viability.[37] This requirement will help ensure that the CAISO can enforce the commercial viability criteria, and that developers cannot use one project's power purchase agreement for another project's viability demonstration. All stakeholders supported this enhancement as a just and reasonable compliance measure.

G. Clarifying the Modification Process for Online Generators

1. Current Process

Interconnection customers that have not achieved commercial operation can make modifications to their project generally where there is no material impact on other interconnection customers, *i.e.*, no negative effect on the cost or timing of other customers' projects.[38] This flexibility ensures that interconnection customers can improve the costs or benefits of their own projects.

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projects that submitted interconnection requests before the CAISO moved to a cluster process in 2008).

35 *See* Section 6.7.4 of Appendix DD.

36 *Id*. (As discussed below, the CAISO also proposes to remove attestations of balance-sheet or project financing.)

37 Proposed Section 6.7.4 of Appendix DD; proposed Section 6.9.5 of Appendix Y; proposed Section 4.4.7 of Appendix U to the CAISO tariff. Other revisions to the commercial viability criteria are addressed below.

38 *See* Section 6.7.2.2 of Appendix DD to the CAISO tariff.

Generators that have achieved commercial operation may modify their projects under a different standard. Because there is limited ability to modify the interconnection facilities and network upgrades already constructed to interconnect that generator, the CAISO and transmission owner must ensure that any modification to the generator will not threaten the reliability of the grid. This could occur, for example, if an online generator's modification increased its capacity beyond what the transmission capacity was studied for, or changed its electrical characteristics such that it would alter the generator's short-circuit duty impact, power flow, or dynamic stability. As such, the CAISO allows online generators to modify their projects after a study to confirm that the proposed changes will neither increase the total capability of the plant at the point of interconnection[39] nor change the plant's electrical characteristics such that its re-energization may violate reliability criteria.[40] This standard also ensures that an online generator's modifications do not affect other projects (both online and planned).

The distinction between these standards should be further clarified. For example, the GIA provision on modification merely states that the interconnection customer may make modifications, "subject to the provisions of this LGIA and the CAISO Tariff."[41] First, this provision fails to reference any relevant provision of the GIA or the tariff. Second, it fails to distinguish between possible modifications while the generator is still in development and once the generator and its network upgrades are online. This has led to some avoidable confusion among interconnection customers both in development and online.

Additionally, generators that have achieved their commercial operation date have unclear or limited ability under the current tariff to decrease their capacity once they are online. Because the CAISO's generator downsizing process is currently limited to interconnection customers in queue, there is confusion on how online generators can request to reduce their generating and interconnection capacity.

2. Proposed Revisions

The CAISO proposes to clarify in the tariff that interconnection customers that have not achieved commercial operation are subject to a material modification assessment, and interconnection customers that have achieved commercial operation may modify their projects where they neither increase their capacity at the point of interconnection nor substantially change their electrical characteristics such that reliability criteria could be violated.[42] This clarification will allow interconnection

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[39] Generators can increase their generating capacity where they install equipment to ensure that the output at the point of interconnection does not exceed its interconnection service

[40] Section 25.1 of the CAISO tariff.

[41] *See* Article 5.19.1 of Appendix EE to the CAISO tariff.

[42] Proposed Articles 3.4.5 of Appendix T; proposed Article 5.19.1 of Appendix V; proposed Article 5.19.1 of Appendix BB; proposed Article 5.19.1 of Appendix CC; proposed Article 5.19.1 of Appendix EE;

customers to understand their options in a transparent manner and without avoidable confusion. In addition, the CAISO proposes to revise its downsizing provisions to expressly include online generators.[43] This will allow generators to reduce their capacity under their needs, free up interconnection service capacity, and provide transparency to the CAISO and transmission owner. All stakeholders supported these clarifications.

H. Mitigating the Impact of Interconnection Customers' Suspensions

1. Current Process

Since Order No. 2003, interconnection customers that have executed Large Generator Interconnection Agreements ("LGIAs") have enjoyed a unilateral right to suspend all work on their projects for up to three years.[44] Suspension includes work toward construction, procurement, engineering, and permitting on the generator's interconnection facilities and assigned network upgrades. Critically, the CAISO and the transmission owner have no ability to review these suspensions. In fact, the interconnection customer can suspend its project without providing any estimate of how long it will be suspended. Because of this uncertainty, the CAISO and transmission owner cannot evaluate the impact of the suspension and the need to move permitting and construction milestones for network upgrades until after the project has come out of suspension, nor evaluate if there are network upgrades that are shared with others. The intent of this right was to ensure that interconnection customers can avoid further expenses when their project is delayed or jeopardized. Once any issue is resolved, the project could proceed.

In the CAISO and its stakeholders' experience, the vast majority of interconnection customers that exercise their suspension rights do so merely to extend their time in queue while they seek a power purchase agreement. In other words, suspension has not been used to achieve the Commission's goal of permitting and construction flexibility. Interconnection customers, transmission owners, and the CAISO can spend months negotiating the original construction milestones for all parties. These milestones are memorialized in an LGIA. However, with the unilateral suspension right, an interconnection customers can sign an LGIA on a Monday, and then suspend its LGIA for three years on Tuesday. Since 2011,[45] exactly half of the suspension notices the CAISO has received have come within six months of when the interconnection

proposed Article 3.4.5 of Appendix FF to the CAISO tariff; proposed Section 25.5 of the CAISO tariff.

[43] Proposed Section 7.5.3 of Appendix DD to the CAISO tariff (older generator interconnection processes incorporate Section 7.5.3 of Appendix DD by reference); proposed Articles 3.4.5 of Appendix T; proposed Article 5.19.1 of Appendix V; proposed Article 5.19.1 of Appendix BB; proposed Article 5.19.1 of Appendix CC; proposed Article 5.19.1 of Appendix EE; proposed Article 3.4.5 of Appendix FF to the CAISO tariff.

[44] *See* Article 5.16 of Appendix EE.

[45] This is when the CAISO began tracking suspension.

customer executed its GIA, and 32 percent have come within one month of executing the GIA. This use of suspension allows the interconnection customer to maintain its queue position while it seeks a power purchase agreement. If it secures one, it immediately comes out of suspension (often then seeking to *accelerate* construction to counteract its own delay). Typically, if a project does not secure a power purchase agreement by the end of the suspension period, it withdraws its interconnection request. Regardless of when an interconnection customer suspends, it frequently can cause uncertainties that have significant ripple effects through the interconnection queue, and largely negate LGIA terms and the material modification assessments required for other modifications (including milestone extensions unrelated to suspensions).

2. Proposed Revisions

The CAISO and its stakeholders agree that prudent suspensions should be allowed. As such, the CAISO does *not* propose to curb the three-year period or examine an interconnection customer's reason for suspension.[46] The CAISO and its stakeholders merely seek to prevent suspensions from causing uncertainty to other interconnection customers. The CAISO therefore proposes to require interconnection customers seeking to suspend their projects to provide a good faith estimate of how long their suspension will last and a request for a material modification assessment.[47] The CAISO and transmission owner will then approve the suspension where the electrical system can be left in a safe and reliable period during the suspension, and the suspension will not result in a material impact that the interconnection customer cannot mitigate.[48] Importantly, where the interconnection customer can resolve any material impact, the modification will still be approved. For example, if a common network upgrade must stay on its current schedule for other interconnection customers, the suspending interconnection customer could suspend all of its other milestones so long as it continues to finance the common network upgrade.

During suspension, the interconnection customer may request to extend or shorten its suspension under the limit established by Order No. 2003. Ninety days before the suspension's anticipated end, the CAISO and the transmission owner will tender an amended LGIA with new construction milestones, which the parties will negotiate in good faith to execute by the suspension's end.

The CAISO and its stakeholders believe this process will ensure fair and equitable treatment for all modification and extension requests. Interconnection

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[46] The tariff (current and as proposed) states that the suspension cannot extend such that the interconnection customer's commercial operation date would be three years from the date memorialized in the LGIA. On average this means that the interconnection customer can suspend for three years, but there are cases where it could be shorter or longer depending on the commercial operation date, when the generator executed its LGIA, and when it exercises it suspension right.

[47] Proposed Article 5.16 of Appendices V, BB, CC, and EE to the CAISO tariff.

[48] *I.e.*, negatively affecting the cost or timing of other interconnection customers.

customers can still suspend (for any reason), but without shifting risk to the transmission owner or other interconnection customers responsible for constructing mutual or subsequent upgrades. All stakeholders supported this enhancement. To the extent these revisions diverge from the generator interconnection procedures in Order No. 2003, the CAISO believes that they represent a needed improvement of the CAISO's current tariff. Because of the huge influx in new generation precipitated by California's rising renewable portfolio standards, the CAISO's generator interconnection procedures have grown to a point where the CAISO is studying and processing hundreds of new generator projects each year. The revisions described above help to mitigate the impact suspensions can cause on other interconnection customers and the transmission owners.

I. Eliminating the Financial Security Refund Criteria

1. Current Process

As explained in Section II.B.1, above, interconnection customers provide the transmission owner with financial security to finance the construction of their network upgrades. If the interconnection customer withdraws its project, it receives back a portion of its financial security depending on the timing of the withdrawal and whether the interconnection customer withdrew for one of several reasons, including failure to secure a power purchase agreement; failure to secure a necessary permit; a substantial increase interconnection facilities costs; a substantial increase in network upgrades cost; etc.[49] Virtually all withdrawing interconnection customers satisfy one of these conditions and receive back the refundable portion of their financial security.[50]

2. Proposed Revisions

The CAISO proposes to eliminate the list of conditions for partial recovery of financial security.[51] Instead, the CAISO and transmission owner will automatically return the eligible portion of the interconnection customer's financial security. Interconnection customers put significant funds at risk throughout the interconnection process, and should not have to prove that they withdrew for a legitimate reason. Eliminating the conditions also will reduce unnecessary administrative burden for all parties. As explained above, virtually all interconnection customers were able to satisfy one of the conditions for recovery, making the imposition of conditions themselves inconsequential. All stakeholders supported this reform.

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[49] Section 11.4.1 of Appendix DD to the CAISO tariff.

[50] Non-refundable portions are put toward still-needed network upgrades and to offset transmission revenue requirements. *See* Section 7.6 of Appendix DD to the CAISO tariff.

[51] Proposed Section 11.4 of Appendix DD; proposed Section 9.4 of Appendix Y to the CAISO tariff.

J. Including Project Names in the Public CAISO Interconnection Queue

1. Current Process

The CAISO maintains on its public website the CAISO generator interconnection queue, which provides detailed information on every interconnection request the CAISO has received.[52] Since 2008, the CAISO's queue includes online generators,[53] withdrawn projects, and projects still in development. For each of these, the CAISO tariff requires the CAISO to list (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the most recent projected commercial operation date; (v) the status of the interconnection request, including whether it is active or withdrawn; (vi) the availability of any studies; (vii) the date of the interconnection request; (viii) the type of generating facility to be constructed (*e.g.*, combined cycle, combustion turbine, wind turbine, and fuel type); and the (ix) requested deliverability status.[54]

To date, the CAISO has never posted the name of the project associated with the interconnection request. Interconnection customers previously wished to keep their name as confidential. In the 2018 IPE initiative, the CAISO and its stakeholders agreed that publicizing project names is prudent. It ensures that developers accurately represent their active project portfolio to prospective procuring entities, and accurately represent their power purchase agreements to the CAISO when required. It also helps permitting agencies refer to a project's status more easily. Publicizing names also makes it easier for developers to create new names that conform to NERC naming standards without using an existing project's name—an all too common occurrence because most projects are simply a combination of the interconnecting substation and the technology type (*e.g.*, Substation ς Solar I, Substation ς Solar III, Substation ς Solar MCMLXXXIII).

2. Proposed Revisions

The CAISO proposes to revise its tariff to require the CAISO to list project names on its public website.[55] This will provide clarity to developers, procuring entities, permitting authorities, transmission owners, and the CAISO. It will also help developers to avoid duplicative names and thus avoid needing to provide alternative names in the

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[52] https://rimspub.caiso.com/rims5/logon.do. The CAISO maintains a link to the queue on its public generator interconnection page as well: http://www.caiso.com/planning/Pages/GeneratorInterconnection/Default.aspx.

[53] The list does not include the interconnection projects that were in each transmission owner's queue that they had studied before the function was aggregated under the CAISO.

[54] Section 3.6 of Appendix DD to the CAISO tariff.

[55] Proposes Section 3.6 of Appendix DD; proposed Section 3.6 of Appendix Y; proposed Section 3.6 of Appendix U to the CAISO tariff.

interconnection request correction process. Stakeholders generally supported this revision, although one stakeholder suggested that the CAISO should allow interconnection customers to elect whether to publicize their names on a case-by-case basis. The CAISO and the majority of stakeholders believed that this flexibility would lead to disparate treatment, confusion, and mitigate the effectiveness of the proposal. As such, the CAISO proposes to treat project names the same as other project information. The CAISO notes that developer names will remain confidential consistent with stakeholder wishes.

K. Prohibiting Fuel-type Modifications for Interconnection Customers that have Lingered in Queue

1. Current Process

Current interconnection procedures anticipate that interconnection customers will develop their projects for no more than seven years.[56] The CAISO's original interconnection procedures anticipated ten years.[57] Both sets of interconnection procedures allow the CAISO and transmission owner to agree to extensions beyond these timelines, "such agreement not to be unreasonably withheld."[58] The CAISO and transmission owners have agreed to extensions where interconnection customers have demonstrated that engineering, permitting, and construction require more time. In the previous IPE initiative, the CAISO also implemented its commercial viability criteria to ensure that only viable projects could retain their deliverability allocations beyond the anticipated seven or ten years.[59] The CAISO could not impose the new commercial viability criteria retroactively under the filed doctrine, so the commercial viability criteria do not apply to interconnection customers that already had commercial operation dates beyond the seven/ten year timeframes memorialized in existing GIAs. The commercial viability criteria only apply where an interconnection customer makes a *new* modification request that affects its commercial operation date now that the commercial viability criteria are effective.

These circumstances allowed (and would continue to allow) some existing projects beyond their anticipated timeframes to make other modifications so long as they did not affect their commercial operation date. For example, if a project had been in queue beyond the anticipated timeline and already had a commercial operation date several years in the future, it could submit a modification request to change its fuel type (*e.g.*, from solar to wind), and the CAISO could not apply the commercial viability criteria unless the modification would further extend the project's commercial operation date.

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56 Section 3.5.1.4 of Appendix DD to the CAISO tariff.

57 Section 3.5.1 of Appendix U to the CAISO tariff.

58 *Id*.

59 *See* Section II.F, above; Section 6.7.4 of Appendix DD; Section 4.4.7 of Appendix U to the CAISO tariff.

The modification would also have to pass all other tariff tests, such as not having a material impact on other customers. These types of modifications have occurred, which led to stakeholder requests for the CAISO to expand the commercial viability criteria and restrict fuel-type changes late in a project's development.

2. Proposed Revisions

The CAISO proposes to address late modifications for interconnection customers that have lingered in queue in two ways. First, the CAISO proposes to apply the commercial viability criteria more broadly. Second, the CAISO proposes to prohibit fuel-type modifications after the interconnection customer has exceeded the seven/ten-year timeline. These revisions will limit very late modifications that stakeholder and the CAISO believe warrant new interconnection requests, while providing flexibility for viable projects to update their technology and make necessary modifications.

First, the CAISO proposes to remove language limiting the commercial viability criteria only to modifications that extend an interconnection customer's commercial operation date. Instead, the commercial viability criteria will apply to all modifications that require a material modification assessment where the interconnection customer has exceeded its anticipated tariff timeline.[60] Such modifications expressly exclude insubstantial changes to the generating facility; changes to inverters; and the addition of energy storage.[61] Stakeholders and the CAISO agree that interconnection customers may make such changes because they invariably improve and update the proposed facility without impacting other customers or the grid. For other modifications, interconnection customers will have to demonstrate that they are viable projects in order to have the modification approved *and* retain their deliverability allocation.[62] If the project cannot meet the commercial viability criteria, it can still complete its modification, but it will be converted to Energy Only deliverability status.

Second, the CAISO proposes to create a new provision that prohibits fuel-type modifications where:

(a) the interconnection customer has exceeded seven years from the date the CAISO received its interconnection request without achieving its commercial operation date;[63]

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[60] Proposed Section 6.7.4 of Appendix DD; proposed Section 6.9.5 of Appendix Y; proposed Section 4.4.7 of Appendix U to the CAISO tariff.

[61] Provided that the interconnection customers installs equipment that limits its output at the point of interconnection to the capacity it originally requested, which was the capacity studied.

[62] This part is not new, but how the commercial viability provisions work today.

[63] These limits are all ten years for the few interconnection customers that have yet to achieve their commercial operation date and are subject to Appendix U or Appendix S to the CAISO tariff.

(b) the interconnection customer's current commercial operation date exceeds seven years from the date the CAISO received its interconnection request; or

(c) the change in fuel type will require the interconnection customer's commercial operation date to exceed seven years from the date the CAISO received its interconnection request.[64]

Interconnection customers seeking to change their fuel type (*e.g.*, natural gas, solar, wind, biomass, geothermal) after they already have or will exceed the tariff's timeline would need to submit a new interconnection request. The CAISO will, however, allow *de minimis* fuel-type changes after the tariff's timeline. Such changes would be defined as the addition or replacement of generating units by no more than the greater of five percent of its capacity or 10 MW, but by no more than twenty-five percent of its capacity as specified in its generation interconnection agreement.

As explained above, the CAISO does not consider the addition of energy storage to be a fuel-type change. As such, interconnection customers would not be prohibited from adding storage capacity to their proposed generator where they meet all other tariff requirements and install equipment to ensure that their output at the point of interconnection does not exceed the interconnection service they requested and which was studied. Adding storage under these conditions neither affects other interconnection customers or the grid, nor requires re-study of the original generator. Fuel-type changes, on the other hand, have that potential. Because these interconnection customers have already been in queue so long, the CAISO and its stakeholders feel that it is unfair to allow them essentially to create a new project while keeping their old queue position and deliverability allocation. Moreover, stakeholders believe that most of the interconnection customers that have sought to make such changes so late in the process have done so to have a better project to market to load serving entities, rather than a project they imminently intend to construct.

These revisions are just and reasonable measures that will limit very late modifications that stakeholder and the CAISO believe warrant new interconnection requests, while still providing flexibility for viable projects to update their technology and make necessary modifications that do not impact study results, the grid, or other customers. All stakeholders supported these revisions as proposed here.

[64] Proposed Section 6.7.2.4 of Appendix DD; proposed Section 6.9.2.4 of Appendix Y; proposed Section 4.4.9 of Appendix U; proposed Section 6.7.2.4 of Appendix S to the CAISO tariff.

L. Deliverability Allocation Process

1. Current Allocation Process

The CAISO and its stakeholders have come to believe that the CAISO's deliverability allocation process has become misaligned with the current procurement landscape in California. The CAISO and its stakeholders also have become concerned that it is imprudent to award deliverability equally to (1) interconnection customers that have secured a regulator-approved power purchase agreement and (2) to interconnection customers merely attesting that they intend to construct projects without a power purchase agreement. These issues are explained in detail below.

An interconnection request includes many components: the point of interconnection, sufficient transmission capacity to deliver power reliably, construction of necessary network upgrades by the transmission owner, etc. Among these components, interconnection customers request a deliverability designation: Full Capacity Deliverability Status ("FCDS"), Partial Capacity Deliverability Status[65] ("PCDS"), or Energy Only. Being designated FCDS or PCDS represents that the grid is capable of delivering the generator's maximum capacity (or partial capacity for PCDS) to the grid under peak load conditions.[66] An Energy Only designation represents that the generator's full output can be delivered only subject to grid conditions.[67] These designations play a key role in providing Resource Adequacy Capacity in California. An FCDS or PCDS designation qualifies the generator's output to count toward a load-serving entity's monthly Resource Adequacy requirement.[68] Only FCDS or PCDS

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65 Partial Capacity Deliverability Status entitles a generating facility to a Net Qualifying Capacity amount that cannot be larger than a specified fraction of its Qualifying Capacity, and may be less pursuant to the assessment of its Net Qualifying Capacity by the CAISO. An Interconnection Customer requesting Partial Capacity Deliverability Status must specify the fraction of Full Capacity Deliverability Status it is seeking in its Interconnection Request.

66 *California Independent System Operator Corp.*, 124 FERC ¶ 61,292 at PP 94-112 (2008) ("For generators selecting full capacity deliverability, the maximum output of each facility can be delivered under peak conditions. Deliverability assessment(s) will be performed to determine the need for delivery network upgrades. The costs for delivery network upgrades will be assigned based on the flow impact of each generating facility on the ISO controlled grid. In addition, an analysis for reliability impacts will be done to determine the need for reliability network upgrades"). Deliverability designations are slightly different for wind resources because their "maximum capacity" is not necessarily commensurate with their nameplate capacity (minus auxiliary load), like it is for most generators. In any case, being designated FCDS or PCDS is not a guarantee that such a generator's energy will be delivered. All generators—regardless of designation—are subject to security-constrained economic dispatch and curtailment by the CAISO.

67 *Id*. at P 95.

68 Importantly, an FCDS designation does not entitle a generator to "firm capacity." All generators are subject to congestion management, the CAISO's security-constrained economic dispatch, and potential curtailment conditions. In other words, an FCDS designation has no bearing on a generator's market awards or dispatch; only its eligibility to provide resource adequacy capacity.

generators will be assigned the financing costs for Delivery Network Upgrades, which are upgrades designed to relieve transmission constraints so that the resource can physically deliver its designated output.[69] An Energy Only designation means that the interconnection customer will not be responsible for the costs of such upgrades, but it will not be eligible to be a Resource Adequacy Resource under current rules.[70]

An interconnection customer's ability to receive a FCDS or PCDS designation depends on the CAISO's Transmission Plan Deliverability ("TP Deliverability") studies. TP Deliverability is "the capability, measured in MW, of the CAISO Controlled Grid as modified by transmission upgrades and additions modeled or identified in the annual Transmission Plan to support the interconnection with FCDS or PCDS of additional Generating Facilities in a specified geographic or electrical area of the CAISO Controlled Grid."[71]

The CAISO transmission planning process identifies network upgrades based on the location and the amount of new resources anticipated to be ultimately developed in discrete geographic areas. These network upgrades will add a certain amount of transmission capacity to the grid, which will then be available to meet the deliverability requirements of proposed new generating facilities in those geographic areas.[72] The CAISO then determines the volume of new generation in each area whose deliverability can be met by the additional grid capacity the network upgrades will provide. The CAISO then allocates the resulting MW volumes of TP Deliverability to those proposed generating facilities in each area determined to be most viable based on a set of specified project development milestones.[73]

Under current tariff provisions, an interconnection customer requesting TP Deliverability must meet the following minimum milestones:

- applied for the necessary government permits for construction; and either

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69 *See* Appendix A to the CAISO tariff. Delivery Network Upgrades are different than Reliability Network Upgrades, which are the transmission facilities a generator needs to interconnect safely and reliably to the grid, regardless of its deliverability designation.

70 Appendix A to the CAISO tariff. A Resource Adequacy Resource is "A resource that is designated in a Supply Plan to provide Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO."

71 Appendix A to the CAISO tariff.

72 *See California Independent System Operator Corp.*, Tariff Amendment to Integrate Transmission Planning and Generator Interconnection Procedures, Docket No. ER12-1855-000 (May 25, 2012) at p. 4.

73 *Id*.

- secured financing or represents to the CAISO that either it has a regulator-approved Power Purchase Agreement ("PPA"); or

- included on an active short list or other commercially recognized method of preferential ranking of power providers by a prospective purchasing load-serving entity.[74]

If there is sufficient TP Deliverability, the CAISO will allocate it to the interconnection customers in the current queue cluster that meet the minimum criteria.[75] If there are more qualifying interconnection customers than TP Deliverability available, the CAISO allocates the TP Deliverability by ranking interconnection customers based upon which TP Deliverability milestones they have met.[76]

For project financing status, the tariff currently has four different levels of achievement an interconnection customer can select:

a. The Generating Facility will be balance-sheet financed or has otherwise received a commitment of project financing, and the Interconnection Customer represents to the CAISO that either it has a regulator-approved power purchase agreement or that the Interconnection Customer is proceeding to commercial operation without a power purchase agreement.

b. The Interconnection Customer has an executed and regulator-approved power purchase agreement.

c. The Interconnection Customer has an executed power purchase agreement but such agreement has not yet received regulatory approval.

d. The Interconnection Customer does not have an executed power purchase agreement but the Interconnection Customer is included on an active short list or other commercially recognized method of preferential ranking of power providers by a prospective purchaser Load Serving Entity.[77]

These levels present two distinct problems. First, selection (a), which is the best level, treats all of the following completely equally:

- Being "balance-sheet financed" or otherwise having a commitment of project financing;

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74 Section 8.9.2 of Appendix DD.

75 *Id*.

76 *Id*.

77 *Id*.

- Having a regulator-approved power purchase agreement; and

- Proceeding without a power purchase agreement.

In reality, these financing statuses are not equivalent. Virtually all interconnection customers that have regulator-approved power purchase agreements will proceed with constructing their generators. On the other hand, interconnection customers that do not have power purchase agreements—regardless of what financing status they attest to—generally do not proceed with developing their generators. Understandably, these interconnection customers will do everything possible to delay putting construction funds at risk until they have secured a power purchase agreement. If they do not secure a power purchase agreement, they withdraw their projects in nearly every case.

Second, grouping these financing statuses together in selection (a) effectively awards more points toward receiving a TP Deliverability allocation for being balance-sheet financed or proceeding without a power purchase agreement than for having an executed power purchase agreement that has yet to receive regulatory approval or for being shortlisted for a power purchase agreement. Again, this grouping does not reflect the reality that a project that has executed or will execute a power purchase agreement is extremely more likely to proceed toward construction than any other project. When the CAISO developed the balance-sheet financing/proceeding without a power purchase agreement option, it was believed that interconnection customers would only attest to it when they were determined to build their project, even on a merchant basis. Experience has proven that this is not the case. This issue is especially problematic because it results in allocating TP Deliverability to interconnection customers that have little potential to use it. That deliverability thus remains in queue, and the delivery network upgrades assigned to those interconnection customers are put at risk, frequently falling to other interconnection customers or the transmission owners to finance and construct.

Stakeholders agree that this issue has come to a head. In its comments, EDF Renewables commented that "the current BSF affidavit process has led to deliverability award and retention by less-viable and non-viable generation projects," concluding that "projects without PPAs should be held to more stringent standards, as their viability is questionable (and more so the longer they remain in the queue)."[78] The Large Scale Solar Association likewise noted that "the option to submit a 'balance-sheet financing' (BSF) affidavit in lieu of an executed and regulator-approved PPA is allowing proposed generation projects with questionable viability to: (1) Receive allocations of scarce TPD in the GIDAP process; and (2) retain their deliverability far beyond a reasonable

[78] EDF Renewables Comments on IPE Straw Proposal, *available at* http://www.caiso.com/Documents/EDFComments-InterconnectionProcessEnhancements2018-StrawProposal.pdf.

period."[79] The Association concluded: "The CAISO should recognize the market reality that independent generation projects of all but minimal size are simply not being constructed without PPAs, and either eliminate the BSF affidavit process or significantly reform it for such entities."[80] In its comments First Solar noted that experience has demonstrated that interconnection customers that attest to balance-sheet financing or proceeding without a power purchase agreement do not actually intend to proceed toward construction unless they first secure a power purchase agreement. Said First Solar: "It is likely that balance-sheet financing is only being used as a path to holding a queue position longer, as generators of all types still require an offtaker for their energy and merchant development is very rare."[81]

2. Current Retention and Parking Process

Once interconnection customers receive TP Deliverability, they must submit an annual affidavit stating that they continue to meet TP Deliverability milestones.[82] The current retention criteria are:

1. The Generating Facility shall remain in good standing with respect to the criteria on which the allocation of TP Deliverability was based;

2. If the Generating Facility was allocated TP Deliverability because it had been shortlisted for a power purchase agreement, have executed the agreement by the start of the next allocation cycle, or attest to balance-sheet financing or receipt of a commitment of project financing;

3. The Interconnection Customer must have executed a GIA and must remain in good standing with regard to its GIA; and

4. The Interconnection Customer must maintain the original Commercial Operation Date set forth in the GIA without request for extension unless such extension is required for reasons beyond the control of the Interconnection Customer and such extension results in no Material Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; or unless the extension is occasioned by a material delay in the Participating TO's construction of

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79 LSA Comments on IPE Issue Paper, *available at* http://www.caiso.com/Documents/LSAComments-InterconnectionProcessEnhancements2018-IssuePaper.pdf.

80 *Id*.

81 First Solar Comments on IPE Straw Proposal, *available at* http://www.caiso.com/Documents/FirstSolarComments-InterconnectionProcessEnhancements2018-IssuePaper.pdf.

82 Section 8.9.3 of Appendix DD.

any Network Upgrades or Participating TO's Interconnection Facilities.[83]

If an interconnection customer fails to satisfy any of these criteria, it loses its TP Deliverability allocation and becomes Energy Only.[84] Where an interconnection customer's request consists of multiple generating units, each generating unit can receive, retain, or lose a TP Deliverability allocation individually.

Interconnection customers that do not initially receive a TP Deliverability allocation have the option to "park" the project for one or two years, convert their projects to Energy Only, or withdraw their interconnection requests.[85] Interconnection customers that park may re-seek TP Deliverability with the next queue cluster based on their current status. For example, in its first allocation cycle, a project may be on a shortlist for a power purchase agreement, and not receive any TP Deliverability. It thus elects to park its project until next year's cycle. If it has executed a power purchase agreement, and it attests to having done so in its affidavit, it will have a better chance at receiving TP Deliverability as a result. Some interconnection customers also may park one additional year (two total) where TP Deliverability is still available in its area and they have not been assigned network upgrades needed by other interconnection customers.[86]

3. Current Annual Full Capacity Deliverability Option Process

Online Partial Capacity Deliverability Status and Energy Only generators, and Energy Only interconnection customers in queue also have another opportunity to receive a TP Deliverability allocation through the CAISO's "Annual Full Capacity Deliverability Option."[87] This allows interconnection customers to submit an additional interconnection request and a non-refundable $10,000 study fee for the CAISO and transmission owner to determine whether there is sufficient available capacity for these generators to receive Full Capacity Deliverability Status or Partial Capacity Deliverability Status. Unlike the TP Deliverability allocation process described above, this process only examines the deliverability capacity available from the existing grid and any transmission projects approved in the CAISO's transmission planning process (exclusive of network upgrades planned in the generator interconnection study process).[88] In other words, these interconnection customers and online generators' request for Full Capacity Deliverability Status or Partial Capacity Deliverability Status

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83 *Id*.

84 Section 8.9.7 of Appendix DD to the CAISO tariff.

85 Section 8.9.4 of Appendix DD to the CAISO tariff.

86 Section 8.9.4.1 of Appendix DD to the CAISO tariff (an interconnection customer may park the additional year even if it has been assigned network upgrades needed by other interconnection customers if those other interconnection customers also elect to park).

87 Section 9 of Appendix DD to the CAISO tariff.

88 Section 9.2.4 of Appendix DD to the CAISO tariff.

cannot trigger the construction of new network upgrades. Interconnection customers infrequently request to be studied under this option.

4. Proposed Revisions to Allocation Processes

The CAISO proposes to revise its TP Deliverability allocation process to award TP Deliverability to the interconnection customers most likely to proceed toward construction and thus make use of the award. The CAISO and its stakeholders believe that these interconnection customers consist of those that have made the most progress toward securing a power purchase agreement. In place of the CAISO's current point system—which does not adequately distinguish among power purchase agreements and claims of self-financing—the CAISO proposes to allocate available TP Deliverability to the following groups in the following order:

(1) To interconnection customers that have executed a power purchase agreement(s),[89] and to interconnection customers that are load serving entities serving their own load; then

(2) To interconnection customers that are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement; and then

(3) To interconnection customers that elect to proceed without a power purchase agreement.[90]

In other words, the CAISO will first award TP Deliverability to interconnection customers described in group (1). If additional TP Deliverability is available, the CAISO will allocate the remaining to group (2), and so on. The CAISO and its stakeholders believe that this allocation order aligns with viability and rewards the most financially competitive projects. If there is insufficient TP Deliverability to award an entire allocation group, the CAISO will allocate TP Deliverability based upon the points system, which will examine the interconnection customer's permitting and site

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89 The CAISO proposes to note expressly that all power purchase agreements must require Deliverability for the interconnection customer to represent that it has, is negotiating, or is shortlisted for a power purchase agreement. For all TP Deliverability allocations based upon having, negotiating, or being shortlisted for power purchase agreements, the CAISO will allocate TP Deliverability up to the amount of deliverable MW capacity procured by the power purchase agreement. All load serving entities building generating facilities to serve their own Load must be doing so to fulfill a regulatory requirement that warrants Deliverability. Load serving entities acting as interconnection customers are otherwise eligible for all other attestations (*i.e.,* their projects can be in any applicable group). These requirements will help the CAISO ensure that only genuine power purchase agreements to fulfill regulatory mandates would trigger the construction of new delivery network upgrades designed to fulfill regulatory policies. *Id*.

90 Proposed Section 8.9.2 of Appendix DD to the CAISO tariff.

exclusivity statuses.[91] An interconnection customer in the three groups above that receives a TP Deliverability allocation will be assigned the delivery network upgrades necessary for its generating units to achieve Full Capacity Deliverability Status or Partial Capacity Deliverability Status to be eligible to provide resource adequacy capacity. The CAISO notes that the creation of these groups requires slight modifications to the TP Deliverability affidavit forms.[92]

Additionally, the CAISO proposes to consolidate the Annual Full Capacity Deliverability Option process into the TP Deliverability allocation process.[93] Consolidating these processes will streamline studies and allow interconnection customers to access available TP Deliverability more efficiently. As such, if there is available TP Deliverability that will not require additional upgrades,[94] the CAISO will then allocate it to the following groups in the following order:

(4) To interconnection customers that have not achieved their commercial operation date, originally requested FCDS or PCDS, and have executed a power purchase agreement(s); and to interconnection customers that have achieved their commercial operation date and have executed a power purchase agreement(s).

(5) To interconnection customers that have not achieved their commercial operation date, originally requested FCDS or PCDS, and are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement; and to interconnection customers that have achieved their commercial operation date and are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement.

(6) To interconnection customers that originally requested FCDS or PCDS but achieved their commercial operation date as Energy Only.

(7) To interconnection customers that achieved their commercial operation date.[95]

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91 *Id*.

92 Proposed Section 8.9.2.1 of Appendix DD; proposed Section 8.1 of Appendix Y to the CAISO tariff.

93 Proposed Section 9 of Appendix DD to the CAISO tariff. (Effectively, the CAISO is removing the provisions related to the Annual Full Capacity Deliverability Option, and providing a similar, consolidated version in the TP Deliverability allocation process.)

94 In other words, their deliverability must result from existing transmission facilities, planned upgrades in the CAISO transmission planning process, or upgrades assigned to an interconnection project that has an executed GIA and currently has a TP Deliverability allocation.

95 Proposed Sections 8.9.2; 9 of Appendix DD to the CAISO tariff.

Allocating TP Deliverability to these groups in this order is consistent with the CAISO's intent of awarding TP Deliverability to the most viable projects, even if those projects previously failed to secure a TP Deliverability allocation. It essentially grants these projects a reprieve, but without requiring the CAISO to re-study the projects or construct new network upgrades that ultimately would be financed by ratepayers. In addition, it allows load serving entities to access generators that are already online and may be more cost-efficient than new facilities. Because of the high startup costs to interconnect to the high-voltage transmission grid, there are relatively few online generators that have interconnected to the CAISO controlled grid recently that are Energy Only. However, there are distribution-connected and older online generators that are Energy Only. It is prudent to allow load serving entities to select among these generators to provide resource adequacy capacity where possible.

Because the interconnection customers in these latter four groups have already completed their interconnection studies, the CAISO proposes to require them to submit study deposits of $50,000 to cover prudently incurred study costs. The CAISO will use these funds only to analyze the availability of TP Deliverability for these Energy Only Interconnection Customers. The CAISO will place these study deposits in an interest-bearing account, and upon completion of the study, refund all remaining funds or invoice the interconnection customer for any costs that exceeded the deposit.[96]

5. Proposed Revisions for Proceeding without a Power Purchase Agreement

The CAISO also proposes to retain an option for interconnection customers to receive available TP Deliverability based upon an attestation of "proceeding without a power purchase agreement," a catch-all term the CAISO proposes to use to describe a project's development status that does not rely on securing a power purchase agreement.[97] This is allocation group (3), above. Unlike the current process, however, interconnection customers attesting to proceeding without a power purchase agreement will be subject to strict rules that ensure they cannot linger in queue if they receive a TP Deliverability allocation. First, interconnection customers may only attest to proceeding without a power purchase agreement immediately after receiving their Phase II study results.[98] In other words, if they receive an allocation, they may not park as a means to stay in queue for additional time.[99] Second, interconnection customers that receive TP

[96] Proposed Section 8.9.2.

[97] In other words, the CAISO is removing unnecessary verbiage on "balance-sheet financing," "a commitment of binding financing," or "proceeding without a power purchase agreement" because there is little, if anything, that distinguishes among these claims.

[98] Proposed Section 8.9.2.2 of Appendix DD to the CAISO tariff.

[99] *Id*. However, interconnection customers that receive TP Deliverability in this group may park that portion of their interconnection request that does not receive TP Deliverability. Parked portions may receive TP Deliverability in subsequent allocation cycles from any group for which they qualify.

Deliverability based upon an attestation that they are proceeding without a power purchase agreement may not request suspension under their GIA, delay providing their notice to proceed toward construction, or modify their commercial operation date beyond the earlier of (a) the date established in its interconnection request when it requests TP Deliverability or (b) seven (7) years from the date the CAISO received its interconnection request.[100] Extensions due to transmission owner construction delays will extend the latter deadlines.[101] All of these measures ensure that interconnection customers cannot linger in queue, hoarding TP Deliverability. They also mitigate the risk of interconnection customers representing that they intend to proceed without a power purchase agreement unless they actually intend to proceed toward construction. If an interconnection customer subject to these rules fails to meet them, it will be converted to Energy Only.

Additionally, the CAISO proposes to remove the option to attest to balance-sheet or other financing to satisfy the commercial viability criteria. Going forward, interconnection customers that are beyond the seven-year or ten-year tariff limits must have a regulator-approved power purchase agreement to modify their project and retain their TP Deliverability.[102] The CAISO and stakeholders believe that it is critical that such interconnection customers are truly viable where they have hoarded TP Deliverability for so long and are still seeking to modify their projects.[103]

Under the filed rate doctrine, the CAISO also proposes to add language in Appendix DD to the CAISO tariff clarifying that these new restrictions for proceeding without a power purchase agreement will not apply retroactively to interconnection customers that previously accepted TP Deliverability on the basis of balance-sheet financing, a commitment of financing, or proceeding without a power purchase agreement.[104] Likewise, interconnection customers that attested to being shortlisted in the recent allocation cycles were required to subsequently execute a power purchase agreement or attest to balance sheet financing.[105] These customers should maintain this option without being subject to the new restrictions. Conversely, interconnection customers that do not already have a TP Deliverability allocation—customers that have

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Interconnection customers that receive TP Deliverability allocations for less than requested may elect to reduce their capacity to the amount of TP Deliverability received following the allocation.

100 *Id*.; Proposed Article 5.16 of Appendix EE to the CAISO tariff.

101 *Id*.

102 Proposed Section 4.4.7 of Appendix U; proposed Section 6.9.5 of Appendix Y; proposed Section 6.7.4 of Appendix DD to the CAISO tariff.

103 Again, the CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the generating facility as modifications subject to the commercial viability criteria.

104 *Id*.

105 Proposed Sections 8.9.2.1(2)(e); 8.9.3.1 of Appendix DD to the CAISO tariff.

yet to reach the allocation process or that declined or did not receive an allocation in a previous cycle, for example—will be subject to the TP Deliverability allocation process as described herein. Accordingly, if these interconnection customers attest that they will proceed without a power purchase agreement, they will be placed in allocation group three (3) and will be subject to the new rules for doing so.

Separately, the CAISO proposes to clarify that interconnection customers that previously satisfied the commercial viability criteria on the basis of balance sheet financing may continue to do so in their annual review process.[106] If the interconnection customers elected to request a new modification that would trigger the commercial viability criteria, it would be subject to the commercial viability criteria as proposed in the instant filing.

6. Proposed Revisions to Retention Processes

The CAISO also proposes to enhance its TP Deliverability retention criteria to ensure that interconnection customers that have accepted TP Deliverability continue to make meaningful progress while in queue. The CAISO proposes to require interconnection customers that received TP Deliverability on the basis of having executed a power purchase agreement to receive regulatory approval of that agreement by the following cycle.[107] Likewise, interconnection customers that receive TP Deliverability on the basis of being shortlisted for or negotiating a power purchase agreement must execute a power purchase agreement by the following cycle, and then receive regulatory approval of that agreement by the cycle after that.[108] Consistent with the discussion above, the CAISO also proposes to remove the ability to convert to balance sheet financing as a way to retain TP Deliverability.[109] The CAISO proposes to retain the other existing retention criteria; however, the CAISO proposes to make slight clarifications to the existing retention criterion regarding maintaining the commercial operation date.[110] Currently this criterion states that the interconnection customer must maintain "the original" commercial operation date set forth in its GIA. It is unclear whether "original" refers to the customer's original interconnection request date or some

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106 Proposed Section 4.4.7 of Appendix U; proposed Section 6.9.5 of Appendix Y; proposed Section 6.7.4; of Appendix DD to the CAISO tariff.

107 *I.e.*, within one year of accepting TP Deliverability. Proposed Section 8.9.3 of Appendix DD to the CAISO tariff.

108 *Id*.

109 *Id*.

110 Currently this provision states: "The Interconnection Customer must maintain *the original* Commercial Operation Date set forth in the GIA *without request for extension* unless such extension is required for reasons beyond the control of the Interconnection Customer *and* such extension results in no Material Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; *or* unless the extension is occasioned by a material delay in the Participating TO's construction of any Network Upgrades or Participating TO's Interconnection Facilities." Section 8.9.3 of Appendix DD to the CAISO tariff (emphases added).

other date, so the CAISO proposes to remove that term. Likewise, the provision uses an "and" where it is unclear whether this is strictly conjunctive or an "and/or." The CAISO proposes to revise this "and" to "or" to make it clear that modifications would be allowed if an extension is required for reasons beyond the customer's control *or* results in no material modification or delay in other customers' facilities. These clarifications will ensure that interconnection customers will not lose TP Deliverability where construction extensions are warranted.

Interconnection customers that fail to meet their retention criteria will be converted to Energy Only. However, the CAISO proposes to include a provision stating that if an interconnection customer received a TP Deliverability allocation and subsequently loses it because (a) it had a power purchase agreement, and the load serving entity unilaterally terminated that power purchase agreement through no fault of the interconnection customer; or (b) it was actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement and then did not finalize a power purchase agreement, then the interconnection customer may park its interconnection request and re-seek TP Deliverability with its cluster.[111] If such an interconnection customer's cluster is no longer eligible to park and has already completed the TP Deliverability allocation cycle after its parking opportunities, the interconnection customer will be converted to Energy Only, but will not retain cost responsibility for its assigned delivery upgrades.[112] Such interconnection customers may elect to reduce their interconnection financial security as a result.[113] These provisions mitigate financial risk for interconnection customers that make significant progress, but then come up short through no fault of their own. They also incentivize interconnection customers to make genuine representations regarding their progress toward a power purchase agreement rather than attesting that they will proceed without one.

M. Increasing Opportunities to Convert to Energy Only without Shifting Costs

1. Current Process

As described above, the CAISO's generator interconnection procedures currently anticipate that an interconnection customer will solidify its deliverability status relatively early in the interconnection process. Interconnection customers have several opportunities to reaffirm their request for deliverability or convert to Energy Only:

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111 Proposed Section 8.9.3.2 of Appendix DD to the CAISO tariff. The CAISO also proposes to remove "without request for extension" because that clause is superfluous, and the provision clearly describes circumstances that allow the interconnection customer to request extension.

112 *Id*.

113 *Id*.

- In the initial interconnection request;[114]
- At the initial scoping meeting;
- At the Phase I study results meeting;[115] or
- After the interconnection customer receives its TP Deliverability allocation results (including after each parking opportunity).[116]

If an interconnection customer converts its project to Energy Only pursuant to these process, it is no longer responsible for financing delivery network upgrades (because it does not require TP Deliverability), and those upgrades are removed from its study results. The CAISO provides these opportunities early in the interconnection process primarily for two purposes. First, if an interconnection customer converts to Energy Only, the CAISO and transmission owner need time to determine whether its assigned delivery network upgrades are no longer necessary for *any* interconnection customer, especially in its study cluster. The CAISO can incorporate these results in its reassessment of Phase I studies,[117] or in the Phase II studies. Second, if the delivery network upgrades *are* still needed, the CAISO can adjust the shares of costs each remaining interconnection customer will bear that still needs those upgrades *before* those interconnection customers are required to execute GIAs.[118]

Memorializing responsibility for network upgrades before the execution of GIAs is critical under the CAISO's interconnection procedures. Section 14.2.2 of Appendix DD to the CAISO tariff requires that if an interconnection customer with an executed GIA finances a network upgrade to be built by a transmission owner,[119] then later terminates its GIA and withdraws, the financing obligation reverts to the transmission owner if another interconnection customer in queue still needs the upgrade.[120] This ensures that

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114 Appendix 1 to Appendix DD to the CAISO tariff.

115 Section 6.7.2.2 of Appendix DD to the CAISO tariff.

116 Section 8.9.4 of Appendix DD to the CAISO tariff.

117 *See* Section 7.4 of Appendix DD to the CAISO tariff.

118 For example, four contiguous interconnection customers requesting deliverability may require one new delivery network upgrade for any or all of them to be deliverable. As such, the CAISO assigns each interconnection customer the delivery network upgrade, but notes that its current cost estimate currently is one quarter the cost of the upgrade. If one of these interconnection customers converts to Energy Only before the Phase II study, the other three interconnection customers' cost estimates would each rise to one third the cost of the upgrade.

119 Area Delivery Network Upgrades for option (B) interconnection customers are an exception for merchant development.

120 The financing obligation is the obligation to fund the cost of construction of network upgrades. For a complete explanation of the refund of costs for completed network upgrades, refer to Generator Interconnection and Deliverability Allocation Procedures ("GIDAP") Tariff Appendix DD, Section 14.3.2

financing responsibility does not fall to later-queued customers that also require the upgrade. However, if none of the earlier-queued interconnection customers assigned to finance a particular upgrade execute a GIA, the financing responsibility would fall to later-queued interconnection customers (rather than reverting to the transmission owner) if the upgrade is needed.

In a simplified example, if a Cluster 9 project triggered a delivery network upgrade[121] and was assigned cost responsibility for the upgrade in its Phase I study report, and a project in Cluster 10 subsequently requires that upgrade, once the Cluster 9 project executes its GIA, there is no risk of Cluster 10 "inheriting" any cost responsibility for that upgrade. If the Cluster 9 project terminates its GIA and withdraws, the transmission owner inherits the cost responsibility. However, if the Cluster 9 project withdraws or converts to Energy Only *without* executing a GIA and the Cluster 10 project's Phase study report lists that upgrade as a required upgrade, then the Cluster 10 project inherits the cost responsibility for that upgrade (instead of the transmission owner). Although this presents some uncertainty to the Cluster 10 interconnection customer, the uncertainty is limited to the earliest stages of project development, giving the Cluster 10 interconnection customer time, flexibility, and transparency to make its decisions to proceed.

Requiring GIA execution before the transmission owner must backstop financing is purposeful. The CAISO's procedures help to ensure that transmission owners and ratepayers only incur costs for prudent network upgrades. Interconnection customers will proceed with new generation projects by signing GIAs and posting interconnection financial security where their financing obligations for new network upgrades are cost-competitive and proportional to their capacity. On the other hand, if an interconnection customer (or group of customers) triggers the need for a disproportionately expensive network upgrade, it will likely withdraw its interconnection request rather than sign a GIA and post interconnection financial security it would lose if it later withdraws its project. Transmission owners' backstopping the financing of these network upgrades also allows the CAISO to provide later-queued interconnection customers with meaningful cost caps and project certainty. Without it, the withdrawal of any earlier-queued customer could financially impact later-queued customers.

After the CAISO created the commercial viability criteria in the previous IPE stakeholder process, some interconnection customers purposely failed the criteria so that they would be converted to Energy Only very late in the interconnection process.[122] These interconnection customers actually wanted to be converted to Energy Only because they believed it would compel the CAISO to remove their cost responsibility for

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Repayment of Amounts Advanced for Network Upgrades and Refund of Interconnection Financial Security.

[121] The same is true for Reliability Network Upgrades as well.

[122] Section 4.4.7 of Appendix U; Section 6.9.5 of Appendix Y; Section 6.7.4 of Appendix DD to the CAISO tariff.

delivery network upgrades, even though they had those upgrades assigned to them for years after executing GIAs, and such interconnection customers did not intend to proceed as Energy Only. To the contrary, these interconnection customers reasoned that if their cost assignments were removed, they could reduce their interconnection financial security postings, then withdraw their interconnection request having lost less money. This loss would be picked up the transmission owner, except that the transmission owner would have neither the earlier-queued interconnection customer's financial security (because it converted to Energy Only, reduced its posting, and withdrew), nor the later-queued interconnection customer's financial security (because it had not be assigned cost responsibility because the higher-queued customer had executed a GIA memorializing its responsibility for the delivery network upgrade). Interconnection customers also realized that failing the TP Deliverability retention criteria could yield the same result and allow them to reduce their interconnection financial security postings very late in the interconnection process before withdrawing from the queue.[123]

2. Proposed Revisions

The CAISO proposes to provide interconnection customers with the ability to convert to Energy Only at any time—including long after they have executed GIAs—so long as their conversion does not shift costs to the transmission owner without financial security to cover those costs.[124] This will provide a clear avenue for legitimate Energy Only conversions, thus avoiding the need to purposely fail the commercial viability criteria or TP Deliverability retention criteria. Interconnection customers will be allowed to convert to Energy Only at any time; however, after their Phase II study, interconnection customers will be allowed to reduce their interconnection financial security for delivery network upgrades only where the CAISO and transmission owner can determine that the interconnection customer's assigned delivery network upgrade(s) is no longer needed.[125] This measure will ensure that interconnection customers can no longer convert to Energy Only purely as a means to reduce their financial security before withdrawal, thereby leaving the financing to the transmission owner. If, however, the delivery network upgrades are no longer needed for any interconnection customer, the interconnection customer can reduce its posting and withdraw without incurring further financial effect. The CAISO notes that this will not be the case for the pre-Phase II conversion processes described above. Interconnection customers still can convert to Energy Only in those cases without retaining any cost allocation for the delivery network upgrades because there is still time to assign them to other interconnection customers early in their interconnection process.[126]

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123 Sections 8.9.3; 8.9.7 of Appendix DD to the CAISO tariff.

124 Proposed Sections 6.7.2.5; 7.4.1 of Appendix DD; proposed Section 6.9.2.5 of Appendix Y; proposed Section 4.4.10 of Appendix U to the CAISO tariff.

125 *Id*.

126 As described above, the CAISO also proposes to include a provision stating that if an

The CAISO also proposes to include similar language about the impact on financial security to the CAISO's TP Deliverability retention criteria and the commercial viability criteria.[127] If an interconnection customer is converted to Energy Only for failing either, it may not reduce its financial security posting as a result, unless the CAISO and transmission owner can determine that its assigned delivery network upgrade(s) is no longer necessary. This will prevent interconnection customers from believing that purposely failing those tests will provide them with an advantage upon withdrawal, thus ensuring that transmission owners are protected from having to finance network upgrade construction without interconnection customers' financial security postings.

III. Stakeholder Process

The stakeholder process that resulted in this filing included:

- The CAISO's soliciting stakeholder suggestions on items to be included in this iteration of the IPE initiative;
- Three issue papers issued by the CAISO;
- Developing draft tariff provisions;
- Six stakeholder meetings and conference calls to discuss the CAISO papers and the draft tariff provisions; and
- Four opportunities to submit written comments on the CAISO papers and the draft tariff provisions.[128]

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interconnection customer loses its TP Deliverability because (a) it had a power purchase agreement, and the load serving entity unilaterally terminated that power purchase agreement through no fault of the interconnection customer; or (b) it was actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement, and then did not finalize a power purchase agreement, then the interconnection customer may park its interconnection request and re-seek TP Deliverability with its cluster. If such an interconnection customer's cluster is no longer eligible to park and has already completed the TP Deliverability allocation cycle after its parking opportunities, the interconnection customer will be converted to Energy Only, but will not retain cost responsibility for its assigned delivery upgrades. These provisions mitigate financial risk for interconnection customers that make significant progress, but then come up short through no fault of their own.

[127] Proposed Section 4.4.7 of Appendix U; proposed Section 6.9.5 of Appendix Y; proposed Sections 6.7.4; 8.9.3 of Appendix DD to the CAISO tariff. As described above, interconnection customers that attest that they are proceeding without a power purchase agreement that fail to adhere to the requirements of proposed section 8.9.2.2 will be converted to Energy Only. Similarly, they may not reduce their cost responsibility or interconnection financial security for any assigned delivery network upgrades unless the CAISO and transmission owner determine that the interconnection customer's assigned delivery network upgrade(s) is no longer needed for current interconnection customers.

[128] Materials regarding the IPE stakeholder process are available on the CAISO website at http://www.caiso.com/informed/Pages/StakeholderProcesses/InterconnectionProcessEnhancements.asp

The proposals were presented to the CAISO Governing Board during its public meetings on July 18, 2018 and August 29, 2018. The Board voted unanimously to authorize this filing.[129]

IV. Effective Date

The CAISO requests an effective date of November 27, 2018, 61 days from this filing. This effective date will allow the CAISO to implement the instant revisions in the upcoming TP Deliverability allocation cycle.

V. Communications

In accordance to Rule 203(b)(3) to the Commission's Rules of Practice and Procedure,[130] the CAISO respectfully requests that correspondence and other communications regarding this filing should be directed to the following:

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VI. Service

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of this filing on the CAISO website.

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x. A list of key dates in the stakeholder process that are relevant to this tariff amendment is provided in attachment E to this filing.

129 Materials related to the Board's authorization to prepare and submit this filing are available on the CAISO website at http://www.caiso.com/informed/Pages/BoardCommittees/BoardGovernorsMeetings.aspx. The Memoranda provided to the Board is included in attachment D to this filing.

130 18 C.F.R. § 385.203(b)(3).

VII. Contents of Filing

In addition to this transmittal letter, this filing includes the following attachments:

Attachment A	Clean CAISO tariff sheets incorporating this tariff amendment;
Attachment B	Red-lined document showing the revisions in this tariff amendment;
Attachment C	Final policy papers on this tariff amendment;
Attachment D	Board memoranda; and
Attachment E	List of key dates in the stakeholder process.

VIII. Conclusion

For the reasons set forth in this filing, the CAISO respectfully requests that the Commission accept the tariff revisions proposed in the filing effective November 27, 2018.

Respectfully submitted,

/s/ William H. Weaver
Roger E. Collanton
General Counsel
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Assistant General Counsel
William H. Weaver
Senior Counsel

Counsel for the California Independent System Operator Corporation

Attachment A – Clean Tariff

2018 Interconnection Process Enhancements

California Independent System Operator Corporation

25. Interconnection of Generating Units and Facilities

25.1 Applicability

This Section 25 and Appendix U (the Standard Large Generator Interconnection Procedures (LGIP)), Appendix Y (the Generator Interconnection Procedures (GIP)), Appendix S (the Small Generator Interconnection Procedures (SGIP)), Appendix W, or Appendix DD (the Generator Interconnection and Deliverability Allocation Procedures (GIDAP)), as applicable, shall apply to:

(a) each new Generating Unit that seeks to interconnect to the CAISO Controlled Grid;

(b) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified with a resulting increase in the total capability of the power plant;

(c) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified without increasing the total capability of the power plant but has changed the electrical characteristics of the power plant such that its re-energization may violate Applicable Reliability Criteria;

(d) each existing Generating Unit connected to the CAISO Controlled Grid whose total Generation was previously sold to a Participating TO or on-site customer but whose Generation, or any portion thereof, will now be sold in the wholesale market, subject to Section 25.1.2; and

(e) each existing Generating Unit that is a Qualifying Facility and that is converting to a Participating Generator without repowering or reconfiguring the existing Generating Unit, subject to Section 25.1.2.

25.1.1 Interconnection Request and Generating Unit Requirements

The owner of a Generating Unit described in Section 25.1 (a), (b), or (c), or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with Appendix DD.

25.1.2 Affidavit Requirement

If the owner of a Generating Unit described in Section 25.1(d), or its designee, represents that the total generating capability and electrical characteristics of the Generating Unit will be substantially unchanged, then that entity must submit an affidavit to the CAISO and the applicable Participating TO representing that the total generating capability and electrical characteristics of the Generating Unit have remained

substantially unchanged. However, if there is any change to the total generating capability and electrical characteristics of the Generating Unit, the affidavit shall include supporting information describing any such changes and a $50,000 deposit for the study. The CAISO, in coordination with the applicable Participating TO, will evaluate whether the total generating capability or electrical characteristics of the Generating Unit have substantially changed or will substantially change. The CAISO may engage the services of the applicable Participating TO in conducting such verification activities. Costs incurred by the CAISO and Participating TO (if any) shall be borne by the party making the request under Section 25.1.2, and such costs shall be included in a CAISO invoice for verification activities.

25.1.2.1 If the CAISO and the applicable Participating TO confirm that the electrical characteristics are substantially unchanged, then that request will not be placed into the interconnection queue. However, the owner of the Generating Unit, or its designee, will be required to execute a CAISO Generator Interconnection Agreement, as applicable. All Generation Units described in Section 25.1(d) and (e) will be required to comply with the CAISO's new resource implementation process to ensure compliance with applicable tariff provisions and Applicable Reliability Criteria, as specified in the Business Practice Manuals.

25.1.2.2 If the CAISO and the applicable Participating TO cannot confirm that the total capability and electrical characteristics are and will be substantially unchanged, then the owner of the Generating Unit, or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with Appendix DD.

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25.2 Interconnections to the Distribution System

Any proposed interconnection by the owner of a planned Generating Unit, or its designee, to connect that Generating Unit to a Distribution System of a Participating TO will be processed, as applicable, pursuant to the Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable, of the Participating TO; provided, however, that the owner of the planned Generating Unit, or its designee, shall be required to mitigate any adverse impact on reliability of the

CAISO Controlled Grid consistent with Appendix DD. In addition, each Participating TO will provide to the CAISO a copy of the system impact study used to determine the impact of a planned Generating Unit on the Distribution System and the CAISO Controlled Grid pursuant to a request to interconnect under the applicable Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable.

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25.5 Modifications to Generating Facilities

Pursuant to Article 5.19 of the Large Generator Interconnection Agreement set forth in Appendices V, BB, CC, and EE, or Article 1.3.4 of the Small Generator Interconnection Agreement set forth in Appendices T and FF, Generating Facilities that have achieved their Commercial Operation Date may make modifications to their Generating Facilities where the CAISO and the Participating TO are notified at least ninety (90) calendar days in advance of commencement of work and sufficient information is provided such that the CAISO and the Participating TO(s) have determined that Section 25.1 does not apply to the modification.

25.5.1

Prior to making any modification after the Generating Facility's Commercial Operation Date, the Generating Unit owner must first request that the CAISO evaluate whether Section 25.1 would apply to the modification. In response to the Generating Unit owner's request, the CAISO, in coordination with the affected Participating TO, will evaluate the proposed modification. The CAISO may engage the services of the applicable Participating TO to assess the modification. The CAISO will inform the Generating Unit owner in writing whether Section 25.1 would apply to the modification and therefore be denied. Costs incurred by the Participating TO and the CAISO (if any) shall be borne by the party making the request under Section 25.5, and such costs shall be included in any CAISO invoice for modification assessment activities.

25.5.2

The Generating Unit owner will provide the CAISO a $50,000 deposit for the modification assessment at

the time the request is submitted. Except as provided below, any modification assessment will be concluded, and a response provided to the Generating Unit owner in writing, within forty-five (45) calendar days from the date the CAISO receives all of the following: the Generating Unit owner's written notice to modify the project, technical data required to assess the request, and payment of the $50,000 deposit. If the modification assessment cannot be completed within that time period, the CAISO will notify the Generating Unit owner and provide an estimated completion date and an explanation of the reasons why additional time is required.

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Appendix S Small Generator Interconnection Procedures

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1.3 Application

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1.3.1 Applicability

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1.3.4 Modifications

The Interconnection Customer shall submit to the CAISO, in writing, modifications to any information provided in the Interconnection Request. The Interconnection Customer shall retain its Queue Position if the modifications are determined not to be Material Modifications pursuant to SGIP Section 1.3.4.1. Notwithstanding the above, during the course of the Interconnection Studies, the Interconnection Customer, the applicable Participating TO(s), or the CAISO may identify changes to the planned interconnection that may improve the costs and benefits (including reliability) of the interconnection, and the ability of the proposed change to accommodate the Interconnection Request. To the extent the identified changes are acceptable to the applicable Participating TO(s), the CAISO, and Interconnection Customer, such acceptance not to be unreasonably withheld, the CAISO shall modify the Point of Interconnection and/or configuration in accordance with such changes and the Interconnection Customer shall retain its Queue Position.

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1.3.4.3 Notwithstanding any other provisions in this SGIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded ten (10) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds ten (10) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed ten (10) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this SGIP.

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Appendix T

Small Generator Interconnection Agreement

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Article 3. Effective Date, Term, Termination, and Disconnection

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3.4.5 Modification of the Small Generating Facility

Prior to making any modification to the Small Generating Facility before it has achieved its Commercial Operation Date, the Interconnection Customer must first request that the CAISO evaluate whether any such proposed modification is a Material Modification and receive written authorization from the Participating TO and the CAISO. Such authorization shall not be unreasonably withheld. The CAISO may engage the services of the applicable Participating TO to assess the modification. Costs incurred by the Participating TO and CAISO (if any) shall be borne by the party making the request under Section 1.3.4 of Appendix S, and such costs shall be included in any CAISO invoice for modification assessment activities. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer has achieved its Commercial Operation Date, the CAISO and Participating TO(s) will review the requested modification pursuant to Sections 25 and 25.1(c) of the CAISO Tariff. If the Interconnection Customer makes such modification without the Participating TO's and the CAISO's prior written authorization, the Participating TO or the CAISO shall have the right to temporarily disconnect the Small Generating Facility. Any change to the Point of Interconnection, except those deemed acceptable under this article of the SGIA or so allowed elsewhere, shall constitute a Material Modification. The Interconnection Customer may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating

capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

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Appendix U

Standard Large Generator Interconnection Procedures (LGIP)

Table of Contents

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Appendix 1 INTERCONNECTION REQUEST
Appendix 2 LGIP INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT
Appendix 3 INTERCONNECTION FEASIBILITY STUDY AGREEMENT
Appendix 4 INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT
Appendix 5 INTERCONNECTION STUDY AGREEMENT
Appendix 6 OPTIONAL INTERCONNECTION STUDY AGREEMENT
Appendix 7 AGREEMENT FOR ALLOCATING LGIP AND STUDY RESPONSIBILITIES

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the projected In-Service Date; (v) the status of the Interconnection Request, including Queue Position; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (combined cycle, base load or combustion turbine and fuel type); (ix) for Interconnection Requests that have not resulted in a completed interconnection, an explanation as to why it was not completed; and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes an LGIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted LGIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. Interconnection Study reports and Optional Interconnection Study reports shall be posted to the CAISO Website subsequent to the meeting among the Interconnection Customer, the applicable Participating TO(s) and the CAISO to discuss the applicable study results. The CAISO shall also post any known deviations in the Large Generating Facility's In-Service Date.

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4.4 Modifications

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4.4.7 Commercial Viability Criteria for Retention of Deliverability beyond Ten Years in Queue

The CAISO's to modifications requested pursuant to Section 4.4.3 for an Interconnection Customer that has exceeded or will exceed ten (10) years from the date the Interconnection Request is received by the CAISO with retention of Deliverability will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such

documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase agreement. Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018, on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as modifications under this Section. Interconnection Customers may request such modifications pursuant to this LGIP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy-Only Deliverability Status. . Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the

Generating Facility downsizes pursuant to Section 7.5 of Appendix DD to the CAISO Tariff to the amount in service and operating in the CAISO markets, it will revert to Full Capacity Deliverability Status.

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4.4.9 Fuel-type Modifications

Notwithstanding any other provisions in this LGIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded ten (10) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds ten (10) years from the date the CAISO received the Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed ten (10) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this LGIP.

4.4.10 Conversion to Energy Only

In addition to the options provided in this LGIP, an Interconnection Customer may convert to Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status. This conversion will become effective through the reassessment process described in Section 7.4 of Appendix DD to the CAISO tariff. Interconnection Customers that become Energy Only may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

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6.4 Re-Study

If re-study of the Interconnection Feasibility Study is required due to a higher queued project dropping out of the queue, or a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 6.1, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer and the applicable Participating TO(s) in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the

Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $50,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take not longer than forty-five (45) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. The CAISO shall share applicable study results for review, provide the study results for review and comment to any other potentially-impacted Participating TO(s), incorporate comments, and issue a final study to the Interconnection Customer within sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. If the Interconnection Feasibility Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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7.6 Re-Study

If re-study of the Interconnection System Impact Study is required due to a higher queued project dropping out of the queue, a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 7.2, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $50,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. The CAISO will share applicable study results with the applicable Participating TO(s) for review and comment, and will incorporate comments into the study report. The CAISO will issue a final study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. If the Interconnection System Impact Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of

completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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8.5 Re-Study

If re-study of the Interconnection Facilities Study is required due to a higher queued project dropping out of the queue or a modification of a higher queued project pursuant to LGIP Section 4.4, or any other effective change in information which necessitates a re-study, the CAISO shall so notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $50,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment and incorporate comments, as appropriate. The CAISO will issue a final Interconnection Facilities Study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. If the Interconnection Facilities Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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10.1 Optional Interconnection Study Agreement

On or after the date when the Interconnection Customer receives Interconnection System Impact Study results, the Interconnection Customer may request, and the CAISO shall conduct or cause to be conducted, a reasonable number of Optional Interconnection Studies. The request shall describe the assumptions that the Interconnection Customer wishes to be studied within the scope described in LGIP Section 10.2. Within five (5) Business Days after receipt of a request for an Optional Interconnection Study, the CAISO shall provide to the Interconnection Customer an

Optional Interconnection Study Agreement.

The Optional Interconnection Study Agreement shall: (i) specify the technical data that the Interconnection Customer must provide for each phase of the Optional Interconnection Study, (ii) specify the Interconnection Customer's assumptions as to which Interconnection Requests with higher Queue Positions will be excluded from the Optional Interconnection Study case and assumptions as to the type of interconnection service for Interconnection Requests remaining in the Optional Interconnection Study case, and (iii) the CAISO's estimate of the cost of the Optional Interconnection Study. To the extent known by the CAISO, such estimate shall include any costs expected to be incurred by any Affected System whose participation is necessary to complete the Optional Interconnection Study. Notwithstanding the above, the CAISO shall not be required as a result of an Optional Interconnection Study request to conduct any additional Interconnection Studies with respect to any other Interconnection Request.

The Interconnection Customer shall execute the Optional Interconnection Study Agreement within ten (10) Business Days of receipt and deliver the Optional Interconnection Study Agreement, the technical data and a $50,000 deposit to the CAISO as applicable. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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12.2 Construction Sequencing

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12.2.4 Amended Interconnection Study

An Interconnection Study will be amended, as needed, to determine the facilities necessary to support the requested In-Service Date as specified in the LGIA. This amended study will include those transmission facilities, Large Generating Facilities and any other generating facilities that are expected to be in service on or before the requested In-Service Date. If an amendment to an Interconnection Study is required, the CAISO shall notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the amended study and withdraw the Interconnection Customer's Interconnection Request or (ii) continue with the amended study. If the Interconnection Customer requests the CAISO to continue with the amended study, the Interconnection Customer shall pay the CAISO an additional $50,000 deposit for the amended study along with providing written notice for the CAISO to continue. Such amended study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment, and incorporate comments and issue a final study to the Interconnection Customer within eighty (80) calendar days from the date of the Interconnection Customer's written notice to continue the study and payment of the additional $50,000 deposit. If the amended Interconnection Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the

amended study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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Appendix V

STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT

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Article 5 Facilities Engineering, Procurement, and Construction

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5.16 Suspension. The Interconnection Customer may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA . Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 4.4.6 of the LGIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) the Participating TO's electrical system and the CAISO Controlled Grid shall be left in a safe and reliable condition in accordance with Good Utility Practice and the Participating TO's safety and reliability criteria and the CAISO's Applicable Reliability Standards; and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer

suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA on or before the expiration of three (3) years following commencement of such suspension, this LGIA shall be deemed terminated. The three-year period shall begin on the date the Interconnection Customer provides in its request, if approved. Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

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5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 4.4 of the LGIP if it has not. If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

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Appendix Y GIP

For Interconnection Requests

Generator Interconnection Procedures (GIP)

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the most recent projected Commercial Operation Date; (v) the status of the Interconnection Request, including whether it is active or withdrawn; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (e.g., combined cycle, combustion turbine, wind turbine, and fuel type); (ix) requested deliverability status; and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes a GIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted GIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. The CAISO shall further post to the secure CAISO Website portions of the Phase I Interconnection Study that do not contain customer-specific information following the final Results Meeting and portions of the Phase II Interconnection Study that do not contain customer-specific information no later than publication of the final Transmission Plan under CAISO Tariff Section 24.2.5.2 (such posted information to be placed on the secure CAISO Website to protect any Critical Energy Infrastructure Information contained therein). The CAISO shall post to the secure CAISO Website any documents or other materials posted pursuant to this GIP or a Business Practice Manual that contain Critical Energy Infrastructure Information.

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6.9 Phase 1 Interconnection Study Results Meeting

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6.9.2 Modifications.

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6.9.2.4 Notwithstanding any other provisions in this GIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or

replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded seven (7) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds seven (7) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed seven (7) years from the date the CAISO received its Interconnection Request.

6.9.2.5 In addition to the options provided in this GIP, an Interconnection Customer may convert to Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status after the completion of its Phase II Interconnection Study. This conversion will become effective through the reassessment process described in Section 7.4 of Appendix DD to the CAISO tariff. Interconnection Customers that become Energy Only after their Phase II Interconnection Study may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

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6.9.5 Commercial Viability Criteria for Retention of Deliverability beyond Seven Years in Queue

The CAISO's agreement to modifications requested pursuant to Section 6.9.2.3 for an Interconnection Customer with a Commercial Operation Date that has exceeded or will exceed seven (7) years from the date the Interconnection Request is received by the CAISO with retention of Full Capacity Deliverability Status or Partial Capacity Deliverability Status will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase agreement. Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the

Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018 on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as modifications under this Section. Interconnection Customers may request such modifications pursuant to this GIP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy-Only Deliverability Status. Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the Generating Facility downsizes pursuant to Section 7.5 of Appendix DD to the CAISO Tariff to the amount in service and operating in the CAISO markets, it will revert to Full Capacity Deliverability Status.

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8.1 One-Time Full Capacity Deliverability Option

A Large Generating Facility previously studied as Energy-Only Deliverability Status under the CAISO Tariff, or a Small Generating Facility studied under the provisions of Appendix S of the CAISO Tariff, will have a one-time option to be studied for Full Capacity Deliverability Status.

8.2 [Not Used]

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9.2 Initial Posting of Financial Security

9.2.1 The Interconnection Customer shall post, with notice to the CAISO, two separate Interconnection Financial Security instruments: (i) a posting relating to the Network Upgrades; (ii) a posting relating to the Participating TO's Interconnection Facilities.

Interconnection Customers owned by Participating Transmission Owners are not required to post Interconnection Financial Security to themselves. Notwithstanding this exemption, Interconnection Customers owned by Participating Transmission Owners (i) must post Interconnection Financial Security required for Network Upgrades or Participating TO's Interconnection Facilities on other Participating Transmission Owner's systems where required for interconnection; and (ii) must remit to the CAISO an amount equal to any non-fundable portion of the Interconnection Financial Security that would have been forfeited upon withdrawal or termination absent this exemption pursuant to Section 7.6 of Appendix DD to the CAISO tariff and Section 9.4 of this GIP.

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9.4 Effect of Withdrawal or Termination on Financial Security

Withdrawal of an Interconnection Request or termination of a GIA shall allow the applicable Participating TO(s) to liquidate the Interconnection Financial Security, or balance thereof, posted by the Interconnection Customer for Network Upgrades at the time of withdrawal. To the extent the amount of the liquidated Interconnection Financial Security plus capital, if any, separately provided by the Interconnection Customer to satisfy its obligation to finance Network Upgrades in accordance with GIP Section 12.3 exceeds the total cost responsibility for Network Upgrades assigned to the Interconnection Customer by the final Phase I or Phase II Interconnection Study, whichever is lower, or in the governing study for the Independent Study Process, the applicable Participating TO(s) shall remit to the Interconnection Customer the excess amount.

Withdrawal of an Interconnection Request or termination of a GIA shall result in the release to the Interconnection Customer of any Interconnection Financial Security posted by the Interconnection Customer for Participating TO's Interconnection Facilities, except with respect to any amounts necessary to pay for costs incurred or irrevocably committed by the applicable Participating TO(s) on behalf of the Interconnection Customer for the Participating TO's Interconnection Facilities and for which the applicable Participating TO(s) has not been reimbursed.

9.4.1 [Not Used]

9.4.2 Schedule for Determining Non-Refundable Portion of the Interconnection Financial Security for Network Upgrades.

9.4.2.1 Up to One Hundred Eighty Days After Final Phase II Interconnection Study Report For Queue Cluster Generating Facilities or up to One Hundred Twenty Days After Final Facilities Study Report for Independent Study Process Generating Facilities.

If, at any time after the initial posting of the Interconnection Financial Security for Network Upgrades under GIP Section 9.2 and on or before one hundred eighty (180) calendar days after the date of issuance of the final Phase II Interconnection Study report for Interconnection

Customers in a Queue Cluster, or on or before one hundred twenty (120) days after the date of issuance of the results of the Facilities Study for Interconnection Customers in the Independent Study Process, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for Network Upgrades under GIP Section 9.2 and reimburse the Interconnection Customer in an amount of (i) any posted amount less fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $10,000 per requested and approved megawatt value of the Generating Facility Capacity at the time of withdrawal being retained by the Participating TO(s)), or, (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If the Interconnection Customer has separately provided capital apart from the Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, the applicable Participating TO(s) will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

9.4.2.2 Between One Hundred Eighty-One Days After Final Phase II Interconnection Study Report or Facilities Study Results and the Commencement of Construction Activities.

If, at any time between one hundred eighty-one (181) calendar days after the date of issuance of the final Phase II Interconnection Study report for Interconnection Customers in a Queue Cluster, or the date of issuance of the final Facilities Study Report for Interconnection Customers in the Independent Study Process, and the commencement of Construction Activities for either Network Upgrades or Participating TO's Interconnection Facilities, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for Network Upgrades under GIP Section 9.3 and reimburse the Interconnection Customer in an amount of (i) any posted amounts less fifty percent (50%) of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $20,000 per requested and approved megawatt value of the Generating Facility Capacity at the time of withdrawal being retained by the Participating TO(s)), or, (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If the Interconnection Customer has separately provided capital apart from the Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, the applicable Participating TO(s) will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

9.4.2.3 [Not Used]

9.4.2.4 Special Treatment Based on Failure to Obtain Necessary Permit or Authorization from Governmental Authority.

If, at any time after the posting requirement under GIP Section 9.3, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, and the Delivery Network Upgrades to be financed by the Interconnection Customer under GIP Section 7.3 are also to be financed by one or more other Interconnection Customers, then GIP Section 9.4.2.1 shall apply, except that the Interconnection Customer shall not be reimbursed for its share of any actual costs incurred or irrevocably committed by the applicable Participating TO(s) for Construction Activities.

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Appendix BB

Standard Large Generator Interconnection Agreement for Interconnection Requests in a Serial Group that are tendered or execute a Large Generator Interconnection Agreement on or after May 15, 2018

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ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

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5.16 Suspension. The Interconnection Customer may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA. Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.9.2.3 of the LGIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) that the Participating TO's electrical system and the CAISO Controlled Grid can be left in a safe and reliable condition in accordance with Good Utility Practice, the Participating TO's safety and reliability criteria, and Applicable Reliability Standards; and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so.
The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA on or before the expiration of three (3) years following commencement of such suspension, this LGIA shall be deemed terminated. The three-year period shall begin on the date the Interconnection Customer provides its request, if approved. Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

* * * * *

5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to Sections 25 and 25.1(c) of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.9.2 of the LGIP if it has not.

If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

* * * * *

Appendix CC

Large Generator Interconnection Agreement for Interconnection Requests in a Queue Cluster Window that are tendered a Large Generator Interconnection Agreement on or after May 15, 2018

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ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

* * * * *

5.16 Suspension. The Interconnection Customer may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA, other than Network Upgrades identified in the Phase II Interconnection Study as common to multiple generating facilities. Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.9.2 of the GIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an

anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) the Participating TO's electrical system and the CAISO Controlled Grid can be left in a safe and reliable condition in accordance with Good Utility Practice, the Participating TO's safety and reliability criteria, and Applicable Reliability Standards; and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so.

Network Upgrades common to multiple generating facilities, and to which the Interconnection Customer's right of suspension shall not extend, consist of Network Upgrades identified for:

(i) generating facilities which are the subject of all Interconnection Requests made prior to the Interconnection Customer's Interconnection Request;
(ii) generating facilities which are the subject of Interconnection Requests within the Interconnection Customer's queue cluster; and
(iii) generating facilities that are the subject of Interconnection Requests that were made after the Interconnection Customer's Interconnection Request but no later than the date on which the Interconnection Customer's Phase II Interconnection Study Report is issued, and have been modeled in the Base Case at the time the Interconnection Customer seeks to exercise its suspension rights under this Article.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA in time to ensure that the new projected Commercial Operation Date for the full Generating Facility Capacity of the Large Generating Facility is no more than three (3) years from the Commercial Operation Date identified in Appendix B hereto, this LGIA shall be deemed terminated and the Interconnection Customer's responsibility for costs will be determined in accordance with Article 2.4. The suspension period shall begin on the date the Interconnection Customer provides in its request, if approved. Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

* * * * *

5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.9.2 of the GIP if it has not.

If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

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Appendix DD

Generator Interconnection and Deliverability Allocation Procedures (GIDAP)

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Section 3 Interconnection Requests

3.1 General

Pursuant to CAISO Tariff Section 25.1, a duly authorized officer or agent of the Interconnection Customer will submit to the CAISO (1) an Interconnection Request consistent with Appendix 1 to this GIDAP, including (2) an executed Generator Interconnection Study Process Agreement consistent with Appendix 3 to this GIDAP. All forms may be submitted electronically as provided on the CAISO website. Interconnection customers will submit Appendix B to the Generator Interconnection Study Process Agreement pursuant to Section 7 of this GIDAP. The CAISO will forward a copy of the Interconnection Request to the applicable Participating TO within five (5) Business Days of receipt.

The Interconnection Customer shall submit a separate Interconnection Request for each site and may submit multiple Interconnection Requests for a single site. The Interconnection Customer must submit a deposit with each Interconnection Request even when more than one request is submitted for a single site. An Interconnection Request to evaluate one site at two different voltage levels shall be treated as two Interconnection Requests.

An Interconnection Customer with a proposed Small Generating Facility shall be evaluated using the maximum rated capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system. However, if the maximum capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system is limited (e.g., through use of a control system, power relay(s), or other similar device settings or adjustments), then the Interconnection Customer must obtain the CAISO's agreement, with such agreement not to be unreasonably withheld, that the manner in which the Interconnection Customer proposes to implement such a limit will not adversely affect the safety and reliability of the CAISO's system. If the CAISO does not so agree, then the Interconnection Request must be withdrawn or revised to specify the maximum capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system without such limitations. Furthermore, nothing in this section shall prevent the CAISO from considering an output higher than the limited output, if appropriate, when evaluating system protection impacts.

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3.5 Processing of Interconnection Requests

3.5.1 Initiating an Interconnection Request.

To initiate an Interconnection Request, except as set forth for the Fast Track Process in Section 5, and have the Interconnection Request considered for validation under Section 3.5.2, the Interconnection Customer must submit all of the following during the Cluster Application Window, or at any time during the year for proposed Generating Facilities applying for processing under the Independent Study Process:

(i) An Interconnection Study Deposit of $150,000.

(ii) A completed application in the form of Appendix 1, including requested Deliverability status, requested study process (either Queue Cluster or Independent Study Process), preferred Point of Interconnection and voltage level, and all other required technical data.

(iii) Demonstration of Site Exclusivity or, for Interconnection Requests in a Queue Cluster, a posting of a Site Exclusivity Deposit of $100,000 for a Small Generating Facility or $250,000 for a Large Generating Facility. The demonstration of Site Exclusivity, at a minimum, must be through the Commercial Operation Date of the new Generating Facility or increase in capacity of the existing Generating Facility.

The CAISO requires Interconnection Study Deposits to review and validate the Interconnection Request. Notwithstanding Section 3.5.2 of this GIDAP or any other provision regarding validation or the ability to cure deficiencies, the CAISO will not review, process, or validate an Interconnection Request absent the Interconnection Study Deposit. Any interconnection Customer that has not submitted a complete Interconnection Study Deposit by April 15 (or the next Business Day if April 15 is not a Business Day) will be deemed invalid with no opportunity to cure or otherwise be included in that year's Queue Cluster.

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the most recent projected Commercial Operation Date; (v) the status of the Interconnection Request, including whether it is active or withdrawn; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (e.g., combined cycle, combustion turbine, wind turbine, and fuel type); (ix) requested Deliverability status, and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes a GIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted GIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. The CAISO shall further post to the secure CAISO Website portions of the Phase I Interconnection Study that do not contain customer-specific information following the final Results Meeting and portions of the Phase II Interconnection Study that do not contain customer-specific information no later than publication of the final Transmission Plan under CAISO Tariff Section 24.2.5.2 (such posted information to be placed on the

secure CAISO Website to protect any Critical Energy Infrastructure Information contained therein). The CAISO shall post to the secure CAISO Website any documents or other materials posted pursuant to this or a Business Practice Manual that contain Critical Energy Infrastructure Information.

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Section 6 Initial Activities and Phase I of the Interconnection Study Process for Queue Clusters

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6.1 Initial Activities Following the Close of the Cluster Application Window

6.1.1 [Intentionally Omitted]

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6.7 Phase I Interconnection Study Results Meeting

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6.7.2 Modifications.

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6.7.2.4 Notwithstanding any other provisions in this GIDAP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded seven (7) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds seven (7) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed seven (7) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this GIDAP.

6.7.2.5 In addition to the options provided in this GIDAP, an Interconnection Customer may convert to Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status after the completion of its Phase II Interconnection Study. This conversion will become effective through the reassessment process described in Section 7.4. Except (i) as provided in Section 8.9.3.2 (ii) due to not receiving the requested TP Deliverability allocation, or (iii) due to declining a TP Deliverability allocation, Interconnection Customers that become Energy Only after their Phase II Interconnection Study may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

6.7.3 Re-calculation of Initial Financial Security Posting

The CAISO, in coordination with the applicable Participating TO(s), may determine, based on best engineering judgment, whether modifications, withdrawals, or system changes eliminate the need for any Network Upgrades identified in the Phase I Interconnection Study report. The CAISO and applicable Participating TO(s) will not conduct any re-studies in making this determination.
If the CAISO and applicable Participating TO(s) should determine that one or more Network Upgrades identified in the Phase I Interconnection Study are no longer needed, then, solely for purposes of calculating the amount of the Interconnection Customer's initial Financial Security Posting under Section 11.2, such Network Upgrade(s) will be considered to be removed from the plan of service described in the Interconnection Customer's Phase I Interconnection Study report and the cost estimates for such upgrades shall not be included in the calculation of Interconnection Financial Security in Section 11.2. The CAISO will inform in a timely manner any Interconnection Customers so affected, and provide the Interconnection Customers with written notice of the revised initial Interconnection Financial Security posting amounts. No determination under this Section shall affect either (i) the timing for the initial Interconnection Financial Security posting or (ii) the maximum value for the Interconnection Customer's total cost responsibility for Network Upgrades established by the Phase I Interconnection Study report.

6.7.4 Commercial Viability Criteria for Retention of Deliverability beyond Seven Years in Queue

The CAISO's agreement to modifications requested pursuant to Section 6.7.2.3 for an Interconnection Customer with a Commercial Operation Date that has exceeded or will exceed seven (7) years from the date the Interconnection Request is received by the CAISO with retention of TP Deliverability will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase

agreement. Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018 on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO's agreement to an extension of the proposed Commercial Operation Date does not relieve the Interconnection Customer from compliance with the requirements of any of the criteria in Section 8.9.3 to retain TP Deliverability. The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as modifications under this Section. Interconnection Customers may request such modifications pursuant to this GIDAP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy Only Deliverability Status. . Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource

ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the Generating Facility downsizes pursuant to Section 7.5 to the amount in service and operating in the CAISO markets, it will revert to Full Capacity Deliverability Status. Interconnection Customers in Queue Cluster 7 and beyond whose Phase II Interconnection Study reports require a timeline beyond the seven-year threshold are exempt from the commercial viability criteria in this section provided that they modify their Commercial Operation Dates within six (6) months of the CAISO's publishing the Phase II Interconnection Study report. This exemption is inapplicable to report addenda or revisions required by a request from an Interconnection Customer for any reason.

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Section 7 Activities in Preparation for Phase II

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7.4 Reassessment Process

7.4.1 The CAISO will perform a reassessment of the Phase I Interconnection Study base case prior to the beginning of the GIDAP Phase II Interconnection Studies. The reassessment will evaluate the impacts on those Network Upgrades identified in previous interconnection studies and assumed in the Phase I Interconnection Study of:

(a) Interconnection Request withdrawals occurring after the completion of the Phase II Interconnection Studies for the immediately preceding Queue Cluster;

(b) Generator Downsizing Requests submitted in the most recent Generator Downsizing Request Window that meet the requirements set forth in Section 7.5, and Generating Facilities that are to have their generating capacities reduced pursuant to Sections 8.9.4, 8.9.5, and 8.9.6;

(c) the performance of earlier queued Interconnection Customers with executed GIAs with respect to required milestones and other obligations;

(d) changes in TP Deliverability allocations or Deliverability Status;

(e) the results of the TP Deliverability allocation from the prior Interconnection Study cycle; and,

(f) transmission additions and upgrades approved in the most recent TPP cycle.

The reassessment will be used to develop the base case for the Phase II Interconnection Study

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7.5.3 Eligibility to Participate in Generator Downsizing Process

In order to be eligible to participate in the current annual Generator Downsizing Process, an Interconnection Customer, including Interconnection Customers that have achieved their Commercial Operation Date, must meet the following good standing requirements by the close of the applicable Generator Downsizing Request Window:

(a) The Interconnection Customer has complied with all applicable requirements of the CAISO Tariff under which the Interconnection Request is being processed, including timely submittal of all Interconnection Financial Security postings that have come due.

(b) The Interconnection Request has not been withdrawn or deemed withdrawn by the CAISO. If the Interconnection Customer has received a notice of deemed withdrawal for which the cure period has expired without sufficient cure being made, then the Interconnection Customer will not be eligible to submit a Generator Downsizing Request. If the Interconnection Customer has received a notice of deemed withdrawal for which the cure period has not expired at the time of the close of the applicable Generator Downsizing Request Window and such cure period subsequently expires without sufficient cure being made, the Interconnection Customer's Generator Downsizing Request will be deemed withdrawn.

(c) The Interconnection Customer is in compliance with the terms of its Generator Interconnection Agreement, including Interconnection Customer milestones, and has not received a notice of breach for which the cure period has expired without sufficient cure being made. If the Interconnection Customer has received a notice of breach for which the cure period has not expired at the time of the close of the applicable Generator Downsizing Request Window and such cure period subsequently expires without sufficient cure being made, the Interconnection Customer's Generator Downsizing Request will be deemed withdrawn.

An Interconnection Customer in Section 7.5.3 that meets all applicable eligibility requirements set forth in Section 7.5, including the payment of any related costs, and that participates in the applicable annual Generator Downsizing Process, will not be considered in breach of its obligations under the CAISO Tariff or its Generator Interconnection Agreement due to failing to place into service the megawatt capacity set forth in its Generator Interconnection Agreement. This Section 7.5.3 will not operate to diminish the responsibility of an Interconnection Customer above for any costs or other obligations set forth in the CAISO Tariff or its Generator Interconnection Agreement.

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Section 8 Phase II Interconnection Study and TP Deliverability Allocation Processes

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8.9 Allocation Process for TP Deliverability

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8.9.2 Second Component: Allocating TP Deliverability

Following the process set forth in Section 8.9.1, the CAISO will allocate any remaining TP Deliverability in the following order.

The CAISO shall allocate available TP Deliverability to all or a portion of the full MW capacity of the Generating Facility as specified in the Interconnection Request. Where a criterion is met by a portion of the full MW generating capacity of the Generating Facility, the eligibility score associated with that criterion shall apply to the portion that meets the criterion. The demonstration must relate to the same proposed Generating Facility as described in the Interconnection Request.

(1) To Interconnection Customers in the current Queue Cluster or coming out of parking that have executed power purchase agreements, and to Interconnection Customers in the current Queue Cluster that are Load Serving Entities serving their own Load.

(2) To Interconnection Customers in the current Queue Cluster or coming out of parking that are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement.

(3) To Interconnection Customers in the current Queue Cluster with a completed Phase II Interconnection Study that have not parked, which are subject to Section 8.9.3.2 and elect to proceed without a power purchase agreement, or that parked before November 27, 2018 and attested to balance-sheet financing upon the end of their parking period.

Only these three foregoing groups may trigger the construction of Delivery Network Upgrades pursuant to Section 6.3.2. After the CAISO has allocated TP Deliverability to the three foregoing groups, the CAISO will allocate any remaining TP Deliverability to Energy Only Interconnection Customers requesting Deliverability based on the reassessment study and in the following order:

(4) To Interconnection Customers that have not achieved their Commercial Operation Date, originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status, and have executed power purchase agreements; and to Interconnection Customers that have achieved their Commercial Operation Date and have executed power purchase agreements.

(5) To Interconnection Customers that have not achieved their Commercial Operation Date, originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status, and are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement; and to Interconnection Customers that have achieved their Commercial Operation Date and are actively negotiating a power purchase agreement or on an active

short list to receive a power purchase agreement.

(6) To Interconnection Customers that originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status but achieved their Commercial Operation Date as Energy Only.

(7) To Interconnection Customers that achieved their Commercial Operation Date.

The CAISO will allocate TP Deliverability to these four foregoing groups solely based on TP Deliverability available from existing transmission facilities, from already planned upgrades in the CAISO Transmission Planning Process, or upgrades assigned to an interconnection project that has an executed GIA and currently has a TPD allocation.

Energy Only Interconnection Customers requesting Deliverability must submit to the CAISO a $60,000 study deposit for each Interconnection Request seeking TP Deliverability. The CAISO will deposit these funds in an interest bearing account at a bank or financial institution designated by the CAISO. The funds will be applied to pay for prudent costs incurred by the CAISO, the Participating TO(s), and/or third parties at the direction of the CAISO or applicable Participating TO(s), as applicable, to perform and administer the TP Deliverability studies for the Energy Only Interconnection Customers. Any and all costs of the Energy Only TP Deliverability study will be borne by the Interconnection Customer. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any work within seventy-five (75) calendar days of completion of the study, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the study. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

All power purchase agreements in this Section 8.9 must require Deliverability for the Interconnection Customer to represent that it has, is negotiating, or is shortlisted for a power purchase agreement. For all TP Deliverability allocations based upon having, negotiating, or being shortlisted for power purchase agreements, the CAISO will allocate TP Deliverability up to the amount of deliverable MW capacity procured by the power purchase agreement. All Load Serving Entities building Generating Facilities to serve their own Load must be doing so to fulfill a regulatory requirement that warrants Deliverability. Load Serving Entities acting as Interconnection Customers are otherwise eligible for all other attestations.

8.9.2.1 Deliverability Affidavits

To determine TP Deliverability allocation order, Interconnection Customers will be assigned a numerical score reflecting the its demonstration of having met the criteria below under the methodology set forth in the Business Practice Manual.

(1) Permitting status. An Interconnection Customer's Generating Facility must meet at least one of the following:

a. The Interconnection Customer has received its final governmental permit or authorization allowing the Generating Facility to commence construction.

b. The Interconnection Customer has received a draft environmental report document (or equivalent environmental permitting document) indicating

likely approval of the requested permit and/or which indicates that the permitting authority has not found an environmental impact which would likely prevent the permit approval.

c. The Interconnection Customer has applied for the necessary governmental permits or authorizations and the authority has deemed such documentation as data adequate for the authority to initiate its review process.

d. The Interconnection Customer has applied for the necessary governmental permit or authorization for the construction.

(2) Project financing status. An Interconnection Customer's Generating Facility must meet at least one of the following criteria:

a. The Interconnection Customer has an executed and regulator-approved power purchase agreement.

b. The Interconnection Customer has an executed power purchase agreement but such agreement has not yet received regulatory approval.

c. The Interconnection Customer is on an active short list or other commercially recognized method of preferential ranking of power providers by a prospective purchaser Load Serving Entity or procuring entity, or is currently negotiating a power purchase agreement.

d. The Interconnection Customer is a Load Serving Entity constructing its project to serve its own Load pursuant to a regulatory requirement.

e. The Interconnection Customer is proceeding to commercial operation without a power purchase agreement pursuant to Section 8.9.2.2, attested to balance-sheet financing before November 27, 2018, or attests to being balance-sheet financed or otherwise received a commitment of project financing pursuant to Section 8.9.3.1.

(3) Land acquisition

a. The Interconnection Customer demonstrates a present legal right to begin construction of the Generation Facility on one hundred percent (100%) of the real property footprint necessary for the entire Generating facility.

b. The Interconnection Customer demonstrates Site Exclusivity.

In allocating TP Deliverability under this section, in a situation where the TP Deliverability cannot accommodate all of the Interconnection Customers in a qualifying group, the CAISO will allocate TP Deliverability based on the highest numerical score. In a Situation where the available amount of TP Deliverability can accommodate all Interconnection Customers with equal scores, the CAISO will allocate the TP Deliverability to the Interconnection Customers with the lowest LDNU cost estimates. For all TP Deliverability allocations based upon having, negotiating, or being shortlisted for power purchase agreements, the CAISO will allocate TP Deliverability up to the amount of deliverable MW capacity procured by the power purchase agreement.

All power purchase agreements must require Deliverability above zero for the Interconnection Customer to represent that it has, is negotiating, or is shortlisted for a power purchase agreement. All Load Serving Entities building Generating Facilities to serve their own Load must be doing so to fulfill a regulatory requirement that warrants Deliverability.

8.9.2.2 Proceeding without a Power Purchase Agreement

Interconnection Customers only may attest that they are proceeding without a power purchase agreement in the allocation cycle immediately following receipt of their Phase II Interconnection Study (without having parked). Interconnection Customers that receive TP Deliverability in this group may park only that portion of their Interconnection Request that does not receive TP Deliverability. Parked portions may receive TP Deliverability in subsequent allocation cycles from any group for which they qualify. Interconnection Customers that receive TP Deliverability allocations for less than requested may elect to reduce their capacity to the amount of TP Deliverability received following the allocation.

If an Interconnection Customer receives TP Deliverability on the basis that it is proceeding without a power purchase agreement, it must accept the TP Deliverability allocation and forego parking that capacity, or withdraw. If an Interconnection Customer receives TP Deliverability on the basis that it is proceeding without a power purchase agreement, it may not request suspension under its GIA, delay providing its notice to proceed as specified in its GIA, or modify its Commercial Operation Date beyond the earlier of (a) the date established in its Interconnection Request when it requests TP Deliverability or (b) seven (7) years from the date the CAISO received its Interconnection Request. Extensions due to Participating TO construction delays will extend these deadlines equally. Interconnection Customers that fail to proceed toward their Commercial Operation Date under these requirements and as specified in their GIA will be converted to Energy Only. Interconnection Customers that become Energy Only for this or any reason may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

This Section 8.9.2.2 does not apply to Interconnection Customers that attested to balance-sheet financing or otherwise receiving a commitment of project financing before November 27, 2018, or that do so pursuant to Section 8.9.3.1.

8.9.3 Retaining TP Deliverability Allocation

For Interconnection Customers in Queue Cluster 10 or later, once a Generating Facility is allocated TP Deliverability under Section 8.9.1, the Interconnection Customer annually, on the date set forth and according to the process described in the Business Practice Manual, must demonstrate that the Generating Facility meets the following criteria to retain its TP Deliverability:

(1) The Generating Facility is in good standing with respect to the criteria on which the allocation of TP Deliverability was based;
(2) If the Generating Facility received TP Deliverability on the basis of having executed a power purchase agreement, it must have received regulatory approval of that agreement;
(3) If the Generating Facility received TP Deliverability on the basis of negotiating or being shortlisted for a power purchase agreement, it must have executed the agreement by November 30 of the year it received TP Deliverability. It must then comply with criterion 8.9.3(2) the following year;

(4) The Interconnection Customer must have executed a GIA and must remain in good standing with regard to its GIA, such that neither the Participating TO nor CAISO has provided the Interconnection Customer with a Notice of Breach of the GIA that has not been cured and the Interconnection Customer has not commenced curative actions;
(5) The Interconnection Customer must maintain its Commercial Operation Date set forth in the GIA unless an extension is required for reasons beyond the control of the Interconnection Customer or such extension results in no Material Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; or unless the extension is occasioned by a material delay in the Participating TO's construction of any Network Upgrades or Participating TO's Interconnection Facilities

The Interconnection Customer will provide the required information in the form of an affidavit as described in the Business Practice Manual. Interconnection Customers that fail to meet these criteria will become Energy Only for that portion of the Generating Facility that has not retained TP Deliverability. An Interconnection Customer's failure to retain its TP Deliverability will not be considered a Breach of its GIA. Except as provided in Section 8.9.3.2, Interconnection Customers that become Energy Only for failure to retain their TP Deliverability Allocation may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers. To the extent TP Deliverability has been allocated, lost, or relinquished only for a portion of the Interconnection Customer's project, this section 8.9.3 will apply to that portion of the project only.

8.9.3.1 Retaining TP Deliverability Allocation for Pre-Cluster 10 Interconnection Customers

Interconnection Customers in Queue Cluster 9 or earlier subject to this Appendix DD that have been allocated TP Deliverability or that parked pursuant to Section 8.9.4 or 8.9.4.1, annually, on the date set forth and according to the process described in the Business Practice Manual, must demonstrate that the Generating Facility meets the following criteria to retain its TP Deliverability:

(1) The Generating Facility is in good standing with respect to the criteria on which the allocation of TP Deliverability was based;

(2) If the Generating Facility received TP Deliverability on the basis of negotiating or being shortlisted for a power purchase agreement, it must have executed the agreement by the start of the next allocation cycle, or attest to balance-sheet financing or receipt of a commitment of project financing;

(3) The Interconnection Customer must have executed a GIA and must remain in good standing with regard to its GIA, such that neither the Participating TO nor CAISO has provided the Interconnection Customer with a Notice of Breach of the GIA that has not been cured and the Interconnection Customer has not commenced curative actions;

(4) The Interconnection Customer must maintain its Commercial Operation Date set forth in the GIA unless an extension is required for reasons beyond the control of the Interconnection Customer or such extension results in no Material Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; or unless the extension is occasioned by a material delay in the Participating TO's construction of any Network Upgrades or

Participating TO's Interconnection Facilities.

Interconnection Customers that have attested to balance-sheet financing or receipt of a commitment of project financing or do so pursuant to this Section are not subject to Section 8.9.2.2. Interconnection Customers that attest to balance-sheet financing pursuant to this Section 8.9.3.1 will be placed in TP Deliverability allocation group 8.9.2(3).

8.9.3.2 Loss of Power Purchase Agreement or Short List Status

Notwithstanding any provision of this GIDAP, if an Interconnection Customer receives TP Deliverability for all or a portion of its project after attesting that

(a) it had a power purchase agreement, and the Load Serving Entity or procuring entity unilaterally terminates that power purchase agreement through no fault of the Interconnection Customer; or

(b) it was actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement, and then did not finalize a power purchase agreement,

the Interconnection Customer may park its Interconnection Request, and re-seek TP Deliverability with its Queue Cluster. Alternatively, if such an Interconnection Customer's Queue Cluster is no longer eligible to park and has already completed the TP Deliverability allocation cycle after its parking opportunities, the Interconnection Customer will be converted to Energy Only but will not retain cost responsibility for its assigned Delivery Network Upgrades. Such Interconnection Customers may elect to reduce their Interconnection Financial Security as a result.

* * * * *

8.9.7 [Intentionally Omitted]

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Section 9 Additional Deliverability Assessment Options

9.1 [Intentionally Omitted]

9.2 [Intentionally Omitted]

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Section 11 Interconnection Financial Security

* * * * *

11.2 Interconnection Financial Security-Initial Posting for Queue Cluster Customers

11.2.1 Each Interconnection Customer in a Queue Cluster shall post, with notice to the CAISO, two separate Interconnection Financial Security instruments: (i) a posting relating to the applicable Network Upgrades; (ii) a posting relating to the Participating TO's Interconnection Facilities.

Interconnection Customers owned by Participating Transmission Owners are not required to post Interconnection Financial Security to themselves. Notwithstanding this exemption, Interconnection Customers owned by Participating Transmission Owners (i) must post Interconnection Financial Security required for Network Upgrades or Participating TO's Interconnection Facilities on other Participating Transmission Owner's systems where required for interconnection; and (ii) must remit to the CAISO an amount equal to any non-fundable portion of the Interconnection Financial Security that would have been forfeited upon withdrawal or termination absent this exemption pursuant to Sections 7.6 and 11.4.

* * * * *

11.2.7 Re-calculation of Initial Posting Requirement.

If withdrawals, modifications, or system changes occur after the completion of the Phase I Interconnection Study, pursuant to Section 6.7.2, and the CAISO, in consultation with the applicable Participating TO(s), is able to reasonably determine, prior to the date for initial posting of Interconnection Financial Security, that as a result of such decrease (solely or in combination with other modifications made by Interconnection Customers) some of the Network Upgrades and/or Participating TO Interconnection Facilities identified in the Phase I Interconnection Study will no longer be required, then the calculation of the initial posting of Interconnection Financial Security will not include those Network Upgrades and/or Participating TO Interconnection Facilities. Such determination will be made based on the CAISO's best engineering judgment and will not include any re-studies.

* * * * *

11.4 Withdrawal or Termination-Effect on Financial Security

Withdrawal of an Interconnection Request or termination of a GIA shall allow the applicable Participating TO(s) to liquidate the Interconnection Financial Security, or balance thereof, posted by the Interconnection Customer for Network Upgrades at the time of withdrawal.

To the extent the amount of the liquidated Interconnection Financial Security plus capital, if any, separately provided by the Interconnection Customer to satisfy its obligation to finance Network Upgrades exceeds the total cost responsibility for Network Upgrades assigned to the Interconnection Customer, the applicable Participating TO(s) shall remit to the Interconnection Customer the excess amount.

Withdrawal of an Interconnection Request or termination of a GIA shall result in the release to the Interconnection Customer of any Interconnection Financial Security posted by the Interconnection Customer for Participating TO Interconnection Facilities, except

with respect to any amounts necessary to pay for costs incurred or irrevocably committed by the applicable Participating TO(s) on behalf of the Interconnection Customer for the Participating TO's Interconnection Facilities and for which the applicable Participating TO(s) has not been reimbursed.

11.4.1 [Intentionally Omitted]

11.4.2 Determining Refundable Portion of the Interconnection Financial Security for Network Upgrades.

11.4.2.1 Withdrawal Between the First Posting and the Deadline for the Second Posting

If the Interconnection Customer either withdraws its Interconnection Request or terminates its GIA at any time between the initial posting and the deadline for the second posting of the Interconnection Financial Security for applicable Network Upgrades, then the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for the applicable Network Upgrades and reimburse the Interconnection Customer the lesser of:

a. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) less (all costs and expenses incurred or irrevocably committed to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer); or

b. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) minus the lesser of fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades or $10,000 per requested and approved, pre-downsized megawatt of the Generating Facility Capacity.

11.4.2.2 Withdrawal Between the Second Posting and the Commencement of Construction Activities

If the Interconnection Customer either withdraws or terminates its GIA at any time after the between the second posting of the Interconnection Financial Security for applicable Network Upgrades and the Commencement of Construction Activities for such Network Upgrades, then the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for the applicable Network Upgrades and reimburse the Interconnection Customer the lesser of:

a. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) less (all costs and expenses incurred or irrevocably committed to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer) and less (any posting reduction due to the Interconnection Customer's election to self-build Stand Alone Network Upgrades); or

b. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) minus the lesser of fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades or $20,000 per requested and approved, pre-downsized megawatt of the Generating Facility Capacity.

11.4.2.3 Special Treatment Based on Failure to Obtain Necessary Permit or Authorization from Governmental Authority.

If, at any time after the second posting requirement , the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, because the Interconnection Customer received a final denial from the primary issuing Governmental Authority for authorization necessary for the construction or operation of the Generating Facility, and the Delivery Network Upgrades to be financed by the Interconnection Customer are also to be financed by one or more other Interconnection Customers, then Section 11.4.2.2 shall apply, except that the Interconnection Customer shall not be reimbursed for its share of any actual costs incurred or irrevocably committed by the applicable Participating TO(s) for Construction Activities.

* * * * *

Appendix 3
GENERATOR INTERCONNECTION STUDY PROCESS AGREEMENT FOR QUEUE CLUSTERS

THIS AGREEMENT is made and entered into this day of , 20 by and between _____ , a organized and existing under the laws of the State of , ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the CAISO Controlled Grid pursuant to Appendix DD to the CAISO Tariff; and

WHEREAS, the Interconnection Customer has requested the CAISO to conduct or cause to be performed Interconnection Studies to assess the system impact of interconnecting the Generating Facility to the CAISO Controlled Grid and to specify and estimate the cost of the equipment, engineering, procurement and construction work needed on the Participating TO's electric system in accordance with Good Utility Practice to physically and electrically connect the Generating Facility to the CAISO Controlled Grid;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the CAISO's FERC-approved Generation Interconnection and Deliverability Allocation Procedures in CAISO Tariff Appendix DD "GIDAP" or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.

* * * * *

4.0 The Interconnection Studies will be based upon the technical information provided by the

Interconnection Customer in the Interconnection Request, as may be modified under the CAISO Tariff. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection Studies

5.0 **[NOT USED]**

6.0 Consistent with the GIDAP and CAISO Tariff, the Interconnection Customer will provide deposits and pay its share of actual costs of applicable studies, including in excess of provided deposits. The CAISO and Participating TO will provide invoices and refunds on a timely basis required by the GIDAP and the CAISO Tariff.

Following the issuance of an Interconnection Study report, the CAISO shall charge and the Interconnection Customer shall pay its share of the actual costs of the Interconnection Study pursuant to Section 3.5.1 of the GIDAP.

Any difference between the deposits made toward the Interconnection Study process and associated administrative costs, including any accelerated studies, and the actual cost of the Interconnection Studies and associated administrative costs shall be paid by or refunded to the Interconnection Customer, in the appropriate allocation, in accordance with Section 3.5.1 of the GIDAP.

7.0 Pursuant to Section 3.7 of the GIDAP, the CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The CAISO may provide a copy of the Interconnection Studies or other assessments to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection.

* * * * *

10.0 The CAISO and Participating TO(s) shall maintain records and accounts of all costs incurred in performing the Interconnection Study in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the CAISO representative, within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Interconnection Study.

* * * * *

12.0 This Agreement shall become effective upon submission to the CAISO. If the CAISO does not receive the fully executed Agreement and deposit or other Interconnection Financial Security pursuant to Section 3.5.1 of the GIDAP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the GIDAP.

* * * * *

Appendix A

[NOT USED]

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Appendix EE

Large Generator Interconnection Agreement for Interconnection Requests under the

Generator Interconnection and Deliverability Allocation Procedures

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ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

* * * * *

5.16 Suspension. The Interconnection Customer may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA, other than Network Upgrades identified in the Phase II Interconnection Study as common to multiple generating facilities. Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.7.2 of the GIDAP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) the Participating TO’s electrical system and the CAISO Controlled Grid can be left in a safe and reliable condition in accordance with Good Utility Practice, the Participating TO’s safety and reliability criteria, and Applicable Reliability Standards; and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO’s electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO

shall obtain Interconnection Customer's authorization to do so.
Network Upgrades common to multiple generating facilities, and to which the Interconnection Customer's right of suspension shall not extend, consist of Network Upgrades identified for:

(i) generating facilities which are the subject of all Interconnection Requests made prior to the Interconnection Customer's Interconnection Request;

(ii) generating facilities which are the subject of Interconnection Requests within the Interconnection Customer's queue cluster; and

(iii) generating facilities that are the subject of Interconnection Requests that were made after the Interconnection Customer's Interconnection Request but no later than the date on which the Interconnection Customer's Phase II Interconnection Study Report is issued, and have been modeled in the Base Case at the time the Interconnection Customer seeks to exercise its suspension rights under this Article.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA in time to ensure that the new projected Commercial Operation Date for the full Generating Facility Capacity of the Large Generating Facility is no more than three (3) years from the Commercial Operation Date identified in Appendix B hereto, this LGIA shall be deemed terminated and the Interconnection Customer's responsibility for costs will be determined in accordance with Article 2.4 of this LGIA. The suspension period shall begin on the date the Interconnection Customer provides in its request, if approved.. Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension. Interconnection Customer subject to Section 8.9.2.2 of Appendix DD may not request suspension.

* * * * *

5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.7.2 of Appendix DD if it has not.

If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial

Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

* * * * *

Appendix FF

Small Generator Interconnection Agreement for Interconnection Requests Processed Under the Generator Interconnection and Deliverability Allocation Procedures

* * * * *

Article 3. Effective Date, Term, Termination, and Disconnection

* * * * *

3.4.5 Modification of the Small Generating Facility

Prior to making any modifications to the Small Generating Facility before it has achieved its Commercial Operation Date, the Interconnection Customer must first request that the CAISO evaluate whether such modification is a Material Modification and receive written authorization from the Participating TO and the CAISO. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. The CAISO may engage the services of the applicable Participating TO to assess the modification. Costs incurred by the Participating TO and CAISO (if any) shall be borne by the party making the request under Section 6.7.2 of Appendix DD, and such costs shall be included in any CAISO invoice for modification assessment activities. If the Interconnection Customer has achieved its Commercial Operation Date, the CAISO and Participating TO(s) will review the requested modification pursuant to Sections 25 and 25.1(c) of the CAISO Tariff. If the Interconnection Customer makes modifications without the Participating TO's and the CAISO's prior written authorization, the Participating TO or the CAISO shall have the right to temporarily disconnect the Small Generating Facility. Any change to the Point of Interconnection, except those deemed acceptable under this article of the GIDAP SGIA or so allowed elsewhere, shall constitute a Material Modification. The Interconnection Customer may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.44 of Appendix DD will still apply to such requests to reduce capacity.

Attachment B – Marked Tariff

2018 Interconnection Process Enhancements

California Independent System Operator Corporation

25. Interconnection of Generating Units and Facilities

25.1 Applicability

This Section 25 and Appendix U (the Standard Large Generator Interconnection Procedures (LGIP)), Appendix Y (the Generator Interconnection Procedures (GIP)), Appendix S (the Small Generator Interconnection Procedures (SGIP)), ~~or~~ Appendix W, or Appendix DD (the Generator Interconnection and Deliverability Allocation Procedures (GIDAP)), as applicable, shall apply to:

(a) each new Generating Unit that seeks to interconnect to the CAISO Controlled Grid;

(b) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified with a resulting increase in the total capability of the power plant;

(c) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified without increasing the total capability of the power plant but has changed the electrical characteristics of the power plant such that its re-energization may violate Applicable Reliability Criteria;

(d) each existing Generating Unit connected to the CAISO Controlled Grid whose total Generation was previously sold to a Participating TO or on-site customer but whose Generation, or any portion thereof, will now be sold in the wholesale market, subject to Section 25.1.2; and

(e) each existing Generating Unit that is a Qualifying Facility and that is converting to a Participating Generator without repowering or reconfiguring the existing Generating Unit, subject to Section 25.1.2.

25.1.1 Interconnection Request and Generating Unit Requirements

The owner of a Generating Unit described in Section 25.1 (a), (b), or (c), or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with Appendix DD.

25.1.2 Affidavit Requirement

If the owner of a Generating Unit described in Section 25.1(d), or its designee, represents that the total generating capability and electrical characteristics of the Generating Unit will be substantially unchanged, then that entity must submit an affidavit to the CAISO and the applicable Participating TO representing that the total generating capability and electrical characteristics of the Generating Unit have remained

substantially unchanged. However, if there is any change to the total generating capability and electrical characteristics of the Generating Unit, the affidavit shall include supporting information describing any such changes and a $5~~1~~0,000 deposit for the study. The CAISO, in coordination with the applicable Participating TO, will evaluate whether the total generating capability or electrical characteristics of the Generating Unit have substantially changed or will substantially change. The CAISO may engage the services of the applicable Participating TO in conducting such verification activities. Costs incurred by the CAISO and Participating TO (if any) shall be borne by the party making the request under Section 25.1.2, and such costs shall be included in a CAISO invoice for verification activities.

25.1.2.1 If the CAISO and the applicable Participating TO confirm that the electrical characteristics are substantially unchanged, then that request will not be placed into the interconnection queue. However, the owner of the Generating Unit, or its designee, will be required to execute a ~~Standard Large~~ CAISO Generator Interconnection Agreement ~~in accordance with Section 11 of Appendix U (the LGIP), a Large Generator Interconnection Agreement in accordance with Section 11 of Appendix Y (the GIP), a Small Generator Interconnection Agreement in accordance with Section 3.3.4, 3.4.5, or 3.5.7 and Section 4.8 of the SGIP, or an interconnection agreement in accordance with Appendix W~~, as applicable. All Generation Units described in Section 25.1(d) and (e) will be required to comply with the CAISO's new resource implementation process to ensure compliance with applicable tariff provisions and Applicable Reliability Criteria, as specified in the Business Practice Manuals.

25.1.2.2 If the CAISO and the applicable Participating TO cannot confirm that the total capability and electrical characteristics are and will be substantially unchanged, then the owner of the Generating Unit, or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with ~~Appendix U (the LGIP), Appendix Y (the GIP), Appendix S (the SGIP), or Appendix W, as applicable~~ Appendix DD.

* * * * *

25.2 Interconnections to the Distribution System

Any proposed interconnection by the owner of a planned Generating Unit, or its designee, to connect that Generating Unit to a Distribution System of a Participating TO will be processed, as applicable, pursuant to the Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable, of the Participating TO; provided, however, that the owner of the planned Generating Unit, or its designee, shall be required to mitigate any adverse impact on reliability of the CAISO Controlled Grid consistent with ~~Appendix U (the Standard Large Generator Interconnection Procedures) and Appendix Y (the GIP)~~ Appendix DD. In addition, each Participating TO will provide to the CAISO a copy of the system impact study used to determine the impact of a planned Generating Unit on the Distribution System and the CAISO Controlled Grid pursuant to a request to interconnect under the applicable Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable.

* * * * *

25.5 Modifications to Generating Facilities

Pursuant to Article 5.19 of the Large Generator Interconnection Agreement set forth in Appendices V, BB, CC, and EE, or Article 1.3.4 of the Small Generator Interconnection Agreement set forth in Appendices T and FF, Generating Facilities that have achieved their Commercial Operation Date may make modifications to their Generating Facilities where the CAISO and the Participating TO are notified at least ninety (90) calendar days in advance of commencement of work and sufficient information is provided such that the CAISO and the Participating TO(s) have determined that Section 25.1 does not apply to the modification.

25.5.1

Prior to making any modification after the Generating Facility's Commercial Operation Date, the Generating Unit owner must first request that the CAISO evaluate whether Section 25.1 would apply to the modification. In response to the Generating Unit owner's request, the CAISO, in coordination with the affected Participating TO, will evaluate the proposed modification. The CAISO may engage the services

of the applicable Participating TO to assess the modification. The CAISO will inform the Generating Unit owner in writing whether Section 25.1 would apply to the modification and therefore be denied. Costs incurred by the Participating TO and the CAISO (if any) shall be borne by the party making the request under Section 25.5, and such costs shall be included in any CAISO invoice for modification assessment activities.

25.5.2

The Generating Unit owner will provide the CAISO a $5~~1~~0,000 deposit for the modification assessment at the time the request is submitted. Except as provided below, any modification assessment will be concluded, and a response provided to the Generating Unit owner in writing, within forty-five (45) calendar days from the date the CAISO receives all of the following: the Generating Unit owner's written notice to modify the project, technical data required to assess the request, and payment of the $5~~1~~0,000 deposit. If the modification assessment cannot be completed within that time period, the CAISO will notify the Generating Unit owner and provide an estimated completion date and an explanation of the reasons why additional time is required.

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Appendix S Small Generator Interconnection Procedures

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1.3 Application

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1.3.1 Applicability

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1.3.4 Modifications

The Interconnection Customer shall submit to the CAISO, in writing, modifications to any information provided in the Interconnection Request. The Interconnection Customer shall retain its Queue Position if the modifications are determined not to be Material Modifications pursuant to SGIP Section 1.3.4.1. Notwithstanding the above, during the course of the Interconnection Studies, the Interconnection Customer, the applicable Participating TO(s), or the CAISO may identify changes to the planned interconnection

that may improve the costs and benefits (including reliability) of the interconnection, and the ability of the proposed change to accommodate the Interconnection Request. To the extent the identified changes are acceptable to the applicable Participating TO(s), the CAISO, and Interconnection Customer, such acceptance not to be unreasonably withheld, the CAISO shall modify the Point of Interconnection and/or configuration in accordance with such changes and the Interconnection Customer shall retain its Queue Position.

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1.3.4.3 Notwithstanding any other provisions in this SGIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded ten (10) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds ten (10) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed ten (10) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this SGIP.

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Appendix T

Small Generator Interconnection Agreement

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Article 3. Effective Date, Term, Termination, and Disconnection

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3.4.5 Modification of the Small Generating Facility

Prior to making any modification to the Small Generating Facility before it has achieved its Commercial Operation Date, the Interconnection Customer must first request that the CAISO evaluate whether any such proposed modification is a Material Modification and receive written authorization from the Participating TO and the CAISO. Such authorization shall not be unreasonably withheld. The CAISO may engage the services of the applicable Participating TO to assess the modification. Costs incurred by the Participating TO and CAISO (if any) shall be borne by the party making the request under

Section 1.3.4 of Appendix S, and such costs shall be included in any CAISO invoice for modification assessment activities. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer has achieved its Commercial Operation Date, the CAISO and Participating TO(s) will review the requested modification pursuant to Sections 25 and 25.1(c) of the CAISO Tariff. If the Interconnection Customer makes such modification without the Participating TO's and the CAISO's prior written authorization, the Participating TO or the CAISO shall have the right to temporarily disconnect the Small Generating Facility. Any change to the Point of Interconnection, except those deemed acceptable under this article of the SGIA or so allowed elsewhere, shall constitute a Material Modification. The Interconnection Customer may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

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Appendix U

Standard Large Generator Interconnection Procedures (LGIP)

Table of Contents

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11.1 Tender ~~1138~~

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12 ~~CONSTRUCTION OF PARTICIPATING TO'S~~BUILDING PTO INTERCONNECTION FACILITIES AND NETWORK UPGRADES

12.1 Schedules

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12.2.3 [No Subheading Title] ~~Advancing Construction of Network Upgrades that are Part of an Expansion Plan of the Participating TO~~

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Appendix 2 LGIP INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT
Appendix 3 INTERCONNECTION FEASIBILITY STUDY AGREEMENT
Appendix 4 INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT
Appendix 5 INTERCONNECTION STUDY AGREEMENT
Appendix 6 OPTIONAL INTERCONNECTION STUDY AGREEMENT
Appendix 7 AGREEMENT FOR ALLOCATING LGIP AND STUDY RESPONSIBILITIES

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the projected In-Service Date; (v) the status of the Interconnection Request, including Queue Position; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (combined cycle, base load or combustion turbine and fuel type); ~~and~~ (ix) for Interconnection Requests that have not resulted in a completed interconnection, an explanation as to why it was not completed; and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes an LGIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted LGIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. Interconnection Study reports and Optional Interconnection Study reports shall be posted to the CAISO Website subsequent to the meeting among the Interconnection Customer, the applicable Participating TO(s) and the CAISO to discuss the applicable study results. The CAISO shall also post any known deviations in the Large Generating Facility's In-Service Date.

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4.4 Modifications

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4.4.7 Commercial Viability Criteria for Retention of Deliverability beyond Ten Years in Queue

~~Interconnection Customers will be converted to Energy-Only Deliverability Status if they exceed ten (10) years from the date the Interconnection Request is received by the CAISO, unless the Interconnection Customer demonstrates that it is commercially viable.~~

The CAISO's ~~agreement~~ to ~~an extension of the proposed In-Service Date~~ modifications requested pursuant to Section 4.4.3 for an Interconnection Customer that has exceeded or will exceed ten (10) years from the date the Interconnection Request is received by the CAISO with retention of Deliverability will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase agreement.~~, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing~~ Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018, on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as

modifications under this Section. Interconnection Customers may request such modifications pursuant to this LGIP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy-Only Deliverability Status. . Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the Generating Facility downsizes pursuant to Section 7.5 of Appendix DD to the CAISO Tariff to the amount in service and operating in the CAISO markets, it will revert to Full Capacity Deliverability Status.

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4.4.9 Fuel-type Modifications

Notwithstanding any other provisions in this LGIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded ten (10) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds ten (10) years from the date the CAISO received the Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial

Operation Date to exceed ten (10) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this LGIP.

4.4.10 Conversion to Energy Only

In addition to the options provided in this LGIP, an Interconnection Customer may convert to Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status. This conversion will become effective through the reassessment process described in Section 7.4 of Appendix DD to the CAISO tariff. Interconnection Customers that become Energy Only may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

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6.4 Re-Study

If re-study of the Interconnection Feasibility Study is required due to a higher queued project dropping out of the queue, or a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 6.1, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer and the applicable Participating TO(s) in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $5~~1~~0,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take not longer than forty-five (45) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. The CAISO shall share applicable study results for review, provide the study results for review and comment to any other potentially-impacted Participating TO(s), incorporate comments, and issue a final study to the Interconnection Customer within sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. If the Interconnection Feasibility Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30)

days of being invoiced.

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7.6 Re-Study

If re-study of the Interconnection System Impact Study is required due to a higher queued project dropping out of the queue, a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 7.2, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $5~~1~~0,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. The CAISO will share applicable study results with the applicable Participating TO(s) for review and comment, and will incorporate comments into the study report. The CAISO will issue a final study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. If the Interconnection System Impact Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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8.5 Re-Study

If re-study of the Interconnection Facilities Study is required due to a higher queued project dropping out of the queue or a modification of a higher queued project pursuant to LGIP Section 4.4, or any other effective change in information which necessitates a re-study, the CAISO shall so notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional $5~~1~~0,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment and incorporate comments, as appropriate. The CAISO will issue a final Interconnection Facilities Study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. If the Interconnection Facilities Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the re-study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the re-study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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10.1 Optional Interconnection Study Agreement

On or after the date when the Interconnection Customer receives Interconnection System Impact Study results, the Interconnection Customer may request, and the CAISO shall conduct or cause to be conducted, a reasonable number of Optional Interconnection Studies. The request shall describe the assumptions that the Interconnection Customer wishes to be studied within the scope described in LGIP Section 10.2. Within five (5) Business Days after receipt of a request for an Optional Interconnection Study, the CAISO shall provide to the Interconnection Customer an Optional Interconnection Study Agreement.

The Optional Interconnection Study Agreement shall: (i) specify the technical data that the Interconnection Customer must provide for each phase of the Optional Interconnection Study, (ii) specify the Interconnection Customer's assumptions as to which Interconnection Requests with higher Queue Positions will be excluded from the Optional Interconnection Study case and assumptions as to the type of interconnection service for Interconnection Requests remaining in the Optional Interconnection Study case, and (iii) the CAISO's estimate of the cost of the Optional Interconnection Study. To the extent known by the CAISO, such estimate shall include any costs expected to be incurred by any Affected System whose participation is necessary to complete the Optional Interconnection Study. Notwithstanding the above, the CAISO shall not be required as a result of an Optional Interconnection Study request to conduct any additional Interconnection Studies with respect to any other Interconnection Request.

The Interconnection Customer shall execute the Optional Interconnection Study Agreement within ten (10) Business Days of receipt and deliver the Optional Interconnection Study Agreement, the technical data and a $5~~1~~0,000 deposit to the CAISO as applicable. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance

within thirty (30) days of being invoiced.

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12.2 Construction Sequencing

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12.2.4 Amended Interconnection Study

An Interconnection Study will be amended, as needed, to determine the facilities necessary to support the requested In-Service Date as specified in the LGIA. This amended study will include those transmission facilities, Large Generating Facilities and any other generating facilities that are expected to be in service on or before the requested In-Service Date. If an amendment to an Interconnection Study is required, the CAISO shall notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the amended study and withdraw the Interconnection Customer's Interconnection Request or (ii) continue with the amended study. If the Interconnection Customer requests the CAISO to continue with the amended study, the Interconnection Customer shall pay the CAISO an additional $5~~1~~0,000 deposit for the amended study along with providing written notice for the CAISO to continue. Such amended study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment, and incorporate comments and issue a final study to the Interconnection Customer within eighty (80) calendar days from the date of the Interconnection Customer's written notice to continue the study and payment of the additional $5~~1~~0,000 deposit. If the amended Interconnection Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the amended study shall be borne by the Interconnection Customer being re-studied. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

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Appendix V

STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT

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Article 5 Facilities Engineering, Procurement, and Construction

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5.16 Suspension. The Interconnection Customer ~~reserves the right, upon written notice to the Participating TO and the CAISO,~~ may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA . Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 4.4.6 of the LGIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where: ~~with the condition that~~

(a) the Participating TO's electrical system and the CAISO Controlled Grid shall be left in a safe and reliable condition in accordance with Good Utility Practice and the Participating TO's safety and reliability criteria and the CAISO's Applicable Reliability Standards; and ~~.~~

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. ~~In such event, t~~The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA on or before the expiration of three (3) years following commencement of such suspension, this LGIA shall be deemed terminated. The three-year period shall begin on the date the ~~suspension is requested~~ Interconnection Customer provides in its request, if approved. ~~or the date of the written notice to the Participating TO and the CAISO, if no effective date is specified~~ Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

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5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 4.4 of the LGIP if it has not~~the provisions of this LGIA and the CAISO Tariff~~. If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

~~In the case of Large Generating Facility modifications that do not require the Interconnection Customer to submit an Interconnection Request, the CAISO or Participating TO shall provide, within thirty (30) Calendar Days (or such other time as the Parties may agree), an estimate of any additional modifications to the CAISO Controlled Grid, Participating TO's Interconnection Facilities, Network Upgrades or Distribution Upgrades necessitated by such Interconnection Customer modification and a good faith estimate of the costs thereof. The Participating TO and the CAISO shall determine if a Large Generating Facility modification is a Material Modification in accordance with the LGIP.~~

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Appendix Y GIP

For Interconnection Requests

Generator Interconnection Procedures (GIP)

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8.2 [Not Used]~~Annual Full Capacity Deliverability Option~~

8.3 PTO Tariff Option for Full Capacity Deliverability Status

8.4 Deliverability from Non-Participating TOs

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9.3 ~~Second and Third~~ Additional Posting of Interconnection Financial Security

9.3.1 Second Posting of Interconnection Financial Security.

9.3.2 Third Posting of Interconnection Financial Security.

9.3.3 Offsets for Network Upgrades with Participating TOs Elect to Up-Front Fund

9.4 ~~General~~ Effect of Withdrawal ~~of Interconnection Request~~ or Termination ~~of the GIA on Interconnection~~ Financial Security

9.4.1 ~~Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of GIA~~[Not Used]

9.4.2 Schedule for Determining Non-Refundable Portion of the Interconnection Financial Security for Network Upgrades

9.4.2.1 Up to One Hundred Eighty Days After Final Phase II Interconnection Study Report for Queue Cluster Generating Facilities or up to One Hundred Twenty Days After Final Facilities Study Report for Independent Study Process Generating Facilities

9.4.2.2 Between One Hundred Eighty-One Days After Final Phase II Interconnection Study Report or Facilities Study Results and the Commencement of Construction Activities

9.4.2.3 [Not Used]

9.4.2.4 Special Treatment Based on Failure to Obtain Necessary Permit or Authorization from Governmental Authority

9.4.2.5 After Commencement of Construction Activities

9.4.2.6 Notification to CAISO and Accounting by Applicable Participating TO(s)

9.5 Maximum Cost Recovery for Interconnection Customers

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11.5 Interconnection Customer to Meet ~~Requirements of the~~ P~~articipating~~ TO~~'s~~ ~~Interconnection~~ Handbook Requirements

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12.3 Network Upgrades

12.3.1 Initial Funding

12.3.2 Repayment of Amounts Advanced for Network Upgrades and Refund of Interconnection Financial Security

12.3.2.1 Repayment of Amounts Advanced Regarding Non-Phased Generating Facilities

12.3.2.2 Repayment of Amounts Advanced Regarding Phased Generating Facilities

12.3.2.3 Interest Payments and Assignment Rights

12.4 Special Provisions for Affected Systems, ~~and~~ Other Affected P~~articipating~~ TOs

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the most recent projected Commercial Operation Date; (v) the status of the Interconnection Request, including whether it is active or withdrawn; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (e.g., combined cycle, combustion turbine, wind turbine, and fuel type); ~~and~~ (ix) requested deliverability status; and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes a GIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted GIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. The CAISO shall further post to the secure CAISO Website portions of the Phase I Interconnection Study that do not contain customer-specific information following the final Results Meeting and portions of the Phase II Interconnection Study that do not contain customer-specific information no later than publication of the final Transmission Plan under CAISO Tariff Section 24.2.5.2 (such posted information to be placed on the secure CAISO Website to protect any Critical Energy Infrastructure Information contained therein). The CAISO shall post to the secure CAISO Website any documents or other materials posted pursuant to this GIP or a Business Practice Manual that contain Critical Energy Infrastructure Information.

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6.9 Phase 1 Interconnection Study Results Meeting

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6.9.2 Modifications.

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6.9.2.4 Notwithstanding any other provisions in this GIP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded seven (7) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds seven (7) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed seven (7) years from the date the CAISO received its Interconnection Request.

6.9.2.5 In addition to the options provided in this GIP, an Interconnection Customer may convert to

Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status after the completion of its Phase II Interconnection Study. This conversion will become effective through the reassessment process described in Section 7.4 of Appendix DD to the CAISO tariff. Interconnection Customers that become Energy Only after their Phase II Interconnection Study may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

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6.9.5 Commercial Viability Criteria for Retention of Deliverability beyond Seven Years in Queue

~~Interconnection Customers may not retain Full Capacity Deliverability Status or Partial Capacity Deliverability Status if they exceed seven (7) years from the date the Interconnection Request is received by the CAISO, unless the Interconnection Customer demonstrates that the Generating Facility is commercially viable.~~

The CAISO's agreement to modifications requested pursuant to Section 6.9.2.3 for an Interconnection Customer with a Commercial Operation Date that has exceeded or will exceed seven (7) years from the date the Interconnection Request is received by the CAISO ~~an extension of the proposed Commercial Operation Date~~ with retention of Full Capacity Deliverability Status or Partial Capacity Deliverability Status will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase agreement.~~, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing~~ Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018 on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO will not consider the addition of energy storage; changes to the type,

number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as modifications under this Section. Interconnection Customers may request such modifications pursuant to this GIP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy-Only Deliverability Status. Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the Generating Facility downsizes pursuant to Section 7.5 of Appendix DD to the CAISO Tariff to the amount in service and operating in the CAISO markets, it will revert to Full Capacity Deliverability Status.

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8.1 One-Time Full Capacity Deliverability Option

~~**8.1.1**~~ A Large Generating Facility previously studied as Energy-Only Deliverability Status under the CAISO Tariff, or a Small Generating Facility studied under the provisions of Appendix S of the CAISO Tariff, will have a one-time option to be studied for Full Capacity Deliverability Status.

~~**8.1.2 An Interconnection Customer must make such election within the Cluster Application Window for the CAISO's fourth Queue Cluster, which will open on March 1, 2011.**~~

~~**8.1.3 Any Interconnection Customers selecting this option will be studied as part of the Phase I and Phase II Interconnection Studies for the CAISO's fourth Queue Cluster.**~~

~~**8.1.4 Interconnection Customers electing this one-time option will be required to post a study**~~

~~deposit in the amount set forth in Section 3.5.1 of this GIP, less any study deposit amounts already paid if the Interconnection Customer's Generating Facility is still in the CAISO's interconnection queue.~~

8.2 [Not Used] ~~Annual Full Capacity Deliverability Option~~

~~**8.2.1** A Generating Facility previously studied as Energy-Only Deliverability Status under the CAISO Tariff, or a Small Generating Facility studied under the provisions of Appendix S of the CAISO Tariff will have an annual option to be studied to determine whether it can be designated for Full Capacity Deliverability Status using available transmission capacity. An Interconnection Customer must make such a request within a Cluster Application Window, beginning with the Cluster Application Window for the CAISO's fifth Queue Cluster, which will open on March 1, 2012.~~

~~**8.2.2** Any Interconnection Customer selecting this option will be studied immediately following the Phase II Interconnection Studies associated with the Queue Cluster during which the Interconnection Customer submits its request, typically June through August annually.~~

~~**8.2.3** Interconnection Customers that wish to participate in this annual process must submit an Interconnection Request as set forth in Appendix 1 to the GIP along with a non-refundable $10,000 study fee.~~

~~**8.2.4** After allocating transmission system capability, including capability associated with both existing capability and capability relating to approved transmission upgrades, to Interconnection Customers in the Queue Cluster who originally requested Full Capacity Deliverability Status in the Phase II Interconnection Study, the CAISO will perform additional studies using the deliverability study procedures set forth in Section 6.5.2 of this GIP to determine the availability of any remaining transmission system capability for to those Interconnection Customers requesting Full Capacity Deliverability Status as part of the annual process described in this Section 8.~~

~~**8.2.4.1** In determining available transmission capability, priority will be given to Interconnection Customers whose Generating Facilities have the lowest transfer distribution factors, calculated according to the deliverability study procedures set forth in Section 6.5.2 of this GIP.~~

~~**8.2.4.2** If there is sufficient available transmission capability for the Interconnection Customer to deliver the full output of its Generating Unit, then the Interconnection Customer's Generating Facility will be considered to have Full Capacity Deliverability Status.~~

~~**8.2.4.3** If the assessment of available transmission capability conducted under this GIP Section 8.2.4 indicates that there is some transmission capacity available for use by the Interconnection Customer, but less than is necessary to deliver the full output of the Interconnection Customer's Generating Facility, then the Interconnection Customer's Generating Facility will be considered to be partially deliverable, and the amount of transmission capability made available to that Interconnection Customer's Generating Facility will be equal to the determination of available transmission capability for the Generating Facility rounded down to the nearest 50 MW increment.~~

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9.2 Initial Posting of Financial Security

9.2.1 The Interconnection Customer shall post, with notice to the CAISO, two separate Interconnection Financial Security instruments: (i) a posting relating to the Network Upgrades; (ii) a posting relating to the Participating TO's Interconnection Facilities.

Interconnection Customers owned by Participating Transmission Owners are not required to post Interconnection Financial Security to themselves. Notwithstanding this exemption, Interconnection Customers owned by Participating Transmission Owners (i) must post Interconnection Financial Security required for Network Upgrades or Participating TO's Interconnection Facilities on other Participating Transmission Owner's systems where required for interconnection; and (ii) must remit to the CAISO an amount equal to any non-fundable portion of the Interconnection Financial Security that would have been forfeited upon withdrawal or termination absent this exemption pursuant to Section 7.6 of Appendix DD to the CAISO tariff and Section 9.4 of this GIP.

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9.4 Effect of Withdrawal or Termination on Financial Security

~~Except as set forth in GIP Section 9.4.1, w~~Withdrawal of an Interconnection Request or termination of a GIA shall allow the applicable Participating TO(s) to liquidate the Interconnection Financial Security, or balance thereof, posted by the Interconnection Customer for Network Upgrades at the time of withdrawal. To the extent the amount of the liquidated Interconnection Financial Security plus capital, if any, separately provided by the Interconnection Customer to satisfy its obligation to finance Network Upgrades in accordance with GIP Section 12.3 exceeds the total cost responsibility for Network Upgrades assigned to the Interconnection Customer by the final Phase I or Phase II Interconnection Study, whichever is lower, or in the governing study for the Independent Study Process, the applicable Participating TO(s) shall remit to the Interconnection Customer the excess amount.

Withdrawal of an Interconnection Request or termination of a GIA shall result in the release to the Interconnection Customer of any Interconnection Financial Security posted by the Interconnection Customer for Participating TO's Interconnection Facilities, except with respect to any amounts necessary to pay for costs incurred or irrevocably committed by the applicable Participating TO(s) on behalf of the Interconnection Customer for the Participating TO's Interconnection Facilities and for which the applicable Participating TO(s) has not been reimbursed.

9.4.1 **[Not Used]** ~~**Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of GIA**~~

~~A portion of the Interconnection Financial Security shall be released to the Interconnection Customer, consistent with GIP Section 9.4.2, if the withdrawal of the Interconnection Request or termination of the GIA occurs for any of the following reasons:~~

~~(a) Failure to Secure a Power Purchase Agreement. At the time of withdrawal of the Interconnection Request or termination of the GIA, the Interconnection Customer demonstrates to the CAISO that it has failed to secure an acceptable power purchase agreement for the Energy or capacity of the Generating Facility after a good faith effort to do so. A good faith effort can be established by demonstrating participation in a competitive solicitation process or bilateral negotiations with an entity other than an Affiliate that progressed, at minimum, to the mutual exchange by all counter-parties of proposed term sheets.~~

~~(b) Failure to Secure a Necessary Permit. At the time of withdrawal of the Interconnection Request or termination of the GIA, the Interconnection Customer demonstrates to the CAISO that it has received a final denial from the primary issuing Governmental Authority of any permit or other authorization necessary for the construction or operation of the Generating Facility.~~

~~(c) Increase in the Cost of Participating TO's Interconnection Facilities. The Interconnection Customer withdraws the Interconnection Request or terminates the GIA based on an increase of more than 30% or $300,000, whichever is greater, in the estimated cost of Participating TO's Interconnection Facilities between the Phase I Interconnection Study and the Phase II Interconnection Study, provided, however, that the Interconnection Financial Security shall not be released if this increase in the estimated cost is due to the Interconnection Customer's requested modification to the interconnection configuration.~~

~~(d) Material Change in Interconnection Customer Interconnection Facilities Created by a CAISO Change in the Point of Interconnection. The Interconnection Customer withdraws the Interconnection Request or terminates the GIA based on a material change from the Phase I Interconnection Study in the Point of Interconnection for the Generating Facility mandated by the CAISO and included in the final Phase II Interconnection Study. A material change in the Point of Interconnection shall be where Point of Interconnection has moved to (i) a different substation, (ii) a different line on a different right of way, or (iii) a materially different location than previously identified on the same line.~~

9.4.2 Schedule for Determining Non-Refundable Portion of the Interconnection Financial Security for Network Upgrades.

9.4.2.1 Up to One Hundred Eighty Days After Final Phase II Interconnection Study Report For Queue Cluster Generating Facilities or up to One Hundred Twenty Days After Final Facilities Study Report for Independent Study Process Generating Facilities.

If, at any time after the initial posting of the Interconnection Financial Security for Network Upgrades under GIP Section 9.2 and on or before one hundred eighty (180) calendar days after the date of issuance of the final Phase II Interconnection Study report for Interconnection Customers in a Queue Cluster, or on or before one hundred twenty (120) days after the date of issuance of the results of the Facilities Study for Interconnection Customers in the Independent Study Process, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, ~~in accordance with GIP Section 9.4.1,~~ the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for Network Upgrades under GIP Section 9.2 and reimburse the Interconnection Customer in an amount of (i) any posted amount less fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $10,000 per requested and approved megawatt value of the Generating Facility Capacity at the time of withdrawal being retained by the Participating TO(s)), or, (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If the Interconnection Customer has separately provided capital apart from the Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, the applicable Participating TO(s) will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

9.4.2.2 Between One Hundred Eighty-One Days After Final Phase II Interconnection Study Report or Facilities Study Results and the Commencement of Construction Activities.

If, at any time between one hundred eighty-one (181) calendar days after the date of issuance of the final Phase II Interconnection Study report for Interconnection Customers in a Queue Cluster, or the date of issuance of the final Facilities Study Report for Interconnection Customers in the Independent Study Process, and the commencement of Construction Activities for either Network Upgrades or Participating TO's Interconnection Facilities, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, ~~in accordance with GIP Section 9.4.1,~~ the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for Network Upgrades under GIP Section 9.3 and reimburse the Interconnection Customer in an amount of (i) any posted amounts less fifty percent (50%) of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $20,000 per requested and approved megawatt value of the Generating Facility Capacity at the time of withdrawal being retained by the Participating TO(s)), or, (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If the Interconnection Customer has separately provided capital apart from the Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, the applicable Participating TO(s) will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

9.4.2.3 [Not Used]

9.4.2.4 Special Treatment Based on Failure to Obtain Necessary Permit or Authorization from Governmental Authority.

If, at any time after the posting requirement under GIP Section 9.3, the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, ~~in accordance with GIP Section 9.4.1(b),~~ and the Delivery Network Upgrades to be financed by the Interconnection Customer under GIP Section 7.3 are also to be financed by one or more other Interconnection Customers, then GIP Section 9.4.2.1 shall apply, except that the Interconnection Customer shall not be reimbursed for its share of any actual costs incurred or irrevocably committed by the applicable Participating TO(s) for Construction Activities.

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Appendix BB

Standard Large Generator Interconnection Agreement for Interconnection

Requests in a Serial Group that are tendered or execute a Large Generator

Interconnection Agreement on or after May 15, 2018

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ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

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5.16 Suspension. The Interconnection Customer ~~reserves the right, upon written notice to the Participating TO and the CAISO,~~may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA. Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.9.2.3 of the LGIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) ~~with the condition~~ that the Participating TO's electrical system and the CAISO Controlled Grid ~~shall~~ can be left in a safe and reliable condition in accordance with Good Utility Practice, ~~and~~ the Participating TO's safety and reliability criteria, and ~~the CAISO's~~ Applicable Reliability Standards; and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. ~~In such event, t~~The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so. The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA on or before the expiration of three (3) years following commencement of such suspension, this LGIA shall be deemed terminated. The three-year period shall begin on the date the Interconnection Customer provides its request, if approved. ~~suspension is requested, or the date of the written notice to the Participating TO and the CAISO, if no effective date is specified.~~ Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

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5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to Sections 25 and 25.1(c) of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.9.2 of the LGIP if it has not~~the provisions of this LGIA and the CAISO Tariff~~.

If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information

regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

~~In the case of Large Generating Facility modifications that do not require the Interconnection Customer to submit an Interconnection Request, the CAISO or Participating TO shall provide, within thirty (30) Calendar Days (or such other time as the Parties may agree), an estimate of any additional modifications to the CAISO Controlled Grid, Participating TO's Interconnection Facilities, Network Upgrades or Distribution Upgrades necessitated by such Interconnection Customer modification and a good faith estimate of the costs thereof. The Participating TO and the CAISO shall determine if a Large Generating Facility modification is a Material Modification in accordance with the LGIP.~~

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Appendix CC

Large Generator Interconnection Agreement for Interconnection Requests in a Queue Cluster Window that are tendered a Large Generator Interconnection Agreement on or after May 15, 2018

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ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

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5.16 Suspension. The Interconnection Customer ~~reserves the right, upon written notice to the Participating TO and the CAISO,~~ may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA, other than Network Upgrades identified in the Phase II Interconnection Study as common to multiple generating facilities. Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.9.2 of the GIP, a modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end

date. The CAISO and Participating TO will approve suspension requests where:~~,~~ ~~with the condition that~~

(a) the Participating TO's electrical system and the CAISO Controlled Grid ~~shall~~ can be left in a safe and reliable condition in accordance with Good Utility Practice, ~~and~~ the Participating TO's safety and reliability criteria, and ~~the CAISO's~~ Applicable Reliability Standards; and~~.~~

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will require a new modification assessment request and deposit. ~~In such event,~~ T~~t~~he Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so.

Network Upgrades common to multiple generating facilities, and to which the Interconnection Customer's right of suspension shall not extend, consist of Network Upgrades identified for:

(i) generating facilities which are the subject of all Interconnection Requests made prior to the Interconnection Customer's Interconnection Request;
(ii) generating facilities which are the subject of Interconnection Requests within the Interconnection Customer's queue cluster; and
(iii) generating facilities that are the subject of Interconnection Requests that were made after the Interconnection Customer's Interconnection Request but no later than the date on which the Interconnection Customer's Phase II Interconnection Study Report is issued, and have been modeled in the Base Case at the time the Interconnection Customer seeks to exercise its suspension rights under this Article.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA in time to ensure that the new projected Commercial Operation Date for the full Generating Facility Capacity of the Large Generating Facility is no more than three (3) years from the Commercial Operation Date identified in Appendix B hereto, this LGIA shall be deemed terminated and the Interconnection Customer's responsibility for costs will be determined in accordance with Article 2.4. The suspension period shall begin on the date the ~~suspension is requested~~Interconnection Customer provides in its request, if approved. ~~, or the date of the written notice to the Participating TO and the CAISO, if no effective date is specified.~~ Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.

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5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.9.2 of the GIP if it has not.

~~the provisions of this LGIA and the CAISO Tariff.~~ If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

~~In the case of Large Generating Facility modifications that do not require the Interconnection Customer to submit an Interconnection Request, the CAISO or Participating TO shall provide, within thirty (30) Calendar Days (or such other time as the Parties may agree), an estimate of any additional modifications to the CAISO Controlled Grid, Participating TO's Interconnection Facilities, Network Upgrades or Distribution Upgrades necessitated by such Interconnection Customer modification and a good faith estimate of the costs thereof. The Participating TO and the CAISO shall determine if a Large Generating Facility modification is a Material Modification in accordance with the GIP.~~

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Appendix DD

Generator Interconnection and Deliverability Allocation Procedures (GIDAP)

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11.2.3 Posting Amount for Network Upgrades

11.2.3.1 Small Generator Interconnection Customers

11.2.3.2 Large Generator Interconnection Customers

11.2.4 Posting Amount for Participating TO Interconnection Facilities

11.2.4.1 Small Generator Interconnection Customers

11.2.4.2 Large Generator Interconnection Customers

11.2.5 Cost Estimates Less than Minimum Posting Amounts

11.2.6 Consequences for Failure to Post

11.2.7 ~~Effect of Decrease in Output~~ Re-calculation of~~n~~ Initial Posting Requirement

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11.4 Withdrawal or Termination-Effect on Financial Security

11.4.1 [Intentionally Omitted]~~Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of GIA~~

11.4.2 Determining Refundable Portion of the Interconnection Financial Security for Network Upgrades

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Section 3 Interconnection Requests

3.1 General

Pursuant to CAISO Tariff Section 25.1, a~~n~~ duly authorized officer or agent of the Interconnection Customer ~~shall~~ will submit to the CAISO (1) an Interconnection Request ~~in the form of~~consistent with Appendix 1 to this GIDAP, including (2) an executed Generator Interconnection Study Process Agreement consistent with Appendix 3 to this GIDAP. All forms may be submitted electronically as provided on the CAISO website. Interconnection customers will submit Appendix B to the Generator Interconnection Study Process Agreement pursuant to Section 7 of this GIDAP. The CAISO will forward a copy of the Interconnection Request to the applicable Participating TO within five (5) Business Days of receipt.

The Interconnection Customer shall submit a separate Interconnection Request for each site and may submit multiple Interconnection Requests for a single site. The Interconnection Customer must submit a deposit with each Interconnection Request even when more than one request is submitted for a single site. An Interconnection Request to evaluate one site at two different voltage levels shall be treated as two Interconnection Requests.

An Interconnection Customer with a proposed Small Generating Facility shall be evaluated using the maximum rated capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system. However, if the maximum capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system is limited (e.g., through use of a control system, power relay(s), or other similar device settings or adjustments), then the Interconnection Customer must obtain the CAISO's agreement, with such agreement not to be unreasonably withheld, that the manner in which the Interconnection Customer proposes to implement such a limit will not adversely affect the safety and reliability of the CAISO's system. If the CAISO does not so agree, then the Interconnection Request must be withdrawn or revised to specify the maximum capacity that the Small Generating Facility is capable of injecting into the CAISO's electric system without such limitations. Furthermore, nothing in this section shall prevent the CAISO from considering an output higher than the limited output, if appropriate, when evaluating system protection impacts.

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3.5 Processing of Interconnection Requests

3.5.1 Initiating an Interconnection Request.

To initiate an Interconnection Request, except as set forth for the Fast Track Process in Section 5, and have the Interconnection Request considered for validation under Section 3.5.2, the Interconnection Customer must submit all of the following during the Cluster Application Window, or at any time during the year for proposed Generating Facilities applying for processing under the Independent Study Process:

(i) An Interconnection Study Deposit of $150,000.

(ii) A completed application in the form of Appendix 1, including requested Deliverability status, requested study process (either Queue Cluster or Independent Study Process), preferred Point of Interconnection and voltage level, and all other required technical data.

(iii) Demonstration of Site Exclusivity or, for Interconnection Requests in a Queue Cluster, a posting of a Site Exclusivity Deposit of $100,000 for a Small Generating Facility or $250,000 for a Large Generating Facility. The demonstration of Site Exclusivity, at a minimum, must be through the Commercial Operation Date of the new Generating Facility or increase in capacity of the existing Generating Facility.

The CAISO requires Interconnection Study Deposits to review and validate the Interconnection Request. Notwithstanding Section 3.5.2 of this GIDAP or any other provision regarding validation or the ability to cure deficiencies, the CAISO will not review, process, or validate an Interconnection Request absent the Interconnection Study Deposit. Any interconnection Customer that has not submitted a complete Interconnection Study Deposit by April 15 (or the next Business Day if April 15 is not a Business Day) will be deemed invalid with no opportunity to cure or otherwise be included in that year's Queue Cluster.

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3.6 Internet Posting

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the most recent projected Commercial Operation Date; (v) the status of the Interconnection Request, including whether it is active or withdrawn; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (e.g., combined cycle, combustion turbine, wind turbine, and fuel type); ~~and~~ (ix) requested Deliverability status, and (x) project name.

Except in the case of an Affiliate, the list will not disclose the identity of the

Interconnection Customer until the Interconnection Customer executes a GIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted GIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. The CAISO shall further post to the secure CAISO Website portions of the Phase I Interconnection Study that do not contain customer-specific information following the final Results Meeting and portions of the Phase II Interconnection Study that do not contain customer-specific information no later than publication of the final Transmission Plan under CAISO Tariff Section 24.2.5.2 (such posted information to be placed on the secure CAISO Website to protect any Critical Energy Infrastructure Information contained therein). The CAISO shall post to the secure CAISO Website any documents or other materials posted pursuant to this or a Business Practice Manual that contain Critical Energy Infrastructure Information.

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Section 6 Initial Activities and Phase I of the Interconnection Study Process for Queue Clusters

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6.1 Initial Activities Following the Close of the Cluster Application Window

6.1.1 **[Intentionally Omitted]** ~~**Generator Interconnection Study Process Agreement**~~

~~By May 31 or the next Business Day if May 31 is not a Business Day, the CAISO shall provide to each Interconnection Customer with a validated Interconnection Request received during the Cluster Application Window a pro forma Generator Interconnection Study Process Agreement in the form set forth in Appendix 3. The pro forma Generator Interconnection Study Process Agreement shall specify that the Interconnection Customer is responsible for the actual cost of the Interconnection Studies, including reasonable administrative costs, and all requirements of this GIDAP. Within three (3) Business Days following the Scoping Meeting, the Interconnection Customer shall specify for inclusion in the attachment to the Generator Interconnection Study Process Agreement the Point of Interconnection for the Phase I Interconnection Study. Within ten (10) Business Days following the CAISO's receipt of such designation, the CAISO, in coordination with the applicable Participating TOs, shall provide to the Interconnection Customer a signed Generator Interconnection Study Process Agreement. The Interconnection Customer shall execute and deliver to the CAISO the Generator Interconnection Study Process Agreement no later than thirty (30) calendar days after the Scoping Meeting.~~

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6.7 Phase I Interconnection Study Results Meeting

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6.7.2 Modifications.

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6.7.2.4 Notwithstanding any other provisions in this GIDAP or the Interconnection Customer's GIA, the Interconnection Customer may not modify its fuel type, including through the addition or replacement of Generating Units, by more than the greater of five percent (5%) of its capacity or 10 MW (but by no more than twenty-five percent (25%) of its capacity), where:

(a) the Interconnection Customer has exceeded seven (7) years from the date the CAISO received its Interconnection Request without achieving its Commercial Operation Date;

(b) the Interconnection Customer's current Commercial Operation Date exceeds seven (7) years from the date the CAISO received its Interconnection Request; or

(c) the change in fuel type will require the Interconnection Customer's Commercial Operation Date to exceed seven (7) years from the date the CAISO received its Interconnection Request.

The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as fuel-type modifications. Interconnection Customers may request such modifications pursuant to this GIDAP.

6.7.2.5 In addition to the options provided in this GIDAP, an Interconnection Customer may convert to Energy Only, Partial Capacity Deliverability Status, or a lower fraction of Partial Capacity Deliverability Status after the completion of its Phase II Interconnection Study. This conversion will become effective through the reassessment process described in Section 7.4. Except (i) as provided in Section 8.9.3.2 (ii) due to not receiving the requested TP Deliverability allocation, or (iii) due to declining a TP Deliverability allocation, Interconnection Customers that become Energy Only after their Phase II Interconnection Study may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

6.7.3 ~~**Determination of Impact of Modifications Decreasing Generating Capacity Output or Deliverability Status Reductions on**~~**Re- c**~~**C**~~**alculation of Initial Financial Security Posting**

~~After receiving from the Interconnection Customer any modification elections involving decreases in electrical output (MW) of the Generating Facility and/or changes (*i.e.*,~~

~~reductions) in Deliverability status as permitted in this Section, t~~The CAISO, in coordination with the applicable Participating TO(s), ~~will~~ may determine, based on best engineering judgment, whether ~~such~~ modifications, withdrawals, or system changes ~~will~~eliminate the need for any ~~Delivery~~ Network Upgrades identified in the Phase I Interconnection Study report. The CAISO and applicable Participating TO(s) will not conduct any re-studies in making this determination.

If the CAISO and applicable Participating TO(s) should determine that one or more ~~Delivery~~ Network Upgrades identified in the Phase I Interconnection Study are no longer needed, then, solely for purposes of calculating the amount of the Interconnection Customer's initial Financial Security Posting under Section 11.2, such ~~Delivery~~ Network Upgrade(s) will be considered to be removed from the plan of service described in the Interconnection Customer's Phase I Interconnection Study report and the cost estimates for such upgrades shall not be included in the calculation of Interconnection Financial Security in Section 11.2. The CAISO will inform in a timely manner any Interconnection Customers so affected, and provide the Interconnection Customers with written notice of the revised initial Interconnection Financial Security posting amounts. No determination under this Section shall affect either (i) the timing for the initial Interconnection Financial Security posting or (ii) the maximum value for the Interconnection Customer's total cost responsibility for Network Upgrades established by the Phase I Interconnection Study report.

6.7.4 Commercial Viability Criteria for Retention of Deliverability beyond Seven Years in Queue

~~Interconnection Customers may not retain their TP Deliverability if they exceed seven (7) years from the date the Interconnection Request is received by the CAISO, unless the Interconnection Customer demonstrates that the Generating Facility is commercially viable. The CAISO's agreement to an extension of the proposed Commercial Operation Date does not relieve the Interconnection Customer from compliance with the requirements of any of the criteria in Section 8.9.3 to retain TP Deliverability.~~

The CAISO's agreement to modifications requested pursuant to Section 6.7.2.3 for an Interconnection Customer with a Commercial Operation Date that has exceeded or will exceed seven (7) years from the date the Interconnection Request is received by the CAISO ~~extension of the proposed Commercial Operation Date~~ with retention of TP Deliverability will be predicated upon the Interconnection Customer's ability to meet and maintain the following commercial viability criteria:

a) Providing proof of having, at a minimum, applied for the necessary governmental permits or authorizations, and that the permitting authority has deemed such documentation as data adequate for the authority to initiate its review process;

b) Providing proof of having an executed and regulator-approved power purchase agreement~~, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing~~. Power purchase agreements must have the point of interconnection, capacity, fuel type, technology, and site location in common with the Interconnection Customer and GIA;

c) Demonstrating Site Exclusivity for 100% of the property necessary to construct the facility through the Commercial Operation Date requested in the modification request. A Site Exclusivity Deposit does not satisfy this criterion;

d) Having an executed Generator Interconnection Agreement ("GIA"); and

e) Being in good standing with the GIA such that neither the Participating TO nor the CAISO has provided a Notice of Breach that has not been cured and the Interconnection Customer has not commenced sufficient curative actions.

Interconnection Customers that satisfied these commercial viability criteria before November 27, 2018 on the basis of balance-sheet or binding financing may continue to do so in their annual review. The CAISO's agreement to an extension of the proposed Commercial Operation Date does not relieve the Interconnection Customer from compliance with the requirements of any of the criteria in Section 8.9.3 to retain TP Deliverability. The CAISO will not consider the addition of energy storage; changes to the type, number, or manufacturer of inverters; or insubstantial changes to the Generating Facility as modifications under this Section. Interconnection Customers may request such modifications pursuant to this GIDAP.

If the Interconnection Customer fails to meet all of the commercial viability criteria but informs the CAISO that it intends to proceed with the modified Commercial Operation Date, the Generating Facility's Deliverability Status will become Energy -Only Deliverability Status. . Interconnection Customers that become Energy Only for failure to meet these criteria may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades as a result of converting to Energy Only unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

If an Interconnection Customer satisfies all the commercial viability criteria except criterion (b), the CAISO will postpone converting the Generating Facility to Energy-Only Deliverability Status for one year from the day the Interconnection Customer submits the modification request, or eight years after the CAISO received the Interconnection Request, whichever occurs later. Interconnection Customers exercising this provision must continue to meet all other commercial viability criteria.

If an Interconnection Customer has declared Commercial Operation for a portion of a Generating Facility, or one or more Phases of a Phased Generating Facility, the CAISO will not convert to Energy-Only the portion of the Generating Facility that is in service and operating in the CAISO markets. Instead, the portion of the Generating Facility that has not been developed will be converted to Energy-Only Deliverability Status, resulting in Partial Capacity Deliverability Status for the Generating Facility. However, where the Generating Facility has multiple Resource IDs for the Generating Facility, each Resource ID will have its own Deliverability Status independent from the Generating Facility. Any individual Resource ID may have Full Capacity Deliverability Status where the Generating Facility as a whole would have Partial Capacity Deliverability Status. If the Generating Facility downsizes pursuant to Section 7.5 to the amount in service and

operating in the CAISO markets, it will revert to Full Capacity Deliverability Status. Interconnection Customers in Queue Cluster 7 and beyond whose Phase II Interconnection Study reports require a timeline beyond the seven-year threshold are exempt from the commercial viability criteria in this section provided that they modify their Commercial Operation Dates within six (6) months of the CAISO's publishing the Phase II Interconnection Study report. This exemption is inapplicable to report addenda or revisions required by a request from an Interconnection Customer for any reason.

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Section 7 Activities in Preparation for Phase II

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7.4 Reassessment Process

7.4.1 The CAISO will perform a reassessment of the Phase I Interconnection Study base case prior to the beginning of the GIDAP Phase II Interconnection Studies. The reassessment will evaluate the impacts on those Network Upgrades identified in previous interconnection studies and assumed in the Phase I Interconnection Study of:

(a) Interconnection Request withdrawals occurring after the completion of the Phase II Interconnection Studies for the immediately preceding Queue Cluster;

(b) Generator Downsizing Requests submitted in the most recent Generator Downsizing Request Window that meet the requirements set forth in Section 7.5, and Generating Facilities that are to have their generating capacities reduced pursuant to Sections 8.9.4, 8.9.5, and 8.9.6;

(c) the performance of earlier queued Interconnection Customers with executed GIAs with respect to required milestones and other obligations;

(d) ~~compliance of earlier queued Interconnection Customers that were allocated TP Deliverability under Section 8.9.3 with the retention criteria~~changes in TP Deliverability allocations or Deliverability Status ~~by Interconnection Customers~~;

(e) the results of the TP Deliverability allocation from the prior Interconnection Study cycle; and,

(f) transmission additions and upgrades approved in the most recent TPP cycle.

The reassessment will be used to develop the base case for the Phase II Interconnection Study

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7.5.3 Eligibility to Participate in Generator Downsizing Process

~~**7.5.3.1 Commercial Operation Status**~~

In order to be eligible to participate in the current annual Generator Downsizing Process, an Interconnection Customer, including Interconnection Customers that have achieved their Commercial Operation Date, must ~~be in one of the following two categories:~~

~~(1) The Interconnection Customer has a Generating Facility that is currently being processed under the CAISO's interconnection procedures and has not achieved the last Commercial Operation Date indicated in its Generator Interconnection Agreement.~~

~~(2) The Interconnection Customer has a Generating Facility that has achieved the last Commercial Operation Date indicated in its Generator Interconnection Agreement with a total megawatt capacity amount that is lower than the amount specified in its Generator Interconnection Agreement by an amount that is greater than the de minimis threshold set forth in Section 7.5.13.1. This eligibility will be limited to the first annual Generator Downsizing Process with a Generator Downsizing Request Window that closes on a date after the last Commercial Operation Date indicated in its Generator Interconnection Agreement.~~

~~**7.5.3.2 Good Standing Requirements**~~

~~The Interconnection Customer must also~~ meet the following good standing requirements ~~of good standing~~ by the ~~date~~ close of the applicable Generator Downsizing Request Window ~~closes in order to be eligible to participate in the Generator Downsizing Process~~:

(a) The Interconnection Customer has complied with all applicable requirements of the CAISO Tariff under which the Interconnection Request is being processed, including timely submittal of all Interconnection Financial Security postings that have come due.

(b) The Interconnection Request has not been withdrawn or deemed withdrawn by the CAISO. If the Interconnection Customer has received a notice of deemed withdrawal for which the cure period has expired without sufficient cure being made, then the Interconnection Customer will not be eligible to submit a Generator Downsizing Request. If the Interconnection Customer has received a notice of deemed withdrawal for which the cure period has not expired at the time of the close of the applicable Generator Downsizing Request Window and such cure period subsequently expires without sufficient cure being made, the Interconnection Customer's Generator Downsizing Request will be deemed withdrawn.

(c) The Interconnection Customer is in compliance with the terms of its Generator Interconnection Agreement, including Interconnection Customer milestones, and has not received a notice of breach for which the cure period has expired without sufficient cure being made. If the Interconnection Customer has received a notice of breach for which the cure period has not expired at the time of the close of the applicable Generator Downsizing Request Window and such cure period subsequently expires without sufficient cure being made, the Interconnection Customer's Generator Downsizing Request will be deemed withdrawn.

~~An Interconnection Customer under category (2) in Section 7.5.3.1 will be eligible to participate in the Generator Downsizing Process if its failure to meet one or more of the three requirements listed in this Section 7.5.3.2 is due solely to its Generating Facility having achieved the last Commercial Operation Date indicated in its Generator Interconnection Agreement with a total megawatt capacity amount that is lower than the amount specified in its Generator Interconnection Agreement by an amount that is greater than the de minimis threshold specified in Section 7.5.13.1.~~

~~7.5.3.3 Treatment of Customers with Capacity Reductions Greater than the De Minimis Threshold~~

An Interconnection Customer ~~under category (2)~~ in Section 7.5.3~~.1~~ that meets all applicable eligibility requirements set forth in Section 7.5, including the payment of any related costs, and that participates in the applicable annual Generator Downsizing Process, will not be considered in breach of its obligations under the CAISO Tariff or its Generator Interconnection Agreement due to failing to place into service the megawatt capacity set forth in its Generator Interconnection Agreement. This Section 7.5.3 will not operate to diminish the responsibility of an Interconnection Customer ~~under category (2)~~ above for any costs or other obligations set forth in the CAISO Tariff or its Generator Interconnection Agreement.

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Section 8 Phase II Interconnection Study and TP Deliverability Allocation Processes

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8.9 Allocation Process for TP Deliverability

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8.9.2 Second Component: Allocating TP Deliverability ~~to the Current Queue Cluster~~

~~If the CAISO determines,~~ Following the process set forth in ~~under~~ Section 8.9.1 ~~above~~, the CAISO will allocate any remaining TP Deliverability in the following order. ~~that no TP Deliverability exists for allocation to the current Queue Cluster, then no allocation of TP Deliverability shall be made to the current Queue Cluster. If TP Deliverability is available for allocation, then the CAISO will allocate such capacity to eligible Generating Facilities.~~

~~The CAISO shall allocate any TP Deliverability available after taking into account the commitments described in the prior section to eligible Generating Facilities in the current Interconnection Study Cycle and eligible parked Generating Facilities.~~

The CAISO shall allocate available TP Deliverability to ~~Option (A) and Option (B) Generating Facilities according to the Interconnection Customers' demonstration of having met the criteria listed below for~~ all or a portion of the full MW ~~generating~~ capacity of the Generating Facility as specified in the Interconnection Request. Where a criterion is met by a portion of the full MW generating capacity of the Generating Facility, the

eligibility score associated with that criterion shall apply to the portion that meets the criterion. The demonstration must relate to the same proposed Generating Facility as described in ~~Appendix A to~~ the Interconnection Request.

(1) To Interconnection Customers in the current Queue Cluster or coming out of parking that have executed power purchase agreements, and to Interconnection Customers in the current Queue Cluster that are Load Serving Entities serving their own Load.

(2) To Interconnection Customers in the current Queue Cluster or coming out of parking that are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement.

(3) To Interconnection Customers in the current Queue Cluster with a completed Phase II Interconnection Study that have not parked, which are subject to Section 8.9.3.2 and elect to proceed without a power purchase agreement, or that parked before November 27, 2018 and attested to balance-sheet financing upon the end of their parking period.

Only these three foregoing groups may trigger the construction of Delivery Network Upgrades pursuant to Section 6.3.2. After the CAISO has allocated TP Deliverability to the three foregoing groups, the CAISO will allocate any remaining TP Deliverability to Energy Only Interconnection Customers requesting Deliverability based on the reassessment study and in the following order:

(4) To Interconnection Customers that have not achieved their Commercial Operation Date, originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status, and have executed power purchase agreements; and to Interconnection Customers that have achieved their Commercial Operation Date and have executed power purchase agreements.

(5) To Interconnection Customers that have not achieved their Commercial Operation Date, originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status, and are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement; and to Interconnection Customers that have achieved their Commercial Operation Date and are actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement.

(6) To Interconnection Customers that originally requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status but achieved their Commercial Operation Date as Energy Only.

(7) To Interconnection Customers that achieved their Commercial Operation Date.

The CAISO will allocate TP Deliverability to these four foregoing groups solely based on TP Deliverability available from existing transmission facilities, from already planned upgrades in the CAISO Transmission Planning Process, or upgrades assigned to an interconnection project that has an executed GIA and currently has a TPD allocation.

Energy Only Interconnection Customers requesting Deliverability must submit to the CAISO a $60,000 study deposit for each Interconnection Request seeking TP Deliverability. The CAISO will deposit these funds in an interest bearing account at a bank or financial institution designated by the CAISO. The funds will be applied to pay for prudent costs incurred by the CAISO, the Participating TO(s), and/or third parties at

the direction of the CAISO or applicable Participating TO(s), as applicable, to perform and administer the TP Deliverability studies for the Energy Only Interconnection Customers. Any and all costs of the Energy Only TP Deliverability study will be borne by the Interconnection Customer. The CAISO will coordinate the study with the Participating TO(s). The Participating TO(s) will invoice the CAISO for any work within seventy-five (75) calendar days of completion of the study, and, within thirty (30) days thereafter, the CAISO will issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the study. If the actual costs of the study are greater than the deposit provided by the Interconnection Customer, the Interconnection Customer will pay the balance within thirty (30) days of being invoiced.

All power purchase agreements in this Section 8.9 must require Deliverability for the Interconnection Customer to represent that it has, is negotiating, or is shortlisted for a power purchase agreement. For all TP Deliverability allocations based upon having, negotiating, or being shortlisted for power purchase agreements, the CAISO will allocate TP Deliverability up to the amount of deliverable MW capacity procured by the power purchase agreement. All Load Serving Entities building Generating Facilities to serve their own Load must be doing so to fulfill a regulatory requirement that warrants Deliverability. Load Serving Entities acting as Interconnection Customers are otherwise eligible for all other attestations.

8.9.2.1 Deliverability Affidavits

~~The Generating Facility shall~~To determine TP Deliverability allocation order, Interconnection Customers will be assigned a numerical score reflecting the ~~Interconnection Customer's~~its demonstration of having met the criteria below under the methodology set forth in the Business Practice Manual. ~~At a minimum, the Generating Facility must meet (1)d and either (2)a or (2)d.~~

(1) Permitting status. An Interconnection Customer's Generating Facility must meet at least one of the following:

a. The Interconnection Customer has received its final governmental permit or authorization allowing the Generating Facility to commence construction.

b. The Interconnection Customer has received a draft environmental report document (or equivalent environmental permitting document) indicating likely approval of the requested permit and/or which indicates that the permitting authority has not found an environmental impact which would likely prevent the permit approval.

c. The Interconnection Customer has applied for the necessary governmental permits or authorizations and the authority has deemed such documentation as data adequate for the authority to initiate its review process.

d. The Interconnection Customer has applied for the necessary governmental permit or authorization for the construction.

(2) Project financing status. An Interconnection Customer's Generating Facility must meet at least one of the following criteria:

a. ~~The Generating Facility will be balance-sheet financed or has otherwise~~

~~received a commitment of project financing, and the Interconnection Customer represents to the CAISO that either it has a regulator-approved power purchase agreement or that the Interconnection Customer is proceeding to commercial operation without a power purchase agreement.~~

~~Interconnection Customers that attest to this status at any time will be precluded from exercising rights in accordance with Section 11.4.1(a) as a condition for partial recovery of the Network Upgrade Interconnection Financial Security.~~

~~b.~~ The Interconnection Customer has an executed and regulator-approved power purchase agreement.

b~~c~~. The Interconnection Customer has an executed power purchase agreement but such agreement has not yet received regulatory approval.

c~~d~~. The Interconnection Customer ~~does not have an executed power purchase agreement but the Interconnection Customer~~ is ~~included~~ on an active short list or other commercially recognized method of preferential ranking of power providers by a prospective purchaser Load Serving Entity or procuring entity, or is currently negotiating a power purchase agreement.

d. The Interconnection Customer is a Load Serving Entity constructing its project to serve its own Load pursuant to a regulatory requirement.

e. The Interconnection Customer is proceeding to commercial operation without a power purchase agreement pursuant to Section 8.9.2.2, attested to balance-sheet financing before November 27, 2018, or attests to being balance-sheet financed or otherwise received a commitment of project financing pursuant to Section 8.9.3.1.

(3) Land acquisition

a. The Interconnection Customer demonstrates a present legal right to begin construction of the Generation Facility on one hundred percent (100%) of the real property footprint necessary for the entire Generating facility.

b. The Interconnection Customer demonstrates Site Exclusivity.

In allocating TP Deliverability under this section, in a situation where the ~~available amount of~~ TP Deliverability cannot accommodate all of the Interconnection Customers in a qualifying group, the CAISO will allocate TP Deliverability based on the highest numerical score. In a Situation where the available amount of TP Deliverability can accommodate all Interconnection Customers with ~~only one out of two or more Generating Facilities requesting TP Deliverability and such Generating Facilities score~~ equal~~ly~~ scores, ~~under the criteria above, then~~ the CAISO will allocate the TP Deliverability to ~~such equally scoring Generating Facilities according to~~ the Interconnection Customers with the lowest LDNU cost estimates. For all TP Deliverability allocations based upon having, negotiating, or being shortlisted for power purchase agreements, the CAISO will allocate TP Deliverability up to the amount of deliverable MW capacity procured by the power purchase agreement.

All power purchase agreements must require Deliverability above zero for the Interconnection Customer to represent that it has, is negotiating, or is shortlisted for a power purchase agreement. All Load Serving Entities building Generating Facilities to serve their own Load must be doing so to fulfill a regulatory requirement that warrants Deliverability.

8.9.2.2 Proceeding without a Power Purchase Agreement

Interconnection Customers only may attest that they are proceeding without a power purchase agreement in the allocation cycle immediately following receipt of their Phase II Interconnection Study (without having parked). Interconnection Customers that receive TP Deliverability in this group may park only that portion of their Interconnection Request that does not receive TP Deliverability. Parked portions may receive TP Deliverability in subsequent allocation cycles from any group for which they qualify. Interconnection Customers that receive TP Deliverability allocations for less than requested may elect to reduce their capacity to the amount of TP Deliverability received following the allocation.

If an Interconnection Customer receives TP Deliverability on the basis that it is proceeding without a power purchase agreement, it must accept the TP Deliverability allocation and forego parking that capacity, or withdraw. If an Interconnection Customer receives TP Deliverability on the basis that it is proceeding without a power purchase agreement, it may not request suspension under its GIA, delay providing its notice to proceed as specified in its GIA, or modify its Commercial Operation Date beyond the earlier of (a) the date established in its Interconnection Request when it requests TP Deliverability or (b) seven (7) years from the date the CAISO received its Interconnection Request. Extensions due to Participating TO construction delays will extend these deadlines equally. Interconnection Customers that fail to proceed toward their Commercial Operation Date under these requirements and as specified in their GIA will be converted to Energy Only. Interconnection Customers that become Energy Only for this or any reason may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades unless the CAISO and Participating~~on~~ TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers.

This Section 8.9.2.2 does not apply to Interconnection Customers that attested to balance-sheet financing or otherwise receiving a commitment of project financing before November 27, 2018, or that do so pursuant to Section 8.9.3.1.

8.9.3 ~~Criteria for~~ Retaining TP Deliverability Allocation

For Interconnection Customers in Queue Cluster 10 or later, ~~O~~once a Generating Facility is allocated TP Deliverability under Section 8.9.1, the Interconnection Customer annually, on the date set forth and according to the process described in the Business Practice Manual, must demonstrate that the Generating Facility meets the following criteria to retain its TP Deliverability:

(1) The Generating Facility ~~shall remain~~is in good standing with respect to the criteria on which the allocation of TP Deliverability was based;
(2) If the Generating Facility received TP Deliverability on the basis of having executed a power purchase agreement, it must have received regulatory approval of that agreement; ~~If the Generating Facility was allocated TP Deliverability based on achievement of only level d Section 8.9.2(2), then the Interconnection Customer must, by the start of the next allocation cycle, demonstrate achievement of level a, b or c of Section 8.9.2(2).~~
(3) If the Generating Facility received TP Deliverability on the basis of negotiating or being shortlisted for a power purchase agreement, it must have executed the

agreement by November 30 of the year it received TP Deliverability. It must then comply with criterion 8.9.3(2) the following year;

(4) The Interconnection Customer must have executed a GIA and must remain in good standing with regard to its GIA, such that neither the Participating TO nor CAISO has provided the Interconnection Customer with a Notice of Breach of the GIA that has not been cured and the Interconnection Customer has not commenced curative actions;

(54) The Interconnection Customer must maintain ~~the original~~its Commercial Operation Date set forth in the GIA ~~without request for extension~~ unless ~~such~~ an extension is required for reasons beyond the control of the Interconnection Customer ~~and~~ or such extension results in no Material Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; or unless the extension is occasioned by a material delay in the Participating TO's construction of any Network Upgrades or Participating TO's Interconnection Facilities

The Interconnection Customer will provide the required information in the form of an affidavit as described in the Business Practice Manual. Interconnection Customers that fail to meet these criteria will become Energy Only for that portion of the Generating Facility that has not retained TP Deliverability. An Interconnection Customer's failure to retain its TP Deliverability will not be considered a Breach of its GIA. Except as provided in Section 8.9.3.2, Interconnection Customers that become Energy Only for failure to retain their TP Deliverability Allocation may not reduce their cost responsibility or Interconnection Financial Security for any assigned Delivery Network Upgrades unless the CAISO and Participating TO(s) determine that the Interconnection Customer's assigned Delivery Network Upgrade(s) is no longer needed for current Interconnection Customers. To the extent TP Deliverability has been allocated, lost, or relinquished only for a portion of the Interconnection Customer's project, this section 8.9.3 will apply to that portion of the project only.

8.9.3.1 Retaining TP Deliverability Allocation for Pre-Cluster 10 Interconnection Customers

Interconnection Customers in Queue Cluster 9 or earlier subject to this Appendix DD that have been allocated TP Deliverability or that parked pursuant to Section 8.9.4 or 8.9.4.1, annually, on the date set forth and according to the process described in the Business Practice Manual, must demonstrate that the Generating Facility meets the following criteria to retain its TP Deliverability:

(1) The Generating Facility is in good standing with respect to the criteria on which the allocation of TP Deliverability was based;

(2) If the Generating Facility received TP Deliverability on the basis of negotiating or being shortlisted for a power purchase agreement, it must have executed the agreement by the start of the next allocation cycle, or attest to balance-sheet financing or receipt of a commitment of project financing;

(3) The Interconnection Customer must have executed a GIA and must remain in good standing with regard to its GIA, such that neither the Participating TO nor CAISO has provided the Interconnection Customer with a Notice of Breach of the GIA that has not been cured and the Interconnection Customer has not commenced curative actions;

(4) The Interconnection Customer must maintain its Commercial Operation Date set forth in the GIA unless an extension is required for reasons beyond the control of the Interconnection Customer or such extension results in no Material

Modification or delay in the construction schedule for Network Upgrades common to multiple Generating Facilities; or unless the extension is occasioned by a material delay in the Participating TO's construction of any Network Upgrades or Participating TO's Interconnection Facilities.

Interconnection Customers that have attested to balance-sheet financing or receipt of a commitment of project financing or do so pursuant to this Section are not subject to Section 8.9.2.2. Interconnection Customers that attest to balance-sheet financing pursuant to this Section 8.9.3.1 will be placed in TP Deliverability allocation group 8.9.2(3).

8.9.3.2 Loss of Power Purchase Agreement or Short List Status

Notwithstanding any provision of this GIDAP, if an Interconnection Customer receives TP Deliverability for all or a portion of its project after attesting that

(a) it had a power purchase agreement, and the Load Serving Entity or procuring entity unilaterally terminates that power purchase agreement through no fault of the Interconnection Customer; or

(b) it was actively negotiating a power purchase agreement or on an active short list to receive a power purchase agreement, and then did not finalize a power purchase agreement,

the Interconnection Customer may park its Interconnection Request, and re-seek TP Deliverability with its Queue Cluster. Alternatively, if such an Interconnection Customer's Queue Cluster is no longer eligible to park and has already completed the TP Deliverability allocation cycle after its parking opportunities, the Interconnection Customer will be converted to Energy Only but will not retain cost responsibility for its assigned Delivery Network Upgrades. Such Interconnection Customers may elect to reduce their Interconnection Financial Security as a result.

* * * * *

8.9.7 [Intentionally Omitted] ~~Consequences of Failure to Retain TP Deliverability~~

~~An Interconnection Customer's failure to retain its allocation of TP Deliverability shall not be considered a Breach of the GIA. Upon failure of the Interconnection Customer to retain TP Deliverability, the Deliverability status of the Generating Facility corresponding to the Interconnection Request shall convert to Energy Only Deliverability Status as to that portion of the Generating Facility which has not retained the TP Deliverability.~~

* * * * *

Section 9 Additional Deliverability Assessment Options

9.1 [Intentionally Omitted]

9.2 [Intentionally Omitted]~~Annual Full Capacity Deliverability Option~~

~~**9.2.1** Generating Facilities eligible for Deliverability under this Section are~~

~~(i) a Generating Facility previously studied as Energy-Only Deliverability Status in any prior~~

Interconnection Study under the CAISO Tariff (including a Small Generating Facility studied under the provisions of Appendix S of the CAISO Tariff), and for which all Interconnection Studies have been completed, or which has a GIA under which the Generating Facility is Energy Only Deliverability Status and such GIA is in good standing at the time of request under this Section;

(ii) an Option (A) Generating Facility not allocated TP Deliverability in any prior Interconnection Study Cycle that converted to Energy-Only Deliverability Status and has a GIA in good standing and desires to seek additional Deliverability with respect to the Energy Only portion of the Generating Facility;

(iii) an Option (B) Generating Facility which chose Partial Capacity Deliverability Status and has a GIA in good standing, and desires to seek additional Deliverability with respect to the Energy Only portion of its Generating Facility.

An eligible Generating Facility will have an option to be studied to determine whether it can be designated for Full Capacity Deliverability Status or Partial Capacity Deliverability Status based on available transmission capacity. To be considered in the annual assessment, the Interconnection Customer must make such a request which complies with Section 9.2.3 below within the corresponding annual Cluster Application Window.

9.2.2 Any Interconnection Customer selecting this option will be studied immediately following the Phase II Deliverability assessment in the Interconnection Study Cycle in which the Interconnection Customer submitted the request.

9.2.3 Interconnection Customers must submit an Interconnection Request as set forth in Appendix 1 along with a non-refundable $10,000 study fee.

9.2.4 After allocating transmission system capability, including capability associated with both existing capability and capability relating to approved transmission upgrades, to Interconnection Customers in the Queue Cluster who originally requested Full Capacity Deliverability Status in the Phase II Interconnection Study, the CAISO will perform additional studies using the Deliverability study procedures set forth in Section 6.3.2 to determine the availability of any remaining transmission system capability for Interconnection Customers requesting Full Capacity Deliverability Status as part of the annual process described in this Section.

9.2.4.1 In determining available transmission capability, priority will be given to Interconnection Customers whose Generating Facilities have the lowest transfer distribution factors, calculated according to the Deliverability study procedures.

9.2.4.2 If there is sufficient available transmission capability for the Interconnection Customer to achieve Full Capacity Deliverability Status, then the Interconnection Customer's Generating Facility will be considered to have Full Capacity Deliverability Status.

9.2.4.3 If the assessment of available transmission capability conducted under this Section indicates that there is some transmission capacity available for use by the Interconnection Customer, but less than is necessary to achieve Full Capacity Deliverability Status for the Interconnection Customer's Generating Facility, then the Interconnection Customer's Generating Facility will be considered to be partially deliverable, and the amount of transmission capability made available to that Interconnection Customer's Generating Facility will be equal to the determination of available transmission capability for the Generating Facility rounded down to the nearest 50 MW increment.

* * * * *

Section 11 Interconnection Financial Security

* * * * *

11.2 Interconnection Financial Security-Initial Posting for Queue Cluster Customers

11.2.1 Each Interconnection Customer in a Queue Cluster shall post, with notice to the CAISO, two separate Interconnection Financial Security instruments: (i) a posting relating to the applicable Network Upgrades; (ii) a posting relating to the Participating TO's Interconnection Facilities.

Interconnection Customers owned by Participating Transmission Owners are not required to post Interconnection Financial Security to themselves. Notwithstanding this exemption, Interconnection Customers owned by Participating Transmission Owners (i) must post Interconnection Financial Security required for Network Upgrades or Participating TO's Interconnection Facilities on other Participating Transmission Owner's systems where required for interconnection; and (ii) must remit to the CAISO an amount equal to any non-fundable portion of the Interconnection Financial Security that would have been forfeited upon withdrawal or termination absent this exemption pursuant to Sections 7.6 and 11.4.

* * * * *

11.2.7 ~~Effect of Decrease in Output~~ Re-calculation o~~f~~n Initial Posting Requirement.

If ~~an Interconnection Customer decreases the electrical output of its facility~~withdrawals, modifications, or system changes occur after the completion of the Phase I Interconnection Study, pursuant to Section 6.7.2, and the CAISO, in consultation with the applicable Participating TO(s), is able to reasonably determine, prior to the date for initial posting of Interconnection Financial Security, that as a result of such decrease (solely or in combination with other modifications made by Interconnection Customers ~~in the same Study Group~~) some of the Network Upgrades and/or Participating TO Interconnection Facilities identified in the Phase I Interconnection Study will no longer be required, then the calculation of the initial posting of Interconnection Financial Security will not include those Network Upgrades and/or Participating TO Interconnection Facilities. Such determination will be made based on the CAISO's best engineering judgment and will not include any re-studies.

* * * * *

11.4 Withdrawal or Termination-Effect on Financial Security

~~Except as set forth in Section 11.4.1, w~~Withdrawal of an Interconnection Request or termination of a GIA shall allow the applicable Participating TO(s) to liquidate the Interconnection Financial Security, or balance thereof, posted by the Interconnection Customer for Network Upgrades at the time of withdrawal.

To the extent the amount of the liquidated Interconnection Financial Security plus capital, if any, separately provided by the Interconnection Customer to satisfy its obligation to finance Network Upgrades exceeds the total cost responsibility for Network Upgrades assigned to the Interconnection Customer, the applicable Participating TO(s) shall remit

to the Interconnection Customer the excess amount.

Withdrawal of an Interconnection Request or termination of a GIA shall result in the release to the Interconnection Customer of any Interconnection Financial Security posted by the Interconnection Customer for Participating TO Interconnection Facilities, except with respect to any amounts necessary to pay for costs incurred or irrevocably committed by the applicable Participating TO(s) on behalf of the Interconnection Customer for the Participating TO's Interconnection Facilities and for which the applicable Participating TO(s) has not been reimbursed.

11.4.1 [Intentionally Omitted] ~~Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of GIA~~

~~A portion of the Interconnection Financial Security shall be released to the Interconnection Customer, consistent with Section 11.4.2, if the withdrawal of the Interconnection Request or termination of the GIA occurs for any of the following reasons:~~

~~(a) Failure to Secure a Power Purchase Agreement. At the time of withdrawal of the Interconnection Request or termination of the GIA, the Interconnection Customer demonstrates to the CAISO that it has failed to secure an acceptable power purchase agreement for the Energy or capacity of the Generating Facility after a good faith effort to do so. A good faith effort can be established by demonstrating participation in a competitive solicitation process or bilateral negotiations with an entity other than an Affiliate that progressed, at minimum, to the mutual exchange by all counter-parties of proposed term sheets.~~

~~Interconnection Customers that attested on the TP Deliverability Affidavit under Section 8.9.2, part (2), subpart (a) are ineligible to claim this condition for partial recovery of Interconnection Financial Security.~~

~~(b) Failure to Secure a Necessary Permit. At the time of withdrawal of the Interconnection Request or termination of the GIA, the Interconnection Customer demonstrates to the CAISO that it has received a final denial from the primary issuing Governmental Authority of any permit or other authorization necessary for the construction or operation of the Generating Facility.~~

~~(c) Increase in the Cost of Participating TO's Interconnection Facilities. The Interconnection Customer withdraws the Interconnection Request or terminates the GIA based on an increase of more than 30% or $300,000, whichever is greater, in the estimated cost of Participating TO's Interconnection Facilities between the Phase I Interconnection Study and the Phase II Interconnection Study, provided, however, that the Interconnection Financial Security shall not be released if this increase in the estimated cost is due to the Interconnection Customer's requested modification to the interconnection configuration.~~

~~(d) Material Change in Interconnection Customer Interconnection Facilities Created by a CAISO Change in the Point of Interconnection. The Interconnection Customer withdraws the Interconnection Request or terminates the GIA based on a material change from the Phase I Interconnection Study in the Point of Interconnection for the Generating Facility mandated by the CAISO and included in the final Phase II Interconnection Study. A material change in the Point of Interconnection shall be where Point of Interconnection has moved to (i) a different substation, (ii) a different line on a different right of way, or (iii) a materially different location than previously identified on the same line.~~

~~(e) An Interconnection Customer having selected Option (A) in accordance with Section 7.2 is not allocated TP Deliverability and notifies the CAISO of its election to withdraw by the deadline for the second posting of Interconnection Financial Security. This condition does not apply to an Interconnection Customer whose Generating Facility was allocated TP Deliverability for a portion of its Interconnection Request and elected to seek additional Deliverability in the next TP Deliverability allocation process.~~

~~(f) For an Interconnection Customer having selected Option (B) in accordance with Section 7.2 an increase in the Phase II Interconnection Study cost estimates for ANDUs over the Phase I Interconnection Study cost estimates for ADNUs of either twenty (20) percent, or $20 million, whichever is less. Provided, however, that the Interconnection Financial Security shall not be released if this increase in the estimated cost of ADNUs is due to the Interconnection Customer's requested modification to the interconnection configuration.~~

11.4.2 Determining Refundable Portion of the Interconnection Financial Security for Network Upgrades.

11.4.2.1 Withdrawal Between the First Posting and the Deadline for the Second Posting

If the Interconnection Customer either withdraws its Interconnection Request or terminates its GIA ~~under any of the conditions (a)-(f) of Section 11.4.1 above and~~ at any time between the initial posting and the deadline for the second posting of the Interconnection Financial Security for applicable Network Upgrades, then the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for the applicable Network Upgrades and reimburse the Interconnection Customer the lesser of:

a. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) less (all costs and expenses incurred or irrevocably committed to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer); or

b. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) minus the lesser of fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades or $10,000 per requested and approved, pre-downsized megawatt of the Generating Facility Capacity.

11.4.2.2 Withdrawal Between the Second Posting and the Commencement of Construction Activities

If the Interconnection Customer either withdraws or terminates its GIA ~~under any of the conditions (a)-(f) of Section 11.4.1 above and~~ at any time after the between the second posting of the Interconnection Financial Security for applicable Network Upgrades and the Commencement of Construction Activities for such Network Upgrades, then the applicable Participating TO(s) shall liquidate the Interconnection Financial Security for the applicable Network Upgrades and reimburse the Interconnection Customer the lesser of:

a. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) less (all costs and expenses incurred or irrevocably committed to finance Pre-Construction Activities for Network Upgrades on behalf of the Interconnection Customer) and less (any posting reduction due to the Interconnection Customer's election to self-build Stand Alone Network Upgrades); or

b. the Interconnection Financial Security plus (any other provided security plus any separately provided capital) minus the lesser of fifty (50) percent of the value of the posted Interconnection Financial Security for Network Upgrades or $20,000 per requested and approved, pre-downsized megawatt of the Generating Facility Capacity.

11.4.2.3 Special Treatment Based on Failure to Obtain Necessary Permit or Authorization from Governmental Authority.

If, at any time after the second posting requirement , the Interconnection Customer withdraws the Interconnection Request or terminates the GIA, as applicable, ~~in accordance with Section 11.4.1(b),~~ because the Interconnection Customer received a final denial from the primary issuing Governmental Authority for authorization necessary for the construction or operation of the Generating Facility, and the Delivery Network Upgrades to be financed by the Interconnection Customer are also to be financed by one or more other Interconnection Customers, then Section 11.4.2.2 shall apply, except that the Interconnection Customer shall not be reimbursed for its share of any actual costs incurred or irrevocably committed by the applicable Participating TO(s) for Construction Activities.

* * * * *

Appendix 3
GENERATOR INTERCONNECTION STUDY PROCESS AGREEMENT FOR QUEUE CLUSTERS

THIS AGREEMENT is made and entered into this day of , 20 by and between _____ , a organized and existing under the laws of the State of , ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the CAISO Controlled Grid pursuant to ~~the Queue Cluster process~~Appendix DD to the CAISO Tariff; and

WHEREAS, the Interconnection Customer has requested the CAISO to conduct or cause to be performed Interconnection Studies to assess the system impact of interconnecting the Generating Facility to the CAISO Controlled Grid and to specify and estimate the cost of the equipment, engineering, procurement and construction work needed on the Participating TO's electric system in accordance with Good Utility Practice to physically and electrically connect the Generating Facility to the CAISO Controlled Grid;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the

meanings indicated in the CAISO's FERC-approved Generation Interconnection and Deliverability Allocation Procedures in CAISO Tariff Appendix DD "GIDAP" or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.

* * * * *

4.0 The Interconnection Studies will be based upon the technical information provided by the Interconnection Customer in the Interconnection Request, as may be modified ~~as the result of the Scoping Meeting, subject to any modifications in accordance with Section 6.7.1 of the and modifications to the proposed Commercial Operation Date of the Generating Facility permitted by the GIDAP~~ under the CAISO Tariff. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection Studies~~. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the Interconnection Studies may be modified as specified in the GIDAP.~~

5.0 **[NOT USED]** ~~The Interconnection Study report for each Interconnection Study shall provide the information specified in the GIDAP.~~

6.0 Consistent with the GIDAP and CAISO Tariff, ~~T~~the Interconnection Customer ~~shall~~ will provide ~~an Interconnection Study Deposit, a Site Exclusivity Deposit, if applicable, and other Interconnection Financial Security for the performance of the Interconnection Studies in accordance with the provisions of Sections 3.5.1 and 11 of the GIDAP.~~deposits and pay its share of actual costs of applicable studies, including in excess of provided deposits. The CAISO and Participating TO will provide invoices and refunds on a timely basis required by the GIDAP and the CAISO Tariff.

Following the issuance of an Interconnection Study report, the CAISO shall charge and the Interconnection Customer shall pay its share of the actual costs of the Interconnection Study pursuant to Section 3.5.1 of the GIDAP~~-~~.

Any difference between the deposits made toward the Interconnection Study process and associated administrative costs, including any accelerated studies, and the actual cost of the Interconnection Studies and associated administrative costs shall be paid by or refunded to the Interconnection Customer, in the appropriate allocation, in accordance with Section 3.5.1 of the GIDAP.

7.0 Pursuant to Section 3.7 of the GIDAP, the CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The CAISO may provide a copy of the ~~Phase I Interconnection Study results~~ Interconnection Studies or other assessments to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection.

* * * * *

10.0 The CAISO and Participating TO(s) shall maintain records and accounts of all costs incurred in performing the Interconnection Study in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the

CAISO representative, within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Interconnection Study.

* * * * *

12.0 ~~Pursuant to Section 6.1.1 of the GIDAP, t~~This Agreement shall become effective upon submission to ~~the date the fully executed Agreement is received by~~ the CAISO. If the CAISO does not receive the fully executed Agreement and deposit or other Interconnection Financial Security pursuant to Section 3.5.1 of the GIDAP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the GIDAP.

* * * * *

Appendix A

[NOT USED]~~ASSUMPTIONS USED IN CONDUCTING THE PHASE I INTERCONNECTION STUDY~~

~~The Phase I Interconnection Study will be based upon the information set forth in the Interconnection Request and agreed upon in the Scoping Meeting held on _____, subject to any modifications in accordance with Section 6.2 of the GIDAP, and the following assumptions:~~

~~Designation of Point of Interconnection and configuration to be studied.~~

~~Deliverability status requested~~

~~(_____ Full Capacity,~~
~~_____Partial Deliverability for _____ percent of Full Capacity~~
~~_____Energy only)~~

~~NOTICE: YOUR CHOICE OF DELIVERABILITY STATUS CAN AFFECT YOUR ABILITY TO QUALIFY YOUR GENERATING FACILITY AS A RESOURCE ADEQUACY RESOURCE OR AFFECT YOUR TRANSACTIONS FOR SALE OF POWER. PLEASE GIVE CONSIDERATION TO YOUR CHOICE OF DELIVERABILITY STATUS~~

* * * * *

Appendix EE

Large Generator Interconnection Agreement for Interconnection Requests under the

Generator Interconnection and Deliverability Allocation Procedures

* * * * *

ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

* * * * *

5.16 Suspension. The Interconnection Customer ~~reserves the right, upon written notice to the Participating TO and the CAISO,~~may request to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA, other than Network Upgrades identified in the Phase II Interconnection Study as common to multiple generating facilities.~~,~~ ~~with the condition that~~ Interconnection Customers seeking to suspend construction will provide the CAISO and Participating TO a request for assessment pursuant to Section 6.7.2.~~3~~ of the GIDAP, ~~an~~ modification assessment deposit, and an anticipated end date of the suspension. Interconnection Customers may request a suspension for the maximum amount of time in lieu of providing an anticipated end date. The CAISO and Participating TO will approve suspension requests where:

(a) the Participating TO's electrical system and the CAISO Controlled Grid ~~shall~~ can be left in a safe and reliable condition in accordance with Good Utility Practice, ~~and~~ the Participating TO's safety and reliability criteria, and ~~the CAISO's~~ Applicable Reliability Standards;~~.~~ and

(b) the CAISO and Participating TO determine the suspension will not result in a Material Modification.

During suspension, the Interconnection Customer~~s~~ may request to extend or shorten their suspension period, consistent with the maximum period provided in this Article. The CAISO and Participating TO will approve such requests where they meet criteria (a) and (b), above. Requests to extend or shorten extensions will ~~not~~ require a new modification assessment request and deposit. ~~In such event, the~~The Interconnection Customer shall be responsible for all reasonable and necessary costs for suspension for which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so. Network Upgrades common to multiple generating facilities, and to which the Interconnection Customer's right of suspension shall not extend, consist of Network Upgrades identified for:

(i) generating facilities which are the subject of all Interconnection Requests made prior to the Interconnection Customer's Interconnection Request;

(ii) generating facilities which are the subject of Interconnection Requests within the Interconnection Customer's queue cluster; and

(iii) generating facilities that are the subject of Interconnection Requests that were

made after the Interconnection Customer's Interconnection Request but no later than the date on which the Interconnection Customer's Phase II Interconnection Study Report is issued, and have been modeled in the Base Case at the time the Interconnection Customer seeks to exercise its suspension rights under this Article.

The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA in time to ensure that the new projected Commercial Operation Date for the full Generating Facility Capacity of the Large Generating Facility is no more than three (3) years from the Commercial Operation Date identified in Appendix B hereto, this LGIA shall be deemed terminated and the Interconnection Customer's responsibility for costs will be determined in accordance with Article 2.4 of this LGIA. The suspension period shall begin on the date the ~~suspension is requested~~Interconnection Customer provides in its request, if approved~~or upon approval, whichever is later.~~, ~~or the date of the written notice to the Participating TO and the CAISO, if no effective date is specified~~. Ninety (90) days before the anticipated end date of the suspension, the Participating TO and the CAISO will tender an amended draft LGIA with new construction milestones. The Parties agree to negotiate the amended draft LGIA in good faith such that it can be executed by the end of the suspension.
Interconnection Customer subject to Section 8.9.2.2 of Appendix DD may not request suspension.

* * * * *

5.19 Modification.

5.19.1 General. The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to ~~the provisions of this LGIA and the CAISO Tariff.~~Section 25.1(c) and Section 25 of the CAISO Tariff if the Interconnection Customer has achieved its Commercial Operation Date, and subject to Section 6.7.2 of Appendix DD if it has not. ~~the provisions of this LGIA and the CAISO Tariff.~~

If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.11 of Appendix DD will still apply to such requests to reduce capacity.

~~In the case of Large Generating Facility modifications that do not require the~~

~~Interconnection Customer to submit an Interconnection Request, the CAISO or Participating TO shall provide, within thirty (30) Calendar Days (or such other time as the Parties may agree), an estimate of any additional modifications to the CAISO Controlled Grid, Participating TO's Interconnection Facilities, Network Upgrades or Distribution Upgrades necessitated by such Interconnection Customer modification and a good faith estimate of the costs thereof. The Participating TO and the CAISO shall determine if a Large Generating Facility modification is a Material Modification in accordance with the GIDAP.~~

* * * * *

Appendix FF

Small Generator Interconnection Agreement for Interconnection Requests Processed Under the Generator Interconnection and Deliverability Allocation Procedures

* * * * *

Article 3. Effective Date, Term, Termination, and Disconnection

* * * * *

3.4.5 Modification of the Small Generating Facility

Prior to making any modifications to the Small Generating Facility before it has achieved its Commercial Operation Date, the Interconnection Customer must first request that the CAISO evaluate whether such modification is a Material Modification and receive written authorization from the Participating TO and the CAISO. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. The CAISO may engage the services of the applicable Participating TO to assess the modification. Costs incurred by the Participating TO and CAISO (if any) shall be borne by the party making the request under Section 6.7.2 of Appendix DD, and such costs shall be included in any CAISO invoice for modification assessment activities. If the Interconnection Customer has achieved its Commercial Operation Date, the CAISO and Participating TO(s) will review the requested modification pursuant to Sections 25 and 25.1(c) of the CAISO Tariff. If the Interconnection Customer makes ~~such~~ modifications without the Participating TO's and the CAISO's prior written authorization, the Participating TO or the CAISO shall have the right to temporarily disconnect the Small Generating Facility. Any change to the Point of Interconnection, except those deemed acceptable under this article of the GIDAP SGIA or so allowed elsewhere, shall constitute a Material Modification. The Interconnection Customer may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.

Notwithstanding Section 7.5 of Appendix DD, at any time after achieving its Commercial Operation Date, the Interconnection Customer may reduce the megawatt generating capacities of its Generating Facilities, subject to Section 25.1(c) of the CAISO Tariff. Section 7.5.44 of Appendix DD will still apply to such requests to reduce capacity.

Attachment C – Final Policy Papers

2018 Interconnection Process Enhancements

California Independent System Operator Corporation

2018 Interconnection Process Enhancements

Revised Straw Proposal

July 10, 2018

Table of Contents

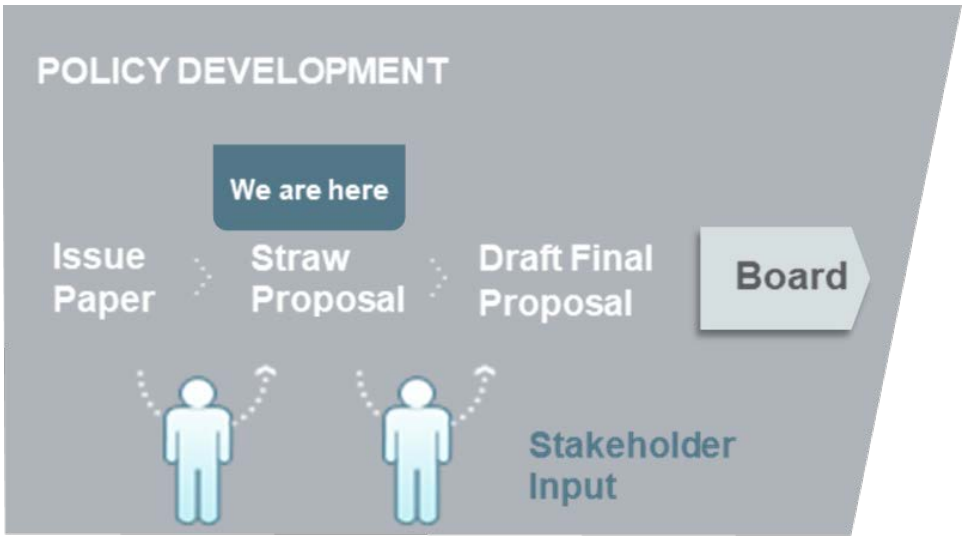
1. Introduction

Previous iterations of the California Independent System Operator Corporation's (CAISO) Interconnection Process Enhancement (IPE) initiative focused on several enhancements to the CAISO's interconnection and deliverability allocation procedures. 2018 IPE will address some substantial concepts, but also a myriad of minor concepts that have not been addressed in some time along with issue that have surfaced since 2015 IPE that need to be resolved. This revised straw proposal reviews topics still under development and identifies topics that have been finalized after the issue paper and are going to the July 2018 Board of Governors meeting. Topics fall into six broad categories deliverability, energy storage, generator interconnection agreements, interconnection cost responsibility and financial security, interconnection requests, and modifications.

2. Stakeholder Process

The CAISO is at the "Revised Straw Proposal / Partial Draft Final" stage in the 2018 IPE stakeholder process. Figure 1 below shows the current status within the overall 2018 IPE stakeholder process. The purpose of the revised straw proposal is to present the scope and proposed solutions to topics that are in track 2 or track 3 related to deliverability, energy storage, generator interconnection agreements, interconnection cost responsibility and financial security, interconnection requests, and modifications. Track 1 are the issues that are going to the July Board meeting. Track 2 are issues that will be taken to the September Board meeting for approval. Track 3 are issues in the revised straw proposal that are still being discussed and are anticipated to go to the November Board meeting. The CAISO has reviewed and considered stakeholder feedback provided through comments submitted on the straw proposal and have addressed these comments in this revised straw proposal.

Figure 1: Stakeholder Process for 2018 IPE Stakeholder Initiative



3. Scope

The CAISO plans to publish a Draft Final Proposal of the remaining issues early in the fourth quarter of 2018. Due to the substantial number of topics in this paper, the CAISO is planning to move forward with topics in three separate tracks. Topics included in track 1 were finalized in the straw proposal and are targeted for the July 2018 Board of Governors meeting, topics in track 2 are being finalized in the revised straw proposal are targeted for the September 2018 meeting, and topics in track 3 are targeted for the November meeting. The table below reflecting the scope for this initiative includes the identification of which Board of Governors meeting for each topic included in this initiative.

Table 1: Overall Topic Status

Category	Section	Topic	Targeted Board of Governors Meeting
Deliverability	4.1	Transmission Plan Deliverability Allocation	September 2018
	4.2	Balance Sheet Financing	September 2018
	4.3	Participating in the Annual Deliverability Allocation	September 2018
	4.4	Change in Deliverability Status to Energy Only	September 2018
	4.5	Energy Only Projects' Ability to Re-enter the Queue for Full Capacity	September 2018
	4.6	Options to Transfer Deliverability	September 2018
Energy Storage	5.2	Replacing Entire Existing Generator Facilities with Storage	September 2018
Generator Interconnection Agreements	6.1	Suspension Notice	September 2018
	6.2	Affected Participating Transmission Owner	September 2018
	6.3	Clarify New Resource Interconnection Requirements	July 2018
	6.4	Ride-through Requirements for Inverter-based Generation	November 2018
Interconnection Financial Security and Cost Responsibility	7.1	Maximum Cost Responsibility for NUs and potential NUs	September 2018
	7.3	Eliminate Conditions for Partial IFS Recovery upon Withdrawal	September 2018
	7.5	Shared SANU and SANU Posting Criteria Issues	September 2018
	7.6	Clarification on Posting Requirements for PTOs	July 2018
	7.7	Reliability Network Upgrade Reimbursement Cap	September 2018
	7.9	Impact of Modifications on Initial Financial Security Posting	July 2018
Interconnection Requests	8.1	Study Agreements	July 2018
	8.4	Project Name Publication	September 2018
Modifications	9.1	Timing of Fuel Type Changes	September 2018
	9.2	Commercial Viability – PPA Path Clarification	September 2018
	9.3	PPA Transparency	July 2018
	9.4	Increase Repowering Deposit	July 2018
	9.5	Clarify Measure for Modifications After COD	July 2018
	9.6	Short Circuit Duty Contribution Criteria for Repower Projects	BPM Change

Note: The topics in yellow were combined into one topic.

4. Deliverability

4.1 Transmission Plan Deliverability Allocation

Background/Issue

Transmission Plan Deliverability (TPD) is the transmission capacity needed to make a generating unit's output deliverable to the aggregate of load on the CAISO Controlled Grid during peak conditions. TPD is required for a project to be designated as Full Capacity Deliverability Status (FCDS) allows a generator to be eligible to provide Resource Adequacy.

The CAISO desires to allocate TPD, if available, to generating projects according to the interconnection customer's demonstration of having met the criteria identified in Section 8.9.2 of Appendix DD of the CAISO Tariff, namely being far enough along in the status of permitting, project financing and land acquisition. The project may either have a Power Purchase Agreement (PPA) or balance sheet financing (BSF) as a key threshold requirement. The current TPD allocation process provides four opportunities for all interconnection customers to obtain FCDS – (1) following the Phase II interconnection studies, (2) after 1 year of parking, (3) for projects that qualify after a second year of parking, and (4) the annual full capacity deliverability option. If after exhausting its applicable opportunities a project does not receive a TPD allocation the project must convert to energy only or withdraw.

In the 2018 IPE straw proposal, the CAISO proposed an opportunity to modify the allocation of deliverability and Commercial Viability Criteria (CVC). The proposal consisted of a new structure of Allocation Groups whereby projects are allocated TPD based on their commercial status, as depicted in the chart below. The proposal eliminates the use and terminology of BSF as part of a project seeking TPD affidavit process. The proposal also eliminates the Annual Full Capacity (AFC) Deliverability Allocation option such that the newly proposed allocation groups provide equal or greater opportunity for energy only projects to obtain a TPD allocation.

Allocation Group	Project Status	Commercial Status
1	Study/Parking Process	Executed or regulator-approved PPA requiring FCDS or interconnection customer is Load Serving Entity serving its own load
2	Study/Parking Process	Shortlisted in a RFO/RFP
3	Study Process (Following Ph. II Only)	Proceeding without a PPA (formerly BSF)
4	Converted to Energy Only	Executed or regulator-approved PPA requiring FCDS
5	Converted to Energy Only	Shortlisted in a RFO/RFP
6	Converted to Energy Only	Commercial operation achieved
7	Energy Only	Commercial operation achieved

With regard to California regulations, increased Renewable Portfolio Standard (RPS) requirements, and the CPUCs determination of a proper Resource Adequacy and procurement path forward: The CPUC has yet to determine the effective load carrying capability (ELCC) deliverability methodology for studying generator interconnection customers and without this methodology being finalized, the future impacts of allocating TPD to intermittent generators, such as solar and wind, is unknown. Moreover, while California has increased the RPS from 33% to 50%, the state has yet to make a decision on whether to increase deliverability requirements above the 33% RPS level to require the incremental amount to 50% to be deliverable. Other variables impacting TPD include the CPUC Integrated Planning Process that has not progressed to the point of providing actionable guidance to the jurisdictional utilities, or the CAISO and the California Legislature consideration of increasing the RPS above 50%, which could have a

dramatic impact on the transmission planning assumptions and direction. As a result, the CAISO believes more information and direction is needed to guide a process for making significant modifications to the deliverability study process in order to accommodate an option that allows energy only projects the ability to reenter the deliverability study process to determine if Delivery Network Upgrades (DNUs) are needed to make a project deliverable and to provide an opportunity for projects to have those DNUs constructed within the GIDAP.

As drafted in the Straw Proposal, the CAISO combined multiple topics into one whereby we created one concise and consistent solution to the allocation and retention of TPD. As such, Section 4.2 -Balance Sheet Financing, Section 4.3 – Participating in the Annual Full Capacity Deliverability Option, Section 4.5 - Energy Only Projects Ability to Re-enter the Queue for Full Capacity, and Section 9.2 - Commercial Viability – PPA Path Clarification, will be discussed and any proposed revisions will be consolidated and provided within Section 4.1.

Stakeholder Input

Overall Stakeholder Comments

First Solar, San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Pacific Gas and Electric (PG&E) support the CAISO's proposal to combine topics 4.1, 4.2, 4.3, 4.5, and 9.2, and believe the proposal is an improvement to the existing TPD allocation/ranking process. Further, they appreciate the proposed allocation ranking groups such that it allocates deliverability to those with a Power Purchase Agreement (PPA) ahead of those that propose to build without one. PG&E believes that this change will result in only projects with deliverability moving forward with construction and allow only the most viable projects to proceed.

CalWEA believes the proposed plan would clearly distinguish among generation projects based on their commercial status when allocating TPD capacity; as opposed to the current scheme in which a complex scoring mechanism based on projects' performance.

EDF Renewables (EDF-R) and sPower believe the CAISO's proposal contains flaws they have raised in their feedback. They are unsure of how or if any additional deliverability will be provided beyond the options now available. Further, they believe the CAISO should provide an opportunity for energy only projects to re-enter the queue and obtain deliverability on an equal basis with new projects.

SCE believes that the CAISO's proposal, which maintains a focus on limiting the risk to the PTOs, while affording greater opportunity for projects that have a PPA to obtain TPD, is reasonable approach and provides projects greater opportunities to participate in the TPD allocation process based on their project status.

SDG&E supports the proposal to create seven allocation groups and believes that replacing the current AFC deliverability option with groups 4, 5, 6, and 7 would be a big step forward. SDG&E appreciates the detailed descriptions given to each allocation group, especially groups 2 and 5, in which it is specified that the shortlisted project must execute a PPA by November 30th of the calendar year that such a TPD allocation was received. SDG&E appreciates the clarification that the CAISO will only allocate TPD to energy only projects provided no new DNUs are required.

LS Power notes that in reviewing the new TPD allocation groups proposed by the CAISO, it does

not appear that existing energy only projects, which have not yet achieved commercial operation, fit in any proposed allocation group. As such, LS Power believes CAISO should create an option for these projects to seek deliverability.

Stakeholder Comments on the Straw Proposal-specific Topics

TPD Allocation & Scoring prioritization:

CalWEA suggested that the CAISO tariff, or at least the BPM, should clearly spell out how TPD capacity allocation would be prioritized within each Allocation Group.

EDF-R and sPower suggest that allocation groups 4 through 7 can currently request deliverability through the AFC Deliverability Study. However, those projects receive only "leftover" deliverability (e.g. are allocated deliverability only after new generation projects in the regular Interconnection Studies process, and further, do not have the ability to trigger, and pay for, DNUs).

EDF-R recalls the CAISO mentioning at the stakeholder meeting that the new allocation proposal includes some kind of methodology change that would make more deliverability available to such projects, and EDF-R believes this aspect should be better clarified in the proposal. EDF-R believes the CAISO should explain assumed changes to the deliverability availability methodology in the proposal that would increase available deliverability. EDF continues to advocate for the CAISO to also perform analyses in study areas where deliverability is now exhausted to show how much additional deliverability would be provided in those areas through the proposed change.

First Solar requested that the CAISO clarify the process for calculating deliverability and explain why this newly-structured ranking process provides an opportunity for allocation to the energy-only process. First Solar believes it would be valuable to have details that allow interconnection customers to better understand the methodology for the allocation and why the CAISO believes that the new process creates a better opportunity for TPD allocations to energy-only projects.

First Solar agrees with the logic behind the limitation on extensions of time in queue, however, for a project that successfully executes or receives regulator-approval for a PPA, First solar believes it makes commercial sense, and sense for ratepayers, to align the COD with the PPA requirements, including extensions beyond the 7 year time-in-queue limitation if need be.[1]

Elimination of Balance Sheet Financing

CalWEA and First Solar raise questions regarding the TPD allocation for projects that selected Balance-Sheet-Financing on their Seeking TPD Affidavit prior to this proposal becoming effective. CalWEA and First Solar suggest that CAISO clarify that the removal of the balance-sheet-financing option and all of its features is on a prospective basis only and clarify how it intends to make the delineation clear as to which projects will be subject to the new rules. Further, the CAISO should explain how the current balance-sheet-financed projects will be treated in the annual commercial viability and quarterly project status updates.

EDF-R believes the current options to select BSF on the seeking TPD affidavit has led to

[1] Section 6.7.5 of Appendix DD of the CAISO tariff already allows the alignment of the GIA COD with the PPA.

deliverability award and retention by less-viable and non-viable generation projects, and it should be eliminated. EDF-R agrees that projects without PPAs should be held to more stringent standards, as their viability is questionable (and more so the longer they remain in the queue). However, if and when they obtain PPAs, the CAISO should clarify that they can then be subject to rules applicable to projects with PPAs.

SDG&E and PG&E support the CAISO proposal to modify the concept of BSF and include stricter restrictions for those who plan to proceed regardless of their PPA status.

First Solar suggests that projects that elect to proceed without a PPA, in allocation Group Three, should be held to the limitation on extension of COD unless there are delays caused by the PTO or an affected system that are not under the control of the interconnection customer.

In addition, First Solar believes a project should not be required to move immediately into the notice to proceed if it is not yet ready for development. First Solar believes that requiring the notice to proceed within 30 days of executing the GIA establishes an artificial deadline that may not account for timing of permitting. Since the CAISO is already modifying the rules to tighten up the time-in-queue provisions for projects proceeding in Group Three, First Solar urges the CAISO to allow these projects the same rights granted to other projects to manage the commercial and environmental elements of the project in line with GIA terms to bring the project to commercial operation.

Elimination of Annual Full Capacity Deliverability Option

SCE, SDG&E, and PG&E support the CAISO's proposal to have Groups four, five, six, and seven in the TPD Allocation sequencing to replace the current AFC deliverability option. SCE believes this process will serve as an alternative to energy-only projects requesting to reenter the queue to seek TPD. Further, SDG&E believes the current AFC process is not very beneficial and is open to allowing Interconnection Customers to seek TPD after they have exhausted their opportunities through the standard allocation process.

LS Power states that the CAISO's current AFC Deliverability allocation does not require a project to be commercially operational whereas this proposal does. LS Power proposes to create an option for such non-commercially operational projects to obtain TPD.

Project's ability to re-enter the queue to seek deliverability

EDF-R, sPower, LS Power and CalWEA believe energy only projects, whether or not the project has achieved commercial operation, should have an opportunity to re-enter the regular queue study process, have an opportunity to construct DNUs, and receive deliverability awards on the same basis as new generation projects in the cluster study process. Additionally, CalWEA suggests that these energy only projects should be allowed to finance Local Deliverability Network Upgrades (LDNUs) that were once triggered by an earlier queued project that are no longer deemed necessary.

SCE is not opposed to allowing existing, currently operating, Energy Only projects opportunities to reenter the queue in order to seek deliverability as long as the interconnection customer bear the full cost responsibility of any needed deliverability upgrades.

Commercial Viability Criteria PPA Clarifications

PG&E and SDG&E support the elimination of the BSF reference for the purpose of meeting CVC and believe this will prevent unnecessary time and resources be spent on projects that are not likely to proceed.

SCE supports providing projects means, beyond an executed or regulator-approved PPA, for demonstrating their commercial viability. SCE believes that while the CAISO proposes to eliminate the ability of a generator to rely on BSF as part of the commercial viability process, the CAISO's proposal does allow a resource developer to demonstrate its viability absent a PPA.

Stakeholder Comments to the proposed Allocation Ranking Groups

Allocation Group One

CalWEA, EDF-R, sPower, the Six Cities, and LS Power believe that in order to place a LSE-developed resource in proposed Allocation Group One, CAISO should require the LSE to demonstrate (similar to a regulator-approved PPA) that the project must meet the LSE's own loads (e.g. being developed pursuant to a regulator-approved procurement plan or are otherwise sized to meet their loads (not just a project that is being considered by that LSE)).

LS Power also commented on the process in which projects are procured through a LSE, suggesting that only after the LSE has completed a competitive acquisition process should their project be considered as Group One.

Allocation Group Three

CalWEA suggested that, at the conclusion of the Phase 2 study, CAISO should allow projects with demonstrated "productive" commercial activities (*e.g.* advanced bilateral negotiations with one or more LSE), subject to verification by the CAISO (*e.g.*, attestation by the LSE), also to be included in Allocation Group Three.

CalWEA suggested that a project proceeding without a PPA, in Allocation Group Three, should be allowed to delay COD beyond 7 years if it can demonstrate that the source of the delay is outside of its control (*e.g.*, PTO delay in construction of interconnection facilities, distribution or network upgrades, or delays in securing environmental permitting).

CalWEA further suggested that a project proceeding without a PPA, in Allocation Group Three, that parks the energy only portion of its project should be allowed to change the status of its project to a "PPA-approved" project if, during the parking period, they can secure a PPA.

Allocation Group Four & Five

First Solar, EDF-R, and sPower share concerns that the TPD allocation ranking proposal does not match LSE procurement or market realities, and further believe the CAISO proposal structure is inconsistent with the ways in which projects are procured and developed. In particular, groups four and five assume that a developer would undertake the considerable effort needed to develop a project through an RFO shortlisted position (which typically requires a Phase II Study) and execute a PPA (which nearly always involves provision of significant development security to an off-taker) with no assurance that the project would receive deliverability.

Allocation Group Six & Seven

SDG&E feels it is counterintuitive that projects that have achieved commercial operation are allocated TPD after projects that have not achieved COD (Allocation Groups Six and Seven) and would like the CAISO to explain why these projects are given a lower priority in the proposed ranking.

CalWEA suggests Energy Only projects in proposed Allocation Groups Six and Seven should be allowed to apply for TPD allocation and deliverability capacity upon GIA execution, not necessarily waiting until COD.

CAISO Response

CAISO Comments on the Straw Proposal-specific Topics

TPD Allocation & Scoring prioritization

The CAISO's overarching intent is to modify TPD allocation process in the way in which the determination of what projects are allocated TPD is based on the project's business need or PPA requirement. The ISO is eliminating the concept of "leftover" capacity in the AFC process and defines specific criteria and groups to which TPD is allocated on an annual basis. Thus, the AFC allocation mechanism for seeking TPD will be eliminated.

Within each allocation group, the ISO intends to utilize the scoring mechanism currently established, with slight modifications. More specifically, the tariff and GIDAP BPM would be modified to include the proposed seven allocation groups, how projects would be scored within each allocation group, and confirmation of the project's PPA Status. The allocation ranking and scoring mechanism is proposed below.

In response to EDF-R suggesting that the CAISO discuss the concept of creating more TPD; the CAISO does not have the ability to increase available TPD. The decision on whether policy driven deliverability network upgrades to provide deliverability for renewable resources beyond the 33 percent Renewable Portfolio Standard (RPS) level to some higher level is within the purview of the CPUC. The CAISO's role in that process is to provide technical guidance on the impacts and effectiveness of such a decision on the transmission system and the identification of needed system upgrades in the implementation process following such a decision utilizing the CAISO's Transmission Planning Process (TPP). In addition, as discussed above, the CPUC has yet to determine the final ELCC methodology so any additional TPD that may be made available from that CPUC change is unknown at this time. However, the ISO believes that the proposed TPD allocation process will result in TPD being allocated to only those projects that have a demonstrated business requirement. As a result, over time more TPD may become available as projects who currently hold TPD allocations and do not obtain a PPA lose those allocations in the allocation retention process, freeing up TPD for those projects that can demonstrate a business requirement.

It is unclear the deliverability calculation First Solar is referring to. However, the CAISO believes this proposal allows energy only projects the opportunity to obtain TPD similar to the current AFC allocation process and further, provides energy only projects greater opportunity to receive TPD in the event they are able to enter into a PPA with a LSE that requires the project to be FCDS.

With regard to First Solar's suggestion to allow a project to align its COD with its PPA by extending its COD beyond the 7 year time-in-queue, the CAISO tariff Appendix DD Section 6.7.5 already provides an opportunity for COD extensions to align with a projects PPA. However, having a PPA is not the only factor that makes a project commercially viable and thus, projects exercising this extension provision must still demonstrate they meet the CVC.

Elimination of Balance Sheet Financing

The CAISO believes it would be considered retroactive ratemaking to apply this TPD allocation proposal to projects that previously received a TPD allocation based upon an attestation of balance sheet financing. If the schedule proposed below is acceptable, all projects that sought and received a TPD allocation in Cluster 9 and prior will not be subject to the new TPD allocation methodology. Any project in Cluster 8 or 9 who received an allocation, but declined it and parked, whether or not they claimed BSF, will be required to follow this new TPD allocation methodology. Cluster 10 and later clusters will be subject to the new TPD allocation methodology.

Regarding projects with an allocation currently subject to CVC, projects that used the BSF designation to demonstrate CVC prior to the new rules will see no changes. However, any project with an allocation and under CVC that submits an MMA to extend its COD further after the FERC approval date of this proposal will be subject to the new requirements and will no longer be able to cite BSF for CVC.

In response to EDF-R's BSF and PPA comments, the CAISO agrees that adjustments are necessary to ensure the most viable projects proceed appropriately. The CAISO also believes there is a difference and separation between how a project finances a project and the commercial/PPA status of such project. The CAISO is proposing to eliminate the concept of BSF from the current TPD allocation and retention model and shift to a mechanism that allocates/ranks projects based on their ability to obtain a PPA within the initial allocation and parking period following the Phase II studies, followed by an ongoing process for energy only projects that are able obtain a PPA that requires TPD or that achieves commercial operation.

The CAISO agrees with First Solar that an interconnection customer should not be impacted by PTO or affected system delays. However, historically, affected system issues have not impacted a project's ability to reach COD. Therefore, coordination to ensure that a project is able to move forward in accordance with the timeline specified in their GIA is done in accordance with the existing affected system process. With respect to PTO delays, the CAISO allows COD modifications through the modification process to ensure a project's COD aligns with a PTOs estimated timeline to constructed needed network upgrades.

In addition, upon further review, the CAISO agrees with First Solar that it may not be practical in all scenarios to require a project to provide a notice to proceed to the PTO immediately following the GIA execution. The CAISO has eliminated this requirement for Group Three. However, to ensure the intent of projects proceeding without a PPA proceed through the process without delay (to execute a GIA, proceed to construction, and achieve COD in a timely manner), the CAISO has adjusted the criteria for projects proceeding without a PPA, in Group Three, in the proposal below.

Elimination of Annual Full Capacity Deliverability Option

It is the CAISO's intention to shift to a mechanism where TPD is only allocated to those energy only projects that have a commercial or business need to obtain it. An energy only project that has achieved commercial operation or obtained a PPA will have an opportunity to seek and obtain TPD provided no additional network upgrades are required. The CAISO does not find it appropriate to allocate TPD to energy only projects that have not achieved commercial operation. Energy only projects may seek TPD in Groups four through seven as proposed below.

Project's ability to re-enter the queue to seek deliverability

The CAISO understands the desire for energy only projects to have an ability to re-enter the cluster study process to be restudied and have an opportunity to build and pay for DNUs necessary to achieve FCDS and to seek and obtain a TPD allocation. The CAISO is still considering its position on this issue. The CAISO requests that stakeholders provide comments on this issue and provide specific proposals on how the deliverability study process within the current two-phase study process would be modified to allow projects to re-enter the queue cluster study process to be restudied for FCDS, eek TPD, and pay for DNUs if necessary.

Commercial Viability Criteria PPA Clarifications

The CAISO appreciates the feedback in support of the proposal to eliminate the BSF criteria from the CVC process. The CAISO will proceed with this modification.

CAISO Comments, clarifications, and additions to the proposed Allocation Ranking Groups

Allocation Group One

The CAISO agrees with stakeholders that a requirement should be established such that an LSE must demonstrate it has received regulator-approved authority to develop such project in order to meet their own load (similar to an independent project having a regulator-approved PPA). An LSE will be prohibited from receiving TPD under allocation Group One in the event the LSE is developing a project with the intention of selling such energy (or project) to market or otherwise, unless the project can demonstrate it has an executed PPA with an LSE located within the CAISO Balancing Authority Area.

The CAISO understands that LSEs may have various paths for procuring projects or resources based on business need, regulatory requirement, or otherwise. It is not the intention of the CAISO to require LSEs to procure projects and obtain TPD via a specific mechanism. However, as stated above, if an LSE is developing a project for the purpose of serving its own load and doing so under a regulator-approved requirement, the LSE can seek TPD under allocation Group One.

Allocation Group Three (and relative to Groups Two and Five)

CalWEA suggests that projects with demonstrated "productive" commercial activities (negotiations) also to be included in Allocation Group Three. The intention of Group Three is to provide customers an opportunity to develop a project without a PPA and therefore will not have an opportunity to claim they are negotiating or seeking to obtain a PPA as a method of acceptance or otherwise delay of their project. However, the CAISO will consider active

negotiations, outside of an RFO/RPF process, as shortlisted commercial status. More specifically, if a project is in productive commercial activities, such as negotiating a PPA (and that PPA ultimately requires the project to be FCDS), and outside of a formal RFO/RFP procurement process (with attestation to and verification by the CAISO), those customers or projects will be permitted to seek a TPD allocation under allocation Group Two or Group Five, based on the project's location/status within the TPD allocation process (proceeding through the study/parking process or converted to energy only). As such, the CAISO will confirm the status of such negotiations with the LSE.

Allocation Group Three

In response to CalWEA (and First Solar's comments on section 4.2), the CAISO agrees that a PTO delay is a permissible reason to delay a projects COD. The CAISO has adjusted the criteria for projects proceeding without a PPA in Group Three.

In response to CalWEA's suggestion that a project proceeding without a PPA in Allocation Group Three, that parks a portion of its project (due to it not receiving all or a portion of a TPD allocation), should be allowed to change the status of its project if they can secure a PPA during the parking period. The CAISO agrees with the suggestion by CalWEA and has provided clarification to the proposal below.

Allocation Group Four & Five

The CAISO understands stakeholder concerns regarding the likelihood of energy only projects opportunity to bid into and be selected in an RFO/RFP, and further the likelihood of a project to commit significant development security without surety that the project will obtain TPD. The CAISO's intent is to provide more opportunity for all energy only projects, with a business or regulatory need, to obtain TPD. Further, the CAISO believes that there may be opportunity to improve coordination between the LSE procurement processes and timing and the CAISO queue cluster study process. The CAISO is soliciting input and suggestions of how to initiate and establish such coordination.

The CAISO does not plan to remove these groups based on current stakeholder feedback. However, in consideration of seeking additional input, the CAISO has additional questions for stakeholders:

1. In the event, through an RFO/RFP evaluation process, a project is determined to be least cost/best fit for a LSE, do developers/customers have an opportunity to and/or are LSEs willing to execute a PPA contingent on receiving TPD? None of the allocation groups have a guarantee of obtaining a TPD allocation prior to the allocation process, so even a project in Group One who has an executed PPA enters the TPD allocation process with no guarantee of receiving an allocation. Furthermore, it seems that PPAs would be contingent, ultimately, on obtaining regulator-approval and therefore, could a PPA be executed contingent on obtaining TPD?

2. If the reality of a project's opportunity to obtain TPD and proceed under allocation Group Four or Group Five is unrealistic, are stakeholders in favor of eliminating these groups from the proposed allocation groups?

Allocation Group Six & Seven

The CAISO provides the following response to the stakeholder question about why energy only projects that have achieved commercial operation should be allocated TPD ahead of those projects that have executed a PPA or are shortlisted and have not yet reached commercial operation. The CAISO's intent for this proposal is to provide those projects with a regulatory-approved and/or business need to obtain a TPD allocation ahead of those projects that do not have a regulatory-approved and/or business need.

The CAISO will not consider projects under the circumstances where such project could obtain TPD just by executing a GIA. This would likely provide a majority, if not all, projects the opportunity to seek and obtain TPD and leave nothing available for those with a regulatory and/or business need for it.

CAISO TPD Allocation Proposal

Allocation Groups

Allocation Group One includes those projects that are active as FCDS projects, have just completed the Phase II study process or and are seeking a TPD allocation following their parking opportunity(s), and have an executed or regulator-approved PPA with an LSE that requires the project to be FCDS or projects being developed by an LSE that already has regulatory authority to construct such project. An LSE seeking TPD in Group One must be constructing its project for the purposes of fulfilling a regulatory requirement and for serving its own load. More specifically, an LSE may not build a project to serve load outside its service area and seek TPD under Group One, unless the project can demonstrate it has an executed PPA with an LSE located within the CAISO Balancing Authority Area that requires the project to obtain FCDS. The parking opportunities for the projects in this group will remain unchanged.

Allocation Group Two includes those projects that are active as FCDS projects, have just completed the Phase II study process, and are seeking a TPD allocation following their parking opportunity(s) and are included on a commercially recognized method of preferential ranking of power providers (*i.e.*, shortlisted) by a prospective purchaser (LSE) that require the project to be FCDS. If a shortlisted project receives a TPD allocation, the interconnection customer must execute a PPA by November 30th of the calendar year such allocation was received. If a PPA is executed, the interconnection customer must attest that the PPA has been executed in the retention affidavit, typically due on or around December 1st, to solidify the allocation. Otherwise the TPD is released and becomes available for the next allocation cycle. Further, regulatory approval of such executed PPA must be received by the following year's TPD retention affidavit due date to solidify the allocation. If not, the TPD is released and becomes available for the next allocation cycle.

Allocation Group Three includes those projects that are active as FCDS projects, have just completed the Phase II study process, and have declared that it is their intent to proceed with developing their project regardless of whether they obtain a PPA. The only point in the GIDAP process a project can proceed in Allocation Group Three is following the project's Phase II Study. More specifically, the only time a project can declare it will proceed without a PPA is in the seeking TPD affidavit and allocation cycle immediately following the project's Phase II study. If a

project claims that it will proceed without a PPA and receives an allocation, it must accept the allocation (whether full or partial) or withdraw. If a partial allocation is received, the project may elect to park the remaining portion of the project that did not get TPD and seek TPD in the next allocation cycle, or downsize to the size corresponding with the TPD allocation they previously received. In the event a TPD allocation is not received, that project may elect to park with their respective queue cluster and seek a TPD allocation, in Group Three, in the following allocation cycle. However, if a project 1) receives a partial allocation and parks that portion of the project that did not receive an allocation, or 2) does not receive an allocation and parks all of its project, and the project can demonstrate that it has improved its commercial status (executed a PPA) by the next seeking/retention affidavit due date, then the project may seek TPD for the parked portion of the project by claiming a higher allocation group (Group One or Group Two) in the next seeking TPD Affidavit.

It is expected that a project electing to proceed without a PPA will continue developing their project in a timely manner. As such, there should be no need for the interconnection customer to delay the negotiations of the GIA, start of construction, or progress towards achieving commercial operation. Therefore, at the time a project has declared it will proceed without a PPA and is allocated TPD, the following requirements would apply to the project:

- Project must accept the TPD allocation. If the project chooses to not accept the TPD allocation, the project must withdraw from the queue;
- Project will not be afforded any suspension provisions in its GIA;
- Project will lose TPD allocation if Notice To Proceed is not provided to the PTO as established in the GIA milestones;
- Project agrees that the CAISO and PTO will not consent to COD extensions beyond the earlier of 1) the COD established in the interconnection request, or 2) 7 years in queue, under any circumstances except a PTO delay.

Allocation Group Four includes those projects that selected FCDS on their interconnection requests, have been converted to energy only following the cluster study and parking opportunities, and have an executed or regulator-approved PPA with a LSE that requires the project to be FCDS. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Five includes those projects that selected FCDS on their interconnection request application, have been converted to energy only deliverability status following the cluster study and parking opportunities, and are included on a commercially recognized method of preferential ranking of power providers (*i.e.*, shortlisted) by an LSE that requires the project to be FCDS. If a shortlisted project receives a TPD allocation, the interconnection customer must execute a PPA by November 30th of the calendar year such allocation was received. If a PPA is executed, the interconnection customer must attest that the PPA has been executed in the retention affidavit to solidify the allocation (*e.g.*, affidavits were due December 1st in 2017). If the steps described here are not completed, the TPD is released and becomes available for the next allocation cycle. Further, regulatory approval of the PPA must be received by the following year's TPD retention affidavit to solidify the allocation. If not, the TPD is released and becomes

available for the next allocation cycle. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Six includes those projects that selected FCDS on their interconnection requests and have been converted to energy only following the cluster study and parking opportunities and have achieved commercial operation. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Seven includes those projects that selected energy only and have achieved commercial operation. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Summary

Allocation Group	Project Status	Commercial Status	Can Build DNUs for Allocation?	Allocation Rank
1	Study/Parking Process	Executed or regulator-approved PPA requiring FCDS or interconnection customer is a LSE serving its own load	Yes	Allocated 1st
2	Study/Parking Process	Shortlisted in a RFO/RFP	Yes	Allocated 2nd
3	Study Process (Following Ph. II Only)	Proceeding without a PPA (f.k.a., BSF)	Yes	Allocated 3rd
4	Converted to Energy Only	Executed or regulator-approved PPA requiring FCDS	No	Allocated 4th
5	Converted to Energy Only	Shortlisted in a RFO/RFP	No	Allocated 5th
6	Converted to Energy Only	Commercial operation achieved	No	Allocated 6th
7	Energy Only	Commercial operation achieved	No	Allocated 7th

Timing and implementation of proposed TPD Allocation methodology: The CAISO's target is to implement this TPD allocation proposal in the upcoming 2018/2019 allocation cycle. The CAISO is planning to present this topic to the CAISO Board of Governors at the September Board meeting and file with FERC no later than September 30, 2018. Assuming FERC approves the filing as proposed and without delay, the CAISO will implement this aspect for the 2018/2019 TPD allocation cycle. This would include a modification to the seeking and retention TPD affidavits typically due December 1st. If the proposed schedule above works, all projects that sought and received a TPD allocation in Cluster 9 and prior will not be subject to the new TPD allocation methodology and will be subject to meeting CVC. Any project in Cluster 8 or 9 allocated TPD, that declined their allocation and parked, whether or not they claimed BSF, will be required to follow this new TPD allocation methodology. Cluster 10 and later clusters will be subject to the new TPD allocation methodology.

TPD Allocation Process and Scoring Methodology: The TPD Allocation Process for TPD, as currently identified in Tariff Appendix DD Section 8.9, the GIDAP BPM Section 6.2.9, and the Seeking TPD affidavit, will be modified to reflect the following:

1. **TPD Allocation Group (Select one)**

   (1) In Study/Parking Process and
      a. Executed/regulator-approved PPA requiring FCDS status
      or
      b. Load Serving Entity with regulator-approved authority to develop and serve own load

   (2) In Study/Parking Process and shortlisted in RFO/RFP

   (3) Proceeding without a PPA

   (4) Project was studied as FCDS, converted to Energy Only, and has executed/regulator-approved PPA requiring FCDS status

   (5) Project was studied as FCDS, converted to Energy Only, and shortlisted in RFO/RFP

   (6) Project was studied as FCDS, converted to Energy Only, and has achieved Commercial Operation

   (7) Project was studied as Energy Only and has achieved Commercial Operation

2. **The project's PPA Status (Allocation Groups 1 and 4 Only)**

   A. (10 points) The Interconnection Customer represents to the CAISO that it has a regulator-approved power purchase agreement with a Load-Serving Entity that serves end users in its service area requiring the project to be FCDS status or an executed power purchase agreement that does not require any further regulatory approval.

   B. (7 points) The Interconnection Customer has an executed power purchase agreement requiring the project to be FCDS status, but such agreement has not yet received regulatory approval.

3. **The project's PPA Status (Allocation Groups 2 and 5 Only)**

   A. (Minimum criteria, no points) The Interconnection Customer does not have an executed power purchase agreement, but the Interconnection Customer is included on an active short list or other commercially recognized method of preferential ranking of power providers by a prospective purchaser Load Serving Entity in the CAISO balancing authority area requiring the project to be FCDS status.

4. **The Project's permitting status (All allocation Groups 1 – 7)**

   A. (10 points) The Interconnection Customer has received its final governmental permit or authorization allowing the Generating Facility to commence construction.

   B. (5 points) The Interconnection Customer has received a draft environmental report (or equivalent environmental permitting document) indicating likely approval of the requested permit and/or which indicates that the permitting authority has not found an environmental impact which would likely prevent the approval. For purposes of this requirement, a draft environmental report can take the form of a draft environmental impact report, draft environmental impact statement, environmental assessment,

mitigated negative declaration, or CEC preliminary staff assessment. Findings that would qualify as those which would indicate likely approval include no environmental impacts found that cannot be mitigated to insignificance, or in the case of a National Environmental Policy Act document, the Project has been identified as the preferred alternative. If Federal or State Endangered Species Act permits are required, draft environmental reports for such permits have been received and similarly either indicate likely approval or do not find an impact that would likely prevent approval.

C. (3 points) The Interconnection Customer has applied for the necessary governmental permits or authorizations and the authority has deemed such documentation as data adequate for the authority to initiate its review process.

D. (1 point) The Interconnection Customer has applied for the necessary governmental permit or authorization for the construction.

5. The Project's land acquisition status (All allocation Groups 1 – 7)

A. (3 points) The Interconnection Customer can demonstrate a present legal right to begin construction of the Generating Facility on one hundred percent (100%) of the real property footprint necessary for the entire Generating facility.

B. (2 points)The Interconnection Customer can demonstrate Site Exclusivity.

Groups Four, Five, Six, and Seven will replace the current AFC deliverability option specified in CAISO Tariff Section 9.2.1. These energy only allocation options are intended to serve as the opportunity where stakeholders have requested that a project be able to reenter the queue to seek TPD. For reasons described above, while these options do not allow for a project to reenter the queue to seek TPD, (*e.g.*, to be restudied for and allowed to fund additional DNUs) it serves as an opportunity where an energy only project can seek a TPD allocation without triggering new network upgrades.

The CAISO will perform a TPD allocation assessment within the annual reassessment study to determine what energy only projects are eligible receive a TPD allocation. An initial step of the allocation assessment is a process to determine if any energy only projects seeking an allocation are located behind a local constraint. This will ensure that no energy only project seeking a TPD allocation require a LDNU to be deemed deliverable. This process has been used for projects seeking FCDS through the AFC Deliverability Option. To ensure that local deliverability is retained for all FCDS projects, including projects in the most recent Phase I study, the methodology to determine project's impacts on local constraints is to include all active interconnection queue projects seeking FCDS in the study model, including the FCDS projects that have just completed their Phase I study. Additionally, all transmission upgrades approved in the Transmission Planning Process (TPP) and all interconnection related network upgrades that are under construction are modeled. No capacity associated with area deliverability is retained for any projects that have not yet received a TPD allocation. Energy only projects that are not located behind a local constraint are eligible to receive a TPD allocation up to the point where all local deliverability and area deliverability is fully allocated.

All projects, regardless of whether a project is seeking a TPD allocation, must submit a seeking TPD affidavit. The seeking TPD affidavit, available on the CAISO's public website, must be completed annually and is typically due on or around December 1st.

For all projects with an energy only status that submit a seeking TPD affidavit, consistent with the downsizing process, the CAISO will require a $60,000 deposit for each project requesting TPD allocation. The CAISO will utilize this deposit to cover costs associated with the evaluation and TPD allocation process. The CAISO will deposit all TPD allocation deposits in an interest-bearing account at a bank or financial institution designated by the CAISO. The TPD allocation deposit will be applied to pay for reasonable costs incurred by the CAISO, the PTOs, or third parties at the direction of the CAISO or PTOs. The interconnection customer will be charged the actual cost incurred and once the evaluation is completed, excess funds will be returned with interest or, in the event the deposit is utilized entirely, an invoice will sent to the interconnection customer requesting additional funds.

CAISO Commercial Viability – Elimination of Balance Sheet Financing Proposal

When interconnection customers request an extension to a project's COD the CAISO evaluates the request under the material modification assessment (MMA) process. The CAISO requires interconnection customers to prove their project meets CVC to extend their milestones beyond the 7/10 year threshold, as it applies to project's studies under the cluster and serial study processes, respectively.[2] The current CVC are:

- Having, at a minimum, applied for the necessary governmental permits or authorizations and that the permitting authority has deemed such documentation "as data adequate" for the authority to initiate its review process;
- Having an executed power purchase agreement, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing;
- Demonstrating Site Exclusivity for 100% of the property (in lieu of a Site Exclusivity Deposit);
- Having executed a GIA; and
- Being in good standing with its GIA such that neither the PTO nor the CAISO has provided the interconnection customer with a Notice of Breach of the GIA (where the breach has not been cured or the interconnection customer has not commenced sufficient curative actions).

The CAISO's current CVC were designed to complement the TPD allocation criteria. The current CVC can be thought about in broad terms as "TPD criteria plus", in other words, commercial viability is as stringent as TPD allocation criteria with respect to financing and GIA requirements, and is more stringent with respect to permitting and site exclusivity requirements.

[2] The In-Service Date ("ISD") for Generating Facilities studied in the serial study process shall not exceed ten (10) years from the date the Interconnection Request is received by the CAISO. For Generating Facilities studied in the cluster study process, the COD shall not exceed seven (7) years from the date the Interconnection Request is received by the CAISO.

The CAISO proposes to eliminate the ability to claim BSF as part of the commercial viability process. In this proposal, interconnection customers requesting an extension to a project's COD beyond the 7/10 year threshold will have three options:

- The interconnection customer could demonstrate CVC with a PPA that provides a later in-service date of such project, then the COD extension would be approved to that delivery date and deliverability is maintained. This option would apply for all projects with a PPA, as part of Group One or Four above. This does not apply to those projects that elected to proceed without a PPA (i.e. Group Three above).
- The project could have a COD extension approved absent commercial viability demonstration, move forward with the project as energy only (if desired), and then seek deliverability through the new processes proposed in this Section 4.1. This option would apply for all projects except those that elected to proceed without a PPA (i.e. Group Three above).
- If the PTO is delayed in construction of the network upgrades, then the COD extension would be approved and deliverability is maintained. The extension would consist of a day-for-day slip based on the new in-service date provided by the PTO, regardless of the projects allocation group.

In consideration of and consistent with the revised TPD allocation criteria above, the CAISO proposes to eliminate BSF as an option in the commercial viability process. Therefore, the CAISO is also proposing to modify the CVC in Appendix DD, Section 6.7.4 of the CAISO Tariff.

4.2 Balance Sheet Financing

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.3, 4.5 and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.3 Participating in the Annual Full Capacity Deliverability Option

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.5 and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.4 Change in Deliverability Status to Energy Only

Background/Issue

The CAISO is seeking to clarify when projects may elect to convert to energy only deliverability status, when the CAISO will convert projects to energy only regardless of customer election, and the consequences for such conversions.

Currently, projects may voluntarily convert from FCDS or Partial Capacity Deliverability Status

(PCDS) to energy only deliverability status only at certain times during the interconnection process. A project may convert to energy only deliverability status between Phase I and Phase II studies, or immediately following the TPD allocation process (either after the Phase II study or after parking for parked projects). This restriction minimizes impacts on other projects and the PTOs. Projects that convert to energy only deliverability status at these times are no longer responsible for DNU costs going forward.

Although the CAISO tariff is specific on when a project can voluntarily convert to energy only deliverability status, it does not specify whether a project can request energy only deliverability status at other times during the interconnection process, nor does the tariff describe the consequences of such conversion, particularly with regard to financial obligation for DNUs.

Projects are currently required to convert to energy only deliverability status for failure to meet commercial viability or TPD retention criteria. If the CAISO converts a project to energy only deliverability status under these conditions, all DNU costs are removed from the converting project's cost responsibility. However, the CAISO believes that some project developers may seek to utilize the conversion requirements associated with failure to meet CVC and TPD retention criteria to reduce their cost responsibility and then withdraw. The CAISO believes this outcome is problematic because it potentially allows projects to shift costs to other project developers inappropriately or to the PTOs. Failing to be commercially viable effectively becomes an attractive option for interconnection customers contemplating withdrawal.

The CAISO proposed that projects that change to energy only deliverability status as a result of failure to meet commercial viability or TPD retention criteria will retain the cost responsibility for all DNUs.

The CAISO also proposed that projects may request to change their deliverability status to energy only at any time after the Phase II study. These requests will be evaluated in the annual reassessment study to determine cost responsibility for the project. If the DNUs are still required, the project will be converted to energy only, but will retain the cost responsibility for those upgrades. If, however, the DNUs are no longer needed, the upgrades will be removed from the project's cost responsibility.

Stakeholder Input

SDG&E and Six Cities support the proposal. CalWEA supports the proposal and requests clarification that a project should be allowed to seek conversion to PCDS in the proposed process. SCE would support if the Interconnection Customer retains cost responsibility for all DNUs still required for queued generators.

EDF-R and sPower believe that it would be unfair for generators seeking such changes to continue to fund DNUs for which they arguably receive no benefit and that there should be a preliminary assessment of whether the need for DNUs would remain.

First Solar opposes the proposal to require projects to continue to pay for DNUs when the conversion is required due to failure to meet commercial viability.

CAISO Response

The CAISO proposes two clarifications from the straw proposal based on stakeholder comments. First, projects that change to energy only deliverability status as a result of failure to meet commercial viability or TPD retention criteria will retain the cost responsibility for all DNUs unless the annual reassessment study shows that the DNUs are no longer needed for other queued projects. If the DNUs are no longer needed, the upgrades will be removed from the project's cost responsibility. The CAISO believes that without this requirement, interconnection customers will be incentivized to remain in queue and then purposely fail the CVC to reduce their non-refundable IFS. The CAISO already has seen examples of this behavior.

The second clarification is that projects may request to change their deliverability status to energy only or PCDS at any time after the Phase II study.

In response to comments submitted by EDF-R and sPower, the CAISO does not have the ability to perform a preliminary assessment of whether the need for DNUs would remain if a project were to convert to energy only or PCDS. This determination requires a study. The proposal to have the evaluation performed as part of the annual reassessment study is consistent with the requirements that are in place for projects seeking to downsize. This approach has proven effective for the downsizing process and we believe that it is the best approach for this application as well. As with the downsizing process, if a project requests to change to energy only, the project is making a commitment to that change, regardless of the result of whether any DNUs are removed or continue to be required for other projects.

4.5 Energy Only Projects' Ability to Re-enter the CAISO Queue for Full Capacity

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.3, and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.6 Options to "Transfer" Deliverability

Background/Issue

Currently interconnection customers have some ability to effectively "transfer" deliverability to a different owner through the repower process and within a generating facility at the same Point of Interconnection (POI) through the material modification analysis. The CAISO clarifies that deliverability is not a property right and may not be sold or otherwise assigned; only transferred with an entire interconnection customer itself. The CAISO calculates deliverability based on the deliverability assessment methodology.

Interconnection customers also may "transfer" their deliverability capacity among their own generating units (new and old) at their generating facility. Adding new generating units is generally done through the behind-the-meter expansion option under an independent study request. Any expansion using the independent study process is energy only unless the capacity

expansion uses the same technology as the original generating facility. If it is, the interconnection customer can elect to request to transfer its deliverability from the original generating units to the capacity expansion facility.

In the straw proposal, the CAISO clarified the methodology of deliverability transfers under various scenarios.

Opportunities to Transfer Deliverability

1. Deliverability Reservation from Repowering Generators

   When a generator with FCDS or PCDS plans to retire, the generator owner may request that the deliverability of its existing generator be preserved for its repowered project. The repowered project is either approved through the repowering process, if the total capability and electrical characteristics of the generating unit remain substantially unchanged, or by submitting it into the generation interconnection queue. As such, deliverability is transferred between the same owner, old and new generating units at the same site.[3]

2. Deliverability Transfer among Generating Units at a Generating Facility

   Upon request from the generator, the CAISO will transfer deliverability between existing generating units at the same POI, if owned by the same generator owner and under the same generating facility GIA. The CAISO will reduce deliverability from the transfer-from generating unit and assign to the transfer-to generating unit using the deliverability transfer calculation below. The transfer-to generating unit will have:

   - FCDS if the transfer-from generating units had FCDS or PCDS and the full deliverability is calculated for the transfer.
   - PCDS if the transfer-from generating unit had FCDS or PCDS and the partial deliverability is calculated for the transfer.
   - Interim Deliverability Status (IDS) if the transfer-from generator had IDS.

3. Deliverability Transfer within the Same Interconnection Request

   Interconnection customers are allowed to shift deliverability between different portions (*i.e.*, generating units) of the same interconnection request based on the deliverability transfer calculation below. This includes transferring deliverability to energy storage capacity conversions or additions made through the MMA review process. The CAISO will perform a deliverability transfer calculation and notify the interconnection customer of the resulting deliverability for each component of the project.

4. Deliverability Transfer for Behind-the-Meter Capacity Expansion

[3] The CAISO notes that for all of these, "generating units" are a generating facility capable of having their output separately metered such that they are able to have separate resource IDs and participate in the CAISO markets separately (where the interconnection customer elects to do so). Typical examples include bifurcations of large solar or wind resources (X turbines/panels are one unit, Y turbines/panels are another) and storage resources paired with any other generator. There are a myriad of other possibilities.

Currently, section 4.2.1.2 of Appendix DD requires that the behind-the-meter capacity expansion is metered separately from the original generating facility and assigned a separate resource ID, unless the expansion is the same technology as the original generating facility. When the behind-the-meter capacity expansion is metered separately, the expansion is energy only. The CAISO proposes to allow the interconnection customer to designate all or partial deliverability from the original generating facility to the capacity expansion. The CAISO will perform a deliverability transfer calculation to determine the resulting deliverability for the original generating facility and the capacity expansion.

Calculation of Transferred Deliverability

A major principle of a deliverability transfer is that the transfer results in the same or lower maximum output tested in the deliverability assessment, based on the methodology adopted at the time of the transfer request. The table below shows the maximum output in the deliverability assessment for different type of resources:

Table: Maximum Output Assumptions in Deliverability Assessment

	Existing	New
Non-intermittent Resources	Highest NQC value in last 3-year summer months	Requested Pmax
Intermittent Resources (solar and wind)	CAISO calculated exceedance level expressed as percentage of the interconnection capacity	

The deliverability transferred is calculated as:

$$(Deliverability\ \%)_{transfer-to} = \max\left\{100\%, \frac{(Max\ Deliverability\ Output)_{transfer-from}}{(Max\ Deliverabiity\ Output\ if\ FC)_{transfer-to}}\right\}$$

Stakeholder Input

CalWEA, EDF-R, First Solar, LS Power, SDG&E and PG&E support the CAISO's proposal. LS Power recommends that CAISO should make public the information regarding deliverability transfer review so that the interconnection queue can be informed of impacts of such requests on TPD.

CAISO Response

The CAISO does not propose any additional modifications to this aspect of the straw proposal. Because the deliverability is transferred on the basis that it would keep the same or lower the maximum output tested in the deliverability assessment, the transfer does not affect availability of TPD to any other interconnection requests. The publicly available generation interconnection queue information and BPMs reflect the approved changes, regarding the technology, size, and deliverability status. The CAISO does not believe there is a need to post more information regarding deliverability transfers.

5. Energy Storage

5.2 Replacing Entire Existing Generator Facilities with Storage

Background/Issue

In the prior Straw Proposal the CAISO proposed that for generating facilities that are retiring a portion of the project and want to continue to operate the storage unit that was added under the MMA process; the CAISO and PTOs will assess the impact of the system without the original generating facility and only the energy storage remaining. If there are no identified reliability issues then the energy storage can stay interconnected and continue to operate and any FCDS or PCDS that is available could be transferred from the retiring unit to the energy storage. If there are any identified reliability issues, then the generator cannot retire unless a mitigation is determined, or the energy storage will need to be disconnected at the time the unit retires. If a generating facility wants to retire and repower as energy storage, then it would need to go through the repowering process and the repowering rules will apply, including the potential transfer of FCDS or PCDS if the original generating facility has such status.

Stakeholder Input

The CAISO received five comments on this aspect of the straw proposal. Four comments supported the concepts the CAISO proposed with clarifications and one comment opposed policy that has been in place since the 2015 storage initiative.

Able Grid commented that they were concerned that some of the proposed procedures for converting an existing generating facility to energy storage would allow converted projects to leapfrog other energy storage projects in the interconnection queue. Able Grid believes this potentially compromises the equitable nature of the interconnection study process by giving incumbent generators a competitive advantage over new generators. Able Grid suggested that the operating range of a project be used as a simple metric to determine whether or not a repowered project is consistent with the original interconnection application. For example, if a 100 MW generator was originally studied as having an operating range from 0 MW to 100 MW, adding storage without re-entering the interconnection queue would be permissible as long the project is not charging from the grid and stays within the 0 MW to 100 MW operating range. By contrast, replacing the generator with a 100 MW energy storage facility that charges from the grid and operates in the range of -100 MW to 100 MW would be a material change that requires resubmission into the interconnection queue. Able Grid believes that this simple framework is consistent with past precedent under which an expansion of the operating capabilities of a project is a material change to the interconnection requiring a new interconnection application, and that it maintains the competitive nature of the interconnection study process while providing a clear framework for market participants.

CalWEA commented that 1) the “automatic” acceptable level of converting generation resource capacity (after the project signs it’s GIA) to storage should be 25% (rather than the current 10%), subject to a standard material modification assessment (MMA). This would be similar to the

rules for behind-the-meter capacity expansion; and 100% conversion of an existing project to storage should be allowed subject to the project adhering to CAISO charging instructions.

CESA observed that the current BPMs do not always provide clarity on pathways, such as through the material modification process, for the aforementioned repower-and-replace scenarios. Specifically, CESA raised ideas for the CAISO to consider in developing the study and interconnection processes for these scenarios:

> Consider whether the criteria for *de minimus* impact for repowering existing generation facilities with energy storage could apply to the criteria for *de minimus* impact for keeping the energy storage system online even as the original generation facilities retire.
>
> Consider whether the same fuel source requirement for repowering existing generation facilities with energy storage is necessary for keeping the energy storage system online even as the original generation facilities retire – *i.e.*, allowing energy storage to charge from the grid without a full cluster study review of load impacts.
>
> Consider whether and how deliverability transfers can occur when repowered energy storage systems remain online even as the original generation facilities retire.

With respect to the reliability assessment, CESA noted that energy storage systems can provide synthetic inertia that replicates the inertial response of the rotating mass from the gas generation it intends to replace. New provisions may be required (*e.g.*, state of charge and minimal energy requirements similar to how synchronous generators have minimum loading levels) in the interconnection agreement for the repowered energy storage resource to ensure that synthetic inertial response is provided.

As the CAISO has noted, short circuit duty is a grid service that may not be sufficiently provided by inverter-based technologies such as energy storage at this time, which may present reliability issues if the existing generation facilities are retired. CESA commented that there is potential for the provision of short circuit duty by alternative sources, such as synchronous condensers, where the costs could be borne by the remaining energy storage system which could resolve the concern.

Overall, CESA supports the CAISO's reliability study processes and understands that the charging impacts of the standalone energy storage facility must be studied. CESA aims to ensure that there is clarity on the reliability assessment in the facility study and that there are alternative pathways for repowered energy storage facilities to remain online.

With respect to Order 845 implementation, CESA believes that interconnection issues scoped into the 2018 IPE Initiative will need to be viewed and addressed within the context of the Order 845 issued by the Federal Energy Regulatory Commission (FERC) on April 19, 2018 that amended the pro forma Large Generator Interconnection Procedures (LGIP) and Large Generator Interconnection Agreements (LGIA)[4] in many different ways. Specifically around repower-and-replace scenario, Order 845 mostly deferred this issue as being outside the scope of this rulemaking and as appropriate for being addressed elsewhere, except to "ameliorate

[4] Reform of Generator Interconnection Procedures and Agreements, Docket No. RM17-8-000, issued April 19, 2018.

business and financial risk" to the surplus interconnection service customer.

SDG&E supports allowing a generating facility to add 100% (storage) of its approved capability to the project provided the output of the project does not exceed the interconnection capacity at the POI and the generator has a limiting mechanism to ensure that the additional capacity is not put on to the grid. SDG&E also accepts the proposal to allow up to a 10% change when decreasing the amount of proposed generation to replace it with energy storage. SDG&E also agrees that this is something that could be on a case-by-case basis moving forward. SDG&E appreciates the clarifications in regards to these projects following CAISO dispatch instructions since they are not considered a firm load, but are negative generation. SDG&E thinks it is important that the projects install an automatic generator tripping scheme and give the CAISO authority to trip the generating facility or take any other necessary actions to limit the output of the generating facility so the total output of the generating facility does not exceed the approved interconnection request capacity at the POI.

PG&E supports the CAISO's explanation of energy storage and understands that while a bright-line test for the maximum amount of transferred generation capacity from the original generation type to energy storage is not possible, the CAISO is open to generators transferring generation capacity more than 10%, depending on the specifics of the request.

CAISO Response

With respect to Able Grid's feedback, the CAISO already had a stakeholder process in 2015 that determined that storage was negative generation and interconnection customers could use the CAISO's generator interconnection process to request storage. The CAISO's MMA process can be used to revise existing projects that have already gone through the interconnection queue process. Stakeholders agreed that storage need not be studied initially as firm load and must respond to CAISO's dispatch instructions for both charging and discharging.

CalWEA and CESA may misunderstand the CAISO's position on the percentage of generation resource capacity that could be converted to storage via the MMA process. The CAISO is willing to consider anything short of 100% conversion to storage using the MMA process. In other words, provided the total MW capacity at the POI does not increase and the electrical characteristics are substantially unchanged the conversion to storage would be allowed. SDG&E and PG&E agree that the amount of conversions should be determined on a case-by-case basis.

CESA raised questions as to the reliability assessment when generating units request retirement. As stated in the GM BPM, the CAISO evaluates the reliability of the system without the retiring generating unit. The reliability studies include but are not limited to dynamic stability assessment, post-transient power flow, short circuit duty, contingency analysis, etc. If the storage unit were to remain the CAISO would determine if there is a reliability impact with only the storage unit connected to the grid and if there is an issue, can that be mitigated to allow the storage unit to remain.

For repowering, the GM BPM already outlines the requirements for repowering and the criteria that is applied. The CAISO has also worked with the repowering generators that had minor issues that were impeding the ability to repower, including revising equipment, to allow the repower request to be approved. The CAISO believes that all of CESA concerns regarding

repowering are already addressed in that BPM. However, if CESA has additional suggestions on modifying the BPM it can do so using the CAISO's BPM change management process.

Regarding Order No. 845, the CAISO is developing its compliance plan concurrently with IPE and will address related issues in future publications and consultation with stakeholders.

For generating facilities that are adding storage above 100% of their maximum MW, the CAISO and PTO have required the within 10 days of approving the modification, the interconnection customer must provide information regarding the mechanism by which the interconnection customer will limit the generator output to the approved MW capability.

Based on the clarifications above, the CAISO does not propose additional modification to this aspect of the Straw Proposal and will implement the proposed retirement clarifications through the GM BPM.

6. Generator Interconnection Agreements

6.1 Suspension of Notice

Background/Issue

The CAISO believes that modifications to the LGIA are needed to allow for request and approval of a project to suspend. Article 5.16 of the LGIA requires interconnection customers to notify the CAISO and PTO if a project will be suspended. This article is not specific in that requests are not required to include a start and end date for the suspension. The provisions also do not provide an opportunity for the CAISO to approve the terms of the suspension to ensure that the project is not in breach of the generator interconnection agreement (GIA) when suspension is requested. The current provisions also do not provide the CAISO the ability to ensure that the suspension will not impact other interconnection customers, or to the extent that it does impact other customers, to require the interconnection customer requesting the suspension to agree to continue paying for the joint network upgrades.

Stakeholder Input

EDF-R and sPower commented that CAISO's attempts to restrict unilateral suspension rights is understandable but not warranted. The requirement for firm suspension end dates (as opposed to the expected dates now required) is unrealistic. Often, the conditions dictating the need for suspension involve conditions with unknown timelines (*e.g.*, permitting problems) that do not allow for date certainty. At a minimum, a project should be permitted to extend its suspension end dates after the suspension begins, if the conditions driving the suspension have not been resolved, as long as the three-year COD delay is not exceeded.

EDF-R commented that the current rules already prohibit suspension of financial obligations for upgrades "common to multiple generating facilities," so a study or other analysis should not be required to process the suspension request. EDF-R believes any Material Modification Assessment (MMA) request to modify milestones should not be required until the project is ready to exit suspension, and it should be considered part of the obligation of the parties to negotiate revised milestones in good faith. In addition, EDF-R believes the CAISO should clarify that the

suspension of financial obligations should be effective upon submission of the suspension notice, and that those obligations should not continue during any lengthy CAISO processing.

First Solar agreed with CalWEA's comments that the start and end dates would be highly hypothetical but are supportive of the CAISO conducting a material modification assessment to ensure the suspension will not impact other interconnection customers and provide conditions to mitigate those impacts if identified.

SCE and SDG&E supported the CAISO's proposal to require the Interconnection Customer to include a proposed start and end date of the suspension in its suspension request (with the caveat that the end date be no more than three years from the originally proposed COD, as is currently the case in the pro-forma LGIA or three years from the date the suspension request is submitted, whichever is earlier). SCE and SDG&E believe the CAISO also should have the authority to approve the suspension, with concurrence from the PTO, by ensuring the project is in good standing and in determining how the milestones set forth in the GIA and later queued customers may be impacted during the suspension period. To address the potential of projects lingering without making an earnest effort to move towards achieving commercial operation or adversely impact queued behind projects, SCE also supported the proposed GIA modification to include language requiring the interconnection customer to negotiate in good-faith to expeditiously revise the milestone dates (at the end of the suspension period).

PG&E supported the CAISO's proposed requirement to Interconnection Customer's to submit the start and end date of their requested suspension in the suspension notice delivered to the CAISO and PTO. This change will allow the CAISO and PTO to confirm the suspension of the Project will not adversely affect the interconnection other Interconnection Customers.

CAISO Response

The CAISO believes that EDF-R and sPower may misunderstand the CAISO's proposal. The CAISO is not proposing to require firm dates, as the CAISO recognizes most generators do not know the extent of the suspension if there are permitting or land acquisition issues. The CAISO clarifies that it is asking for the interconnection customer to submit an MMA with the request for suspension stating the start and estimated end date so that the CAISO can realistically assess the impact to other projects, including those that are precursor network upgrades for other projects. The CAISO believes this is preferable to an assumption that all projects will suspend for the maximum amount of time (which would be the most likely to affect other customers). The MMA can also determine the tentative milestone dates to ensure that the PTO can schedule the network upgrades when they are needed. Where suspension time is still available, interconnection customers will be able to extend their original suspensions where the CAISO can determine that further suspension will not harm other interconnection customers.

The CAISO agrees with SCE that the suspension cannot go beyond the maximum time already allowed in the LGIA – three years. In addition, the CAISO supports SCE's suggestion that the interconnection customer must negotiate in good faith to expeditiously revise the milestone dates at the end of the suspension period.

The CAISO proposes the following revisions to this aspect of the straw proposal:

- Require the suspension request to be an MMA with the actual start date and tentative end date.
- Include a provision that the interconnection customer must negotiate in good faith to expeditiously revise the milestone dates at the end of the suspension period.

6.2 Affected Participating Transmission Owner

Background/Issue

Generating facilities interconnecting to the CAISO controlled grid may affect the transmission system of a PTO that is not the PTO at the POI. In these instances, the PTO being impacted is referred to as an affected PTO. The current GIDAP does not address how the interconnection customer's financial security postings, cost responsibility, and affected PTO repayment will be disbursed among the interconnecting and affected PTOs.

The CAISO currently documents the contractual rights and obligations of the CAISO, interconnection customer, interconnection PTO and affected PTO in two separate agreements. The CAISO enters into a *pro forma* small or large generator interconnection agreement with the interconnection customer and interconnecting PTO under which interconnection service is provided to the interconnection customer. The non *pro forma* affected participating transmission owner upgrade facilities agreement (UFA) among the CAISO, interconnection customer and affected PTO establishes the mitigation measures required on the affected PTO's electric system due to the interconnection of the interconnection customer's generating facility to the CAISO controlled grid.

Stakeholder Input

SCE supported providing developers greater cost certainty through the CAISO's proposal to modify the Tariff to allow a separate maximum cost responsibility for each PTO. The maximum cost responsibility for each PTO will be documented in the interconnection studies and the GIA or affected PTO upgrade facilities agreement as appropriate. SCE believes it would then be appropriate for interconnection customers to post interconnection financial security to each PTO separately.

SDG&E supported the CAISO's proposal to modify the Tariff to allow a separate maximum cost responsibility for each PTO, which will be documented in the interconnection studies and the GIA or affected PTO upgrade facilities agreement as appropriate. SDG&E supported the ICs making IFS postings with IFS instruments to each PTO separately, which would translate into the ICs receiving repayment for their contribution to the cost of network upgrades from each PTO separately. SDG&E supported the repayment amounts advanced for reliability network upgrades will be paid by each PTO up to a combined maximum of $60,000 per MW of generating capacity as specified in the GIA. SDG&E also believes that it is fair that the CAISO added proportionality to the total repayment of each PTO's RNU's.

CalWEA strongly recommended that CAISO reconsider its position regarding 4 (or more)-party GIAs. CalWEA stated that forcing the interconnection customer to sign and then maintain separate agreements with individual PTOs is inefficient because the overwhelming majority of

the agreement provisions are the same among all GIAs and each time one of them needs to be modified, the modification must be separately negotiated with each PTO. CalWEA also believes there are obligations (the least of which is confidentiality) among the PTOs that cannot be managed in a separate GIA paradigm. CalWEA stated that, as a result, the PTOs try to obligate the interconnection customer to enforce inter-PTO obligations, something that ICs are in no position to make happen.

EDF-R agreed with CalWEA and added that the requirement for two agreements also negates the advantage to developers of siting projects in the large CAISO footprint and it imposes on developers the cost of CAISO reluctance to mandate consistent PTO procedures.

sPower strongly agreed that a single Generator Interconnection Agreement (GIA) is warranted and agreed with the comments of CalWEA and EDF-R. sPower believes there should be no need for the interconnection customer to negotiate two separate agreements with CAISO-area PTOs, especially since the CAISO has not imposed any standard template for GIA appendices.

SCE supported the CAISO not proposing to further discuss any potential for a four-party agreement with Affected PTOs. SCE believes that it is more appropriate, and more manageable, to have the continued use of separate agreements in order to properly identify the requisite terms and conditions among only the parties involved.

CAISO Response

The CAISO proposes to modify the tariff to describe separate network cost estimates for the interconnecting PTO and any affected PTO(s). These PTO cost estimates will sum to set a single maximum cost responsibility for the interconnection customer's entire project. This is a change from the draft straw proposal where the CAISO proposed a separate interconnection customer maximum cost responsibility for each of these PTOs. The cost estimates for each interconnecting and affected PTO(s) will be documented in the interconnection studies and the GIA or affected PTO facilities agreement as appropriate. The CAISO believes it is critical to maintain a single maximum cost responsibility for each project. This will allow the CAISO to entertain more efficient and lower overall network cost solutions without being constrained by individual interconnection customer maximum costs responsibilities across multiple PTOs. For example, if, through the study and/or reassessment processes, network upgrades identified by each PTO needed for a project change or better solutions are identified, the PTO costs will be allowed to float from one PTO to another within the limit of the interconnection customer's maximum cost responsibility for the project. However, in the case where overall network upgrade costs exceed the interconnection customer's maximum cost responsibility (due to project withdrawals or unanticipated system change), the PTOs whose costs increased such that after utilizing any available costs from any decrease in costs by another PTO, will assume financial responsibility for all dollars over the maximum cost responsibility for the project.

Example of Maximum Cost Responsibility Float

The interconnection customer will make their 1st and 2nd IFS posting to the interconnecting PTO and will make the third IFS posting to each PTO separately based on each PTO's network cost estimate. In addition, interconnection customers will be entitled to receive repayment for their contribution to the cost of network upgrades from each PTO separately. Repayment of amounts advanced for reliability network upgrades will be paid by each PTO up to a combined maximum of $60,000 per MW of generating capacity as specified in the GIA. Total repayment from both PTO's will be applied proportionately based on the amount paid to each PTO for its RNUs.

Sample Proportional Repayment Calculation

The following example assumes a 100 MW generating capacity and a $10,000,000 total cost of RNUs across all PTOs. In this scenario the total reimbursement for RNUs to the interconnection customer is $6,000,000 (100 MW × $60,000 per MW).

	RNU Cost	Proportion of Total Costs Assigned to PTO	100 MW Maximum Repayment
Interconnecting PTO	$ 7,000,000	70%	$ 4,200,000
Affected PTO	$ 3,000,000	30%	$ 1,800,000
Total	$ 10,000,000	100%	$ 6,000,000

The consistent desire of interconnection customers to negotiate a single agreement to document the rights and obligations of the interconnection customer, interconnecting PTO, affected PTO(s) and CAISO prompted the CAISO to reconsider its position requiring a separate GIA and UFA.

The CAISO is not convinced that the anticipated efficiencies of a single agreement will be realized since two agreements have coordinated terms and conditions and both the CAISO and the interconnection customers are parties to both which assists with the compatibility. The interconnection customer will always be in the middle as the PTO(s) are individually supporting the interconnection customer's interconnection project. The terms and conditions of the UFA are

public as it is filed with the FERC. The GIA is public once it is effective. The terms and conditions of each agreement are available to interested individuals. Each PTO should be able to manage its electric system according to its policies. The CAISO is proposing to continue with the separate UFA / GIA structure. The CAISO is also considering submitting the UFA to the FERC, seeking to make it a CAISO *pro forma* agreement.

6.4 Performance and Diagnostic Minimum Requirements for Inverter based Generation

Background/Issue

The CAISO proposed modifications to the technical requirements for the interconnection of inverter based generation to the CAISO controlled grid. The CAISO proposed these new requirements to address incorrect and undesired tripping or cessation of inverter based generation which occurred during the routine high speed clearing of bulk electric transmission lines.

Stakeholder Input

The CAISO received comments from CalWEA, CESA, EDF-R, First Solar, LS Power, SCE, SDG&E, Six Cities, and sPower.

CalWEA generally supported the proposal to discontinue the use of momentary cessation with the understanding that the proposal would apply to new projects, and would apply to existing projects only if they repower or modify their inverters. CalWEA proposed that these requirements should be applicable to all projects, such as WDAT, and not just to projects connecting to the CAISO controlled grid. The CAISO agrees that this would improve system reliability and will recommend that the PTOs update their generation interconnection handbooks to reflect new approved requirements. CalWEA also proposed that the CAISO should work to resolve redundant reporting requirements to both CAISO and NERC/WECC.

EDF-R and sPower provided similar comments that stated that the CAISO's proposals are based on proposed NERC standards, and CAISO should wait until NERC establishes a standard before trying to implement any ride through requirements.

First Solar indicated that it will need to see specifics before providing detailed comments. Further, First Solar suggests that the ISO host a technical workshop once the specific requirements are identified.

SCE supported the CAISO proposal for addressing voltage and frequency ride-through requirements, including the requirement to continue to inject current during system fault conditions that are cleared within a prescribed time period (*i.e.*, cycles needed for system protection to clear faulted facilities). SCE agreed with the CAISO that tripping should be based on physical equipment limitations to protect the inverter itself, and not a generic NERC standard which is less stringent. SCE believes that minimum technical standards for return times following transient voltage deviations and post inverter trip return time are also appropriate to stabilize the grid following a disturbance and to not jeopardize the reliability of the network.

SDG&E agreed that these obligations need to be on a "moving forward" basis and only apply to existing resources if projects repower or modify their inverters. SDG&E supported the CAISO's proposal to no longer permit momentary cessations for new inverter based generation during momentary drops in the system AC voltage. SDG&E believes that if inverters give priority to reactive current (during transient low voltage conditions), then this would remedy the issue of inadvertent generator tripping by supporting the system. SDG&E fully supported the CAISO's proposals regarding: Momentary low voltage, momentary high voltage, return times following transient voltage deviations, phase lock loop synchronization issues, post inverter trip return time and diagnostic equipment. SDG&E believes that the sum of these approaches and recommendations will go a long way in preserving the reliability of our high voltage transmission system.

CAISO Response

In response to CalWEA's comment that CAISO should work to resolve redundant reporting requirements between CAISO and WECC/NERC, the CAISO notes that it previously requested NERC to share data submitted in response to previous alerts / advisories.. NERC responded that it cannot share data submitted to it with Balancing Authorities or other outside entities.

In response to EDF-R, and sPower's feedback, the CAISO is working closely with NERC and is an active participant in the NERC task force that is developing a guideline for inverter based generation (note: a copy is now available for public comment). NERC is not currently active in developing a new national standard for inverter based generation. The CAISO ride through proposal is based on recently issued recommendations identified in a NERC alert (advisories) issued to registered inverter based generating units, and not on any "proposed" NERC Standards. The applicable NERC Advisory can be found at: https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_Loss_of_Solar_Resources_during_Transmission_Disturbance-II_2018.pdf

In response to First Solar, the CAISO will prepare specific requirements as the next step in this stakeholder process. The CAISO will consider the request to host a technical workshop once specific requirements are identified. In response to First Solar's comment pertaining to dynamic model requirements, the CAISO intends to enforce modeling requirements in the interconnection study process. Non-compliant dynamic model settings will be rejected as invalid. Non-compliant performance observed in simulation will be noted in the study report and will need to be mitigated by the interconnecting customer.

The CAISO fully concurs with stakeholder input that it is now appropriate to provide detailed information on the proposed ride through requirements. The following is the CAISO's initial proposal to update the technical requirements summarized in Appendix H of the generator interconnection agreement:[5]

[5] This language represents an initial draft for policy discussion purposes. The CAISO will stakeholder its draft tariff language at the conclusion of the policy development. As always, the CAISO reserves the right to modify its final tariff language up to its submission with FERC, so long as that language is completely consistent with the final policy approved by the CAISO Board.

Appendix H

INTERCONNECTION REQUIREMENTS FOR AN ASYNCHRONOUS GENERATING FACILITY

Appendix H sets forth interconnection requirements specific to all Asynchronous Generating Facilities. Existing individual generating units of an Asynchronous Generating Facility that are, or have been, interconnected to the CAISO Controlled Grid at the same location are exempt from the requirements of this Appendix H for the remaining life of the existing generating unit. Generating units that are replaced, however, shall meet the requirements of this Appendix H.

A. Technical Requirements Applicable to Asynchronous Generating Facilities

i. Low Voltage Ride-Through (LVRT) Capability

An Asynchronous Generating Facility shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the requirements below.

1. An Asynchronous Generating Facility shall remain online for the voltage disturbance caused by any fault on the transmission grid, or within the Asynchronous Generating Facility between the Point of Interconnection and the high voltage terminals of the Asynchronous Generating Facility's step up transformer, having a duration equal to the lesser of the normal three-phase fault clearing time (4-9 cycles) or one-hundred fifty (150) milliseconds, plus any subsequent post-fault voltage recovery to the final steady-state post-fault voltage unless clearing the fault effectively disconnects the generator from the system. Clearing time shall be based on the maximum normal clearing time associated with any three-phase fault location that reduces the voltage at the Asynchronous Generating Facility's Point of Interconnection to 0.2 per-unit of nominal voltage or less, independent of any fault current contribution from the Asynchronous Generating Facility.

2. An Asynchronous Generating Facility shall remain online for any voltage disturbance caused by a single-phase fault on the transmission grid, or within the Asynchronous Generating Facility between the Point of Interconnection and the high voltage terminals of the Asynchronous Generating Facility's step up transformer, with delayed clearing, plus any subsequent post-fault voltage recovery to the final steady-state post-fault voltage unless clearing the fault effectively disconnects the generator from the system. Clearing time shall be based on the maximum backup clearing time associated with a single point of failure (protection or breaker failure) for any single-phase fault location that reduces any phase-to-ground or phase-to-phase voltage at the Asynchronous Generating Facility's Point of Interconnection to 0.2 per-unit of nominal voltage or less, independent of any fault current contribution from the Asynchronous Generating Facility.

3. Remaining on-line shall be defined as continuous connection between the Point of Interconnection and the Asynchronous Generating Facility's units, without any mechanical isolation. ~~Asynchronous Generating Facilities may cease to inject current into the transmission grid during a fault.~~ For transient low voltage conditions, the Asynchronous Generating Facility's units will inject reactive current. The level of this reactive current shall be directionally proportional to the decrease in Per Unit voltage at the inverter AC terminals. The inverter shall produce full rating reactive current when the AC voltage at the inverter terminals drops to a level of 0.50 PU. The Asynchronous Generating Facility's units may cease to inject current into the transmission grid for transient high voltage conditions above 1.20 PU. The Asynchronous Generating Facility should continue to absorb reactive current for transient voltages between 1.10 and 1.20 PU.

Upon the cessation of transient voltage conditions and the return of the grid to normal operating voltage (0.90 < V < 1.10 PU), the Asynchronous Generating Facility's units shall automatically connect to the grid within a maximum of 0.10 seconds (if momentary cessation was used for transient high voltage), and transition to normal active (real power) current injection. The Asynchronous Generating Facility's units shall ramp up to inject active (real power) current with a minimum ramp rate – from no output to full output - of at least 100%/second. A ramp rate of 200% / second is preferred. The entire time to complete the transition shall be one second or less.

Inverter protective functions should use a filtered, fundamental frequency voltage input for overvoltage protection to avoid spurious tripping on transient high voltages.

4. An Asynchronous Generating Facility unit trip is defined as the opening of the unit's AC circuit breaker or otherwise electrical isolation of the unit from the grid. Following the unit trip, the unit will make at least one attempt to resynchronize and connect back to the grid. The time delay to accomplish this will be adjustable to between 2 and 5 minutes. The default time shall be 2 ½ minutes.

5. The Asynchronous Generating Facility is not required to remain on line during multi-phased faults exceeding the duration described in Section A.i.1 of this Appendix H or single-phase faults exceeding the duration described in Section A.i.2 of this Appendix H.

6. The requirements of this Section A.i of this Appendix H do not apply to faults that occur between the Asynchronous Generating Facility's terminals and the high side of the step-up transformer to the high-voltage transmission system.

7. Asynchronous Generating Facilities may be tripped after the fault period if this action is intended as part of a special protection system.

8. Asynchronous Generating Facilities may meet the requirements of this Section A.i of this Appendix H through the performance of the generating units or by installing additional equipment within the Asynchronous Generating Facility, or by a combination of generating unit performance and additional equipment.

9. The provisions of this Section A.i of this Appendix H apply only if the voltage at the Point of Interconnection has remained within the range of 0.9 and 1.10 per-unit of nominal voltage for the preceding two seconds, excluding any sub-cycle transient deviations.

10. Asynchronous Generating Facility units shall not trip or cease to inject current for loss of the Phase Lock Loop (PLL). As a minimum, the Asynchronous Generating Facility's unit controls may lock the PLL to the last synchronized point and continue to inject current into the grid at that last calculated phase until the PLL can regain synchronism upon voltage recovery (e.g. the transmission system fault clears). The reactive current injection may be limited to protect the inverter.

11. Inverter restoration following transient voltage conditions must not be impeded by plant level controllers. If the Asynchronous Generating Facility uses a plant level controller, it must be coordinated to allow the individual inverters to rapidly respond following transient voltage recovery, before resuming overall control of the individual plant inverters.

~~The requirements of this Section A.i in this Appendix H shall not apply to any Asynchronous Generating Facility that can demonstrate to the CAISO a binding commitment, as of July 3, 2010, to purchase inverters for thirty (30) percent or more of the Generating Facility's maximum Generating Facility Capacity that are incapable of complying with the requirements of this~~

~~Section A.i in this Appendix H. The Interconnection Customer must include a statement from the inverter manufacturer confirming the inability to comply with this requirement in addition to any information requested by the CAISO to determine the applicability of this exemption.~~[6]

ii. Frequency Disturbance Ride-Through Capability

An Asynchronous Generating Facility shall comply with the off nominal frequency requirements set forth in the ~~WECC Under Frequency Load Shedding Relay Application Guide or successor requirements as they may be amended from time to time.~~ NERC Standard PRC-024, Western Variance.

iii. Power Factor Design Criteria (Reactive Power)

An Asynchronous Generating Facility not studied under the Independent Study Process, as set forth in Section 4 of Appendix DD, shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the high voltage side of the substation transformer ~~Point of Interconnection~~ as defined in this LGIA in order to maintain a specified voltage schedule, if the Phase II Interconnection Study shows that such a requirement is necessary to ensure safety or reliability. An Asynchronous Generating Facility studied under the Independent Study Process, as set forth in Section 4 of Appendix DD, shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this LGIA in order to maintain a specified voltage schedule. The power factor range standards set forth in this section can be met by using, for example, power electronics designed to supply this level of reactive capability (taking into account any limitations due to voltage level, real power output, etc.) or fixed and switched capacitors, or a combination of the two, if agreed to by the Participating TO and CAISO. The Interconnection Customer shall not disable power factor equipment while the Asynchronous Generating Facility is in operation. Asynchronous Generating Facilities shall also be able to provide sufficient dynamic voltage support in lieu of the power system stabilizer and automatic voltage regulation at the generator excitation system if the Phase II Interconnection Study shows this to be required for system safety or reliability.

iv. Supervisory Control and Data Acquisition (SCADA) Capability

An Asynchronous Generating Facility shall provide SCADA capability to transmit data and receive instructions from the Participating TO and CAISO to protect system reliability. The Participating TO and CAISO and the Asynchronous Generating Facility Interconnection Customer shall determine what SCADA information is essential for the proposed Asynchronous Generating Facility, taking into account the size of the plant and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability.

v. Power System Stabilizers (PSS)

Power system stabilizers are not required for Asynchronous Generating Facilities.

vi. Diagnostic Equipment

An Asynchronous Generating Facility shall monitor and record the following data in real time:

Plant Level

[6] New policy aside, the CAISO may remove this paragraph as anachronistic. The CAISO will move this language into the BPM for those generators for which this applied.

(1) Plant three phase voltage, current and power factor
(2) Status of ancillary reactive devices
(3) Status of all plant circuit breakers
(4) Status of plant controller
(5) Plant control set points
(6) Status of main plant transformer no load taps
(7) Status of main plant transformer tap changer (if applicable)
(8) Protective relay trips (relay target data)

Inverter Level Data
(1) High and low frequency ride through events
(2) High and low voltage ride through events
(3) Momentary cessation for transient high voltage events
(4) Reactive current injection for transient low voltage events
(5) Phase Lock Loop (PLL) status
(6) Inverter status
(7) AC and DC current
(8) AC and DC voltage

The data shall be time synchronized to a one millisecond level of resolution. The Asynchronous Generating Facility shall store this data for a minimum of 30 calendar days. The Asynchronous Generating Facility, upon request from the CAISO or the PTO, shall make this data available within 10 calendar days of the request.

The Asynchronous Generating Facility shall install and maintain a PMU (Phase angle Measuring Unit) at the service entrance to the facility. The PMU shall have a resolution of at least 30 samples per second. The Asynchronous Generating Facility, upon request from the CAISO or the PTO, shall make this data available within 10 calendar days.

7. Interconnection Financial Security and Cost Responsibility

7.1 Maximum Cost Responsibility for Network Upgrades and Potential Network Upgrades

Background/Issue

Currently the “maximum cost responsibility” is established from the Phase I and Phase II study reports. The combined costs for all network upgrades in the Phase I and Phase II study reports are compared and the lower of the cost for all network upgrades between the two reports sets the maximum cost responsibility for network upgrades for the project. However, an Interconnection Customer’s “current cost responsibility” is used to calculate the required Interconnection Financial Security (IFS). This latter figure can change as the result of customers withdrawing from the queue. The CAISO is aware that the reassessment related cost responsibility changes and the increased appearance of contingent (fka potential) network upgrade costs in project’s study reports has created understandable confusion around how the

maximum cost responsibility plays out in practice. The CAISO also has observed that there is confusion regarding when a provided figure relates to the maximum cost responsibility or the current cost responsibility. The CAISO is hoping that the addition of new cost responsibility and exposure definitions will provide more clarity on how potential network upgrades from prior clusters where GIAs have and have not been executed affect cost responsibility.

Stakeholder Input

CalWEA and First Solar supported the CAISO's proposal. First Solar stated a concern that power purchase agreements may include an interconnection cost cap that requires the seller to pay for any costs in excess of the cap and requests that stakeholders be allowed to discuss the proposal in more detail before settling on a final proposal.

PG&E, SDG&E, and SCE generally supported the proposal and all agreed that potential network upgrades should be included in the maximum cost responsibility. In addition, they urged the CAISO to keep in its proposal the requirement that potential network upgrades should be included in the maximum cost responsibility in the Phase I and Phase II study reports rather than raising the maximum cost responsibility later when an earlier queued project withdraws prior to executing a GIA.

PG&E, SCE and SDG&E are concerned that execution of a GIA does not guarantee that a project will progress towards completion in a timely manner. They requested that the trigger for the removal of potential network upgrades not be the execution of the GIA, but rather some other trigger point, such as receipt of final financial postings and written authorization to proceed from the Interconnection Customer.

SCE's position is that a 100% share of certain shared RNUs which SCE labels as "plan of service" RNUs in the interconnection studies, should be included in the potential network upgrades costs for each interconnection customer participating in the upgrade, for purposes of determining each of the sharing interconnection customer's maximum cost responsibility. SCE stated that the backstop financing risk associated with the potential re-allocation of costs associated with a plan of service RNU must be placed upon those remaining interconnection customers that absent the sharing of the RNU, would otherwise be required to construct the RNU. They continued, stating that if PTOs are not allowed to re-allocate any remaining plan of service RNUs and would be required to backstop finance facilities that provide no network benefits that the PTO may no longer agree to allow ICs to share plan of service RNUs.

EDF-R and sPower both stated they believe that the ISO should clarify in the Phase II study and GIA the maximum cost responsibility without the potential network upgrades. They also agreed with the initial CAISO proposal that the headroom between maximum cost responsibility and current cost responsibility not be used to create headroom for non-potential network upgrades. Both parties stated that when more than one PNU is assigned to a project that each PNU's cost is dealt with on an individual basis and not be allowed to create headroom for a different PNU if the one PNU is removed from the Maximum Cost Responsibilities (MCR). In other words the removal of one PNU should not create headroom for another PNU the same way that a PNU cannot create headroom for another assigned upgrade whenever a reallocation of costs is performed in a reassessment study.

CAISO Response

In response to PG&E, SCE and SDG&E's concern that execution of a GIA does not guarantee that a project will progress towards completion and request that the trigger for the removal of potential network upgrades not be the execution of the GIA, but rather some other trigger point, such as receipt of final financial postings and written authorization to proceed from the Interconnection Customer, the CAISO understands the PTO's concern; however, the CAISO has not identified a better solution and is looking for additional stakeholder input.

In response to SCE's position that a 100% share of plan of service RNUs in the interconnection studies should be included in the potential network upgrades; the CAISO agrees and notes this is the current practice and should continue.

In response to EDF-R and sPower's feedback that the headroom between maximum cost responsibility and current cost responsibility should not be used to create headroom for non-potential network upgrades, the CAISO agrees and notes that this is the intent of the proposal. The CAISO also notes that it likely will refer to these upgrades as "contingent upgrades" consistent with Order No. 845.

First Solar raised a concern that the impact of contingent network upgrades raising the maximum cost responsibility late in the process could put a power purchase agreement at risk. The CAISO believes that having contingent network upgrade's impact reflected at the beginning of the study process mitigates First Solar's concern related to unanticipated changes to the maximum cost exposure after the interconnection customer submits a proposal into an RFO as they seek to obtain a power purchase agreement.

The CAISO proposal

The CAISO has reconsidered its original proposal and determined that the proposed definitions in the straw proposal did not fully meet the original objectives, specifically the treatment of contingent network upgrades. The CAISO has decided to revisit with stakeholders the framework for overall cost responsibility in this paper and will propose final definitions in the next IPE paper:

1. An interconnection customer is assigned the cost of reliability network upgrades (RNUs) and local deliverability network upgrades (LDNUs) identified in their Phase I and Phase II study reports.
2. These RNUs and LDNUs include two components:
    a. Direct RNUs and LDNUs - Network Upgrades originally identified in the interconnection customers Phase I or Phase II study reports.
    b. Contingent RNUs and LDNUs – Network Upgrades that are required by a project for its selected level of service whose cost responsibility is assigned to one or more prior-queued projects where at the time that a study report is completed

none of those prior queued projects have executed a Generator Interconnection Agreement, including Stand Alone Network Upgrades (SANUs).

3. The interconnection customer maximum cost exposure includes two components:
    a. The lower subtotal for both RNUs and LDNUs originally assigned to the interconnection customer in the final Phase I or the final Phase II interconnection study reports (Currently known as the Maximum Cost Responsibility).
    b. The full cost of any contingent RNUs and LDNUs.
4. The interconnection customer maximum cost exposure can change over time during the annual reassessment study:
    a. The maximum cost responsibility originally assigned to the interconnection customer is subject to adjustment based on the results of the annual reassessment and the criteria for changes to the maximum cost responsibility in the reassessment process provisions in Appendix DD. However, this cost can never be more that the amount determined in 3.a. above plus the full cost of any former contingent upgrade now assigned to this project. More specifically, if a contingent upgrade becomes a direct upgrade, the full cost for that Network Upgrade will be included in the project's maximum cost responsibility and the maximum cost responsibility may increase (see expanded discussion below).
    b. Costs for contingent facilities can change if these upgrades are memorialized in an executed GIA, are determined to be no longer needed, or become a direct RNU or LDNU (see expanded discussion below).
5. The interconnection customer only posts IFS for direct RNUs and LDNUs (currently known as 'current cost responsibility') and will not post IFS for the cost of Contingent Network Upgrades. However, if the interconnection customer wishes to achieve commercial operation, they may have to post and fund any remaining contingent RNUs and LDNUs needed for the projects selected level of service.

<u>Expanded discussion from (4a & 4b) above</u>

The CAISO is considering providing tariff and or BPM language clarifying that if a prior cluster project executes a GIA that contains a Network Upgrade that is identified as a Contingent Network Upgrade in a later cluster project's study report, then the Contingent Network Upgrade is removed from the maximum cost exposure of that later cluster project unless the $60,000/MW RNU reimbursement cap becomes an issue for the later-queued cluster (as discussed in Section 7.7 of this revised straw proposal). Conversely, a Network Upgrade stops being contingent and becomes a direct LDNU or RNU when all prior cluster projects assigned a cost responsibility allocation for that contingent Network Upgrade withdraw without having executed a GIA. This will result in:

1) The costs for the Network Upgrade to be included in the project's current cost responsibility for Network Upgrades in the proportionate amount that the Network Upgrade is allocated to each project within that cluster that is now responsible for funding the upgrade. In other words, the cost of the Network Upgrade(s) is allocated to each project in the cluster that "inherits" the responsibility for the upgrade in the same manner

the cost for any Network Upgrade is allocated to projects sharing a Network Upgrade in the cluster study process.

2) The full cost for that Network Upgrade will be included in the project's maximum cost responsibility and the maximum cost responsibility may increase.

A contingent network upgrade will not serve to provide headroom for increasing cost allocations of Network Upgrades that are part of a project's maximum cost responsibility, nor can a Contingent Network Upgrade be used to create headroom for another contingent network upgrade when more than one are assigned to a project.

The full cost (100%) of each contingent network upgrade will be included in a project's maximum cost exposure. With the PTO protected from having to backstop the cost of a contingent network upgrade prior to a project that has the upgrade in its current cost responsibility signing a GIA, there is no need for any projects to post more than its cost allocation for a network upgrade established in its current cost responsibility. Projects will not be required to post towards a contingent network upgrade until such time that the contingent network upgrade ceases to be a contingent network upgrade and the cost of the contingent network upgrade becomes part of the projects current cost responsibility.

7.3 Eliminate Conditions for Partial IFS Recovery upon Withdrawal

Background/Issue

Pursuant to Section 11.4 of Appendix DD to the CAISO tariff, an interconnection customer can withdraw its interconnection request and recoup a partial amount of the interconnection financial security posted if it meets certain criteria. The CAISO currently requires a project to meet conditions for partial recovery of the interconnection financial security of network upgrades. Once proof is submitted by an interconnection customer and approved by the CAISO, the CAISO can refund the network upgrades financial security posting to the project. There are different calculations depending on the timing of the project withdrawal, but often the interconnection financial security amount refunded is fifty percent of the amount posted. Non-refundable funds are disbursed first to PTOs to help pay for network upgrades that the withdrawing projects have a cost responsibility for and are still needed by other projects, up to the withdrawing projects obligation; and if funds are still available to the PTO's to decrease the cost of the Transmission Revenue Requirement, which is paid by ratepayers.

In the straw proposal, the CAISO proposed to eliminate the conditions for partial recovery of interconnection financial security upon withdrawal of interconnection request or termination of GIA as detailed in section 11.4.1 of Appendix DD. Virtually all interconnection customers are able to meet a criterion, and the CAISO believes that by removing this requirement, it will eliminate the administrative effort of searching for documents that prove a project meets the requirement (which virtually all eligible interconnection customer can eventually produce), and this also will avoid further delays in the refund process of the interconnection financial security. The CAISO also believes that by posting interconnection financial security an interconnection

customer has already made a considerable effort in developing the project. The CAISO's intent is to make the withdrawal process easier for these interconnection customers. The refundable portion amount will remain the same; however, all projects, will qualify for partial recovery of the Interconnection Financial Security.

Stakeholder Input

CalWEA supported the CAISO's proposal to eliminate the conditions for partial recovery of interconnection financial security for Network Upgrades.

SCE requested the CAISO consider a change in the current non-refundable amounts disbursement process which includes the proposal that a transmission-build entity be eligible for recovery of 100% of incurred costs of a transmission facility or network upgrade approved by the CAISO which is subsequently cancelled by the CAISO or deemed to no longer be needed. Six Cities disagreed with SCE and stated that FERC's standard policy for non-incentive projects is to require 50-50 sharing of abandonment costs between shareholders and ratepayers. Six Cities also stated that this is a matter of FERC policy, and including provisions in the CAISO tariff that purport to provide 100% cost recovery in the event of abandonment is not appropriate.

CAISO Response

In response to SCE's comment to include full cost recovery for costs incurred on a transmission facility or network upgrade approved by the CAISO, which is subsequently cancelled or deemed to no longer be needed, the CAISO believes that this issue is too complex to insert into the 2018 IPE initiative at the revised straw proposal stage. The issue warrants a more complete stakeholder discussion process than the 2018 IPE would allow at this point.

The CAISO will move forward with the proposal to eliminate conditions for partial IFS recovery upon withdrawal without additional modifications.

7.5 Shared SANU and SANU Posting Criteria Issues

Background/Issue

The CAISO tariff defines a SANU as Network Upgrades or tasks (e.g., telecommunications, environmental, or property work) that an interconnection customer may construct without affecting day-to-day operations of the CAISO controlled grid or affected systems during their construction. The PTO, the CAISO, and the interconnection customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Large Generator Interconnection Agreement.

The CAISO tariff allows a SANU to be built by an interconnection customer when the CAISO and the PTO agree that it qualifies as a SANU and agree to allow the interconnection customer to build the SANU. The CAISO GIDAP BPM currently requires that 100% of the cost responsibility for the network upgrade must be assigned to the interconnection customer as indicated in the study reports to qualify as a SANU. The CAISO has received requests to remove the 100% cost responsibility requirement to an individual interconnection customer and allow two or more interconnection customers to share the cost responsibility for a SANU. In addition, stakeholders have requested that CAISO allow two or more interconnection customers to share the

construction responsibility for a SANU as well.

This issue closely aligns with the FERC Order No. 845 item A.2 on the interconnection customer's option to build stand alone network upgrades.

Stakeholder Input

All stakeholders agreed with the CAISO's proposal to clarify the GIDAP BPM to address the issue that a SANU can be shared by more than one interconnection customer, and to allow the PTOs to make this determination on a case by case basis. The CAISO will remove the requirement in the BPM that each interconnection customer seeking to self-build a SANU be assigned 100% of the cost.

However, EDF-R and sPower stated there is no rationale for treating SANUs different from other shared Network Upgrades and the CAISO proposal would allow the current piecemeal practices to remain and worsen them by allowing PTOs to treat SANUs differently.

EDF-R and sPower also stated that PTOs should not be allowed to set their own security-posting policies and that while PTOs are entitled to have legitimate costs covered, that principle does not require more than 100% cost coverage in security postings. GIAs can easily be modified to provide for cost-responsibility and security-posting increases if projects sharing a SANU withdraw.

PG&E supported the proposal associated with interconnection customers sharing the responsibility of building a SANU as long as each PTO has the freedom to establish its own criteria for SANU cost allocation.

SCE pointed to the GIDAP BPM requirement that any project assigned a SANU must post for 100% of the associated costs and should remain intact. SCE went on to state that if multiple interconnection customers share a SANU, they each should continue to be required to post 100% of the costs. Changing the current CAISO policy to allow each project assigned a SANU to post less than 100% of the costs would unreasonably transfer financial risk to the PTO if projects with a shared SANU withdraw, but the SANU is still needed.

CAISO Response

In response to EDF-R and sPower's comment that there is no rationale for treating SANUs different from other shared Network Upgrades, the CAISO contends that SANUs do have distinct differences from most RNUs. The typical RNU is more highly impacted by project size and potentially the number of projects needing the particular RNU. When a non-stand alone RNU is designed for multiple projects and later some of those projects withdraw it is likely the RNU can be scaled back or eliminated due to reduction in project capacity. However, with a SANU, which is typically a new switching station, no matter how many projects need the upgrade initially or later when the SANU is identified by later clustered projects who intend to utilize the SANU, if all but one project withdraw the SANU continues to be needed for that one project. The cost of a new switching stations is often significant, as EDF-R and sPower stated, which opens the door for gaming where one project initiates the need for a SANU and a later cluster project also needs the SANU. This is a frequent occurrence and without some cost responsibility by the later cluster project the first project could withdraw, putting the full cost responsibility on the PTO and the later

cluster project gets the SANU at zero cost to them. It is possible that in this scenario the amount of nonrefundable IFS funds the initial project loses is less than the cost the SANU would impose on the later cluster project who ultimately benefits from the construction of the SANU.

In response to EDF-R and sPower's comment that PTOs should not be allowed to set their own security-posting policies and that PTOs should not require more than 100% cost coverage in security postings, the CAISO agrees that IFS postings should not be greater than the cost allocation established in the Phase I and Phase II study reports; however, the CAISO continues to believe that all projects associated with a SANU should have 100% of the cost included in their MCR in the same manner that Contingent Network Upgrades are proposed to be covered in the MCR in topic 7.1.

In response to PG&E's support being contingent on each PTO having the freedom to establish its own criteria for SANU cost allocation the CAISO disagrees. The CAISO believes the cost allocation methodology needs to be consistent across all PTOs. The CAISO will solicit stakeholder feedback on this issue so that the PTOs can demonstrate what would justify different cost allocation practices, and so developers can comment on their preference.

In response to SCE's reference to the GIDAP BPM requirement that any project assigned a SANU must post for 100% of the associated costs and should remain intact, the CAISO clarifies, the BPM only states "To qualify as a Stand Alone Network Upgrade the Interconnection Customer must be assigned 100% of the cost responsibility for the Network Upgrade as indicated in the study reports." This is the BPM language the CAISO proposes to remove from the BPM to allow multiple projects to partner together in building a SANU. The CAISO's proposal is to only require a project's posting to be based on a 100% cost allocation when the project is truly the only project needing the SANU.

SCE commented that if multiple interconnection customers share a SANU, they each should continue to be required to post 100% of the costs. SCE is concerned that changing the current CAISO policy to allow each project assigned a SANU to post less than 100% of the costs would unreasonably transfer financial risk to the PTO if projects with a shared SANU withdraw, but the SANU is still needed. As previously stated, the CAISO does not agree that multiple projects should each be required to post 100% of the costs of the SANU. The CAISO believes PTOs should be adequately protected by requiring that all projects associated with a SANU have 100% of the cost included in their MCR in the same manner that Contingent NUs are proposed to be covered in the MCR in topic 7.1. Including the full cost for the SANU in the MCR of each project that needs the SANU protects the PTO when projects with a shared SANU withdraw, but the SANU is still needed. Requiring each project to post based on a 100% cost allocation for the SANU is not needed.

The CAISO proposes to clarify the GIDAP BPM by removing the requirement in the BPM that each interconnection customer seeking to self-build a SANU be assigned 100% of the cost of the SANU. This will remove the barrier to multiple generators partnering to build a SANU and provide for the PTOs to make a determination on a case-by-case basis whether an interconnection customer proposed arrangement for multiple interconnection customers to jointly build a SANU should be allowed.

The CAISO further proposes that when multiple projects need a common SANU and are within a cluster that initially identified the need for a SANU then the IFS postings should reflect the cost allocations established in the Phase I and Phase II study reports. Additionally, all projects needing the same SANU, regardless of what cluster they are in, should have 100% of the cost included in their MCR in the same manner that Contingent Network Upgrades are proposed to be covered in the MCR in topic 7.1.

The CAISO's FERC Order No. 845 compliance filing is due on or before November 5, 2018. The CAISO proposes to make the BPM change stated above and will include the option for the PTOs to make a determination on a case by case basis whether an interconnection customer proposed arrangement for multiple interconnection customers to jointly build a SANU should be allowed in its compliance filing to FERC. The posting and MCR requirements proposed here will continue to be handled in the 2018 IPE initiative.

7.7 Reliability Network Upgrade Reimbursement Cap

Background/Issue

Section 14.3.2.1 of the GIDAP provides that PTOs will reimburse an interconnection customer's cost responsibility for RNUs only up to $60,000 per MW of the interconnection customer's generating capacity, as specified in its GIA.[7] This policy was designed to ensure that ratepayers only incur costs for RNUs commensurate with the benefits they receive from the new generator. The repayment limit of $60,000 per MW for RNUs assigned to a project was determined to result in full cash repayment for RNUs for the vast majority of projects, and provides an incentive for interconnection customers to avoid siting projects in locations where the costs of RNUs needed to support the interconnections would be inappropriately high.

The CAISO has found that the $60,000 per MW maximum reimbursement amount for an RNU for funds advanced for network upgrades has the potential to be circumvented in instances where earlier-queued projects withdraw from the queue but the upgrades are still needed. To demonstrate this potential issue, consider the following example; Assume a 100 MW project in Cluster 8 with an executed GIA has a required RNU whose cost exceeds the $60,000 per MW limit. Also assume a Cluster 10 project, also 100 MW, requires the same RNU as the Cluster 8 project to interconnect. If the Cluster 8 project that triggered the RNU withdraws, the PTO must fund the construction costs of the RNU for the Cluster 10 project.[8] In this example the PTO is responsible for funding the entire cost of the RNU, including the portion over $60,000 per MW, and will include the entire cost of the RNU into its Transmission Revenue Requirement and ratepayers will ultimately have to pay for the entire cost of the RNU.

The CAISO is revising its original proposal provided in the straw proposal. The $60,000 per MW reimbursement cap for RNUs is to ensure that ratepayers only incur costs for RNUs commensurate with the benefits they receive from the new generator. This is a principle that

[7] Reimbursement beyond the cost cap would come in the form of Merchant Transmission Congestion Revenue Rights.

[8] *See* Section 14.2.2 of Appendix DD to the CAISO tariff.

overrides any cost protection principles for interconnection customers and PTOs. The goal of this proposal is to provide a process that is transparent to participants in the GIDAP to help them deal with the inherent uncertainties that the concept of contingent upgrades present, while protecting ratepayers from excessive RNU costs. The proposal continues to seek to ensure that when a PTO becomes responsible for funding an RNU that exceeds the cap because a project signs a GIA and then withdraws, there is a mechanism to require the project that ultimately benefits from the RNU to pay the cost component over the cap related to the specifics of their project. Without this mechanism, the PTO would fund the full amount of the RNU and place those costs in its rate base, which would then burden ratepayers with costs the policy was designed to exclude.

In the straw proposal the CAISO proposed that if a project withdraws after executing a GIA whose RNU costs exceed the $60,000 per MW RNU cost cap, the cost responsibility for the amount exceeding the $60,000 per MW RNU cost cap will fall to the later cluster projects needing the RNUs, in the fashion of a contingent Network Upgrade, but not be reimbursable. These costs will thus be included as contingent upgrades in the interconnection customers' study reports.

Stakeholder Input

The ORA, PG&E, SCE, SDG&E and the Six Cities fully agreed with the proposal.

EDF-R, First Solar and sPower suggested that if a later-queued project becomes responsible for funding a RNU previously assigned to a withdrawn project, then the MW capacity of that project should be used to recalculate the amount of the reimbursable portion of the RNU.

First Solar requested clarification as to the equities of this proposal to the later queued interconnection customer. The uncertainty associated with withdrawals may change or eliminate required reliability network upgrades, and there is not sufficient justification to move these costs to the next cluster.

EDF-R and sPower stated that a generation project with an executed GIA would typically have made its second security posting. Thus, the PTO would already be entitled to retain security postings equal to ~30% of the upgrade cost, which would likely far exceed the non-refundable portion.

CAISO Response

In response to EDF-R, First Solar and sPower's suggestion that if a later-queued project becomes responsible for funding the RNU, then the MW capacity of that projects should be used to recalculate the amount of the reimbursable portion of the RNU, the CAISO agrees. The determination of the cost cap should be developed on a project by project basis. The determination of the amount of a later-queued project's RNU cost related to the RNU cap should be determined on the basis of it capacity amount and total RNU costs plus the cost of any RNUs it inherits from a withdrawing project, regardless of how the RNU cost cap may have impacted the project that withdrew.

First Solar stated that withdrawals may change or eliminate required reliability network upgrades, and there is not sufficient justification to move these costs to the next cluster. The CAISO agrees

that the reassessment could determine that the RNU is no longer needed or it is downsized, to the benefit of the remaining active projects. While it is understandable that project developers may be concerned with the additional uncertainty this proposal imposes, the $60,000 per MW reimbursement cap for RNUs was designed and accepted by FERC as just and reasonable to ensure that ratepayers only incur costs for RNUs commensurate with the benefits they receive from the new generator. The CAISO's proposal is solely intended to ensure that the policy is not circumvented.

EDF-R and sPower comment that a generation project with an executed GIA would typically have made its second security posting. Thus, according to them, the PTO would already be entitled to retain security postings equal to ~30% of the upgrade cost, which would likely far exceed the non-refundable portion. The CAISO believes that the premise that the PTO is allowed to retain the full second posting amount if false. Topic 7.3 proposes to eliminate the conditions for partial recovery of interconnection financial security upon withdrawal such that all projects who have made their initial or second postings withdraw will be entitled to a potential refund, typically 50% of their second posting[9]. Furthermore, the GIDAP tariff provides for a process for the application of non-refundable amounts from IFS postings to be disbursed to the applicable PTO as a contribution in aid of construction of the still-needed network upgrade and be reflected as a reduction in the cost of this Network Upgrade for purposes of reallocating the cost responsibility for this Network Upgrade[10]. This will be to the benefit of any later-queued project that has the RNU as a Contingent Network Upgrade. However, while the amount provided to the PTO will be used to reduce the RNU costs there is no guarantee that any amount that is provided to the PTO in this manner would be sufficient to cover a significant portion of the RNU's total cost.

In the CAISO's development of the details of the various scenarios to describe how the proposal would operate it became apparent that the final determination of the cost that exceeds the $60,000 per MW RNU cost cap should not be performed against the earlier project(s) that initiated any precursor RNU, signed a GIA, and then withdrew. Rather, the determination of the cost that exceeds the $60,000 per MW RNU cost cap should be performed against the first cluster project(s) that actually go into commercial operation and utilize the precursor RNU. An example of a scenario where ratepayers might not be protected is where a 100 MW project "A" initially triggers RNUs that have a total cost of $8,000,000, but is only eligible to be reimbursed for $6,000,000 ($60,000 × 100 MW). Project "A" executes a GIA and then withdraws. Project "B" is a 20 MW project in the next cluster and needs the same RNUs and has the same $8,000,000 in total RNU costs. The PTO constructs all needed RNUs for the 20 MW project "B," funding the construction costs based on the GIA that project "A" executed, and project "B" then goes into operation. Project "B" is only eligible to be reimbursed for $1,200,000 ($60,000 × 20 MW). Basing the non-refundable amount of the IFS posting on the project "A" would not protect ratepayers, it would actually harm ratepayers.

There are also scenarios where the later projects could be harmed. A 20 MW project "A" initially

[9] Tariff Appendix DD Section 11.4.1 – Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of GIA

[10] Tariff Appendix DD Section 7.6 – Application of Non-Refundable Amounts

triggers RNUs that have a total cost of $8,000,000, but is only eligible to be reimbursed for $1,200,000 ($60,000 × 20 MW). Project "A" executes a GIA and then withdraws. Project "B" is a 135 MW project in the next cluster and needs the same RNUs and has the same $8,000,000 in total RNU costs. The PTO constructs all needed RNUs for the 135 MW project "B," funding the construction costs based on the GIA that project "A" executed, and project "B" then goes into operation. Project "B" is eligible to be reimbursed for all $8,000,000 ($60,000 × 135 = $8,100,000). Basing the non-refundable amount of the IFS posting on the project "A" would harm project "B". While this scenario could be easily dealt with, it demonstrates that the determination of the amount of the RNU's costs that exceeds the $60,000 per MW RNU cost cap needs to be based on the project that actually goes into operation.

The CAISO developed the following three options and requests that stakeholders provide comments on these options, state their preferred option and explain their reasons for preferring that option.

Option 1

One option to protect ratepayers and interconnection customers is to have any project with a precursor RNU determined to be needed in the project's Phase I study report to have 100% of that precursor RNU's cost included in their Maximum Cost Responsibility (MCR). If there are more than one projects that needs the same precursor RNU then each project will have 100% of that precursor RNU's cost included in their MCR. The full amount of the precursor RNU cost is needed in each project's MCR to ensure that the generation project(s) that are actually constructed and utilize the designated precursor RNU are the projects that have the $60,000 per MW RNU cost cap tested against. The 100% of the precursor RNU's cost in a project's MCR will ensure that there is sufficient headroom in the MCR to accommodate the situation where any given project is the only project that ultimately needs the RNU. Any amount less than a 100% cost allocation in each project's MCR would put ratepayers at risk of funding some portion of the amount over the $60,000 per MW RNU cost cap. This option fully protects ratepayers and provides information to the Interconnection Customer of its potential cost exposure in the Phase I study report – the earliest of the three options.

Option 2

A second option is to document any precursor RNU's that are included in a GIA executed by a previous project (*e.g.* project "A") required by a later cluster project (*e.g.* project "B") in its Phase I and Phase II study reports, and track the continuing need for the precursor RNU in the reassessment studies. This follows the CAISO's current process. If the end result is that project "A" withdraws and project "B" goes into operation with the precursor RNU's still needed and funded and constructed by the PTO for project "B" then any potential non-reimbursable IFS posting would be calculated based on project "B's" MW capacity and the total RNU costs of all RNUs needed for project "B," including the precursor RNU that was funded by the PTO. Any amount that exceeds the $60,000 per MW RNU cost cap for RNUs would not be reimbursed to project "B". There is a risk in this option that project "B's" total postings for both RNUs and DNUs is less than the non-refundable amount calculated for project "B" because project "B" did not post for the precursor RNU, and Project "B" will need to provide additional funds to cover the shortfall. This option fully protects ratepayers, but does not fully provide information on the amount of an

interconnection customer's IFS posting at risk of being non-refundable until late in the process.

Option 3

A third option, using the same project "A" and "B" as above, at the point that project "A" withdraws increase project "B's" MCR by the cost project "B" would be allocated for the precursor RNU. The MCR would be increased based on the cost allocation of the precursor RNU that project "B" must now become responsible for. If more than one project in project "B's" cluster "inherit" the RNU, then each project's MCR would increase by the cost of the RNU allocation to each project. Each project would not take on a 100% cost responsibility for the RNU as is proposed in Option 1. This could result in the MCR increasing above the minimum of the Phase I and Phase II cost responsibility. Furthermore, if project "B" was not allocated 100% of the cost of the precursor RNU, its MCR could continue to increase if projects sharing in the precursor RNU's cost withdraw and the precursor RNU is still needed. This option fully protects the ratepayers, but adds uncertainty to interconnection customers. Option 3 provides information to the interconnection customer on its MCR later than Option 1, but sooner than Option 2 and does not require the full 100% cost responsibility if the precursor RNU is shared with other projects.

8. Interconnection Request

8.4 Project Name Publication

Background/Issue

The CAISO's public interconnection queue currently provides a variety of project information by queue number (*e.g.,* POI area, PTO, capacity, GIA status). It does not list project names or developer names. In the straw proposal, the CAISO proposed to modify the current confidentiality requirements for project names so that in the future they will be publicly available through the interconnection queue report accessible on the CAISO's public website and sought input on publishing developer/Interconnection Customer names as well.

Stakeholder Input

CalWEA indicates that this information is commercially sensitive and recommend publication only upon approval from the Interconnection Customer or upon the filing of the executed GIA with FERC.

EDF-RE and SPower indicate no objection to publication of project names but oppose publication of interconnection customer names.

First Solar supports publication of project names and suggested that project names not be established until later in the interconnection process.

CAISO Response

The CAISO maintains its proposal to publish project names as part of the interconnection queue report. The CAISO believes that providing project names will provide more transparency to interconnection customers, PTOs, and LSEs. Based on stakeholder input, the CAISO is not proposing to publish developer/ interconnection customer names.

In response to the First Solar suggestion that project names not be established until later in the interconnection process, this would constitute a significant change in the interconnection process and associated systems that is beyond the scope of this initiative but may be considered at a later time.

9. Modifications

9.1 Timing of Fuel Type Changes

Background/Issue

Because the CAISO provides a fairly open-ended ability to modify projects, current tariff provisions do not provide detailed limitations on the timing or types of technology and fuel type changes that an interconnection customer may request. Interconnection customers may request changes to the technology and fuel type of projects between the Phase I and Phase II process, and after the Phase II results. Moreover, the CAISO does not review a project's time-in-queue or commercial viability status for technology/fuel type changes. Commercial viability reviews are only performed for extensions of commercial operation date beyond the 7/10 year threshold.

Due to increased overall system reliability associated with transmission upgrades and topology changes, if the CAISO retains its current evaluation framework, the CAISO anticipates approving more technology and fuel change requests later in the project development cycle. Interconnection customers have reported that observing the highest-queued projects receive approval for changes in technology after being in the queue for over 10 years seems unfair.

In the 2018 IPE Straw Proposal the CAISO proposed to create an absolute prohibition on technology changes that change the project fuel type for interconnection customers that have (or are requesting) a commercial operation date beyond the 7/10 year threshold anticipated by the CAISO tariff. The proposal also outlined that fairly and effectively implementing a moratorium requires the following attributes:

- Interconnection customers with projects that have not yet declared commercial operation may request technology to the best available (e.g., a change to the number, type, or manufacturer for project inverters) provided the change does not alter the technology fuel type;
- The moratorium must apply to both requests to change technology as well as requests for additive technology; and
- Interconnection customers requesting technology changes, regardless of time in queue, will need to demonstrate that they are able to construct the project with the proposed new technology/fuel configuration within the 7/10 year threshold.

Additionally, the CAISO also proposed to change the MMA process to evaluate CVC for every MMA requested by a project where the project milestones are beyond the 7/10 year threshold. For example, a 50 MW solar PV interconnection request that has been in the queue for 11 years would be required to reconfirm it meets CVC in the event it wants to alter its gen-tie route, add project phasing, or change its project site.

Stakeholder Input

CalWEA, EDF-R, PG&E, SCE, SDG&E, and sPower all generally supported the CAISO's proposal.

CalWEA expressed concern applying this policy to projects who are beyond the 7/10 year threshold for reasons beyond their own control, and requests the CAISO provide an exception in this circumstance.

EDF-R and sPower caveated their support with a request that the CAISO continue to allow additive fuel type changes after the 7/10 year threshold, citing that such an allowance could only increase the project value and viability.

PG&E and SDG&E supported changing the MMA process to evaluate CVC for every MMA requested by a project where the project milestones are beyond the 7/10 year threshold.

CAISO Response

The CAISO appreciates CalWEA's concerns regarding applying this policy to projects who are beyond the 7/10 year threshold for reasons beyond their own control. The CAISO confirms that the PTO delay process currently in place protects projects from the outcome CalWEA describes. To the extent there are changes to the scope of, or schedule for, planned network upgrades or PTO interconnection facilities, and such changes are not attributable to the interconnection customer's inaction (*e.g.*, failure to pay invoices or failure to submit specifications), the PTO delay process provides projects with day-for-day schedule slippage for their COD milestone and does not trigger a commercial viability evaluation.

The CAISO appreciates EDF-R and sPower's suggestion that additive fuel type changes should be exempt from the fuel change prohibition. The CAISO cannot agree to a policy where additive fuel type changes are unrestricted because the concession creates a policy loophole that renders the policy basically unenforceable. To demonstrate this potential loophole consider the following example; A customer with 100 MW gas plant could request to add 100 MW solar PV and to develop the project components in distinct phases with the solar project declaring commercial operation several years in advance of the gas portion. After the solar phase is online, the interconnection customer could then enter the annual downsizing process and eliminate the gas phase of the project. This project would have then effectively swapped its technology.

The CAISO proposes to move forward with the fuel type prohibition as summarized above (including the proposal to check commercial viability for every MMA requested by a project where the project milestones are beyond the 7/10 year threshold) with one modification: the CAISO proposes that projects beyond the 7/10 year threshold be allowed *de minimus* additive fuel type changes. Additive fuel type changes will be capped at the same MW amounts allowed by the CAISO's de minimis reductions in generating facility capacity policy: no more than the greater of five percent (5%) of its MW capacity or 10 MW, but by no more than twenty-five percent (25%) of the MW capacity as specified in the GIA. For example:

Project GIA MW	the greater of		Not More than 25%	Maximum allowable additive fuel type change
	5%	10 MW		
10 MW	.5 MW	10 MW	2.5 MW	2.5 MW
20 MW	1 MW	10 MW	5 MW	5 MW
100 MW	5 MW	10 MW	25 MW	10 MW
500 MW	25 MW	10 MW	125 MW	25 MW

This limit closes the loophole described above. A customer with 100 MW gas plant could request to add 10 MW solar PV and to develop the project components in distinct phases with the solar project declaring commercial operation several years in advance of the gas portion. After the solar phase is online, the customer could still enter the annual downsizing process and eliminate the gas phase of the project, but the policy circumvention ultimately achieved is, by its definition, minimal.

The CAISO plans to take this proposal to the September 2018 board meeting for approval.

9.2 Commercial Viability – PPA Path Clarification

Due to the nature and relationship of CVC and the TPD allocation process, the CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.3, and 4.5. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

10. Additional Comments

Section 10 consists of issues that were finalized in the Straw Proposal. These are either topics going to the July Board of Governors meeting or topics that are not being included in this initiative but stakeholder comments were submitted.

10.1 Clarify New Resource Interconnection Requirements (Section 6.3)

Background/Issue

Existing and operational generating units under grandfathered PPAs can convert to participating generator status under Section 25 of the CAISO Tariff. These prospective participating generators are required to execute agreements with the CAISO for generator interconnection and market participation, and also complete the New Resource Implementation process (NRI).

CAISO proposed modifications to Section 25 of the CAISO Tariff to clarify the need to complete the NRI process for existing and operational generating units converting to participating generator status. This Tariff modification does not add any new requirements, but highlights the requirement of completing the NRI process for existing generating units.

Stakeholder Input

CalWEA, First Solar, EDF-R, SCE, Six Cities, and PG&E had no comments on this proposal. SDG&E agreed with the CAISO proposal on this issue.

CAISO Response

Considering the general support, the CAISO will be taking this topic to the July Board of Governors meeting as proposed.

10.2 Affected System Options (Section 6.5)

Stakeholder Input

The CAISO received comments from First Solar on Affected System Options that, as noted in the straw proposal, the CAISO is not including as part of this initiative. First Solar suggested additional coordination between the CAISO and affected system operators. First Solar suggested that a limit be placed on the maximum forfeiture amount in order to mitigate the financial risk associated with a project withdrawal associated with the inability to resolve affected system issues.

CAISO Response

The CAISO agrees that this issue may warrant examination; however, because FERC is still considering Affected System issues in Docket Nos. EL18-26 and AD18-8, the CAISO believes that it is prudent to wait for FERC to act before making modifications to its existing process.

10.3 Data Modeling Requirements (Section 6.6)

Stakeholder Input

The Six Cities urged the CAISO, in formulating these new data reporting requirements for modeling data from Participating Generators, to work with resources to ensure that generators have adequate time to respond to any requests from the CAISO for modeling data and to ensure that the scope of and process for submittal requirements are clearly documented and communicated. Six Cities stated they believe if there are resources that are not currently subject to the applicable reporting requirements as a result of compliance obligations, then the CAISO may need to consider an implementation plan to the extent that the reporting requirements necessitate testing or verification activities that generators may not have recently undertaken.

CAISO Response

The CAISO has already submitted PRR 1067 into the BPM change management process at: https://bpmcm.caiso.com/Pages/default.aspx The PRR provides, explicit data requirements for the generating unit and the complexity diminishes based on the size and point of interconnection

of the generating unit. The first set of generators will need to provide data by May 31, 2019, thus CAISO believes there is ample time to submit the data and testing if required.

10.4 ITCC for Non-Cash Reimbursement Network Upgrade Costs (Section 7.2)

Stakeholder Input

CalWEA commented that the justification offered at the last stakeholder call for SCE continuing to collect ITCC for non-cash reimbursable network upgrade costs was the requirement by the CAISO tariff. CalWEA is unable to find such a requirement in the CAISO tariff and would like to ask CAISO to identify that part of its tariff that distinguishes between cash reimbursable and non-cash reimbursable network upgrade costs when it comes to collection of ITCC.

CAISO Response

The CAISO clarifies that ITCC is not addressed in the CAISO tariff.

10.5 Clarification on Posting Requirements for PTOs (Section 7.6)

Background/Issue

Interconnection customers currently post interconnection financial security (IFS) to PTOs for the construction of their network upgrades and interconnection facilities. Currently, there is no distinction in the tariff for projects where the interconnection customer itself is also the PTO. PG&E proposed that PTOs should not have to post financial security to themselves when they develop new generation projects interconnecting to their own areas. PG&E has noted that the PTOs have already successfully petitioned FERC for case-by-case waivers on this issue, which FERC has granted.

Stakeholder Input

sPower, First Solar, EDF-R, and CalWEA generally support the proposal.

CAISO Response

Stakeholders generally agree with the CAISO proposal to exempt the PTOs from posting financial security to themselves when they develop new generation projects interconnecting to their own areas in conjunction with a tariff mechanism requiring a PTO that withdraws an interconnection project after the initial and subsequent posting due dates to provide appropriate non-refundable funds to the CAISO in accordance with the tariff requirement. The CAISO will be taking this topic to the July Board of Governors meeting as proposed with the clarification that the PTO must be developing the project in their own service area.

10.6 Reimbursement for Network Upgrades (Section 7.8)

Stakeholder Input

SDG&E commented that although Reimbursement of Network Upgrades was not selected as a topic for the CAISO's 2018 IPE, SDG&E wanted to clarify their original position. SDG&E was not supportive of the CAISO including the reimbursement of network upgrades topic in 2018 IPE because, as the CAISO mentioned, it is such a big paradigm shift that would require a separate setting and huge modifications to the tariff that could not be covered in 2018 IPE. SDG&E, however, believes that this is a topic worth studying and considering in a separate process that has a larger timeline, since this topic likely requires much more time than provided in IPE.

CAISO Response

The ISO thanks SDG&E for this clarification and suggests that they propose this issue through the stakeholder catalog process.

10.7 Impact of Modifications on Initial Financial Security Posting (Section 7.9)

Background/Issue

Between the end of the Phase I study and the due date for the Initial Interconnection Financial Security (IFS) postings, the CAISO has found that due to changes in the CAISO queue, such as project withdrawals or other system changes, there may be network upgrades or PTO interconnection facilities that may no longer be needed. If an upgrade or interconnection facilities are known to be no longer needed after the completion of the Phase I studies, then that will be reflected in the Phase II studies and no changes are made to the Phase I study report. The CAISO believes that if engineering judgement can definitively determine that a required upgrade in an interconnection customer's Phase I study report is no longer needed due to the withdrawal or changes to earlier queued projects or other system changes, and that determination is made in advance of the initial IFS posting due date, the interconnection customer should not be required to post IFS for that upgrade. This determination would be a collaborative effort between the PTO and the ISO and both parties would need to be in agreement that these facilities and upgrades can be removed.

The CAISO proposed in the straw proposal to change the requirement that a project may only qualify for an adjustment in the initial interconnection financial security if they have modified the project, such as a reduction in electrical output of the facility or changed deliverability status.

Stakeholder Input

CalWEA, EDF-R, First Solar, and SPower fully supported this proposal. EDF-R and SPower both commented that the proposal is a matter of common sense. First Solar stated they appreciate the CAISO identifying this improvement based on its experience from Cluster 10.

SCE, SDG&E, and PG&E supported this proposal and agree that the term "engineering judgment" has been a controversial point between the developers and the PTOs. SCE, SDG&E,

and PG&E are all concerned they will need to provide justification in support of their engineering judgement for not removing upgrades or facilities.

CAISO Response

The CAISO agrees with SCE, SDG&E, and PG&E that the term "engineering judgment" can be contentious and that any removal of upgrades or facilities should only be removed if both parties can agree with certainty that they are no longer needed. In addition, the CAISO agrees that the PTOs should not be required to provide justification for their engineering judgement methodology and will address this in the new tariff language developed for this proposal.

Stakeholders support the CAISO proposal. The CAISO will be taking this topic to the July Board of Governors meeting as proposed with the clarification that the CAISO and PTO must agree that the upgrade or facilities are no longer needed.

10.8 Study Agreement (Section 8.1)

Background/Issue

The CAISO proposes to incorporate Appendix 3 of Appendix DD, the generation interconnection study process agreement (GISPA), into the interconnection request so that it is executed when the interconnection customer submits an interconnection request. To achieve this efficiency, the interconnection request form would be changed slightly to incorporate the documentation required by the GISPA.

The CAISO proposes to establish the following requirements for interconnection customers to agree to the study agreement terms and conditions within the interconnection request: (1) The interconnection request will be expanded to include the modified GISPA; and (2) interconnection requests can only be submitted by an authorized signatory of the interconnection customer.

Stakeholder Input

CalWEA generally supported the proposed clarifications and clean-up of the GIP Study Agreement (GIPSA) language. However, CalWEA requested that the Interconnection Customer be allowed at least 5 business days (preferably 10 calendar days) to complete the GIPSA with the final POI and size for the project. As they have stated previously, the scoping meeting is one of the most important components in the generation interconnection process. The information gathered at the scoping meeting allows all parties, and particularly the interconnection customer, to make significant improvements in the details of the interconnection application (or withdraw the application) for the benefit of all parties involved including the ratepayers.

First Solar & SDGE supported this proposal.

CESA, EDF-R, Able Grid, LS Power, SCE, Six Cities and SPower provided no comments on this aspect of the propsoal.

CAISO Response

In response to CalWEA's question about adjusting the time allowed for project modifications following the scoping meeting from 3 to 5 days; the CAISO believes this requirement needs to

remain at 3 days. This timeline was previously 5 days and through a prior process was shortened to 3 days due to the timing of the study process and a need to ensure the process continues moving forward.

The interconnection customer will still have the opportunity to confirm the POI within 3 business days following the scoping meeting and that does not impact the execution of the study agreement. The CAISO also proposes to clarify Section 3.5 of Appendix DD to ensure that developers understand that they must submit the $150,000 interconnection study deposit within the interconnection request window. Absent the deposit, the CAISO does not have funds to process and validate the interconnection request. As such, the CAISO intends to clarify that the lack of an interconnection study deposit is not a deficiency that can be cured by May 31. Interconnection requests that lack a deposit by the close of the window will be rejected without opportunity to cure. The CAISO notes that this clarification is not true for Site Exclusivity Deposits. Often interconnection customers submit site exclusivity documentation that is deemed insufficient. Interconnection customers will continue to have the opportunity to cure this deficiency with either further documentation or submitting a $250,000 deposit within the cure window.

Stakeholders support the CAISO proposal. The CAISO will be taking this topic to the July Board of Governors meeting as proposed with the clarification regarding study deposit requirements versus site exclusivity deposits.

10.9 FERC Order 827 (Section 8.6)

Stakeholder Input

CalWEA indicated in comments to the straw proposal that on topic 8.6, CAISO should establish study processes that determines projects compliance with FERC Order 827 under normal operating voltage (typically from 0.95 to 1.05 PU) at the POI and not contingency based operating voltages such as 0.9 PU. Projects should be allowed to reduce their MW output to meet FERC Order 827 requirements under contingency based operating voltages such as 0.9 PU.

CAISO Response

As stated in the issue paper, the methodology of evaluating reactive power capability in the generation interconnection studies will be discussed in the BPM change management process. The CAISO will address this feedback in that process.

10.10 PPA Transparency (Section 9.3)

Background/Issue

The CAISO requires interconnection customers demonstrating CVC with a PPA to provide a copy of the PPA so the CAISO can verify that the project and the PPA match. This requirement ensures accurate project-to-PPA data relationships and a robust and transparent commercial viability process. In order for interconnection customers with PPAs to modify the project's COD,

the PPA must have the following in common with the proposed generating facility in the GIA:

- the point of interconnection;
- MW capacity (allowing differences in utility defined project size before transformation and line losses);
- fuel type and technology; and
- site location

The CAISO proposes no changes to this process, but intends to move the requirement from the BPM to the tariff for greater transparency.

Stakeholder Input

CalWEA and SDGE supported the proposal to move the demonstration requirements for commercial viability from the BPM to the tariff.

CAISO Response

Stakeholders support the CAISO proposal. The CAISO will be taking this topic to the July Board of Governors meeting as proposed.

10.11 Increase Repowering and Serial Re-Study Deposit (Section 9.4)

Background/Issue

With the increase in repowering and serial re-studies, the current $10,000 deposit is insufficient for covering the study costs. Based on experience, the CAISO proposes to increase the study deposit for repowering and restudy of serial projects to $50,000.

The CAISO received four comments on the straw proposal. Three comments supported the CAISO straw proposal and one comment opposed the straw proposal.

Stakeholder Input

CESA supported the CAISO's efforts to ensure that the re-study deposit covers the CAISO's costs. CESA only added that since the re-study efforts will be underway for any repowering requests as well as for requests to keep repowered facilities online after the original generation facility retires, the CAISO should consider all the various pathways a repowered facility can remain online. For example, as noted in our comments on Issue 5.2 above, CESA recommended options to pursue potential mitigation measures if certain criteria in the reliability assessment are not met. Overall, CESA recommended that the CAISO consider all the pathways to allow repowered facilities to take advantage of less intensive, less costly material modification study processes rather than having these facilities be pushed into the full cluster study process.

SDG&E and PG&E supported the CAISO's proposal to revise all references from $10,000 to $50,000 in sections 25.1.2 of the tariff, Appendix U Sections 6.4, 7.6, 8.5, 10.1 and 12.2.4. By

increasing the deposit past the average cost of the study, the CAISO ensures that billing and payment, between the PTOs and the CAISO, can typically be done without requesting additional funds from the interconnection customer.

CalWEA and sPower opposed the proposal to increase the Repowering Study Deposit to $50K. CalWEA and sPower believes this proposal is inconsistent with the method used to establish cluster-study Study Deposits, where the new figure was set at the median study cost; that prior methodology would establish the Repowering Study Deposit at $25K and not $50K. In addition, sPower commented that the number of repowering applications is fairly small, and the CAISO certainly has adequate tools to recover actual study costs from generators. Moreover, sPower noted it has experienced significant delays for refunds of unused study-deposit amounts – more than a year, in some cases – so increases above this level should not be considered until the CAISO and PTOs improve their refund processes.[11]

CAISO Response

The CAISO has responded to CESA's comments in Section 5.2 above. With respect to CalWEA and sPower's comment that a median should be used, the current methodology was developed when the CAISO went from the serial study process to the cluster study process and is not appropriate here. In the instance of serial restudies and repowering studies, the number is increasing, and while not close to the number is a cluster study, the CAISO and PTO should not put its ratepayers in a position to cover costs where work has been done but the deposit is insufficient to pay for the services and the customer goes bankrupt or just goes away without paying the difference between the deposit and actual cost of the study. The CAISO agrees with sPower that refunds should not be delayed. For most types of optional studies, the tariff already provides:

> The Participating TO(s) shall invoice the CAISO for any assessment work within seventy-five (75) calendar days of completion of the assessment, and, within thirty (30) days thereafter, the CAISO shall issue an invoice or refund to the Interconnection Customer, as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment.[12]

To ensure that this requirement is consistent for all studies, the CAISO will add similar language for studies where such deadlines are not express.

Stakeholders support the CAISO proposal. The CAISO will be taking this topic to the July Board of Governors meeting as propose.

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[11] While not an issue in IPE, the CAISO completely understands the interconnection customers frustration with the time it takes to receive refunds. The CAISO has revised the tariff to require the PTOs to provide the invoice within 75 days of completion of the study process or MMA and added CAISO staff to process the refunds so that they can be done quicker. There is a backlog, but we are working as quickly as possible to refund and invoice all projects as soon as possible. Since July 2017 we have processes 365 refunds.

[12] *See, e.g.*, Section 6.7.2.3 of Appendix DD (for modification requests).

10.12 Clarify Measure for Modifications After COD (Section 9.5)

Background/Issue

Interconnection customers frequently struggle to understand the test to determine whether a modification will be approved. Specifically, this confusion may depend on whether the project is in the interconnection process or has already achieved commercial operation. The GIA confounds this issue in Article 5.19 by stating that approval of all modifications will be based on the Material Modification in accordance with the GIDAP which in essence determines the approval of the modification based on whether it impacts the scope, schedule or budget of a project in the queue. During the interconnection process modifications are generally approved unless they are material, as explained in Section 9.1 above. On the other hand, existing, online generating units may request modifications to their generating facility if the total MW capability of the generating facility and its electrical characteristics do not change in accordance with Section 25 of the CAISO tariff. Both requirements are intended to prevent changes that will affect reliability and other projects studied or connected to the grid.

The CAISO received three comments all supporting the straw proposal.

Stakeholder Input

CalWEA, SDG&E and PG&E supported CAISO's proposal to clarify in the LGIA and SGIA that modifications requested prior to COD will be approved based on the material modification assessment in the GIDAP, and modifications requested after COD will be approved based on the criteria in Section 25 of the CAISO tariff, and to enable downsizing generation projects after COD. In addition, SDG&E supported the ability to downsize generation projects after COD.

CAISO Response

Stakeholders support the CAISO proposal. The CAISO will be taking this topic to the July Board of Governors meeting as proposed.

10.13 Short Circuit Duty Contribution Criteria for Repower Projects (Section 9.6)

Background/Issue

The criteria used to test whether there is a substantial change in short circuit duty contribution due to a repower project request is more stringent than that used for a material modification request.

The short circuit duty test for repower projects requires that the repowered project must produce the same or less short circuit duty as compared with the original generating unit. This framework is also used to evaluate post-COD modification requests. A small increase of short circuit duty would fail the test, even if the system still has a high breaker capacity margin.

For modification requests for projects active in the interconnection queue, the CAISO will

consider changes to project equipment and transformers to be non-material if the new equipment is substantially similar and does not cause significant electrical changes, including changes to short circuit duty or reactive support. Evaluating changes to short circuit duty follows the general principle of no adverse impact to later queued generation project and the PTO. If the requested change causes only a small increase of short circuit duty, the modification could be considered non-material if the increase causes no breaker capacity concerns.

In the straw proposal, the CAISO proposes to apply the following criteria in short circuit duty tests for both repower and modification requests.

Increase of the short circuit duty at network breakers that require upgrades in the generation interconnection study is less than the amount that would be flagged by the Participating TO as meaningful contribution; and

The total short circuit duty from the repowered Generating Unit and all the active generation projects in the queue at network breakers that do not require upgrades in the generation interconnection study does not exceed the breaker capacity.

The CAISO is bringing this topic to the July Board of Governors Meeting.

Stakeholder Input

CalWEA, CESA, SCE, SDG&E and PG&E commented on this topic. All stakeholder comments supported CAISO's proposal. CalWEA requested that the PTOs be required to pre-specify "the [SCD] amount that would be flagged by the Participating TO" for the purpose of determining whether the increase of the short circuit duty at network breakers will be considered an adverse impact.

CAISO Response

The SCD threshold as the meaningful contribution varies depending on the situation. Therefore, pre-specifying the amount would adversely impact approval of the requests since a conservative number has to be used.

Stakeholders generally support the CAISO proposal. The CAISO will be taking this topic through the BPM change management process at the conclusion of the IPE initiative.

10.14 Storage Issues – Other

Stakeholder Input

CESA observed that in the Straw Proposal the only energy storage-specific issue that was included in the scope of the 2018 IPE Initiative is Issue 5.2. CESA commented in the issue paper that two other energy-storage-specific issues should be considered by the CAISO in this initiative, revising Resource Adequacy (RA) deliverability rules for distributed generation to enable distributed energy resource aggregations (DERA) for RA capacity value; and deliverability for Effective Flexible Capacity (EFC) using a deliverability assessment that focuses on Net Qualifying Capacity (NQC), as the CAISO works to finalize potential, new product designs and flexible deliverability assessments for Flexible RA in Phase 2 of the Flexible RA Capacity and Must-Offer Obligation (FRACMOO) Initiative.

CAISO Response

As the CAISO has previously stated, issues on resource adequacy are not included in the interconnection process enhancements initiative because they are not part of the interconnection process and are already underway in a separate stakeholder initiative – ESDER and Flexible RA.

10.15 EFC/NQC Separation - Other

Stakeholder Input

LS Power commented that CAISO should include EFC/NQC separation under 2018 IPE. LS Power supported establishment of an EFC, independent of NQC, which is a Peak deliverability product.

CAISO Response

The CAISO notes that issues related topic NQC/EFC are already underway in a separate stakeholder initiative – FRACMOO2 and therefore not included in this initiative.

11. Final Proposals

The following topics are considered final and the CAISO plans to seek approval at the September 2018 Board of Governors meeting:

- Transmission Plan Deliverability Allocation
- Balance Sheet Financing
- Participating in the Annual Deliverability Allocation
- Change in Deliverability Status to Energy Only
- Energy Only Projects' Ability to Re-enter the Queue for Full Capacity
- Options to Transfer Deliverability
- Replacing Entire Existing Generator Facilities with Storage
- Suspension Notice
- Affected Participating Transmission Owner
- Maximum Cost Responsibility for NUs and potential NUs
- Financial Security Postings and Non-refundable Amounts
- Shared SANU and SANU Posting Criteria Issues
- Reliability Network Upgrade Reimbursement Cap
- Project Name Publication
- Timing of Technology Changes
- Commercial Viability – PPA Path Clarification

2018 Interconnection Process Enhancements

Straw Proposal

May 9, 2018

Table of Contents

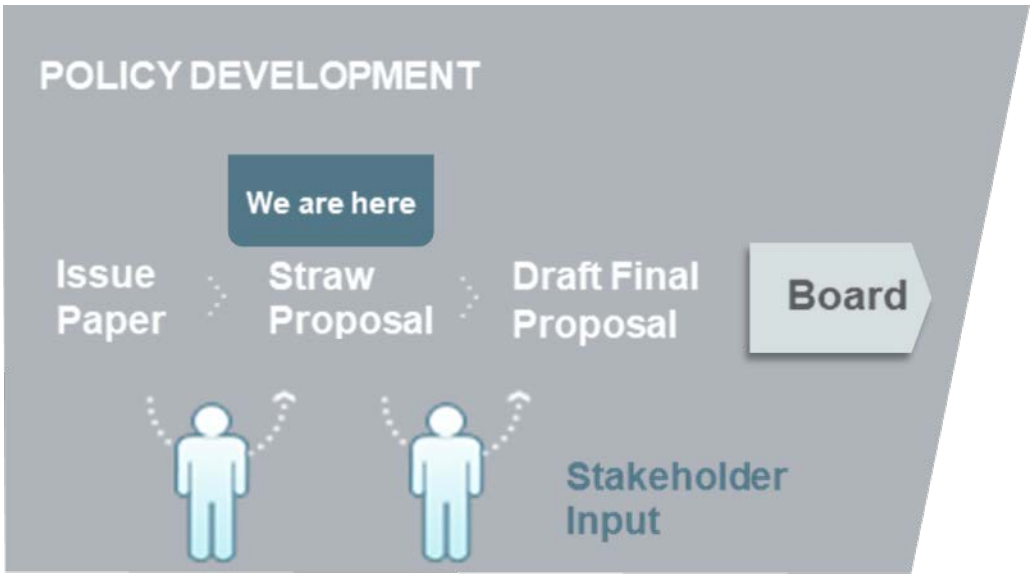
1. Introduction

Previous iterations of the California Independent System Operator Corporation's (CAISO) Interconnection Process Enhancement (IPE) initiative focused on several enhancements to the CAISO's interconnection and deliverability allocation procedures. 2018 IPE will address some substantial concepts, but also a myriad of minor concepts that have not been addressed in some time along with issue that have surfaced since 2015 IPE that need to be resolved. This straw proposal reviews topics currently being proposed for inclusion in this stakeholder initiative and addresses topics from the issue paper that will not be included. The topics fall into six broad categories deliverability, energy storage, generator interconnection agreements, interconnection cost responsibility and financial security, interconnection requests, and modifications.

2. Stakeholder Process

The CAISO is at the "Straw Proposal / Partial Draft Final" stage in the 2018 IPE stakeholder process. Figure 1 below shows the current status within the overall 2018 IPE stakeholder process. The purpose of the straw proposal is to present the scope and proposed solutions to topics related to deliverability, energy storage, generator interconnection agreements, interconnection cost responsibility and financial security, interconnection requests, and modifications. For issues that the stakeholders agreed were complete in the issue paper, this is the draft final proposal. The CAISO has reviewed and considered stakeholder feedback provided through comments submitted on the issue paper and have addressed stakeholder comments on all topics regardless of inclusion in the identified scope of this initiative. In most instances specific proposals are included for topics that are being included in the scope of this initiative, on some topics, however, the CAISO seeks additional input through stakeholder feedback to help facilitate development of a robust proposal.

Figure 1: Stakeholder Process for 2018 IPE Stakeholder Initiative



3. Scope

The CAISO plans to publish a Revised Straw Proposal of the remaining issues early in the third quarter of 2018 and a Draft Final Proposal for the remaining issues during the fourth quarter of 2018. Due to the substantial number of topics in this paper, the CAISO is planning to move forward with topics in three separate tracks. Topic included in the first track are targeted for the July 2018 Board of Governors meeting, topics in the second track are targeted for the September 2018 meeting, and we are targeting the November 2018 meeting for topics in the third track. The table below reflecting the scope for this initiative includes the identification of which Board of Governors meeting for each topic and reflects NA for topics that we are not planning to include in the scope of this initiative.

Category	Topic	Targeted Board of Governors Meeting
Deliverability	Transmission Plan Deliverability Allocation	November 2018
	Balance Sheet Financing	November 2018
	Participating in the Annual Deliverability Allocation	November 2018
	Change in Deliverability Status to Energy Only	September 2018
	Energy Only Projects' Ability to Re-enter the Queue for Full Capacity	November 2018
	Options to Transfer Deliverability	September 2018
	Transparency on Availability of Deliverability	NA
	Commercial Viability Criteria – Continuous Compliance Obligation	NA
	Interim Deliverability Status	NA
	Effective Load Carrying Capacity	NA
	Cancellation or Delay of CAISO Approved Transmission Projects	NA
Energy Storage	Distributed Energy Resources	NA
	Replacing Entire Existing Generator Facilities with Storage	September 2018
	Deliverability Assessment for Energy Storage Facilities	NA
Generator Interconnection Agreements	Suspension Notice	September 2018
	Affected Participating Transmission Owner	September 2018
	Clarify New Resource Interconnection Requirements	September 2018
	Ride-through Requirements for Inverter-based Generation	November 2018
	Affected System Options	NA
	Modeling Data Requirements	NA

Category	Topic	Targeted Board of Governors Meeting
Interconnection Financial Security and Cost Responsibility	Maximum Cost Responsibility for NUs and potential NUs	September 2018
	ITCC for Non-cash Reimbursable NU Costs	NA
	Financial Security Postings and Non-refundable Amounts	NA
	Queue Clearing Measures	NA
	Shared SANU and SANU Posting Criteria Issues	September 2018
	Clarification on Posting Requirements for PTOs	July 2018
	Reliability Network Upgrade Reimbursement Cap	September 2018
	Reimbursement for NUs	NA
	Impact of Modifications on Initial Financial Security Posting (New to Straw Proposal)	September 2018
Interconnection Requests	Study Agreements	July 2018
	Revisions to Queue Entry Requirements	NA
	Master Planned Projects (Open-ended and Serial Projects)	NA
	Project Name Publication	September 2018
	Interconnection Request Application Enhancements	NA
	FERC Order No. 827	NA
Modifications	Timing of Technology Changes	September 2018
	Commercial Viability – PPA Path Clarification	November 2018
	PPA Transparency	July 2018
	Increase Repowering Deposit	July 2018
	Clarify Measure for Modifications After COD	July 2018
	Short Circuit Duty Contribution Criteria for Repower Projects	July 2018
	Material Modifications for Parked Projects	NA

4. Deliverability

4.1 Transmission Plan Deliverability Allocation

Background/Issue

Transmission Plan Deliverability (TPD) is the transmission capacity needed to make a generator's output deliverable to the aggregate of load on the CAISO Controlled Grid during peak conditions. TPD is required for a project to be designated as Full Capacity Deliverability Status (FCDS). As such, TPD is a required for a generator to be eligible to provide Resource Adequacy.

The CAISO allocates TPD, if available, to generating projects according to the interconnection customer's demonstration of having met the criteria identified in Section 8.9.2 of Appendix DD of the CAISO Tariff, namely being far enough along in the status of permitting, project financing and

land acquisition. The project may either have a Power Purchase Agreement (PPA) or balance sheet financing as a key threshold requirement. The current TPD allocation process provides four opportunities for all interconnection customers seeking FCDS – (1) following the Phase II interconnection studies, (2) after 1 year of parking, (3) for projects that qualify after a second year of parking, and (4) the annual full capacity deliverability option. If after exhausting its applicable opportunities a project does not receive a TPD allocation the project must convert to energy only or withdraw.

The TPD allocation process works well during periods that procurement opportunities exist. However, renewable procurement has recently slowed significantly, resulting in few projects meeting the criteria to qualify for a TPD allocation. It is possible that future procurement of renewables will not require FCDS, but until that issue is determined, interconnection customers believe they must have FCDS to compete for a PPA in the procurement processes of load serving entities (LSE).

In the IPE 2018 issue paper, the CAISO discussed several opportunities or concepts of how to improve the allocation of deliverability and commercial viability criteria. Upon review of stakeholder comments and further discussion, the CAISO is proposing to combine some topics into one whereby we create one concise and consistent solution to the allocation of TPD. The CAISO is proposing to include adjustments to the TPD allocation process, replace the Annual Full Capacity Deliverability option, address the topic of allowing energy only projects' the ability to re-enter the CAISO queue for Full Capacity allocation, and address issues with the balance sheet financing option as it related to both TPD and commercial viability criteria (CVC), all within the proposal outlined in this section. As such, Section 4.2 -Balance Sheet Financing, Section 4.3 – Participating in the Annual Full Capacity Deliverability Option, Section 4.5 - Energy Only Projects Ability to Re-enter the Queue for Full Capacity, and Section 9.2 - Commercial Viability – PPA Path Clarification, will be discussed and any proposed revisions will be consolidated and provided within Section 4.1.

Balance Sheet Financing (previously section 4.2)

Interconnection customers seeking a TPD allocation have the option, on the seeking TPD allocation affidavit, to elect that they will balance sheet finance their project, with or without a PPA. A number of stakeholders suggested that the CAISO eliminate interconnection customers' ability to claim their generating facility will be balance-sheet financed or has otherwise received a commitment of project financing, and the interconnection customer is proceeding to commercial operation without a power purchase agreement.

Participating in the Annual Full Capacity Deliverability Option (previously section 4.3)

The annual full capacity deliverability option described in Section 9.2.1 (ii) of Appendix DD of the CAISO tariff allows Option (A) projects that were not allocated TPD in any prior TPD allocation cycle, or that converted to energy only and have GIAs in good standing, to seek TPD for Partial Capacity Deliverability Status (PCDS) or FCDS for the energy only portion of their projects. Various stakeholders have asked the CAISO to consider changes to the annual option, including adoption of additional qualifying criteria. Additionally, stakeholders suggested requiring the same TPD retention criteria as for projects that received a TPD allocation by qualifying for the

allocation in the TPD allocation process, and addressing the potential for gaming.

Energy Only Projects' Ability to Re-enter the CAISO Queue for Full Capacity (previously section 4.5)

Stakeholders have indicated a desire for the CAISO to provide an opportunity for projects to re-enter the queue to obtain deliverability status in addition to the existing Annual Full Capacity Deliverability Option for energy only and PCDS.

Commercial Viability – PPA Path Clarification (previously section 9.2)

The CAISO requires interconnection customers to prove their project meets CVC to extend their milestones beyond the 7/10 year threshold. As such, the existing criteria requires a project to either have an executed power purchase agreement, be pursuing a PPA within a limited grace period of 1 year, or attest that the generating facility will be balance-sheet financed.

In the 2018 IPE Issue Paper, the CAISO proposed to clarify that an interconnection customer's ability to either; a) claim it will balance-sheet finance, or b) pursue additional PPA opportunities during the grace period, will be a binary election that must be made only during the initial MMA assessment to extend the COD past the 7/10 years. In other words, interconnection customers cannot elect to balance-sheet finance after using the one-year safe harbor to pursue a PPA.

Stakeholder Input

Transmission Plan Deliverability Allocation

First Solar, GSCE, and ITC Holdings all believe more can be done to appropriately allocate and provide more opportunity to obtain TPD allocation in light of a changing procurement landscape. ORA does not see a need to make adjustments and suggests that changes should only be considered for projects that support area needs and services that are in addition to energy delivery. SDG&E agrees that the topics should be reviewed and discussed in 2018 IPE.

SCE opposes any proposal for projects to remain in the queue indefinitely to have endless opportunity to seek TPD. Further, they support the methodology of assigning higher priority to those projects that meet the GIDAP Section 8.9.2 (2)a as identified in Section 4.2 below.

Balance Sheet Financing (previously section 4.2)

CalWEA and ITC agree that the topic of balance sheet financing (BSF) deserves attention and suggests the scoring for BSF projects be scored less than those projects with a PPA. First Solar also believe the CAISO should reevaluate the criteria for BSF and create more rigorous criteria that allows validation and enforcement for those selecting to BSF.

GSCE does not support the removal or changes to the BSF criteria.

LSA believes that generation projects are claiming BSF allowing them to (1) receive allocations of scarce TPD in the GIDAP process; and (2) retain their deliverability far beyond a reasonable period. Further, LSA has suggested to eliminate the option entirely and comments that the market reality for larger non-utility projects simply are not being built in California without PPAs, and have not been since the formation of the CAISO. They further suggest, in the event BSF remains an option, that the CAISO play a larger role in policing the validity of a projects financial ability to commit to such a claim or introduce stricter criteria or penalties for those who claim and

proceed with BSF. LSA also recommended an adjustment to the naming and points awarded to projects with executed and regulator-approved PPAs so that such an arrangement counts for more than a financing commitment without a PPA.

SCE suggested that interconnection customers should forfeit financial security if they have accepted TPD allocations and subsequently withdraw, or are converted to energy only for not meeting their retention criteria.

SDG&E, rather than removing the option to BSF, prefers to strengthen the BSF requirements within this section such that projects must provide evidence that they are prepared and able to BSF. Further, SDG&E supports LSA and EDF-RE's suggestion of implementing a minimum forfeit amount for serial projects or increasing postings for cluster projects with low or no network upgrade costs.

Participating in the Annual Full Capacity Deliverability Option (previously section 4.3)

The ORA, PG&E, SCE, and SDG&E support adding additional qualifying criteria for AFC projects seeking an allocation, and to require the same TPD retention criteria as projects that receive an allocation through the standard allocation process based on affidavit scoring.

GSCE wants to ensure that projects seeking deliverability through a secondary process are given a fair opportunity to receive an allocation of deliverability.

ITC supports ensuring that projects remaining in the queue can continue to seek TPD.

LSA does not support a proposal to add qualifying criteria because they believe that the amount of applicable capacity is likely very small with very few projects that have obtained deliverability in this manner. LSA indicates that the process is so long (2+ years) and the outcome is uncertain because these projects would be "last in line" for TPD awards. LSA has no objection to imposing TPD retention criteria after a reasonable amount of time on projects receiving deliverability using this mechanism, e.g., starting two years after the award.

Wellhead believes the current qualifying criteria are adequate and states that additional qualifying criteria are not necessary.

CalWEA states that rather than trying to add features to the annual full capacity deliverability allocation process, CAISO should consider allowing any project to re-enter the queue and apply to increase their deliverability level.

Energy Only Projects' Ability to Re-enter the CAISO Queue for Full Capacity (previously section 4.5)

Stakeholder input was received from CalWEA, First Solar, GSCE, ITC, LSA, NRG, ORA, SCE, SDG&E, and Wellhead. All respondents were in favor of the additional opportunity under certain circumstances with the exception of ORA.

ORA indicated that allowing projects to re-enter the queue for deliverability would create uncertainty surrounding the required upgrades and the responsibility for funding. ORA suggested that if it was allowed then the interconnection customer should bear the entire cost of any needed upgrade; this is also what SCE suggested.

Various other qualifiers for re-entering the queue for deliverability were suggested by

stakeholders. ITC wanted to ensure that no negative impact to others in the queue or avoidance of network upgrade cost responsibilities would result. GSCE stated that the option should be available to projects that had achieved COD as energy only, while CalWEA thought an executed energy only or partial deliverability GIA should be necessary to re-enter the CAISO Queue for deliverability. LSA indicated that if projects were allowed to re-enter the queue that they should be treated the same as any other queued project and pay their share of identified Deliverability Network Upgrades (DNU). SDG&E also indicated that since FERC has deemed network upgrades a benefit to the system that the interconnection customer should be eligible for reimbursement of upgrade costs. First Solar proposed energy only projects should have an opportunity to compete for a TPD allocation annually along with others seeking TPD.

NRG indicated that the Annual Full Capacity process has not worked well for their needs and they are looking to the opportunity to re-enter the queue to be a more viable solution for their projects seeking deliverability.

ORA requested improved access to deliverability information so that interconnection customers can make more informed decisions regarding deliverability.

Commercial Viability – PPA Path Clarification (previously section 9.2)

First Solar, ITS, PG&E, and SDG&E supported the CAISO's proposal for the CVC process.

SCE provided feedback that it did not support the proposal, expressing its view that the current tariff language provides customers flexibility. SCE supported keeping the policy as is, provided the customer's decision to switch did not require further delays in In-Service, Initial Synch, and COD timelines. SCE suggested that the CAISO consider obtaining interconnection customer confirmation of desire to move to BSF if acquiring a PPA was unsuccessful prior to the end of the grace period.

CalWEA expressed a strong preference for the CAISO to retain BSF in the commercial viability framework. LSA, EDF, SPower, and ORA provided feedback that BSF should be eliminated from the commercial viability framework.

CAISO Response and TPD Allocation Proposal

Balance Sheet Financing (previously section 4.2)

Based on stakeholder comments, the CAISO believes there is a need to maintain an option for some interconnection customers to develop their projects regardless of whether they have a PPA. Therefore, the CAISO is proposing to modify the concept of BSF and include stricter restrictions for those who elect to develop regardless of their PPA status.

Participating in the Annual Full Capacity Deliverability Option (previously section 4.3)

The CAISO appreciates the stakeholder feedback received on this topic. While Wellhead believes that the current AFC process does not need enhancement, the majority of interconnection customers do not see the current AFC process as very beneficial, but generally support a continuing need for a process that allows an interconnection customer to seek a TPD allocation after it has exhausted its opportunities through the standard allocation process based on affidavit scoring.

Energy Only Projects' Ability to Re-enter the CAISO Queue for Full Capacity (previously section 4.5)

Based on the majority of stakeholder comments being in favor of a process to allow energy only projects' the ability to obtain FCDS, the CAISO believes the proposal described below allows reasonable opportunity for energy only projects an opportunity to obtain a TPD allocation without re-entering the queue.

Commercial Viability – PPA Path Clarification (previously section 9.2)

The CAISO believes there is a need to redefine BSF in this straw proposal and proposes to shift to a model that allows projects to declare that their business plan is to proceed regardless of whether they obtain a PPA. If this proposal is implemented, electing between a PPA and BSF by this point (a project requesting extension beyond the 7/10 year threshold) will already be made. Thus, the CAISO is proposing that the option to BSF for the purposes of meeting CVC be eliminated.

CAISO TPD Allocation Proposal

Past and current practice have indicated that interconnection customers require a TPD allocation to compete for a PPA that subsequently allows LSE to use the Net Qualifying Capacity (NQC) from the project towards meeting their Resource Adequacy (RA) requirement. In an effort to 1) provide those projects that have an executed or regulator-approved PPA greater opportunity to obtain TPD, 2) better align the allocation process with the power procurement environment, and 3) adjust the existing process based on stakeholder input, the CAISO is proposing to modify the TPD allocation process, including the options of BSF and the AFC. The proposed modified process consists of allocation priority groups, and retains an affidavit ranking process to determine the allocation priority within each group.

Each allocation group will have certain criteria established to receive a TPD allocation. The TPD allocation will occur sequentially during the annual allocation process with all generators that receive an allocation being required to meet the retention criteria, as demonstrated through an affidavit. The CAISO notes that this proposal—like all proposals—would only apply prospectively, and would therefore have no effect on any existing deliverability capacity allocations (or any that occur between now and when such a proposal is in effect). In other words, the CAISO would not reorganize existing allocations into these groups until approval from FERC.

Allocation Group Summary

Allocation Group	Project Status	Commercial Status
1	Study/Parking Process	Executed or regulator-approved PPA or interconnection customer itself is LSE
2	Study/Parking Process	Shortlisted in an RFO process
3	Study Process (Following Ph.II Only)	Proceeding without a PPA (formerly Balance Sheet Financing)
4	Converted to Energy Only	Executed or regulator-approved PPA
5	Converted to Energy Only	Shortlisted in an RFO process
6	Converted to Energy Only	Commercial operation achieved
7	Energy Only	Commercial operation achieved

Allocation Group One includes those projects that are currently in the CAISO's queue cluster study process or following their parking opportunity(s) and have an executed or regulator-approved PPA with an LSE that require the project to be FCDS or projects being developed by an LSE with a regulatory authority to construct such project. In other words, those projects that requested FCDS in their Interconnection Request (IR) and have not been converted to energy only. The parking opportunities for the projects in this group will remain unchanged.

Allocation Group Two includes those projects that are currently in the CAISO's queue cluster study process or following their parking opportunity(s) and are included on a commercially recognized method of preferential ranking of power providers (i.e. shortlisted) by a prospective purchaser (LSE) that require the project to be FCDS. If a shortlisted project receives a TPD allocation, the interconnection customer must execute a PPA by November 30th of the calendar year such allocation was received. If a PPA is executed, the interconnection customer must attest that the PPA has been executed in the retention affidavit, typically due on or around December 1st, to solidify the allocation. Otherwise the TPD is released and becomes available for the next allocation cycle. Further, regulatory approval of such executed PPA must be received by the following year's TPD retention affidavit due date to solidify the allocation. If not, the TPD is released and becomes available for the next allocation cycle.

Allocation Group Three includes those projects that are currently in the CAISO's queue cluster study process and have declared that it is their intent to proceed with developing their project regardless of whether they obtain a PPA. The only point in the GIDAP process a project can proceed in Allocation Group Three is following the project's Phase II Study. More specifically, the only time a project can declare it will proceed without a PPA is in the seeking TPD affidavit and allocation cycle following the project's Phase II study. If a project claims that it will proceed without a PPA and receives an allocation, it must accept the allocation (whether full or partial) or withdraw. If a partial allocation is received, the project may park the remaining portion of the project that did not get TPD and seek TPD in the next allocation cycle, or downsize to the size corresponding with the TPD allocation they previously received. In the event a TPD allocation is

not received, that project may elect to park with their respective queue cluster and seek a TPD allocation in the following allocation cycle.

It is expected that a project that elects to proceed without a PPA will proceed to developing their project in a timely manner. As such, there should be no need by the interconnection customer to delay the negotiations of the GIA, start of construction, or progress towards achieving commercial operation. Therefore, at the time a project has declared it will proceed without a PPA and is allocated TPD, the following requirements would apply to the project:

1. Project must accept the TPD allocation. If the project chooses to not accept the TPD allocation, the project must withdraw from the queue;
2. Project will not be afforded any Suspension provisions in its GIA;
3. Project must proceed to executing a GIA, provide its written notice to proceed to the PTO within 30 calendar days following the execution of its GIA, and post its required Interconnection Financial Security (IFS); and
4. Project agrees that the CAISO and PTO will not consent to COD extensions beyond 7 years in queue under any circumstance.

Allocation Group Four includes those projects that selected FCDS on their interconnection requests, have been converted to energy only following the cluster study and parking opportunities, and have an executed or regulator-approved PPA with a LSE that requires the project to be FCDS. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Five includes those projects that selected FCDS on their interconnection request application, have been converted to energy only deliverability status following the cluster study and parking opportunities, and are included on a commercially recognized method of preferential ranking of power providers (*i.e.* shortlisted) by an LSE that requires the project to be FCDS. If a shortlisted project receives a TPD allocation, the interconnection customer must execute a PPA by November 30th of the calendar year such allocation was received. If a PPA is executed, the interconnection customer must attest that the PPA has been executed in the retention affidavit to solidify the allocation (e.g. affidavits were due December 1st in 2017). If the steps described here are not completed, the TPD is released and becomes available for the next allocation cycle. Further, regulatory approval of the PPA must be received by the following year's TPD retention affidavit to solidify the allocation. If not, the TPD is released and becomes available for the next allocation cycle. For energy only projects, the CAISO will only allocate TPD provided only where new DNUs are not required.

Allocation Group Six includes those projects that selected FCDS on their interconnection requests and have been converted to energy only following the cluster study and parking opportunities and have achieved commercial operation. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Seven includes those projects that selected energy only and have achieved commercial operation. For energy only projects, the CAISO will only allocate TPD provided no new DNUs are required.

Allocation Group Summary

Allocation Group	Project Status	Commercial Status	Can Build DNUs for Allocation?	Allocation Rank
1	Study/Parking Process	Executed or regulator-approved PPA requiring FCDS or interconnection customer is Load Serving Entity	Yes	Allocated 1st
2	Study/Parking Process	Shortlisted in a RFO/RFP	Yes	Allocated 2nd
3	Study Process (Following Ph.II Only)	Proceeding without a PPA (PKA, BSF)	Yes	Allocated 3rd
4	Converted to Energy Only	Executed or regulator-approved PPA requiring FCDS	No	Allocated 4th
5	Converted to Energy Only	Shortlisted in a RFO/RFP	No	Allocated 5th
6	Converted to Energy Only	Commercial operation achieved	No	Allocated 6th
7	Energy Only	Commercial operation achieved	No	Allocated 7th

Groups four, five, six, and seven will replace the current AFC deliverability option specified in CAISO tariff Section 9.2.1. These energy only allocation options are intended to serve as the opportunity where stakeholders have requested that a project be able to reenter the queue to seek TPD. While these options do not allow for a project to reenter the queue to seek TPD, (e.g. to be restudied for and allowed to fund additional DNUs) it serves as an opportunity where an energy only project can seek a TPD allocation without triggering new network upgrades.

The CAISO will perform a TPD allocation assessment within the annual reassessment study to determine what projects are eligible receive a TPD allocation. An initial step of the allocation assessment is a process to determine if any energy only projects seeking an allocation are located behind a local constraint. This will ensure that no energy only project seeking a TPD allocation require a Local Delivery Network Upgrade (LDNU) to be deemed deliverable. This process has been used for projects seeking FCDS through the AFC Deliverability Option. To ensure that local deliverability is retained for all FCDS projects, including projects in the most recent Phase I study, the methodology to determine project's impacts on local constraints is to include all active interconnection queue projects seeking FCDS in the study model, including the FCDS projects that have just completed their Phase I study. Additionally, all transmission upgrades approved in the Transmission Planning Process (TPP) and all interconnection related network upgrades that are under construction are modeled. No capacity associated with area deliverability is retained for any projects that have not yet received a TPD allocation. Energy only projects that are not located behind a local constraint are eligible to receive a TPD allocation up to the point where all local deliverability and area deliverability is fully allocated.

All projects seeking a TPD allocation must request to be included and evaluated in the annual

TPD allocation process by submitting a seeking TPD affidavit.

For all projects with an energy only status that submit a seeking TPD affidavit, consistent with the downsizing process, the CAISO will require a $60,000 deposit for each project requesting TPD allocation. The CAISO will utilize this deposit to cover costs associated with the evaluation and TPD allocation process. The CAISO will deposit all TPD allocation deposits in an interest-bearing account at a bank or financial institution designated by the CAISO. The TPD allocation deposit will be applied to pay for prudent costs incurred by the CAISO, the PTOs, or third parties at the direction of the CAISO or PTOs.

CAISO Commercial Viability – Elimination of Balance Sheet Financing Proposal

When interconnection customers request an extension to a project's COD the CAISO evaluates the request under the material modification assessment (MMA) process. The CAISO requires interconnection customers to prove their project meets commercial viability criteria to extend their milestones beyond the 7/10 year threshold, as it applies to project's studies under the cluster study process and serial study process, respectively.[1] The commercial viability criteria are:

- Having, at a minimum, applied for the necessary governmental permits or authorizations and that the permitting authority has deemed such documentation "as data adequate" for the authority to initiate its review process;
- Having an executed power purchase agreement, attesting that the Generating Facilities will be balance-sheet financed, or otherwise receiving a binding commitment of project financing;
- Demonstrating Site Exclusivity for 100% of the property (in lieu of a Site Exclusivity Deposit);
- Having executed a GIA; and
- Being in good standing with its GIA such that neither the PTO nor the CAISO has provided the interconnection customer with a Notice of Breach of the GIA (where the breach has not been cured or the interconnection customer has not commenced sufficient curative actions).
- The CAISO's current commercial viability criteria were designed to complement the TPD allocation criteria. The current commercial viability criteria can be thought about in broad terms as "TPD criteria plus", in other words, commercial viability is as stringent as TPD allocation criteria with respect to Financing and GIA requirements, and is more stringent with respect to Permitting and Site Exclusivity requirements.

The CAISO proposes to eliminate the ability to BSF as part of the commercial viability process.

[1] The In-Service Date ("ISD") for Generating Facilities studied in the serial study process shall not exceed ten (10) years from the date the Interconnection Request is received by the CAISO. For Generating Facilities studied in the cluster study process, the COD shall not exceed seven (7) years from the date the Interconnection Request is received by the CAISO.

In this new proposal, interconnection customers requesting an extension to a project's COD beyond the 7/10 year threshold will have three options:

- The interconnection customer could demonstrate commercial viability criteria with a PPA that provides a later in-service date of such project, then the COD extension would be approved to that delivery date and deliverability is maintained. This option would apply for all projects with a PPA (i.e. if a project received a TPD allocation as part of Group 1 or 4 above) except those that elected to proceed without a PPA (i.e. Group 3 above).
- The project could have a COD extension approved absent commercial viability demonstration, move forward with the project as energy only (if desired), and then seek deliverability through the new processes proposed in Section 4.1 above. This option would apply for all projects except those that elected to proceed without a PPA (i.e. Group 3 above).
- If the PTO is delayed in construction of the network upgrades, then the COD extension would be approved and deliverability is maintained. The extension would consist of a day-for-day slip based on the new in-service date provided by the PTO.

In consideration of and consistent with the revised TPD allocation criteria above, the CAISO proposes to eliminate BSF as an option in the commercial viability process. Therefore, the CAISO is also proposing to modify the commercial viability criteria in Appendix DD, Section 6.7.4 of the CAISO tariff.

4.2 Balance Sheet Financing

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.3, 4.5 and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.3 Participating in the Annual Full Capacity Deliverability Option

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.5 and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.4 Change in Deliverability Status to Energy Only

Background/Issue

The CAISO is seeking to clarify when projects may elect to convert to energy only deliverability status, when the CAISO will convert projects to energy only regardless of customer election, and the consequences for such conversions.

Currently, projects may voluntarily convert from FCDS or PCDS to energy only deliverability status only at certain times during the interconnection process. A project may convert to energy only deliverability status between Phase I and Phase II studies, or immediately following the TPD allocation process (either after the Phase II study or after parking for parked projects). This restriction minimizes impacts on other projects and the PTOs. Projects that convert to energy only deliverability status at these times are no longer responsible for DNU costs going forward.

Although the CAISO tariff is specific on when a project can voluntarily convert to energy only deliverability status, it does not specify whether a project can request energy only deliverability status at other times during the interconnection process, nor does the tariff describe the consequences of such conversion, particularly with regard to financial obligation for DNUs.

Projects are currently required to convert to energy only deliverability status for failure to meet commercial viability or TPD retention criteria. If the CAISO converts a project to energy only deliverability status under these conditions, all DNU costs are removed from the converting project's cost responsibility. However, the CAISO believes that some project developers may seek to utilize the conversion requirements associated with failure to meet CVC and TPD retention criteria to reduce their cost responsibility and then withdraw. The CAISO believes this outcome is problematic because it potentially allows projects to shift costs to other project developers inappropriately or to the PTOs. Failing to be commercially viable effectively becomes an attractive option for interconnection customers contemplating withdrawal.

Stakeholder Input

The CAISO received comments on this issue from CalWEA, ORA, First Solar, GSCE, LSA, PG&E, SCE, and SDG&E. All commenters favored exploring additional opportunities for a project to change from FCDS to energy only deliverability, with the exception of SCE.

CalWEA and ORA comment that the additional opportunities should only be provided after the currently allowed timelines to change to energy only have passed. GSCE suggested that the ability to change to energy only should be allowed at any time.

Nearly all respondents, with the exception of SCE, supported projects changing to energy only for any reason, including not meeting TPD retention criteria or commercial viability, and should have their non-refundable IFS network upgrades amount based on project costs prior to the conversion to energy only. SCE suggested that, in addition to no additional opportunities to change to energy only, projects that withdraw or fail to meet TPD retention criteria after accepting an allocation be required to forfeit 100% of their IFS network upgrade posting.

CAISO Response

The CAISO proposes that projects that change to energy only deliverability status as a result of failure to meet commercial viability or TPD retention criteria will retain the cost responsibility for all DNUs.

The CAISO also proposes that projects may request to change their deliverability status to energy only at any time after the Phase II study. These requests will be evaluated in the annual reassessment study to determine cost responsibility for the project. If the DNUs are still required, the project will be converted to energy only, but will retain the cost responsibility for

those upgrades. If, however, the DNUs are no longer needed, the upgrades will be removed from the project's cost responsibility.

4.5 Energy Only Projects' Ability to Re-enter the CAISO Queue for Full Capacity

The CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.3, and 9.2. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

4.6 Options to "Transfer" Deliverability[2]

Background/Issue

Currently interconnection customers have some ability to effectively "transfer" deliverability to a different owner through the repower process and the material modification analysis. To be sure, deliverability is not a property right and may not be sold or otherwise assigned; only transferred with an entire interconnection customer itself. In any case, the CAISO calculates deliverability based on the deliverability assessment methodology.

Interconnection customers also may "transfer" their deliverability capacity among their own generating units (new and old) at their generating facility. Adding new generating units is generally done through the behind-the-meter expansion option under an independent study request. Any expansion is energy only unless the capacity expansion uses the same technology as the original generating facility. If it is, the interconnection customer can elect to request to transfer its deliverability from the original generating units to the capacity expansion facility.

As part of 2018 IPE, the CAISO proposes to clarify the methodology of deliverability transfers under various scenarios.

Stakeholder Input

The CAISO received comments on this topic from CalWEA, First Solar, LSA, NRG and SDG&E. All commenters supported the clarification of the deliverability transfer provisions.

CAISO Response

As explained above, deliverability transfer requests are typically reviewed by the CAISO through the repowering process or through a material modification analysis[3]. An interconnection customer will repower its facility to effect a technology change and effect an assignment of the interconnection project itself (along with all rights and obligations). Interconnection customers

[2] Please note that while the CAISO is making this proposal at this time, we are also reviewing FERC's recent Order 845 in Docket No. RM17-8-000 to determine if our proposal is impacted by the order.

[3] See Business Practice Manual for Generator Management, Section 12 – 'Repowering' and Section 6 – 'Overview of Modification Provisions'.
https://bpmcm.caiso.com/BPM%20Document%20Library/Generator%20Management/BPM_for_Generator Management_V21_Clean.docx.

also frequently transfer their deliverability capacity among existing and new generating units after a behind-the-meter expansion. The CAISO explains common scenarios below where deliverability is "transferred" from different generating units or technologies. The CAISO also sets forth its proposal for a new methodology in scenario 4.

Opportunities to Transfer Deliverability

1. *Deliverability Reservation from Repowering Generators*

   When a generator with Full or Partial Capacity Deliverability Status (FCDS or PCDS) plans to retire, the generator owner may request that the deliverability of its existing generator be preserved for its repowered project. The repowered project is either approved through the repowering process, if the total capability and electrical characteristics of the generating unit remain substantially unchanged, or by submitting it into the generation interconnection queue. As such, deliverability is transferred between the same owner, old and new generating units at the same site and under the same GIA.[4]

2. *Deliverability Transfer among Generating Units*

   Upon request from the generator, the CAISO would transfer deliverability between existing generating units at the same Point of Interconnection (POI), owned by the same generator, and under the same GIA. The CAISO will reduce deliverability from the transfer-from generator and assign to the transfer-to generator using the deliverability transfer calculation below. The transfer-to generator will have:

   - FCDS if the transfer-from generator had FCDS or PCDS and the full deliverability is calculated for the transfer.
   - PCDS if the transfer-from generator had FCDS or PCDS and the partial deliverability is calculated for the transfer.
   - Interim Deliverability Status (IDS) if the transfer-from generator had IDS.

3. *Deliverability Transfer within the Same Interconnection Request*

   The interconnection customer is allowed to shift deliverability between different portions (*i.e.*, generating units) of the same interconnection request based on the deliverability transfer calculation below. This includes deliverability being transferred to energy storage capacity conversions or additions made through the MMA review process. The CAISO will perform a deliverability transfer calculation and notify the interconnection customer of the resulting deliverability for each component of the project.

4. *Deliverability Transfer for Behind-the-Meter Capacity Expansion*

[4] The CAISO notes that for all of these, "generating units" are a generating facility capable of having their output separately metered such that they are able to have separate resource IDs and participate in the CAISO markets separately (where the interconnection customer elects to do so). Typical examples include bifurcations of large solar or wind resources (X turbines/panels are one unit, Y turbines/panels are another) and storage resources paired with any other generator. There are a myriad of other possibilities.

Currently, section 4.2.1.2 of Appendix DD requires that the behind-the-meter capacity expansion is metered separately from the original generating facility and assigned a separate resource ID, unless the expansion is the same technology as the original generating facility. When the behind-the-meter capacity expansion is metered separately, the expansion can only be energy only. The CAISO proposes to allow the interconnection customer to designate all or partial deliverability from the original generating facility to the capacity expansion. The CAISO will perform a deliverability transfer calculation to determine the resulting deliverability for the original generating facility and the capacity expansion.

Calculation of Transferred Deliverability

A major principle of a deliverability transfer is that the transfer results in the same or lower maximum output tested in the deliverability assessment, based on the methodology adopted at the time of the transfer request. The table below shows the maximum output in the deliverability assessment for different type of resources:

Table: Maximum Output Assumptions in Deliverability Assessment

	Existing	New
Non-intermittent Resources	Highest NQC value in last 3-year summer months	Requested Pmax
Intermittent Resources (solar and wind)	CAISO calculated exceedance level expressed as percentage of the interconnection capacity	

The deliverability transferred is calculated as:

$$(Deliverability\ \%)_{transfer-to} = \max\left\{100\%, \frac{(Max\ Deliverability\ Output)_{transfer-from}}{(Max\ Deliverabiity\ Output\ if\ FC)_{transfer-to}}\right\}$$

4.7 Transparency on Availability of Deliverability

Background/Issue

Stakeholders have requested that the CAISO provide insight into how much deliverability is available at different points on the grid, and how much is available before the next significant upgrade would be triggered. The CAISO has stated previously that this information is available in documents on the CAISO public website or Market Participant Portal, such as cluster Phase I and Phase II area study reports, annual TPD allocation reports, and annual transmission plans.

Stakeholder Input

The CAISO received comments from CalWEA, First Solar, ITC, LSA, PG&E and SDG&E. In general, stakeholders agree with the CAISO position that the CAISO already provides sufficient information. First Solar, ITC, and LSA emphasize the importance of such information to the generators. LSA requests that the CAISO post the TPD allocation reports on the public site and include operational deliverability assessment in the annual reassessment.

CAISO Response

The TPD allocation reports include Critical Energy Infrastructure Information (CEII), therefore

they are to have restricted access and therefore are posted on the Market Participant Portal. The CAISO will add on the public website a link to the most recent report on Market Participant Portal. To access the Market Participant Portal, one must complete a non-disclosure agreement. Instructions are located on the CAISO website at: http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx

Regarding LSA's request to include operational deliverability assessment in the annual reassessment, the CAISO does not see the need and could not accommodate another annual operational deliverability assessment update because the operational deliverability assessment is already performed annually for all the existing generators and active generation projects in the queue.

4.8 Commercial Viability Criteria – Continuous Compliance Obligation

Background/Issue

EDF-RE has suggested the CAISO consider implementing a continuous CVC compliance obligation whereby the CAISO would check projects during the year to ensure a project that had met CVC at its last MMA continues to meet CVC established in Section 6.7.4 of Appendix DD of the CAISO tariff, including during instances where a project makes modifications after it has made an initial CVC demonstration but before the annual review process. This issue is being considered in an open proceeding before FERC in docket ER18-156-000. On March 16, 2018, the Commission accepted the Second Amended LGIA for filing and suspended it for a nominal period, to become effective December 25, 2017, subject to refund, and has established hearing and settlement judge procedures.

Stakeholder Input

CalWEA commented that the CAISO's position should be based on its impact on the entirety of the generation interconnection process as opposed to a single FERC proceeding.

LSA, EDF and SPower commented that most compliance obligations under the CAISO tariff requires continuous compliance and there is no reason why compliance with CVC should only be required on the day when the sworn compliance affidavits are due. These stakeholders believe that non-compliance between these dates should not be tolerated. LSA, EDF and SPower stated the CAISO should re-verify CVC compliance between affidavit submissions if the project is modified (even if the modification is not otherwise material), and especially if the CAISO has reason to suspect that the project is not in compliance. SCE supports the CAISO considering the implementation of a continuous CVC compliance obligation, including during instances where a project makes modifications after it has made an initial CVC demonstration but before the annual review process. SCE believes the increased review frequency should be effective towards reducing the time a non-commercially viable project remains in the queue.

PG&E and SDG&E agrees with the CAISO that it would be appropriate to await the outcome of the FERC proceeding and then determine if this topic should be discussed further.

CAISO Response

Stakeholders generally misunderstand the CAISO's position. Interconnection customers are not required to meet the CVC only on the days where they attest to their compliance. The CAISO merely attested that it is unreasonable to require interconnection customers to comply with the CVC for a project modification as a condition of even applying for the modification. The CAISO believes that where a modification would alter its site exclusivity or permitting, it is reasonable to have the modification approved before being required to alter siting and permitting. In any case, the current tariff interpretation is now before FERC. The CAISO will revisit this issue after the case has been resolved.[5]

4.9 Interim Deliverability Status

Background/Issue

Stakeholders have requested clarification of the CAISO's interim deliverability status methodology and further information on decisions related to what projects are awarded available deliverability. The CAISO has previously indicated it provides information regarding interim deliverability in various documents that address the stakeholder requests.

Stakeholder Input

CalWEA and SDG&E agree with the CAISO position that this issue should not be included in the 2018 IPE. LSA requests that the CAISO provide annual updates to the operational deliverability assessment in the annual reassessment.

CAISO Response

The CAISO provides information regarding interim deliverability in various documents that address the requests for clarification and further information and therefore does not believe this issue needs to be a 2018 IPE topic. As discussed in topic 4.7 above, the operational deliverability assessment is performed annually as part of the Phase II interconnection study process and it assesses all the generation projects in the queue. The CAISO does not see the need and could not accommodate another annual operational deliverability assessment update.

4.10 Effective Load Carrying Capacity

Background/Issue

Stakeholders have requested that the CAISO explore the implications of the CPUC's adoption of the Effective Load Carrying Capacity (ELCC) for wind and solar projects on deliverability availability and interconnection studies. The CAISO has shared its review of the potential implications of ELCC and intends for the deliverability methodology review to be considered in a specific effort outside of this IPE 2018 initiative.

[5] This issue is proceeding in FERC Docket No. ER18-156-000.

Stakeholder Input

The CAISO received comments on this topic from CalWEA, First Solar, LSA, ORA, SDG&E, and Wellhead. Theses stakeholders support the CAISO's separate effort to review the deliverability methodology. CalWEA expressed the opinion that studying generation levels above ELCC values will force network upgrades that add no resource adequacy capacity value to the system. LSA urged the CAISO to initiate the effort quickly, aim to conclude it by year-end, and reflect the new methodology in the upcoming interconnection and planning studies.

CAISO Response

The CAISO is actively reviewing the deliverability methodology. Because it is a highly complex technical study, the CAISO must evaluate potential modifications and consequences before proposing a new methodology for stakeholder review and input. The CAISO expects to propose the methodology modification to the stakeholders near the end of 2018 as a separate stakeholder initiative. This topic is not included in the 2018 IPE.

4.11 Cancellation or Delay of CAISO Approved Transmission Projects

Background/Issue

Stakeholders have requested that the CAISO consider expressly including generator deliverability in decisions to delay or cancel transmission projects that have been approved under the CAISO TPP and in mitigation plans to address these actions. Stakeholders also request CAISO provide notice to generation developers of any resulting impacts. The CAISO has responded that it does not cancel a transmission upgrade if the upgrade is required by a generation project active in the interconnection queue. Delays to transmission upgrades could be due to many factors, such as environmental issues in the permitting process, equipment availability, staffing, or project sponsor abandonment. The CAISO updates transmission project status regularly in both the annual transmission plan report and the cluster interconnection study reports. The CAISO also provides updates directly to the interconnection customers when the upgrade affects the deliverability status of the generation projects. For these reasons, the CAISO does not plan to include this issue in the 2018 IPE initiative.

Stakeholder Input

CalWEA, ORA, PG&E, and SDG&E agree with the CAISO position. First Solar, GSCF, and LSA requested that the CAISO include adding a clear statement to this effect in the CAISO practice in BPM or tariff in the 2018 IPE process.

CAISO Response

This issue is being addressed in the CAISO BPM PRR 1027. The CAISO agrees with the point that the CAISO has made references to solution "cancellations" or being "on hold" and as such, should be referenced in BPM for transmission planning Section 4.12.2.3. The CAISO is discussing resolution options with LSA in the BPM change management process. This issue will not be included in the 2018 IPE initiative because it is already being addressed in the BPM

change management process.

5. Energy Storage

5.1 Distributed Energy Resources

Background/Issue

This issue was proposed by stakeholders. Diversified Energy Regulatory Consulting suggested the CAISO provide clarification regarding interconnection, jurisdictional boundaries, market participation and dispatch, and safety requirements for Distributed Energy Resources (DERs) in this stakeholder initiative. In the issue paper, the CAISO clarified that the Energy Storage and Distributed Energy Resources (ESDER) Phase 3 initiative was the appropriate forum to address most of these topics, while others were addressed by the CPUC in its energy storage proceeding, docket R.15-03-011.

Dominion Energy recommended that CAISO consider modifications to the interconnection process to include a notification to distributed energy resources when they potentially meet the North American Electric Reliability Corporation (NERC) Bulk Electric System (BES) definition inclusion 4 (I4) criteria. This criterion establishes that project aggregations of 75 MVA or greater are included in the definition of BES and fall under NERC jurisdiction. In the issue paper the CAISO stated that it is not its role to determine and notify entities if they fall under NERC jurisdiction or may have to meet NERC standards.

Stakeholder Input

The CAISO received comments on this topic from CESA, ORA, and SDG&E. SDG&E agrees that this topic should not be included as part of 2018 IPE. ORA and CESA agree that ESDER Phase 3 is the appropriate forum to address interconnection, jurisdictional boundaries, market participation and dispatch, and safety requirements for DERs. CESA indicated a need to further develop the capabilities for Distributed Energy Resource Aggregations (DERA) to have resource adequacy values. Here again, this issue would best be addressed in ESDER Phase 3.

CAISO Response

The CAISO will not include this topic in 2018 IPE.

5.2 Replacing Entire Existing Generator Facilities with Storage

Background/Issue

Some interconnection customers have sought to replace the entirety of their project or existing generating facility with storage through the CAISO's modification process. The BPM for Generator Management ("GM BPM") Section 6.5.9 provides that projects in the queue may replace a portion of the requested MW with storage, or add storage to the project above the approve project capability, provided it does not increase the total output of the generating facility

to the grid at any time. For existing generating facilities, the GM BPM allows for a portion of the project capacity to be converted to energy storage including the FCDS/PCDS values. In both instances, the CAISO assumes the non-storage portion of the generating unit is available to charge the storage facility if the grid cannot directly provide power to the energy storage unit when necessary. While there is currently no bright-line test to determine how much capacity can be replaced with storage without substantially changing the electrical characteristics of the generating facility, a whole replacement of the generating facility would constitute such a change. To date, the CAISO has only approved up to 10% conversion to battery from an existing project via the modification process.[6] In addition, as discussed further below, the CAISO has allowed projects to add up to 100% of their original studied capacity to the project but requires an automatic tripping scheme to ensure that the actual capacity delivered to the grid is not greater that the studied interconnection capacity. However, if the interconnection customer desires to convert more of their deliverability allocation to the energy storage unit, the value of FCDS/PCDS/IDS will be based on the exceedance factor of the original generating unit.

Replacing some project capacity with storage under the modification process may have significant impacts on grid reliability. First, charging was never studied for a traditional generator. Second, because a whole change from the studied project to storage results in material changes to the electrical characteristics that were studied, the CAISO cannot permit a replacement of 100% of the generating facilities to battery storage through the modification process. Instead, whole change storage replacement requests must go through the cluster study process as a new project.

Stakeholder Input

CESA stated that there is a major opportunity to consider expedited interconnection processes for the complete replacement of an existing generating unit with interconnection service in place, especially in light of policy and market forces driving underutilized interconnection capacity. CESA believes the concept and triggers for needing additional study for energy should link to: (i) whether the generation from the resource could be materially different; and (ii) whether the charging of the resource requires study. For (i), CESA expects the full deliverability and nature of studies for dispatchable fossil plants are such that additional study for dispatchable energy storage discharges may be unnecessary.

CESA also raised an issue where storage is paired with an existing generator and the existing generator retires, what happens to the storage capability? CESA also recommended that the CAISO provide further clarity and transparency on the repowering process around these retirement scenarios, as the current rules and processes may unreasonably cause the repowered energy storage resource to retire along with its paired existing generating facility.

First Solar and GSCE both requested the CAISO to expand on what is possible for energy storage expansions and to evaluate additional possibilities for these types of conversions. In addition, NRG requested that CAISO consider developing expedited interconnection processes

[6] This is not to say that the CAISO would not approve higher percentages. The CAISO is merely saying that of the requested modifications, 10% conversion has been the highest approved. The vast majority of infeasible conversions were approaching 100%.

that leverage this valuable existing infrastructure to promote the deployment of energy storage resources that are a key part of California's energy future. SDG&E requested that the CAISO clearly define the maximum percentage of an existing project that can be replaced with energy storage.

Invenergy comments were similar to First Solar and GSCE but also suggested the CAISO should establish a cutoff date for changes in technology to be tendered through the modification request process that is as late as feasible for CAISO.

CAISO Response[7]

The various facets of energy storage have not been fully addressed in the BPM and should be explored and addressed in this initiative. Specifically, interconnection customers have asked if storage is added to an existing generating facility and the facility retires, what happens to the storage component. Also commenters requested that the CAISO be more transparent on what is allowed for the addition of storage and define better guidelines or "rules of thumb" that could be provided to generation developers, instead of the current vague process.

The CAISO disagrees with CESA comments that additional study for dispatchable energy storage discharges may be unnecessary. A fossil plant is a rotating machine that has inertia that provides voltage and VAR support to the grid whereas the energy storage is inverter based and the electrical characteristics are substantially different. This would not, however, apply to cases of replacing or adding storage to existing inverter-based generation like solar, where dispatchability at any given time of day was neither assumed nor studied in the past interconnection studies. Actually the CAISO has added storage to solar units through the modification process because the electrical characteristics are similar and while CESA is correct, the production of electricity could be at different times than expected, the generation interconnection studies use peak periods for analysis, and the storage can only be dispatched at the CAISO's direction which would not harm the grid.

CESA also questions what should happen to the storage capability when storage is paired with an existing generator and the existing generator retires. The CAISO agrees that this is an outstanding issue and the BPM should be expanded to opine on this issue. CESA also requested the CAISO provide further clarity and transparency on the repowering process around these retirement scenarios. The CAISO has incorporated the impact of repowering and retirements in the BPM for Generator Management section 12, but agrees that the issue of storage combined with these units has not been specifically address and should be included in this initiative. Invenergy also suggested the CAISO should establish a cutoff date for changes in technology to be tendered through the modification request process that is as late as feasible for CAISO. The CAISO tariff already addresses this issue. A modification can be tendered at any time in accordance with Appendix Y, U, and DD Section 6.7.2 before the commercial operation date and after the commercial operation date in accordance with Article 5.19 of the GIA.

CAISO currently allows a generating facility to add 100% of its approved capability to the project

[7] Please note, this response is being made prior to the CAISO considering the impact of FERC's recently released Reform of Generator Interconnection Procedures and Agreements and this response may change due to compliance with the Commission's Order. Docket No. RM17-8-000; Order No. 845.

provided the output of the project does not exceed the interconnection capacity at the POI and the generator has a limiting mechanism to ensure that the additional capacity is not put on to the grid. In addition, if a project desires to decrease the amount of proposed generation and replace it with storage, the CAISO has allowed up to 10% change to date, but the issue of how much replacement can be approved needs to be determined on a case-by-case basis. This is due to the impact to the short circuit duty and assurance that the storage is dispatched for both charging and discharging at the CAISO's direction. Otherwise the storage would be considered a firm load and be required to be studied as firm load by the interconnecting PTO.

As noted above, using the modification process does not allow the CAISO or PTO to study whether the change to the generating facility would affect the reliability of the grid. As an example, assume a 100 MW solar generating facility wants to modify its project to 80 MW solar and 20 MW energy storage. The original project was studied for FCDS at 93 MW on-peak and 0 MW off-peak. The project, as an example, could have solar FCDS of 74.4 MW and PCDS of 18.6 MW for energy storage. Since the modification process does not allow for the restudy of a project's deliverability, the CAISO will not know the impact to the grid of discharging the energy storage unit outside of the on-peak period. This is the reason behind the CAISO's requirement that energy storage added through the generator interconnection process, including modifications, must follow CAISO dispatch instructions to ensure reliability of the grid. It is not considered a firm load, it is treated as negative generation.

An additional example helps explain other related requirements. For instance, assume that a 100 MW solar generating facility wants to modify its project by adding 20 MW energy storage under the modification process. In order to ensure that the generating facility meets the established requirement that it does not increase its total MW capability delivered to the grid, the project must install an automatic generator tripping scheme. This automatic generator tripping scheme must be sufficient to ensure that the total output of the generating facility, including the energy storage addition, does not at any time exceed the interconnection request maximum interconnection capacity at the POI. The CAISO will have the authority to trip the generating facility subject to the automatic generator tripping scheme, or take any other necessary actions to limit the output of the generating facility so the total output of the generating facility does not exceed the approved interconnection request capacity at the POI. In addition, the 20 MW energy storage addition is considered energy-only, therefore, adding storage does not impact FCDS. If the project wants to move deliverability to the storage unit from the solar unit then the project would be PCDS.

Others have raised the question if a generator goes through the modification process and is approved and then the generator retires, what happens to the energy storage component? The outcome would depended upon the reliability assessment that is done when the original generator requests retirement. The CAISO and PTOs will assess the impact of the system without the original generating facility and just the energy storage remaining. If there is no reliability issue then the energy storage can stay interconnected and continue to operate and any FCDS or PCDS that is available could be transferred from the retiring unit to the energy storage. If there is a reliability issue, then the generator cannot retire unless a mitigation is determined, or the energy storage may need to be disconnected at the time the unit retires. If a generating facility wants to retire and repower as energy storage, then they would need to go through the

repowering process and the repowering rules will apply, including the potential transfer of FCDS or PCDS if the original generating facility has such status.

5.3 Deliverability Assessment for Energy Storage Facilities

Background/Issue

Stakeholders requested additional information and clarification to help them better understand the deliverability assessment for energy storage facilities. The CAISO has clarified the deliverability methodology for energy storage facilities in the issue paper published in this initiative.

Stakeholder Input

CESA acknowledged the CAISO's clarification of the deliverability assessment for energy storage facilities and requested further clarifications on how deliverability is allocated between system and flexible capacity deliverability.

SDG&E agreed with the CAISO clarification.

CAISO Response

The CAISO believes the issues raised by stakeholders have been addressed through the clarifications provided in the Issue Paper – 2018 Interconnection Process Enhancements and do not require further consideration in 2018 IPE.

Regarding CESA's further comments on flexible capacity deliverability, currently there isn't a separate deliverability assessment for flexible capacity. The effective flexible capacity (EFC) is bundled with the resource Net Qualifying Capacity (NQC). It is assumed that the summer peak condition reasonably represents the stressed operating scenario to deliver the full output of the resource to the CAISO aggregate load. Therefore, the NQC is considered as the upper limit of the EFC. As more and more renewable generation went into operation, the actual data revealed that the highest system ramping needs occur during weekends in the winter, instead of summer peak days. The CAISO believes that the deliverability test under summer peak conditions provides enough assurance that the flexible resources are deliverable at the end of the ramping period during summer months. This issue however, may become a concern if ramping in the winter season is constrained by the available transmission capacity. The current deliverability methodology does not serve the purpose of ensuring flexible capacity is not limited by a transmission constraint when it is needed. Therefore, the CAISO believes that a new methodology might be needed to test the deliverability of flexible capacity, calculate the flexible capacity for each resource and quantify the diminishing impacts of new wind and solar resources on flexibility deliverability. In addition, policies may need to be developed to identify situations that new transmission upgrades shall be pursued to support flexible deliverability and to consider if this analysis should be performed as part of the generation interconnection process. The CAISO plans to investigate in depth the need for flexible deliverability requirement on its own track following the discussion of the deliverability assessment methodology with the stakeholders. This issue is not included in 2018 IPE.

6. Generator Interconnection Agreements

6.1 Suspension of Notice

Background/Issue

The CAISO believes that modifications to the LGIA are needed to allow for request and approval of a project to suspend. Article 5.16 of the LGIA requires interconnection customers to notify the CAISO and PTO if a project will be suspended. This article is not specific in that requests are not required to include a start and end date for the suspension. The provisions also do not provide an opportunity for the CAISO to approve the terms of the suspension to ensure that the project is not in breach of the generator interconnection agreement (GIA) when suspension is requested, and to ensure that the suspension will not impact other interconnection customers.

Stakeholder Input

CalWEA commented that any information about the start and end date for suspension period will likely be highly hypothetical. CalWEA stated the CAISO should consider the usefulness of such hypothetical information if it chooses to require it from the interconnection customer.

LSA/EDF-RE/SPower commented that they do not object to the CAISO's desire to clarify that suspension notices should include start and end dates, or that the CAISO's evaluation of such notices include potential harm to later-queued projects. LSA/EDF-RE/SPower also noted that the CAISO should 1) clarify the process for developers seeking to extend such suspensions, within the limits allowed in the tariff; 2) comply with the Generator Interconnection Provisions (Appendix B) that the CAISO and developers will negotiate new milestones once the project exits suspension, and not require MMA requests for new milestones as a condition of initiating the suspension; and 3) developers seeking to suspend their projects have the opportunity to mitigate harm to later-queued project, *e.g.*, by continuing to fund upgrades needed by later-queued projects or subjugating their deliverability rights to others in their cluster.

NRG raised concerns that the CAISO having approval authority over a LGIA suspension period is very significant and warrants considerable discussion. PG&E also supports having the discussion. The CAISO agrees and believes this stakeholder process will provide that venue.

ORA, SDG&E, and SCE support the requirement for inclusion of start and end dates along with the authority to approve the suspension. SCE notes that this requirement will provide the CAISO with the ability to approve the suspension period, with concurrence from the PTO, by ensuring that the project is in good standing and in determining how the milestones set forth in the GIA and later queued customers may be impacted during the suspension period. In addition, the inclusion of a start and end date will place the CAISO and the PTO in a better position to enforce the termination provision of the GIA if work does not recommence by the end date. In addition, SCE requested the CAISO modify the GIA suspension language to include provisions that would require the interconnection customer or off-taker, upon the recommencement of work, to negotiate in good-faith, new revised milestone dates based on the construction duration period already established in the executed GIA (taking into account the period of suspension). A request by the interconnection customer or off taker to self-build pursuant to Article 5.3 of the

GIA by claiming that the PTO can no longer meet the milestone dates designated in the executed GIA as a result of not taking the period of suspension into account is unreasonable and should be denied.

CAISO Response

CalWEA believes that any requirement for requests to include start and end dates would not be helpful because any dates provided would be highly hypothetical. While the CAISO understands the start and end date information may be hypothetical, providing even hypothetical information can help the CAIS determine the impact on other generators.

LSA/EDF-RE/SPower also wanted clarification on seeking extension of suspensions which don't exceed the three (3) years allowed in the GIA which we will include in the GM BPM Section 10. With respect to their request to negotiate milestones once the project exits suspension without using the MMA process, the CAISO disagrees. The CAISO and PTO need the MMA process to ensure that the dates proposed by the interconnection customer are achievable and that network upgrades are in place for the new timeline.

Based on comments received, the CAISO proposes that article 5.16 of the LGIA be modified to include language such as when the interconnection customer requests suspension, the written notice shall include a start and end date for the suspension. The CAISO shall notify the interconnection customer of its approval which shall not be unreasonably withheld. If there is an impact of the suspension on other queued customers, the interconnection customer has the right to mitigate the impacts provided all Parties agree which shall not be unreasonably. In addition, the article will be modified to include language requiring the interconnection customer to negotiate in good-faith to expeditiously revise the milestone dates.

6.2 Affected Participating Transmission Owner

Background/Issue

Generating facilities interconnecting to the CAISO controlled grid may affect the transmission system of a PTO that is not the PTO at the POI. In these instances, the PTO is referred to as an affected PTO. The current GIDAP does not address how the interconnection customer's financial security postings, cost responsibility, and affected PTO repayment will be disbursed among the interconnecting and affected PTOs.

Stakeholder Input

CalWEA fully supports CAISO's intention to examine this issue in the 2018 IPE. CalWEA suggested the CAISO consider a combined four (or more) party agreement, combining the generator interconnection agreement and the affected PTO upgrade facilities agreement (GIA/UFA). The single agreement would address all interconnection issues among the CAISO, interconnection customer, interconnecting PTO, and all affected PTOs.

LSA, EDF, and SPower commented in support of better clarification and documentation of situations where a PTO other than the interconnecting PTO is impacted by a generator interconnection. They support a structure similar to the "manager" structure for a combined GIA/UFA where the interconnecting PTO would act as the single point-of-contact "manager" and

would be responsible for communication and management of payment distributions to other impacted PTOs. In lieu of that structure, LSA, EDF, and SPower could support CalWEA's proposed four-party GIA, including both the interconnecting and other impacted PTOs.

NRG, PG&E, and ORA support the CAISO clarifying the policies regarding the financial considerations when interconnection customers must contract with two separate PTOs and including this issue in IPE 2018.

In response to a suggestion raised during the January 24 stakeholder meeting that a four-party agreement (between the interconnection customer, interconnecting PTO, affected PTO, and the CAISO) may be used to detail the obligations of all four parties, SCE strongly opposes, in its written comments, this proposal for the following reasons:

1. The affected PTO has no input with respect to the interconnecting PTO's requirements as identified by the reliability studies performed by the interconnecting PTO.
2. The affected PTO has no input with respect to upgrades that may have been identified internal to the interconnecting PTO's electric system.
3. The interconnecting PTO's have no ability to manage and resolve issues on behalf of the interconnection customer that may arise with an affected PTO.
4. Negotiating appropriate agreements among three parties is already a complex time-consuming effort which would grow significantly with each additional party that is added to the agreement.
5. The CASO already oversees agreement negotiations and mediates any stalled negotiations.

SCE supports the continued use of separate agreements in order to properly identify the requisite terms and conditions among only the parties involved. SCE also supports including a pro forma affected PTO's facilities agreement in the GIDAP to assist in the negotiations.

SDG&E is not opposed to clarifying policies for ICs and PTOs regarding financial considerations when ICs must contract with two separate PTOs for the construction of the interconnection facilities and network upgrades.

CAISO Response

Stakeholders generally support adding clarification to the tariff to remove the cost uncertainty when more than one PTO is impacted by an interconnection request. The CAISO proposes to modify the tariff to allow a separate maximum cost responsibility for each PTO. The maximum cost responsibility for each PTO will be documented in the interconnection studies and the GIA or affected PTO upgrade facilities agreement as appropriate. Interconnection customers will make interconnection financial security postings with interconnection financial security instruments to each PTO separately. In addition, interconnection customers will be entitled to receive repayment for their contribution to the cost of network upgrades from each PTO separately. Repayment of amounts advanced for reliability network upgrades will be paid by each PTO up to a combined maximum of $60,000 per MW of generating capacity as specified in

the GIA. Total repayment from both PTO's will be applied proportionately based on the costs of each PTO's RNUs.

Sample Proportional Repayment Calculation

Assumes a 100 MW generating capacity and a $10,000,000 total cost of reliability network upgrades across all PTOs.

	RNU Cost	Proportion of Total Costs Assigned to PTO	100 MW Maximum Repayment
Interconnecting PTO	$ 7,000,000	70%	$ 4,200,000
Affected PTO	$ 3,000,000	30%	$ 1,800,000
Total	$ 10,000,000	100%	$ 6,000,000

CalWEA, LSA, EDF and SPower proposed that the CAISO create a 4 (or more) party agreement among the interconnection customer, CAISO and the two PTOs. Due to joint participation lines, like the Southwest Power Link, the CAISO was involved in a 5-party GIA with the potential that the interconnection customer could decide later whose balancing authority area the point of interconnection was in. This require two studies and two sets of practically every term and condition of the GIA, including the appendices. Moreover, the responsibilities and obligations were confused depending upon the PTO chosen. In addition, the customer became very confused as to which transmission owner was responsible for each obligation and as a non-conforming agreement the customer was concerned that all amendment would need to be filed and approved by FERC prior to implementation. Fortunately, the agreement was never signed as the project decided to not move forward.

In this instance, with the affected PTO, the obligations of the interconnection customer are different with respect to the interconnecting PTO. Moreover, the terms and conditions other than construction, operation and payment do not apply to the affected PTO. Thus, after carefully considered this suggestion, CAISO found that it is too complicated to delineate which provisions of the tariff apply to which participating transmission owners in a single agreement and the obligations in the GIA are much different than the obligations in a utility facilities agreement. This CAISO's intent is that this issue will not be further discussed in IPE 2018.

6.3 Clarify New Resource Interconnection Requirements

Background/Issue

New generators seeking interconnection to the CAISO are required to go through the CAISO generator interconnection process. Generators that pre-existed the CAISO and operate under grandfathered PPAs (typically qualifying facilities (QF)) can convert to a participating generator status under Section 25 of the CAISO tariff upon termination of their PPA, and receive interconnection service under a 3-party GIA with the CAISO and PTO. Besides going through the conversion process, these generators are also required to go through the New Resource Implementation (NRI) process. The CAISO believes that it should clarify these procedures to

make them more transparent in the tariff. Any tariff amendment would be for clarification purpose only, and would not burden generators with any new obligations.

Stakeholder Input

LSA does not believe that a tariff change is needed but will not object to one. LSA also believes that it may be helpful to new developers, or those repowering or converting QF contracts, if better explanatory materials for the New Generator Interconnection Process were developed.

CalWEA, ORA and SDG&E agree with the CAISO's position on this issue.

CAISO Response

Stakeholders are either in support or did not object to this issue. The CAISO believes that providing tariff references to NRI processes will clarify procedures and obviate the need for development of additional explanatory materials. The CAISO will proceed with amending Section 25 of the CAISO Tariff to reference the NRI requirement. To the extent stakeholders believe there is a specific complexity or lack of information in the NRI process, the CAISO would welcome additional feedback provided through stakeholders written comments. In addition, the CAISO has held a Resource Interconnection Fair that explains all steps of the generator interconnection process and posts the slides on the CAISO website for reference. The slides from the 2017 fair can be found at: http://www.caiso.com/informed/Pages/MeetingsEvents/PublicForums/Default.aspx.

6.4 Performance and Diagnostic Minimum Requirements for Inverter based Generation

Background/Issue

Over the past five years, the CAISO controlled grid has expanded substantially in correlation with the state's environmental policies of 33% renewables by 2020 and 50% by 2030. With this expansion, more generating facilities are interconnected with inverters, and the technical characteristics of the inverters are more frequently affecting the system during transmission faults. During recent operations, the CAISO system experienced one transmission fault that ultimately led to 1,100 MW of generation that unnecessarily tripped offline and did not return to service for an extended period of time. These generators tripped for faults on the high voltage transmission system (500 kV and 220 kV) for frequency deviations at the "Instantaneous Trip" level in Attachment 1 of NERC reliability standard PRC-024-2.

PRC-024-2 provides specifications in the form of ride-through voltage and frequency curves that dictate when inverters can and cannot trip, which are the minimum performance requirements. The CAISO is trying to ensure that the inverter trips are based on the equipment manufacturer standards and not at the minimum levels, in order to not exacerbate grid issues that must be mitigated by the CAISO. For example, for several transmission faults that were recently experienced, protective relay systems consistently cleared all faults in four cycles or fewer, obviating the need for these generators to trip at all, and yet very large amounts of inverter based generation immediately dropped offline. Preliminary analysis indicates that many of the inverters tripped instantaneously with frequency or voltage targets as recorded in the inverter codes.

CAISO staff has already worked with generators, PTOs, NERC, WECC, and inverter manufactures to address this current issue. In the meantime, the CAISO is also addressing tripping rules and related inverter settings for inverter-based generation in this initiative.[8] The proposed requirements will be applied to all new generation connected to the CAISO controlled grid going forward.

Appendix H of the LGIA allows asynchronous generating facilities to cease to inject current into the transmission grid during a fault. In CAISO's discussions with manufactures, it is clear that inverters can be designed and programed to continue injecting current into the grid, thereby decreasing the potential of the generating facility tripping and impacting the transmission fault. Moreover, PRC-024-2 establishes the generating facility frequency and voltage regions (labeled as "No Trip" on the frequency and voltage ride through curves) where the generating units must remain connected during defined frequency and voltage excursions. The CAISO needs generating frequency and voltage region protections to apply to all generation connected to the CAISO controlled grid, even if the generating facility is not NERC jurisdictional, to avoid the significant loss of generation discussed above.

Stakeholder Input

CalWEA, NRG, SCE, SDG&E and LSA, EDF-RE and SPower commented that they generally agree with CAISO's position that this reliability issue requires attention—though mainly via enforcement of existing rules on all new generation interconnecting at all voltage levels (including DG resources). All parties urged the CAISO not to eliminate these exemptions for existing asynchronous generators. PG&E supports consideration of this issue.

ORA supports the CAISO's effort to address ride-through requirements and requirements to continue injecting current and return online for inverter-based generation. ORA also supports consideration of whether or not it is appropriate to revise the exemption of existing and operational asynchronous generating facilities from the LGIA Appendix H requirements (including low-voltage ride-through, frequency disturbance ride-through, power factor design, supervisory control and data acquisition (SCADA) and power system stabilizers). ORA stated the costs, benefits, and feasibility of updating inverter requirements for existing facilities should be analyzed before reaching a final recommendation whether to update existing Appendix H exemption.

SCE also supports the CAISO addressing voltage and frequency ride-through requirements, including the requirement to continue to inject current during system fault conditions that are cleared within a prescribed time period (i.e., cycles needed for system protection to clear faulted facilities). The need to continue to inject current will ensure MWs associated with these asynchronous resources support system voltage and frequency.

CAISO Response

All stakeholders supported the CAISO's efforts to address this issue. The following description provides additional details of the problems associated with momentary cessation, and the CAISO's proposal to eliminate its use. The CAISO agrees that the obligation would need to be

[8] Because this issue only presents in the form of inverter-based generation, the CAISO does not plan to address tripping or ramping of non-inverter-based generation in this initiative.

on a going forward basis, and only apply to existing resources if projects repower or revise their inverters.

Momentary cessation is an inverter operating condition. In momentary cessation, the inverter ceases to gate the Insulated Gate Bipolar Transistors (IGBTs) but the DC and AC inverter connections remain intact. The conversion of the inverter from AC to DC is through the gate switching. Many inverter manufacturers configure the inverters to enter into momentary cessation whenever there is a significant deviation in the AC voltage observed at the inverter terminals. While values vary, typical inverters will enter into the momentary cessation mode when the AC voltage at the inverter terminals drops below 0.9 PU (Per Unit) or increases above 1.10 PU. It is important to note that since the DC and AC connections remain electrically intact, the inverter can operate in this mode for only very short periods of time, typically only a few seconds.

The CAISO, along with SCE, actively participated in a NERC Task Force to study this problem. The task force identified momentary cessation as a major factor in the loss of inverter based generation. Further, the extensive use of momentary cessation may pose increased risks to the reliability of the grid.

Momentary Low Voltage

The CAISO proposes that momentary cessation will no longer be permitted for new inverter based generation during momentary drops in the system AC voltage. Further, the CAISO proposes that during transient low voltage conditions, the inverters should give priority to reactive current to provide some voltage support to the system.

The amount of reactive current is proportional to the decrease in the AC voltage applied to the inverter terminals. This is a linear relationship, and the slope of this line is often referred to as the “k” factor. Most inverters available today have the capability to provide reactive current support during transient low voltage. Further, these inverters often have adjustable “k” factors. The CAISO proposes to use a “k” factor of 2, which provides for full available reactive current injection when the inverter AC terminal voltage drops to 0.50 PU. Future studies may conclude that higher k factors may be desirable, but the CAISO believes that a factor of 2 is an appropriate requirement at this time.

Inverters must remain in the reactive current injection mode as long as the transient low voltage condition exists. However, if the inverter enters into the trip zone, the inverter will trip off line, generally by opening the inverter’s AC circuit breaker. This trip zone should be based on physical equipment limitations to protect the inverter itself, and not based solely on the PRC-024-2 voltage ride-through curves. The region outside the no trip zone in PRC-024-2 is a “may trip” zone. Many generator owners and operators are incorrectly interpreting this region as a “must trip” zone. The CAISO thus proposes that generator owners reset the trip settings considering the physical equipment limitation.

Momentary High Voltage

The CAISO notes that a large percentage of inverters are configured to trip using instantaneous overvoltage protection, based on the PRC-024-2 high voltage ride-through curve. If inverters use this method, the inverter must filter out the voltage signal for transients on the transmission

system. If not properly filtered, transient high voltages may cause the inverter to instantaneously trip incorrectly for transients caused by transmission switching or fault clearing. The CAISO observed several instances of inverters instantaneously tripping for transient high voltages introduced during the clearing of high voltage transmission line faults.

Momentary cessation is still acceptable during transient high voltage conditions above 1.20 PU, provided that the inverter is using properly filtered AC voltage when determining the level of high voltage. Tripping should be based on physical equipment limitations to protect the inverter itself, and not based solely on the PRC-024-2 voltage ride-through curves. The CAISO proposes that generator owners be required to reset the trip settings considering the physical equipment limitations.

Return Times Following Transient Voltage Deviations

After momentary voltage transients clear, the inverter must return back to its normal operating mode quickly. Failure to do so may decrease the reliability of the grid because inverters may not be injecting real power current into the grid, in essence creating a short term generation deficiency. In its review of several events, the CAISO observed that some inverter based generators were taking many seconds to minutes to return back to normal operation, *i.e.*, injecting real power current.

As voltage recovers, and the inverter transitions from reactive current priority to active power priority (following momentary transient low voltage), or the inverter transitions from momentary cessation (if used for voltages above 1.20 PU) to active power priority following momentary transient high voltage, the inverter must transition fully to normal operating mode in one second or less. To do this, the CAISO proposes at a minimum that the inverter must have a ramp rate—from no output to full output— during this transition of at least 100% per second. If the inverter has a wait time before beginning this transition, the inverter will require a faster ramp rate. The CAISO prefers a ramp of at least 200% per second. This ramp rate should not be confused with the steady state ramp rate that the inverter uses when it first starts up for normal operation.

Many facilities use a central plant controller. After voltage recovers and the AC voltage at the inverter terminals enters a normal operating range, the plant controller will resume normal operation and the individual inverters will respond to signals from the plant controller. The plant controller will then apply the normal ramp rate limits to the inverters. Following return from reactive current injection for transient low voltage or momentary cessation due to transient high voltage, the individual inverter ramp rate to return to normal active current injection should not be impeded by the plant controller. The generator operator must take care to ensure that the plant controller and the individual inverter controls are coordinated to ensure rapid return (*i.e.*, one second maximum) to active (real) power current injection.

Phase Lock Loop Synchronization Issues

Inverters generally use a phase lock loop (PLL) to synchronize the AC output of the inverter to the grid. At very low voltages, the PLL may not function correctly. Some inverters may trip for this condition. Momentary loss of synchronism will not cause direct damage to an inverter, and the inverter should not trip for this condition. Inverters should ride-through this momentary loss of synchronism and continue to inject current into the grid. The inverter controls may lock the

PLL to the last synchronized point and continue to inject current into the grid at that last calculated phase until the PLL can regain synchronism upon voltage recovery (e.g. the transmission system fault clears). The reactive current injection may be limited to protect the inverter. Once synchronism returns, the inverter should stably return to injecting current based on synchronized PLL phase conditions. The CAISO proposes that generators will be required to ensure their PLL is working properly so that the inverter doesn't trip at low voltage. In the event the inverter loses synchronism, the PLL should lock to the last synchronized point and the inverter should continue to inject current into the grid.

Post Inverter Trip Return Time

Most inverters use an internal circuit breaker to isolate the inverter from the AC grid voltage. On occasion, the inverter may need to isolate itself from the grid in order to protect the inverter. Some examples of when the inverter may need to isolate itself include extended transient high or low AC system voltage or system frequency. Typically the inverter will open the internal AC circuit breaker, cease to gate the Insulated Gate Bipolar Transistors (IGBTs), and for solar photovoltaic plants isolate the inverter from the source solar panels. This is defined as an inverter trip condition.

In its review of events involving dropped inverter based generation, the CAISO observed that inverters were returning back to service at various time intervals, ranging from seconds to minutes. Due to a lack of a national or regional standard governing the interconnection of inverters to the bulk electric system, virtually all manufacturers designed the inverters to comply with IEEE 1547. This standard identifies requirements for inverters connected to distribution systems, and was not intended to apply to inverters connected to the bulk electric system. The IEEE standard specified a minimum five-minute wait period before the inverter could attempt to resynchronize to the grid (providing, of course, that normal voltage and frequency conditions were present). Lacking any other guidance, the bulk of the installed inverters were programmed to wait for five minutes before attempting to resynchronize.

The CAISO proposes that inverters have an adjustable time delay to attempt resynchronization following an inverter trip between two and two and a half minutes. The CAISO believes this requirement for two to two and a half minutes to attempt resynchronization following an inverter trip is appropriate because it will minimize the need for system operators to take corrective action for extended generation loss.

Diagnostic Equipment

While conducting investigations into recent system events involving the loss of asynchronous plant generation, the CAISO observed that critical plant data such as fault codes or system alarms were not available because the data was stored for a very short time, or in some cases, never recorded in the first place. Some data, such as inverter fault codes or ride though event details, are critical in order to conduct an accurate and thorough analysis following a system event. These post mortem analyses are critical to understand events and diagnose issues in order to ensure the continued reliable operation of the grid.

Accordingly, the CAISO proposes that as a minimum, the following items are recorded for each asynchronous generating facility:

Plant Level Data

1. Plant three phase voltage, current and power factor;
2. Status of ancillary reactive devices;
3. Status of all plant circuit breakers;
4. Status of plant controller;
5. Plant control set points;
6. Status of main plant transformer no load taps;
7. Status of main plant transformer tap changer (if applicable); and
8. Protective relay trips (relay target data).

Inverter Level Data

1. High and low frequency ride through events;
2. High and low voltage ride through events;
3. Momentary cessation for transient high voltage events;
4. Reactive current injection for transient low voltage events;
5. Phase Lock Loop (PLL) status;
6. Inverter status;
7. AC and DC current; and
8. AC and DC voltage.

When conducting a post event analysis, it is critical to not only have the above referenced data, but also to know when any of the above referenced data points may have changed status. This level of detail is often referred to as a sequence of events. To achieve this, all of the above referenced data points must be time synchronized and time stamped. Further, the level of accuracy of the time stamp must be at least one millisecond.

Following an event involving generation tripping, the CAISO will make reasonable efforts to contact generators to request assistance and obtain data when conducting a post mortem analysis. To ensure that the data is available, the CAISO proposes that all the above referenced data must be stored for a minimum of 30 calendar days. Further, the CAISO proposes that this data must be made available to the CAISO and the interconnecting PTO within ten calendar days upon request.

The CAISO also proposes to require the interconnecting generator to record the above referenced plant and inverter level data. The data shall be time synchronized and time stamped to a one millisecond level of resolution. Further, the CAISO recommends that the interconnecting generator install a Phase angle Measuring Unit (PMU) at the entrance to the generating facility. The PMU must have a sample rate of at least 30 samples per second. The PMU is an economical device that can capture plant level voltage and current, and is available in some protective relays. The generator owner will be required to make the above referenced data

available to the CAISO and/or the interconnecting PTO within 10 calendar days upon request.

6.5 Affected System Options

Background/Issue

The current affected system process includes CAISO outreach to potentially affected systems, who can then choose to be an identified affected system. Interconnection customers are required to coordinate with all identified affected systems and provide documentation of resolution of any reliability issue on the affected system to the CAISO six months in advance of initial synchronization. Coordination between interconnection customers and identified affected systems may include a requirement for an affected system study to determine reliability impacts. While CAISO studies may show flows that could potentially represent impacts to neighboring systems, it is the responsibility of the identified affected system to determine the reliability impacts to their system. At the request of an interconnection customer or an identified affected system operator the CAISO reviews affected system study inputs and results, and looks for potential mitigation on the CAISO system for reliability impacts to identified affected systems.

Stakeholder Input

LSA proposed the inclusion of CAISO-system options to mitigate adverse affected system impacts identified in CAISO interconnection studies. This suggestion intends to eliminate or reduce the need to deal with separate affected system study timelines and financial-impact uncertainty.

Comments submitted by LSA, EDF-RE, and SPower clarified that their original proposal was to allow an additional option whereby an affected system operator could elect to utilize mitigation on the CAISO system to address a reliability impact found on the identified affected system. Section 6.1.4.3 of the GIDAP BPM already allows mitigation within the CAISO controlled grid that would be accompanied with coordination between the CAISO and the affected system operator. LSA, EDF-RE, and SPower also point out that interconnection studies do occasionally indicate potential impacts to affected systems and when they do, the CAISO and PTO should make an effort to identify mitigation on the CAISO system.

First Solar also indicated a need for more coordination between the CAISO and affected system operators, including a CAISO review of study assumptions and a mechanism by which the CAISO would allow interconnection when an affected system is being unreasonable.

ITC Holdings likewise recommends that the CAISO include an affected systems coordination examination in light of EDF Renewable Energy complaint filing at FERC against MISO, PJM, and SPP in Docket EL18-26.

MID, SDG&E, and PG&E supported leaving the current affected system process unchanged.

CAISO Response

When CAISO interconnection studies show flows exiting the CAISO systems that could ultimately cause impacts to affected systems, the CAISO notes this as a potential impact to an affected system in the study results. However, the flows that are seen in the CAISO studies do

not include the identification of reliability impacts to the neighboring systems. It would be premature for the CAISO to identify mitigation for flows that may or may not cause reliability issues on a neighboring system. If the affected system identifies a reliability issue, the CAISO and affected system will determine if a mitigation exists that does not negatively impact other interconnection customers.

Regarding "unreasonable" affected systems, Section 6.1.4.3 of the GIDAP BPM allows the interconnection customer or the identified affected system operator to request that CAISO review the reasonableness of the studies conducted and study results issued by the identified affected system operator. Whenever these parties have requested such review in the past, the CAISO has been involved with the review of the studies assumptions and results, as well as the legitimacy of identified reliability issues, and evaluation of potential mitigation on the CAISO controlled grid required to resolve legitimate reliability issues on the affected system. In terms of allowing interconnection when an affected system is being unreasonable, Section 6.1.4.3 of the GIDAP BPM allows an interconnection customer to proceed without affirmative agreement by an affected system operator if the affected system operator does not move forward on a timely basis, the affected system cannot demonstrate a reliability issue, and the impacts can be mitigated on the CAISO system.

Finally, the CAISO disagrees with ITC Holdings that EDF's complaint against MISO, PJM, and SPP warrant examination of the CAISO's own process. First, to the extent FERC will act, it is prudent to see what that action will be, and Order No. 845 expressly deferred action on affected system coordination. Second, the fact that MISO, PJM, and SPP have significant affected system coordination issues only demonstrates that the CAISO's practice may be the best practice possible for addressing a largely intractable problem. Third, and perhaps most importantly, MISO, PJM, and SPP not only primarily have jurisdictional affected systems, but RTOs. The CAISO, on the other hand, is almost completely surrounded by non-FERC-jurisdictional entities.9 MISO, SPP, and PJM thus make poor analogs for the CAISO.

Given the above, the CAISO does not plan to examine this issue further in this initiative.

6.6 Data Modeling Requirements

Background/Issue

NERC and WECC have implemented MOD-032, which requires generating units connected to the bulk electric system (100 kV and above) and greater than 10 MVA (single unit) or 75 MVA (generating facility) to comply with NERC data standards, and provide updated data at least every 10 years. However, the NERC dynamic data validation standards only apply to generating units 75 MW and above. The CAISO estimates that approximately 30% of the generation in the market is not required to meet the NERC/WECC standard. Nevertheless, the CAISO needs the data to ensure both modeling for planning purposes and reliability of the grid. The lack of validated data compromises the accuracy of power system models utilized to predict the ability of the CAISO system to withstand credible contingencies on the CAISO system. It also

[9] Of 18 affected systems surrounding the CAISO, 16 of them are non-jurisdictional.

compromises the CAISO's ability to maintain accurate models as required by NERC and WECC.

Stakeholder Input

LSA, EDF-RE, and SPower commented that the CAISO receives considerable modeling data with a generation-project Interconnection Request, in the New Resource Implementation Process, and with MMA requests. These stakeholders stated the requirements have become more burdensome in recent years, and data is updated every 10 years for 70% of CAISO generating capacity. These stakeholders state that they do not understand why the current modeling data submission and updates are not sufficient for CAISO modeling purposes. They also object to the imposition of requirements beyond those imposed by NERC/WECC in the absence of compelling reasons, which the CAISO's generally stated concerns do not justify.

ORA, SCE, and SDG&E support the clarification of data requirements. SCE noted that the proposal is to complete technical modeling data from roughly 30% of the generation in the market, which are currently not required to meet the NERC/WECC modeling data standard. This is needed for planning purposes and reliability of the grid, and increased technical data will ensure studies properly reflect current expected system performance. Without such technical data, actual performance cannot be properly simulated, adversely impacting PTOs and the CAISO's ability to properly study overall system reliability.

SDG&E agrees with the CAISO that the lack of validated data compromises the accuracy of power system models utilized to predict the ability of the CAISO system to withstand credible contingencies on the CAISO system. It also compromises the CAISO's ability to maintain accurate models as required for NERC and WECC compliance.

CAISO Response

With response to LSA, EDF, and SPower comments, they are incorrect. While it is true that the substantial majority of units do not meet the NERC and WECC criteria and therefore do not have to provide modeling data information to the CAISO in accordance with those reliability standards, Section 24.8.2 of the CAISO tariff states that "In addition to any information that must be provided to the CAISO under the NERC Reliability Standards, Participating Generators shall provide the CAISO on an annual or periodic basis in accordance with the schedule, procedures and in the form required by the Business Practice Manual any information and data reasonably required by the CAISO to perform the Transmission Planning Process, including, but not limited to: (1) modeling data for short-circuit and stability analysis and (2) data, such as term, and status of any environmental or land use permits or agreements the expiration of which may affect that the operation of the Generating Unit." Therefore the CAISO will be imposing data submission updates similar to NERC and WECC standards on all generators participating in the CAISO markets.

Since the issue paper was published that raised this potential issue, the CAISO has determined that Section 24.8 of the CAISO tariff provides authority for the CAISO to obtain the needed data from generators in the market and will use that authority to obtain the data. The CAISO will further clarify the data requirements in the BPM for transmission planning and will contact the generators directly for the data that is needed from them. This issue will not be addressed further in this initiative.

7. Interconnection Financial Security and Cost Responsibility

7.1 Maximum Cost Responsibility for Network Upgrades and Potential Network Upgrades

Background/Issue

Maximum cost responsibility is established from the Phase I and Phase II study reports. The combined costs for all network upgrades in the Phase I and Phase II study reports are compared and the lower of the cost for all network upgrades between the two reports sets the maximum cost responsibility for network upgrades for the project. However, an interconnection customer's current cost responsibility is used to calculate the required Interconnection Financial Security (IFS). This latter figure can change as the result of customers withdrawing from the queue. The CAISO is aware that the reassessment related cost responsibility changes and the increased appearance of potential network upgrade costs in project's study reports has created confusion around how the maximum cost responsibility plays out in practice. The CAISO also has observed that there is confusion regarding when a provided figure relates to the maximum cost responsibility or the current cost responsibility. The CAISO is hoping that the addition of the proposed cost responsibility definitions will provide more clarity on how potential network upgrades from prior clusters where GIAs have not been executed yet affect cost responsibility.

Stakeholder Input

CalWEA, ITC Holdings, ORA, and PG&E all agree that clarifying the terms for cost responsibility is needed, and agree with the cost terms proposed.

LSA, EDF, and SPower strongly oppose the CAISO's proposal to redefine the "cost caps" in the tariff to include the potential network upgrades.10 They suggest raising the cost cap to include potential network upgrade costs, should those allocations fall to a later queued cluster. They also stated that the interconnection studies should only include upgrades triggered by the cluster under the study. They suggested an alternative, to initially not have the cost of a potential network upgrade included in the maximum cost responsibility. If at a later point in the process all interconnection customers who were responsible for funding the network upgrade withdraw without signing a GIA, then raise the maximum cost responsibility at that time to include potential network upgrade cost.

SCE stated that the maximum cost responsibility should include the potential network upgrades and the maximum cost responsibility should not be adjusted if these upgrades disappear. They recommend that any changes should result in adjustments to the current cost responsibility not the maximum cost responsibility.

SDG&E agrees that clarification to the cost responsibility principles are needed. They believe

[10] As explained below, the CAISO notes here that this would not constitute a change, but is, in fact, the *status quo*.

that the trigger to construct a Network Upgrade should be that an adequate amount of projects responsible for Network Upgrades must have signed a GIA, provided a third posting, and a written authorization to proceed. This view has been incorporated into a revision they made to the potential network upgrades definition. SDG&E also recommended additional language to the definition of the Potential Network Upgrades, adding the requirement that a project must provide a third Interconnection Financial Security Posting and written authorization to proceed for the Potential Network Upgrade.

CAISO Response

The CAISO will continue to include potential network upgrades in the maximum cost responsibility. This protects the PTO from being financially responsible for network upgrades when projects assigned those network upgrades withdraw prior to executing a GIA.

Additionally, the CAISO notes that defining "Contingent Upgrades" is a compliance requirement in Order No. 845. Many of the issues here may be partially predetermined or moot as a result of that order, which the CAISO must comply with before it can stakeholder this issue in IPE. The CAISO may adjust its proposal as it develops its compliance plan for Order No. 845.

The CAISO disagrees with LSA, EDF and SPower's portrayal of the CAISO's proposed definition as redefining the maximum cost responsibility to include potential network upgrades. The proposed definition is based wholly on current practices. They suggest an alternative, which is to initially not have the cost of a potential network upgrade included in the maximum cost responsibility. If at a later point in the process all interconnection customers who were responsible for funding the network upgrade withdraw without signing a GIA, raise the maximum cost responsibility at that time to include potential network upgrade cost. The CAISO has concerns with this approach being problematic if the maximum cost responsibility is raised for an interconnection customer relatively late in the interconnection customer's lifecycle in the interconnection process. The CAISO will continue to propose the definition of the maximum cost responsibility essentially as originally proposed, but is interested in stakeholder providing comments on the LSA, EDF and SPower suggest an alternative in comments on this Straw Proposal.

The CAISO does not agree with SCE that the maximum cost responsibility should not be adjusted when a potential network upgrade is no longer needed. Section 7.4.3(i) of Appendix DD allows for the adjustment of the maximum cost responsibility as part of the reassessment process. The CAISO believes that an interconnection customer should not be penalized for projects in a prior cluster delaying the signing of their GIA. Once a project in a prior cluster signs its GIA then any projects with a potential network upgrade from that project should have their maximum cost responsibility reduced by the amount of the potential network upgrade. The CAISO believes it is important to provide as much visibility into the type of network upgrades the interconnection customer will be responsible for. By allowing "headroom" related to a potential network upgrade in the maximum cost responsibility, the interconnection customer is at higher risk for paying for more costs in the reassessment cost reallocation process than interconnection customers without a potential network upgrade

The proposed definition to the Maximum Cost Responsibility for Network Upgrades remains the

same as presented previously, namely:

> The total costs allocated for all Network Upgrades assigned to an interconnection customer, based on the lesser of the costs for such Network Upgrades assigned to the interconnection customer in the final Phase I Interconnection Study, or the final Phase II Interconnection Study and will include the cost of Potential Network Upgrades. The Maximum Cost Responsibility for Network Upgrades shall be subject to further adjustment based on the results of the annual reassessment and the criteria for changes to the Maximum Cost Responsibility in the reassessment process provisions in Appendix DD.

The proposed definition to the Current Cost Responsibility also remains the same as presented previously:

> The cost for Network Upgrades used to calculate the Interconnection Financial Security requirement when the Interconnection Financial Security requirement is due, which does not include the cost of Potential Network Upgrades.

The CAISO proposes the below change (in red) from the original proposed definition to the Potential Network Upgrade definition in the Issue paper:

> 9. Network Upgrades that are required by a project for its selected level of service whose cost responsibility is assigned to one or more prior cluster projects where at the time that a study report is completed none of those prior cluster projects have executed a Generator Interconnection Agreement, including Stand Alone Network Upgrades (SANU). If a prior cluster project executes a Generator Interconnection Agreement that contains a Network Upgrade that is identified as a Potential Network Upgrades in a later cluster project's study report, then that later cluster project will no longer have cost responsibility for that Network Upgrade. A Network Upgrade stops being a Potential Network Upgrade and the cost responsibility becomes the responsibility of a project when all prior cluster projects assigned a cost responsibility allocation for the Network Upgrade withdraw without having executed a Generator Interconnection Agreement. This will also cause the costs for this Network Upgrade to be included in the project's Current Cost Responsibility for Network Upgrades, up to the project's Maximum Cost Responsibility at that time.

With regard to SDG&E's recommendation on potential network upgrades, the CAISO believes this change is out of scope for this topic because there currently is no language in the tariff that requires a project to execute a GIA and submit a written authorization to proceed for a potential network upgrade. Adding additional requirements to the definitions rather than clarifications will necessitate changes to sections of the tariff that the CAISO will not be addressing in this topic.

7.2 ITCC for Non-cash Reimbursement Network Upgrade Costs

Background/Issue

ITCC is the income tax component of contribution that is equal to the estimated tax liability for the interconnection facilities paid to the PTO. The ITCC is included in the project cost responsibility. CalWEA has requested the treatment of ITCC for non-cash reimbursable network upgrade costs (e.g., RNU cost above $60K/MW) be reviewed in the 2018 IPE initiative. CalWEA suggested that the CAISO consider if the non-cash reimbursable network upgrade costs be reimbursed though another instrument such as CRRs. CalWEA also suggested the CAISO consider if non-cash reimbursable network upgrades should be subject to ITCC.

Stakeholder Input

CalWEA argues that ITCC is a form of "gift tax" that a PTO may become responsible for whenever an interconnection customer pays for some transmission facilities that may become owned by the PTO without the interconnection customer receiving compensation from the PTO. Hence, some PTOs collect a deposit equivalent to the size of that potential "gift tax" to cover that potential situation. CalWEA specifically stated that:

- Per established FERC policy, PTOs do not collect ITCC for "cash-reimbursable" RNUs related to the high voltage transmission system (e.g., 230 kV and above). Cash reimbursements to the interconnection customer for such RNUs are funded by the TAC, for which all load-serving entities (not the specific Participating TO) are financially responsible. Non-cash reimbursements in the form of CRRs are also funded by all LSEs. Thus, even though the direct source of the non-cash reimbursement is CAISO through a CRR, as opposed to the PTO via cash, ultimate financial responsibility for the two are the same, warranting identical treatment regarding ITCC.
- In almost all other RTOs, except for ERCOT, the reimbursement of network upgrades funded by an interconnection customers is in non-cash form, typically in the form of CRRs or equivalent, provided by the RTO and not the PTO. Based on CalWEA's research, network upgrades in these jurisdictions are not subject to ITCC even though the reimbursement is not in cash form from the RTO. CalWEA encourages the CAISO to conduct its own research.

LSA, EDF, and SPower agreed with CalWEA that, if a developer receives compensation through Congestion Revenue Rights (CRRs) for these investments, they should not be subject to ITCC.

SCE stated that the issue of non-reimbursable network upgrade costs subject to posting security for ITCC should not be addressed in a CAISO stakeholder proceeding and recommends that participants seeking clarification on this issue reach out to the Internal Revenue Service (IRS). SDG&E also notes that the "non-cash reimbursable" network upgrades could be subject to ITCCA, depending on whether the interconnection customer's funding advances meet the Safe Harbor guidelines for being deemed taxable or non-taxable, as provided by the IRS notices on ITCCA.

CAISO Response

The CAISO agrees that the CAISO is not the appropriate arbiter here, and that resolution of this

issue through the CAISO tariff would likely be futile. As such, the CAISO will not include this issue in 2018 IPE. If interconnection customers want to seek a letter ruling from the IRS on this issue and provide the results of that opinion with the CAISO, the CAISO would then consider how the tariff may need to incorporate such an opinion in a future initiative.

7.3 Financial Security Postings and Non-Refundable Amounts

Background/Issue

Pursuant to Section 11.4 of Appendix DD to the CAISO tariff, an interconnection customer can withdraw its interconnection request and recoup a partial amount of the interconnection financial security posted if it meets certain criteria. The CAISO currently requires a project to meet conditions for partial recovery of the interconnection financial security of network upgrades. Once proof is submitted by an interconnection customer and approved by the CAISO, the CAISO can refund the network upgrades financial security posting to the project. There are different calculations depending on the timing of the project withdrawal, but often the interconnection financial security amount refunded is fifty percent of the amount posted. Non-refundable funds are disbursed first to PTOs to help pay for network upgrades that the withdrawing projects have a cost responsibility for and are still needed by other projects, up to the withdrawing projects obligation; and if funds are still available to the PTO's to decrease the cost of the transmission revenue requirement in that Transmission Access Charge which is paid by ratepayers (loads and exports).

Interconnection customers have expressed concern that the non-refundable amounts are punitive towards projects that withdrew due to market conditions outside their control. These interconnection customers have requested that the CAISO reevaluate the non-refundable amounts process.

Stakeholder Input

CalWEA recommended that the non-refundable portion of the interconnection financial security deposit should be first assigned towards network upgrades triggered by the same queue cluster of the withdrawing project rather than the general TAC.

First Solar, GSCE, LSA, EDF, and SPower stated that the current process with high forfeiture amounts gives non-viable projects incentive to stay in the queue or forfeit substantial security postings for conditions outside of their control.

First Solar also commented that the forfeiture amounts is especially burdensome when there is a lack of available information on deliverability.

GSCE stated that the current procurement environment has limited the ability of interconnection customers to sign PPAs in the short amount of time allowed for projects to be eligible to receive deliverability. GSCE also stated that requiring high forfeiture amounts is especially punitive towards interconnection customers that face these conditions.

ORA stated that the current non-refundable financial security amounts for interconnection

requests are appropriate. ORA requested CAISO provide an explanation on how the non-refundable amounts are applied between TAC and network upgrades that are still needed. This will assist with understanding PG&E's request for a portion of the funds to be assigned to upgrades no longer deemed needed due to reassessment, but where the PTO has already incurred costs or irrevocably committed funds to the project.

SCE supported PG&E's proposal to have a portion of non-refundable financial security postings assigned to upgrades that are no longer deemed needed due to reassessment, but where the PTO has already incurred costs or irrevocably committed funds to the project. SCE stated that there needs to be a change in the CAISO tariff such that the transmission-building entity is eligible for recovery of 100% of prudently incurred costs of a transmission facility or network upgrade approved by the CAISO which is subsequently cancelled by the CAISO through no fault of the PTO.

SDGE supports the CAISO's position that the current non-refundable amounts are appropriate. SDG&E agrees that financial security postings and non-refundable amounts should not be included for consideration in the 2018 IPE.

CAISO Response

The CAISO continues to believe that the current non-refundable amounts process is fair and benefits interconnection customers with serious intentions for the completion of their projects. The CAISO believes that the elimination or reduction of the non-refundable amounts would only undermine the interconnection process by increasing speculative requests and decreasing the validity of the study results for projects.

CalWEA recommended that the non-refundable amounts be assigned to network upgrades triggered by the same cluster and not just to the general TAC. The current process is that non-refundable amounts are first allocated to still needed upgrades and if the threshold requirements are met then the remaining funds are applied to TAC.

SCE stated that a transmission building entity should be able to recover 100% of the costs of a transmission facility or network upgrades that is approved and subsequently cancelled by the CAISO. The CAISO does not have the authority to approve or cancel generation-driven upgrades. The CAISO can only cancel transmission planning process projects when they are determined to no longer be needed which we would not do if a generator required the transmission project. In addition, interconnection financial security posted by interconnection customers cannot be used to cover costs for transmission planning process upgrades.

The CAISO has considered First Solar's comment that some projects may withdraw more quickly if they are not faced with significant forfeitures upon withdrawal; however, the CAISO believes that beginning a study process with projects prepared to fund financial security postings amounts will create a more viable group of projects from the outset, and that this concern is paramount.

The CAISO proposes to eliminate the conditions for partial recovery of interconnection financial security upon withdrawal of interconnection request or termination of GIA as detailed in section 11.4.1 of Appendix DD. The CAISO believes that by removing this requirement, it will eliminate the administrative effort of searching for documents that prove a project meets the requirement (which virtually all eligible interconnection customers can eventually produce), and this also will

avoid further delays in the refund process of the interconnection financial security. The CAISO also believes that by posting interconnection financial security an interconnection customer has already made a considerable effort in developing the project. The CAISO's intent is to make the withdrawal process easier for these interconnection customers. The refundable portion amount will remain the same; however, all projects, will qualify for partial recovery of the Interconnection Financial Security.

The CAISO will not pursue an alternative for the application of non-refundable amounts. The CAISO believes the current disbursement process for non-refundable amounts that has been in place for three years has been working adequately and has benefited ratepayers. In the current disbursement process, the CAISO first disburses the non-refundable amounts to still needed network upgrades, and any other funds are applied to offset the regional and local transmission revenue requirements. The CAISO believes this process works adequately and will not be pursuing an alternative for the application of non-refundable amounts in 2018 IPE.

7.4 Queue Clearing Measures

Background/Issue

In IPE 2015, CAISO established numerous measures to clear the queue and have decreased the pre-Cluster 6 projects that existed in 2013 of 324 to 45 project today and a few of those project, while currently listed in the queue, have partially achieved commercial operation. LSA has suggested that the CAISO consider exploring additional measures to reduce the number of projects with "questionable viability" in the interconnection queue. LSA suggested potential queue clearing measures, including continuous demonstration of CVC and a one-time security-forfeit holiday.

Stakeholder Input

LSA, EDF, SPower, and First Solar believe that the CAISO should explore additional measures to clear the queue of non-viable projects. They support a one-time exemption or "holiday" from forfeitures. These stakeholders stated that this would be especially beneficial to projects without executed GIAs that may be less inclined to withdraw at this earlier point due to the high forfeiture amounts, though it otherwise would be the best decision. LSA, EDF, SPower, and First Solar also suggested that the CAISO could offer to forgive the forfeit and/or facilitate voluntary payment by those later-queued project to induce the generation project to drop out of the queue. In addition, they qualified their proposal that if the CAISO adopts the proposals to eliminate or validate balance sheet financing affidavit submittals, and enforce continuous commercial viability criteria compliance obligations, then those measures will provide strong tools to force non-viable generators from the queue or, at a minimum, require them to relinquish their scarce deliverability. As such, the proposed queue clearing measures would not be needed.

ITC requested that the CAISO remain open to considering additional requirements in the scope related to demonstrations that projects are commercially viable and moving forward.

ORA, PG&E, and SDG&E do not support a one-time interconnection financial security forfeiture holiday because they stated it is not an effective tool for managing the queue and the financial

security funds are used to refund ratepayers and PTOs for the costs of considering and completing upgrades that are triggered by projects that later withdraw. These stakeholders stated the already-executed enhancements should be allowed to work on the interconnection queue before additional reforms are considered or implemented.

CAISO Response

The CAISO agrees with the ORA, PG&E, and SDG&E that the existing mechanisms in place should be allowed to work on the interconnection queue before additional reforms are considered or implemented. While the commercial viability criteria is only used when a project wants to extend beyond the 7/10 years allowed in the tariff, the CAISO requires projects to provide quarterly detailed reports of the project status so that if a project is not progressing, the CAISO can work with them early as possible to get the project back on track or withdrawn. Moreover, the CAISO believes that its deliverability proposal in Section 4.1, above, should help curb speculative projects remaining in queue. As such, the CAISO does not believe an additional compliance demonstration is warranted.

The CAISO also does not agree that it would be reasonable to offer a one-time security-non-refundable amounts exemption or holiday. The CAISO believes that the cost of such an event would outweigh the benefits, especially to ratepayers. The CAISO believes that the measures that are currently in place for queue management, including the review for commercial viability, are sufficient to ensure that projects are moving forward. The CAISO is therefore removing this topic from 2018 IPE**.**

7.5 Shared SANU and SANU Posting Criteria Issues

Background/Issue

The CAISO tariff defines a SANU as Network Upgrades or tasks (e.g., telecommunications, environmental, or property work) that an interconnection customer may construct without affecting day-to-day operations of the CAISO Controlled Grid or Affected Systems during their construction. The Participating TO, the CAISO, and the interconnection customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Large Generator Interconnection Agreement.

The CAISO tariff allows a SANU to be built by an interconnection customer when the CAISO and the PTO agree that it qualifies as a SANU and agree to allow the interconnection customer to build the SANU. The CAISO GIDAP BPM currently requires that 100% of the cost responsibility for the network upgrade must be assigned to the interconnection customer as indicated in the study reports to qualify as a SANU. The CAISO has received requests to remove the 100% cost responsibility requirement because it is stated in the BPM, but not is the tariff. By removing the 100% of the cost responsibility requirement stakeholders seek to allow two or more projects to share construction and cost responsibility for a SANU.

Stakeholder Input

CALWEA recommended that the CAISO explore measures to prevent gaming strategies and allow projects that share a SANU to post financial security depending on their share of the SANU

cost.

LSA, EDF, and SPower stated that the tariff has no prohibitions for sharing financial costs for shared SANU. LSA, EDF, and SPower also stated that postings and cost responsibility for SANUs should be shared among the projects in the same cluster, similar to all other upgrades.

ORA and SDG&E recommended revising the BPM to allow for shared cost allocation of SANU.

PG&E supported the CAISO's position not to include the topic in 2018 IPE.

SCE stated that the current policy where each project assigned a SANU posts for 100% of the associated costs should remain intact.

SDG&E supported the CAISO position that it is not appropriate to create specific criteria on what SANU an interconnection customer will be allowed to build.

CAISO Response

The CAISO agrees that clarification is needed in the GIDAP BPM to address the issue that a SANU can be shared by more than one generator, and also agrees that consistency is needed within the tariff, which does not prohibit generators from sharing a SANU (assuming it is otherwise "stand-alone"). The CAISO believes that splitting the cost responsibility for a SANU would unnecessarily put the PTO at risk if a project sharing the SANU withdraws. Nevertheless, this risk is the PTOs, and the CAISO therefore proposes to allow PTOs to make this determination on a case by case basis, or to establish their own criteria for SANU cost allocation. The CAISO will remove the requirement in the BPM that each project seeking to self-build a SANU be assigned 100% of the cost.

7.6 Clarification on Posting Requirements for PTOs

Background/Issue

Interconnection customers currently post interconnection financial security (IFS) to PTOs for the construction of their network upgrades and interconnection facilities. There currently is no distinction in the tariff for projects where the interconnection customer itself is also the PTO. PG&E proposed that PTOs should not have to post financial security to themselves when they develop new generation projects interconnecting to their own areas. PG&E has noted that the PTOs have already successfully petitioned FERC for case-by-case waivers on this issue, which FERC has granted.[11]

Stakeholder Input

Other than CalWEA, who recommends that PTOs be required to continue to seek waivers at FERC on a case-by-case basis, all stakeholders agree that PTOs should not be required to post IFS to themselves.

CAISO Response

The CAISO proposes to exempt the PTOs from posting to themselves in these situations;

[11] *See, e.g.,* FERC Docket No. ER18-859-000.

however, the CAISO will develop a tariff mechanism that would require a PTO that withdraws an interconnection project after the initial and subsequent posting due dates to provide appropriate non-refundable funds to the CAISO in accordance with the tariff requirement. This will obviate the issue of a PTO being required to post IFS to itself while also ensuring fair and equal treatment for interconnection customers, and proper protection to ratepayers.

7.7 Reliability Network Upgrade Reimbursement Cap

Background/Issue

Section 14.3.2.1 of the GIDAP provides that PTOs will reimburse an interconnection customer's cost responsibility for Reliability Network Upgrades (RNUs) only up to $60,000 per MW of the interconnection customer's generating capacity, as specified in its GIA.[12] This policy was designed to ensure that ratepayers only incur costs for RNUs commensurate with the benefits they receive from the new generator. The repayment limit of $60,000 per MW for RNUs assigned to a project was determined to result in full cash repayment for RNUs for the vast majority of projects, and provides an incentive for interconnection customers to avoid siting projects in locations where the costs of RNUs needed to support the interconnections would be inappropriately high.

The CAISO has found that the $60k/MW maximum reimbursement amount for an RNU for funds advanced for network upgrades has the potential to be circumvented in instances where earlier-queued projects withdraw from the queue but the upgrades are still needed. For example, assume a 100 MW project in cluster 8 with an executed GIA has a required RNU whose cost exceeds the $60k/MW limit. Also assume a cluster 10 project, also 100 MW, has the same RNU as a requirement for interconnection as a precursor project. If the cluster 8 project that triggered the RNU withdraws, the PTO must fund the construction costs for the cluster 10 project.[13] In this example the PTO is responsible for funding the entire cost of the RNU, including the portion over $60k/MW, and will ultimately put the entire cost of the RNU into its Transmission Revenue Requirement and ratepayers will ultimately have to pay for the entire cost of the RNU.

Stakeholder Input

CalWEA suggested that the cost cap should be eliminated. LSA likewise suggested that in the rare case the issue does occur as explained in the example, then the non-refundable funds mechanism should cover the amount over $60k/MW.

ORA, SCE, and SDG&E have each individually suggested that if a project withdraws after executing a GIA whose RNU costs exceed the $60k/MW cap, the cost responsibility for the amount in excess of the $60k/MW cap should fall to the later cluster projects needing the RNUs, in the fashion of a potential NU, but not be reimbursable.

CAISO Response

[12] Reimbursement beyond the cost cap would come in the form of Merchant Transmission Congestion Revenue Rights.

[13] *See* Section 14.2 of Appendix DD to the CAISO tariff.

In response to CalWEA's suggestion to eliminate the cost cap, the CAISO continues to believe that reimbursement cap is appropriate and has not been presented with evidence to the contrary. The CAISO does not agree that sufficient funds are always available from the non-refundable funds process to cover the amount over $60k/MW, nor does the CAISO believe they should be.

The CAISO considers the solution by ORA, SCE, and SDG&E to be simple to implement and would be appropriate. This solution would ensure that ratepayers do not get the burden of the amount over $60k/MW cap, and interconnection customers in later clusters that locate their project in an area that triggers high cost RNUs are exposed to the potential cost implications of that choice. The CAISO proposes that if a project withdraws after executing a GIA whose RNU costs exceed the $60k/MW cap, the cost responsibility for the amount exceeding the $60k/MW cap will fall to the later cluster projects needing the RNUs, in the fashion of a potential NU, but not be reimbursable. These costs will thus be included as contingent upgrades in the interconnection customers' study reports.

7.8 Reimbursement for Network Upgrades

Background/Issue

Interconnection customers finance the construction of network upgrades. Upon commercial operation, PTOs then reimburse the interconnection customers for those costs, and the PTOs then include the costs in their Transmission Revenue Requirement(s) to be recovered through the CAISO Transmission Access Charge(s). In many of the areas of the country, interconnection customers are not reimbursed through cost-based rates like they are in the CAISO. Interconnection customers may include their costs in their capacity contract, and also are reimbursed in the form of transmission or congestion revenue rights. Generators also could recover some costs by increasing their energy bids in the markets.

Six Cities suggested that the CAISO consider whether the current allocation methodology for the cost of network upgrades needed to interconnect new (or functionally modified) resources should be revised to allocate such costs to interconnection customers. This would essentially change the recovery mechanism for network upgrades from the TAC to some combination of capacity contracts and bids to supply power.

Stakeholder Input

CalWEA, LSA and SDG&E agree with the CAISO's proposal to not include this topic in the straw proposal as it represent a fundamental paradigm shift in the CAISO's generator interconnection process and a huge shift in policy.

ORA recommends that the CAISO include this proposal in the 2018 IPE initiative because it would address the unresolved interconnection upgrade cost responsibility issues that arise when interconnection projects that trigger interconnection upgrades later withdraw. These issues are also discussed in further detail in sections 4.4, 4.5, and 7.7 of this document.

CAISO Response

The CAISO understands ORA's recommendation, but believes that the issues it raises can be addressed and resolved in a more straightforward manner, rather than with such a large policy change that would affect virtually all of the CAISO's other processes. Changing the process for reimbursing interconnection customers for network upgrades would make a number of current interconnection procedures infeasible, including meaningful cost caps for interconnection customers, non-cascading costs across clusters, and the annual reassessment.14 It would also lead to the creation of numerous new merchant transmission congestion revenue rights. While these are not insurmountable obstacles, they would represent a fundamental paradigm shift in the CAISO's generator interconnection process. At this time, CAISO is not willing to consider such a shift without vociferous stakeholder support. This topic will not be included in 2018 IPE.

7.9 Impact of Modifications on Initial Financial Security Posting

Background/Issue

This proposal is an item that CAISO has identified and has been added as a result of discussions from the Cluster 10 Phase I results meetings. It was not included in the 2018 IPE issue paper and was not submitted by external stakeholders.

Between the end of the Phase I study and the due date for the Initial Interconnection Financial Security (IFS) postings, the CAISO has found that due to changes in the CAISO queue, such as project withdrawals or other system changes, there may be network upgrades or PTO interconnection facilities that may no longer be needed. If a facility is known to be no longer needed after the completion of the Phase I studies, then that will be reflected in the Phase II studies and no changes are made to the Phase I study report. The CAISO believes that if engineering judgement can definitively determine that a required upgrade in an interconnection customer's Phase I study report is no longer needed due to the withdrawal or changes to earlier queued projects or other system changes, and that determination is made in advance of the initial IFS posting due date, the interconnection customer should not be required to post IFS for that upgrade. Currently, a project may only qualify for this initial interconnection facilities adjustment if they have modified the project, such as a reduction in electrical output of the facility or changed deliverability status.[15]

This proposal will not change the requirement that any adjustments in the initial interconnection financial postings due to Sections 6.7.3 and 11.2.7 will not result in a maximum cost responsibility adjustment and will not include any restudies.

[14] Where interconnection customers would inherit costs instead of the PTOs, interconnection customers would require immediate notification and restudy.

[15] Cite to DD section.

Stakeholder Input

The CAISO will solicit stakeholder input with the publication of this paper.

8. Interconnection Request

8.1 Study Agreement

Background/Issue

CAISO staff is proposing to incorporate Appendix 3 of Appendix DD, the generation interconnection study process agreement (GIPSA), into the interconnection request so that it is executed when the interconnection customer submits an interconnection request.[16] To achieve this efficiency, the interconnection request form would be changed slightly to incorporate the documentation required by the GIPSA.

Stakeholder Input

CalWEA, CESA, First Solar, GSCE, LSA, ORA, SDGE, Wellhead, and PG&E supported this topic being included in the scope of the IPE 2018 stakeholder initiative to improve the efficiency of the interconnection request and Generator Interconnection Process Study Agreement (GIPSA) submissions for developers.

CAISO Response

The CAISO proposes to establish the following requirements for interconnection customers to agree to the study agreement terms and conditions within the interconnection request: (1) The interconnection request will be expanded to include the modified GIPSA; and (2) interconnection requests can only be submitted by an authorized signatory of the interconnection customer.

The CAISO will update the GIPSA to remove repetitive and/or ambiguous language as well as add applicable language for the execution, effectiveness and termination, modify the interconnection request to incorporate the GIPSA, and update Appendix DD Section 6.1.1 such that when the interconnection request is submitted the interconnection customer is agreeing to the terms and conditions of the GIPSA, the interconnection customer is responsible for the actual cost of the interconnection studies, including reasonable administrative costs, and all requirements of this GIDAP; and within 3 business days of the scoping meeting the interconnection customer shall submit to the CAISO Appendix A to the Generator Interconnection Study Process Agreement, which includes the Point of Interconnection and requested Deliverability status for the Phase I Interconnection. In addition, the interconnection request will not be valid unless the deposit or other interconnection financial security pursuant to Section 3.5.1 of the GIDAP, then the interconnection request will be deemed withdrawn upon the interconnection customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the GIDAP.

The CAISO also proposes to clarify Section 3.5 of Appendix DD to ensure that developers

[16] http://www.caiso.com/Documents/AppendixDD_GeneratorInterconnectionAndDeliverabiltyAllocationProcess_asof_Mar8_2016.pdf

understand that they must submit the $150,000 Interconnection study deposit within the interconnection request window. Absent the deposit, the CAISO does not have funds to process and validate the interconnection request. As such, the CAISO intends to clarify that the lack of an interconnection study deposit is not a deficiency that can be cured by May 31. Interconnection requests that lack a deposit by the close of the window will be rejected without opportunity to cure. (The CAISO notes that this clarification is not true for Site Exclusivity Deposits. Often interconnection customers submit site exclusivity documentation that is deemed insufficient. Interconnection customers will continue to have the opportunity to cure this deficiency with either further documentation or submitting a $250,000 deposit within the cure window.)

8.2 Revisions to Queue Entry Requirements

Background/Issue

Westlands Solar Park suggested that the CAISO consider enhancements to queue entry requirements. Westlands stated that more stringent information requirements for projects to enter the queue will help ensure that only viable projects seek interconnection. Westlands suggested that the CAISO consider requiring additional information for projects entering the CAISO queue to demonstrate viability will also discourage the speculative "testing" that occurs in instances where project developers hope to have the CAISO do the study work to determine available transmission capacity without doing their own upfront engineering work before applying.

Stakeholder Input

CalWEA, LSA and SDG&E agreed that this issue should not be considered for IPE 2018. GSCE and ITC suggested that the CAISO should remain open to specific proposals that would meet the limitations set by FERC. The ORA recommended that the CAISO provide the deliverability status in the proposed project area as an immediate response to interconnection requests and that the issue should be included in the 2018 IPE initiative.

CAISO Response

Stakeholders did not submit any specific, concrete proposals for CAISO consideration. Moreover, the CAISO believes that it is unlikely that it would be feasible to revise the queue entry requirements in any meaningful way that would be acceptable to FERC and it would be difficult for stakeholders to reach any consensus. As such, the CAISO is removing this issue in the 2018 IPE initiative.

8.3 Master Planned Projects (Open Ended and Serial Projects)

Background/Issue

Westlands Solar Park requested that the CAISO consider the unique status of open-ended and serial projects, specifically master planned renewable energy projects such as the Westlands

Solar Park. Westlands stated that the CAISO should recognize these types of master planned projects in the interconnection process because they could be more viable and may provide the CAISO with a better understanding of when and how much renewable generation will come online in specified areas at specific times. This enhanced knowledge could decrease the potential for stranded costs because it can allow utilities to plan long-term upgrades around these projects and the related transmission upgrades may provide multiple benefits.

Stakeholder Input

CalWEA LSA, ORA and PG&E recommended the issue not be pursued in IPE. LSA stated that the issue is complex and if the CAISO decides to pursue it, these complexities would require another separate effort. ORA agrees with the CAISO that phased projects should not receive a unique status as proposed. PG&E is concerned that creating an open-ended interconnection project undermines the current cluster process of studying and developing mitigations to the impacts of new generation interconnecting to the transmission system.

GCSE requests this issue be included in IPE 2018 to encourage the planning of master-planned projects that will provide benefits to the system and ratepayers, and encourage more environmentally-beneficial development decisions. Where the state of California has spent time and energy to develop renewable energy development zones and portfolios based on those zones, the CAISO's interconnection processes should account for this work and remove any barriers to planning and developing transmission to these master planned areas to meet the state's RPS goals.

GCSE requests that the CAISO include this issue in the 2018 IPE. We believe that doing so may encourage the planning of other master-planned projects that will provide benefits to the system and to ratepayers and encourage more environmentally-beneficial development decisions.

SDG&E stated that all PTOs have had to work with the unique status of open-ended and serial projects, specifically master planned renewable energy projects. Although the CAISO's clarification on the current GIDAP provisions (which allow for phased generation facilities, decreases in capacity and project modifications) accommodates some of these issues, SDG&E recommended that this should be explored further in the 2018 IPE initiative. SDG&E stated that there could be potential improvements to better manage open-ended and serial projects.

CAISO Response

SDG&E agrees with the CAISO that the GIDAP accommodates some of the issues raised related to open-ended, serial, and master planned renewable energy projects. Although there is no current mechanism to accommodate open-ended projects as suggested, the CAISO does not believe modifications should be made to the study process to accommodate this request because of the significant complexity and planning obstacles that open-ended projects such as the master planned project described above would present. The CAISO also believes that studying such projects and retaining their interconnection and deliverability capacity only would exacerbate speculation and hoarding in the queue.

The CAISO has responded in the past to the state of California's identification of renewable energy development zones and portfolios based on those zones, as GCSE recommended. Further, the CAISO's transmission planning process continually works with the state to plan and

developing transmission to meet the state's RPS goals. Specifically, the CAISO does not believe the timing is right to embark on this topic at this time. In following the passage of the 50% RPS, the state has yet to make decisions on whether to increase deliverability above the 33% RPS level to accommodate the 50% requirement. Moreover, the CPUC Integrated Planning Process has not progressed to the point of providing actionable guidance to the jurisdictional utilities or the CAISO. Additionally, the California Legislature is considering increasing the RPS above 50%, which could have a dramatic impact on the transmission planning assumptions and direction. The CAISO does not believe the level of information needed to proceed with this topic is available and does not intend to consider this topic in 2018 IPE, especially where the vast majority of stakeholders oppose the proposal.

8.4 Project Name Publication

Background/Issue

The CAISO's public interconnection queue currently provides a variety of project information by queue number (*e.g.,* POI area, PTO, capacity, GIA status). It does not list project names or developer names. The CAISO proposes to modify the current confidentiality requirements for project names so that in the future they will be publicly available through the interconnection queue report accessible on the CAISO's public website.

Stakeholder Input

ORA and SDG&E support the proposal. CALWEA, LSA, EDF-RE, and SPower indicate no objection, but state that permission should be provided by each customer.

CAISO Response

The CAISO maintains its proposal to publish project names as part of the interconnection queue report. The CAISO believes that providing project names will provide more transparency to interconnection customers, PTOs, and LSEs. However, it is not clear to the CAISO why permission from individual projects should be required. The CAISO requests clarification from interested stakeholders on this issue. The CAISO also will solicit stakeholder feedback on whether the project name itself is sufficient to achieve the necessary transparency, or whether the CAISO also should publish the name of the developer/interconnection customer (as many project names are as enigmatic as queue numbers).

8.5 Interconnection Request Application Enhancements

Background/Issue

In the 2018 IPE Issue Paper, the CAISO discussed four topics that PG&E raised regarding interconnection requests: project naming, standardized technical data, changes to technical data, and FERC Order No. 827, which requires all newly interconnecting non-synchronous generators to provide reactive power at the high-side of the generator substation as a condition of interconnection.[17] We have moved FERC Order No. 827 to a new, separate topic, in Section

[17] This was already a general requirement, but FERC eliminated the exemption previously provided to wind

8.6.

First, PG&E states that there has been some confusion with project naming selections during the application process, resulting in increased renaming. PG&E suggests that new requirements be established to mitigate such confusion and need for renaming.

The second topic suggested that the CAISO consider updating the interconnection request application to improve efficiency, consistency, and accuracy between the interconnection request and supporting technical data provided by the interconnection customer.

The third topic asked the CAISO to consider defining the cut-off date for allowable changes to a project's technical data or system design specifications prior to the start of the Phase I Study process.

Stakeholder Input

LSA, EDF, and SPower had no specific comments but generally supported the CAISO's efforts to streamline the application process. SDG&E and the ORA supported the CAISO's proposed improvements to the interconnection request application, including data collected on Attachment 1 to Appendix A.

CalWEA raised the question of using the scoping meeting to modify some of project's technical data, including its POI, and emphasizes the value of the information received at the scoping meeting. CalWEA recommends that the length of the time allowed for the modification of the project interconnection application be increased to five BDs from the current three BDs.

CAISO Response

Regarding the first topic, as noted in the 2018 IPE Issue Paper, in the spring of 2017, prior to the opening of the cluster 10 application window, Section 5.2 was added to the GIDAP BPM and the prohibited project name list (PPNL) was posted to caiso.com. The CAISO and stakeholders had an opportunity to utilize these resources during the cluster 10 application and validation process, but there were many valuable lessons learned and CAISO believes more time may be necessary to evaluate the impact and improvement to these project-naming provisions. The CAISO does not believe this issue requires any CAISO tariff changes at this time. If updates or changes are deemed necessary in the future, CAISO believes they can be resolved through the GIDAP BPM Change Management process.

Regarding the second topic, since the 2018 IPE Issue Paper, the CAISO has developed and deployed a new Microsoft Excel version of the Attachment A to Appendix 1 portion of the interconnection request application for the cluster 11 interconnection application window. The CAISO believes this enhancement does not require tariff changes and can be resolved outside of the 2018 IPE initiative.

Regarding the third topic, as noted in the 2018 IPE Issue Paper, the CAISO expects that all project data and project details be locked-in following the scoping meeting, however, changes

generators.

beyond that may be allowable, on a limited case-by-case basis, based on the particular circumstance and the ability to accommodate the change before the Phase I study base case development begins. CAISO believes that the current case-by-case consideration provisions are appropriate and no further tariff clarification is necessary at this time.

In response to CalWEA's question about adjusting the time allowed for project modifications following the scoping meeting from 3 to 5 days; the CAISO believes this requirement needs to remain at 3 days. This timeline was previously 5 days and through a historical process was shortened to 3 days due to the timing of the study process and a need to ensure the process continues moving forward.

Overall, stakeholders generally agree and understand the efforts the CAISO is making outside of the 2018 IPE process to address the tariff requirements to improve the project naming guidelines, modifications to the technical details, and method CAISO uses to collect such data in the interconnection request applications. Thus, the CAISO will not include these topics in the 2018 IPE.

8.6 FERC Order No. 827

Background/Issue

FERC Order No. 827 requires that non-synchronous generators design their generating facilities to maintain a composite power delivery at continuous rated power output at the high-side of the generator substation. Non-synchronous generators must provide dynamic reactive power within the power factor range of 0.95 leading to 0.95 lagging, unless the transmission provider has established a different power factor range. Non-synchronous generators may meet the dynamic reactive power requirement by utilizing a combination of the inherent dynamic reactive power capability of the inverter, dynamic reactive power devices (*e.g.*, Static VAR Compensators), and static reactive power devices (*e.g.*, capacitors) to make up for losses. Since FERC Order No. 827 became effective, the CAISO and PTOs have been evaluating the reactive power capability for each new interconnection request in the interconnection request review and validation and interconnection studies. Stakeholders asked the CAISO to develop a standardized methodology and test among all the CAISO and PTOs. The CAISO, in coordination with the PTOs, will develop a methodology to evaluate generation project's capability of meeting such requirement during the interconnection study process.

Stakeholder Input

ORA supports the CAISO's position to develop an approach to evaluate the reactive power capacity in the interconnection studies through the BPM change management process.

CAISO Response

The CAISO, in coordination with the PTOs, has developed a white paper on reactive power capability evaluation. The white paper will be incorporated into the BPM for generation interconnection and deliverability allocation procedure through the BPM change management process. As such, the CAISO will include this issue in the 2018 IPE.

9. Modifications

9.1 Timing of Technology Changes

Background/Issue

Because the CAISO provides a fairly open-ended ability to modify their projects, current tariff provisions do not provide detailed limitations on the timing or types of technology and fuel type changes that an interconnection customer may request. Interconnection customers may request changes to the technology and fuel type of projects between the Phase I and Phase II process, and after the Phase II results. Moreover, the CAISO does not review a project's time-in-queue or commercial viability status for technology/fuel type changes. Commercial viability reviews are only performed for extensions of commercial operation date beyond the 7/10 year threshold.

The CAISO frequently receives requests for technology and fuel changes and historically, the CAISO has denied many technology and fuel type change requests because they result in changes in electrical characteristics that would cause reliability issues that would have to be mitigated by a network upgrade. Of the requests received, the CAISO estimates at least 25% of active projects in the queue beyond the 7/10 year threshold have changed their fuel type or technology.[18] The remaining 75% most frequently occur after the Phase II results activities and after the project has been in the queue five or more years.

Due to increased overall system reliability associated with transmission upgrades and topology changes, if the CAISO retains its current evaluation framework, the CAISO anticipates approving more technology and fuel change requests later in the project development cycle. Interconnection customers have reported that observing the highest-queued projects receive approval for changes in technology after being in the queue for over 10 years seems unfair.

The CAISO proposes that projects not be allowed to request technology changes that change the project fuel, including adding storage, after the 7/10 year threshold.

Stakeholder Input

The CAISO received comments from CESA, LSA, EDF-RE, SPower, SDG&E PG&E, SCE, and Wellhead on this topic. All but Wellhead supported including the topic in the 2018 IPE. PG&E and SCE expressed some concern that implementing a true moratorium (a temporary ban to be lifted at a future date) would create additional issues or remove some of the interconnection processes existing flexibility.

CAISO Response

The CAISO proposes to create an absolute prohibition on technology changes that change the project fuel type for interconnection customers that have (or are requesting) a commercial operation date beyond the 7/10 year threshold anticipated by the CAISO tariff.[19] Additionally, if

[18] CAISO Queue comparison (8/26/2011 vs. 12/5/2017)

[19] Project will still be allowed to request transformer, inverter, and other technical equipment changes for the existing fuel type.

stakeholders are supportive, the CAISO is also willing to consider changing the MMA process to evaluate commercial viability criteria for every MMA requested by a project where the project milestones are beyond the 7/10 year threshold[20].

As noted above, SCE and PG&E both expressed some reluctance for a moratorium on technology changes for interconnection customers. The CAISO clarifies that it intended to propose a complete prohibition, and did not mean to suggest a temporary moratorium. The CAISO also recognizes the need for a limited exception to this policy that allows customers with projects that have not yet declared commercial operation to retain their fuel type and update their technology to the best available (*e.g.*, a change to the number, type, or manufacturer for project inverters.) The prohibition would apply to both requests to change technology as well as requests for additive technology. For example, a 100 MW combined cycle gas interconnection request that has been in the queue for 11 years would not be allowed to:

- Change any amount of MW of gas for solar PV, while retaining a 100 MW limit at the POI, nor
- Add any amount of MW of energy storage while retaining a 100 MW limit at the POI.

Furthermore, all interconnection customers requesting technology changes, regardless of time in queue, will need to demonstrate that they are able to construct the project with the proposed new technology/fuel configuration within the 7/10 year threshold, otherwise the request will be denied. For example, if a 20 MW wind project that has been in the queue for 6.5 years, but has a COD occurring in 5 months submits an MMA to transform into a 20 MW solar PV project, that project would be required to prove it has the site exclusivity and permitting to achieve COD by its existing COD, otherwise the MMA would be denied.

Currently, the CAISO verifies CVC for requests only to extend project milestones beyond the 7/10 year threshold. CAISO also receives confirmation from the customer to confirm that its commercial viability criteria has been maintained annually. The CAISO also proposes to change the MMA process to evaluate commercial viability criteria for every MMA requested by a project where the project milestones are beyond the 7/10 year threshold. For example, a 50 MW solar PV interconnection request that has been in the queue for 11 years would be required to reconfirm it meets commercial viability criteria in the event it wants to alter its gen-tie route, add project phasing, or change its project site.

9.2 Commercial Viability – PPA Path Clarification

Due to the nature and relationship of CVC and the TPD allocation process, the CAISO has decided to include this topic in 2018 IPE and combine this topic with topics 4.1, 4.2, 4.3, and 4.5. This combined topic will seek to enhance the GIDAP in a manner that addresses all five issues under one topic to be addressed in Section 4.1.

[20] Currently the CAISO reviews commercial viability for milestone related MMAs only.

9.3 PPA Transparency

Background/Issue

The CAISO requires interconnection customers demonstrating commercial viability criteria with a PPA to provide a copy of the PPA so the CAISO can verify that the project and the PPA match.[21] This requirement ensures accurate project-to-PPA data relationships and a robust and transparent commercial viability process. In order for interconnection customers with PPAs to modify the project's COD, the PPA must have the following in common with the proposed generating facility in the GIA:

- the point of interconnection;
- MW capacity (allowing differences in utility defined project size before transformation and line losses);
- fuel type and technology; and
- site location

The CAISO proposes no changes to this process, but intends to move the requirement from the BPM to the tariff for greater transparency.[22]

Stakeholder Input

The CAISO received comments from CalWEA, ITC, LSA, EDF-RE, SPower, ORA, PG&E, SCE, and SDG&E. All comments were supportive.

CAISO Response

Because there is healthy stakeholder support for this proposal, no further discussion is warranted and the CAISO will submit for Board approval as soon as practical.

9.4 Increase Repowering and Serial Re-Study Deposit

Background/Issue

With the increase in repowering and serial re-studies, the current $10,000 deposit is insufficient for covering the study costs. Based on experience, the CAISO proposes to increase the study deposit for repowering and restudy of serial projects to $50,000.

Stakeholder Input

CalWEA generally agreed with the CAISO on this issue. However, CalWEA recommended that the repower deposit be raised to a median historical cost number (~$25,000) instead of the

[21] BPM for GM section 6.5.2.2

[22] The PPA-to-GIA relationship may be many-to-one. However, a PPA cannot be used to support deliverability for more than the capacity specified in the PPA. Interconnection customers are free to redact sensitive financial data. Interconnection customers are not required to provide PPAs to the PTO, and the CAISO does not share the PPA with the PTO. The CAISO only positively affirms with the PTO that the customer has indeed met commercial viability criteria.

maximum historical cost number ($50,000). ORA, PG&E, SDG&E, and SCE all supported raising the amount to $50,000.

CAISO Response

The CAISO selected the $50,000 amount because the repower and serial re-studies are generally over $25,000. Selecting a lower amount would continue to result in significant shortfalls for the PTOs and the CAISO. Moreover, projects often withdraw from the queue and dissolve their LLCs before paying these shortfalls, leaving the shortfall with the PTOs and CAISO. In addition, if there is any money to be refunded, the refund includes interest. As such, the CAISO believes that a $50,000 deposit is prudent and will eliminate the need to re-raise the deposit in the imminent future. The CAISO thus proposes to revise all references to $10,000 to $50,000 in sections 25.1.2 of the tariff, Appendix U Sections 6.4, 7.6, 8.5, 10.1 and 12.2.4.

9.5 Clarify Measure for Modifications After COD

Background/Issue

Interconnection customers frequently struggle to understand the test to determine whether a modification will be approved. Specifically, this confusion may depend on whether the project is in the interconnection process or has already achieved commercial operation. The GIA confounds this issue in Article 5.19 by stating that approval of all modifications will be based on the Material Modification in accordance with the GIDAP which in essence determines the approval of the modification based on whether it impacts the scope, schedule or budget of a project in the queue. During the interconnection process modifications are generally approved unless they are material, as explained in Section 9.1 above. On the other hand, existing, online generating units may request modifications to their generating facility if the total MW capability of the generating facility and its electrical characteristics do not change in accordance with Section 25 of the CAISO tariff. Both requirements are intended to prevent changes that will affect reliability and other projects studied or connected to the grid.

Stakeholder Input

CalWEA agrees with CAISO position on this issue. LSA, EDF-RE and SPower have no objection and ORA, PG&E and SDG&E support the clarification. LSA, EDF-RE and SPower also want to include the potential for downsizing generation projects after COD.

CAISO Response

The CAISO proposes to clarify in the LGIA and SCIA that modifications requested prior to COD will be approved based on the material modification assessment in the GIDAP, and modifications requested after COD will be approved based on the criteria in Section 25 of the CAISO tariff. The CAISO also supports the ability to downsize generation projects after COD. With no opposition to this issue, the CAISO intends to take this to the Board as soon as practical.

9.6 Short Circuit Duty Contribution Criteria for Repower Projects

Background/Issue

The criteria used to test whether there is a substantial change in short circuit duty contribution due to a repower project request is more stringent than that used for a material modification request.

The short circuit duty test for repower projects requires that the repowered project must produce the same or less short circuit duty as compared with the original generating unit. This framework is also used to evaluate post-COD modification requests. A small increase of short circuit duty would fail the test, even if the system still has a high breaker capacity margin.

For modification requests for projects active in the interconnection queue, the CAISO will consider changes to project equipment and transformers to be non-material if the new equipment is substantially similar and does not cause significant electrical changes, including changes to short circuit duty or reactive support. Evaluating changes to short circuit duty follows the general principle of no adverse impact to later queued generation project and the PTO. If the requested change causes only a small increase of short circuit duty, the modification could be considered non-material if the increase causes no breaker capacity concerns.

The CAISO proposes to consider applying more consistent criteria in short circuit duty tests for repower and modification requests.

Stakeholder Input

The CAISO received comments from CalWEA, CESA, LSA, ORA, SCE, and SDG&E. All supported the CAISO's proposal. SCE recommended that the individual PTOs define and determine the appropriate thresholds and methods.

CAISO Response

The CAISO proposes the following criteria to determine the short circuit duty impact of a repowering request in Section 12 of the BPM for Generator Management:

> Any reduction in the short circuit duty of the repowered Generating Unit, as compared with the original Generating Unit, will not be considered an adverse impact and will not be considered a substantial change to the unit's electrical characteristics. An increase in the short circuit duty of the repowered Generating Unit as compared with the original Generating Unit will not be considered an adverse impact if both of the following conditions are met:
>
> 1. Increase of the short circuit duty at network breakers that require upgrades in the generation interconnection study is less than the amount that would be flagged by the Participating TO as meaningful contribution; and
> 2. The total short circuit duty from the repowered Generating Unit and all the active generation projects in the queue at network breakers that do not require upgrades in the generation interconnection study does not exceed

the breaker capacity.

The CAISO also proposes to use the same criteria to test material modification including energy storage capacity addition requests.

9.7 Material Modification for Parked Projects

Background/Issue

The CAISO believes the intent of parking is to postpone a project's obligations and provide an opportunity for projects to seek TPD in the next allocation cycle. In the IPE 2018 Issue Paper, the CAISO proposed restricting all work while a project is parked including modification requests. Similar to not working on the GIA while a project is parked, the CAISO previously indicated it believes it may be appropriate to postpone processing any modification requests for parked projects.

Stakeholder Input

Invenergy, Wellhead, ORA, and LSA objected to the proposed change to limit material modification assessments while parked. The general belief suggests there are often reasonable business needs to make project adjustments while parked and believe that they should retain that opportunity.

Alternatively, SDG&E, PG&E, SCE, and ITC stated that the intent of parked projects is to postpone certain obligations of all parties, and they supported including removal of the opportunity for projects to request material changes while parked.

CAISO Response

Upon further review, the CAISO agrees that some projects may have a business necessity to submit a material modification request while parked. Further, the MMAs are paid entirely by the interconnection customer. Therefore, the CAISO proposes that interconnection customers maintain the opportunity to modify a project while parked and this topic will be removed from 2018 IPE.

10. Additional Comments

No additional issues were submitted by stakeholders.

11. Final Proposals

The following topics are considered final and the CAISO plans to seek approval at the July 2018 Board of Governors meeting:

- Clarification on Posting Requirements for PTOs
- Study Agreements

- PPA Transparency
- Increase Repowering Deposit
- Clarify Measure for Modifications After COD
- Short Circuit Duty Contribution Criteria for Repower Projects

Attachment D – Board Memoranda

2018 Interconnection Process Enhancements

California Independent System Operator Corporation

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market and Infrastructure Development

Date: August 29, 2018

Re: **Decision on Interconnection Process Enhancements – Track 2**

This memorandum requires Board action

EXECUTIVE SUMMARY

The Interconnection Process Enhancement (IPE) 2018 is the California Independent System Operator Corporation's current stakeholder initiative in its ongoing commitment to a continuous improvement process of the Generator Interconnection and Deliverability Allocation Procedures (GIDAP). As discussed at the July Board meeting, IPE 2018 identified a total of twenty-five (25) topics for inclusion in the IPE initiative this year. Some will require tariff amendments and some will result in modifications to business practice manuals. Seven enhancements were approved at the July Board meeting, and eight additional topics have reached successful conclusion in the stakeholder process and are being presented here for Board consideration. They are:

1. Allocating transmission plan deliverability
2. Options for converting to energy only
3. Options for transferring deliverability
4. Retaining energy storage facilities added to retiring generators
5. Generator Interconnection Agreement suspension
6. Eliminating conditions for partial recovery of financial security
7. Adding project names to interconnection queue
8. Prohibiting technology changes for delayed projects

Management recommends the following motion:

> ***Moved, that the ISO Board of Governors approves the proposed interconnection process enhancements, as described in the memorandum dated August 29, 2018; and***
>
> ***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposal, including any filings that***

implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.

DISCUSSION AND ANALYSIS

The ISO currently has 289 active projects in the interconnection queue that have not achieved commercial operation. To manage the interconnection and queue management processes effectively in a changing environment, the ISO strives to enhance interconnection processes when needed. To that end, Management seeks Board approval of the following enhancements:

1. Allocating transmission plan deliverability

Transmission plan deliverability refers to the transmission capacity needed for a generator to be deemed full capacity deliverability status (FCDS) and have the ability to deliver its output during peak conditions. A resource does not have to have transmission plan deliverability to interconnect to the ISO system and can instead opt to interconnect as an energy only resource. However, interconnection customers generally seek transmission plan deliverability to be eligible to provide resource adequacy capacity to a load serving entity. The ISO allocates transmission plan deliverability based on a project's progress, as reflected through its status with permitting, financing, site control, and most importantly, in obtaining a power purchase agreement (PPA). Management proposes to modify the transmission plan deliverability allocation process to better align the process with the current generation procurement landscape in California, and to mitigate issues with projects that have not obtained a PPA. Management proposes seven deliverability allocation ranking groups, as depicted below. This proposal also provides interconnection customers greater opportunity to obtain deliverability while in energy only status, which has generally prevented projects from receiving deliverability. By providing an option for energy only projects to obtain a deliverability allocation, the opportunity for energy only projects seeking deliverability is enhanced, which allows for the elimination of the more restrictive annual full capacity

deliverability process for energy only projects. The proposed seven allocation groups are shown in the table below.

Allocation Group	Project Status	Commercial Status
1	Study/Parking Process	Executed or regulator-approved PPA requiring full capacity deliverability status (FCDS) or interconnection customer is load serving entity serving own load
2	Study/Parking Process	Shortlisted in a RFO/RFP
3	Study Process (Following Ph. II Only)	Proceeding without a PPA
4	Converted to Energy Only, or Energy Only projects that achieved commercial operation	Executed or regulator-approved PPA requiring FCDS
5	Converted to Energy Only, or Energy Only projects that achieved commercial operation	Shortlisted in a RFO/RFP
6	Converted to Energy Only	Commercial operation achieved
7	Energy Only	Commercial operation achieved

The allocation groups are designed to prioritize projects based on their position in the queue cluster study process (including parking opportunities), giving priority to projects that are eligible to have delivery network upgrades built to achieve FCDS. Additional priority is given to projects that have obtained a PPA, or are on a PPA shortlist, that requires a project to be FCDS. Lower priority is given to projects that are energy only and the lowest priority given to projects that have reached commercial operation without an allocation as energy only. Parking is an option where a project that fails to obtain an allocation can choose to suspend further action for up to two years, which provides additional time to obtain a PPA and remain eligible for groups 1 and 2.

Allocation groups 1 and 2 include projects that have completed the study process and projects that are coming out of their first or second year of parking following the study process. Groups 1 and 2 require an executed PPA or to be on an active shortlist for obtaining a PPA that requires FCDS. Group 3 includes projects that have just completed the study process and attest that they will proceed to commercial operation regardless of whether they are able to obtain a PPA. Groups 4 and 5 include projects that originally requested FCDS but converted to energy only because they did not qualify for an allocation while eligible to participate in groups 1 and 2. The proposal has been modified from the original draft final proposal presented to stakeholders on July 10, 2018 to also allow in Groups 4 and 5 energy only projects that achieved commercial operation. Groups 6 and 7 include projects that have achieved commercial operation with an energy only status and request an allocation. Groups 6 and 7 have the lowest priority because their ability to proceed to commercial operation is not contingent on receiving an allocation and are not required to have a PPA to receive an allocation. Group 7 is last because those projects were not studied as FCDS in the phase II study process.

2. Options for converting to energy only

Because energy only projects do not have deliverability such that they can provide resource adequacy capacity, they do not have to finance delivery network upgrades as a condition of interconnection. Currently, projects may only voluntarily convert from full capacity deliverability status or partial capacity deliverability status to energy only deliverability status at certain times during the interconnection process (generally very early). Management seeks to provide more opportunities for projects to convert to energy only. Management also proposes to better define the consequences for such conversions, namely, ensuring that such conversions do not shift costs to other interconnection customers or transmission owners late in the interconnection process. This protection will apply regardless of whether the change to energy only status is by customer choice or required by the tariff.

Management proposes to allow projects to convert from full capacity deliverability status to partial capacity or energy only at any time following the Phase II study process. The following are the situations where a project that converts to energy only is required to retain cost responsibility for their assigned deliverability network upgrades[1], unless the annual reassessment study shows that these upgrades are no longer needed for other queued projects:

a. Projects that change to energy only deliverability status by choice after its phase II study is complete.
b. Projects that are converted to energy only as a result of failure to meet commercial viability criteria.
c. Projects that are converted to energy only as a result of failing to meet the allocation retention criteria, except as specified in the modification below.

The above proposal has been modified from the original draft final proposal presented to stakeholders on July 10, 2018 to incorporate stakeholder input received after the draft final proposal was posted. Based on that input the ISO determined that a modification to the proposal was warranted and an addendum to the draft final proposal was posted on August 28, 2018. Specifically, the addendum addressed two circumstances where projects that are converted to energy only as a result of failing to meet the allocation retention criteria will not be required to retain the cost responsibility for the delivery network upgrades.

1) If a project that obtained a deliverability allocation by having a PPA and the procuring entity unilaterally terminates the PPA through no fault of the

[1] The project sponsor will be fully reimbursed for these costs once the upgrade is in-service and the generator achieves commercial operation.

interconnection customer. The project would have to demonstrate evidence on the reason that the procuring entity terminated the PPA.

2) If a project that obtained a deliverability allocation by being included in an RFO shortlist, but does not receive a PPA.

Projects in these two circumstances could also park or re-seek deliverability if they and their cluster still have opportunity to do so under the tariff.

3. Options for transferring deliverability

Although deliverability is not a property right that can be sold or assigned, interconnection customers have some ability to effectively "transfer" deliverability among their own onsite generating units. Examples include transferring deliverability from an existing generator to a newly constructed onsite generating facility through the repower process, and between generating facilities at the same point of interconnection through the material modification process. Generally the same entity must own the original facility that holds the deliverability and the new facility seeking to receive the deliverability. Management proposes to clarify the methodology used in the deliverability transfer assessment process to improve transparency and the efficiency of the assessment and to provide one additional opportunity for transferring deliverability, which is to transfer deliverability between the original facilities and expansion facilities for interconnection requests submitted under the behind-the-meter independent study process. The same deliverability transfer methodology will apply to the reservation of deliverability associated with a generator in the repowering process, the transfer of deliverability among generating units at a generating facility, the transfer of deliverability within the same interconnection request, and the transfer of deliverability associated with the behind-the-meter capacity expansion process.

4. Retaining energy storage facilities added to retiring generators

Management proposes to modify the generating unit retirement assessment process to include an evaluation to determine if a storage facility that has been added to an operating generating facility can continue to operate after the original generating facility retires. This assessment will be based on the ISO's current analysis of whether the new facilities will materially change the electrical characteristics of the generator such that new studies are required. In addition, the retirement assessment will determine if the deliverability associated with the original generator can be transferred to the storage facility. This will allow the storage facility to remain online with deliverability as long as there is no reliability impact (or there is an ability to mitigate that impact).

5. Generator Interconnection Agreement suspension

Currently, interconnection customers have a unilateral right to suspend their generation interconnection agreements for up to three years starting immediately following execution of the agreement. This suspension does not require the customer to define

the agreement suspension's start and end dates, which often impact the construction of network upgrades needed for other projects. Management proposes to modify the generator interconnection agreement suspension process to: 1) require a generator that requests a suspension to provide a start and estimated end date of such suspension, and 2) condition allowing the suspension on a finding by the ISO that the suspension will not materially impact other interconnection customers. The interconnection customer can seek to mitigate identified material impacts to other customers (*e.g.,* continuing to make payments on shared network upgrades while in suspension) to satisfy that condition.

6. Eliminating conditions for partial recovery of financial security

Interconnection customers post interconnection financial security to finance the construction of their network upgrades. This security is liquidated if the customer withdraws from the queue. However, when a project withdraws from the interconnection queue, it recovers a substantial part of its interconnection financial security if it meets one of several criteria (*e.g.*, it failed to secure a power purchase agreement or critical permit). Virtually all customers have met the requirements to receive a partial refund of their financial security. Management proposes to eliminate the burden for receiving a refund by eliminating the conditions for partial recovery of interconnection financial security for withdrawn projects. Consequently, interconnection customers will recover any refundable amount more quickly upon withdrawal.

7. Adding project names to interconnection queue

The ISO's public interconnection queue currently provides a variety of project information by queue number (*e.g.*, point of interconnection, participating transmission owner, capacity, interconnection agreement status). The ISO tariff currently considers project names as confidential information and does not provide project names in the public interconnection queue. Management proposes to add project names to the public interconnection queue. This will provide more transparency for customers seeking to identify unique project names that conform to NERC reliability standards, and will allow for better coordination with other state agencies dealing with permitting.

8. Prohibiting technology changes for delayed projects

The tariff currently does not provide detailed limitations on the timing or types of technology and fuel type changes that an interconnection customer may request. Stakeholders have observed that older projects in the queue have received approval for technology changes very late in the process, including for projects that have already been in the queue for ten years or more. Management proposes to prohibit projects from requesting technology changes if the project's current commercial operation date

has exceeded or will exceed the 7- or 10-year time-in-queue threshold. Management proposes to nevertheless allow *de minimus* fuel-type change (lesser of 5% or 10 MW).

POSITIONS OF THE PARTIES

The ISO conducted stakeholder outreach on these topics consisting of an issue paper on January 24, 2018, a straw proposal on May 21, 2018, and a revised straw proposal on July 10, 2018. Stakeholders were able to provide comments at each phase with a majority fully or partially supporting the eight Track 2 topic proposals with some exceptions. The more notable exceptions are summarized below along Management's response to them. A comprehensive summary of all stakeholder comments is provided in Attachment A.

Allocation of transmission plan deliverability

First Solar and Intersect Power recommend deliverability be allowed to projects that obtain a PPA with counterparties that do not have a resource adequacy requirement. The ISO does not agree that the limited amount of remaining deliverability available for allocation should be provided to projects that are procured by entities that do not have a resource adequacy requirement. First Solar also recommended revising the criteria associated with the proposed allocation group 3 where projects designate that they will proceed to commercial operation even if they are not able to obtain a PPA for their project. Specifically, First Solar recommends that projects should be allowed more time to elect the allocation status of a project that will proceed to commercial operation even if it does not obtain a PPA, and further request the ability to change the project's Commercial Operation Date (COD) if a PPA is obtained. The ISO does not agree because the recommended change would allow "gaming" the process whereby projects could get an allocation when they have no intention of building their project without a PPA. This is the very behavior the ISO seeks to eliminate through the proposed criteria.

EDF-R, the Large Scale Solar Alliance (LSA), and NextEra recommend reducing the PPA requirements from PPAs that require deliverability to PPAs that are seeking deliverability, but do not require deliverability as an absolute requirement. As stated previously, the ISO does not agree that the limited amount of remaining deliverability available for allocation should be provided to projects that are procured by entities that do not require deliverability as a requirement within the PPA.

Various parties would like the opportunity for energy only projects to re-enter the queue, pay for upgrades identified as needed in a deliverability study, and seek a deliverability allocation. Currently, once an energy only project completes the interconnection process, it cannot reenter the interconnection process to be restudied and seek to build additional network upgrades to allow the project to become fully deliverable. While the ISO decided not consider this topic in IPE 2018 due to not having sufficient time for it given all the other 2018 policy issues, the ISO agrees to consider this topic in a future IPE stakeholder initiative.

Options for converting to energy only

EDF-R, LSA, and NextEra recommend that extra studies be performed before the interconnection customer elects to convert to energy only so that the customer will know if its network upgrades are no longer needed. Alternatively, these stakeholders recommend that the ISO provide the interconnection customer with the ability to withdraw its request to convert to energy only if their delivery network upgrades are still needed. The ISO disagrees because these additional study requirements would be burdensome and can be performed by the interconnection customers themselves. The ISO's study process schedule is integrated with the transmission planning study process and cannot accommodate additional studies.

Intersect Power suggests that funds should only be retained if deliverability upgrades are still needed for other projects in the same cluster. The ISO disagrees because that would require the transmission owner to fund the subject upgrade if the project withdraws after converting to energy only, producing an opportunity for the interconnection customer to game the withdrawal process.

First Solar expressed concerns over the number of projects that would be adversely impacted by these changes and urged the ISO to consider other ways to address the concern identified with projects that purposely put themselves in a position where they are required to be converted to energy only in order to have their cost responsibility for delivery network upgrades removed, thereby reducing their non-refundable funds when they subsequently withdraw from the queue. In follow up discussions with First Solar, the ISO found that First Solar had misinterpreted the breadth of projects impacted by the proposal. However, they did raise a valid concern related to projects that receive an allocation by having a PPA or being on a PPA short list, and then lose the allocation in the retention process through no fault of their own. As a result, the ISO modified the proposal to exclude projects that fall within those scenarios.

Options for transferring deliverability

EDF-R, LSA, and NextEra support the proposal and recommend that that such transfers be extended to any project at the same point of interconnection, regardless of ownership. The ISO disagrees because this would make deliverability a marketable commodity, which would be a significant paradigm shift in the current deliverability procedures and bypass the ISO's deliverability allocation process.

Prohibiting technology changes for delayed projects

EDF-R, First Solar, and NextEra recommend technology additions, not wholesale or partial changes, be allowed beyond the 7/10 year time-in-queue threshold. The ISO disagrees because the process of adding new technologies to a project has enabled projects to incrementally make changes that result in wholesale technology conversions, which warrant a new interconnection request.

CONCLUSION

Management recommends that the Board approve the eight changes proposed in this memorandum. These changes are generally supported by stakeholders and were refined to address many of their comments and concerns throughout the stakeholder process. The proposed modifications improve the effectiveness of allocating deliverability to projects and expands customer options. These modifications also protect projects, transmission owners, and ratepayers. The proposed modifications will continue to improve the ISO's generator interconnection procedures to help California and the West to have robust capacity and meet their public policy goals.

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market and Infrastructure Development

Date: July 18, 2018

Re: **Decision on Initial Interconnection Process Enhancements**

This memorandum requires Board action

EXECUTIVE SUMMARY

Over the years, the ISO has made numerous policy and process improvements regarding how it manages the generator interconnection study process and generator interconnection queue. These changes, many of which were designed to address specific concerns of renewable energy developers, have resulted in a very effective interconnection process. The ISO is now in a position of continuous improvement where certain refinements and clarifications to the interconnection process are required to manage projects in the current interconnection queue and to provide additional structure and clarification for projects seeking to interconnect in future queue clusters.

The ISO and its stakeholders identified a total of twenty-five (25) topics for inclusion in the interconnection process enhancements initiative this year. Some will require tariff amendments and some will result in modifications to the business practice manuals. Seven topics have reached successful conclusion in the stakeholder process and are being presented here for Board consideration. The remaining topics requiring tariff changes will be presented at future board meetings this year. The specific seven topics being presented here for Board consideration include the following:

1. Revise the tariff to incorporate reference to the new resource implementation process;
2. Exempt participating transmission owners from posting interconnection financial security to themselves;
3. Specify that if an upgrade is identified in the Phase I report but is determined to no longer be needed prior to the initial financial security posting, then the posting requirement will be revised prior to the posting;
4. Incorporate the execution of the generation interconnection study process agreement in the interconnection request;

5. Require interconnection customers to provide a copy of their power purchase agreement when demonstrating commercial viability;
6. Increase the deposit for customer-requested repowering studies and serial re-studies from $10,000 to $50,000 consistent with the cost of recent studies; and
7. Clarify that modifications to generator projects after they achieve commercial operation is based on the impact to total capability and electrical characteristics, not the impact to projects in the queue.

Management recommends the following motion:

Moved, that the ISO Board of Governors approves the proposed interconnection process enhancements, as described in the memorandum dated July 18, 2018; and

Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed interconnection process enhancements, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.

DISCUSSION AND ANALYSIS

The ISO currently has 319 active projects in the interconnection queue that have not achieved commercial operation. One hundred fourteen (114) of these were submitted during the open application window in April of this year. In order to effectively manage the interconnection and queue processes continuous improvement in the form of policy modifications and clarifications to the interconnection process are required. To that end, Management is seeking Board approval of the following items:

<u>Modify the tariff to reference the new resource implementation process:</u>
New generators seeking interconnection to the ISO are required to go through the ISO generator interconnection request process. Generators that pre-existed the ISO and operate under grandfathered power purchase agreements (typically qualifying facilities) can convert to a participating generator status upon expiration of their original agreement, and receive interconnection service under a 2-party or 3-party generator interconnection agreement with the ISO and participating transmission owner.[1] Besides going through the agreement conversion process, these generators are also required to go through the new resource implementation process, which ensures compliance with interconnection requirements (while accounting for the age of these generators). The ISO believes that it should clarify these procedures in the tariff to make them more

[1] Most of these entities are currently listed under the investor-owned utility's agreements and need to execute new agreements with the ISO and provide separate metering and telemetry. Distribution connected resources execute interconnection agreements only with the participating transmission owner.

transparent. Any tariff amendment would be for clarification purpose only, and would not create new obligations.

Modify the participating transmission owner posting requirements:
Interconnection customers currently post interconnection financial security to participating transmission owners for the construction of their network upgrades and interconnection facilities. There currently is no distinction in the tariff for projects where the interconnection customer itself is also the participating transmission owner. Pacific Gas and Electric Company (PG&E) proposed that participating transmission owners should not have to post financial security to themselves when they develop new generation projects interconnecting to their own areas. PG&E has noted that the participating transmission owners have already successfully petitioned FERC for case-by-case waivers on this issue, which FERC has granted.[2] This tariff change would codify what FERC has already approved and removes the administrative burden from both the participating transmission owners and FERC to waiver the posting on a case-by-case basis. This tariff change would also clarify that a participating transmission owner that withdraws their generator interconnection request will be required to provide non-refundable funds to the ISO similar to any other interconnection customer.

Impact of modifications on initial financial security posting:
Between the issuance of the Phase I study and the initial interconnection financial security (IFS) posting, changes such as project withdrawals or network changes may cause network upgrades identified in the Phase 1 study to no longer be needed.[3] If a network upgrade is no longer needed, then that will be reflected in the Phase II studies, however, no changes are made to the Phase I study report or the associated financial security posting requirements. This can create an unnecessarily excessive financial burden to interconnection customers particularly if the no longer needed upgrade is expensive. To address this, the ISO proposes that if engineering judgement can definitively determine that a required network upgrade in an interconnection customer's Phase I study report is no longer needed, and that determination is made in advance of the initial financial security posting, the interconnection customer should not be required to post financial security for that upgrade.

Revise the generation interconnection study agreement process:
Currently interconnection customers submit an interconnection request and then execute a generator interconnection study process agreement (GISPA) after the project is validated. The ISO proposes to incorporate the GISPA into the interconnection request so that they are executed together.[4] To achieve this efficiency, the interconnection request form would be changed slightly to incorporate the GISPA. In addition, the ISO would establish that the interconnection requests could only be submitted by an authorized signatory of the interconnection customer.

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[2] *See, e.g.,* FERC Docket No. ER18-859-000.
[3] This financial posting is due 90 calendar days after the issuance of the Phase I report or 40 calendar days after issuance of the revised final Phase I report.
[4] http://www.caiso.com/Documents/AppendixDD_GeneratorInterconnectionAndDeliverabiltyAllocationProcess_asof_Mar8_2016.pdf

The ISO also will clarify that interconnection customers must submit the $150,000 interconnection study deposit within the interconnection request window (and not during the validation/correction window).[5] Absent the deposit, the ISO does not have funds to process and validate the interconnection request. Interconnection requests that lack a deposit by the close of the interconnection request window will be denied.[6]

Revise requirements for power purchase agreements:

The ISO requires interconnection customers to demonstrate commercial viability criteria with a power purchase agreement if they are requesting an extension of their commercial operation date beyond the maximum period allowed in the ISO tariff. In these cases, the ISO requires the interconnection customer to provide a copy of the power purchase agreement so the ISO can verify that the project capacity and the power purchase agreement capacity match for purposes of retaining deliverability.[7] This requirement ensures accurate project-to-power purchase agreement data relationship and a robust and transparent commercial viability process. In order for interconnection customers to modify the project's commercial operation date, the power purchase agreement must match the specific generating facility. The CAISO proposes no changes to this process, but intends to move the requirement from the BPM for Generator Management to the tariff for greater transparency.

Increase repower study and serial re-study deposit amount:

When electing to request optional studies, interconnection customers are required to submit an initial deposit (currently $10,000). Once the study is completed, interconnection customers pay the remaining actual study costs or are credited if actual study costs are less than the deposit. The ISO has observed that the current $10,000 deposit is often insufficient for covering repowering study and serial re-study costs, forcing the ISO and PTOs to seek additional funds from the customers. The ISO thus proposes to increase the study deposit for repowering and restudy of serial projects to $50,000 as a reasonable and prudent amount. The ISO selected the $50,000 amount because the repower and serial re-studies are reaching this amount and selecting a lower amount would continue to result in further shortfalls. Moreover, projects often withdraw from the queue and dissolve their LLCs before paying these shortfalls, leaving the shortfall with the participating transmission owner and ISO ratepayers. CAISO will also include the standard invoice process for these studies.

Clarify criteria for modifications after the commercial operation date is achieved for the project:

Interconnection customers frequently struggle to understand the criteria the ISO uses to determine whether their project modification request will be approved. This confusion frequently stems from the fact that the ISO applies different criteria depending on whether the project is in the interconnection process or has already achieved

[5] The ISO posts in advance the timing of the interconnection request window. In 2018, the interconnection request window was April 1st to April 16th therefore, both the application and the funds were required to be received by April 16th.

[6] The ISO notes that this clarification is not true for Site Exclusivity Deposits. Often interconnection customers submit site exclusivity documentation that is deemed insufficient. Interconnection customers will continue to have the opportunity to cure this deficiency with either further documentation or submitting a $250,000 deposit within the cure window.

[7] BPM for GM section 6.5.2.2

commercial operation. For modification requests to projects that are still in the interconnection process, the generator interconnection procedures base modification approval on whether the modification affects the scope, schedule, or budget of another project in the queue. For modification requests to projects that have already achieved commercial operation, Section 25 of the tariff allows existing, online generating units to request modifications to their generating facility if the total MW capability of the generating facility and its electrical characteristics do not substantially change. The ISO proposes to clarify and make more transparent which test applies when. In addition to the clarification, stakeholders requested that the ISO allow projects to downsize after they have achieved commercial operation. The ISO previously only allowed post-commercial generating facilities to downsize in 2014. As such, the ISO proposes to remove the limitation for downsizing after achieving the commercial operation date of the project.

POSITIONS OF THE PARTIES

The ISO conducted stakeholder outreach on these topics consisting of an issue paper on January 24, 2018 and straw proposal on May 21, 2018. Stakeholders were able to provide comments at each phase and were generally supportive of the proposed changes with some exceptions. Specifically, CalWEA recommended in its reply to the Issue paper that the participating transmission owners continue to seek waivers at FERC on a case-by-case basis versus modifying the tariff to exempt their posting requirement. Further, in the comments to the straw proposal CalWEA commented they could agree to not requiring the participating transmission owners to seek waivers provided they provide documentation that the generation is required to meet the participating transmission owner's load. Management believes the additional administrative burden of filing on the participating transmission owners and FERC is not productive nor does the ISO want to be in a position of validating generation need. With respect to increasing the repower study and serial re-study deposit amount CalWEA and sPower generally agreed but recommended raising the deposit to a median historical cost number (~$25,000) and sPower opposes the increase on the grounds that they have not received timely refunds of their study deposits. As stated above, Management selected the $50,000 amount because the repower and serial re-studies are reaching this amount and selecting a lower amount would continue to result in further shortfalls. Moreover, projects often withdraw from the queue and dissolve their LLCs before paying these shortfalls, leaving the shortfall with the participating transmission owner and ISO ratepayers. The ISO agrees with sPower that we need to be timelier in refunding deposits and have been working with the participating transmission owners to accomplish this.

CONCLUSION

Management recommends that the Board approve the seven changes proposed in this memorandum. These changes are generally supported by stakeholders and were refined to address many of their comments and concerns throughout the stakeholder process. The proposed modifications will continue to improve the ISO's ability to

administer the queue more efficiently as we move closer to meeting California's ambitious renewable energy and environmental goals.

Attachment E – List of Key Stakeholder Dates

2018 Interconnection Process Enhancements

California Independent System Operator Corporation

List of Key Dates in the Stakeholder Process for this Tariff Amendment[1]

Date	Event
August 10, 2017	CAISO solicits stakeholder suggestions for IPE topics
September 18, 2017	Stakeholders submit IPE topic suggestions
January 17, 2018	CAISO publishes issue paper
January 24, 2018	CAISO hosts stakeholder conference call and web conference on issue paper
February 8, 2018	Stakeholders submit comments on issue paper
May 17, 2018	CAISO publishes straw proposal
May 21, 2017	CAISO hosts stakeholder conference call and web conference on straw proposal
June 11, 2018	Stakeholders submit comments on straw proposal
July 10, 2018	CAISO publishes revised straw proposal (draft final for track 1 and 2 issues)
July 17, 2018	CAISO hosts stakeholder conference call and web conference on revised straw proposal
August 9, 2018	Stakeholders submit comments on revised straw proposal
September 4, 2018	CAISO publishes draft tariff revisions
September 17, 2018	Stakeholders submit comments on draft tariff revisions
September 18, 2018	CAISO hosts stakeholder conference call and web conference on draft tariff revisions
September 19, 2018	CAISO publishes revised draft tariff revisions

[1] Please note that IPE 2018 split into three tracks, with tracks one and two comprising the instant filing. Track 3 is still ongoing. All issues in all tracks shared papers until resolved. *See* http://www.caiso.com/informed/Pages/StakeholderProcesses/InterconnectionProcessEnhancements.aspx for links to all documents.