April 30, 2020

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

**Re: California Independent System Operator Corporation
Filing of Split Resource Participation Agreement
Docket No. ER20-____-000**

Dear Secretary Bose:

The California Independent System Operator Corporation ("CAISO") submits for filing and acceptance an agreement, the Split Resource Participation Agreement ("Agreement"), dated April 29, 2020, between the CAISO and CCFC Sutter Energy, LLC ("Calpine").[1] The Agreement sets forth the terms under which Calpine will split one of its resources, the Sutter Energy Center ("Sutter"), through simple modeling and logical metering into two generating units for purposes of participation in the CAISO markets. Under the Agreement, Calpine will assume the operational and financial consequences from splitting Sutter, a multi-stage generating resource, into two simple generating units. Splitting the Sutter resource will support concurrent participation of the separate generating units in the markets – one in the energy imbalance market as an EIM participating resource and the other in the CAISO day-ahead and real-time markets utilizing pseudo-tie functionality.

This proposal will benefit CAISO customers by allowing capacity from one of the generating units in the split resource to satisfy resource adequacy requirements in the CAISO balancing authority area,[2] while the other separate and distinct generating unit serves as a Sacramento Municipal Utility District ("SMUD") capacity resource. The CAISO requests that the Commission accept the Agreement effective July 1, 2020. This effective date will allow Sutter to participate as split resources supporting Sutter's continued fulfillment of pre-existing Calpine commitments to SMUD and serving CAISO load serving entities

---

[1] The CAISO submits the Split Resource Participation Agreement pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d. The Agreement is included as Attachment A to this filing, and is designated as CAISO Service Agreement No. 6139.

[2] *See* California Public Utility Commission Decision 19-11-016 (recognizing CAISO load serving entities' procurement obligation of additional resource adequacy capacity).

as soon as the late summer of 2020 based on commitments made by Calpine.

I. Background

The Sutter resource is an air-cooled, combined cycle gas turbine generating facility located near Yuba City in Sutter County with a generating capacity of approximately 550 MW. The resource is within the Balancing Authority of Northern California ("BANC") balancing authority area and interconnected to the transmission system of the Western Area Power Administration – Sierra Nevada Region ("Western").

The Sutter resource currently provides SMUD with approximately one-half of its capacity under pre-existing contracts, and Calpine has contractual arrangements (contingent, in part, on FERC's approval of the Agreement) with CAISO load serving entities for the procurement of the other half of its capacity. SMUD and Western effectively operate as separate subsystems within the BANC balancing authority area. This separation of the SMUD and WAPA systems through interchange-like practices makes it necessary to account for the SMUD share of Sutter as a pseudo-tie from the Western sub-area to the SMUD sub-area within the BANC balancing authority area. The share of Sutter that Calpine intends to deliver to the CAISO balancing authority area would be separately pseudo-tied from the Western subsystem within the BANC balancing authority area to the CAISO balancing authority area.

II. The Agreement

The Agreement details the contractual terms under which Calpine will split the Sutter resource into two separate logical resources for modeling and participation in CAISO markets. Each split resource will be modeled and registered with the CAISO as a simple generating unit and may participate independently in the CAISO markets, or not at all, provided that each split resource meets all of the CAISO tariff requirements, contractual terms, and business practices applicable to such participation. The split resources must also fulfill any associated requirements of BANC, Western, and SMUD.

Article II includes the requirements specific to the split resources, which the CAISO will treat as any other generating unit. Calpine will essentially forgo CAISO market operation of Sutter as a multi-stage generating resource in exchange for the opportunity to operate two simple generating units that can participate separately in the CAISO markets. A scheduling coordinator must represent each split resource as required by the CAISO tariff for its participation.

Schedule 1 of the Agreement describes the split resources that will be registered and included in the master file, including the required information regarding the split resource capacity, the amount of capacity participating in

CAISO markets, and additional telemetering points required by the CAISO. Section 2.2.2 of the Agreement provides that the split resource is not required, nor is it eligible, to register as a multi-stage generating resource under the CAISO tariff, and it will not be treated as a multi-stage generating resource under any provision of the CAISO tariff. Calpine must register the resources and apply for master file changes regarding each of the split resources under the provisions of the applicable agreements required for CAISO market participation. Any changes affecting Schedule 1 will only apply after all applicable agreements for participation in CAISO Markets are updated consistent with their specific requirements, and Calpine will be required to notify the CAISO of any changes to Schedule 1 prior to or simultaneously with initiating any changes in the master file.

Under the Agreement, Calpine is required to provide the CAISO with separate telemetry data for the entire Sutter resource and each split resource, in addition to or in satisfaction of the telemetry data required for submission under the applicable agreements for CAISO market participation. The parties will test and confirm the transmission of the specified data points, prior to the split resources participating in CAISO markets, and as required on an ongoing basis. If the CAISO requires a modification to telemetry, it will discuss these modifications with Calpine and provide a thirty (30) day notice prior to implementing any such modifications.

The requirements above, including the additional telemetry requirement and establishing an allocation protocol described below, are the only unique requirements imposed by the Agreement upon the split resources. Otherwise, each generating unit will be subject to all CAISO tariff requirements and the allocation protocol (described below), contractual terms, and business practices applicable to generating unit participation in the CAISO markets, without exception or modification. The split resources must complete the new resource implementation process, during which the CAISO will review, among other things, the logical metering calculation for each split resource to confirm meter data accuracy for settlement purposes consistent with the metering requirements for scheduling coordinators. This implementation process will also include finalizing the allocation protocol as required by the Agreement and testing to confirm that the allocation outcomes are as expected.

The remainder of the Agreement, Articles III through X, includes standard terms and conditions associated with participation in the CAISO markets. These provisions address term and termination, applicability of the CAISO tariff, costs, dispute resolution, representations and warranties, liability uncontrollable forces, and miscellaneous terms. These terms and conditions are substantially unchanged from other CAISO *pro forma* participation agreements.

III. Split Resource Allocation Protocol

The Agreement provides that Calpine will assume the financial and operational responsibility for operating Sutter as split resources, while incorporating all tariff requirements associated with generating unit participation in the CAISO markets. This means Calpine is fully responsible for compliance with the tariff rules regarding CAISO market participation by the split resource generating units. For example, the CAISO may issue one dispatch instruction to the split resource participating in the EIM and a separate dispatch instruction to the split resource participating in the real-time market that, either separately or in combination, require the Sutter resource to experience what would otherwise have been an infeasible dispatch. Should this circumstance arise, Calpine would be obligated to operate the Sutter resource consistent with the CAISO tariff and dispatch instruction separately issued to each split resource consistent with an allocation protocol the Agreement requires to be established prior to participation by the split resources. This protocol would consider the principles for allocating resource characteristics, outages, telemetry, and metering for each split resource. It is important to register the split resource characteristics consistent with expectations, to inform the market of limitations that would otherwise create an infeasibility, and to account for the split resources' performance accordingly. This is the primary purpose of the allocation protocol specific to the Sutter resource. In all circumstances, Calpine would be responsible for the administration of the protocol and for managing all other associated obligations under the CAISO tariff and its contractual obligations to third parties.

If the Sutter resource experiences an outage, Calpine would be required to report the outage to each split resource's Scheduling Coordinator pursuant to this protocol.[3] Each Scheduling Coordinator would report the outage according to the CAISO tariff outage reporting requirements applicable to each of the generating units, including, where applicable, resource adequacy substitution requirements and availability penalties. Any allocation of planned and forced outages between each split resource is necessarily complex because it must account for the operational characteristics and pre-existing contractual obligations associated with the Sutter Energy Center. To that end, Calpine has committed to allocate outages proportionally (pro-rata) between the split resources based on the capacity splits in the Agreement's Schedule 1 whenever possible; *i.e.*, not otherwise required by operational characteristics or pre-existing contractual obligations. Because of the specific and detailed nature of the parameters needed to implement this principle, the Agreement provides that Calpine will allocate unavailability of each split resource due to a forced or

---

[3] Calpine's Scheduling Coordinator will report outages directly to the CAISO. Calpine will inform SMUD's Scheduling Coordinator of any outages allocated to the EIM resource, as determined consistent with the allocation protocol. SMUD would then have the obligation to communicate those outages to the CAISO.

planned outage according to a protocol developed by Calpine and agreed to by the CAISO. The Agreement further requires finalization of this outage allocation protocol prior to the split resource implementation based on documented operational characteristics and pre-existing contractual obligations. This will allow the parties to proceed in a timely manner and provide an auditable protocol for any non-proportional allocation of outages between the split resources.

Operationally, the Sutter resource is a combined-cycle resource that will not be eligible for multi-stage generator unit modeling. Normally, that modeling puts appropriate constraints on the dispatch of a combined-cycle resource based on its operating characteristics. These constraints include, for example, transition times, configuration-based Pmin and Pmax values, and forbidden operating regions. Those physical constraints do not go away when splitting the resource into two separate logical generating units; they will continue to create constraints reflected in reporting the allocation of available capacity between the two split resources. For example, if a pro-rata (equal) split of an outage violates a Pmin of a split resource, the allocation of the outage should change to a disproportionate split. The outage allocation protocol would document such conditions and identify an existing CAISO outage management designation for use in such circumstances.

Contractually, the Sutter resource is subject to a pre-existing contract with SMUD for which the outage allocation protocol must also account. That contract expires on October 31, 2020, and generally grants SMUD a "priority right" on contract quantity equal to approximately one-half of Sutter. The allocation of outages must respect this priority right until after October 2020 because the contract pre-dates the Agreement by several years, and SMUD and Calpine incurred significant costs to bring the Sutter resource back online after suspension of operations and layup. Accordingly, until November 1, 2020, if there is an outage, Calpine and the CAISO understand that accommodating the pre-existing contract requires availability of the units to be disproportionate in limited circumstances. The CAISO expects that contractual commitments entered into after the effective date of the Agreement will support the pro rata allocation of unavailability due to an outage, subject only to the operational limitations noted above. Procedures will further detail implementation of the outage allocation protocol that would be followed when operating the Sutter resource and communicating with the CAISO.

IV. Split Resource Modeling and Settlement

Applying CAISO pseudo-tie modeling conventions could result in some settlement difference between the split resource participating in the EIM and the split resource participating in the CAISO day-ahead and real-time markets.[4] This settlement difference could occur because there will be some modeling differences associated with each resource. The results of any such differences will be settled with the scheduling coordinator for each split resource—SMUD for the split resource participating in the EIM, and Calpine for the split resource participating in the CAISO day-ahead and real-time markets.

Pseudo-tied resources are modeled as belonging to the attaining balancing authority area; thus, the split resources will be constrained by different power balance constraints. Because the power balance constraint shadow price, along with other components like marginal losses and congestion, determines the locational marginal price, it is possible that the split resources will have different prices in the real-time market. This is the correct treatment because the resources are constrained by different power balance constraints—one serves CAISO load and the other serves SMUD load—and such differences should not be a concern in this circumstance. The split resource allocation protocol required by the Agreement will provide a logical and non-discretionary framework to account for resource characteristics, outages, telemetry and metering. This protocol, coupled with the split resources being represented by different scheduling coordinators serving different customers with different obligations, will be sufficient to mitigate any opportunities to take advantage of differences in settlement between the split resources. In any event, the split resource generating units will be subject to monitoring in accordance with the CAISO tariff.

Regarding other potential settlement differences, a congestion difference could arise if the split resource pseudo-tied to the CAISO directly from Western uses a different intertie than SMUD's portion using SMUD's interties. In that case, a scheduling limit could affect one intertie but not the other – which affects congestion pricing. These interties have significant available capacity, so congestion due to a scheduling limit should be rare or non-existent. At the same time, physical congestion within BANC should affect both split resource LMPs the same, although there could be differences in the settlement for the CAISO versus SMUD load aggregations.

Regarding losses, the LMP loss component will be the same, but the EIM participating resource may include a different settlement for losses based on the SMUD tariff or contract. The CAISO markets compute the LMP loss component based on the impact of injections at a resource's physical location on the overall losses in the CAISO markets' grid and do not include losses in transmission outside the market area. The CAISO is aware that other transmission providers may use different settlement mechanisms for losses on their transmission

---

[4] *See, e.g.,* CAISO Tariff Section 27.5.1.1 (excluding external losses and congestion for pseudo-tie resources to the CAISO balancing authority area to ensure that the generating unit is accurately represented as being located in the attaining balancing authority area).

facilities located in their area, but does not perform loss calculations for their settlement mechanisms. These differences in settlement mechanisms may affect the final cost to transmission customers in such areas.

V. Other Considerations Supporting Acceptance of the Agreement

The Agreement establishes two separate and distinct generating units, one that is expected to participate in the CAISO day-ahead and real-time markets as a pseudo-tie participating resource and another that is expected to participate in the EIM as a pseudo-tied EIM participating resource. This resource separation would be established prior to registering either generating unit in the CAISO systems. Separating the resources prior to registration allows each independent resource to be individually treated as a generating unit under the rules applicable to the markets in which it will participate. In other words, the CAISO does not consider any tariff exception or modification necessary for the split resources to participate in the CAISO markets, once they have been separated into individual generating units, beyond what is provided in the Agreement. Nonetheless, the CAISO recognizes there are related considerations that may be relevant to Commission acceptance of the Agreement.

The CAISO tariff requires pseudo-tie generating units to transfer dynamically the entire output of their real-time generation production to the CAISO balancing authority area.[5] The CAISO believes the split resource registered to participate in the CAISO day-ahead and real-time markets will meet this requirement. The resource will be registered as a pseudo-tie generating unit and will be modeled, telemetered and metered as an individual generating unit representing the full output of the real-time generation production from that resource consistent with the allocation protocol required by the Agreement. By treating each split resource as a generating unit, the entire output of the pseudo-tie generating unit would be transferred dynamically to the CAISO, meeting this requirement. Key to this approach is the definition of a generating unit because the definition of a pseudo-tie generating unit is a concatenated term. A "generating unit" is defined as an "individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered".[6] The Agreement provides for each split resource to be identified separately through modeling, telemetry, and metering in accordance with a split resource allocation protocol, and treats each split resource as a generating unit. By defining each split resource as a generating unit, the Agreement establishes that they will be treated accordingly.

---

[5] CAISO Tariff, Appendix N, Section 1.2.1.2; *see also* CAISO Tariff, Appendix N, Sections 1.2.1.9 and 1.2.1.10 (requiring off-system sales to be scheduled as an export from the CAISO and the total output of the generating unit to be telemetered to the CAISO).

[6] CAISO Tariff, Appendix A.

Treating a split resource as a generating unit that may be pseudo-tied to the CAISO balancing authority area may, in turn, raise some consideration of the tariff provision that requires dynamic transfer of the entire output of a pseudo-tie generating unit to the CAISO. Calpine addresses this by identifying Sutter as two separate resources, having the split resource allocation protocol in place, and accepting any operational or financial consequences that may result from such separation. The split resource pseudo-tied to the CAISO balancing authority area will represent the full output of that generating unit according to the CAISO tariff. Accordingly, the CAISO proposes to address the requirements for Sutter's concurrent participation in the EIM and the CAISO day-ahead and real-time markets in accordance with the terms of the Agreement.

The CAISO also understands that Sutter may not be the only resource located in an EIM entity balancing authority area that would benefit from being separated into individual resources that could be pseudo-tied to the CAISO balancing authority area in compliance with the tariff. However, Sutter is the first EIM participating resource with a demonstrated need to concurrently pseudo-tie to the CAISO balancing authority area in the 2020 timeframe due to its intention to offer capacity to satisfy CAISO resource adequacy needs in that timeframe. The CAISO is prepared to offer a comparable Split Resource Participation Agreement to any similarly situated resources where a multi-stage generating resource owned by a single entity seeks to split into individual simple generating units each of which will be able to participate in CAISO markets in accordance with the CAISO tariff. The resource owner would similarly be required to assume by contract the financial and operational responsibility for operating the resource as split resources. The resource owner also would be required to assume additional telemetry requirements and necessary split resource allocation protocols comparable to those set forth in the Agreement.

The CAISO also recognizes that other resources not similarly situated may nonetheless be interested in pursuing options for split resource participation in the CAISO markets. The CAISO intends to address the needs of future split resources through a stakeholder process that considers whether changes to the CAISO tariff would be warranted; *e.g.*, a participating resource located in an EIM entity balancing authority area that has a commitment to concurrently deliver a share of its output to the CAISO balancing authority area. Other ISO/RTOs support market participation by pseudo-tie resources representing less than the entire output of the generating facility, including as capacity resources, and the CAISO has identified a need to do so.[7] Based on the outcome of that stakeholder process, the CAISO may modify the tariff provisions that require the entire output of a pseudo-tie generating unit to allow for the concurrent delivery of

[7] *See, e.g.,* PJM Manual 12, Balancing Operations, Version 41, Attachment F, Dynamic Transfers, pgs. 100-106 (March 26, 2020) (providing for partial unit transfers)

a resource between an EIM entity balancing authority area and the CAISO balancing authority area.[8] This may be necessary and appropriate as early as 2021 with the implementation of the Los Angeles Department of Water and Power EIM Agreement.[9] In the meantime, the Agreement is a just and reasonable approach to meet Calpine's commitments with respect to participation of the Sutter resource as an EIM participating resource concurrent with participation in the CAISO day-ahead and real-time markets.[10]

The CAISO has concluded that this filing does not require any type of waiver. The Agreement provides for service under the Commission approved CAISO tariff without exception or modification. The Agreement only (1) imposes certain additional requirements for telemetry to ensure that the split resource can comply with the existing generating unit definition in the CAISO tariff and (2) establishes a split resource allocation protocol to affect feasible dispatches and provide consistent and understood reporting and accounting procedures for the individual split participation resources.

VI. Next Steps

Following Commission acceptance of the Agreement, the CAISO will allow Calpine to remove the single Sutter resource registration, and proceed with registering two new generating units through simple modeling and logical metering consistent with the approved split resource allocation protocol. This process will include Calpine executing a *pro forma* Pseudo-Tie Participating Generator Agreement contained in appendix B.16 to the CAISO tariff,[11] and

[8] The CAISO also intends to pursue a joint owned unit modeling solution that would more accurately align the market model with the operation of jointly owned resources. This would alleviate some of the potential operational challenges, and also consider and address potential settlement implications of the joint owned unit modeling. This initiative is included on the market initiatives roadmap in the 2021-2022 timeframe. CAISO Final Policy Initiatives Roadmap 2020, page 20, available at http://www.caiso.com/Documents/2020FinalPolicyInitiativesRoadmap.pdf.

[9] The CAISO would also consider a split resource form of agreement in support of the Los Angeles Department of Water and Power EIM implementation, if necessary. However, the CAISO believes that resources affected by the EIM implementation for the Los Angeles Department of Water and Power would best served through a stakeholder process that leads to amendment of the CAISO tariff given the potentially broader interest in such an initiative.

[10] The Agreement may no longer be necessary following a change in the CAISO tariff specific to partial pseudo-tie resource participation, in which case the CAISO would file with the Commission a notice for termination of the Agreement. *See* Agreement, Section 3.2.1 (specifically allowing the CAISO to terminate the Agreement if the tariff supports split resource participation in the CAISO markets).

[11] The CAISO will separately file a notice of termination of the pilot Pseudo-Tie Participating Generator Agreement between the CAISO and Calpine, with a requested effective date concurrent with the *pro forma* Pseudo-Tie Participating Generator Agreement. *See* FERC Docket No. ER18-474-000 (representing in footnote 4 of the transmittal letter that Calpine will enter into a

updating the Dynamic Transfer Balancing Authority Operating Agreement with BANC and any other associated agreements, all in support of the split resource that will be pseudo-tied to the CAISO balancing authority area.

VII. Effective Date

The CAISO respectfully requests that the Agreement be made effective on July 1, 2020.

VIII. Service

The CAISO has served copies of this filing upon all scheduling coordinators, Calpine, the California Public Utilities Commission, and the California Energy Commission. In addition, the CAISO has posted the filing on the CAISO website.

IX. Correspondence

Pursuant to Rule 203(b)(3) of the Commission's Rules of Practice and Procedure,[12] the CAISO requests that all correspondence, pleadings, and other communications concerning this filing be served upon the following:

John C. Anders
Assistant General Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7287
E-mail: janders@caiso.com

X. Conclusion

The CAISO respectfully requests that the Commission accept this filing and permit the Agreement to be effective July 1, 2020, as requested. If there are any questions concerning this filing, please contact the undersigned.

---

pro forma Pseudo-Tie Participating Generator Agreement upon further request to pseudo-tie the Sutter resource to the CAISO balancing authority area).

[12] 18 C.F.R. § 385.203(b)(3).

Respectfully submitted,

By: _/s/ John C. Anders_
Roger E. Collanton
General Counsel
Burton A. Gross
Deputy General Counsel
John C. Anders
Assistant General Counsel
California Independent System
Operator Corporation
Tel: (916) 608-7287
Email: janders@caiso.com

Attorneys for the California Independent System Operator Corporation

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

CCFC SUTTER ENERGY, LLC

SPLIT RESOURCE PARTICIPATION AGREEMENT

SPLIT RESOURCE AGREEMENT

THIS SPLIT RESOURCE AGREEMENT ("AGREEMENT") is established this 29th day of April, 2020, and is accepted by and between:

(1) **CCFC Sutter Energy, LLC** ("Split Resource Owner"), a Delaware limited liability company, having its registered and principal executive office at 717 Texas Avenue, Suite 1000, Houston, Texas 71002,

and

(2) **California Independent System Operator Corporation** ("CAISO"), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate.

The Split Resource Owner and the CAISO are hereinafter referred to as the "Parties."

Whereas:

A. The CAISO operates the CAISO Markets pursuant to the CAISO Tariff.

B. The Resource is currently a Multi-Stage Generating Resource located in the Balancing Authority of Northern California ("BANC") Balancing Authority Area, and currently has arrangements to provide the Sacramento Municipal Utility District ("SMUD") with approximately one-half of its capacity.

C. The Split Resource Owner desires to enter into a separate arrangement with one or more Load Serving Entities within the CAISO for capacity not committed to SMUD, and is willing to forgo treatment as a Multi-Stage Generating Resource to accomplish this objective.

D. The CAISO is willing to enable the Split Resource Owner to fulfill its commitments to SMUD and to one or more Load Serving Entities if it splits the Resource into two simply modeled and logically metered Generating Units (each a "Split Resource") that simultaneously account for the total energy or capacity delivered within the BANC Balancing Authority Area, i.e., to SMUD, and to one or more Load Serving Entities.

E. The Parties wish to enter into this Agreement to establish the terms and conditions for the Resource to operate as Split Resources.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

1.1 **Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff, unless defined otherwise in Section 1.1.

"Effective Date" as defined in Section 3.1 of this Agreement.

"Split Resource Allocation Protocol" is defined in Section 2.2.5 of this Agreement.

"Split Resource" is one of the two simply modeled and logically metered Generating Units that is the result of splitting the modeling of the Resource in the CAISO Markets, that simultaneously accounts for the total energy or capacity delivered within the BANC Balancing Authority Area, i.e., to SMUD, and to one or more Load Serving Entities, the summation of which shall not exceed the total capacity in MW of the Resource.

"Resource" is the Sutter Energy Center, a combined cycle facility [reference Schedule 1], interconnected to Western Area Power Administration ("WAPA") and located in Yuba City, CA.

1.2 **Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the CAISO Tariff, this Agreement will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

(c) the masculine shall include the feminine and neutral and vice versa;

(d) "includes" or "including" shall mean "including without limitation";

(e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

(f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;

(g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;

(h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;

(i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

(j) unless the context requires otherwise, "or" is used in the conjunctive sense;

(k) any reference to a day, week, month or year is to a calendar day, week, month or year; and

(l) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II

RESPONSIBILITIES OF SPLIT RESOURCE

2.1 Split Resource Scheduling Coordinator. Each Split Resource shall be represented by a Scheduling Coordinator as required by the CAISO Tariff for its participation in the CAISO Markets. The Split Resource Owner shall ensure that its Scheduling Coordinator performs all actions with respect to the Split Resources it controls consistent with the provisions of this Agreement, and for any Split Resource not controlled by the Split Resource Owner, it shall nonetheless ensure that Split Resource Owner's actions are consistent with the provisions of this Agreement.

2.2 Split Resources. The CAISO will treat each Split Resource as a Generating Unit subject to all associated CAISO Tariff requirements, including the execution of any agreements necessary for participation in the CAISO Markets, unless a Split Resource does not participate in any CAISO Market. Each Split Resource may also be subject to requirements of the BANC Balancing Authority Area. The Split Resource Owner is required to execute all applicable agreements required for CAISO Market participation prior to participation of these Split Resources in the CAISO Market, but no later than sixty (60) days after the Effective Date.

2.2.1 Technical Characteristics. The Split Resource Owner has identified under Schedule 1, Section 1, all Split Resources that it owns, operates, has a contractual entitlement to, or that otherwise will be included in the Master File. The Split Resource Owner has provided to the CAISO in Schedule 1 the required information regarding the Split Resource capacity, and the amount of capacity participating in CAISO Markets or other markets, for each Split Resource.

2.2.2 Operating Characteristics. A Split Resource is not required to, nor is it eligible, to register as Multi-Stage Generating Resource pursuant to Section 27.8 of the CAISO Tariff, and will not be treated as a Multi-Stage Generating Resource under any provision of the CAISO Tariff. The Split Resource Owner assumes full responsibility for operation of the Split Resources, including any financial, compliance or other consequences that may result from such operation.

2.2.3 Notification of Changes. The Split Resource Owner shall be required to apply for Master File changes regarding the Split Resources in accordance with the provisions of the applicable agreements required for CAISO Market participation. Any modifications to Schedule 1 shall only apply after all other applicable agreements for participation in CAISO Markets have been modified in accordance with their specific requirements. Under this Agreement, the Split Resource Owner shall notify the CAISO of such changes prior to or in parallel with initiating any changes in the Master File, and any such changes shall be captured under Schedule 1 as required.

2.2.4 Telemetry.

The Split Resource Owner must submit separate telemetry data for the Resource and the Split Resources to the CAISO, in addition to or in satisfaction of the telemetry data required for submission under the applicable agreements for CAISO Market participation. The CAISO shall specify the additional data points under Schedule 1, Section 2. The CAISO and the Split Resource Owner shall test and confirm the transmission of the specified data points, prior to the Split Resources participating in CAISO Markets, and as required on an ongoing basis. If the CAISO requires a modification to Schedule 1, Section 2, it shall discuss these modifications with the Split Resource Owner, and provide a thirty (30) day written notice prior to requiring the Split Resource Owner to provide any telemetry data required due to such modifications.

2.2.5 Split Resource Allocation Protocol.

Specifically, each Split Resource shall be subject to the CAISO Tariff in accordance with Section 2.1 and Section 4.1.

The Split Resource Owner has provided to the CAISO an initial draft guidance document defining principles for the Resource's Master File characteristics, the allocation of both Maintenance and Forced Outages between the Split Resources, and separately, the logical meter calculation for Settlement Quality Meter Data. TheSplit Resource Owner shall provide a final draft of the guidance document to the CAISO no later than May 31, 2020 ("Split Resource Allocation Protocol"). This Split Resource Allocation Protocol will also generally describe expected operational or contractual constraints on the Split Resource allocations. The Split Resource Allocation Protocol must be agreed to by the Parties prior to participation of any Split Resource in the CAISO Markets. Approval of this Split Resource Allocation Protocol does not constitute any waivers of CAISO Tariff requirements for the Split Resource Owner, but is developed solely as a document to demonstrate the practical application of CAISO Tariff provisions.

The Split Resource Allocation Protocol shall state a first preference of allocations on a pro-rata basis. With respect to logical meter data, the allocation will be based on real-time, 5-minute dispatch operating targets. With respect to Outages availability will be split based on the following formula.

Pro-rata allocation calculation:

Pro- rata allocation calculation of Split Resource =

$$Pro - rata\ allocation\ to\ Split\ Resource(n) in\ MW = \frac{Split\ Resource(n)\ (MAX\_GEN)}{\sum_1^n Split\ Resource(n)\ (MAX\_GEN)}$$

Where MAX_GEN values are identified in Schedule 1, Section 1, and shall be consistent with CAISO Master File characteristics.

The Split Resource Allocation Protocol will also identify principles for adjusting the allocation when the results of a pro-rata allocation would otherwise be operationally infeasible, or otherwise violate conditions of the pre-existing SMUD contract described in the Split Resource Allocation Protocol that terminates after October 31, 2020.

Any modifications proposed to the Split Resource Allocation Protocol by the Split Resource Owner shall only be effective following the approval of the CAISO. The CAISO shall maintain the effective version of the Split Resource Allocation Protocol, and the Split Resource Owner shall maintain copies of the Split Resource Allocation Protocol, which may inform the development of procedures, as appropriate, for Split Resource operation and reporting. Neither Party is required to review or approve any internal procedures, developed by the other Party, in accordance with the Split Resource Allocation Protocol, and in the event of a conflict between such internal procedures and the Split Resource Allocation Protocol, the latter shall control. The CAISO shall have the right to require the Split Resource Owner to submit, with thirty (30) days' notice, an explanation and supporting documentation (e.g., spreadsheet tools, results of individual decisions) to demonstrate its compliance with the Split Resource Allocation Protocol.

ARTICLE III

TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the date it is accepted for filing and made effective by FERC ("Effective Date"), and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO.
The CAISO may terminate this Agreement by giving written notice of termination in the event that the Split Resource Owner commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Split Resource Owner, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article IX of this Agreement. The CAISO may also terminate this Agreement upon thirty (30) days written notice if the CAISO Tariff provides for CAISO Market participation in a manner substantially similar to the Agreement's provision for participation by Split Resources. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, and this Agreement shall terminate upon acceptance by the FERC of such a notice of termination. The Parties shall terminate (or revise) all applicable agreements required for participation of the Split Resource in the CAISO Markets, concurrently with the termination of this Agreement.

3.**2.2 Termination by Split Resource Owner.** In the event that the Split Resource Owner no longer wishes to submit Bids and transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 2.2.3, the Split Resource Owner may modify Schedule 1 to remove Split Resources which it no longer owns, operates, or no longer has contractual entitlement to, and such modification shall be effective upon receipt by the CAISO. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, and this Agreement shall terminate upon acceptance by the FERC of such a notice of termination. The Parties shall terminate (or revise) all applicable agreements required for participation of the Split Resource in CAISO Markets, concurrently with the termination of this Agreement.

ARTICLE IV

CAISO TARIFF

4.1 **Agreement Subject to CAISO Tariff.** The Parties will comply with all applicable provisions of the CAISO Tariff. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein. The logical nature of the Split Resources as provided in this Agreement will not be an impediment to fulfilling any requirement of the CAISO Tariff, including with respect to registering, modeling, operating, or accounting for the Split Resources in the CAISO Markets. Therefore, this Agreement is not expected to conflict with any provisions of the CAISO Tariff or other applicable agreements for participation in CAISO Markets.

ARTICLE V

COSTS

5.1 **Operating and Maintenance Costs.** The Split Resource Owner shall be responsible for all its costs incurred in connection with meeting its obligations under this Agreement.

ARTICLE VI

DISPUTE RESOLUTION

6.1 **Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Split Resource Owner and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VII

REPRESENTATIONS AND WARRANTIES

7.1 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

7.2 Necessary Approvals. The Split Resource Owner represents that all necessary rights, leases, approvals, permits, licenses, easements, access to operate in compliance with this Agreement have been or will be obtained by the Split Resource Owner prior to the Effective Date of this Agreement.

ARTICLE VIII

LIABILITY

8.1 Liability. The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Split Resource Owner and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE IX

UNCONTROLLABLE FORCES

9.1 Uncontrollable Forces Tariff Provisions. Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Split Resource Owner and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE X

MISCELLANEOUS

10.1 Assignments. Either Party may assign or transfer any or all of its rights or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and no Party may assign or transfer any or all of its rights or obligations under this Agreement without such consent. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest were an original Party to this Agreement. The Split Resource Owner shall complete the assignments of all other applicable agreements required for participation in CAISO Markets, prior to or in parallel with the assignment of this Agreement.

10.2 Notices. Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Split Resource Owner and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information in Schedule 2 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

10.3 Waivers. Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

10.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

10.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

10.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

10.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

10.8 Amendments. Modification of Schedule 1 for the purposes of adding or removing Split Resources or Resource, or for updating capacity or operating characteristics of Split Resources or Resource, in accordance with Section 2.2.3, shall not constitute an Amendment to this Agreement, and shall not be subject to the requirements under this Section 11.8.This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Split Resource shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

10.9 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: DocuSigned by: Eric Schmitt
0971A84CB55B4B8...

Name: Eric Schmitt

Title: VP, Operations

Date: 4/29/2020

CCFC Sutter Energy, LLC

By: DocuSigned by: Gevan Reeves
E03ED643EE864DA...

Name: Gevan Reeves

Title: Vice President

Date: 4/29/2020

Schedule 1, Section 1

[Subject to Section 2.2.1]

[This section will be updated with applicable CAISO Resource ID and associated characteristics after they have been created in CAISO systems. The information provided here is a placeholder till the final information is available.]

Resource/Split Resource Name	CAISO Resource ID	Type of Unit/ Primary Fuel Type	Capacity(MW)	Resource Type	Market Participation
Sutter Energy Center	N/A	Combined Cycle/Gas	Gross Capacity: 550	Resource	N/A
Sutter Energy Center-Psuedo Tie	XX_1_UNIT	CT/Gas	Master File MAX_GEN: 275	Split Resource	Pseudo-Tie
Sutter Energy Center-EIMPR	XX_1_EIM	CT/Gas	Master File MAX_GEN: 275	Split Resource	EIM Participating Resource

Schedule 1, Section 2

[Subject to Section 2.2.4]

[This section will be updated with applicable CAISO Resource ID and associated characteristics after they have been created in CAISO systems. The information provided here is a placeholder till the final information is available.]

Resource ID	**Resource type**	**Telemetry data points**
XX_1_UNIT	Split Resource	WAPA UPMW_GEN2 WAPA UPMV_GEN2 TOT UPMW_GEN2 TOT UPMV_GEN2
XX_1_EIM	Split Resource	
N/A	Resource	

SCHEDULE 2

NOTICES

[Section 11.2]

Resource:

Name of Primary Representative:	Mark J. Smith
Title:	Vice President
Company:	Calpine Corporation
Address:	3003 Oak Road, Suite 400
City/State/Zip Code:	Walnut Creek, CA 94597
Email Address:	mark.smith@calpine.com
Phone:	925 557-2231
Fax No:	N/A

Name of Alternative Representative:	Chief Legal Officer
Title:	N/A
Company:	CCFC Sutter Energy, LLC
Address:	717 Texas Avenue, Suite 1000
City/State/Zip Code:	Houston, TX 71002
Email Address:	N/A
Phone:	(713) 830-2000
Fax No:	N/A

Continued Next Page:

Name of Alternative Representative:	Contract Administration
Title:	N/A
Company:	CCFC Sutter Energy, LLC
Address:	717 Texas Avenue, Suite 1000__
City/State/Zip Code:	Houston, TX 71002
Email Address:	commoditycontracts@calpine.com
Phone:	(713) 830-2000
Fax No:	N/A

CAISO:

Name of Primary Representative:	Regulatory Contracts
Title:	N/A
Address:	250 Outcropping Way
City/State/Zip Code:	Folsom, CA 95630
Email address:	RegulatoryContracts@caiso.com
Phone:	(916) 351-4400
Fax:	(916) 608-5063

Name of Alternative Representative:	Christopher J. Sibley
Title:	Manager, Regulatory Contracts
Address:	250 Outcropping Way
City/State/Zip Code:	Folsom, CA 95630
Email address:	csibley@caiso.com
Phone:	(916) 608-7030
Fax:	(916) 608-5063