

**Attachment A – Clean Tariff**

**FERC Order No. 2222 – Compliance Filing**

**California Independent System Operator Corporation**

**August 15, 2022**

**\*Grey highlighting denotes approved tariff language not yet effective in this docket number.**

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#### **4.17.3 Requirements for Distributed Energy Resource Aggregations**

The following requirements apply to Distributed Energy Resource Aggregations:

- (a) A Distributed Energy Resource Aggregation will consist of one (1) or more Distributed Energy Resources.
- (b) A Distributed Energy Resource may not participate in more than one Distributed Energy Resource Aggregation.
- (c) A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not participate as a resource in the CAISO Market separate from the Distributed Energy Resource Aggregation.
- (d) Each Distributed Energy Resource Aggregation must be located in a single Sub-LAP.
- (e) A Distributed Energy Resource Aggregation must provide a net response at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File.
- (f) Distributed Energy Resource Aggregations are Scheduling Coordinator Metered Entities. Scheduling Coordinators for a Distributed Energy Resource Aggregation must have entered into a Scheduling Coordinator Metering Agreement with the CAISO. A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not also participate in the CAISO Markets as a CAISO Metered Entity.
- (g) A Distributed Energy Resource Aggregation may not receive compensation for capacity, Energy, or other services it provides in CAISO's markets if it provides the same services in retail programs.
- (h) Distributed Curtailment Resources may participate in Distributed Energy Resource Aggregations pursuant to these rules and Section 4.17.7.

#### **4.17.4 Identification of Distributed Energy Resources**

Each Distributed Energy Resource Provider will provide information, as described in the Business

Practice Manual, identifying each of its Distributed Energy Resource Aggregations and such information regarding the location, capacity, operating characteristics and applicable Generation Distribution Factors of its Distributed Energy Resource Aggregation(s) as may be reasonably requested from time to time by the CAISO, and when the information changes due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. All information provided to the CAISO by a Distributed Energy Resource Provider regarding the operational and technical characteristics of its Distributed Energy Resource Aggregation(s) must be accurate.

As further described in the Business Practice Manual, the CAISO will share any necessary information and data about the Distributed Energy Resources comprising a Distributed Energy Resource Aggregation with the applicable Utility Distribution Company or Metered Subsystem regarding information provided about Distributed Energy Resources comprising a Distributed Energy Resource Aggregation(s). The Utility Distribution Company or Metered Subsystem will have an opportunity to provide written comments within thirty (30) days regarding the accuracy of the information about Distributed Energy Resources comprising a Distributed Energy Resource Aggregation(s) or raise concerns with respect to whether the Distributed Energy Resources (1) are participating in another Distributed Energy Resource Aggregation; (2) are participating as a Proxy Demand Response resource or a Reliability Demand Response Resource; (3) do not comply with applicable Utility Distribution Company tariffs or requirements of the relevant Local Regulatory Authority; (4) receive compensation from retail programs for capacity, Energy, or other services that would be offered to the CAISO Markets; or (5) may pose a significant threat to the safe and reliable operation of the Distribution System, if operated as part of a Distributed Energy Resource Aggregation. The Utility Distribution Company or Metered Subsystem review of criterion (5) must be limited to those impacts resulting from the aggregation, exclusive of issues previously considered during the interconnection study process for each Distributed Energy Resource. The CAISO will provide the Distributed Energy Resource Provider with the Utility Distribution Company or Metered Subsystem's written comments, and the Distributed Energy Resource Provider will resolve any concerns with the Utility Distribution Company or Metered Subsystem prior to the CAISO allowing the individual Distributed Energy Resource to participate in a Distributed Energy Resource Aggregation. Parties may resolve any

disputes regarding these concerns with the applicable Governmental Authority for the Utility Distribution Company or Metered Subsystem or Section 13 of the CAISO tariff, as applicable to the dispute.

#### **4.17.4.1 Modifications to Distributed Energy Resource Aggregations**

The Distributed Energy Resource Provider will notify the CAISO of any changes to the information it provided during the registration process due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. The Distributed Energy Resource Provider also will notify the CAISO of any changes to its Distributed Energy Resource Aggregation's physical or operational characteristics. The CAISO will notify the applicable Utility Distribution Company or Metered Subsystem of any changes, and the Utility Distribution Company or Metered Subsystem will have fourteen (14) days to provide the CAISO any written comments raising concerns under Section 4.17.4.

#### **4.17.5 Characteristics of Distributed Energy Resource Aggregations**

##### **4.17.5.1 Size Limits**

A Distributed Energy Resource Aggregation will be no smaller than 100 kW. A Distributed Energy Resource Aggregation that includes Distributed Energy Resources located at different PNodes will be no larger than 20 MW.

##### **4.17.5.2 Metering and Telemetry**

Scheduling Coordinators shall submit to the CAISO Actual Settlement Quality Meter Data or Estimated Settlement Quality Meter Data for Distributed Energy Resource Aggregations they represent for each Settlement Period in an Operating Day. Distributed Energy Resources and Distributed Curtailment Resources participating in a Distributed Energy Resource Aggregation will be directly metered pursuant to a meter that complies with any applicable Utility Distribution Company tariff and any standards of the relevant Local Regulatory Authority or, if no such tariff exists or no standards have been set by that Local Regulatory Authority, the metering standards as further detailed in the CAISO's Business Practice Manual. Distributed Energy Resource Providers must make Settlement Quality Meter Data from individual Distributed Energy Resources and Distributed Curtailment Resources comprising a Distributed Energy Resource Aggregation available to the CAISO upon request.

Distributed Energy Resource Providers shall provide information regarding Distributed Energy Resource

Aggregation(s) with a rated capacity of 10 MW or greater or, if the Distributed Energy Resource Aggregation(s) provides Ancillary Services, through telemetry to the CAISO's EMS in accordance with the CAISO's standards for direct telemetry and consistent with the requirement for telemetry set forth in Section 7.6.1. Distributed Energy Resource Providers are not required to have their own direct telemetry on each DER, and may acquire the data required to provide the CAISO with accurate telemetry data for the DERA by any means, including calculation.

#### **4.17.6 Operating Requirements**

Distributed Energy Resource Aggregations will respond to (1) CAISO Dispatch Instructions and (2) instructions from the Utility Distribution Company to maintain the safety and reliability of the Distribution System. The CAISO may dispatch a Distributed Energy Resource Aggregation to the extent the Distributed Energy Resource Aggregation bids or schedules Energy or Ancillary Services into the CAISO Markets and receives an award. The CAISO may also issue an Exceptional Dispatch Instruction for the Distributed Energy Resource Aggregation for reliability pursuant to Section 34.10. Distributed Energy Resource Aggregations shall respond to Dispatch Instructions consistent with Generation Distribution Factors for the Distributed Energy Resource Aggregation.

Each Distributed Energy Resource Provider will operate its Distributed Energy Resource Aggregation(s) in a manner consistent with limitations or operating orders established by the Utility Distribution Company or Metered Subsystem. Scheduling Coordinators for Distributed Energy Resources Providers shall submit Outages to the CAISO as necessary to reflect any distribution constraints impacting Distributed Energy Resources that comprise a Distributed Energy Resource Aggregation under its control. The CAISO shall have the authority to coordinate and approve Outage schedules for the Distributed Energy Resource Aggregation(s) listed in a Distributed Energy Resource Provider Agreement, in accordance with the provisions of Section 9. Where the Utility Distribution Company requires its own direct communication with the Distributed Energy Resource Provider for the safety and reliability of the Distribution System, those communication and data protocols will be established in Schedule 4 to the Distributed Energy Resource Provider Agreement.

#### **4.17.7 Distributed Energy Resource Aggregations with Demand Curtailment**

Distributed Energy Resource Aggregations that include Distributed Curtailment Resources are subject to

all the requirements in Section 4.17 and this subsection. The Scheduling Coordinator for a Distributed Energy Resource Aggregation that includes a Distributed Curtailment Resource will submit Bids for Energy or Ancillary Services or Energy Self-Schedules representing the net injection of Energy from the Distributed Energy Resources that are not Distributed Curtailment Resources, if any, plus the Demand curtailment from the Distributed Curtailment Resources. Scheduling Coordinators must include Bid parameters consistent with Section 30.5.2.6. A Distributed Energy Resource Aggregation must provide a net response of Energy, Demand curtailment, or both at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File. To calculate the Demand curtailment provided by the Distributed Curtailment Resources within a Distributed Energy Resource Aggregation, the Scheduling Coordinator must calculate a Demand Response Energy Measurement for the Distributed Curtailment Resources, excluding any Distributed Energy Resources that are injecting Energy and not Distributed Curtailment Resources, consistent with the requirements in Sections 4.13.4 and 11.6.

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#### **11.6.5 Settlement of Distributed Energy Resource Aggregations**

Settlements for Energy provided by a Distributed Energy Resource Provider from a Distributed Energy Resource Aggregation shall be based on the applicable PNode or Aggregated PNode of the Distributed Energy Resource Aggregation. For Distributed Energy Resource Aggregations comprising a single PNode, settlement for Energy transactions would reflect the LMP at that PNode. For Distributed Energy Resource Aggregations comprising multiple PNodes settlement for Energy transactions would be the weighted average LMP of the PNode(s) based on the applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File. Consistent with the provisions of Section 11.5.2, the CAISO will impose UIE on a Distributed Energy Resource Provider if the Distributed Energy Resource Provider's Distributed Energy Resource Aggregation does not follow a Dispatch Instruction.

### **11.6.5.1 Settlement of Distributed Energy Resource Aggregations with Demand Curtailment**

Settlements for Energy and Demand curtailment provided by a Distributed Energy Resource Provider from a Distributed Energy Resource Aggregation that includes Distributed Curtailment Resources will be consistent with Section 11.6.5. The CAISO will settle such Distributed Energy Resource Aggregations based on the sum of (1) the net Energy provided by the Distributed Energy Resources, if any, accounting for any Load and any negative Energy from energy storage resources, and (2) the Demand curtailment provided by the Distributed Curtailment Resources, represented as positive Supply. For settlement, monitoring, compliance, and audit purposes, the Scheduling Coordinator for such Distributed Energy Resource Aggregation must submit in the Settlement Quality Meter Data Systems:

- (1) the net injection or withdrawal of Energy from any Distributed Energy Resources that are not Distributed Curtailment Resources;
- (2) the Demand curtailment provided by the Distributed Curtailment Resources, calculated consistent with the requirements of Section 11.6.1;
- (3) the Customer Load Baseline or Generator Output Baseline used to calculate the Demand curtailment for the Distributed Curtailment Resources, calculated consistent with the requirements of Section 4.13.4; and
- (4) the actual underlying consumption or Energy during all hourly intervals for the calendar days for which the Meter Data was collected to develop the baseline.

Only the net injection of Energy and the Demand curtailment will be considered Settlement Quality Meter Data.

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### **30.5.2.6 Supply Bids for Distributed Energy Resource Aggregations**

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for Distributed Energy Resource Aggregations will contain the following components as applicable: Generation Distribution Factors, Ramp Rate, Minimum and Maximum Operating Limits; Energy Limit, and Contingency Flag. If the Scheduling Coordinator does not submit the Generation Distribution Factors for the Bid, the CAISO

will use default Generation Distribution Factors registered in Master File. The CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Demand Response Providers and Distributed Energy Resource Aggregations that include Distributed Curtailment Resources. The CAISO will not accept Bids from Distributed Energy Resource Aggregations that include Distributed Curtailment Resources for Energy below this threshold Market Clearing Price in the CAISO Markets.

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## **Appendix A**

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### **- Distributed Curtailment Resource**

A Distributed Energy Resource providing Demand curtailment as part of a Distributed Energy Resource Aggregation.

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## **Appendix B.21**

### **Distributed Energy Resource Provider Agreement**

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**4.1.4 Small Utility Limits.** A Distributed Energy Resource Provider that aggregates Distributed Energy Resources that are customers in utilities that distribute (four million MWh or less in the previous fiscal year must certify to the CAISO that its participation is permitted by the Local Regulatory Authority applicable to Distributed Energy Resources, and that it has satisfied all applicable rules and regulations of the Local Regulatory Authority. Distributed Energy Resource

Providers that met this requirement previously must notify the CAISO immediately if the Local Regulatory Authority prohibits participation.

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**4.2.5 Distribution System Communications.** Where the Utility Distribution Company requires its own direct communication with the Distributed Energy Resource Provider for the safety and reliability of the Distribution System, those communication and data protocols will be established in Schedule 4 to the Distributed Energy Resource Provider Agreement.

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### **Appendix K**

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**A 1.1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Regulation) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;

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**B 1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Spinning Reserve) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;

\* \* \* \* \*

**C 1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Non-Spinning Reserve) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;

**Attachment B – Marked Tariff**  
**FERC Order No. 2222 – Compliance Filing**  
**California Independent System Operator Corporation**  
**August 15, 2022**

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#### **4.17.3 Requirements for Distributed Energy Resource Aggregations**

The following requirements apply to Distributed Energy Resource Aggregations:

- (a) A Distributed Energy Resource Aggregation will consist of one (1) or more Distributed Energy Resources.
- (b) A Distributed Energy Resource may not participate in more than one Distributed Energy Resource Aggregation.
- (c) A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not participate as a resource in the CAISO Market separate from the Distributed Energy Resource Aggregation.
- ~~(d) A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not also participate in a retail net energy metering program that does not expressly permit wholesale market participation.~~
- ~~(de)~~ Each Distributed Energy Resource Aggregation must be located in a single Sub-LAP.
- ~~(ef)~~ A Distributed Energy Resource Aggregation must provide a net response at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File.
- ~~(fg)~~ Distributed Energy Resource Aggregations are Scheduling Coordinator Metered Entities. Scheduling Coordinators for a Distributed Energy Resource Aggregation must have entered into a Scheduling Coordinator Metering Agreement with the CAISO. A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not also participate in the CAISO Markets as a CAISO Metered Entity.
- ~~(gh)~~ A Distributed Energy Resource Aggregation may not receive compensation for capacity, Energy, or other services it provides in CAISO's markets if it provides the same services in from-retail programs ~~for capacity, Energy, or other services it provides the CAISO Markets.~~

- (h) Distributed Curtailment Resources may participate in ~~heterogeneous~~ Distributed Energy Resource Aggregations pursuant to these rules and Section 4.17.78. ~~Aggregations of only Distributed Curtailment Resources without other Distributed Energy Resources that inject Energy must participate as Proxy Demand Resources or Reliability Demand Response Resources.~~

#### 4.17.4 Identification of Distributed Energy Resources

Each Distributed Energy Resource Provider will provide information, as described in the Business Practice Manual, identifying each of its Distributed Energy Resource Aggregations and such information regarding the location, capacity, operating characteristics and applicable Generation Distribution Factors of its Distributed Energy Resource Aggregation(s) as may be reasonably requested from time to time by the CAISO, and when the information changes due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. All information provided to the CAISO by a Distributed Energy Resource Provider regarding the operational and technical characteristics of its Distributed Energy Resource Aggregation(s) must be accurate.

As further described in the Business Practice Manual, the CAISO will ~~confer~~ share any necessary information and data about the Distributed Energy Resources comprising a Distributed Energy Resource Aggregation with the applicable Utility Distribution Company or Metered Subsystem regarding information provided about Distributed Energy Resources comprising a Distributed Energy Resource Aggregation(s). The Utility Distribution Company or Metered Subsystem will have an opportunity to provide written comments within thirty (30) days regarding the accuracy of the information about Distributed Energy Resources comprising a Distributed Energy Resource Aggregation(s) or raise concerns with respect to whether the Distributed Energy Resources (1) are participating in another Distributed Energy Resource Aggregation; (2) are participating as a Proxy Demand Response resource or a Reliability Demand Response Resource; ~~(3) are participating in a retail net energy metering program that does not expressly permit wholesale market participation;~~ (3) do not comply with applicable Utility Distribution Company tariffs or requirements of the relevant Local Regulatory Authority; (4) receive compensation from retail programs for capacity, Energy, or other services that would be offered to the

CAISO Markets; or (56) may pose a significant threat to the safe and reliable operation of the Distribution System, if operated as part of a Distributed Energy Resource Aggregation. The Utility Distribution Company or Metered Subsystem review of criterion (5) must be limited to those impacts resulting from the aggregation, exclusive of issues previously considered during the interconnection study process for each Distributed Energy Resource. If the Utility Distribution Company or Metered Subsystem raises concerns based on these factors, the CAISO will provide the Distributed Energy Resource Provider with the Utility Distribution Company or Metered Subsystem's written comments, and the Distributed Energy Resource Provider will resolve ~~those~~ any concerns with the Utility Distribution Company or Metered Subsystem prior to the CAISO allowing the individual Distributed Energy Resource to participate in a Distributed Energy Resource Aggregation. Parties may resolve Aany disputes regarding these concerns ~~shall be undertaken~~ with the applicable Governmental Authority for the Utility Distribution Company or Metered Subsystem ~~and shall not be arbitrated or in any way resolved through a~~ or Section 13 of the CAISO tariff, as applicable to the dispute ~~CAISO dispute resolution mechanism.~~

#### **4.17.4.1 Modifications to Distributed Energy Resource Aggregations**

The Distributed Energy Resource Provider will notify the CAISO of any changes to the information it provided during the registration process due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. The Distributed Energy Resource Provider also will notify the CAISO of any changes to its Distributed Energy Resource Aggregation's physical or operational characteristics. The CAISO will notify the applicable Utility Distribution Company or Metered Subsystem of any changes, and the Utility Distribution Company or Metered Subsystem will have fourteen (14) days to provide the CAISO any written comments raising concerns under Section 4.17.4.

#### **4.17.5 Characteristics of Distributed Energy Resource Aggregations**

##### **4.17.5.1 Size Limits**

A Distributed Energy Resource Aggregation will be no smaller than 100 kW. A Distributed Energy Resource Aggregation that includes Distributed Energy Resources located at different PNodes will be no larger than 20 MW.

##### **4.17.5.2 Metering and Telemetry**

Scheduling Coordinators shall submit to the CAISO Actual Settlement Quality Meter Data or Estimated Settlement Quality Meter Data for Distributed Energy Resource Aggregations they represent for each Settlement Period in an Operating Day. Distributed Energy Resources and Distributed Curtailment Resources participating in a Distributed Energy Resource Aggregation will be directly metered pursuant to a meter that complies with any applicable Utility Distribution Company tariff and any standards of the relevant Local Regulatory Authority or, if no such tariff exists or no standards have been set by that Local Regulatory Authority, the metering standards as further detailed in the CAISO's Business Practice Manual. Distributed Energy Resource Providers must make Settlement Quality Meter Data from individual Distributed Energy Resources and Distributed Curtailment Resources comprising a Distributed Energy Resource Aggregation available to the CAISO upon request.

Distributed Energy Resource Providers shall provide information regarding Distributed Energy Resource Aggregation(s) with a rated capacity of 10 MW or greater or, if the Distributed Energy Resource Aggregation(s) provides Ancillary Services, through telemetry to the CAISO's EMS in accordance with the CAISO's standards for direct telemetry and consistent with the requirement for telemetry set forth in Section 7.6.1. Distributed Energy Resource Providers are not required to have their own direct telemetry on each DER, and may acquire the data required to provide the CAISO with accurate telemetry data for the DERA by any means, including calculation.

#### **4.17.6 Operating Requirements**

Distributed Energy Resource Aggregations will respond to (1) CAISO Dispatch Instructions and (2) instructions from the Utility Distribution Company to maintain the safety and reliability of the Distribution System. The CAISO may dispatch a Distributed Energy Resource Aggregation to the extent the Distributed Energy Resource Aggregation bids or schedules Energy or Ancillary Services into the CAISO Markets and receives an award. The CAISO may also issue an Exceptional Dispatch Instruction for the Distributed Energy Resource Aggregation for reliability pursuant to Section 34.10. Distributed Energy Resource Aggregations shall respond to Dispatch Instructions consistent with Generation Distribution Factors for the Distributed Energy Resource Aggregation.

Each Distributed Energy Resource Provider will operate its Distributed Energy Resource Aggregation(s) in a manner consistent with limitations or operating orders established by the Utility Distribution Company

or Metered Subsystem. Scheduling Coordinators for Distributed Energy Resources Providers shall submit Outages to the CAISO as necessary to reflect any distribution constraints impacting Distributed Energy Resources that comprise a Distributed Energy Resource Aggregation under its control. The CAISO shall have the authority to coordinate and approve Outage schedules for the Distributed Energy Resource Aggregation(s) listed in a Distributed Energy Resource Provider Agreement, in accordance with the provisions of Section 9. Where the Utility Distribution Company requires its own direct communication with the Distributed Energy Resource Provider for the safety and reliability of the Distribution System, those communication and data protocols will be established in Schedule 4 to the Distributed Energy Resource Provider Agreement.

#### **4.17.7 ~~Heterogeneous~~ Distributed Energy Resource Aggregations with Demand Curtailment**

~~Heterogeneous~~ Distributed Energy Resource Aggregations that include Distributed Curtailment Resources are subject to all the requirements in Section 4.17 and this subsection. ~~Heterogeneous Distributed Energy Resource Aggregations must consist of at least one Distributed Energy Resource that injects Energy and at least one Distributed Curtailment Resource, participating together under a single Resource ID as a Distributed Energy Resource Aggregation through a Distributed Energy Resource Provider.~~ The Scheduling Coordinator for a ~~heterogeneous~~ Distributed Energy Resource Aggregation that includes a Distributed Curtailment Resource will submit Bids for Energy or Ancillary Services or Energy Self-Schedules representing the net injection of Energy from the Distributed Energy Resources that are not Distributed Curtailment Resources, if any, plus the Demand curtailment from the Distributed Curtailment Resources. Scheduling Coordinators must include Bid parameters consistent with Section 30.5.2.6. A ~~heterogeneous~~ Distributed Energy Resource Aggregation must provide a net response of Energy, Demand curtailment, or both at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File. To calculate the Demand curtailment provided by the Distributed Curtailment Resources within a ~~heterogeneous~~ Distributed Energy Resource Aggregation, the Scheduling Coordinator must calculate a Demand Response Energy Measurement for the Distributed Curtailment Resources, excluding ~~the any~~ Distributed Energy Resources that are injecting Energy and not Distributed Curtailment Resources, consistent with the requirements in

Sections 4.13.4 and 11.6.

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### 11.6.5 Settlement of Distributed Energy Resource Aggregations

Settlements for Energy provided by a Distributed Energy Resource Provider from a Distributed Energy Resource Aggregation shall be based on the applicable PNode or Aggregated PNode of the Distributed Energy Resource Aggregation. For Distributed Energy Resource Aggregations comprising a single PNode, settlement for Energy transactions would reflect the LMP at that PNode. For Distributed Energy Resource Aggregations comprising multiple PNodes settlement for Energy transactions would be the weighted average LMP of the PNode(s) based on the applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File. Consistent with the provisions of Section 11.5.2, the CAISO will impose UIE on a Distributed Energy Resource Provider if the Distributed Energy Resource Provider's Distributed Energy Resource Aggregation does not follow a Dispatch Instruction.

#### 11.6.5.1 ~~Settlement of Heterogeneous~~ Distributed Energy Resource Aggregations with Demand Curtailment

Settlements for Energy and Demand curtailment provided by a Distributed Energy Resource Provider from a ~~heterogeneous~~ Distributed Energy Resource Aggregation that includes Distributed Curtailment Resources will be consistent with Section 11.6.5. The CAISO will settle ~~each heterogeneous~~ such Distributed Energy Resource Aggregations based on the sum of (1) the net Energy provided by the Distributed Energy Resources, if any, accounting for any Load and any negative Energy from energy storage resources, and (2) the Demand curtailment provided by the Distributed Curtailment Resources, represented as positive Supply. For settlement, monitoring, compliance, and audit purposes, the Scheduling Coordinator for ~~each such heterogeneous~~ Distributed Energy Resource Aggregation must submit in the Settlement Quality Meter Data Systems:

- (1) the net injection or withdrawal of Energy from ~~the any~~ Distributed Energy Resources that are not Distributed Curtailment Resources;

- (2) the Demand curtailment provided by the Distributed Curtailment Resources, calculated consistent with the requirements of Section 11.6.1;
- (3) the Customer Load Baseline or Generator Output Baseline used to calculate the Demand curtailment for the Distributed Curtailment Resources, calculated consistent with the requirements of Section 4.13.4; and
- (4) the actual underlying consumption or Energy during all hourly intervals for the calendar days for which the Meter Data was collected to develop the baseline.

Only the net injection of Energy and the Demand curtailment will be considered Settlement Quality Meter Data.

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### **30.5.2.6 Supply Bids for Distributed Energy Resource Aggregations**

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for Distributed Energy Resource Aggregations will contain the following components as applicable: Generation Distribution Factors, Ramp Rate, Minimum and Maximum Operating Limits; Energy Limit, and Contingency Flag. If the Scheduling Coordinator does not submit the Generation Distribution Factors for the Bid, the CAISO will use default Generation Distribution Factors registered in Master File. The CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Demand Response Providers and ~~heterogeneous~~ Distributed Energy Resource Aggregations that include Distributed Curtailment Resources. The CAISO will not accept Bids from ~~heterogeneous~~ Distributed Energy Resource Aggregations that include Distributed Curtailment Resources ~~Bids~~ for Energy below this threshold Market Clearing Price in the CAISO Markets.

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## **Appendix A**

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**- Distributed Curtailment Resource**

A Distributed Energy Resource providing Demand curtailment as part of a ~~heterogeneous~~-Distributed Energy Resource Aggregation.

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**Appendix B.21**

**Distributed Energy Resource Provider Agreement**

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**4.1.4 Small Utility Limits.** A Distributed Energy Resource Provider that aggregates Distributed Energy Resources that are customers in utilities that distribute: ~~(1) over four million MWh in the previous fiscal year must certify to the CAISO that its participation is not prohibited by the Local Regulatory Authority; or (2)~~ four million MWh or less in the previous fiscal year must certify to the CAISO that its participation is permitted by the Local Regulatory Authority applicable to Distributed Energy Resources, and that it has satisfied all applicable rules and regulations of the Local Regulatory Authority. Distributed Energy Resource Providers that met this requirement previously must notify the CAISO immediately if the Local Regulatory Authority prohibits participation.

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**4.2.5 Distribution System Communications.** Where the Utility Distribution Company requires its own direct communication with the Distributed Energy Resource Provider for the safety and reliability of the Distribution System, those communication and data protocols will be established in Schedule 4 to the Distributed Energy Resource Provider Agreement.

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## **Appendix K**

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**A 1.1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Regulation) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;

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**B 1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Spinning Reserve) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;

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**C 1.1** the rated capacity of the resource must be 500 KW or greater (i.e. the resource must be capable of providing at least 500 KW of Non-Spinning Reserve) unless the resource is participating in an aggregation arrangement approved by the CAISO, or is a storage resource or Distributed Energy Resource Aggregation 100 KW or greater;