

August 28, 2019

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 Rate Schedule No. 5174
Docket No. ER19-____-000**

Request for Confidential Treatment Under 18 C.F.R. § 388.112

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) requests the Federal Energy Regulatory Commission accept the attached Transferred Frequency Response Agreement between the CAISO and Powerex Corp. (Powerex) as a rate schedule.¹ The CAISO respectfully requests the Commission accept this agreement, effective December 1, 2019.²

I. Background

On September 16, 2016, the Commission conditionally accepted tariff revisions submitted by the CAISO to facilitate the CAISO's compliance with the frequency response requirements of the North American Electric Reliability Corporation (NERC) Reliability Standard BAL-003-1.1 – *Frequency Response and Frequency Bias Setting*.³ Reliability Standard BAL-003-1.1 establishes frequency response requirements for balancing authority areas.⁴ Requirement 1

¹ The CAISO submits this filing pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d. Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the CAISO tariff and the attached agreement. The CAISO has designated this agreement as Rate Schedule No. 5174.

² 18 C.F.R. § 35.3.

³ *Cal. Indep. Sys Operator Corp.*, 156 FERC ¶ 61,182 (2016), *rehearing denied Cal. Indep. Sys Operator Corp.*, 158 FERC ¶ 61,129 (2017) (Frequency Response Compliance Order).

⁴ *Frequency Response and Frequency Bias Setting Reliability Standard*, Order No. 794, 146 FERC ¶ 61,024 (2014).

of NERC Reliability Standard BAL-003-1.1 requires each balancing authority to achieve an annual frequency response measure that equals or exceeds its frequency response obligation. A balancing authority's frequency response obligation is determined each year and reflects its proportionate share – based on annual generation and load – of the interconnection's frequency response obligation. Compliance with the annual frequency response obligation runs from December 1 through November 30 of the following year.

In prior orders, the Commission accepted tariff provisions that authorize the CAISO to procure transferred frequency response from other balancing authorities in the Western Interconnection as a means to ensure compliance with Requirement 1 of NERC Reliability Standard BAL-003-1.1.⁵ Section 42.2.1 of the CAISO tariff states:

If the CAISO concludes that it may be unable to provide sufficient frequency response consistent with Applicable Reliability Criteria, the CAISO may, acting in accordance with Good Utility Practice, negotiate contracts for Transferred Frequency Response. The CAISO will solicit bids for contracts for Transferred Frequency Response. The CAISO shall select the bids that permit the CAISO to satisfy Applicable Reliability Criteria at lowest cost consistent with the seller's capability to provide Transferred Frequency Response, and not to exceed the estimated cost of satisfying Applicable Reliability Criteria using additional procurement of Regulation Up.⁶

The Commission has accepted agreements for the CAISO to procure transferred frequency responses for the 2016-2017, 2017-2018, and 2018-2019 compliance years under NERC Reliability Standard BAL-003-1.1.⁷

Earlier this year, the CAISO initiated a competitive solicitation to request offers for transferred frequency response for the 2019-2020 compliance year under NERC Reliability Standard BAL-003.1.1. The CAISO stated it intended to secure transferred frequency response in an amount not to exceed 100 MW/0.1 Hz. Based on an assessment of prior frequency events and the performance of resources during those events, the CAISO determined it should procure 65 MW/0.1 Hz for the

⁵ Frequency Response Compliance Order.

⁶ CAISO tariff sections 11.34 and 42.2.2 govern the allocation of costs to scheduling coordinators for any transferred frequency response contract the CAISO enters.

⁷ See Letter Orders dated January 19, 2017, in Commission Docket Nos. ER17-408 and ER17-411. See also Letter Orders dated October 27, 2017, in Commission Docket Nos. ER17-2387, ER17-2393, and ER17-2398. See also Letter Orders dated December 11, 2018, in Commission Docket Nos. ER19-179, ER19-180, ER19-188, ER19-190, and ER19-196.

2019-2020 compliance year to help the CAISO meet its compliance obligations.⁸ As part of its assessment, the CAISO examined the performance during prior frequency events of conventional resources scheduled to retire in 2019 and 2020. The CAISO also considered the potential displacement of conventional generation by inverter-based resources. Some inverter-based resources will have frequency response capabilities, but most will not operate with available head-room to respond during a frequency disturbance. As part of its assessment, the CAISO considered potential frequency response capabilities of resources that will likely reach commercial operation during the 2019-2020 compliance year.

II. The CAISO Completed a Competitive Solicitation for Transferred Frequency Response for the 2020-2019 Compliance Year

On April 1, 2019, the CAISO issued a request for proposals to provide transferred frequency response to balancing authorities in the Western Interconnection. The CAISO also provided a draft Transferred Frequency Response Agreement that reflected the product the CAISO was soliciting. The CAISO accepted bids up to, and including, May 20, 2019. Copies of the CAISO's request and supporting documents are provided with this transmittal letter as Attachment B.⁹

After the receipt of bids from balancing authorities or their authorized sellers, the CAISO evaluated those bids against prior frequency response performance by each bidder, as well as the frequency response needs estimated by the CAISO for the 2019-2020 compliance year. After this evaluation, the CAISO commenced negotiations with selected bidders to execute transferred frequency response contracts.

The competitive solicitation the CAISO conducted was consistent with the guidance the Commission has provided for competitive solicitation processes to ensure that affiliates do not receive undue preference.¹⁰ In that regard, the

⁸ The CAISO previously opened a stakeholder initiative intended to address long-term compliance with NERC Reliability Standard BAL-003-1.1 through market mechanisms. This stakeholder initiative is currently inactive, but the CAISO plans to reopen the initiative in 2020 to assess whether to design a market product for primary frequency response capabilities, or instead, develop additional market products that will rely upon secondary controls, *i.e.* fast regulation. See Presentation of CAISO 2019 Briefing on 2019 Policy Initiatives Roadmap and Annual Plan at slide 6, available at <http://www.caiso.com/Documents/Briefing-2019PolicyInitiativesRoadmap-AnnualPlan-Presentation-Dec2018.pdf>.

⁹ The CAISO's Market Notice issuing the request for proposals is available at <http://www.caiso.com/Documents/TransferredFrequencyResponseRequest-Proposal.html>.

¹⁰ See generally *Allegheny Energy Supply Co., LLC*, 108 FERC ¶ 61,082, P 22 (2004). Although the CAISO does not have an affiliate that could provide transferred frequency response, the Commission's guidance remains instructive.

Commission has ruled that competitive solicitation processes should follow these four guidelines:

- a. *Transparency*: the competitive solicitation should be open and fair.
- b. *Definition*: the product or products sought through the competitive solicitation process should be precisely defined.
- c. *Evaluation*: evaluation criteria should be standardized and applied equally to all bids and bidders.
- d. *Oversight*: an independent third party should design the solicitation, administer bidding, and evaluate bids prior to selection.¹¹

The CAISO's transferred frequency response competitive solicitation process satisfied these four principles and was also consistent with the CAISO's tariff. First, as reflected in the request for proposals, the competitive solicitation was open to all balancing authorities in the Western Interconnection, or their authorized sellers, that are able to provide transferred frequency response. Second, the CAISO defined transferred frequency response, which was the product subject to the solicitation.¹² The request for proposals identified the terms, timeline, bidding instructions for the solicitation, evaluation criteria and terms of service reflected in a draft contract. Third, the CAISO selected bids, consistent with its tariff and evaluation criteria. These criteria include lowest cost and the bidders' ability to provide transferred frequency response.¹³ The CAISO applied these criteria to all bids and bidders for transferred frequency response. Fourth, the CAISO, an independent entity, administered the competitive solicitation on behalf of the CAISO market and evaluated the bids.

¹¹ *Id.*

¹² Appendix A to the CAISO tariff, Master Definitions Supplement defines transferred frequency response as:

A frequency response performance adjustment under Applicable Reliability Criteria expressed in MW/0.1 Hz that a receiving Balancing Authority may acquire under an arrangement whereby another Balancing Authority adjusts its frequency response performance downward by the same amount it has provided to the receiving Balancing Authority.

Transferred Frequency Response is reported on applicable NERC/WECC forms, and applied consistently to each reported frequency disturbance event. On these forms, the delivering Balancing Authority decreases its performance and the receiving Balancing Authority increases its performance by the same amount.

Transferred Frequency Response may reflect an aggregate amount from multiple contracts. Any reported Transferred Frequency Response will not exceed the frequency response performance that the delivering Balancing Authority has produced as reflected in its annual frequency response measure.

¹³ CAISO tariff section 42.2.1.

III. Purpose of the Transferred Frequency Response Agreement

The Transferred Frequency Response Agreement between the CAISO and Powerex governs the terms and conditions under which Powerex will provide transferred frequency response to the CAISO and the payment the CAISO will make to Powerex for such service. Under the Transferred Frequency Response Agreement, Powerex will provide transferred frequency response and document its performance on the appropriate NERC compliance forms for the 2019-2020 compliance year beginning December 1, 2019. The CAISO has agreed to compensate Powerex at the contract price for its performance. Under the Transferred Frequency Response Agreement, Powerex and the CAISO will adjust their frequency response performance by the contract amount for each disturbance event selected by NERC to assess compliance under NERC Reliability Standard BAL-003-1.1 for the 2019-2020 compliance year.

IV. The Commission Should Accept the Rate Schedule

The CAISO considered its recent year-over-year deterioration in its response to frequency disturbance events to develop a procurement target. Based on this information, the CAISO identified a MW/01.Hz quantity of transferred frequency response to procure in order to provide adequate insurance to meet its expected frequency response obligation for the 2019-2020 compliance year under NERC Reliability Standard BAL-003-1.1.

Based on an analysis it performed in 2019, the CAISO developed a conservative estimated cost per MW to obtain 65MW/0.Hz from additional regulation up capacity. This estimated cost falls within the range of monthly average regulation up prices in the CAISO market during 2018.¹⁴ The CAISO compared the cost of the bids received to the anticipated cost of ensuring compliance with BAL-003-1.1 through the procurement of additional regulation up. The CAISO's study used a two-part approach to estimate the costs of procuring additional regulation up capacity. The first step determined the quantity of regulation up capacity, which could provide desired frequency response without the procurement of transferred frequency response. The second step estimated annual increased market costs based on the increased hourly procurement requirements for regulation up and additional contributing variables such as seasonality and energy market prices. To derive this estimate, the CAISO employed a statistical learning model to perform a regression analysis, which accounted for variability and uncertainty of various contributing

¹⁴ See generally CAISO Monthly Market Performance Reports for 2018 and 2019 – Regulation up prices in Table entitled IFM (Day Ahead) Monthly Average Ancillary Service Procurement. In the last four months of 2018 and the first two months of 2019, monthly average prices for regulation up have ranged between \$9.61 and \$18.54 per MWh. These reports are posted on the CAISO website: <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>.

factors.

The CAISO's tariff states that the CAISO will select the lowest cost bids consistent with the sellers' demonstrated ability to provide transferred frequency response. Powerex demonstrated its ability to support its bid for transferred frequency response based on prior performance, and its bid reflected the lowest cost offer for the quantity selected. The CAISO evaluated the offers based on an estimate of costs the market might incur by procuring additional regulation up capacity in order to secure frequency response capability. A confidential comparison of bids received versus the potential cost to secure frequency response through the procurement of additional regulation up capacity is provided with this transmittal letter as Attachment C. Powerex's offer price was well below the CAISO's estimated cost to secure frequency response through procurement of additional regulation up capacity. Based on the bids received and consistent with the factors set forth in section 42.2.1 of the CAISO tariff, the CAISO selected Powerex's bid along with the bids from six other entities for transferred frequency response.¹⁵

Beyond the contract amount and the contract prices, the Commission should accept the remaining terms and conditions of the transferred frequency response agreement between Powerex and the CAISO. Of importance, the Transferred Frequency Response Agreement provides that transferred frequency response may not exceed the frequency response performance that the transferor balancing authority has produced as reflected in its annual frequency response measure under NERC Reliability Standard BAL-003-1.1.¹⁶ This term of the agreement ensures that Powerex can manage the risk of having sufficient frequency response to transfer to the CAISO under the agreement without having to provide the contract amount in response to each and every disturbance event identified by NERC Reliability Standard BAL-003-1.1.

With respect to payment terms, the CAISO and Powerex have agreed that Powerex will invoice the CAISO for transferred frequency response and the CAISO shall pay the invoice electronically. These payment terms allow sufficient time for the Commission to review and approve this agreement prior to the issuance of an invoice and for the CAISO to collect sufficient revenues from scheduling coordinators under section 11.34 of the CAISO tariff to pay Powerex in a timely manner.

¹⁵ Separately, the CAISO will file contracts with the City of Seattle, by and through its City Light Department; the City of Tacoma Department of Public Utilities Light Division *dba* Tacoma Power; Chelan County Public Utility District; Grant County Public Utility District; Bonneville Power Administration; and Tucson Electric Power Company for the Commission's acceptance.

¹⁶ See Transferred Frequency Response Agreement, Articles 1.6 and 1.7.

V. Effective Date

The CAISO respectfully requests that the Commission accept the attached Transferred Frequency Response Agreement, effective as of December 1, 2019, the first day of the 2019-2020 compliance period under NERC Reliability Standard BAL-001-1.1.

VI. Request for Confidential Treatment

The CAISO is submitting both a confidential version and a public version of this filing. Pursuant to 18 C.F.R. § 388.112, the CAISO requests privileged treatment for information within a table included in Attachment C to this filing relating to bids submitted to provide transferred frequency response and the CAISO's cost comparison of these bids.¹⁷ The CAISO also requests privileged treatment of the potential costs of procuring additional regulation up capacity to meet its frequency response obligation as described on line 28 of page 2 of Attachment C to this filing. The CAISO has redacted this information from the public version of this filing. This information reflects sensitive commercial and financial information and its disclosure could harm CAISO market participants. The CAISO submits a form of protective agreement as Attachment D to this filing.

VII. Service

Copies of this filing have been served upon Powerex, the California Public Utilities Commission, the California Energy Commission, all parties with effective scheduling coordinator service agreements under the CAISO tariff, and the Commission's service list for Docket No. ER16-1483. In addition, the CAISO is posting this transmittal letter and all public attachments on its public website.

¹⁷ See Attachment C hereto.

VIII. Attachments

The following attachments, in addition to this transmittal letter, support the instant filing:

| | |
|--------------|--|
| Attachment A | Executed Transferred Frequency Response Agreement; |
| Attachment B | Copies of the CAISO's Request for Proposals and attachments thereto; |
| Attachment C | Comparison of bids received versus the potential cost to procure additional regulation up capacity (a public and privileged version are attached); and |
| Attachment D | Form of Protective Agreement. |

IX. Communications

Pursuant to Rule 203(b) of the Commission's Rules of Practice and Procedure,¹⁸ the CAISO requests that all correspondence, pleadings and other communications concerning this filing be served upon the following whose names should appear on the official service list established by the Commission with respect to this submittal:

Anthony Ivancovich
Deputy General Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7135
Fax: (916) 608-7222
aivancovich@caiso.com

Andrew Ulmer
Director, Federal Regulatory Affairs
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7209
Fax: (916) 608-7222
aulmer@caiso.com

¹⁸ See 18 C.F.R. § 385.203(b).

X. Conclusion

The Commission should accept the transferred frequency response agreement between the CAISO and Powerex. The agreement is consistent with the CAISO's tariff provisions regarding procurement of transferred frequency response. The agreement will help ensure the CAISO meets the requirements of Reliability Standard BAL-003-01.1 for the compliance year beginning December 1, 2019.

Respectfully submitted,

By: /s/ Andrew Ulmer

Roger E. Collanton
General Counsel
Anthony Ivancovich
Deputy General Counsel, Regulatory
Andrew Ulmer
Director, Federal Regulatory Affairs
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel. (916) 608-7209
Fax. (916) 608-7222
Email aulmer@caiso.com

*Attorneys for the California Independent
System Operator Corporation*

Attachment A – Executed Agreement
Transferred Frequency Response between
Powerex Corp. and
California Independent System Operator Corporation

**CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

AND

POWEREX CORP.

**TRANSFERRED FREQUENCY
RESPONSE AGREEMENT**

THIS TRANSFERRED FREQUENCY RESPONSE AGREEMENT

(“**AGREEMENT**”) is established this 8th day of July, 2019, and is accepted by and between:

Powerex Corp. (“Powerex” or “Authorized Seller”), a British Columbia Corporation, having its principal office at 1300-666 Burrard Street, Vancouver BC, Canada.

and

California Independent System Operator Corporation (“CAISO or Transferee Balancing Authority”), 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 Authorized Seller and the CAISO are hereinafter referred to as the “Parties” or individually as “Party.”

Whereas:

- A.** The CAISO operates a Balancing Authority Area.
- B.** The Authorized Seller has been authorized to enter into commercial arrangements to provide Transferred Frequency Response from British Columbia Hydro and Power Authority (the “Adjusting BA”), a Canadian balancing authority that operates in the Western Interconnection exclusively in the Province of British Columbia under the jurisdiction of the British Columbia Utilities Commission (“BCUC”).
- C.** On January 16, 2014, the Federal Energy Regulatory Commission (“FERC”) adopted Order No. 794, approving the North American Electric Reliability Corporation (“NERC”) reliability standard BAL-003-1.1.
- D.** NERC implements reliability standards in coordination with regional reliability entities and the entity for the western region is the Western Electricity Coordinating Council (“WECC”).
- E.** NERC will determine on an annual basis the Frequency Response Obligation for each Balancing Authority in the Western Interconnection.

- F. On September 16, 2016, FERC accepted, subject to condition, CAISO tariff revisions that authorize the CAISO to procure Transferred Frequency Response to comply with NERC reliability standard BAL-003-1.1.
- G. The Parties wish to enter into this Agreement to establish the terms and conditions for Transferred Frequency Response.

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

1 Definitions

- 1.1 **BAL-003-1.1** A NERC reliability standard, as it may be amended from time to time.
- 1.2 **Balancing Authority.** The responsible entity that integrates resource plans ahead of time, maintains demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
- 1.3 **Balancing Authority Area.** The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
- 1.4 **Frequency Response Obligation.** The Balancing Authority's share of the required Interconnection Frequency Response Obligation as defined by NERC. This obligation will be expressed in megawatts per 0.1 Hertz (MW/0.1Hz).
- 1.5 **Frequency Response.** The sum of the change in demand, plus the change in generation, divided by the change in frequency, expressed in MW/0.1 Hz.
- 1.6 **Frequency Response Measure.** The median of all of the Frequency Response observations reported annually by Balancing Authorities or Frequency Response Sharing Groups for frequency events as specified by NERC under BAL-003-1.1. This measure will be calculated as MW/0.1HZ
- 1.7 **Transferred Frequency Response.** Frequency response performance adjustment under BAL-003-1.1 expressed in MW/0.1 Hz that a Transferee Balancing Authority may acquire under an arrangement whereby an Adjusting BA adjusts its reported Frequency Response by

the same amount transferred and added to the Transferee Balancing Authority. Transferred Frequency Response does not change NERC-designated Frequency Response Obligation of any entity. Transferred Frequency Response is reported on applicable NERC/WECC forms, and applied consistently to each reported frequency disturbance event. The Adjusting BA adjusts its reported performance downward and the Transferee Balancing Authority adjusts its reported Frequency Response performance upward by the same amount. Transferred Frequency Response may reflect an aggregate amount from multiple contracts. Any reported Transferred Frequency Response may not exceed the frequency response performance that the Adjusting BA has produced as reflected in its annual Frequency Response Measure.

2. Term and Termination

2.1 Effective Date and Term

This Agreement shall be effective as of December 1, 2019, unless this Agreement is accepted for filing and made effective by the FERC on some other date, and shall continue in effect until April 1, 2021 (the “Contract Term”) notwithstanding those terms that survive the Contract Term.

2.2 Conditional Pending FERC Acceptance

CAISO intends to file this Agreement for approval by the FERC. In the event that FERC does not accept this Agreement, or conditions its acceptance on terms that are unacceptable to either Party, either Party may terminate the Agreement by providing written notice within thirty (30) days of the FERC order. In the event of termination prior to the start of the Contract Term, any and all payments made under this Agreement will be returned to the payee.

3. Authorized Seller Obligations

3.1 Authorized Seller shall ensure that the Adjusting BA adjusts the Transferred Frequency Response column of the Adjusting BA’s Applicable NERC/WECC forms by 5 MW/0.1 Hz (the “Contract Amount”) in accordance with the terms of BAL-003-1.1 from December 1, 2019 to November 30, 2020 (the “Compliance Year”).

- 3.2** Authorized Seller shall ensure that the Adjusting BA produces sufficient Frequency Response such that the Frequency Response Measure is greater than or equal to the Contract Amount.
- 3.3** Authorized Seller shall reasonably cooperate with the CAISO in the event that either Party, or the Adjusting BA, is subject to NERC, WECC, or BCUC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

4 CAISO Obligations

- 4.1** As full consideration to Authorized Seller for its performance under this Agreement the CAISO shall compensate Authorized Seller \$405,150 (the "Contract Price"). The Contract Price shall compensate Authorized Seller for any and all costs in connection with such performance, including but not limited to, any fines or reliability based penalties assessed against Adjusting BA under BAL-003-1.1 that result from the failure to supply the Contract Amount Transferred Frequency Response.
- 4.2** The CAISO shall reasonably cooperate with the Authorized Seller and Adjusting BA in the event that either Party or the Adjusting BA is subject to NERC, WECC, or BCUC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

5. Performance Obligations

If Authorized Seller fails to perform its obligations under Section 3, and such failure directly causes the CAISO to incur fines or penalties imposed by FERC, WECC or NERC for non-compliance with BAL-003-1.1, Authorized Seller shall be liable for the imposed fines or penalties applied against CAISO for such failure.

6 REPRESENTATIONS AND WARRANTIES

- 6.1** The CAISO is a California nonprofit public benefit corporation that has the full power and authority to execute, deliver and perform its obligations under this Agreement.
- 6.2** Powerex has the full power and authority to contract for, execute, deliver and perform obligations under this Agreement.

6.3 Both the CAISO and Powerex mutually represent and warrant that this Agreement has been duly authorized, executed and delivered by or on behalf of each Party and is, upon execution and delivery, the legal, valid and binding obligation of such Party, enforceable against it in accordance with its terms.

7 Liability

7.1 Liability to Third Parties

Except as otherwise expressly provided herein, nothing in this Agreement shall be construed or deemed to confer any right or benefit on, or to create any duty to, or standard of care with reference to any third party, or any liability or obligation, contractual or otherwise, on the part of CAISO or Powerex.

7.2 Liability Between the Parties

The Parties' duties and standard of care with respect to each other, and the benefits and rights conferred on each other, shall be no greater than as explicitly stated herein. Except as otherwise expressly provided herein, neither Party, its directors, officers, employees, or agents, shall be liable to the other Party for any loss, damage, claim, cost, charge, or expense, whether direct, indirect, or consequential, arising from the Party's performance or nonperformance under this Agreement, except for a Party's gross negligence, or willful misconduct.

Nothing contained in this Agreement shall be construed as creating a corporation, company, partnership, association, joint venture or other entity with the other Party, nor shall anything contained in this Agreement be construed as creating or requiring any fiduciary relationship between the Parties. No Party shall be responsible hereunder for the acts or omissions of the other Party.

8. Miscellaneous

8.1 Notices

Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in writing and unless otherwise stated or agreed upon by the Parties shall be made to the

representative of the other Party indicated in Schedule 1 and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, (d) upon receipt of confirmation by return e-mail if sent by e-mail or (e) upon delivery if delivered by prepaid commercial courier service. A Party must update the information in Schedule 1 relating to its address as that information changes. Such changes shall not constitute an amendment to this Agreement.

8.2 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 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.

8.3 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.

8.4. Uncontrollable Forces

8.4.1 An Uncontrollable Force means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Parties which could not be avoided through compliance with mandatory NERC Reliability Standards and WECC Regional

Reliability Standards.

8.4.2 Neither Party will be considered in breach of any obligation under this Agreement or liable to the other for direct, indirect, and consequential damages if prevented from fulfilling that obligation due to the occurrence of an Uncontrollable Force requiring the Party to suspend performance of its obligations. Each Party shall each use its best efforts to mitigate the effects of an Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder in a timely manner.

8.5 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.

8.6 Section Headings

Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

8.7 Amendments

This Agreement and the schedule attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA, if applicable, and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

8.8 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.

9 Payment and Billing Disputes

9.1 Payment

CAISO shall act in good faith and use its best efforts to submit payment to Powerex as soon as possible. CAISO shall pay Powerex the entire Contract Price no later than March 31, 2020.

All invoices must be submitted to the attention of Dennis Estrada DEstrada@caiso.com with a copy to Chhanna Hasegawa chasegawa@caiso.com

Payments to Powerex shall be sent via wire transfer to:

| | |
|---------------------|------------------|
| Bank Name: | Wells Fargo Bank |
| ABA: | 026005092 |
| Beneficiary's Bank: | Bank of Montreal |
| Account: | 00044625335 |

9.2 Billing Disputes

9.2.1 If the CAISO disputes any portion of an invoice the CAISO shall, within thirty (30) days after receipt of an invoice, provide written notice to Powerex with a copy of the invoice noting the disputed amount and reason for the dispute. Notwithstanding whether any portion of the bill is in dispute, the CAISO shall pay the entire bill by the due date.

9.2.2 If the Parties agree, or if after a final determination of a dispute, the CAISO is entitled to a refund of any portion of the disputed amount, then Powerex shall make such refund with simple interest computed from the date of receipt of the disputed payment to the date the refund is made. The daily interest rate shall equal the Prime Rate (as reported in the Wall Street Journal or successor publication in the first issue published during the month in which payment was due) divided by 365.



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 first written above.

California Independent System Operator Corporation

By: DocuSigned by:
Eric Schmitt
0971A84CB55B4B8... _____
Name: Eric Schmitt
Title: VP, Operations
Date: 7/1/2019

Powerex Corp.

By: DocuSigned by:
Tom Bechard
766C24EB53FA4C9... _____
Name: Tom Bechard
Title: President and CEO
Date: 7/8/2019

SCHEDULE 1

NOTICES

[Section 8.1]

Powerex Corp.

Name of Primary Representative: Manager, Contracts
Title: N/A
Company: Powerex Corp.
Address (U.S. Mail): 1300-666 Burrard Street
City/State/Zip Code: Vancouver, BC Canada V6C 2X8
Email Address: powerex.legalservices@powerex.com
Phone: 604-891-6090
Fax No: 604-891-5006

Name of Alternative Representative: Jay Ratzlaff
Title: Chief Legal Officer
Company: Powerex Corp.
Address (Overnight): 1300-666 Burrard Street
City/State/Zip Code: Vancouver, BC Canada V6C 2X8
Email Address: jay.ratzlaff@powerex.com
Phone: 604-895-7067
Fax No: 604-891-5006



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

**Attachment B – Proposals Request
Transferred Frequency Response between
Powerex Corp. and
California Independent System Operator Corporation**

From: [Kirrene, Daune](#)
To: [Kirrene, Daune](#)
Cc: [Bautista Alderete, Guillermo](#); [Wang, Jiankang](#); [Strouse, Nancy](#); [Kirrene, Daune](#)
Subject: CAISO RFP Transferred Frequency Response
Date: Thursday, March 28, 2019 4:42:03 PM
Attachments: [2019 TFR RFP.docx](#)
[2019 TransferredFrequencyResponse Agreement_Generic.docx](#)

Hello Balancing Authorities,

The California Independent System Operator Corporation (“CAISO”) is seeking to purchase up to 100 MW per 0.1 Hz of Transferred Frequency Response capability to meet its frequency response obligation for the compliance period starting on December 1, 2019 and continuing up to and including November 30, 2020.

The submittal deadline for transferred frequency response bids and proof of capability is 11:59 p.m. Pacific Standard Time on Monday, May 20, 2019. Send an email to Nancy Strouse at nstrouse@caiso.com, by May 13, 2019 so that the site through which bids will be submitted can be set up.

Please contact me with any questions.

Daune (Dawn)

Daune Wilson Kirrene
Sr. Contract Negotiator
Infrastructure Contracts and Management



O: (916) 608-7058 | C: (916) 873-4491
250 Outcropping Way, Folsom, CA 95630



Please consider the environment before printing this email

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California Independent System Operator Corporation

Request for Proposal Transferred Frequency Response

Submittal Deadlines:
Monday May 20, 2019
Time: 11:59 p.m. Pacific Standard Time

Submit Proposals via:



A secure collaboration site will be set up for each bidder.
Send an email request for an Accellion site by May 13, 2019 to

Nancy Strouse
nstrouse@caiso.com
916-608-1117
California ISO
250 Outcropping Way,
Folsom, CA 95630

Introduction

The California Independent System Operator Corporation (“CAISO”) is seeking to purchase up to 100 MW per 0.1 Hz Transferred Frequency Response capability to meet its frequency response obligation for the compliance period starting on December 1, 2019 and continuing up to and including November 30, 2020.

The CAISO is defining Transferred Frequency Response as a frequency response performance obligation adjustment expressed in MW per 0.1 Hz that the CAISO may acquire from another Balancing Authority pursuant to a contract. The CAISO is proposing to report Transferred Frequency Response annually on applicable NERC/WECC forms. CAISO’s Transferred Frequency Response adjustment reported on its forms may reflect an aggregate amount of frequency response from contracts with multiple Balancing Authorities. The CAISO expects its frequency response performance rate reported for each frequency disturbance event expressed in MW per 0.1 Hz will be evaluated for compliance with the Applicable Reliability Criteria including the Transferred Frequency Response adjustment.

Terms:

- Product - Transferred Frequency Response
- Eligible Provider – Balancing Authority in the WECC or its authorized seller, as discussed further in the Transferred Frequency Response Agreement
- Quantity – up to 100 MW/0.1Hz (Total amount which can be procured through multiple contracts)
- Term (compliance period) – December 1, 2019 – November 30, 2020
- Price - \$/compliance period

Timeline:

- May 20, 2019 – Request For Proposal responses are due to CAISO
- June 6, 2019 – CAISO notifies successful bidder(s)
- June 6, 2019 – Begin negotiation of Transferred Frequency Response Agreement with successful bidder(s)
- September 3, 2019 - file executed agreement(s) with FERC for a December 1, 2019 effective date.

Bidding Instructions:

- A bidding template is provided as Attachment A to this Request for Proposal and bids must be submitted using this template.
- In addition to the bidding template, submission of Proof of Capability for the past two years is required through submitting the prior two years of NERC forms, Frequency Response Standard Form 1 and 2.
 - CAISO agrees to treat submitted data as Covered Data in accordance with the WECC Universal Data Sharing Agreement (“UDSA”) and will return or destroy the data after the assessment.

- Submit Bids and Proof of Capability by 11:59 p.m. Pacific Standard Time on May 20, 2019 through:
 - The [Accellion](#) secure collaboration site set up for each bidder.
 - Send an email request to Nancy Strouse, nstrouse@caiso.com, May 13, 2019 so that the site through which bids will be submitted can be set up.

Eligibility:

- Bids will not be considered from single generator Balancing Authorities

Evaluation Criteria:


- Demonstration of ability to provide the amount of Frequency Response Transfer
- Least Cost

Terms and Conditions of Service:

- A draft agreement is provided along with this RFP and the bidder must be willing to execute the agreement as drafted. If the bidder does not agree with the terms and conditions in the draft agreement, then the bidder must address in their bid the following:
 - What term or condition bidder disagrees with?
 - Why does the bidder disagree with the term or condition?
 - What does the bidder propose as an alternative?
 - Are there other terms and conditions the bidder would need in the agreement if selected? If yes, please provide those terms and conditions.

Attachment A

Transferred Frequency Response Bidding Template

Please submit this form to the CAISO along with proof of capability for the past two years through the  secure collaboration site set up for each bidder by 11:59 p.m. Pacific Standard Time on May 20, 2019. For any questions please contact Daune Kirrene at 916-608-7058 or dkirrene@caiso.com.

Company Name: _____

Contact Name: _____

Contact Title: _____

Phone Number: _____

Alternative Phone Number (optional): _____

E-mail Address: _____

Bid Quantity (MW/0.1 Hz): _____

Bid Price (\$/compliance period): _____

Comments on draft Transferred Frequency Response Agreement:

Other Information: _____

**CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

AND

Name

**TRANSFERRED FREQUENCY
RESPONSE AGREEMENT**

THIS TRANSFERRED FREQUENCY RESPONSE AGREEMENT

(“AGREEMENT”) is established this ____ day of _____, _____, and is accepted by and between:

Name (“Transferor Balancing Authority”), having its registered and principal executive office at address.

and

California Independent System Operator Corporation (“CAISO or Transferee Balancing Authority”), 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 Transferor Balancing Authority and the CAISO are hereinafter referred to as the “Parties” or individually as “Party.”

Whereas:

- A.** The Parties named above operate Balancing Authority Areas.
- B.** On January 16, 2014, the Federal Energy Regulatory Commission (“FERC”) adopted Order No. 794, approving the North American Electric Reliability Corporation (“NERC”) reliability standard BAL-003-1.1.
- C.** NERC implements reliability standards in coordination with regional reliability entities and the entity for the western region is the Western Electricity Coordinating Council (“WECC”).
- D.** NERC will determine on an annual basis the Frequency Response Obligation for each Balancing Authority in the Western Interconnection.
- E.** On September 16, 2016, FERC accepted, subject to condition, CAISO tariff revisions that authorize the CAISO to procure Transferred Frequency Response to comply with NERC reliability standard BAL-003-1.1.
- F.** The Parties wish to enter into this Agreement to establish the terms and conditions for Transferred Frequency Response.

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

1 Definitions

- 1.1 BAL-003-1.1** A NERC reliability standard, as it may be amended from time to time.
- 1.2 Balancing Authority.** The responsible entity that integrates resource plans ahead of time, maintains demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
- 1.3 Balancing Authority Area.** The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
- 1.4 Frequency Response Obligation.** The Balancing Authority's share of the required Interconnection Frequency Response Obligation as defined by NERC. This obligation will be expressed in megawatts per 0.1 Hertz (MW/0.1Hz).
- 1.5 Frequency Response.** The sum of the change in demand, plus the change in generation, divided by the change in frequency, expressed in MW/0.1 Hz.
- 1.6 Frequency Response Measure.** The median of all of the Frequency Response observations reported annually by Balancing Authorities or Frequency Response Sharing Groups for frequency events as specified by NERC under BAL-003-1.1. This measure will be calculated as MW/0.1HZ
- 1.7 Transferred Frequency Response.** Frequency response performance adjustment under BAL-003-1.1 expressed in MW/0.1 Hz that a Transferee Balancing Authority may acquire under an arrangement whereby a Transferor Balancing Authority adjusts its reported Frequency Response by the same amount transferred and added to the Transferee Balancing Authority. Transferred Frequency Response does not change NERC-designated Frequency Response Obligation of any entity. Transferred Frequency Response is reported on applicable NERC/WECC forms, and applied consistently to each reported frequency disturbance event. The Transferor Balancing Authority adjusts its reported performance downward and the Transferee Balancing Authority adjusts its reported Frequency Response performance upward by the same

amount. Transferred Frequency Response may reflect an aggregate amount from multiple contracts. Any reported Transferred Frequency Response may not exceed the frequency response performance that the Transferor Balancing Authority has produced as reflected in its annual Frequency Response Measure.

2. Term and Termination

2.1 Effective Date and Term

This Agreement shall be effective as of December 1, 2019, unless this Agreement is accepted for filing and made effective by the FERC on some other date, and shall continue in effect until April 1, 2021 (“Contract Term”) notwithstanding those terms that survive the Contract Term.

2.2 Conditional Pending FERC Acceptance

CAISO has stated its intent to file this Agreement for approval by the FERC. In the event that FERC does not accept this Agreement, or conditions its acceptance on terms that are unacceptable to either Party, either Party may terminate the Agreement by providing written notice within thirty (30) days of the FERC order. In the event of termination prior to the start of the Contract Term, any and all payments made under this Agreement will be returned to the payee.

3. Transferor Balancing Authority Obligations

3.1 Transferor Balancing Authority shall adjust its Transferred Frequency Response column of the Applicable NERC/WECC forms by ## MW/0.1 Hz (the “Contract Amount”) in accordance with the terms of BAL-003-1.1 from December 1, 2019 to November 30, 2020 the “Compliance Year.”

3.2 Transferor Balancing Authority shall produce sufficient Frequency Response such that the Frequency Response Measure is greater than or equal to the Contract Amount.

3.3 Transferor Balancing Authority shall reasonably cooperate with the CAISO in the event that either Party is subject to NERC or WECC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

4 CAISO Obligations

- 4.1** As full consideration to Transferor Balancing Authority for its performance under this Agreement the CAISO shall compensate Transferor Balancing Authority \$##### (“Contract Price”). The Contract Price shall compensate Transferor Balancing Authority for any and all costs in connection with such performance, including but not limited to, any fines or reliability based penalties assessed against Transferor Balancing Authority under BAL-003-1.1 that result from the failure to supply the Contract Amount Transferred Frequency Response.
- 4.2** The CAISO shall reasonably cooperate with the Transferor Balancing Authority in the event that either Party is subject to NERC or WECC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

5. Performance Obligations

If Transferor Balancing Authority fails to perform its obligations under Section 3, and such failure directly causes the CAISO to incur fines or penalties imposed by FERC, WECC or NERC for non-compliance with BAL-003-1.1, Transferor Balancing Authority shall be liable for the imposed fines or penalties applied against CAISO for such failure.

6 REPRESENTATIONS AND WARRANTIES

- 6.1** The CAISO is a California nonprofit public benefit corporation and that has the full power and authority to execute, deliver and perform its obligations under this Agreement.
- 6.2** Transferor Balancing Authority is a Balancing Authority and has the full power and authority to contract for, execute, deliver and perform obligations under this Agreement.
- 6.3** Both the CAISO and Transferor Balancing Authority mutually represent and warrant on behalf of their respective entity that this Agreement has been duly authorized, executed and delivered by or on behalf of such entity and is, upon execution and delivery, the legal, valid and binding obligation of such Party, enforceable against it in accordance with its terms.

7 Liability

7.1 Liability to Third Parties

Except as otherwise expressly provided herein, nothing in this Agreement shall be construed or deemed to confer any right or benefit on, or to create any duty to, or standard of care with reference to any third party, or any liability or obligation, contractual or otherwise, on the part of CAISO or the Transferor Balancing Authority.

7.2 Liability Between the Parties

The Parties' duties and standard of care with respect to each other, and the benefits and rights conferred on each other, shall be no greater than as explicitly stated herein. Except as otherwise expressly provided herein, neither Party, its directors, officers, employees, or agents, shall be liable to the other Party for any loss, damage, claim, cost, charge, or expense, whether direct, indirect, or consequential, arising from the Party's performance or nonperformance under this Agreement, except for a Party's gross negligence, or willful misconduct.

Nothing contained in this Agreement shall be construed as creating a corporation, company, partnership, association, joint venture or other entity with the other Party, nor shall anything contained in this Agreement be construed as creating or requiring any fiduciary relationship between the Parties. No Party shall be responsible hereunder for the acts or omissions of the other Party.

8. Miscellaneous

8.1 Notices

Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in writing and unless otherwise stated or agreed upon by the Parties shall be made to the representative of the other Party indicated in Schedule 1 and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, (d) upon receipt of confirmation by return e-mail if sent by e-mail or (e) upon delivery if delivered by prepaid

commercial courier service. A Party must update the information in Schedule 1 relating to its address as that information changes. Such changes shall not constitute an amendment to this Agreement.

8.2 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 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.

8.3 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.

8.4. Uncontrollable Forces

8.4.1 An Uncontrollable Force means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Parties which could not be avoided through compliance with mandatory NERC Reliability Standards and WECC Regional Reliability Standards.

8.4.2 Neither Party will be considered in breach of any obligation under this Agreement or liable to the other for direct, indirect, and consequential damages if prevented from fulfilling that obligation

due to the occurrence of an Uncontrollable Force requiring the Party to suspend performance of its obligations. Each Party shall each use its best efforts to mitigate the effects of an Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder in a timely manner.

8.5 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.

8.6 Section Headings

Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

8.7 Amendments

This Agreement and the schedule attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA, if applicable, and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

8.8 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.

9 Payment and Billing Disputes

9.1 Payment

CAISO shall act in good faith and use its best efforts to submit payment to Transferor Balancing Authority as soon as possible. CAISO shall pay Transferor Balancing Authority the entire Contract Price no later than March 31, 2020.

All invoices must be submitted to the attention of Dennis Estrada DEstrada@caiso.com with a copy to Chhanna Hasegawa chasegawa@caiso.com

Payments to name shall be sent via wire transfer to:

Bank Name:
ABA:
Account:

9.2 Billing Disputes

9.2.1 If the CAISO disputes any portion of an invoice the CAISO shall, within thirty (30) days after receipt of an invoice, provide written notice to Transferor Balancing Authority with a copy of the invoice noting the disputed amount and reason for the dispute. Notwithstanding whether any portion of the bill is in dispute, the CAISO shall pay the entire bill by the due date.

9.2.2 If the Parties agree, or if after a final determination of a dispute, the CAISO is entitled to a refund of any portion of the disputed amount, then Transferor Balancing Authority shall make such refund with simple interest computed from the date of receipt of the disputed payment to the date the refund is made. The daily interest rate shall equal the Prime Rate (as reported in the Wall Street Journal or successor publication in the first

issue published during the month in which payment was due) divided by 365.

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 first written above.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

Name

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1**NOTICES****[Section 8.1]****Transferor Balancing Authority**

Name of Primary
Representative:

Title:

Company:

Address (U.S. Mail):

City/State/Zip Code

Email Address:

Phone:

Fax No:

Name of Alternative
Representative:

Title:

Company:

Address (Overnight):

City/State/Zip Code

Email Address:

Phone:

Fax No:

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

From: [Kirrene, Daune](#)
To: "Laura Manz"
Cc: [Joseph Meier](#); [Kirrene, Daune](#)
Subject: RE: Expression of Interest from Navigant Consulting Inc. Transferred Frequency Response
Date: Monday, April 8, 2019 8:58:40 AM
Attachments: [2019 TFR RFP.docx](#)
[2019 TransferredFrequencyResponse Agreement_Generic.docx](#)

Hello Laura,

The requested information is described below and detailed in the attached documents.

The California Independent System Operator Corporation ("CAISO") is seeking to purchase up to 100 MW per 0.1 Hz of Transferred Frequency Response capability to meet its frequency response obligation for the compliance period starting on December 1, 2019 and continuing up to and including November 30, 2020.

The submittal deadline for transferred frequency response bids and proof of capability is 11:59 p.m. Pacific Standard Time on Monday, May 20, 2019. Send an email to Nancy Strouse at nstrouse@caiso.com, by May 13, 2019 so that the site through which bids will be submitted can be set up.

Please contact me with any questions.

Daune (Dawn)

Daune Wilson Kirrene
Sr. Contract Negotiator
Infrastructure Contracts and Management



O: (916) 608-7058 | C: (916) 873-4491
250 Outcropping Way, Folsom, CA 95630



Please consider the environment before printing this email

From: Laura Manz <laura.manz@navigant.com>
Sent: Thursday, April 4, 2019 1:35 PM
To: Kirrene, Daune <dkirrene@caiso.com>
Cc: Laura Manz <laura.manz@navigant.com>; Joseph Meier <Joseph.Meier@navigant.com>
Subject: [EXTERNAL] Expression of Interest from Navigant Consulting Inc. Transferred Frequency Response

Hello Daune,
Navigant would like to respond to the RFP for

<http://www.caiso.com/Documents/TransferredFrequencyResponseRequest-Proposal.html>. I am writing to see if there are any vendor qualifications we should complete as we develop a detailed proposal. Also would appreciate knowing if responses should be sent to you or some other means.

Thank you very much for getting us pointed in the right direction.

Kind regards,

Laura

LAURA J. MANZ | Director
Energy | Navigant
35 Iron Point Circle | Suite 225 | Folsom, CA 95630 | USA
858-354-8333 | Laura.Manz@Navigant.com
navigant.com

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Navigant Europe Limited, Registered in England No. 11378449, Registered Office: 100 New Bridge Street London EC4V 8JA
Navigant Investments B.V., Registered in the Netherlands, No. 24464589, Registered office: Stadsplateau 15, 3521 AZ Utrecht



California Independent System Operator Corporation

Request for Proposal Transferred Frequency Response

Submittal Deadlines:
Monday May 20, 2019
Time: 11:59 p.m. Pacific Standard Time

Submit Proposals via:



A secure collaboration site will be set up for each bidder.
Send an email request for an Accellion site by May 13, 2019 to

Nancy Strouse
nstrouse@caiso.com
916-608-1117
California ISO
250 Outcropping Way,
Folsom, CA 95630

Introduction

The California Independent System Operator Corporation (“CAISO”) is seeking to purchase up to 100 MW per 0.1 Hz Transferred Frequency Response capability to meet its frequency response obligation for the compliance period starting on December 1, 2019 and continuing up to and including November 30, 2020.

The CAISO is defining Transferred Frequency Response as a frequency response performance obligation adjustment expressed in MW per 0.1 Hz that the CAISO may acquire from another Balancing Authority pursuant to a contract. The CAISO is proposing to report Transferred Frequency Response annually on applicable NERC/WECC forms. CAISO’s Transferred Frequency Response adjustment reported on its forms may reflect an aggregate amount of frequency response from contracts with multiple Balancing Authorities. The CAISO expects its frequency response performance rate reported for each frequency disturbance event expressed in MW per 0.1 Hz will be evaluated for compliance with the Applicable Reliability Criteria including the Transferred Frequency Response adjustment.

Terms:

- Product - Transferred Frequency Response
- Eligible Provider – Balancing Authority in the WECC or its authorized seller, as discussed further in the Transferred Frequency Response Agreement
- Quantity – up to 100 MW/0.1Hz (Total amount which can be procured through multiple contracts)
- Term (compliance period) – December 1, 2019 – November 30, 2020
- Price - \$/compliance period

Timeline:

- May 20, 2019 – Request For Proposal responses are due to CAISO
- June 6, 2019 – CAISO notifies successful bidder(s)
- June 6, 2019 – Begin negotiation of Transferred Frequency Response Agreement with successful bidder(s)
- September 3, 2019 - file executed agreement(s) with FERC for a December 1, 2019 effective date.

Bidding Instructions:

- A bidding template is provided as Attachment A to this Request for Proposal and bids must be submitted using this template.
- In addition to the bidding template, submission of Proof of Capability for the past two years is required through submitting the prior two years of NERC forms, Frequency Response Standard Form 1 and 2.
 - CAISO agrees to treat submitted data as Covered Data in accordance with the WECC Universal Data Sharing Agreement (“UDSA”) and will return or destroy the data after the assessment.

- Submit Bids and Proof of Capability by 11:59 p.m. Pacific Standard Time on May 20, 2019 through:
 - The [Accellion](#) secure collaboration site set up for each bidder.
 - Send an email request to Nancy Strouse, nstrouse@caiso.com, May 13, 2019 so that the site through which bids will be submitted can be set up.

Eligibility:

- Bids will not be considered from single generator Balancing Authorities

Evaluation Criteria:


- Demonstration of ability to provide the amount of Frequency Response Transfer
- Least Cost

Terms and Conditions of Service:

- A draft agreement is provided along with this RFP and the bidder must be willing to execute the agreement as drafted. If the bidder does not agree with the terms and conditions in the draft agreement, then the bidder must address in their bid the following:
 - What term or condition bidder disagrees with?
 - Why does the bidder disagree with the term or condition?
 - What does the bidder propose as an alternative?
 - Are there other terms and conditions the bidder would need in the agreement if selected? If yes, please provide those terms and conditions.

Attachment A

Transferred Frequency Response Bidding Template

Please submit this form to the CAISO along with proof of capability for the past two years through the  secure collaboration site set up for each bidder by 11:59 p.m. Pacific Standard Time on May 20, 2019. For any questions please contact Daune Kirrene at 916-608-7058 or dkirrene@caiso.com.

Company Name: _____

Contact Name: _____

Contact Title: _____

Phone Number: _____

Alternative Phone Number (optional): _____

E-mail Address: _____

Bid Quantity (MW/0.1 Hz): _____

Bid Price (\$/compliance period): _____

Comments on draft Transferred Frequency Response Agreement:

Other Information: _____

**CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

AND

Name

**TRANSFERRED FREQUENCY
RESPONSE AGREEMENT**

THIS TRANSFERRED FREQUENCY RESPONSE AGREEMENT

(“AGREEMENT”) is established this ____ day of _____, _____, and is accepted by and between:

Name (“Transferor Balancing Authority”), having its registered and principal executive office at address.

and

California Independent System Operator Corporation (“CAISO or Transferee Balancing Authority”), 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 Transferor Balancing Authority and the CAISO are hereinafter referred to as the “Parties” or individually as “Party.”

Whereas:

- A.** The Parties named above operate Balancing Authority Areas.
- B.** On January 16, 2014, the Federal Energy Regulatory Commission (“FERC”) adopted Order No. 794, approving the North American Electric Reliability Corporation (“NERC”) reliability standard BAL-003-1.1.
- C.** NERC implements reliability standards in coordination with regional reliability entities and the entity for the western region is the Western Electricity Coordinating Council (“WECC”).
- D.** NERC will determine on an annual basis the Frequency Response Obligation for each Balancing Authority in the Western Interconnection.
- E.** On September 16, 2016, FERC accepted, subject to condition, CAISO tariff revisions that authorize the CAISO to procure Transferred Frequency Response to comply with NERC reliability standard BAL-003-1.1.
- F.** The Parties wish to enter into this Agreement to establish the terms and conditions for Transferred Frequency Response.

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

1 Definitions

- 1.1 BAL-003-1.1** A NERC reliability standard, as it may be amended from time to time.
- 1.2 Balancing Authority.** The responsible entity that integrates resource plans ahead of time, maintains demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
- 1.3 Balancing Authority Area.** The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
- 1.4 Frequency Response Obligation.** The Balancing Authority's share of the required Interconnection Frequency Response Obligation as defined by NERC. This obligation will be expressed in megawatts per 0.1 Hertz (MW/0.1Hz).
- 1.5 Frequency Response.** The sum of the change in demand, plus the change in generation, divided by the change in frequency, expressed in MW/0.1 Hz.
- 1.6 Frequency Response Measure.** The median of all of the Frequency Response observations reported annually by Balancing Authorities or Frequency Response Sharing Groups for frequency events as specified by NERC under BAL-003-1.1. This measure will be calculated as MW/0.1HZ
- 1.7 Transferred Frequency Response.** Frequency response performance adjustment under BAL-003-1.1 expressed in MW/0.1 Hz that a Transferee Balancing Authority may acquire under an arrangement whereby a Transferor Balancing Authority adjusts its reported Frequency Response by the same amount transferred and added to the Transferee Balancing Authority. Transferred Frequency Response does not change NERC-designated Frequency Response Obligation of any entity. Transferred Frequency Response is reported on applicable NERC/WECC forms, and applied consistently to each reported frequency disturbance event. The Transferor Balancing Authority adjusts its reported performance downward and the Transferee Balancing Authority adjusts its reported Frequency Response performance upward by the same

amount. Transferred Frequency Response may reflect an aggregate amount from multiple contracts. Any reported Transferred Frequency Response may not exceed the frequency response performance that the Transferor Balancing Authority has produced as reflected in its annual Frequency Response Measure.

2. Term and Termination

2.1 Effective Date and Term

This Agreement shall be effective as of December 1, 2019, unless this Agreement is accepted for filing and made effective by the FERC on some other date, and shall continue in effect until April 1, 2021 (“Contract Term”) notwithstanding those terms that survive the Contract Term.

2.2 Conditional Pending FERC Acceptance

CAISO has stated its intent to file this Agreement for approval by the FERC. In the event that FERC does not accept this Agreement, or conditions its acceptance on terms that are unacceptable to either Party, either Party may terminate the Agreement by providing written notice within thirty (30) days of the FERC order. In the event of termination prior to the start of the Contract Term, any and all payments made under this Agreement will be returned to the payee.

3. Transferor Balancing Authority Obligations

3.1 Transferor Balancing Authority shall adjust its Transferred Frequency Response column of the Applicable NERC/WECC forms by ## MW/0.1 Hz (the “Contract Amount”) in accordance with the terms of BAL-003-1.1 from December 1, 2019 to November 30, 2020 the “Compliance Year.”

3.2 Transferor Balancing Authority shall produce sufficient Frequency Response such that the Frequency Response Measure is greater than or equal to the Contract Amount.

3.3 Transferor Balancing Authority shall reasonably cooperate with the CAISO in the event that either Party is subject to NERC or WECC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

4 CAISO Obligations

- 4.1** As full consideration to Transferor Balancing Authority for its performance under this Agreement the CAISO shall compensate Transferor Balancing Authority \$##### (“Contract Price”). The Contract Price shall compensate Transferor Balancing Authority for any and all costs in connection with such performance, including but not limited to, any fines or reliability based penalties assessed against Transferor Balancing Authority under BAL-003-1.1 that result from the failure to supply the Contract Amount Transferred Frequency Response.
- 4.2** The CAISO shall reasonably cooperate with the Transferor Balancing Authority in the event that either Party is subject to NERC or WECC regulatory inquiry or audit in connection with the Transferred Frequency Response that is the subject of this Agreement.

5. Performance Obligations

If Transferor Balancing Authority fails to perform its obligations under Section 3, and such failure directly causes the CAISO to incur fines or penalties imposed by FERC, WECC or NERC for non-compliance with BAL-003-1.1, Transferor Balancing Authority shall be liable for the imposed fines or penalties applied against CAISO for such failure.

6 REPRESENTATIONS AND WARRANTIES

- 6.1** The CAISO is a California nonprofit public benefit corporation and that has the full power and authority to execute, deliver and perform its obligations under this Agreement.
- 6.2** Transferor Balancing Authority is a Balancing Authority and has the full power and authority to contract for, execute, deliver and perform obligations under this Agreement.
- 6.3** Both the CAISO and Transferor Balancing Authority mutually represent and warrant on behalf of their respective entity that this Agreement has been duly authorized, executed and delivered by or on behalf of such entity and is, upon execution and delivery, the legal, valid and binding obligation of such Party, enforceable against it in accordance with its terms.

7 Liability

7.1 Liability to Third Parties

Except as otherwise expressly provided herein, nothing in this Agreement shall be construed or deemed to confer any right or benefit on, or to create any duty to, or standard of care with reference to any third party, or any liability or obligation, contractual or otherwise, on the part of CAISO or the Transferor Balancing Authority.

7.2 Liability Between the Parties

The Parties' duties and standard of care with respect to each other, and the benefits and rights conferred on each other, shall be no greater than as explicitly stated herein. Except as otherwise expressly provided herein, neither Party, its directors, officers, employees, or agents, shall be liable to the other Party for any loss, damage, claim, cost, charge, or expense, whether direct, indirect, or consequential, arising from the Party's performance or nonperformance under this Agreement, except for a Party's gross negligence, or willful misconduct.

Nothing contained in this Agreement shall be construed as creating a corporation, company, partnership, association, joint venture or other entity with the other Party, nor shall anything contained in this Agreement be construed as creating or requiring any fiduciary relationship between the Parties. No Party shall be responsible hereunder for the acts or omissions of the other Party.

8. Miscellaneous

8.1 Notices

Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in writing and unless otherwise stated or agreed upon by the Parties shall be made to the representative of the other Party indicated in Schedule 1 and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, (d) upon receipt of confirmation by return e-mail if sent by e-mail or (e) upon delivery if delivered by prepaid

commercial courier service. A Party must update the information in Schedule 1 relating to its address as that information changes. Such changes shall not constitute an amendment to this Agreement.

8.2 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 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.

8.3 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.

8.4. Uncontrollable Forces

8.4.1 An Uncontrollable Force means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Parties which could not be avoided through compliance with mandatory NERC Reliability Standards and WECC Regional Reliability Standards.

8.4.2 Neither Party will be considered in breach of any obligation under this Agreement or liable to the other for direct, indirect, and consequential damages if prevented from fulfilling that obligation

due to the occurrence of an Uncontrollable Force requiring the Party to suspend performance of its obligations. Each Party shall each use its best efforts to mitigate the effects of an Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder in a timely manner.

8.5 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.

8.6 Section Headings

Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

8.7 Amendments

This Agreement and the schedule attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA, if applicable, and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

8.8 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.

9 Payment and Billing Disputes

9.1 Payment

CAISO shall act in good faith and use its best efforts to submit payment to Transferor Balancing Authority as soon as possible. CAISO shall pay Transferor Balancing Authority the entire Contract Price no later than March 31, 2020.

All invoices must be submitted to the attention of Dennis Estrada DEstrada@caiso.com with a copy to Chhanna Hasegawa chasegawa@caiso.com

Payments to name shall be sent via wire transfer to:

Bank Name:
ABA:
Account:

9.2 Billing Disputes

9.2.1 If the CAISO disputes any portion of an invoice the CAISO shall, within thirty (30) days after receipt of an invoice, provide written notice to Transferor Balancing Authority with a copy of the invoice noting the disputed amount and reason for the dispute. Notwithstanding whether any portion of the bill is in dispute, the CAISO shall pay the entire bill by the due date.

9.2.2 If the Parties agree, or if after a final determination of a dispute, the CAISO is entitled to a refund of any portion of the disputed amount, then Transferor Balancing Authority shall make such refund with simple interest computed from the date of receipt of the disputed payment to the date the refund is made. The daily interest rate shall equal the Prime Rate (as reported in the Wall Street Journal or successor publication in the first

issue published during the month in which payment was due) divided by 365.

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 first written above.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

Name

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1**NOTICES****[Section 8.1]****Transferor Balancing Authority**

Name of Primary
Representative:

Title:

Company:

Address (U.S. Mail):

City/State/Zip Code

Email Address:

Phone:

Fax No:

Name of Alternative
Representative:

Title:

Company:

Address (Overnight):

City/State/Zip Code

Email Address:

Phone:

Fax No:

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

Privileged and Confidential Information Redacted Pursuant to 18 C.F.R. § 388.112

**Attachment C – Bid Comparison
Transferred Frequency Response between
Powerex Corp. and
California Independent System Operator Corporation**

**Public Version
Privileged and Confidential Information Redacted**

Comparison of Transferred Frequency Response Bids¹

| COMPANY | MW/0.1HZ | COST PER MW/0.1HZ | TOTAL COST | Equivalent Regulation Up price (\$ per MW) |
|----------------|-----------------|------------------------------|-------------------|---|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

¹ Bidders submitted multiple offers reflecting different quantities of transferred frequency response.

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| COMPANY | MW/0.1HZ | COST PER MW/0.1HZ | TOTAL COST | Equivalent Regulation Up price (\$ per MW) |
|------------|------------|-------------------|------------|--|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

The CAISO compared the cost of the bids received to the anticipated cost of ensuring compliance with BAL-003-1.1 through the procurement of additional regulation up. The CAISO’s study used a two-part approach to estimate the costs of procuring additional regulation up capacity. The first step determines the quantity of regulation up capacity, which could provide desired frequency response without the procurement of transferred frequency response. The second step estimates annual increased market costs based on the increased hourly procurement requirements for regulation up and additional contributing variables such as seasonality and energy market prices. The CAISO employed a statistical learning model to perform a regression analysis, which accounts for variability and uncertainty of various contributing factors. The results provided a conservative estimated cost of [REDACTED] per MW for increased regulation

1 procurement to secure 65MW/0.1 Hz.

2 For purposes of the 2019-2020 compliance year under Reliability Standard BAL-
3 003-1.1, the CAISO selected bids that were below its estimated cost of increased
4 regulation up. For transferred frequency response subject to the agreement with
5 Powerex, its equivalent regulation up capacity price is [REDACTED] per MW. The CAISO
6 selected Powerex's 5 MW/0.1 Hz bid as part of a least cost award to multiple bidders to
7 meet a target requirement of 65 MW/0.1Hz. The CAISO also selected 2 MW/0.1 Hz
8 from Tacoma, 25 MW/0.1 Hz from Seattle, 2 MW/0.1 Hz from Grant, 6 MW/0.1 Hz from
9 Tucson, 5 MW/0.1 Hz from Chelan, and 20 MW/0.1 Hz from Bonneville. These bids
10 reflected the least cost means to meet the CAISO's target requirement of 65 MW/0.1Hz.

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**Attachment D – Form of Protective Agreement
Transferred Frequency Response between
Powerex Corp. and
California Independent System Operator Corporation**

PROTECTIVE AGREEMENT

This Protective Agreement (“Agreement”) is entered into this ____ day of _____, 2019 by and between the California Independent System Operator Corporation (“CAISO”) and _____ (“Intervenor”), or *vice versa*, in connection with the proceeding before the Federal Energy Regulatory Commission (the “Commission”) in Docket No. _____. The CAISO and Intervenor are sometimes referred to as herein individually as a “Party” or jointly as the “Parties.”

1. The CAISO filed Protected Materials in the above-referenced Commission proceeding and Intervenor is a Participant in such proceeding, as the term Participant is defined in 18 C.F.R. Section 385.102(b), or has filed a motion to intervene or a notice of intervention in such proceeding. The CAISO and Intervenor enter into this Agreement in accordance with their respective rights and obligations set forth in 18 C.F.R. Section 388.112(b)(2). Notwithstanding any order terminating such proceeding, this Agreement shall remain in effect until specifically modified or terminated by the Commission or court of competent jurisdiction.

2. This Agreement applies to the following two categories of Protected Materials: (A) a Party may designate as protected those materials which customarily are treated by that Party as sensitive or proprietary, which are not available to the public, and which, if disclosed freely, would subject that Party or its customers to risk of competitive disadvantage or other business injury; and (B) a Party shall designate as protected those materials which contain privileged trade secret, commercial and financial information, as defined in 18 C.F.R. Section 388.107.

3. Definitions – For purposes of this Agreement:

(a) (1) The term “Protected Materials” means (A) materials provided by a Party in association with this proceeding and designated by such Party as protected; (B) any information contained in or obtained from such designated materials; (C) notes of Protected Materials; and (D) copies of Protected Materials. The Party producing the Protected Materials shall physically mark them on each page as “PROTECTED MATERIALS” or with words of similar import as long as the term “Protected Materials” is included in that designation to indicate that they are Protected Materials. If the Protected Materials contain Critical Energy Infrastructure Information, the Party producing such information shall additionally mark on each page containing such information the words “Contains Critical Energy Infrastructure Information – Do Not Release.”

(2) The term “Notes of Protected Materials” means memoranda, handwritten notes, or any other form of information (including electronic form) which copies or discloses materials described in Paragraph 3(a)(1). Notes of Protected Materials are subject to the same restrictions provided in this Agreement for Protected Materials except as specifically provided in this Agreement.

(3) Protected Materials shall not include (A) any information or document contained in the publicly-available files of the Commission or of any other federal or state agency, or any federal or state court, unless the information or document has been determined to be protected by such agency or court, or (B) information that is public knowledge, or which

becomes public knowledge, other than through disclosure in violation of this Agreement, or (C) any information or document labeled as “Non-Internet Public” by a Party, in accordance with Paragraph 30 of FERC Order No. 630, FERC Stats. & Regs. ¶ 31,140 (2003). Protected Materials do include any information or documents contained in the files of the Commission that has been designated as Critical Energy Infrastructure Information.

(b) The term “Non-Disclosure Certificate” shall mean the certificate annexed hereto by which Reviewing Representatives who have been granted access to Protected Materials shall certify their understanding that such access to Protected Materials is provided pursuant to the terms and restrictions of this Agreement, and that they have read the Agreement and agree to be bound by it. Each Party shall provide a copy of the Non-Disclosure Certificate(s) executed by its Reviewing Representative(s) to the other Party prior to such Reviewing Representative(s) receiving access to any Protected Materials.

(c) The term “Reviewing Representative” shall mean a person who has signed a Non-Disclosure Certificate and who is:

- (1) an attorney retained by a Party for purposes of this proceeding;
- (2) attorneys, paralegals, and other employees associated for purposes of this proceeding with an attorney described in Paragraph (3)(c)(1);
- (3) an expert or employee of an expert retained by a Party for the purpose of advising, preparing or testifying in this proceeding;
- (4) a person designated as a Reviewing Representative by order of the Commission; or
- (5) employees or other representatives of a Party with significant responsibility for matters involving this proceeding.

4. Protected Materials shall be made available under the terms of this Agreement only to Parties and only through their Reviewing Representative(s) as provided in Paragraphs 7-9.

5. Protected Materials shall remain available to a Party until the later of the date that an order terminating this proceeding becomes no longer subject to judicial review, or the date that any other Commission proceeding relating to the Protected Material is concluded and no longer subject to judicial review. If requested to do so in writing after that date, the Party shall, within fifteen days of such request, return the Protected Materials (excluding Notes of Protected Materials) to the Party that produced them, or shall destroy the materials, except that copies of filings, official transcripts and exhibits in this proceeding that contain Protected Materials, and Notes of Protected Materials may be retained, if they are maintained in accordance with Paragraph 6, below. Within such time period the Party, if requested to do so, shall also submit to the producing Party an affidavit stating that, to the best of its knowledge, all Protected Materials and all Notes of Protected Materials have been returned or have been destroyed or will be

maintained in accordance with Paragraph 6. To the extent Protected Materials are not returned or destroyed, they shall remain subject to this Agreement.

6. All Protected Materials shall be maintained by the Party in a secure place. Access to those materials shall be limited to those Reviewing Representatives specifically authorized pursuant to Paragraphs 8-9.

7. Protected Materials shall be treated as confidential by the Party and its Reviewing Representative(s) in accordance with the certificate executed pursuant to Paragraph 9. Protected Materials shall not be used except as necessary for the conduct of this proceeding, nor shall they be disclosed in any manner to any person except a Reviewing Representative who is engaged in the conduct of this proceeding and who needs to know the information in order to carry out that person's responsibilities in this proceeding. Reviewing Representatives may make copies of Protected Materials, but such copies become Protected Materials. Reviewing Representatives may make notes of Protected Materials, which shall be treated as Notes of Protected Materials if they disclose the contents of Protected Materials.

8. (a) If a Reviewing Representative's scope of employment includes the marketing of energy or the buying or selling of generating assets, the direct supervision of any employee or employees whose duties include the foregoing, the provision of consulting services to any person whose duties include the foregoing, or the direct supervision of any employee or employees whose duties include the foregoing, such Reviewing Representative may not use information contained in any Protected Materials obtained through this proceeding to give any Party or any competitor of any Party a commercial advantage.

(b) In the event that a Party wishes to designate as a Reviewing Representative a person not described in Paragraph 3(c) above, the Party shall seek agreement from the Party providing the Protected Materials. If an agreement is reached that person shall be a Reviewing Representative pursuant to Paragraphs 3(c) above with respect to those materials. If no agreement is reached, the Party shall submit the disputed designation to the Commission for resolution.

9. (a) A Reviewing Representative shall not be permitted to inspect, participate in discussions regarding, or otherwise be permitted access to Protected Materials pursuant to this Agreement unless that Reviewing Representative has first executed a Non-Disclosure Certificate; provided, that if an attorney qualified as a Reviewing Representative has executed such a certificate, the paralegals, secretarial and clerical personnel under the attorney's instruction, supervision or control need not do so. A copy of each Non-Disclosure Certificate shall be provided to counsel for the Party asserting confidentiality prior to disclosure of any Protected Material to that Reviewing Representative.

(b) Attorneys qualified as Reviewing Representatives are responsible for ensuring that persons under their supervision or control comply with this Agreement.

10. Any Reviewing Representative may disclose Protected Materials to any other Reviewing Representative as long as the disclosing Reviewing Representative and the receiving Reviewing Representative both have executed a Non-Disclosure Certificate. In the event that any Reviewing

Representative to whom the Protected Materials are disclosed ceases to be engaged in these proceedings, or is employed or retained for a position whose occupant is not qualified to be a Reviewing Representative under Paragraph 3(c), access to Protected Materials by that person shall be terminated. Even if no longer engaged in this proceeding, every person who has executed a Non-Disclosure Certificate shall continue to be bound by the provisions of this Agreement and the certification.

11. Subject to Paragraph 17, the Commission shall resolve any disputes arising under this Agreement. Prior to presenting any dispute under this Agreement to the Commission, the Parties shall use their best efforts to resolve it. If a Party contests the designation of materials as protected, it shall notify the Party that provided the Protected Materials by specifying in writing the materials whose designation is contested. This Agreement shall automatically cease to apply to such materials five (5) business days after the notification is made unless the Party, within said 5-day period, files a motion with the Commission, with supporting affidavits, demonstrating that the materials should continue to be protected. In any challenge to the designation of materials as protected, the burden of proof shall be on the Party seeking protection. If the Commission finds that the materials at issue are not entitled to protection, the procedures of Paragraph 17 shall apply. The procedures described above shall not apply to Protected Materials designated by a Party as Critical Energy Infrastructure Information. Materials so designated shall remain protected and subject to the provisions of this Agreement unless a Party requests and obtains a determination from the Commission's Critical Energy Infrastructure Information Coordinator that such materials need not remain protected.

12. All copies of all documents reflecting Protected Materials, including the portion of any hearing testimony, exhibits, transcripts, briefs and other documents which refer to Protected Materials, shall be filed and served in sealed envelopes or by other appropriate means endorsed to the effect that they are protected pursuant to this Agreement. Such documents shall be marked "PROTECTED MATERIALS" and shall be filed under seal and served under seal upon the Commission and all Reviewing Representatives who are on the service list. Such documents containing Critical Energy Infrastructure Information shall be additionally marked "Contains Critical Energy Infrastructure Information – Do Not Release." For anything filed under seal, redacted versions or, where an entire document is protected, a letter indicating such, will also be filed with the Commission and served on all parties on the service list. Counsel for the producing Party shall, upon the request of a Party, provide a list of Reviewing Representatives who are entitled to receive such material. Counsel shall take all reasonable precautions necessary to assure that Protected Materials are not distributed to unauthorized persons. If any Party desires to include, utilize or refer to any Protected Materials or information derived therefrom in pleadings, testimony or exhibits to these proceedings in such a manner that might require disclosure of such material to persons other than Reviewing Representatives, such Party shall first notify both counsel for the disclosing Party and the Commission of such desire, identifying with particularity each of the Protected Materials. Thereafter, use of such Protected Materials will be governed by procedures determined by the Commission.

13. Nothing in this Agreement shall be construed as precluding any Party from objecting to the use of Protected Materials on any legal grounds.

14. Nothing in this Agreement shall preclude any Party from requesting the Commission or any other body having appropriate authority to find that this Agreement should not apply to all or any materials previously designated as Protected Materials pursuant to this Agreement. The Commission may alter or amend this Agreement as circumstances warrant at any time during the course of this proceeding.

15. The Parties may amend this Agreement only by mutual consent and in writing, provided, however, that a Party has the right to seek changes to this Agreement as appropriate from the Commission.

16. All Protected Materials filed with the Commission, or any other judicial or administrative body, in support of, or as a part of, a motion, other pleading, brief, or other document, shall be filed and served in sealed envelopes or by other appropriate means bearing prominent markings indicating that the contents include Protected Materials subject to this Agreement. Such documents containing Critical Energy Infrastructure Information shall be additionally marked "Contains Critical Energy Infrastructure Information – Do Not Release."

17. If the Commission finds at any time in the course of this proceeding that all or part of the Protected Materials need not be protected, those materials shall, nevertheless, be subject to the protection afforded by this Agreement for three (3) business days from the date of issuance of the Commission's decision, and if the Party seeking protection files an interlocutory appeal or requests that the issue be certified to the Commission, for an additional seven (7) business days. No Party waives its rights to seek additional administrative or judicial remedies after the Commission's decision respecting Protected Materials or Reviewing Representatives, or the Commission's denial of any appeal thereof. The provisions of 18 C.F.R. Sections 388.112 and 388.113 shall apply to any requests for Protected Materials in the files of the Commission under the Freedom of Information Act (5 U.S.C. § 552).

18. Nothing in this Agreement shall be deemed to preclude either Party from independently seeking through discovery in any other administrative or judicial proceeding information or materials produced in this proceeding under this Agreement.

19. Neither Party waives the right to pursue any other legal or equitable remedies that may be available in the event of actual anticipated disclosure of Protected Materials.

20. The contents of Protected Materials or any other form of information that copies or discloses Protected Materials shall not be disclosed to anyone other than in accordance with this Agreement and shall be used only in connection with this proceeding. Any violation of this Agreement and of any Non-Disclosure Certificate executed hereunder shall constitute a violation of an order of the Commission.

IN WITNESS WHEREOF, the Parties each have caused this Protective Agreement to be signed by their respective duly authorized representatives as of the date first set forth above.

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Representing CAISO

Representing Intervenor

NON-DISCLOSURE CERTIFICATE

I hereby certify my understanding that access to Protected Materials is provided to me pursuant to the terms and restrictions of the Protective Agreement dated _____, 20____ by and between the CAISO and _____ concerning materials in Federal Energy Regulatory Commission Docket No. _____, that I have been given a copy of and have read the Protective Agreement, and that I agree to be bound by it. I understand that the contents of the Protected Materials, any notes or other memoranda, or any other form of information that copies or discloses Protected Materials shall not be disclosed to anyone other than in accordance with the Protective Agreement. I acknowledge that a violation of this certificate constitutes a violation of an order of the Federal Energy Regulatory Commission.

By: _____

Name: _____

Title: _____

Representing: _____