

**FIRST AMENDMENT TO AND RESTATEMENT OF THE MASTER POWER  
PURCHASE AND SALE AGREEMENT  
RA CONFIRMATION LETTER  
BETWEEN  
CALPINE ENERGY SERVICES, L.P.  
AND  
CITY AND COUNTY OF SAN FRANCISCO**

This FIRST AMENDMENT TO AND RESTATEMENT OF THE MASTER POWER PURCHASE AND SALE AGREEMENT RA CONFIRMATION LETTER (“Amendment”) is made and entered into as of this 30<sup>th</sup> day of October, 2020 (the “Confirmation Effective Date”) by and between Calpine Energy Services, L.P. (“Seller”) and City and County of San Francisco, acting by and through its Public Utilities Commission, CleanPowerSF (“Buyer”), each individually a “Party” and together the “Parties.”

**RECITALS**

A. WHEREAS, Buyer and Seller are parties to that certain Master Power Purchase and Sale Agreement for CleanPower SF Community Choice Aggregation dated as of January 13, 2016, as amended by that certain Amendment to the Master Power Purchase and Sale Agreement for CleanPower SF Community Choice Aggregation dated as of October 30, 2020 (as so amended, the “Master Agreement”);

B. WHEREAS, pursuant the Master Agreement, Buyer and Seller are parties to that certain RA Confirmation Letter dated as of April 24, 2018, pursuant to which Seller provides resource adequacy and related services from the Geysers geothermal resources to Buyer for the period from January 1, 2019 through December 31, 2022 (“RA Confirmation”).

C. WHEREAS, pursuant to Public Utilities Code Section 380, as implemented by the CPUC in CPUC Decisions, including but not limited to D.05-10-042, D.06-06-064, D.09-06-028, D.13-06-024, D.18-06-030, D.19-02-022, D.19-06-026, and D.19-10-02, load serving entities are required to purchase resource adequacy in connection with providing electric energy to their customers;

D. WHEREAS, Buyer wishes to amend the RA Confirmation to increase the Contract Quantity from 25 MW to 50 MW beginning on January 1, 2022, and Seller is willing to so modify the RA Confirmation;

E. WHEREAS, Buyer wishes to extend the Term of the RA Confirmation from a delivery period running through December 31, 2022 to a delivery period running through December 31, 2029, and Seller is willing to so extend the RA Confirmation;

F. WHEREAS, Buyer and Seller are intending to an enter into a separate confirmation agreement for the purchase and sale of renewable energy from the Geysers geothermal resources (“RPS Confirmation”), which shall be for the same Contract Quantity and Term as this RA Confirmation.

NOW THEREFORE, in consideration of the premises and the mutual covenants and agreements set forth herein and in the RPS Confirmation, and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties hereby agree to amend and restate the RA Confirmation in its entirety as follows, such amendment and restatement to be effective upon the Confirmation Effective Date.

## **CONFIRMATION**

### **ARTICLE 1 DEFINITIONS**

- 1.1** “Alternate Capacity” means any replacement Product which Seller has elected to provide to Buyer in accordance with the terms of Section 4.5.
- 1.2** “Availability Incentive Payments” has the meaning set forth in the Tariff.
- 1.3** “Availability Standards” has the meaning set forth in the Tariff.
- 1.4** “Buyer” has the meaning specified in the introductory paragraph hereof.
- 1.5** “CAISO” means the California Independent System Operator or its successor.
- 1.6** “Capacity Replacement Price” means (a) the price actually paid for any Replacement Capacity purchased by Buyer pursuant to Section 4.7 hereof, plus costs reasonably incurred by Buyer in purchasing such Replacement Capacity, or (b) absent a purchase of any Replacement Capacity, the market price for such Designated RA Capacity not provided at the Delivery Point. The Buyer shall determine such market prices in a commercially reasonable manner. For purposes of the definition of Section 1.65 of the Master Agreement, “Capacity Replacement Price” shall be deemed to be the “Replacement Price”, as used in the Master Agreement.
- 1.7** “Confirmation” has the meaning specified in the introductory paragraph hereof.
- 1.8** “Confirmation Effective Date” has the meaning specified in the introductory paragraph hereof.
- 1.9** “Contingent Firm RA Product” has the meaning specified in Section 3.4 hereof.
- 1.10** “Contract Price” means, for any Monthly Delivery Period, the RA Capacity Flat Price for such period.
- 1.11** “Contract Quantity” means, with respect to any particular Showing Month of the Delivery Period, the amount of Product (in MWs) set forth in table in Section 4.3 which Seller has agreed to provide to Buyer from the Unit for such Showing Month.
- 1.12** “CPUC Decisions” means CPUC Decisions 04-01-050, 04-10-035, 05-10-042, 06-06-064, 06-07- 031, 07-06-029, 08-06-031, 09-06-028, 10-06-036, 11-06-022, 12-06-025, 13-06-024, 14-06-050, 15-06-063, 16-06-045, 17-06-027, 18-06-030, 18-06-031, 19-02-022 and

19-06-026, and any other existing or subsequent decisions related to resource adequacy issued from time to time by the CPUC, as amended from time to time.

- 1.13** “CPUC Filing Guide” means the annual document issued by the CPUC which sets forth the guidelines, requirements and instructions for LSE’s to demonstrate compliance with the CPUC’s resource adequacy program.
- 1.14** “Delivery Period” has the meaning specified in Section 4.1 hereof.
- 1.15** “Delivery Point” has the meaning specified in Section 4.2 hereof.
- 1.16** “Designated RA Capacity” shall be equal to, with respect to any particular Showing Month of the Delivery Period, the Contract Quantity of Product for such Showing Month including the amount of Contract Quantity that Seller has elected to provide Alternate Capacity with respect to, minus any reductions to Contract Quantity specified in Section 4.4 with respect to which Seller has not elected to provide Alternate Capacity.
- 1.17** “Effective Flexible Capacity” means the flexible capacity of a resource that can be counted towards an LSE’s FCR obligation, as identified from time to time by the Tariff, the CPUC Decisions, LRA, or other Governmental Body having jurisdiction.
- 1.18** “FCR Attributes” means, with respect to a Unit, any and all FCR attributes that can be counted toward an LSE’s FCR, as they are identified from time to time by the CPUC Decisions, the Tariff, an LRA, or other Governmental Body having jurisdiction that can be counted toward FCR and are consistent with the operational limitations and physical characteristics of such Unit. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or redefines the FCR Attributes of a Unit, then such change will not result in a change in payments or obligations made pursuant to this Transaction.
- 1.19** “FCR Showings” means the FCR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions and the Tariff, or to an LRA having jurisdiction over the LSE.
- 1.20** “Firm RA Product” has the meaning specified in Section 3.3 hereof.
- 1.21** “Flexible Capacity Requirements” or “FCR” means the flexible capacity requirements established for LSEs by the CPUC pursuant to the CPUC Decisions, or by an LRA or other Governmental Body having jurisdiction.
- 1.22** “Flexible RA Product” has the meaning specified in Section 3.2 hereof.
- 1.23** “GADS” means the Generating Availability Data System or its successor.
- 1.24** “Generic RA Product” means Designated RA Capacity consisting of RAR Attributes and, if applicable, LAR Attributes, which does not include FCR Attributes.

- 1.25** “Governmental Body” means (i) any federal, state, local, municipal or other government; (ii) any governmental, regulatory or administrative agency, commission or other authority lawfully exercising or entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power; and (iii) any court or governmental tribunal.
- 1.26** “LAR” means local area reliability, which is any program of localized resource adequacy requirements established for jurisdictional LSEs by the CPUC pursuant to the CPUC Decisions, the Tariff, or by another LRA having jurisdiction over the LSE, as implemented in the Tariff. LAR may also be known as local resource adequacy, local RAR, or local capacity requirement in other regulatory proceedings or legislative actions.
- 1.27** “LAR Attributes” means, with respect to a Unit, any and all resource adequacy attributes (or other locational attributes related to system reliability), as they are identified as of the Confirmation Effective Date by the CPUC Decisions, CAISO, LRA, or other Governmental Body having jurisdiction, associated with the physical location or point of electrical interconnection of the Unit within the CAISO Control Area, that can be counted toward LAR and are consistent with the operational limitations and physical characteristics of such Unit, but exclusive of any RAR Attributes which are not associated with where in the CAISO Control Area the Unit is physically located or electrically interconnected. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or re-defines existing local areas, then such change will not result in a change in payments or obligations made pursuant to this Transaction.
- 1.28** “LAR Showings” means the LAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions, or to an LRA having jurisdiction over the LSE.
- 1.29** “LRA” means Local Regulatory Authority, as defined in the Tariff.
- 1.30** “LSE” means load-serving entity. LSEs may be an investor-owned utility, an electric service provider, a community aggregator or community choice aggregator, or a municipality serving load in the CAISO Control Area (excluding exports).
- 1.31** “Master Agreement” has the meaning specified in the introductory paragraph hereof.
- 1.32** “Monthly Delivery Period” means each calendar month during the Delivery Period and shall correspond to each Showing Month.
- 1.33** “Monthly RA Capacity Payment” has the meaning specified in Section 4.9 hereof.
- 1.34** “NERC” means the North American Electric Reliability Council, or its successor.
- 1.35** “NERC/GADS Protocols” means the GADS protocols established by NERC, as may be updated from time to time.
- 1.36** “Net Qualifying Capacity” has the meaning set forth in the Tariff.

- 1.37** “Non-Availability Charges” has the meaning set forth in the Tariff.
- 1.38** “Outage” means disconnection, separation, or reduction in the capacity of any Unit that relieves all or part of the offer obligations of the Unit consistent with the Tariff. For the avoidance of doubt, Outage shall be deemed to include Planned Outage (defined below).
- 1.39** “Outage Schedule” has the meaning specified in Article 6 hereof.
- 1.40** “Planned Outage” means, subject to and as further described in the CPUC Decisions and the Tariff (“Planned Outage”, as the term is used in this Confirmation is known as “Approved Maintenance Outage” under the Tariff), a CAISO-approved planned or scheduled disconnection, separation or reduction in capacity of the Unit that is conducted for the purposes of carrying out routine repair or maintenance of such Unit, or for the purposes of new construction work for such Unit.
- 1.41** “Product” has the meaning specified in Article 3 hereof.
- 1.42** “RA Availability” means, for each Unit, expressed as a percentage, (a) the Unit’s Designated RA Capacity for a Monthly Delivery Period, divided by (b) the Contract Quantity, provided that a Unit’s RA Availability shall not exceed 100%.
- 1.43** “RA Capacity” means the qualifying and deliverable capacity of the Unit for RAR, LAR, and FCR purposes for the Delivery Period, as determined by the CAISO, or other Governmental Body authorized to make such determination under Applicable Laws. RA Capacity encompasses the RAR Attributes, LAR Attributes and FCR Attributes of the capacity provided by a Unit, as applicable pursuant to this Confirmation. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or re-defines existing northern or southern system areas, then such change will not result in a change in payments or obligations made pursuant to this Transaction.
- 1.44** “RA Capacity Flat Price” means the price specified in the RA Capacity Flat Price Table in Section 4.9 hereof.
- 1.45** “RAR” means the resource adequacy requirements, exclusive of LAR and FCR, established for LSEs by the CPUC, pursuant to the CPUC Decisions, or by an LRA or other Governmental Body having jurisdiction.
- 1.46** “RAR Attributes” means, with respect to a Unit, any and all resource adequacy attributes, as they are identified as of the Confirmation Effective Date by the Tariff, the CPUC Decisions, CAISO, LRA, or any Governmental Body having jurisdiction that can be counted toward RAR and are consistent with the operational limitations and physical characteristics of such Unit, exclusive of any LAR Attributes or FCR Attributes.
- 1.47** “RAR Showings” means the RAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and/or, to the extent authorized by the CPUC, to the CAISO), pursuant to the Tariff, the CPUC Decisions or LRA having jurisdiction.
- 1.48** “Replacement Capacity” has the meaning specified in Section 4.7 hereof.

- 1.49** “Replacement Unit” means a generating unit providing Replacement Capacity in accordance with Section 4.5 hereof.
- 1.50** “Resource Category” shall be as described in the CPUC Filing Guide, as such may be modified, amended, supplemented or updated from time to time.
- 1.51** “RMR Agreement” has the meaning set forth in the Tariff.
- 1.52** “RPS Agreement” has the meaning specified in Article 11 hereof.
- 1.53** “Scheduling Coordinator” or “SC” has the meaning set forth in the Tariff.
- 1.54** “Seller” has the meaning specified in the introductory paragraph hereof.
- 1.55** “Showing Month” shall be the calendar month during the Delivery Period that is the subject of the RAR Showing, LAR showing, and/or FCR Showing, as applicable, as set forth in the CPUC Decisions. For illustrative purposes only, pursuant to the CPUC Decisions in effect as of the Confirmation Effective Date, the monthly RAR Showing made in June is for the Showing Month of August.
- 1.56** “Supply Plan” means the supply plans, or similar or successor filings, that each Scheduling Coordinator representing RA Capacity submits to the CAISO, LRA, or other Governmental Body, pursuant to Applicable Laws, in order for that RA Capacity to count for its RAR Attributes, LAR Attributes, and/or FCR Attributes.
- 1.57** “Tariff” means the tariff and protocol provisions of the CAISO, including associated rules, procedures, and business practice manuals, as amended or supplemented from time to time.
- 1.58** “Transaction” has the meaning specified in the introductory paragraph hereof.
- 1.59** “Unit” or “Units” shall mean the generation assets described in Article 2 hereof (including any Replacement Units), from which RA Capacity is provided by Seller to Buyer.
- 1.60** “Unit EFC” means the Effective Flexible Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Effective Flexible Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit EFC shall be deemed the lesser of (i) the Unit EFC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Effective Flexible Capacity. To the extent the Confirmation Effective Date of this Confirmation occurs prior to the CAISO’s setting of a Unit EFC for the applicable Unit, the Unit EFC shall be as agreed to by the Parties and specified in Article 2. To the extent the CAISO creates new categories of flexible capacity during the term of this Transaction and a Unit can count toward such new categories of flexible capacity while operating consistent with the operational limitations and physical characteristics of such Unit, any and all such new categories of flexible capacity shall be deemed to be part of the Effective Flexible Capacity of that Unit. The above notwithstanding, to the extent the CAISO decides to reduce the applicable Unit EFC, Seller shall not be liable for any costs or damages related to such reduction and the Unit EFC shall be reduced per Section 4.4 of this Confirmation.

**1.61** “Unit NQC” means the Net Qualifying Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Net Qualifying Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit NQC shall be deemed the lesser of (i) the Unit NQC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Net Qualifying Capacity.

## **ARTICLE 2 UNIT INFORMATION**

**Name:** Geysers Unit 17

**Location:** Santa Rosa, California

**CAISO Resource ID:** GEYS17\_7\_UNIT17

**Resource Type:** 1\_Phys\_Res

**Resource Category (1, 2, 3 or 4):** 4

**Point of interconnection with the CAISO Controlled Grid (“Substation”):** Fulton Substation

**Path 26 (North, South or None):** North

**Deliverability restrictions, if any, as described in most recent CAISO deliverability assessment:**

None

**Run Hour Restrictions:** None

**LAR Attributes (Yes/No):** Yes

**If yes:** Local Capacity Area (as of the Confirmation Effective Date): North Coast North Bay

**Product Type:**

**If Generic:** Unit NQC (as of the Confirmation Effective Date): 56 MW

**If Flexible:** Unit EFC (as of the Confirmation Effective Date):  
Flexible Capacity Category (Base/Peak/Super-peak):

## **ARTICLE 3 RESOURCE ADEQUACY CAPACITY PRODUCT**

During the Delivery Period, Seller shall provide to Buyer, pursuant to the terms of this Confirmation, the Designated RA Capacity in the amount of the Contract Quantity of (i) RAR Attributes and, if applicable, LAR Attributes, and (ii) FCR Attributes, if Flexible RA Product is specified in Section 3.2, and the Contract Quantity shall be either a Firm RA Product or a Contingent Firm RA Product, as specified in either Section 3.3 or 3.4 (the “Product”). The Product does not confer to Buyer any right to the electrical output from the Units, other than the right to

include the Designated RA Capacity associated with the Contract Quantity in RAR Showings, LAR Showings, and FCR Showings, as applicable, and any other capacity or resource adequacy markets or proceedings as specified in this Confirmation. Specifically, Seller shall not be required to make available to Buyer any energy or ancillary services associated with any Unit as part of this Transaction, and Buyer shall not be responsible for compensating Seller for Seller's commitments to the CAISO required by this Confirmation. Seller retains the right to sell pursuant to the Tariff any RA Capacity from a Unit that is in excess of that Unit's Contract Quantity and any RAR Attributes, LAR Attributes or FCR Attributes not otherwise transferred, conveyed, or sold to Buyer under this Confirmation.

### **3.1 RAR and LAR Attributes**

Seller shall provide Buyer with the Designated RA Capacity of RAR Attributes and, if applicable, LAR Attributes from each Unit, as measured in MWs, in accordance with the terms and conditions of this Confirmation.

### **3.2 Flexible RA Product**

Seller shall provide Buyer with Designated RA Capacity of FCR Attributes from the Units in the amount of the applicable Contract Quantity.

### **3.3 Firm RA Product**

Seller shall provide Buyer with Designated RA Capacity from the Units in the amount of the Contract Quantity. If the Units are not available to provide the full amount of the Contract Quantity for any reason other than Force Majeure, including without limitation any Outage or any adjustment of the RA Capacity of any Unit, pursuant to Section 4.4, then, Seller shall provide Buyer with Designated RA Capacity from one or more Replacement Units pursuant to Section 4.5 hereof. If Seller fails to provide Buyer with replacement Designated RA Capacity from Replacement Units pursuant to Section 4.5, then Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof.

### **3.4 Contingent Firm RA Product**

Seller shall provide Buyer with Designated RA Capacity from the Units in the amount of the applicable Contract Quantity; provided, however, that if the Units are not available to provide the full amount of the Contract Quantity due to Force Majeure, any Planned Outage or any reduction of the RA Capacity of any Unit, then Seller may provide Buyer with Designated RA Capacity from one or more Replacement Units pursuant to Section 4.5 hereof. If Seller fails to provide Buyer with the Designated RA Capacity, then Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof; provided, however, that Seller shall not be liable for damages and/or required to indemnify Buyer for costs, penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof if and only if the failure to deliver the full Contract Quantity is due to Force Majeure, any Planned Outage or any reduction of the RA Capacity of any Unit and Seller has provided Buyer with timely notice pursuant to Section 4.5(a) of Seller's intent not to provide Alternate Capacity in an amount equal to the Contract Quantity of that Showing Month.

**ARTICLE 4  
DELIVERY AND PAYMENT**

**4.1 Delivery Period**

The Delivery Period shall be January 1, 2019 through December 31, 2029, inclusive.

**4.2 Delivery Point**

The Delivery Point for each Unit shall be the CAISO Control Area, and if applicable, the LAR region in which the Unit is electrically interconnected.

**4.3 Contract Quantity**

The Contract Quantity of each Unit for each Monthly Delivery Period shall be:

**Contract Quantity (MWs)**

Year	MWs
2019	
2020	
2021	
2022	
2023	
2024	
2025	
2026	
2027	
2028	
2029	

**4.4 Adjustments to Contract Quantity**

- (a) Planned Outages: Seller's obligation to deliver the Contract Quantity for any Showing Month may be reduced at Seller's option if any portion of the Unit is scheduled for a Planned Outage during the applicable Showing Month; provided, Seller notifies Buyer, no later than ten (10) Business Days before the relevant deadlines for the corresponding RAR Showings, LAR Showings and/or FCR Showings applicable to that Showing Month, of the amount of Product from the Unit Buyer is permitted to include in Buyer's RAR Showings, LAR Showings, and/or FCR Showings applicable to that month as a result of such Planned Outage.

If Seller is unable to provide the applicable Contract Quantity for all or a portion of a Showing Month because of a Planned Outage of a Unit, Seller has the option, but not the obligation, to provide Product for such Showing Month from Replacement Units, provided, Seller provides and identifies such Replacement Units in accordance with Section 4.5. If Seller chooses not to provide Product from Replacement Units and a Unit is on a Planned Outage for the applicable Showing Month, then, the Contract Quantity shall be revised in accordance with any applicable adjustments stipulated by the CPUC Filing Guide or CAISO Tariff in effect for the applicable Showing Month in which the Planned Outage occurs.

- (b) Reductions in Unit NQC: If Product is both (i) Generic RA Product, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity for any Showing Month may also be reduced if the Unit experiences a reduction in Unit NQC as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MWs) Unit NQC was reduced since the Confirmation Effective Date, divided by (c) Unit NQC as of the Confirmation Effective Date. If the Unit experiences such a reduction in Unit NQC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.
- (c) Reductions in Unit EFC: If Product is both (i) Flexible RA Product specified under Section 3.2, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity of Product for any Showing Month may also be reduced if the Unit experiences a reduction in Unit EFC as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MWs) Unit EFC was reduced since Confirmation Effective Date, divided by (c) Unit EFC as of the Confirmation Effective Date. If the Unit experiences such a reduction in Unit EFC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.
- (d) UCAP: If during the Delivery Period the CAISO or the CPUC either replaces Unit NQC as the value utilized to measure the qualifying capacity of a Unit with a successor value such as unforced capacity (UCAP) or utilizes such successor value as a supplemental means of measuring the qualifying capacity of a Unit together with Unit NQC, then from and after such replacement Seller will convey the equivalent amount of qualifying capacity of such Unit on a pro rata basis (i.e. following such replacement, Seller's delivery obligation will be obtained by

calculating the product of (i) the Contract Quantity divided by the Unit NQC, multiplied by (ii) the Unit's overall qualifying capacity (in MW) as measured by such new method of measuring a Unit's qualifying capacity).

#### **4.5 Alternate Capacity and Replacement Units**

- (a) If Seller is unable to provide the full Contract Quantity for any Showing Month for any reason, including, without limitation, due to one of the reasons specified in Section 4.4, or Seller desires to provide the Contract Quantity for any Showing Month from a different generating unit other than the Unit, then Seller may, at no cost to Buyer, provide Buyer with Alternate Capacity from one or more Replacement Units, with the total amount of Product provided to Buyer from the Unit and Replacement Units up to an amount equal to the Contract Quantity for the applicable Showing Month; provided that in each case, Seller shall notify Buyer of its intent (i) not to provide or (ii) to provide Alternative Capacity and identify Replacement Units meeting the above requirements no later than ten (10) Business Days before that Showing Month's applicable deadlines for Buyer's RAR Showings, LAR Showings, and/or FCR Showings. If Seller notifies Buyer in writing as to the particular Replacement Units and such Units meet the requirements of this Section 4.5, then such Replacement Units shall be automatically deemed a Unit for purposes of this Confirmation for that Showing Month and Seller shall not be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Section 4.7 and 4.8 hereof if the total amount of Product provided to Buyer from the Unit and/ or Replacement Units is equal to the Contract Quantity for the applicable Showing Month.
- (b) With respect to a Contingent Firm RA Product, if Seller does not provide Alternate Capacity in an amount equal to the Contract Quantity for that Showing Month, then Buyer may, but shall not be required to, purchase replacement Product. Seller shall not be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof if the failure to deliver the full Contract Quantity is due to Force Majeure, any Planned Outage or any reduction of the RA Capacity of any Unit and Seller notified Buyer, no later than ten (10) Business Days before that Showing Month's relevant deadlines for Buyer's RAR Showings, LAR Showings, and/or FCR Showings, as applicable, of Seller's intent not to provide Alternate Capacity in an amount equal to the Contract Quantity of that Showing Month.

#### **4.6 Delivery of Product**

Seller shall provide Buyer with the Designated RA Capacity of Product for each Showing Month consistent with the following:

- (a) Seller shall, on a timely basis, submit, or cause the Unit's SC to submit, Supply Plans to identify and confirm the Designated RA Capacity provided to Buyer for each Showing Month so that the total amount of Designated RA Capacity identified

and confirmed for such Showing Month equals the Designated RA Capacity, unless specifically requested not to do so by the Buyer.

- (b) Seller shall cause the Unit's Scheduling Coordinator to submit written notification to Buyer, no later than ten (10) Business Days before the applicable RAR Showings, LAR Showings and/or FCR Showings deadlines for each Showing Month, that Buyer will be credited with the Designated RA Capacity for such Showing Month in the Unit's Scheduling Coordinator Supply Plan so that the Designated RA Capacity credited equals the Designated RA Capacity for such Showing Month.

#### **4.7 Damages for Failure to Provide Designated RA Capacity**

If Seller fails to provide Buyer with the Designated RA Capacity of Product for any Showing Month then the following shall apply:

- (a) Buyer may, but shall not be required to, replace any portion of the Designated RA Capacity not provided by Seller with capacity having equivalent RAR Attributes, LAR Attributes and/or FCR Attributes as the Designated RA Capacity not provided by Seller, provided, that, if any portion of the Designated RA Capacity that Buyer is seeking to replace is Designated RA Capacity having RAR Attributes and no LAR Attributes (such capacity shall also include FCR Attributes if this is a Flexible Capacity Product) and no such RAR capacity is available, then Buyer may replace such portion of the Designated RA Capacity with capacity having RAR Attributes and LAR Attributes (as well as FCR Attributes if this is a Flexible Capacity Product) ("Replacement Capacity"). Such Replacement Capacity may be provided by CAISO to Buyer pursuant to the Tariff. Buyer may enter into purchase transactions with one or more parties to replace any portion of Designated RA Capacity not provided by Seller. Additionally, Buyer may enter into one or more arrangements to repurchase its obligation to sell and deliver capacity to another party and, to the extent such transactions are done at prevailing market prices, such arrangements shall be considered equivalent to the procurement of Replacement Capacity. Buyer shall use commercially reasonable efforts to minimize damages when procuring any Replacement Capacity.
- (b) Seller shall pay to Buyer at the time set forth in Section 4.1 of the Master Agreement, the following damages in lieu of damages specified in Section 4.1 of the Master Agreement: an amount equal to the positive difference, if any, between (i) the sum of (A) the actual cost paid by Buyer for any Replacement Capacity, plus (B) each Capacity Replacement Price times the amount of the Designated RA Capacity neither provided by Seller nor purchased by Buyer pursuant to Section 4.7(a), and (ii) the Designated RA Capacity not provided for the applicable Showing Month times the Contract Price for that month. If Seller fails to pay these damages, then Buyer may offset those damages owed it against any future amounts it may owe to Seller under this Confirmation pursuant to Article Six of the Master Agreement.

**4.8 Indemnities for Failure to Deliver Contract Quantity**

Seller agrees to indemnify, defend and hold harmless Buyer from any penalties, fines or costs assessed against Buyer by the CPUC or the CAISO, resulting from any of the following:

- (a) Seller’s failure to provide any portion of the Designated RA Capacity;
- (b) Seller’s failure to provide notice of the non-availability of any portion of Designated RA Capacity as required under Section 4.6;
- (c) A Unit Scheduling Coordinator’s failure to timely submit Supply Plans that identify Buyer’s right to the Designated RA Capacity purchased hereunder; or
- (d) A Unit Scheduling Coordinator’s failure to submit accurate Supply Plans that identify Buyer’s right to the Designated RA Capacity purchased hereunder.

With respect to the foregoing, the Parties shall use commercially reasonable efforts to minimize such penalties, fines and costs; provided, that in no event shall Buyer be required to use or change its utilization of its owned or controlled assets or market positions to minimize these penalties and fines. If Seller fails to pay the foregoing penalties, fines or costs, or fails to reimburse Buyer for those penalties, fines or costs, then Buyer may offset those penalties, fines or costs against any future amounts it may owe to Seller under this Confirmation.

**4.9 Monthly RA Capacity Payment**

In accordance with the terms of Article Six of the Master Agreement, Buyer shall make a Monthly RA Capacity Payment to Seller for each Unit, in arrears, after the applicable Showing Month. Each Unit’s Monthly RA Capacity Payment shall be equal to the product of (a) the applicable Contract Price for that Monthly Delivery Period, (b) the Designated RA Capacity for the Monthly Delivery Period, and (c) 1,000. The final product of this Monthly RA Capacity Payment calculation shall be rounded to the nearest penny (i.e., two decimal places).

**RA CAPACITY FLAT PRICE TABLE**

Year	RA Capacity Flat Price (\$/kW-month)
2019	█
2020	█
2021	█
2022	█ ( █ MW) █ ( █ MW)
2023	█
2024	█
2025	█
2026	█

Year	RA Capacity Flat Price (\$/kW-month)
2027	██████
2028	██████
2029	██████

If the CPUC allows Buyer to apply the capacity of a Unit that is on, or is scheduled to be on, an Outage towards the Buyer’s RAR, then Seller shall be deemed to have provided Buyer the Product from the capacity of such Unit.

**4.10 Allocation of Other Payments and Costs**

Seller may retain any revenues it may receive from the CAISO or any other third party with respect to any Unit for (a) start-up, shut-down, and minimum load costs, (b) capacity revenue for ancillary services, (c) energy sales, (d) any revenues for black start or reactive power services, or (e) the sale of the unit-contingent call rights on the generation capacity of the Unit to provide energy to a third party, so long as such rights do not confer on such third party the right to claim any portion of the RA Capacity sold hereunder in order to make an RAR Showing, LAR Showing, FCR Showing, or any similar capacity or resource adequacy showing with the CAISO or CPUC. Buyer acknowledges and agrees that all Availability Incentive Payments are for the benefit of Seller and for Seller’s account, and that Seller shall receive, retain, or be entitled to receive all credits, payments, and revenues, if any, resulting from Seller achieving or exceeding Availability Standards. The Parties acknowledge and agree that any Non- Availability Charges are the responsibility of Seller, and for Seller’s account and Seller shall be responsible for all fees, charges, or penalties, if any, resulting from Seller failing to achieve Availability Standards. However, Buyer shall be entitled to receive and retain all revenues associated with the Designated RA Capacity of any Unit during the Delivery Period (including any capacity or availability revenues from RMR Agreements for any Unit, Reliability Compensation Services Tariff, and Residual Unit Commitment capacity payments, but excluding payments described in clauses (a) through (c) above). In accordance with Section 4.9 of this Confirmation and Article Six of the Master Agreement, all such revenues received by Seller, or a Unit’s SC, owner, or operator shall be remitted to Buyer, and Seller shall pay such revenues to Buyer if the Unit’s SC, owner, or operator fails to remit those revenues to Buyer. If Seller fails to pay such revenues to Buyer, Buyer may offset any amounts owing to it for such revenues pursuant to Article Six of the Master Agreement against any future amounts it may owe to Seller under this Confirmation. If a centralized capacity market develops within the CAISO region, Buyer will have exclusive rights to offer, bid, or otherwise submit Designated RA Capacity provided to Buyer pursuant to this Confirmation for resale in such market, and retain and receive any and all related revenues.

**ARTICLE 5  
CAISO OFFER REQUIREMENTS**

During the Delivery Period, except to the extent any Unit is in an Outage, or is affected by an event of Force Majeure that results in a partial or full Outage of that Unit, Seller shall either schedule or

cause the Unit's Scheduling Coordinator to schedule with, or make available to, the CAISO each Unit's Designated RA Capacity in compliance with the Tariff, and shall perform all, or cause the Unit's Scheduling Coordinator, owner, or operator, as applicable, to perform all obligations under the Tariff that are associated with the sale of Designated RA Capacity hereunder. Buyer shall have no liability for the failure of Seller or the failure of any Unit's Scheduling Coordinator, owner, or operator to comply with such Tariff provisions, including any penalties or fines imposed on Seller or the Unit's Scheduling Coordinator, owner, or operator for such noncompliance.

## **ARTICLE 6 PLANNED OUTAGES**

- (a) Notwithstanding Section 4.4(a) hereof, if Seller intends to take one or more Planned Outage(s) for the Unit during any calendar year of the Delivery Period and will not be providing Replacement Capacity during such Planned Outage(s), then no later than ten (10) Business Days following the Confirmation Effective Date (with respect to calendar year 2018) or no later than ten (10) Business Days following January 1 (with respect to each subsequent calendar year of the Delivery Period), Seller shall submit or cause the Unit's Scheduling Coordinator to submit to Buyer the portion of the Unit's schedule of proposed Planned Outages for the Delivery Period ("Outage Schedule"). Seller or a Unit's Scheduling Coordinator shall notify Buyer within five (5) Business Days of any change to the Outage Schedule.
- (b) Planned Outages shall not be scheduled from May 1 through September 30 during the Delivery Period, unless otherwise agreed by CAISO. In the event that Seller has a previously scheduled Planned Outage that becomes coincident with a CAISO-declared system emergency, Seller shall make all reasonable efforts to reschedule such Planned Outage.

## **ARTICLE 7 OTHER BUYER AND SELLER COVENANTS**

**7.1** Buyer and Seller shall, throughout the Delivery Period, take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to ensure Buyer's right to the use of the Contract Quantity for the sole benefit of Buyer's RAR, LAR and/or FCR, as applicable. Such commercially reasonable actions (neither Party shall be required to spend more than \$10,000 in total under the Agreement in support of such actions) shall include, without limitation:

- (a) Cooperating with and providing, and in the case of Seller causing each Unit's Scheduling Coordinator, owner, or operator to cooperate with and provide requested supporting documentation to the CAISO, the CPUC, or any other Governmental Body responsible for administering RAR, LAR and/or FCR under Applicable Laws, to certify or qualify the Contract Quantity as RA Capacity and Designated RA Capacity. Such actions shall include, without limitation, providing information requested by the CAISO, the CPUC, or by an LRA having jurisdiction, to demonstrate for each month of the Delivery Period the ability to deliver the Contract Quantity from each Unit to the CAISO Controlled Grid for the minimum

hours required to qualify as RA Capacity, and providing information requested by the CPUC, the CAISO or other Governmental Body having jurisdiction to administer RAR, LAR or FCR to demonstrate that the Contract Quantity can be delivered to the CAISO Controlled Grid, pursuant to “deliverability” standards established by the CAISO, or other Governmental Body having jurisdiction to administer RAR, LAR and/or FCR; and

- (b) Negotiating in good faith to make necessary amendments, if any, to this Confirmation to conform this Transaction to subsequent clarifications, revisions, or decisions rendered by the CPUC, CAISO, FERC, or other Governmental Body having jurisdiction to administer RAR, LAR and FCR, so as to maintain the purpose of the benefits of the bargain struck by the Parties on the Confirmation Effective Date.

**7.2** Seller represents, warrants and covenants to Buyer that, throughout the Delivery Period:

- (a) Seller owns or has the exclusive right to the RA Capacity sold under this Confirmation from each Unit, and shall furnish Buyer, CAISO, CPUC or other jurisdictional LRA, or other Governmental Body with such evidence as may reasonably be requested to demonstrate such ownership or exclusive right;
- (b) No portion of the Contract Quantity has been committed by Seller to any third party in order to satisfy RAR, LAR, FCR or such analogous capacity obligations in CAISO markets, other than pursuant to an RMR Agreement between the CAISO and either Seller or the Unit’s owner or operator;
- (c) No portion of the Contract Quantity has been committed by Seller in order to satisfy RAR, LAR, FCR, or analogous capacity obligations in any non-CAISO market;
- (d) Each Unit is connected to the CAISO Controlled Grid, is within the CAISO Control Area, or is under the control of CAISO;
- (e) The owner or operator of each Unit is obligated to comply with Applicable Laws, including the Tariff, relating to RA Capacity and, as applicable, RAR, LAR and/or FCR;
- (f) With respect to the RA Capacity provided under this Confirmation, Seller shall, and each Unit’s SC is obligated to, comply with Applicable Laws, including the Tariff, relating to RA Capacity, and RAR, LAR and FCR;
- (g) Seller has notified the SC of each Unit that Seller has transferred the Designated RA Capacity to Buyer, and the SC is obligated to deliver the Supply Plans in accordance with the Tariff;
- (h) Seller has notified the SC of each Unit that Seller is obligated to cause each Unit’s SC to provide to the Buyer, at least five (5) Business Days before the relevant deadline for each RAR Showing, LAR Showing, and/or FCR Showing, as

applicable, the Designated RA Capacity of each Unit that is to be submitted in the Supply Plan associated with this Confirmation for the applicable period; and

- (i) Seller has notified each Unit's SC that Buyer is entitled to the revenues set forth in Section 4.10 of this Confirmation, and such SC is obligated to promptly deliver those revenues to Buyer, along with appropriate documentation supporting the amount of those revenues.

## **ARTICLE 8 CONFIDENTIALITY**

Notwithstanding Section 10.13 of the Master Agreement, the Parties agree that Buyer may disclose the Designated RA Capacity under this Transaction to any Governmental Body, the CPUC, the CAISO or any LRA having jurisdiction in order to support its LAR Showings, RAR Showings, and/or FCR Showings, as applicable, and Seller may disclose the transfer of the Designated RA Capacity under this Transaction to the SC of each Unit in order for such SC to timely submit accurate Supply Plans.

## **ARTICLE 9 BUYER'S RE-SALE OF PRODUCT**

Buyer may re-sell all or a portion of the Product hereunder.

## **ARTICLE 10 COLLATERAL REQUIREMENTS**

### **10.1 Party B's Collateral Requirement**

As set forth in that certain Master Power Purchase and Sale Agreement Energy Confirmation Letter between Buyer and Seller dated as of the same date as this Confirmation. The Seller collateral amount set forth in the Energy Confirmation Letter includes the Seller's collateral requirement for this Confirmation.

### **10.2 City's Collateral Requirement**

As set forth in that certain Master Power Purchase and Sale Agreement Energy Confirmation Letter between Buyer and Seller dated as of the same date as this Confirmation. The Buyer collateral amount set forth in the Energy Confirmation Letter includes the Buyer's collateral requirement for this Confirmation.

### **10.3 Obligations Secured**

Each of Buyer and Seller acknowledge and agree that, notwithstanding Sections 8.1 and 8.2 of the Master Agreement, the Buyer and Seller Collateral provided pursuant to this Confirmation shall secure all of each Party's respective payment obligations under this Confirmation in addition to the Party's obligation to make a Termination Payment.

**ARTICLE 11**  
**EARLY TERMINATION**

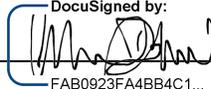
The Parties acknowledge and agree that they are intending to enter into that certain RPS Agreement, which shall be an amendment to the existing confirmation agreement between the Parties (SFPUC Agreement No. CS-1302) for the purchase and sale of renewable energy from the Geysers geothermal resources, amended to increase the Contract Quantity to 50 MW and the Term to a date ending on December 31, 2029 (the “RPS Agreement”).

To the extent the Parties do not fully execute the RPS Agreement prior to December 31, 2020, the Parties acknowledge and agree that this Amendment shall immediately and automatically terminate on such date and have no further force and effect, and, for the avoidance of doubt, the existing RA Confirmation shall continue in force and effect until it expires by its own terms on or before December 31, 2022. Automatic termination pursuant to this Article 11 will not be deemed an Event of Default by the Seller and Seller shall not be subject to damages or ongoing obligations as a result of such termination, including, but not limited to, the damages specified in Article 12 of the Master Agreement.

**ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE.**

**Calpine Energy Services, L.P.** <sup>DS</sup>  


**City and County of San Francisco, acting by  
and through its Public Utilities Commission,  
CleanPowerSF**

By:   
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By: \_\_\_\_\_

Name: Alex Makler

Name: Harlan L. Kelly, Jr.

Title: Vice President

Title: General Manager  
San Francisco Public Utilities  
Commission

Approved as to Form:

Dennis J. Herrera

City Attorney

By: \_\_\_\_\_

Deputy City Attorney

**ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE.**

**Calpine Energy Services, L.P.**

**City and County of San Francisco, acting by  
and through its Public Utilities Commission,  
CleanPowerSF**

By: \_\_\_\_\_

By:  \_\_\_\_\_

Name: \_\_\_\_\_

Name: Harlan L. Kelly, Jr.

Title: \_\_\_\_\_

Title: General Manager  
San Francisco Public Utilities  
Commission

Approved as to Form:

Dennis J. Herrera

City Attorney

By:  \_\_\_\_\_

Deputy City Attorney