DOCKETED	
Docket Number:	21-RPS-02
Project Title:	Renewables Portfolio Standard 10th Edition Guidebook Update
TN #:	241612
Document Title:	SCPPA Comments on February 8th RPS Workshop
Description:	N/A
Filer:	System
Organization:	Southern California Public Power Authority
Submitter Role:	Public
Submission Date:	2/22/2022 2:40:29 PM
Docketed Date:	2/22/2022

Comment Received From: Southern California Public Power Authority
Submitted On: 2/22/2022
Docket Number: 21-RPS-02

SCPPA Comments on February 8th RPS Workshop

Additional submitted attachment is included below.

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February 22, 2022 | Submitted electronically

California Energy Commission
Docket Unit, MS-4
Docket No. 21-RPS-02
715 P Street
Sacramento, CA 95814

RE: February 8th Workshop on RPS Requirements for Energy Storage

The Southern California Public Power Authority[1] ("SCPPA") appreciates the opportunity to provide feedback on the California Energy Commission's (CEC) February 8th workshop[2] on the Renewables Portfolio Standard (RPS) requirements for energy storage.

SCPPA supports the CEC's efforts to review the treatment of energy storage in the Renewables Portfolio Standard Eligibility Guidebook ("RPS guidebook") and believes this workshop is timely. Since the CEC added energy storage provisions to the RPS guidebook, and even since the CEC's last guidebook update, there have been significant policy changes and technological advancements in the state's energy landscape.

Energy storage, especially long-duration energy storage, is poised to play a critical role in maintaining reliability and keeping costs affordable for ratepayers as California works to achieve the 100% clean energy policy codified in Senate Bill (SB) 100 (De León, Chapter 312, Statutes of 2018). However, the current treatment of energy storage losses in the RPS guidebook has the detrimental effect of penalizing renewable facilities paired with energy storage, thereby potentially increasing RPS compliance costs. This effect may become more pronounced as long-duration storage technologies, key for balancing the grid in a high renewables future, may have lower roundtrip efficiencies than the commercial technologies currently available.

SCPPA recommends that the CEC reconsider the current guidebook requirements that net out RECs associated with energy storage losses instead of developing an accounting methodology to verify losses. Specifically, in instances where an eligible renewable energy resource is paired with storage, SCPPA urges the CEC to allow metering in front of the renewable resource and count all RECs associated with the metered generation as RPS

[1] SCPPA is a joint powers authority whose members include the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, and Vernon, and the Imperial Irrigation District. Each Member owns and operates a publicly-owned electric utility (POU) governed by a board of local officials. Our Members collectively serve nearly five million people throughout Southern California. Together they deliver electricity to over two million customers throughout Southern California, spanning an area of 7,000 square miles.

[2] https://www.energy.ca.gov/event/workshop/2022-02/staff-workshop-rps-requirements-energy-storage-devices

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eligible. SCPPA provides the feedback below in response to the questions posed by staff at the February 8th workshop:

How is the energy landscape changing as a result of energy storage?

Energy storage is poised to play a key role in balancing the grid and reducing costs as utilities procure increasing quantities of renewable energy to meet their RPS requirements and achieve the state's 100% clean energy goals. Lithium-ion battery technology has improved substantially in recent years and can help complement intermittent generation from solar and wind energy resources, but the current technology is limited to shifting generation for only a short duration. Emerging technologies like long-duration energy storage, paired with renewable facilities, can help bridge the gap and ensure RPS-eligible (or zero-carbon) generation can meet retail electricity demand even during hard-to-serve hours of the year.

In 2013, when the CEC addressed the eligibility of energy storage in the seventh edition of the RPS guidebook,[3] utility-scale storage was still a nascent technology. At that time, the CEC had not received any applications including energy storage but anticipated the growing role energy storage would play. When the CEC further clarified the treatment of storage in January 2017,[4] there were still no approved certification applications for a renewable resource paired with storage. However, as indicated in slide 5 of staff's February 8th workshop presentation,[5] applications that include storage have surged in recent years, reflecting technology advancements and largely falling costs for lithium-ion batteries.

In recent years, the state has repeatedly recognized the important role that energy storage will play in achieving RPS and zero-carbon generation goals. In 2018, SB 100 increased the RPS procurement requirements to 60% by 2030 and established a new policy for California to serve 100% of retail sales with RPS-eligible and zero-carbon resources by 2045. The 2021 SB 100 Joint Agency Report[6] found that both renewable resource and storage build rates would need to increase dramatically to achieve the 100% clean energy policy. The report also found that "[l]onger duration storage technologies, such as advanced batteries, thermal energy storage, liquid air storage, and compressed air storage, can support reliability and further promote achievement of SB 100 goals."

[3] *Renewables Portfolio Standard Eligibility Guidebook, Seventh Edition.* https://efiling.energy.ca.gov/getdocument.aspx?tn=70867.

[4] *Renewables Portfolio Standard Eligibility Guidebook, Ninth Edition*. https://efiling.energy.ca.gov/getdocument.aspx?tn=215573.

[5] February 8th workshop presentation, https://efiling.energy.ca.gov/GetDocument.aspx?tn=241449&DocumentContentId=75406.

[6] CEC, California Public Utilities Commission, California Air Resource Board, *Achieving 100 Percent Clean Electricity in California: An Initial Assessment* ("SB 100 Joint Agency Report"), https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349

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Last September's SB 100 Priority Actions Report[7] reaffirmed the importance of long-duration energy storage in achieving the 100% clean energy policy and recommended the use of non-ratepayer funds to "accelerate the deployment and scale up" of long-duration storage and other emerging technologies. This importance is also recognized in Governor Newsom's proposed budget this year, which includes $380 million for early-stage deployment of long-duration storage projects.

What does procurement look like for renewable facilities paired with energy storage? Do contracts account for energy losses from storage?

The advent of utility-scale renewable resources paired with storage is still relatively new, as noted above. Until recently, the cost of lithium-ion batteries was cost prohibitive for many POUs. On behalf of its Members, SCPPA executed a power purchase agreement (PPA) in 2019 for utility-scale solar paired with a battery energy storage system (BESS). SCPPA recently approved a second PPA and is also in negotiations for a third paired solar and storage project. Although the contract structures may differ by project, both of SCPPA's PPAs account for BESS losses. SCPPA's participating Members will be entitled to receive all RECs associated with the solar generation and will be obligated to pay, expressly or implicitly, for the generation that was subsequently lost due to the roundtrip efficiency of the BESS.

SCPPA's first PPA, a 25-year agreement including a purchase option, is for a 400 MW solar facility paired with a lithium-ion BESS. That project is expected to achieve commercial operations late next year. Participating Members will pay a bundled dollars-per-kWh ($/kWh) price for all delivered energy from the solar facility through the BESS. The metering configuration for the project is consistent with the hybrid resource (Scenario A) on slide 9 of staff's February 8th workshop presentation, so SCPPA Members will not receive RECs associated with generation that is subsequently lost due to the battery roundtrip efficiency. However, SCPPA's Members are still procuring the full output of the solar facility, regardless of BESS losses, and are in fact contractually obligated to pay the developer the same amount for those losses as for the energy received at the delivery point. In other words, SCPPA Members are paying for the full output of the renewable facility, including the environmental attributes, even though they do not receive the full benefit of that output. If SCPPA exercised its purchase option for the facility, our Members would similarly have to absorb BESS losses as part of the cost of ownership.

SCPPA's second PPA, approved earlier this year, is for a 65 MW solar facility paired with a lithium-ion BESS. This facility is expected to come online by the end of next year and the configuration is consistent with a (paired) co-located resource (Scenario B) on slide 9. In this contract, because the solar and the BESS can be separately dispatched, participating SCPPA Members will pay both a dollars-per-kWh ($/kWh) price for delivered energy and a dollars-per kw-month capacity payment ($/kw-mth) for the BESS. The contract price implicitly accounts for the BESS losses and SCPPA's Members are entitled to receive all RECs associated

[7] CEC, *Report to the Governor on Priority SB 100 Actions to Accelerate the Transition to Carbon-Free Energy* ("SB 100 Priority Actions Report"), September 2021, https://www.energy.ca.gov/sites/default/files/2021-09/CEC-200- 2021-008.pdf.

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with the solar generation, even though they cannot claim those associated with BESS losses as RPS eligible under the current guidebook requirements.

In both PPAs, by pairing storage with solar in accordance with the current RPS guidebook requirements, SCPPA's Members are required to pay for all generation and associated RECs produced by the solar resource but do not receive the full benefits. SCPPA believes the net effect of this treatment could be increased RPS compliance costs.

What impacts do current RPS requirements have on storage development?

At the February 8th workshop, several commenters noted that the current RPS requirements for energy storage may make storage paired with renewable resources less attractive than standalone storage. There may be cost and land-use efficiencies associated with sharing the same gen-tie; moreover, the current investment tax credit (ITC) eligibility requirements incent developers to pair solar and storage together. However, the current RPS requirements have the effect of penalizing hybrid or co-located resources by applying the roundtrip efficiency of the storage device to the renewable resource's generation. If a renewable resource and standalone storage device had separate gen-ties and points of interconnection, even if they were located at the same physical site ("co-located" standalone storage), all RECs associated with the full output of the renewable resource could be RPS eligible. This would come, however, at the cost of ITC eligibility and potential cost efficiencies.

State regulations and federal incentives both exist to accelerate renewable resource development; to be most effective, they should work in tandem, not opposition. Given the importance of energy storage in the state's clean energy future, SCPPA does not believe the current RPS guidebook requirements will prevent energy storage development. However, the RPS requirements may increase compliance costs as POUs are contractually obligated to pay – expressly or implicitly – for the full output of a renewable facility, including losses, even if they are unable to claim all the associated RECs. This could add rate pressures and exacerbate affordability challenges. Allowing all RECs associated with the metered generation of a renewable resource to count toward RPS compliance could help contain costs and assist with energy equity and affordability goals.

SCPPA believes the issue of increased costs will become even more important for long-duration energy storage, which will be critical for maintaining grid reliability as the state moves toward achieving the 100% clean energy policy. Several of SCPPA's Members are exploring long-duration energy storage projects, including flow batteries, compressed air storage, and thermal energy storage, which can offer more flexibility than lithium-ion batteries but have lower roundtrip efficiencies. Thus, the costs associated with storage losses may be even more significant for long-duration storage projects.

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Should the CEC develop energy storage loss accounting requirements for specific technology types, configurations, or scale?

SCPPA recommends that the CEC revise the RPS guidebook to remove the requirement to net out energy storage losses in lieu of developing an accounting methodology to verify losses.

Based on staff's presentation, SCPPA understands that depending on the metering configuration, WREGIS may issue RECs associated with generation that is subsequently lost due to the roundtrip efficiency of the storage device. SCPPA also understands that some RPS facilities have inadvertently failed to identify (paired) co-located storage in their certification applications due to confusion over the requirements. Under the current RPS guidebook requirements, SCPPA believes that CEC staff would need to verify that any RECs issued by WREGIS and associated with losses from directly connected or co-located storage are not counted for purposes of California's RPS program.

However, instead of developing an accounting methodology for storage losses, SCPPA believes the CEC should revise the current RPS guidebook to allow metering in front of the renewable resource and count all RECs associated with the metered resource output as RPS eligible. The RPS program framework is based on procurement of generation from RPS-certified resources, not energy delivered to end-use customers. To the extent that metering and the POU's contract(s) substantiate procurement of energy and RECs from the renewable resource, POUs should be allowed to receive the full benefit of this procurement. This treatment may also encourage the efficient pairing of renewable resources and storage by removing the effective penalty and working in tandem with the ITC incentive.

SCPPA submits that the CEC could make these changes within its existing guidebook authority. Nothing in the definition of an eligible renewable energy resource in Public Utilities Code section 399.12 (e) or a renewable electrical generation facility in Public Resources Code section 25741 requires energy storage losses to be netted out for purposes of RPS eligibility, nor is this required in the CEC's obligations to certify facilities as RPS eligible in Public Utilities Code section 399.25. As noted by staff, energy storage is not directly addressed in the RPS statute, and its eligibility is limited to being an addition or enhancement to an RPS-eligible resource. Moreover, the current treatment of energy storage – applying the storage losses to generation from the renewable resource – is actually a detriment to, rather than enhancement of, the renewable resource.

SCPPA also submits that the CEC is not required to net out energy storage losses as part of its responsibilities to verify and track RECs, in accordance with Public Utilities Code section 399.25 (b) and (c) and the definition of a REC. As noted above, the RPS program framework is based on contractual procurement of generated electricity, and SCPPA's position is that there is no requirement to treat storage losses any differently than line losses.

SCPPA encourages the CEC to revise the treatment of energy storage losses in the next update of the RPS guidebook. However, should the CEC instead pursue the development of a storage loss accounting methodology, SCPPA urges the CEC to, at minimum, ensure that the requirements for directly connected

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facilities address losses from both the RPS-eligible generation *and* the additional electricity that charges the storage device. Under the current guidebook, all losses would be attributed to the renewable generation, regardless of the amount of additional electricity used to charge the storage device.

Potential Topics for Next Guidebook Update

SCPPA recognizes that the February 8th workshop was focused specifically on the treatment of energy storage losses in the RPS guidebook. However, SCPPA offers the following initial suggestions for the CEC to consider when scoping the full guidebook update:

- Eligibility and requirements for hydrogen production as a storage device paired with eligible renewable energy resources like solar and wind.
- Reporting guidance and a pre-certification process for front-of-the-meter aggregates.

Conclusion

Thank you for the opportunity to provide feedback on the February 8th workshop. SCPPA looks forward to working with the CEC to address the treatment of energy storage losses and to scope additional topics for the forthcoming RPS guidebook update.