

155 FERC ¶ 61,229
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

California Independent System
Operator Corporation

Docket No. ER16-1085-000

ORDER ACCEPTING PROPOSED TARIFF REVISIONS SUBJECT TO CONDITION

(Issued June 2, 2016)

1. On March 4, 2016, pursuant to section 205 of the Federal Power Act (FPA),¹ the California Independent System Operator Corporation (CAISO) filed proposed revisions to its Open Access Transmission Tariff (tariff) to facilitate participation of aggregations of distribution-connected or distributed energy resources in CAISO's energy and ancillary services markets. In this order, we accept the filing subject to condition, as discussed below, to become effective June 3, 2016, as requested.

I. Background

2. CAISO proposes to clarify and revise the CAISO tariff to support the participation of distributed energy resources in the CAISO markets.² CAISO explains that the proposed tariff revisions establish an initial framework to enable resources connected to distribution systems within CAISO's balancing authority area to form aggregations of 0.5 MW or more and participate in its energy and ancillary services markets. In particular, CAISO's proposed revisions address five topics: (1) provisions that recognize a distributed energy resource provider (DER Provider) as a market participant; (2) provisions that recognize a distributed energy resource aggregation as a market resource; (3) rules governing participation of these resources in the CAISO markets; (4) distinctions between the requirements for scheduling coordinators representing

¹ 16 U.S.C. § 824d (2012).

² CAISO March 4, 2016 Transmittal Letter at 1-2 (CAISO Transmittal).

demand response providers and the requirements for scheduling coordinators representing DER Providers; and (5) a new *pro forma* DER Provider Agreement.³

II. CAISO Filing

A. DER Provider as New Type of Market Participant

3. CAISO explains that a DER Provider is the owner or operator of a distributed energy resource aggregation for purposes of wholesale market participation.⁴ CAISO proposes to define a distributed energy resource as any resource with a first point of interconnection to a utility distribution company or a metered subsystem.⁵ CAISO states that this broad definition encompasses multiple types of resources within its balancing authority area interconnected to the distribution system, such as distributed generation, energy storage, and plug-in electric vehicle charging stations. CAISO states that these resources could be in front of or behind a customer meter.

4. CAISO notes that the proposed framework will accommodate market participation by aggregated distributed energy resources that are directly measured.⁶ CAISO states that, like all other market participants, a DER Provider may only participate in the CAISO markets through a scheduling coordinator or by becoming a scheduling coordinator itself.

5. CAISO emphasizes that it does not propose to change the way distribution-connected resources already participate in the CAISO markets.⁷ CAISO states that individual generating units located in the CAISO balancing authority area that are 1 MW or greater will still be required to become participating generators and will not be eligible to aggregate their capacity through a DER Provider. CAISO states that participating

³ *Id.* at 2, 4.

⁴ *Id.* at 5.

⁵ A metered subsystem is a geographically contiguous system located within a single CAISO zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority subsumed within the CAISO balancing authority area and encompassed by CAISO certified revenue quality meters. *See* CAISO Tariff, Appendix A (Definitions)

⁶ CAISO Transmittal at n.7.

⁷ *Id.* at 6-7.

generators that are between 0.5 MW and 1 MW will also not be eligible to be part of a distributed energy resource aggregation, unless their owners/operators decide to terminate their participating generator agreements. Also, CAISO proposes to clarify that demand response resources that participate in CAISO's market as proxy demand response resources or reliability demand response resources may not participate in a distributed energy resource aggregation and will continue to operate as curtailable demand.

6. CAISO proposes that resources that are participating in retail programs, such as net metering with storage or virtual net metering, also cannot participate in a wholesale market aggregation. CAISO explains that, under California's current net energy metering program, a participating resource already receives benefits from netting its excess energy against subsequent electricity bills;⁸ therefore, there is no energy available to offer into the CAISO markets because excess energy is banked for later withdrawal. CAISO also notes that its proposal is consistent with Commission orders determining that exports to the transmission grid under a net energy metering program do not constitute a sale for resale of electricity under the FPA because these customers are, on a net basis, consumers.⁹

7. However, CAISO proposes to permit non-net energy metering distributed energy resources to participate in an aggregation as a wholesale market participant. For all resources participating in a distributed energy resource aggregation, the utility distribution company or metered subsystem in which those resources reside will have thirty (30) days from when the prospective DER Provider submits information to CAISO identifying the aggregation to provide written comments regarding the accuracy of the information about distributed energy resources comprising a distributed energy resource aggregation(s) or to raise concerns regarding 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; (4) do not comply with applicable utility distribution company tariffs or requirements of the relevant local regulatory authority; or (5) may pose a threat to the safe and reliable operation of the distribution system, if operated as part of a distributed energy resource aggregation. CAISO states that this

⁸ *Id.* at 7 (citing CPUC Decision 16-01-044 Decision Adopting Successor to Net Energy Metering Tariff at 12-16, describing overview of California's net energy metering program. <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M158/K285/158285436.pdf>).

⁹ *Id.* (citing *Sun Edison LLC*, 129 FERC ¶ 61,146 (2009) *reh'g granted*, 131 FERC ¶ 61,213 (2010); *MidAmerican Energy Co.*, 94 FERC ¶ 61,340 (2001)).

proposed measure ensures that a resource will not undermine the reliable operation of the distribution system.

B. Distributed Energy Resource Aggregation as a Market Resource

8. CAISO states that it will treat the aggregation, rather than the individual distributed energy resources, as the market resource, and explains that this new resource will accommodate smaller distribution-connected generation and emerging resource types that may need a different model for wholesale market participation.¹⁰

9. To ensure accurate modeling of the congestion impacts of these market resources, CAISO proposes that: (1) aggregations may consist of distributed energy resources at one pricing node or may span multiple pricing nodes;¹¹ (2) each aggregation may be no smaller than 0.5 MW; and (3) each aggregation that includes distributed energy resources located at different pricing nodes may be no larger than 20 MW.

10. CAISO also proposes requiring each distributed energy resource aggregation to be located in a single sub-load aggregation point (sub-LAP) to ensure that it does not create additional congestion on the CAISO-controlled grid.¹² CAISO explains that, if an aggregation were allowed to have resources on both sides of a constraint identified by CAISO, a CAISO dispatch instruction to alleviate a constraint between these two sub-LAPs may actually exacerbate the problem. CAISO states that this same requirement is placed on demand response resource aggregations participating in the CAISO markets (i.e., proxy demand response resources and reliability demand response resources).

C. Rules Governing Participation in CAISO Markets

11. CAISO notes that aggregations also may comprise different distributed energy resource types.¹³ CAISO proposes that the scheduling coordinator will submit schedules

¹⁰ *Id.* at 8-9.

¹¹ *Id.* at 9. CAISO explains that a pricing node is a single network node or subset of network nodes where a physical injection or withdrawal is modeled and for which a locational marginal price is calculated and used for financial settlements. *Id.* at n.20.

¹² CAISO explains that a sub-LAP is a defined subset of pricing nodes within a default load aggregation point (default LAP). According to CAISO, sub-LAPs were initially developed with the advent of congestion revenue rights to reflect major transmission constraints within each utility service territory (i.e., within a default LAP). *Id.* at n.24.

¹³ *Id.* at 12-13.

and bids for an aggregation across multiple nodes based on the aggregation's generation distribution factors. CAISO states that the market awards and dispatch instructions will then reflect these distribution factors and that the DER Provider must provide a net response at the pricing node level that is consistent with CAISO's dispatch instructions to capture the value that the aggregation provides at the transmission-distribution interface. For aggregations across multiple pricing nodes, CAISO proposes to settle the DER Provider's response based on a weighted locational marginal price (LMP) associated with each pricing node. For aggregations located at a single pricing node, CAISO proposes to use the LMP for that single node for settlement.

12. CAISO states that, if meter data reflects that a DER Provider did not accurately respond to its dispatch instructions, the DER Provider will face financial consequences in the form of uninstructed imbalance energy charges. CAISO notes that, under this initial proposal, CAISO will not have the ability to impose uninstructed imbalance energy charges at individual pricing nodes unless the aggregation is located behind a single pricing node. CAISO states that if an aggregation operating across multiple pricing nodes fully responds to its dispatch instruction but its response deviates from its generation distribution factors, the distributed energy resource provider would face no uninstructed imbalance energy charges because CAISO settles on meter data at the market resource level, not the pricing node level. CAISO explains that, in order to monitor that a resource's response aligns with its distribution factors, it plans to sample meter data from DER Providers. CAISO states that, based on that review, it may propose enhancements to this initial proposal.

13. CAISO proposes to apply existing metering rules to distributed energy resource aggregations.¹⁴ CAISO notes that it currently does not directly poll the meters of scheduling coordinator metered entities, such as demand response resources operating in the CAISO markets. CAISO states that scheduling coordinators for those resources collect meter data and submit the validated data to CAISO pursuant to settlement timelines set forth in the CAISO tariff.

14. CAISO proposes requiring distributed energy resource aggregations to adhere to the same telemetry standards as other resources. Specifically, if a distributed energy resource aggregation has a rated capacity of 10 MW or greater or provides ancillary services, then it must provide real-time data through telemetry to CAISO's energy management system in a manner similar to a participating generator. In these cases, CAISO proposes to receive telemetry data at the aggregated market resource level (i.e., not from the individual distributed energy resources comprising the aggregation nor from the distinct pricing nodes at which a multiple pricing node aggregation contains individual resources). CAISO states that, as it gains experience with these aggregations,

¹⁴ *Id.* at 13, 16-17.

it may examine modifications to its telemetry requirements to reduce the size of resources at which these requirements apply or to impose requirements at the pricing node level for distributed energy resource aggregations.

15. In addition to complying with CAISO's tariff, operating procedures, business practice manuals and applicable reliability criteria, CAISO proposes that DER Providers must comply with applicable utility distribution company tariffs and operating procedures incorporated into those tariffs and applicable requirements of the local regulatory authority (such as the Public Utilities Commission of the State of California (CPUC) or relevant municipal entity).

16. CAISO also proposes to require the DER Provider to operate its aggregation in a manner consistent with the limitations or operating orders established by the utility distribution company or metered subsystem. CAISO explains that DER Providers will need to disaggregate dispatch instructions CAISO sends to scheduling coordinators in a manner that is consistent with distribution system limitations. CAISO states that, if a utility distribution company or metered subsystem removes facilities from service that affect the operation of an aggregation, the scheduling coordinator for the DER Provider must submit the relevant information to CAISO's outage management system.¹⁵ CAISO points out that these responsibilities are similar to responsibilities the existing CAISO tariff imposes on other market participants, such as participating generators and demand response providers.

D. Requirements for Scheduling Coordinators Representing Demand Response Providers and DER Providers

17. CAISO explains that demand response providers need to submit settlement quality meter data for the settlement interval in which they responded to a CAISO dispatch instruction, while for distributed energy resource aggregations, CAISO proposes to require settlement quality meter data in every operating interval (i.e., 24 hours per day, seven days per week).¹⁶ CAISO states that its proposed revisions reflect existing rules and distinguish between requirements for the two types of scheduling coordinators. CAISO explains that scheduling coordinators representing DER Providers must submit an accurate measure of the actual production or consumption of energy by each distributed energy resource aggregation in all settlement periods, while demand response providers may continue to use a baseline methodology.

¹⁵ *Id.* at 17-18.

¹⁶ *Id.* at 19-20.

E. Pro Forma DER Provider Agreement

18. CAISO proposes to establish a new *pro forma* contract that DER Providers must sign to participate in the CAISO markets. CAISO explains that this *pro forma* agreement sets forth the terms and conditions under which CAISO and DER Providers will discharge their respective duties and responsibilities under the CAISO tariff. CAISO further explains that the proposed agreement does not establish duties and responsibilities between a utility distribution company and distributed energy resources, except in so far as it incorporates conditions of CAISO market participation, such as operating an aggregation consistent with limitations or operating orders of a utility distribution company or metered subsystem. CAISO also incorporates standard terms and conditions from its existing *pro forma* participating resource agreements that address issues such as penalties and sanctions, cost responsibility for fulfilling the terms of the agreement, dispute resolution, representations and warranties, liability, uncontrollable forces and other miscellaneous terms.

19. CAISO proposes that a DER Provider Agreement would identify each distributed energy resource comprising an aggregation subject to the agreement as part of a schedule and explains that DER Providers will have an obligation to maintain an accurate list of the resources that participate in aggregations under their control.¹⁷

F. Compliance with CAISO Tariff Provisions

20. CAISO explains that the CAISO tariff contains existing provisions that also will apply to DER Providers either directly or through their scheduling coordinators. For example, CAISO states that DER Providers seeking to offer ancillary services will need to comply with technical requirements to do so, and creditworthiness requirements will apply to scheduling coordinators for DER Providers as will provisions related to settlements and billing and dispute resolution procedures.¹⁸

21. CAISO adds that, pursuant to existing CAISO tariff provisions, scheduling coordinators must ensure their meters or revenue measuring devices for each distributed energy resource participating in an aggregation meet the requirements of the appropriate local regulatory authority. CAISO notes that additional metering requirements will be set forth in its business practice manual for metering.

22. CAISO explains that existing CAISO tariff provisions will not apply to DER Providers or their aggregations in two circumstances. First, CAISO is not proposing to

¹⁷ *Id.* at 21.

¹⁸ *Id.* at 21-22.

extend the meteorological data requirements that apply to eligible intermittent resources to distributed energy resources comprising an aggregation. CAISO notes that, to impose such a requirement could create an undue burden on individual distributed energy resources that will be less than 1 MW.¹⁹ Second, CAISO is not proposing to recognize distributed energy resource aggregations as resource adequacy resources. For purposes of this initial proposed framework, CAISO proposes to treat distributed energy resource aggregations as if they have energy only deliverability status under CAISO's resource adequacy rules.

III. Notice of Filing and Responsive Pleadings

23. Notice of CAISO's filing was published in the *Federal Register*, 81 Fed. Reg. 12,891 (2016), with interventions and protests due on or before March 25, 2016. CPUC filed a notice of intervention. The following entities filed timely motions to intervene: Alliance for Retail Energy Markets; California Department of Water Resources; Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside, California; City of Santa Clara, California; Department of Water and Power of the City of Los Angeles; Edison Electric Institute (EEI); Golden State Water Company; Microgrid Resources Coalition (Microgrid Coalition); Modesto Irrigation District; Northern California Power Agency; NRG Power Marketing LLC and GenOn Energy Management, LLC, jointly; Pacific Gas and Electric Company (PG&E); San Diego Gas & Electric Company (SDG&E); and Southern California Edison Company (SoCal Edison). The Electric Power Supply Association (EPSA) and SolarCity Corporation (SolarCity) filed motions to intervene out-of-time. Advanced Energy Economy; EEI, Microgrid Coalition, PG&E, SDG&E, SoCal Edison, and SolarCity filed comments.²⁰ On April 11, 2016, CAISO filed an answer.

IV. Discussion

A. Procedural Matters

24. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2015), the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d), the Commission will grant EPSA's and SolarCity's late-filed motions to intervene given their interest in the proceeding, the early stage of the proceeding, and the

¹⁹ *Id.* at 22-23.

²⁰ We note that Advanced Energy Economy and SolarCity filed comments out-of-time on April 13, 2016 and April 24, 2016, respectively.

absence of undue prejudice or delay. We also accept Advanced Energy Economy's and SolarCity's late-filed comments.²¹

25. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

B. Substantive Matters

26. We find overall that CAISO's proposed initial framework to facilitate participation of aggregations of distribution-connected or distributed energy resources in CAISO's energy and ancillary services markets is just and reasonable and we accept CAISO's proposed tariff revisions, subject to condition,²² to become effective June 3, 2016, as requested, as discussed below. In the following sections of this order, we address aspects of CAISO's proposal that have been contested by various commenters.

1. Integrating DER Providers as a New Type of Market Participant

27. As previously described, CAISO's proposed tariff revisions establish an initial framework to enable resources connected to distribution systems within CAISO's balancing authority area to form aggregations of 0.5 MW or more and participate in its energy and ancillary services markets as a new type of market participant.

a. Comments

28. Microgrid Coalition asks CAISO to clarify the definition of distributed energy resources and whether demand response resources can participate in an aggregation.

²¹ We note that, although Advanced Energy Economy filed comments in this proceeding, it did not file a motion to intervene. Therefore, pursuant to Rule 102(c) and Rule 211(a)(2) of the Commission's Rules of Practice and Procedure, §§ 385.102(c), 385.211(a)(2), while Advanced Energy Economy is a commenter, it is not a party to this proceeding.

²² The Commission can revise a proposal filed under section 205 of the FPA as long as the filing utility accepts the change. *See City of Winnfield v. FERC*, 744 F.2d 871, 875-77 (D.C. Cir. 1984). A utility is free to indicate that it is unwilling to accede to the Commission's conditions in this order by withdrawing its filing.

Microgrid Coalition also asks CAISO to clarify the definition of “resource” and whether distributed energy resources may provide multiple services or engage in multiple uses.²³

29. EEI explains that the utility distribution companies need to have visibility and some level of input or control into the resources that are connected to their distribution system for planning and operations purposes.²⁴ EEI states that, as such, the utility distribution companies need access to information about the operating characteristics of the distributed energy resources connected to their systems, including (1) information from the distributed energy resource if it changes its operating characteristics to participate in the wholesale markets; (2) real-time data on dispatch of these resources; and (3) information on whether the resource cleared the day-ahead or real-time markets. EEI also asks the Commission to require CAISO to work with the utility distribution companies to develop measurement and verification processes because these resources are connected to, and metered at, the distribution system.

30. Several commenters request that the Commission delay the implementation of CAISO’s proposal. PG&E argues that the effective date should be conditioned upon CAISO finalizing the relevant business practice manual provisions before the proposed tariff revisions go into effect.²⁵ SDG&E supports CAISO’s efforts but believes that it is imperative that the details of how the proposal will be implemented be thoroughly addressed before the proposal is implemented.²⁶ While SDG&E acknowledges that CAISO proposes to address these details in its business practice manual development process, SDG&E states that it believes that the Commission and stakeholders would benefit from an opportunity to examine, scope and prioritize implementation issues through a technical conference prior to the proposed tariff revisions becoming effective. SoCal Edison asks the Commission to require CAISO to provide additional detail on coordination between CAISO and the utility distribution company before accepting the proposal.²⁷ If questions arise in light of the additional detail, SoCal Edison suggests that a technical conference may be appropriate.

²³ Microgrid Coalition March 25, 2016 Comments at 5-7.

²⁴ EEI March 25, 2016 Comments at 4-5, 7.

²⁵ PG&E March 25, 2016 Comments at 5, 10-12 (PG&E Comments).

²⁶ SDG&E March 25, 2016 Comments at 2.

²⁷ SoCal Edison March 25, 2016 Comments at 11-12 (SoCal Edison Comments).

31. SoCal Edison states it is concerned that proposed tariff section 4.17.4 (Identification of Distributed Energy Resources), explaining which information a DER Provider will submit to CAISO in forming an aggregation, does not describe how matters will be addressed in a timeframe consistent with market operations. SoCal Edison states it is also concerned that the proposed tariff revisions only focus on the dispatch of resources at the pricing node without similarly addressing how an aggregation on multiple distribution circuits will impact flows when dispatched. SoCal Edison notes that, while dispatch of any of the multiple resources at a single pricing node by CAISO will have the same impact on the transmission system and the wholesale market, they potentially have very different impacts on the distribution system. SoCal Edison argues that the proposed tariff revisions are insufficient and that more discussion is needed with stakeholders, in particular distribution operators, on how coordination with the utility distribution companies is going to occur from forward planning (e.g., upon the development of a distributed energy resource aggregation) through day-ahead scheduling and real-time energy imbalance.

32. PG&E suggests that CAISO modify proposed section 4.17.4 to provide that the applicable utility distribution company or metered subsystem affirmatively certify that the aggregation meets the relevant tariff requirements for participation and does not pose a threat to the safe and reliable operation of the distribution system.²⁸ PG&E adds that the thirty (30) day review period may not provide sufficient time for the utility distribution company or metered subsystem to provide this assessment and suggests that the business practice manual establish the time frame for this review.

b. CAISO Answer

33. In response to MicroGrid Coalition's comment, CAISO explains that demand response resources may participate in the CAISO markets as reliability demand response and proxy demand response or may elect to participate in a distributed energy resource aggregation.²⁹ CAISO adds that its proposed framework will support participation by dispatchable load in a distributed energy resource aggregation (e.g., a pump load that is capable of increasing or decreasing its consumption), but distributed energy resources in an aggregation must provide meter data for each settlement period to demonstrate performance and may not use a baseline methodology. CAISO reiterates that demand response resources that elect to participate in the CAISO markets as reliability or proxy demand response resources would not be eligible to participate in a distributed energy resource aggregation. CAISO explains that this restriction prevents double counting the resources' capability to provide services to the transmission system.

²⁸ PG&E Comments at 5, 9-10.

²⁹ CAISO April 11, 2016 Answer at 16 (CAISO Answer).

34. In response to MicroGrid Resources, CAISO clarifies that, under this proposed framework, the aggregation itself constitutes the market resource and that the aggregation must fully participate in all operating intervals rather than providing multiple services to multiple entities in addition to the CAISO markets.³⁰ CAISO points out that CAISO, CPUC and others are just beginning to address the policies and regulatory rules clarifying how distributed energy resources may potentially provide and receive compensation for many services from multiple entities; therefore, those policies and rules are not included in this initial framework.

35. With respect to measurement and verification mechanisms and monitoring of the response to CAISO dispatch instructions, CAISO agrees with EEI that these processes are essential because CAISO is responsible for financially settling the transactions from these resources.³¹ But CAISO points out that EEI has not identified any specific deficiencies or enhancements to the proposed measurement and verification processes. CAISO states that it is committed to sample meter data from an aggregation to validate whether the aggregation is responding to CAISO dispatch instructions consistent with its generator distribution factors and make its findings available to the market. CAISO states that, based on these data and findings, it may propose enhancements or refinements to its market rules for DER Providers, including telemetry requirements.

36. In response to PG&E's, SoCal Edison's and EEI's implementation concerns, CAISO reiterates that utility distribution company tariffs subject to applicable Commission or local regulatory authority jurisdiction may apply.³² CAISO notes that the proposed tariff revisions reflect an initial step toward allowing small distributed energy resources to aggregate for purposes of participating in the CAISO markets. CAISO adds that, for resources exporting power, the utility distribution company must assess how distributed energy resources may operate as part of an aggregation and whether the utility distribution company's system is sufficiently robust to accommodate that operation in response to a range of CAISO dispatch instructions. CAISO notes that the scope of this effort largely involves the business rules of the affected utility distribution company, not CAISO. CAISO states that it recognizes that utility distribution companies and local regulatory authorities may need to consider what rules and program changes are appropriate.

³⁰ *Id.* at 17.

³¹ *Id.* at 12-14.

³² *Id.* at 5.

37. CAISO argues that its work to define its operating procedures should not delay acceptance of this proposal.³³ CAISO contends that acceptance of the proposal will facilitate, and not unduly delay, implementation of the proposed DER Provider framework through appropriate operating procedures. CAISO states that it envisions that these procedures will not be static rules, anticipating an iterative process for working with affected utility distribution companies and metered subsystems to operationalize best practices. CAISO notes that it will address in its business practice manuals the other topics that PG&E highlights (such as default requirements for metering and rules for implementing distributed energy resource aggregations).

38. CAISO states that it plans on having these business practices in effect as of the requested effective date of its proposed tariff revisions.³⁴ Nevertheless, to address commenters' concerns, CAISO states that it is willing to submit an informational report on implementation efforts six (6) months after the effective date of the proposed tariff revisions. CAISO anticipates that this report will include: (1) information regarding the number of distributed energy resource aggregations that have requested to participate in the CAISO markets; (2) the status of those requests and issues identified by utility distribution companies or metered subsystems; (3) the progress of aggregations through CAISO new resource implementation process; (4) the status of changes to business practice manuals and operating procedures to implement CAISO's proposed framework; and (5) a discussion of any additional issues involving coordination between transmission and distribution service providers arising from coordinated efforts to implement CAISO's proposed framework. CAISO states that the Commission could solicit comments on that report, and, to the extent parties believe implementation gaps remain, CAISO would support convening a technical conference at that time.

39. As for day-ahead and real-time operations, CAISO states that it has initiated efforts to incorporate input from utility distribution companies on the extent of their coordination with the DER Providers.³⁵ CAISO adds that it is conducting outreach to better understand the roles and responsibilities that exist between transmission and distribution system operators, and that it anticipates incorporating the outcomes of these discussions into its operating procedures.

³³ *Id.* at 8-9.

³⁴ *Id.* at 9-10. CAISO adds that, to the extent parties believe that its business practices or operating procedures do not adequately conform to the market rules set forth in the CAISO tariff, at any time, they may initiate an FPA section 206 proceeding to seek appropriate relief.

³⁵ *Id.* at 8.

40. In response to PG&E's request that CAISO require the utility distribution company to certify that the aggregation meets the relevant utility distribution company tariff requirements, CAISO states that, as part of its business processes, it will require a prospective DER Provider to obtain from the applicable utility distribution company written confirmation of any concerns that the utility distribution company may have or written confirmation that it does not have any concerns.³⁶ Once the utility distribution company provides written confirmation that it does not have concerns with the aggregation based on criteria identified in the CAISO tariff, CAISO will commence its new resource implementation process, which will take six to seven months.

c. Commission Determination

41. We accept, subject to condition, CAISO's proposed tariff revisions establishing a DER Provider as a new type of market participant. We find that these proposed tariff revisions create a reasonable framework that will serve to increase participation and competition in CAISO's wholesale markets. Contrary to EEI's assertion, we find that CAISO's proposal includes sufficient measurement and verification protocols because each distributed energy resource will be directly metered pursuant to the applicable utility distribution company tariff. Additionally, scheduling coordinators will submit settlement-quality meter data for the aggregation for each operating interval, and scheduling coordinators will maintain records of meter data for an aggregation's individual resources for up to three years. We also note that CAISO commits to sample meter data from an aggregation to validate whether the aggregation is responding to CAISO dispatch instructions consistent with its generator distribution factors, to make its findings available to the public, and to propose any necessary market rule enhancements or refinements. We expect CAISO to abide by this commitment as necessary.

42. We find it unnecessary to direct CAISO to include in its tariff a requirement that utility distribution companies or metered subsystems affirmatively certify that their aggregation meets the relevant tariff requirements for participation and does not pose a threat to the safe and reliable operation of the distribution system, as PG&E suggests. CAISO's proposal already includes mechanisms to ensure that distributed energy resource aggregations adhere to the requirements of the applicable utility distribution company tariffs, such as the DER Provider Agreement certifying that the individual resources within the aggregation satisfy all applicable rules of the utility distribution company tariffs.³⁷ Further, CAISO has committed to include in its business processes that it will require a prospective DER Provider to obtain written confirmation of any

³⁶ *Id.* at 6-7.

³⁷ *See* proposed Distributed Energy Resource Provider Agreement, Article 4.1.1.

concerns that a utility distribution company may have or that it does not have any operational or reliability concerns.³⁸

43. Decisions on whether to place an item in CAISO's tariff or a business practice manual are shaped by the Commission's "rule of reason" policy,³⁹ which dictates that provisions that "significantly affect rates, terms, and conditions" must be included in the filed tariff.⁴⁰ The Commission has elaborated that it is appropriate for a business practice manual to contain "implementation details, such as instructions, guidelines, examples and charts, which guide internal operations and inform market participants of how the [public utility] conducts its operations under the ... tariff."⁴¹ The Commission has also found that the "rule of reason" test requires evaluation on a case-by-case basis, comparing what is in a tariff against what is in an unfiled business practice manual.⁴²

44. We disagree with SoCal Edison that the proposed tariff revisions are insufficient and that more discussion is needed with stakeholders prior to implementation about how coordination with the utility distribution companies is going to occur and how matters will be addressed in a timeframe consistent with market operations. We also disagree with commenters' assertion that we should delay implementation of CAISO's proposal,

³⁸ CAISO Answer at 6-7.

³⁹ See, e.g., *City of Cleveland v. FERC*, 773 F.2d 1368, 1376 (D.C. Cir. 1985) (finding that utilities must file "only those practices that affect rates and service significantly, that are reasonably susceptible of specification, and that are not so generally understood in any contractual arrangement as to render recitation superfluous"); *Public Serv. Comm'n of N.Y. v. FERC*, 813 F.2d 448, 454 (D.C. Cir. 1987) (holding that the Commission properly excused utilities from filing policies or practices that dealt with only matters of "practical insignificance" to serving customers); *Midwest Indep. Transmission Sys. Operator, Inc.*, 98 FERC ¶ 61,137, at 61,401, *clarification granted*, 100 FERC ¶ 61,262 (2002) ("It appears that the proposed Operating Protocols could significantly affect certain rates and services and as such are required to be filed pursuant to Section 205.").

⁴⁰ *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076, at P 656 (2007) (citing *ANP Funding I, LLC v. ISO-NE*, 110 FERC ¶ 61,040, at P 22 (2005); *Prior Notice and Filing Requirements Under Part II of the Federal Power Act*, 64 FERC ¶ 61,139 at 61,986-89 (1993), *order on reh'g*, 65 FERC ¶ 61,081 (1993)).

⁴¹ *Cal. Indep. Sys. Operator Corp.*, 122 FERC ¶ 61,271, at P 16 (2008).

⁴² *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1370 (2006), *order on reh'g*, 119 FERC ¶ 61,076, *order on reh'g*, 120 FERC ¶ 61,271 (2007).

pending the completion of the business practice manual provisions related to this filing. Based on our analysis of CAISO's proposal, except for the two items identified below,⁴³ we find that the proposed tariff revisions already contain the provisions governing the terms and conditions for DER Providers participating in the CAISO markets and that CAISO appropriately intends to place the remaining implementation details in its business practice manual. Accordingly, except for the items identified below, we will not require CAISO to place additional implementation details in its tariff. If, during the process of developing the relevant business practice manual, CAISO identifies any necessary additions to its tariff, it may propose them in a subsequent filing pursuant to FPA section 205. While we decline to delay implementation of the proposal, we emphasize CAISO's commitment to conduct outreach to better understand the roles and responsibilities that exist between transmission and distribution system operators, and incorporate the outcomes of those discussions into its operating procedures.

45. We find that it is unnecessary to hold a technical conference at this time to examine, scope and prioritize implementation issues. However, as proposed by CAISO, we direct CAISO to submit an informational report on implementation efforts six (6) months after the effective date of the proposed tariff revisions, which will include, but not necessarily be limited to, the following: (1) information regarding the number of distributed energy resource aggregations that have requested to participate in the CAISO markets, (2) the status of those requests and issues identified by utility distribution companies or metered subsystems, (3) the progress of aggregations through CAISO's new resource implementation process, (4) the status of changes to business practice manuals and operating procedures to implement CAISO's proposed framework, and (5) a discussion of any additional issues involving coordination between transmission and distribution service providers arising from coordinated efforts to implement CAISO's proposed framework. In response to PG&E's concern, we also direct CAISO to include in that report whether the thirty (30) day review period is sufficient for the utility distribution company or metered subsystem to assess whether an aggregation meets the relevant tariff requirements for participation and does not pose a threat to the safe and reliable operation of the distribution system. We note that, if parties believe that CAISO's business practices or operating procedures do not adequately conform to the market rules set forth in the CAISO tariff, they may initiate an FPA section 206 proceeding to seek appropriate relief.

⁴³ See *infra* P 64.

2. Rules Governing Participation in CAISO Markets

46. As noted above, CAISO proposes numerous rules governing the participation of DER Providers in CAISO's markets.

a. Comments

47. SoCal Edison argues that it is appropriate for the interconnection of resources intending to sell directly into CAISO wholesale markets to occur under (or convert to) the wholesale distribution access tariff (WDAT) of the applicable utility distribution company.⁴⁴ SoCal Edison contends that, because the Commission has jurisdiction over generator interconnection agreements for all resources interconnected to the utility distribution companies' distribution system for purposes of making wholesale sales (except for certain qualifying facilities (QFs)), all distributed energy resources (QFs and non-QFs) participating in a third-party aggregation will need to be interconnected under the applicable WDAT.

48. SoCal Edison adds that, if the proposal that distributed energy resource providers comply with the requirements of the local regulatory authority is intended to reflect interconnection requirements, then the reference is confusing and should be deleted and replaced with references to the WDAT.⁴⁵ SoCal Edison asserts that behind-the-meter resources selling to a third party must interconnect under the applicable WDAT. If the Commission believes that aggregated generators can participate in the CAISO wholesale markets through the CPUC's Rule 21 state-jurisdictional interconnection process, SoCal Edison asks the Commission to expressly allow jurisdictional utility distribution companies to accommodate this approach by finding that no Commission-jurisdictional interconnection agreement is necessary if interconnection service is provided pursuant to state jurisdiction. SoCal Edison asserts that the requirement that the DER Provider comply with the applicable utility distribution company tariff and operating procedures and applicable requirements of the local regulatory authority is confusing. SoCal Edison acknowledges that a distributed energy resource will need to abide by applicable CPUC requirements related to any retail service to its end-use load but argues that such retail service does not need to be addressed in CAISO's tariff.

⁴⁴ SoCal Edison Comments at 2, 4-5.

⁴⁵ SoCal Edison Comments at n.10, 5-6, 8.

49. SolarCity disagrees with SoCal Edison, noting that not all distributed energy resource configurations require usage of the WDAT.⁴⁶ SolarCity asserts that CAISO's proposal provides a more streamlined process than the WDAT. SolarCity argues that requiring the use of the WDAT would impose unnecessary burdens for behind-the-meter resources such as storage, impose fees which would make participation uneconomic for certain resources, and create jurisdictional uncertainty.

50. PG&E argues that CAISO's proposal lacks an explicit means for a local regulatory authority to provide feedback to CAISO regarding whether it has modified its rules and tariffs to adequately address the jurisdictional and local reliability issues that arise from distributed energy resource aggregations' participation in the CAISO markets.⁴⁷ As an example, PG&E states that the proposal may allow a behind-the-meter energy storage resource to charge at a wholesale rate and discharge to serve retail load in contravention of CPUC rules.

51. PG&E argues that CAISO's proposal does not explain how CAISO will ensure that aggregated distributed energy resources respond according to their generation distribution factors.⁴⁸ PG&E acknowledges that the proposed tariff revisions retain CAISO's right to audit a distributed energy resource aggregation and the associated individual resources, but PG&E asks the Commission to require CAISO to establish more specific conditions in its tariff to ensure the individual resources within a distributed energy resource aggregation are responding consistent with the generation distribution factors provided in the market bids. Specifically, PG&E requests that CAISO specify triggering mechanisms, the frequency of audits, and penalties for a DER Provider failing to perform according to its submitted generation distribution factors.⁴⁹ PG&E argues that these audit reports promote transparency and mitigate stakeholder concerns regarding market inefficiencies. PG&E requests that CAISO file quarterly compliance filings documenting audit findings for a three-year period.

52. PG&E also comments that CAISO's pricing methodology is not captured in the tariff revisions, and asks the Commission to require CAISO to modify its tariff accordingly.⁵⁰

⁴⁶ SolarCity April 25, 2016 Comments at 4-5.

⁴⁷ PG&E Comments at 6-8.

⁴⁸ *Id.* at 4, 13.

⁴⁹ *Id.* at 13-14.

⁵⁰ *Id.* at 5, 14.

b. CAISO Answer

53. CAISO states that it opposes incorporating into its tariff a rule that all distributed energy resources seeking to participate in the CAISO markets through an aggregation must use WDAT interconnection service.⁵¹ CAISO states that the WDAT may not apply to all resources, such as a dispatchable demand response resource that either consumes more or less power based on dispatch instructions issued to a distributed energy resource aggregation. CAISO states that, for this reason, providing more general language referring to the applicable interconnection requirements of a utility distribution company or metered subsystem in the CAISO tariff is the appropriate approach. CAISO explains that its proposed tariff rules recognize that distributed energy resources participating in an aggregation must adhere to applicable utility distribution company interconnection tariffs. CAISO states that its tariff does not specify that the utility distribution company WDAT applies because, if the WDAT rules apply, they do so of their own force and effect.

54. CAISO also objects to SoCal Edison's suggestion that proposed CAISO tariff section 4.17.2(b) should specify that distributed energy resources seeking to participate in the CAISO markets through an aggregation must comply with "applicable tariffs and operating procedures incorporated therein pertaining to interconnection to any wholesale usage of the distribution system of the utility distribution company."⁵² CAISO notes that this language incorrectly attempts to characterize all distributed energy resources as requiring interconnection service under the WDAT.

55. CAISO argues that PG&E's recommendation regarding certification from the local regulatory authority is vague, unclear, and unnecessary.⁵³ CAISO asserts that the recommendation does not adequately define what constitutes "relevant jurisdictional issue" or "appropriate protections" and would effectively impede efforts to integrate aggregations of distributed energy resources into the CAISO markets. CAISO adds that it has already proposed mechanisms to ensure that aggregations of distributed energy resources seeking to participate in the CAISO markets adhere to requirements of applicable utility distribution company tariffs and requirements of local regulatory authorities. CAISO adds that PG&E seeks to place a requirement on local regulatory authorities that no local regulatory authority has sought or supported.

⁵¹ CAISO Answer at 2-3.

⁵² *Id.* at 3.

⁵³ *Id.* at 11-12.

56. CAISO states that it believes that PG&E's concerns regarding behind-the-meter energy storage resources illustrate the importance of retaining the language in proposed CAISO tariff section 4.17.2 that DER Providers must adhere to the requirements of local regulatory authorities.⁵⁴ CAISO states that it disagrees that the proposal might allow a behind-the-meter energy storage resource to charge at a wholesale rate and discharge to serve retail load in contravention of CPUC rules, as PG&E suggests.⁵⁵ CAISO explains that its proposed tariff revisions do not alter any rules or requirements of local regulatory authorities and importantly require DER Providers to operate consistent with any such requirement that applies.⁵⁶ CAISO adds that, to the extent those requirements change, its tariff should be flexible enough to permit the aggregation of behind-the-meter resources to participate in the CAISO markets. CAISO explains that, for that reason, the CAISO tariff is written to allow CPUC rules to evolve, without CAISO needing to modify its tariff with each such rule change.

57. CAISO asks the Commission to reject PG&E's request that CAISO include mechanisms to ensure that individual distributed energy resources within an aggregation are responding consistent with the generator distribution factors provided in the market bids.⁵⁷ First, CAISO states that, under its proposal, the aggregation – not the distributed energy resources comprising an aggregation – must respond consistent with generator distribution factors. Second, CAISO argues that imposing penalties on aggregations for failing to respond consistent with generator distribution factors would be unduly discriminatory because such penalties are not imposed on proxy demand response resources, reliability demand response resources, or physical scheduling plants when they fail to follow dispatch instructions consistent with their distribution factors.

⁵⁴ *Id.* at 4.

⁵⁵ *Id.* at 4, 12. CAISO notes that PG&E's concern that retail metering infrastructure is not in place with respect to any behind-the-meter resources that would participate in a distributed energy resource aggregation is addressed by the proposed requirement that a DER Provider comply with applicable utility distribution company or metered subsystem tariffs and operating procedures incorporated therein as well as applicable requirements of the local regulatory authority. *Id.* at 12.

⁵⁶ *Id.* at 4.

⁵⁷ *Id.* at 14.

58. CAISO also asks the Commission to reject PG&E's request that CAISO file quarterly compliance filings for three years documenting its monitoring efforts.⁵⁸ CAISO states that PG&E offers no support for the frequency of such a reporting requirement, which would be overly burdensome. However, CAISO agrees to conduct a market performance review of distributed energy resources at least once a year for three years from the date the Commission makes the proposed tariff revisions effective. CAISO proposes to make the findings of this performance review and any recommendations available to market participants on its website.

59. With respect to the wholesale prices applied to distributed energy resource aggregations, if the Commission so directs, CAISO states it is willing on compliance to clarify in its tariff that it will settle distributed energy resource aggregations at the applicable pricing node level.⁵⁹

c. Commission Determination

60. We accept, subject to condition, CAISO's proposed tariff revisions establishing the rules for DER Providers participating in the CAISO markets. We agree with CAISO and SolarCity that it would be unduly discriminatory to require all distributed energy resources to interconnect through a WDAT when the WDAT interconnection rules do not apply to some distributed energy resources, such as dispatchable demand response resources. Accordingly, we find that CAISO's proposed language is reasonable because it does not limit or expand upon the scope of entities that must interconnect through a WDAT.

61. We disagree with PG&E's request to require the local regulatory authority to certify that the local regulatory authority's rules and tariffs have been satisfactorily modified to accommodate CAISO's proposal. As CAISO states, no local regulatory authority has sought or supported PG&E's approach. We find that requiring a local regulatory authority to make such a certification is outside of our jurisdiction. We also find that PG&E's concern that CAISO's proposal may allow a behind-the-meter energy storage resource to charge at a wholesale rate and discharge to serve retail load in contravention of CPUC rules is addressed by the proposed requirement that DER Providers must operate consistent with any rules or requirements of local regulatory authorities.

⁵⁸ *Id.* at 14-15.

⁵⁹ *Id.* at 15-16.

62. We reject PG&E's request to require CAISO to modify its proposal to ensure that the individual resources within a distributed energy resource aggregation are responding consistent with the generation distribution factors provided in the aggregation's market bids. For several reasons, we disagree that an aggregation deviating from its generation distribution factors will harm distribution reliability. First, before an individual distributed energy resource can participate in the wholesale market, the utility distribution company will study the resource's impact on reliability for a range of output scenarios during the distribution-level interconnection process. Second, CAISO's proposal requires that the DER Provider adhere to any operational limits established by the utility distribution company in dispatching the distributed resources within its aggregation. Finally, utility distribution companies will be able to monitor the performance of the individual resources firsthand because the individual resources will be directly metered.

63. We also reject PG&E's request to require CAISO to assess penalties for an aggregation that fails to respond to dispatch instructions in a manner consistent with its generation distribution factors. We agree with CAISO that this practice would be unduly discriminatory given that proxy demand response resources, reliability demand response resources, and physical scheduling plants are not penalized in this manner. We also reject as overly burdensome PG&E's request that CAISO file quarterly compliance filings for three years, documenting its monitoring of the aggregations. However, as suggested by CAISO, we direct CAISO to conduct market performance reviews of distributed energy resources on at least an annual basis for a period of three years after the effective date of the proposed tariff revisions and to make the findings of this performance review and any recommendations available to market participants on the CAISO website.

64. Additionally, we note that, while CAISO's proposal as described in the transmittal letter provides that a DER Provider who fails to follow a dispatch instruction will face financial penalties in the form of uninstructed imbalance energy, no such provision exists in CAISO's proposed tariff revisions. Similarly, as pointed out by PG&E, CAISO's proposed tariff revisions do not contain its pricing methodology for single and multiple node aggregations. Consistent with the requirement in the "rule of reason" that provisions which "significantly affect rates, terms, and conditions" must be included in the tariff, we direct CAISO to submit a compliance filing within thirty (30) days of the date of this order, revising its tariff to include (1) language stating that CAISO will impose uninstructed imbalance energy charges on a DER Provider who fails to follow a dispatch instruction and (2) its pricing methodology for both single and multiple node aggregations.⁶⁰

⁶⁰ *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076, at P 656 (2007) (citing *ANP Funding I, LLC v. ISO-NE*, 110 FERC ¶ 61,040, at P 22 (2005)).

The Commission orders:

(A) CAISO's proposed tariff revisions are hereby accepted, subject to condition, to become effective June 3, 2016, as discussed in the body of this order.

(B) CAISO is hereby directed to submit a compliance filing within thirty (30) days of the date of this order, as discussed in the body of this order.

(C) CAISO is hereby directed to conduct market performance reviews of distributed energy resources on at least an annual basis for a period of three years after the effective date of the proposed tariff revisions, as discussed in the body of this order.

(D) CAISO is hereby directed to submit an informational report on implementation efforts six (6) months after the effective date of the proposed tariff revisions, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.