



# PROPOSAL FOR REPORTING TO WREGIS AND REPORTING OF NULL POWER UNDER AN ACCOUNTING & REPORTING APPROACH

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# Agenda

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2. **Why accounting for RECs is accurate for what the framework is trying to achieve**
3. **Example calculation**
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# Chapter 01.

**WHY THE A&R APPROACH  
SHOULD ACCOUNT FOR RECS.**

# The A&R approach should account for RECs

- A REC represents 1 MWh of renewable energy plus its exclusive emissions attributes
- WREGIS issues and tracks RECs for compliance and voluntary programs
- If a REC is sold, the electricity becomes “null power”
- The A&R framework could assign generation that has RECs, risking double counting of renewable and emissions claims
- This creates conflicting claims between CAISO and WREGIS, undermining regulatory integrity
- It’s not just a state issue—CAISO’s framework underpins regulatory enforcement and voluntary claims
- CAISO must align emissions allocations with REC ownership to avoid parallel, conflicting systems

# Chapter 02.

**WHY ACCOUNTING FOR  
RECS IS ACCURATE FOR  
WHAT THE FRAMEWORK  
IS TRYING TO ACHIEVE.**



# Accounting for RECs and null power doesn't mess up the accounting

- Accurate load-based emissions accounting must account for all transactions, including attribute transactions
- That requires accounting mechanisms like null power
- That may produce a load-based emissions total that doesn't align with emissions from generation in the market during a given time period
- That's a feature—not a bug

# Chapter 03.

## EXAMPLE CALCULATION.

# Example Setup

3 LSEs, total load = 1,000 MWh

Total participating generation = 1,400 MWh

Generation Mix

Resource	MWh	Emissions Factor (lbs CO <sub>2</sub> /MWh)	Notes
Solar	200	0	
Wind	100	0	RECs sold to a third party
Hydro	150	0	No RECs in WREGIS
Natural Gas	600	882	
Coal	350	2,205	
Total	1400		



# Step 1: Allocate Generation to LSEs and Residual Mix

LSE Allocated Generation (owned and contracted)

LSE	Solar	Hydro	Wind (null)	Gas	Coal	Total (MWh)
A	100	50	30	120	0	300
B	100	50	20	230	0	400
C	0	50	10	40	200	300
Total	200	150	60	390	200	1000

Total LSE Generation = 1,000 MWh  
Null Power to LSEs = 60 MWh

Residual Mix Generation  
(Unowned/Uncontracted/Excess)

Resource	MWh
Wind (null)	40
Natural Gas	210
Coal	150
Total	400

Residual Mix Total = 400 MWh  
Residual Mix Null Power = 40 MWh  
Residual Mix Fossil MWh = 360

## Step 2: Residual Mix Emissions Rate

- Gas (210 MWh)  $\times$  882 = 185,220 lbs CO<sub>2</sub>
- Coal (150 MWh)  $\times$  2205 = 330,750 lbs CO<sub>2</sub>
- Residual Mix Fossil MWh = 360
- Residual Mix Null Power = 40 MWh

Null power-adjusted Residual Mix Emissions Rate (*null power excluded from denominator*) = (185,220 + 330,750) lbs / 360 MWh = **1,433.25 lbs CO<sub>2</sub>/MWh**

Unadjusted Residual Mix Emissions Rate = (185,220 + 330,750) lbs / 400 MWh = **1,289.93 lbs CO<sub>2</sub>/MWh**

# Step 3: Calculate LSE Emissions

## LSE A

- Gas:  $120 \text{ MWh} \times 882 = 105,840 \text{ lbs}$
- Null wind:  $30 \text{ MWh} \times 1,433.25 \text{ lbs/MWh} = 42,997.5 \text{ lbs}$
- Total =  $148,837.5 \text{ lbs CO}_2$

## LSE B

- Gas:  $230 \text{ MWh} \times 882 = 202,860 \text{ lbs}$
- Null wind:  $20 \text{ MWh} \times 1,433.25 \text{ lbs/MWh} = 28,665 \text{ lbs}$
- Total =  $231,525 \text{ lbs CO}_2$

## LSE C

- Gas:  $40 \text{ MWh} \times 882 = 35,280 \text{ lbs}$
- Coal:  $200 \text{ MWh} \times 2,205 = 441,000 \text{ lbs}$
- Null wind:  $10 \text{ MWh} \times 1,433.25 \text{ lbs/MWh} = 14,332.5 \text{ lbs}$
- Total =  $490,612.5 \text{ lbs CO}_2$

## Step 4: Total Emissions

Resource	MWh	Factor	Emissions (lbs CO <sub>2</sub> )
Gas	600	882	529,200
Coal	350	2,205	771,750
Total generator emissions			<b>1,300,950 lbs CO<sub>2</sub></b>

- LSE specified power emissions (not including null power emissions): 784,980 lbs CO<sub>2</sub>
- Residual mix emissions: 515,970 lbs CO<sub>2</sub>

Total LSE specified and residual mix emissions = 784,980 + 515,970 = **1,300,950 lbs CO<sub>2</sub>**

- Total LSE allocated emissions (including null power): 870,975 lbs CO<sub>2</sub>
- Non-participating load: 400 MWh
- Non-participating load emissions: 400 MWh x 1,433.25 lbs/MWh = 573,300 lbs CO<sub>2</sub>

Total allocated emissions = Total LSE emissions (870,975) + Non-participating load emissions (573,300)  
= **1,444,275 lbs CO<sub>2</sub>**

# Final Summary

Metric	Value
Total Generation	1,400 MWh
Total Load (LSEs)	1,000 MWh
Null Power Total	100 MWh (60 LSE allocated, 40 residual mix)
Null-power Adjusted Residual Rate	1,433.25 lbs CO <sub>2</sub> /MWh
Total Generator Emissions	<b>1,300,950 lbs CO<sub>2</sub></b>
Total Allocated Emissions	<b>1,444,275 lbs CO<sub>2</sub></b>

# Chapter 04.

## **PROPOSALS.**

# 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 .
- 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

## Option 1 (preferred)

- **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.
  - 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.

## Across all options:

- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.

# Proposal for Null Power Reporting

## 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.

## Across all options:

- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.

# Proposal for Null Power Reporting

## 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.
  - 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.

## Across all options:

- Null power volumes are removed for residual rate calculations.
- Null power volumes are assigned the residual rate for calculations of reporting entity allocated emissions.

# Chapter 05.

## **SCENARIOS.**

# Owned and contracted generation

Option1	Option 2	Option 3
<ul style="list-style-type: none"><li>• 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.</li><li>• If REC ownership information <u>is not</u> reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.</li></ul>	<ul style="list-style-type: none"><li>• 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.</li><li>• If REC ownership information <u>is not</u> 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.</li><li>• If REC ownership information <u>is not</u> 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.</li></ul>	Same as Option 2.

# Excess owned and contracted in a GHG pricing zone

Option 1	Option 2	Option 3
<ul style="list-style-type: none"> <li>• 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.</li> <li>• If REC retirement on behalf of GHG pricing zone residual mix <u>is not</u> reported to CAISO by the reporting entity, then reported as null power by CAISO. No reporting to WREGIS.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• If REC retirement on behalf of GHG pricing zone residual mix <u>is not</u> 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.</li> <li>• If REC retirement on behalf of GHG pricing zone residual mix <u>is not</u> 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.</li> </ul>	<p>Same as Option 1.</p>

# Attributed to a GHG pricing zone, not allocated to a specific reporting entity

Option 1	Option 2	Option 3
<ul style="list-style-type: none"><li>• 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.</li><li>• If REC retirement on behalf of GHG pricing zone residual mix <u>is not</u> reported to CAISO, then reported as null power in the GHG pricing zone residual mix by CAISO. No reporting to WREGIS.</li></ul>	<ul style="list-style-type: none"><li>• 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.</li></ul>	Same as Option 1.



# Non-participating generation

Option 1	Option 2	Option 3
<ul style="list-style-type: none"><li>Reported as null power by CAISO. No reporting to WREGIS.</li></ul>	<ul style="list-style-type: none"><li>Reported as specified and allocated to the BAA by CAISO. CAISO shares with WREGIS data related to allocation of energy. RECs tagged in WREGIS.</li></ul>	Same as option 1.

# Chapter 03.

## **POLICY NEUTRALITY AND CONFIDENTIALITY.**

# Policy Neutrality

- Coordination with WREGIS
  - Enables states and programs to apply their own rules
  - Supports transparency without setting eligibility criteria
- Requiring Attribute/REC Information (under Options 1 and 3)
  - Prevents double counting across REC-based and emissions programs
  - Allows flexibility: non-REC programs can still use their own data, market data or residual mix
  - Not requiring REC information harms REC-based programs
- Null Power-Adjusted Residual Mix
  - More accurate than default emissions factors
  - Doesn't impose policy—just improves data quality

# Confidentiality

- Only REC account holders and program administrators would see RECs tagged with CAISO allocation data
- WREGIS generators already using CAISO as a QRE could simply agree to share allocation data as well
- In future all-generation tracking systems, unregistered generators' data is still shared securely for residual mix use

# Q&A

# Contact.

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