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AES Scoping Meeting on Proposed Updates for the RPS Eligibility Guidebook Comments

AES Comments

Additional submitted attachment is included below.

AES CORPORATION COMMENTS ON PROPOSED SCOPE FOR RENEWABLES PORTFOLIO STANDARD ELIGIBILITY GUIDEBOOK, TENTH EDITION

June 5, 2025

AES Corporation is grateful for the opportunity to provide input on the California Energy Commission's proposed revisions to the Renewables Portfolio Standard Eligibility Guidebook (Ninth Edition). These comments respond to the proposals presented during the May 21st workshop titled "Scoping Meeting on Proposed Updates for the RPS Eligibility Guidebook, 10th Edition."

The energy landscape has evolved significantly since the Guidebook's last major revision in 2017, making this update both timely and necessary. AES commends the Commission's initiative to modernize these guidelines, enhancing regulatory clarity for California's renewable energy developers and facility operators.

Our comments address two key areas from the workshop presentation:

Energy Storage Provisions (Item 4): AES views the proposed storage-related modifications favorably and recommends enhanced alignment with California Independent System Operator (CAISO) protocols and other relevant regulatory frameworks. While we recognize the Commission's preference for maintaining regulatory independence, improved coordination among jurisdictions would streamline compliance processes and reduce regulatory uncertainty for industry participants.

Metering Standards (Item 5): AES endorses the Commission's proposal to authorize DC metering systems and establish consistent accuracy standards across regulatory bodies. We advocate for regulatory flexibility that accommodates diverse metering approaches and calculation methodologies suitable for large-scale renewable installations with integrated storage components, provided that measurement accuracy remains verifiable and meets established standards.

The following sections provide detailed feedback on the specific components outlined in the workshop materials.

Item 4: Storage Proposal

1 -- **Diagrams/categories of energy storage**

The Commission's objective of increasing regulatory flexibility as technology advances is well-founded. However, eliminating visual aids and categorical frameworks could create unintended consequences for industry stakeholders. Project developers and facility

operators rely heavily on diagrams and classification systems to interpret regulatory requirements.

AES recommends a balanced approach that enhances rather than eliminates visual guidance.

The Guidebook should incorporate comprehensive diagrams reflecting contemporary project architectures, encompassing AC-coupled and DC-coupled Storage implementations. Additionally, the Commission should establish a streamlined mechanism allowing industry participants to propose diagram updates and modifications more frequently than the current eight-year revision cycle. Special attention should be given to illustrating various DC metering configurations, significantly benefiting project developers navigating these emerging technologies. AES provides further illustrations of various possible metering configurations.

2 – Glossary definitions related to energy storage

Enhanced definitional clarity represents a critical improvement that AES fully endorses. We recommend the Commission begin by incorporating terminology already established within CAISO's tariff framework, specifically the definitions found in Appendix A (Master Definitions Supplement) covering Energy Storage and Mixed-Fuel Resources (MFRs)—an emerging regulatory concept. Additional definitions from relevant jurisdictions should be evaluated for inclusion where they provide value.

Establishing consistent terminology across regulatory bodies would significantly streamline compliance processes for multi-jurisdictional operators like AES, reducing administrative burden while improving regulatory certainty.

3 -- Storage designated and metered separate from the facility not subject to loss accounting

The Commission's proposal to eliminate Round-Trip Loss (RTL) adjustments for storage systems with separate designation and metering warrants strong support from AES. This modification would address current inequities regarding how mixed-fuel resources are treated compared to standalone facilities.

Under the existing framework, both Co-located Resource (CLR) configurations—which maintain distinct Resource IDs and separate metering for each technology—and Hybrid Resource (HR) configurations—operating under unified Resource IDs while maintaining discrete renewable energy measurement—face disadvantageous RTL deductions that standalone projects avoid.

The requirement to subtract storage efficiency losses from renewable generation creates an unbalanced regulatory environment. Nearby standalone renewable and Storage facilities can operate without such penalties, even when renewable energy physically flows between them. Eliminating these RTL requirements would restore competitive parity and remove artificial barriers discouraging integrated renewable-storage development.

Additional Loss Accounting Considerations

AES acknowledges the Commission's intention to narrowly apply loss accounting to facility additions or enhancements while maintaining standard interconnection loss adjustments and netting requirements for eligible resource inputs. While we support the continued application of transformer and line losses to the Point of Interconnection—a standard practice that fairly assesses grid benefits—we seek clarification on the specific scope of "additions or enhancements" and "eligible resource inputs" provisions and will provide detailed feedback once the draft Guidebook becomes available. Regarding on-site renewable energy usage that would otherwise require grid supply, AES believes such energy should remain REC-eligible under proper metering protocols, as this renewable generation displaces potentially carbon-intensive grid energy and aligns with the Round-Trip Loss principle of recognizing environmental benefits.

Item 5: Metering Requirements

DC Metering Authorization and Value Adjustments

The Commission's proposal to permit DC metering systems represents a significant advancement that AES enthusiastically endorses, particularly given the critical role these systems play in our DC-coupled storage operations. Establishing DC meter acceptance with equivalent accuracy, testing, and certification standards to AC systems would address a longstanding industry need. CAISO has indicated that the ongoing evaluation of DC meter testing and certification protocols and formal commission support could accelerate these essential developments.

Concurrently, AES endorses the requirement for DC value adjustments that account for conversion losses and transformer high-side reporting, provided these align with existing practices for interconnection loss calculations and maintain consistency with WREGIS operational standards.

Enhanced Accuracy Standards

While AES supports harmonizing measurement precision requirements between regulatory bodies, the proposed ±0.5% accuracy threshold merits comprehensive evaluation beyond simple alignment. The Commission should examine the practical implications of enhanced precision standards, including equipment costs and technological feasibility for commercial-scale installations. Achieving such stringent accuracy for DC metering applications at the utility-scale presents substantial implementation challenges that may not justify automatically adopting the most restrictive available standard. AES recommends broader stakeholder dialogue to balance measurement precision with economic and technical realities while acknowledging that legacy provisions may provide necessary transition flexibility.

AES-Specific Recommendations for DC Metering Configurations

CEC's Metering Proposal

Regarding metering requirements, the CEC proposes to modernize and align standards with current industry practices by allowing DC metering for the first time, provided it meets the same accuracy, testing, and certification requirements as AC metering. The proposal would require DC meter readings to be adjusted for DC/AC conversion losses and transformer losses to align with WREGIS requirements for reporting at the high side of the transformer. Additionally, the CEC seeks to update the accuracy requirement from ±2% (established in 2012's 5th edition) to ±0.5% to match current WREGIS operating rules, though a legacy clause may be included for existing facilities. These changes address current ambiguities around DC metering acceptance and ensure that renewable facilities with DC-coupled energy storage can report generation more accurately and advantageously.

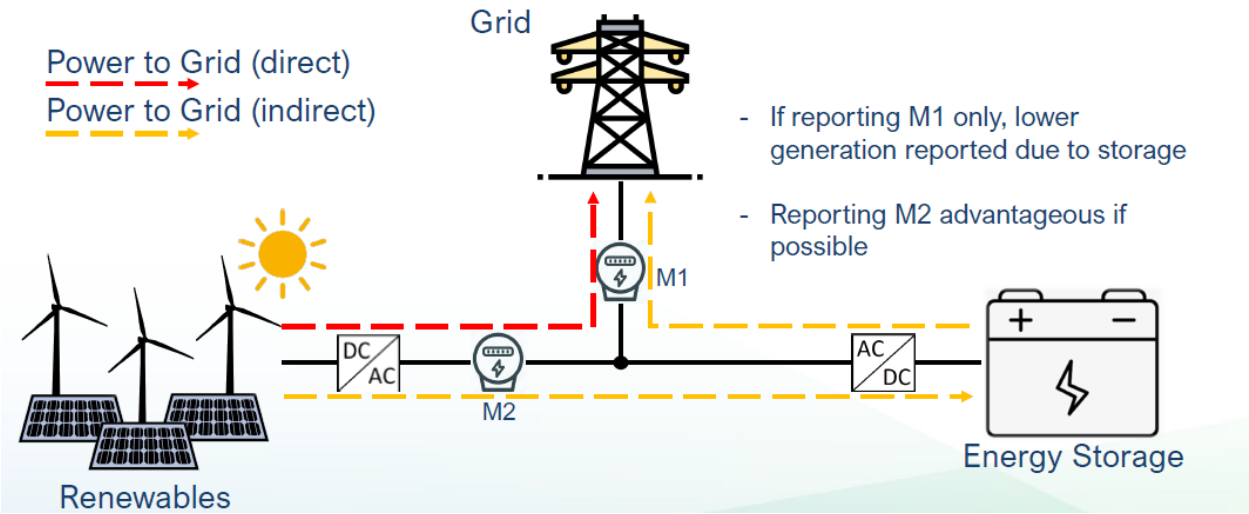
AES proposal for DC Metering

In its scoping meeting, CEC provided an example of the metering configuration for both AC-coupled and DC-coupled systems. These configurations are included in this document, shown in Figure 1 and Figure 2. CEC has proposed to allow DC metering to be used for REC reporting as long as these meet the WREGIS requirement.

AES recommends that CEC approve different metering strategies for DC-coupled sites to enable adaptability to various inverter and BESS products and varying site conditions while maintaining measurement confidence.

Option 1: Install a calibrated DC meter on the PV side in the DC bus bar, as shown in Figure 2. This is the most direct metering option but could be challenging for large-scale solar sites because it will require a large number of expensive DC meters, each requiring calibration

and maintenance. The large quantity of DC meters will also require additional integration and maintenance efforts in the site's communications network.



- *Figure 1- AC coupled energy storage*

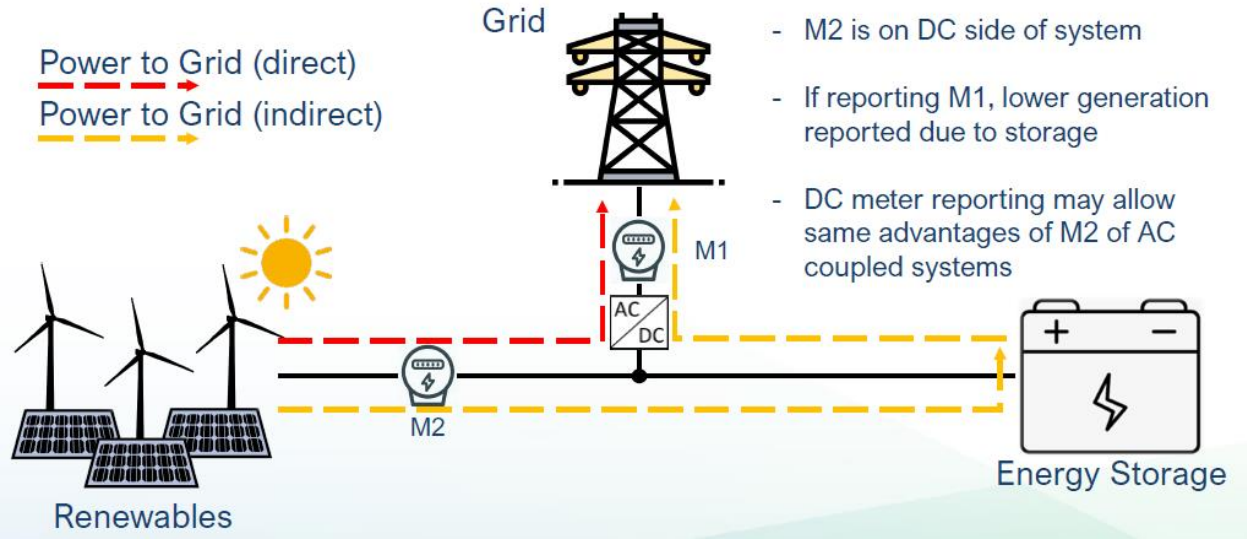


Figure 2- DC Coupled energy storage- DC meter on the Solar side

Option 2: Installation of a calibrated DC meter in the DC bus bar on the PV side and a DC meter in the DC bus on the BESS side, as shown in Figure 3. This option has the benefit that the DC BESS meter could offer a redundant source for backup if a PV meter were temporarily out of service. The calculation will use the AC meter M1 at the inverter level or

the (Point of Delivery) POD level and by subtracting M1 and M3. This option could be challenging for large-scale solar sites because it will require many DC meters for calibration and maintenance. The large quantity of DC meters will also require additional integration and maintenance efforts in the site's communications network. This option is shown in Figure 3.

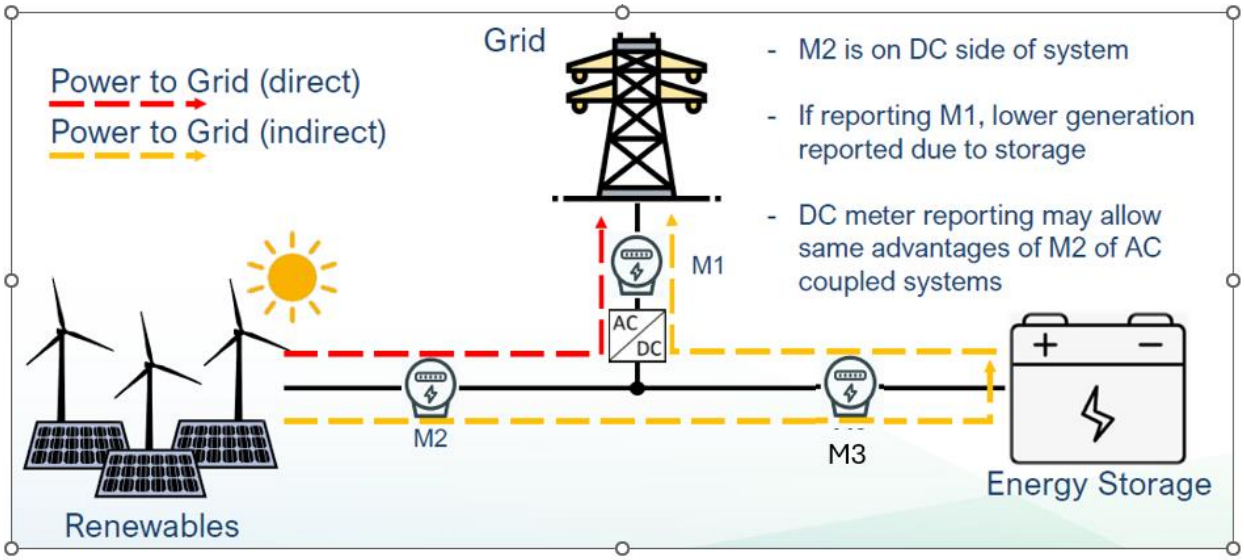


Figure 3 – DC Coupled energy storage – DC meter on Solar and Storage

Option 3: Installation of a calibrated DC meter in the DC bus bar on the BESS side without a DC PV meter on the PV side, as shown in Figure 4. This option has the benefit that the DC BESS meter could be used to calculate the PV generation by subtraction. The calculation will use the AC meter M1 at the inverter or POD level.

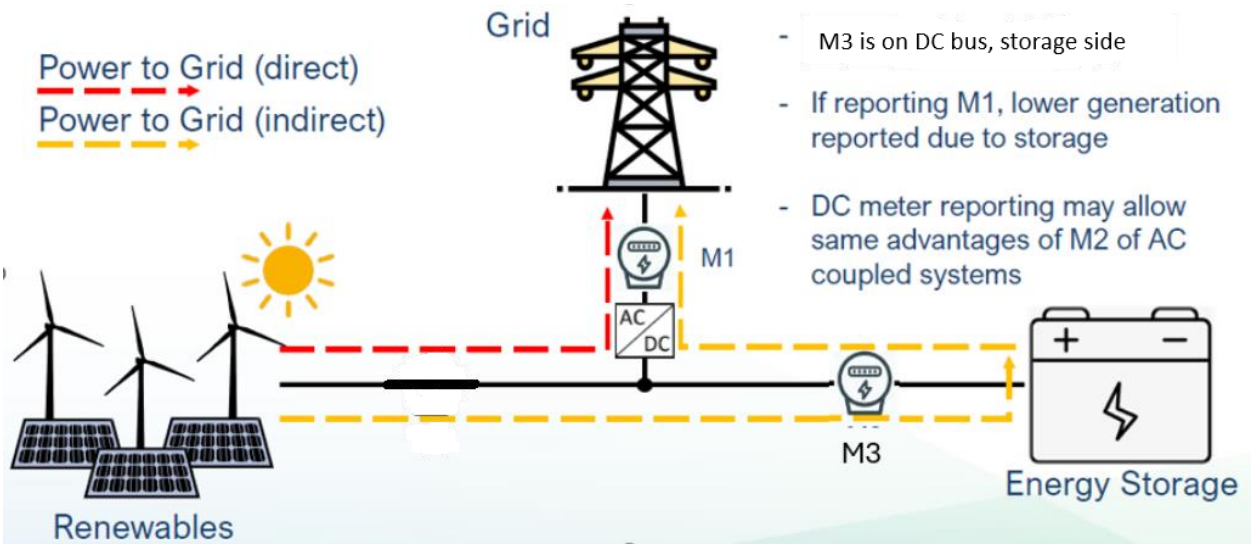


Figure 4 – DC Coupled energy storage – DC meter on Storage

Option 4: Installation of an Inverter level DC meter in the DC bus bar. This option uses the PV meters usually provided by the inverter manufacturers (OEM) as the default. These meters often lack appropriate accuracy and calibration records, but these can be specified to comply with CEC requirements for future sites. Legacy sites' errors can be quantified and periodically verified to achieve compliance. Here, the M1 meter will be used to calibrate or adjust the PV meter data by running the site as PV Only for a few hours or days. M3 is shown as optional but is not required.

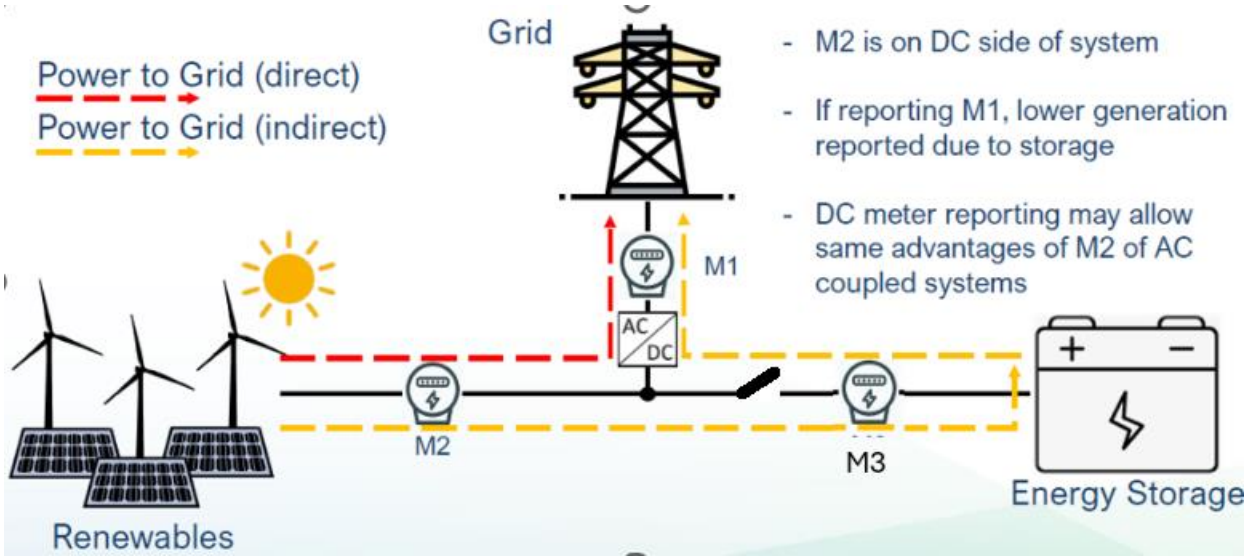


Figure 5 – DC Coupled energy storage – DC meter calibrated with AC Meter