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LSA RESPONSE TO
CEC NOTICE AND REQUEST FOR COMMENT
ON THE PROPOSED SCOPE FOR
THE DRAFT RENEWABLES PORTFOLIO STANDARD ELIGIBILITY GUIDEBOOK, TENTH EDITION

November 1st, 2024

The Large-scale Solar Association (LSA) very much appreciates this opportunity to comment on the California Energy Commission (CEC or Commission) "Notice and Request for Comment on the Proposed Scope for the draft Renewables Portfolio Standard Eligibility Guidebook, Tenth Edition" (Tenth Edition).

Much has changed since the 2017 issuance of the current guidebook (Ninth Edition), and LSA strongly supports the CEC's efforts to update this important publication. LSA's comments cover these topics in the proposed update:

- **Information submittal process (entire document):** LSA supports the proposed e-mail transmission option for materials and data.
- **Metering (Chapter 3.A.2):** LSA supports the proposed update for ANSI standards and use of certified DC meters. In addition, the CEC should include properly reviewed and approved alternatives to standard metering, such as subtractive metering for Mixed-Fuel Resources (MFRs) and other options under the CAISO's Settlement Quality Meter Data (SQMD) procedure.
- **Energy storage (Chapter 3.F):** LSA supports the proposed clarification that "RPS-eligible generation is not impacted by the use of an energy storage device under certain project configurations." Specifically, as described in LSA's earlier comments on the February 8th, 2022 CEC workshop on possible Ninth Edition revisions, the Commission should:
  - Update the Ninth Edition to recognize now-common Mixed Fuel Resource (MFR) configurations, for combined solar-storage and wind-storage projects.
  - Find that "round-trip losses" (RTLs, from potential energy injection into storage, and later withdrawal and injection into the grid) should not be subtracted from RPS-eligible solar or wind energy for Co-located Resource (CLR) MFR configurations (separate Resource IDs for each fuel type).
  - Consider also removing the current provision requiring subtraction of RTLs from RPS-eligible solar or wind energy in Hybrid Resource (HR) MFR configurations (single Resource ID for both fuel types).

As indicated, the second and third main points above – concerning metering and energy storage – are closely related to the development in recent years of MFRs. Thus, LSA's more detailed comments below begin with background information about MFRs and their importance in meeting California's ambitions renewable-energy goals, and then address the specific proposed Tenth Edition modifications.

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Mixed-Fuel Resources – background

CAISO tariff Appendix A defines an MFR as "A Generating Facility with components that use different fuel sources or technologies, participating as a Hybrid Resource or Co-located Resources." (The HR vs. CLR configuration issue is addressed below, under Chapter 3.F issues.)

MFRs most commonly combine an Eligible Renewable Facility (ERF) with a Battery Energy Storage System (BESS) into a single project, with a single interconnection queue position, generation tie line, and position at the interconnection substation, and often sharing the same Interconnection Service Capacity (ISC – maximum capacity at the Point of Interconnection (POI)). For example, a common design might include 100 MW of solar capacity with a 100 MW/400MWh BESS, sharing a gen-tie and substation position with 100 MW of interconnection capacity.

Solar-storage resource combinations are the most common MFR structures, and given LSA's interest in solar-energy development, these comments focus on those mixes. However, other combinations also exist and/or are proposed (e.g., wind-storage), and these comments would largely apply to those as well.

The ongoing transition to the California Public Utilities Commission (CPUC) "Slice-of-Day" (SOD) framework has made MFRs even more attractive to Load-Serving Entities (LSEs) in their procurement activities. SOD rules require LSEs to demonstrate that they have acquired sufficient energy to charge their procured BESS capacity in order for the BESS to count fully for Resource Adequacy (RA) compliance purposes.

Under SOD, energy generated in the same location as BESS capacity need not have CAISO-determined Full Capacity Deliverability Status (FCDS) in order to count as charging energy (as the energy can be delivered to the BESS without the use of the transmission system). Energy from other locations, which must use the grid to be delivered to a BESS, cannot count as charging energy unless it has FCDS, which is scarce and can be difficult to acquire.

There are tens of thousands of MFR MWs in the CAISO Generator Interconnection Queue. Their development (including the storage element) will help California to achieve its ambitious renewable energy goals by providing benefits such as: (i) smoothing the output of intermittent resources; (ii) energy availability, to serve net peak load when renewable generation is unavailable; and (iii) providing ancillary services, to support grid reliability. Individual project sizes can reach several thousand MW each.

It's important to note that MFR projects are already coming on-line in California. Power Purchase Agreements (PPAs) to financially enable these projects were executed years in advance; it is very important that the CEC actions here not retroactively disrupt those arrangements or otherwise cause a loss of value to projects already operating, or far advanced in the development process.

Metering – Chapter 3.A.2

Chapter 3.A.2 currently states as follows:

> Generation from an RPS-certified facility shall be measured using a meter or meters with an independently verified accuracy rating of ±2 percent or better to be counted for the RPS. Any electricity considered for

the RPS, including electricity from any additions or enhancements to a facility, must be measured by the same meter or meters used to report generation to WREGIS.

An applicant must ensure that the facility is using appropriate metering as required by this Guidebook and WREGIS before applying for RPS certification. Additional metering at the facility may be required if the existing metering system does not conform to the requirements of this Guidebook and WREGIS.

LSA suggests that the Commission clarify that determination of RPS-eligible energy production using algorithms based on data from approved metering, or other legitimate methods, is acceptable.

For example, MFRs may have an overall project meter for at the POI and another meter for the BESS. It should be acceptable for the WREGIS Qualified Reporting Entity (QRE) to report the solar energy production by subtracting the BESS meter reads from the overall project meter reads.

Broadening this concept, the CAISO has a procedure that allows Scheduling Coordinators to propose any method of calculating meter data after CAISO review and approval of a Settlement Quality Meter Data Plan.[1] The Commission should clarify that determination of RPS-eligible energy through approved SQMD Plans is acceptable.

Energy storage (Chapter 3.F)

The CAISO has made significant tariff changes, described further below, to accommodate MFR development. The Commission should now do the same, by updating the Ninth Edition to address two MFR-related issues:

- **MFR configurations**, where the Ninth Edition illustrations and examples do not reflect modern MFR project designs; and

- **Treatment of "round-trip losses" (RTLs)** – energy lost when ERF energy in an MFR charges the BESS and then is later discharged onto the electrical grid. The current Ninth Edition provisions are unclear, and they have the potential to impose RTL treatment inequities between MFRs and ERFs/BESSs with separate grid interconnections.

  The best way to avoid these inequities is to remove RTL subtraction provisions from the Ninth Edition entirely. At a minimum, the CEC should confirm the CAISO's current interpretation of the Ninth Edition provisions, i.e., that the RTL provisions do not apply to certain MFR configurations, as described below.

LSA provides below the reasons for these recommendations, and then responds to the specific questions posed by the CEC staff.

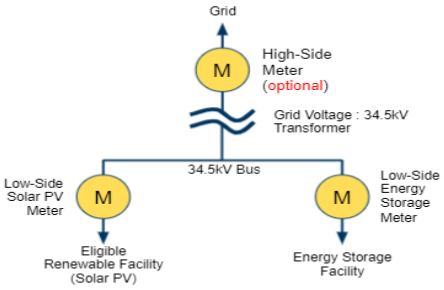
[1] See: (1) Operating Procedure 5750 (Settlement Quality Meter Data (SQMD) Plan – Submission and Approval Process), posted here: https://www.caiso.com/documents/5750.pdf; and (2) SQMD Plan Template, posted here: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.caiso.com%2Fdocuments%2Fsqmdplantemplate.docx&wdOrigin=BROWSELINK.

Ninth Edition updates for MFR configurations

MFRs are being developed in two main configurations, recently included in the CAISO Tariff as a result of the Hybrid Resources Stakeholder Initiative Process:

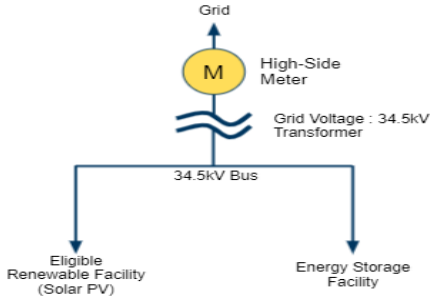
- **Co-located Resources (CLRs)**, where the ERF and BESS are separately metered, scheduled, dispatched, and settled, under separate Resource IDs for each fuel type. The configuration and metering requirements are shown below. (Note that the overall project meter is optional, based on CAISO rules.)

Co-located Resource Configuration



- **Hybrid Resources (HRs)**, where the ERF and BESS are jointly metered, scheduled, dispatched, and settled, under a single Resource ID.

Hybrid Resource Configuration



The CLR configuration is more common for many reasons, including retention of Variable Energy Resource (VER) treatment for the ERF under the CAISO tariff. (ERFs in the CLR configuration lose their VER status.) More fundamentally, though, the CLR configuration reflects the separate nature of the ERF and BESS resources themselves for these projects, in three important respects.

First, while MFR CLRs often share interconnection capacity and equipment, they are otherwise operated as completely separate facilities, i.e., one is not an "enhancement" of the other, as implied in the Ninth Edition. They are separate resources in the CAISO Master File, they are bid separately into CAISO markets, they receive separate schedules and real-time Dispatch Instructions, and they are settled financially through separate payments and revenues.

Second, the ERF and BESS facilities can be owned separately, through different Limited Liability Companies (LLCs), and they can have different financing structures and tax investors as well.

Finally, the ERF and BESS facilities can also be contracted under separate PPAs, to the same or different off-takers. Moreover, the ERF attributes (energy, RECs) and BESS attributes (Resource Adequacy, operational attributes) may be contracted separately.

Ninth Edition updates for treatment of Round-Trip Losses

The Ninth Edition provides (at p.41) that:

> Any losses from energy storage must be subtracted or netted from the generation of an eligible renewable facility… a facility that has an energy storage device may count only the generation that is exported to the grid. If there are losses from energy storage, the amount of generation will be subtracted from the generation produced by the facility. For example, a facility that generates 100 MWh a day but loses 1 MWh from energy storage will count only 99 MWh for the facility.

The Ninth Edition uses the term "facility" to mean different things, leading to lack of clarity in determining RTL treatment. For example, the ERF capacity is referred to as a "facility," but that term is also used to encompass an entire solar-storage project. Other unclarities include the fact that the term "additional electricity" injections could include imports from the grid, even though the Grid is separately labeled in another area.

Thus, the Ninth Edition should be modified, at a minimum, to clarify the word "facility" and other terms, in addition to the other changes recommended below.

Current CAISO RTL guidance

Given the lack of clarity in the Ninth Edition, developers and others in CAISO markets have naturally relied on guidance from the CAISO. There is little written documentation from the CAISO on RTL treatment, but this topic has been extensively discussed in CAISO stakeholder meetings and is apparent from CAISO actions in its role as a QRE for REC reporting to WREGIS. Private discussions with CAISO experts have confirmed the CAISO's interpretations of the current Ninth Edition rules.

Current CAISO RTL treatment for CLRs (two Resource IDs)

CAISO systems (Master File and Full Network Model) treat the separate CLR Resource IDs as entirely separate facilities or "resources," with certain exceptions that allow them to share the combined MFR interconnection capacity. For CLRs, the CAISO reports the ERF output to WREGIS based on the ERF Resource ID meter read, i.e., **without** RTL subtraction.

This treatment reflects the CAISO's stated position that the separate ERF and storage Resource IDs are separate "facilities" under the Ninth Edition, i.e., completely separate projects for that purpose. Effectively, the CAISO treatment (as reflected in market financial settlements) assumes that, for CLRs, all ERF energy reaches the grid, and all BESS energy comes from the grid, even though the tax treatment reflects the physical charging of the BESS by the ERF.

Current CAISO RTL treatment for HRs (one Resource ID)

The CAISO has stated its belief that the Ninth Edition requires, for HRs, subtracting RTLs from ERF measured output before reporting to WREGIS. Consistent with that position, our understanding is that the CAISO will not even act as a QRE for HRs, because its systems are not set up to perform RTL subtraction calculations.

In other words, the CAISO position is that consolidation of the ERF and BESS into one Resource ID means that they are in the same "facility" per the Ninth Edition.

Equitable RTL treatment for all resources

LSA believes that the CEC should confirm compliance of the CAISO MFR CLR treatment with CEC rules, and apply that treatment to MFR HRs as well.

LSA understands the issues involved with RTLs, i.e., they represent ERF-generated energy that does not physically reach the grid. However, any discussion of equitable treatment must:

- Start with treatment of stand-alone ERFs and BESSs connecting at the same or nearby locations; and
- Recognize the substantial interconnection economic and efficiency benefits provided by MFRs.

RTL treatment of stand-alone ERFs/BESSs vs. MFRs

Where stand-alone ERF and BESS projects connect independently (i.e., under separate interconnection queue positions) at the same or nearby locations, it's very likely that, physically, the BESS would be charged by the ERF to the same or similar degree as it would be within an MFR connecting at that location. The ERF would have the same generation patterns, supplemented by the BESS in the same manner. Low prices resulting from plentiful ERF generation would occur at the same times, incenting BESS charging at about those same times.

In other words, the ERF generation is just as likely to reach consumers on the larger grid, or not. The stand-alone ERF at that location would receive RECs without any subtraction, while the ERF connecting at that same location as part of an MFR may (depending on interpretation of the Ninth Edition rules) may receive fewer RECs as a result of RTL subtraction where the energy is stored in the BESS first.

LSA believes that this disparate treatment would be contrary to state policy goals. As described above, there is little or no substantive reason to subject ERFs within MFRs to RTL subtraction when stand-alone facilities are not. Moreover, by sharing interconnection facilities between an ERF and BESS, MFRs, compared to stand-alone projects:

- **Lower costs to ratepayers** by sharing interconnection facilities like gen-ties (and associated costs); and
- **Make more efficient use of scarce interconnection capacity** – e.g., substation positions – thus lowering interconnection costs for all resources at that location through avoidance of unnecessary substation construction and expansion.

Thus, LSA recommends that the discriminatory treatment of MFRs be eliminated, and the RTL subtraction provisions be removed from the Ninth Edition entirely.

RTL treatment of MFR CLRs vs. HRs

As discussed above, the CAISO – a significant QRE – does not subtract RTLs from ERF production for purposes of WREGIS reporting for MFR CLRs, but it believes that such subtraction is required for MFR HRs. At a minimum, the CEC should affirm the CAISO's interpretation, based on the

Substantively, there is no apparent reason why HRs should be treated differently from CLRs, i.e., why RTLs should be subtracted from ERF production for WREGIS reporting purposes. The CPUC has recognized that the behavior of projects would be largely the same in either configuration by adopting the same Resource Adequacy Qualifying Capacity (QC) methodology for MFRs with ITC recovery limitations, regardless of configuration.

Conclusions concerning storage and MFRs (Chapter 3.F)

LSA recommends that the CEC revise the Ninth Edition to do the following:

- Reflect more modern MFR designs actually used in the market today; and
- Rescind the current RTL subtraction provisions for MFRs generally or, at a minimum, affirm the CAISO's interpretation that they do not apply to MFRs in a CLR configuration.

In making this determination, the Commission should understand that PPAs executed to date for MFR CLRs do not typically account for energy losses from storage in their payment for solar energy. Compensation for the ERF facility is typically volumetric and, given the lack of specific guidance from the Ninth Edition, the expected and minimum production targets do not reflect round-trip losses, i.e., parties have been relying on the CAISO interpretation for CLRs.