CRS Proposal to CAISO for Reporting to WREGIS and Reporting of Null Power under an Accounting & Reporting Approach

Proposal for Reporting to WREGIS

- CAISO provides to WREGIS, for each WREGIS-registered generating unit, the quantity of electricity in a given month (for each hour of the month) that was bid into the market and allocated on a resource-specific basis to:
    - a reporting entity and the name of that reporting entity,
    - a non-participating BAA and the name of the BAA,
    - a GHG pricing zone residual mix and the name of the zone,
    - a voluntary climate region residual mix and the name of the region, or
    - the market residual mix.[1]
- To facilitate this data sharing, we recommend a monthly report to WREGIS that provides, for each WREGIS-registered generator, the total hourly allocated volume for a given month by reporting entity, non-participating BAA, GHG pricing zone residual mix, voluntary climate region residual mix, or market residual mix.
- WREGIS should be consulted on details related to the format and transfer of the data.
- Allocations to reporting entities, non-participating BAAs, a GHG pricing zone residual mix, a voluntary climate region residual mix, or the market residual mix are in alignment with the attribution ("deeming") to GHG pricing zones, where applicable, such that generation attributed to a zone cannot be allocated to reporting entities, non-participating BAAs, GHG pricing zone residual mixes, or voluntary climate region residual mixes outside of that zone, or to the market residual mix.

Proposal for Null Power Reporting

<u>Option 1 (preferred)</u>

- *REC information is required by CAISO and REC ownership or retirement is required for allocation of WREGIS-registered generation and emissions on a specified basis. Otherwise, the generation is reported as null power.*
    - For renewable generation allocated on a specified basis to a reporting entity (e.g., associated with owned or contracted generation), CAISO requires that the reporting entity own the associated REC in WREGIS.
    - For renewable generation allocated on a specified basis to either a GHG pricing zone residual mix, a voluntary climate region residual mix, or the market residual mix, CAISO requires that the associated REC has been retired in WREGIS on behalf of that residual mix.

[1] At the Monday, April 21, 2025 meeting of the Accounting and Reporting Approach Subgroup, potential resource-specific allocations were expanded to include non-participating BAAs, a GHG pricing zone residual mix, and a voluntary climate region residual mix.

    - For generation from a renewable resource allocated to a non-participating BAA, the generation is reported as null power.
- Reporting entities provide proof of REC ownership and/or retirement in WREGIS to CAISO monthly.
- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.
- Total generator emissions for a reporting period equal the sum of aggregated reporting entity emissions and non-participating BAA emissions without null power emissions (emissions from specified power only) and residual mix total emissions.[2]

Option 2 (in the case that Options 1 and 3 cannot be implemented)

- *REC information is not required by CAISO and there is optional reporting of null power by reporting entities.*
    - CAISO enables reporting entities to report null power that is (1) a part of their owned and contracted generation, (2) excess generation that is allocated to a GHG pricing region residual mix, a voluntary climate region residual mix, or the market residual mix, or (3) unowned and uncontracted generation allocated to the market residual mix. CAISO identifies null power volumes in these places.
- Reporting of REC ownership and null power to CAISO by reporting entities is done monthly.
- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.
- Total generator emissions for a reporting period equal the sum of aggregated reporting entity emissions and non-participating BAA emissions without null power emissions (emissions from specified power only) and residual mix total emissions.[3]

Option 3

- *Option 1 for residual mixes (RECs required) and Option 2 for owned and contracted (optional).*
    - For renewable generation allocated on a specified basis to either a GHG pricing zone residual mix, a voluntary climate region residual mix, or the market residual mix, CAISO requires that the associated REC has been retired in WREGIS on behalf of that residual mix. Otherwise, the generation is reported as null power.

[2] This may not equal the total allocated emissions to reporting entities and non-participating load during the reporting period depending on the volume of RECs banked or held over longer periods of time and the volume of RECs transacted to entities outside the market (i.e., emissions from renewables not allocated to reporting entities during the reporting period). Total allocated emissions (the load-based GHG emissions account) may be greater because it accounts for clean energy transactions outside of the boundary and assigns emissions to LSE null power. These emissions occur outside the reporting boundary (temporally, geographically, or both) and will be matched with the transacted/held clean energy elsewhere or later such that total system emissions are correct over the period of time during which transactions can occur. For more explanation, see CRS's *Guide to Electricity Sector Greenhouse Gas Emissions Totals* (2022), available at: https://resource-solutions.org/document/110322/.

[3] See note 2. For Option 2, the difference between total emissions from dispatched resources and total emissions allocated to load will also depend on the amount of null power optionally reported. Specifically, there may be less of a difference because some emissions associated with renewable resources were allocated without the REC (i.e., allocated twice, double counted).

    - For generation from a renewable resource allocated to a non-participating BAA, the generation is reported as null power.
    - For renewable generation allocated to a reporting entity associated with owned or contracted generation, REC information is not required by CAISO and there is optional reporting by reporting entities of null power that is a part of their owned and contracted generation.
- Reporting of REC retirement, REC ownership, and null power to CAISO is done monthly.
- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.
- Total generator emissions for a reporting period equal the sum of aggregated reporting entity emissions and non-participating BAA emissions without null power emissions (emissions from specified power only) and residual mix total emissions.[4]

[4] See notes 2 and 3.

Table of Reporting Options for WREGIS-registered Generation by Scenario

Scenario	Option 1	Option 2	Option 3
Owned and contracted generation	• If REC ownership information is reported to CAISO by the reporting entity, then reported as specified and allocated to the reporting entity by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC ownership information is not reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.	• If REC ownership information is reported to CAISO by the reporting entity, then reported as specified and allocated to the reporting entity by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC ownership information is not reported to CAISO by the reporting entity, may be reported as specified and allocated to the reporting entity by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS. • If REC ownership information is not reported to CAISO by the reporting entity, may be reported as null power by CAISO due to optional designation by the reporting entity. No reporting to WREGIS.	Same as Option 2.
Excess owned and contracted generation in a GHG pricing zone	• If REC retirement on behalf of GHG pricing zone residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the GHG pricing zone residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of GHG pricing zone residual mix is not reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.	• If REC retirement on behalf of GHG pricing zone residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the GHG pricing zone residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of GHG pricing zone residual mix is not reported to CAISO by the reporting entity, may be reported as specified and allocated to the GHG pricing zone residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS. • If REC retirement on behalf of GHG pricing zone residual mix is not reported to CAISO by the reporting entity, may be reported as null power by CAISO due to optional designation by the reporting entity. No reporting to WREGIS.	Same as Option 1.

Scenario	Option 1	Option 2	Option 3
Excess owned and contracted generation in a voluntary climate region	• If REC retirement on behalf of voluntary climate region residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the voluntary climate region residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of voluntary climate region residual mix is not reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.	• If REC retirement on behalf of voluntary climate region residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the voluntary climate region residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of voluntary climate region residual mix is not reported to CAISO by the reporting entity, may be reported as specified and allocated to the voluntary climate region residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS. • If REC retirement on behalf of voluntary climate region residual mix is not reported to CAISO by the reporting entity, may be reported as null power by CAISO due to optional designation by the reporting entity. No reporting to WREGIS.	Same as Option 1.
Excess owned and contracted generation (not in a GHG pricing zone or voluntary climate region)	• If REC retirement on behalf of market residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the market residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of market residual mix is not reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.	• If REC retirement on behalf of market residual mix is reported to CAISO by the reporting entity, then reported as specified and allocated to the market residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of market residual mix is not reported to CAISO by the reporting entity, may be reported as specified and allocated to the market residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS. • If REC retirement on behalf of market residual mix is not reported to CAISO by the reporting entity, may be reported as null power by CAISO due to optional designation by the reporting entity. No reporting to WREGIS.	Same as Option 1.

Scenario	Option 1	Option 2	Option 3
Generation attributed to a GHG pricing zone, not allocated to a specific reporting entity	• If REC retirement on behalf of GHG pricing zone residual mix is reported to CAISO (e.g., by the generator), then reported as specified and allocated to the GHG pricing zone residual mix. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of GHG pricing zone residual mix is not reported to CAISO, then reported as null power in the GHG pricing zone residual mix by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the GHG pricing zone residual mix. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as Option 1.
Non-participating generation	• Reported as null power by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the BAA by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as option 1.
Excess non-participating generation (BAA-level exports/excess) in a GHG pricing zone	• Reported as null power in the GHG pricing zone residual mix by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the GHG pricing zone residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as Option 1.
Excess non-participating generation (BAA-level exports/excess) in a voluntary climate region	• Reported as null power in the voluntary climate region residual mix by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the voluntary climate region residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as Option 1.
Excess non-participating generation (BAA-level exports/excess) (not in a GHG pricing zone or voluntary climate region)	• Reported as null power in the market residual mix by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the market residual mix by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as Option 1.
Unowned and uncontracted generation	• If REC retirement on behalf of market residual mix is reported to CAISO (e.g., by the generator), then reported as specified and allocated to the market residual mix. CAISO shares with WREGIS data related to allocation of energy and ownership of RECs. RECs tagged in WREGIS. • If REC retirement on behalf of market residual mix is not reported to CAISO, then reported as null power in the GHG pricing zone residual mix by CAISO. No reporting to WREGIS.	• Reported as specified and allocated to the market residual mix. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.	Same as Option 1.

Explanation and Additional Information

Reporting to WREGIS

For WREGIS renewables allocated on a resource-specific basis through the CAISO A&R framework, WREGIS should receive generator-specific allocation data and tag the associated RECs with that information to ensure transparency. This transparency is essential because the allocation data pertains to the same attributes included in the certificates and may impact the claims of certificate holders. Each state or voluntary program that uses WREGIS can then determine for itself whether those RECs are eligible, ideally ensuring that the RECs are distributed or transferred in alignment with the allocations under the A&R framework to prevent double counting.

To support this process, WREGIS needs generator-specific allocation data from CAISO on a monthly basis, prior to REC issuance. WREGIS mints RECs on an ongoing basis—typically two weeks after data is reported, or earlier if the data is approved by the customer. Importantly, WREGIS does not alter RECs once they have been issued. Although QREs, including CAISO, can submit data adjustments for up to two years, once certificates are transferred or retired, they cannot be revoked. As a result, WREGIS will be asked to change its issuance rules such that if the generator participates in CAISO markets, then the issuance must wait for monthly CAISO allocation data. If not, it can continue to use the two week or sooner issuance policy.

Hourly tracking is also coming to WREGIS, which underscores the need for allocation data to be reported at least monthly and with hourly granularity.

Null Power Reporting

CAISO should enable reporting on null power (generation from renewable resources without RECs) within its A&R framework to make it as accurate as possible and to avoid conflicts with programs that allocate generation and emissions using RECs. Null power may be present in:

1. Owned and contracted generation allocated to a reporting entity,
2. Excess generation from a reporting entity that is allocated to:
    a. a GHG pricing zone residual mix,
    b. a voluntary climate region residual mix,
    c. the market residual mix
3. Generation attributed to a GHG pricing zone, not allocated to a specific reporting entity, that is allocated to a GHG pricing zone residual mix,
4. Non-participating generation allocated to a BAA,
5. Excess non-participating generation (BAA-level exports/excess) allocated to:
    a. a GHG pricing zone residual mix,
    b. a voluntary climate region residual mix,
    c. the market residual mix, and
6. Unowned and uncontracted generation that is allocated to the residual mix.

We present three options for reporting null power in these areas. The first and preferred option is that CAISO requires REC information and REC ownership by a reporting entity for owned and contracted generation or REC retirement on behalf of a residual mix in order to allocate renewable generation resources on a specified basis. Otherwise, this generation is reported as null power.

The second, less preferred option, is that REC information is not required by CAISO and null power reporting is optional and self-reported. In this case, there is a risk that some null power will go unreported—due to a reporting entity choosing not to report null power or because it

cannot be optionally reported as null by a participating reporting entity. As a result, null power data in the market would not be entirely accurate—it would not match the total null power that could be calculated using WREGIS certificate data. However, in the case that the generation is either not voluntarily reported as null power to CAISO or the RECs are transacted after A&R accounting, WREGIS will have the data for the allocation of registered renewables on a specified basis (per Reporting to WREGIS). For WREGIS-registered renewables that are designated as null power and not allocated by CAISO on a resource-specific basis, WREGIS will not receive that information, and the RECs will not be tagged, since their attributes remain unaffected.

The third option, preferred over the second but not the first, is that REC information and retirement is required for generation allocated to a residual mix (of a GHG pricing zone, voluntary climate region, or the market residual mix) or a non-participating BAA, but REC information is not required and null power reporting is optional for generation allocated to a participating reporting entity. While participating reporting entities can choose to report null power for their owned and contracted generation, the default assumption for renewables in the residual mixes and non-participants is that the RECs are being kept by the generator, and, unless proven otherwise, it is treated as null power by the market. This option would avoid a situation wherein there is renewable generation in the residual mix that could be allocated to unfulfilled load and assigned to unspecified power on a specified basis, while the associated RECs could be retained or sold to a specific entity.

Renewable generation attributed (“deemed”) to a GHG pricing zone but not allocated to a specific entity is allocated to the residual mix for the zone. Options 1 and 3 would require retirement of RECs on behalf of the residual mix of the GHG pricing zone (e.g., by the participating generator) in order for the generation to be allocated to the residual mix for the zone on a specified basis. Otherwise, it is reported as null power in the zone’s residual mix. Under Option 2, since it cannot be optionally reported as null by a reporting entity, it will be allocated as specified to the residual mix of the zone and (per Reporting to WREGIS above) reported to WREGIS as such.

Since a non-participating BAA will not provide REC information to CAISO, under Options 1 and 3, any renewables in the generation allocated to a non-participating BAA will be reported as null power. Under Option 2, it will not be optionally reported as null, and it will be allocated as specified to the non-participating BAA and (per Reporting to WREGIS above) reported to WREGIS as such.

For the market residual mix, providing a null power-adjusted residual rate would deliver a more accurate emissions rate under a load-based GHG accounting framework. This adjustment would account for other specified transactions outside the market and support states and consumers who need to factor REC transactions into their emissions accounting from purchased electricity. We recommend that null power volumes be removed from the residual mix rather than assigned emissions. While this would undercount generation in the residual mix, it is preferable to assigning a positive emissions value to that generation.

All generation associated with unbundled RECs must be reported as null power in the CAISO framework in order not to infringe on the REC and in order for those RECs to be used in state and voluntary programs. Those programs could verify this either:

- In the framework itself, if generator-specific information is provided for reported null power, or if not[5]
- Using WREGIS, since (per Reporting to WREGIS) it will be transparent in WREGIS if generation associated with a REC has been allocated by CAISO on a resource-specific basis and not reported as null power.

Finally, it is unnecessary for CAISO to share null power data with WREGIS.

Policy Neutrality

CAISO's A&R framework should provide allocation data in a transparent way, without giving preference to a certain market participant, state, or type of policy. Coordination and data sharing with WREGIS does not set policy for any state or program or affect the ability of any state or market participant to do with that information what it wants, even if market allocation information were to be added to WREGIS certificates. It would simply provide information to enable each state or program to make its own decision regarding the eligibility of WREGIS Certificates on the basis of market attribution to different reporting entities and the value that it assigns to this information. It may, however, affect state and participant decision-making in response to this information. The provision of additional and better data may also lead to future changes, such as all-generation certificate tracking.

Similarly, our recommendation to require attribute ownership for allocation to reporting entities on a resource-specific basis would not constrain state requirements—market allocation data can be used for state programs or not—and in fact provides the flexibility to the most states. Where attribute ownership is required for allocation by CAISO but not required by a particular state program, LSEs could report specified procurement without attributes/RECs and use the residual mix. In this case, the LSE-specific report/allocation simply would not be used for state reporting, and while the residual mix would account for RECs (i.e., has null power volume removed), this is still preferable to using a default emissions factor for these programs. Meanwhile, CAISO's A&R framework would not double count for states that do require the RECs/attributes. On the other hand, if the framework allocates to reporting entities regardless of REC ownership, that will permit double counting for states and programs that do require RECs for GHG accounting. In other words, requiring attribute ownership for allocation to reporting entities would not deny entities in states that do not require REC ownership any information they require from the markets to calculate emissions, whereas not requiring ownership of attributes would deny to stakeholders in states that do require REC ownership vital data required to accurately calculate emissions.

Providing a null power-adjusted residual mix also would not represent a policy position. Again, state policy that does not use/require RECs for load-based GHG accounting typically does not prohibit the provision of data that account for RECs and null power, and a residual mix that is adjusted for null power (i.e., has null power volume removed) is preferable to a default emissions factor.

Confidentiality

Information provided by CAISO to WREGIS and potentially used by WREGIS to "tag" RECs with CAISO allocation data would be seen by the individual account holders of those RECs and program administrators. Furthermore, the WREGIS-registered generators that have already agreed to use CAISO as the qualified reporting entity (QRE) for generation data that is used for

[5] For example, because a state determines that reporting of fuel type for null power would itself represent a claim on the REC.

certificate issuance in WREGIS could simply agree to have CAISO share allocation data with WREGIS as well.

In the future, if there is all-generation tracking in WREGIS, there may be other generators that would not agree to have their generation and allocation data shared with WREGIS. In other all-generation tracking systems, generators register for an account if they wish to have certificates created and issued to them, and they agree to have the market provide their generation data. Again, only they and program administrators can see their account. For generators that are not registered, market data is still provided to the tracking system, but certificates are placed into the system administrator's account, and at the end of the trading period, those certificates are used for residual mix calculations. There does not appear to be a perceived confidentiality issue in that case for those non-registered generators even though their generator-specific data is being shared with the tracking system.

Additional Resources

- CRS Background Report (2024): https://resource-solutions.org/document/112124/
- CRS Blog Post (2025): https://resource-solutions.org/02202025/