Summary of CRS's Primary Recommendation to CAISO EDAM Working Group 3

Greenhouse gas (GHG) attribution in the Western Energy Imbalance Market (EIM) and proposed for an Extended Day-ahead Market (EDAM), in the view of some regulators and program administrators, critically affects the program eligibility of associated renewable energy certificates (RECs). GHG attribution and resource allocation in the EDAM does therefore need to be properly disseminated.

We recommend that the EDAM provide to the Western Renewable Energy Generation Information System (WREGIS), for each generating unit registered in WREGIS, the quantity of electricity in a given period from each such unit that was: (a) bid into the market, and (b) either (i) attributed on a resource-specific basis to load in certain states or zones as a result of the chosen method for optimizing GHG costs (e.g. a "deemed" import to the California GHG compliance area), or (ii) allocated on a resource-specific basis to a load-serving entity (LSE) (e.g. via source-specific attribution for a transfer in the EDAM). WREGIS will be asked to put this information on an equivalent quantity of WREGIS Certificates from each such unit.

This recommendation focuses on the near-team effect of GHG attribution in the EDAM on existing REC systems and programs. In the future, all-generation certificate tracking in WREGIS could facilitate comprehensive fuel type and emissions reporting for all transacted power in the EDAM. Please see our full set of recommendations starting on page 4.

Background

Attribution of generation and emissions in the market may be necessary. States have programs to regulate the allocation of specific electric generation resources and GHG emissions to load—e.g. Renewable Portfolio Standards (RPS), Clean Energy Standards (CES), and GHG reporting and compliance rules for imported electricity under cap-and-trade. While it would be most efficient to allow wholesale electricity markets to operate independently of these programs, several regulate the contractual delivery of both "attributes" (e.g. renewable fuel type, emissions) and the associated energy to load. As a result, there is a need to track specified power and/or emissions through the market in order for the market to serve those programs.

CAISO will choose the attribution and GHG reporting methods for the EDAM. The market attribution method must be consistent with California's cap-and-trade rules. But it also affects other load-based retail programs and instruments. CAISO does not define RECs or set state policy. CAISO only need consider how GHG attribution in the EDAM will interact with RECs, WREGIS, and inform different state programs, as well as how tools and information for tracking and verifying the delivery of specified power to state or utility load can be used and harmonized to maintain credible retail transactions and claims, avoid double counting, and facilitate achievement of regional and state goals.

GHG attribution in the EDAM cannot ignore existing market instruments used to attribute renewable generation to load in compliance and voluntary markets for renewable energy and load-based attribute and emissions accounting and compliance systems across the West. Differentiating power on the grid, and characterizing or specifying delivered or consumed power, must be based on contractual ownership of generation attributes. In general, RECs represent property rights to the full aggregated non-power generation attributes of renewable generation, e.g. emissions, which are not physically delivered and are separate from physical electricity. Each REC represents the generation attributes of one megawatt-hour (MWh) of renewable electricity that has been added to the grid. They are the essential accounting and tracking tool to allocate renewable generation to load. This treatment and use of RECs is accepted and consistent across the U.S.

In the West, RECs are electronically serialized and issued to registered generators with accounts in WREGIS based on metered and verified generation data. They can be transferred between account holders and ultimately permanently retired electronically by LSEs. Retirements indicate whether the RECs have been retired on behalf of an RPS or other retail program or a voluntary sale.

In general, WREGIS does not track energy, only its generation attributes.[1] Since specified power cannot be physically directed to load on the grid and the power itself does not carry generation attributes (it is undifferentiated), contractual allocation of the power and energy transaction data are not needed to account for specified generation delivered to load and specified retail delivery/usage claims. States may require procurement of the associated power (e.g. "bundling") or energy transaction data to meet objectives beyond accounting or specifically to account for attributes (e.g. emissions) from facilities that have sold electricity to the state—in which case parties can transact attributes and energy together.

The allocation/distribution of certificates (attributes) to load determines attribution of specified renewable electricity to load. The attribution to load is done by the account holders/certificate buyers. State programs set their own eligibility and compliance rules to determine attribution to load in compliance with their programs—they use this system for RPS, CES, power source disclosure (PSD), accounting for imported electricity, etc. Contractual delivery/distribution of RECs may be different than

[1] Account holders have the option to match eTags and RECs in WREGIS.

contractual distribution of electricity (and there is no physical distribution of specified power). But distribution of RECs to load determines distribution of *renewable* electricity.

As a result, resource-specific GHG attribution in the market (e.g. to state or zonal load or in market transfers) may conflict with the attribution of renewable generation to load (assignments of generation to load) by account holders (e.g. LSEs) in WREGIS. Multiple and inconsistent attribution methods create a risk of double counting. GHG attribution in EDAM should not double count or erode the integrity of retail claims in the West.

It is our understanding that there are two general ways for resource-specific GHG attribution to potentially occur in the EDAM. First, there may be resource-specific attribution to load in certain states or zones as a result of the chosen method for optimizing GHG (carbon pricing) costs (e.g. "deeming").

The assignment of emissions on a resource-specific basis to electricity imported and delivered to serve load in a specific state or zone affects attribution based on RECs and load-based programs like RPS and CES outside of that state or zone. Where that attribution of generation or emissions is done inconsistent with RECs, double counting may occur where the associated RECs are used toward compliance in other states. In effect, the same generation and emissions attributes may be delivered to or otherwise claimed in two different states.

Avoiding double counting requires that any associated RECs stay in the GHG state or zone to which resources or resource-specific emissions were attributed by the market. It does not require that the RECs be retired on behalf of attribution in the market or any specific utility load or customers inside the state/zone at the time of the market transfer. For now, we understand the zone to be a single state, California. But if, for example, the California cap-and-trade and the Washington cap-and-invest programs are linked to form a combined WA-CA GHG compliance area (i.e. if the zone to which generation/GHGs are attributed includes multiple states), then RECs associated with transactions to the combined GHG compliance area could be used in either California or Washington, provided there is no other attribution of the renewable source by the market (see below).[2]

Second, there may be source-specific attribution for EDAM market transfers. We understand that there is currently source-specific attribution for all transfers in the Western EIM—transfer records include information about the participating resource supporting the transfer. As a result, everything in the EIM is "attributed" and for renewable resources, this attribution does not involve the RECs. It is not clear whether this source attribution in the EIM is equivalent to a "specified" sale under different state and

[2] Unlike RECs associated with imports to the GHG zone, unbundled RECs from generators located inside states/zones with source-based GHG programs (e.g. California generators) do not necessarily need to stay within the state/zone in order to avoid double counting. Source-based accounting of emissions from in-state/zone generators does not attribute the generation to load. It does not affect use of the REC to assign the generation to load (while the cap does reduce the avoided emissions value of the renewable generation to zero).

reporting program definitions. In this case, the EIM makes a determination about source attribution and the seller does not control attribution. While it may not be equivalent to a bilateral transaction of attributes or bundled renewable energy, where power from a renewable resource is sold into the EIM, that renewable source gets attributed by the market to a market transfer. The associated RECs may be retained by the seller, however. Based on that attribution, it could be reported as a renewable purchase by an entity where permitted by programs that do not require the REC and thereby result in double counting.

Finally, this working group is also discussing an "unspecified" or "zonal" approach to optimizing GHG (carbon pricing) costs. To the extent that the optimization for GHG costs under this approach does not result in resource-specific attribution, but rather is quantifying a volume of imported emissions to a GHG zone, this approach may not directly affect RECs. Furthermore, to the extent that an option under this approach for out-of-zone clean resources to participate in or access the GHG zone would not represent a resource-specific import of these resources and all market imports (the total volume) to the GHG zone would still be assigned an unspecified emissions rate, this option may not directly affect RECs either. However, any other source-specific attribution adopted for the market outside of optimization, e.g. to serve other state programs requiring bundling of attributes and energy, etc., may still affect RECs.

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1. Disclaimer Language

CAISO/EDAM can help mitigate confusion and protect the integrity of retail claims by clarifying that ownership of certificates is not included in market transactions by placing in the participant agreement acknowledgment by participants that:

- Attribution in the EDAM does not transfer the WREGIS Certificates for the associated electricity and may affect eligibility of an equivalent quantity of such un-transferred WREGIS Certificates in state and voluntary programs respecting renewable or nonemitting energy, and in other contracts for energy attributes or RECs.
- State and voluntary programs set eligibility and compliance rules to determine delivery and/or attribution of renewable energy generation and associated emissions to load in compliance with their programs.

2. Coordination/Data Sharing with WREGIS

Our primary recommendation is coordination and data sharing that would enable WREGIS to reflect attribution in the market—in effect, harmonizing and adding transparency to the two methods for attribution without integrating RECs into the market.

We recommend that the EDAM provide to WREGIS, for each generating unit registered in WREGIS, the quantity of electricity in a given period from each such unit that was:

(a) Bid into the market, and

(b) Either

  (i) Attributed to load on a resource-specific basis in certain states or zones as a result of the chosen method for optimizing GHG (carbon pricing) costs (e.g. a "deemed" import to the California GHG compliance area), or

  (ii) Allocated on a resource-specific basis to an LSE (e.g. via source-specific attribution for a transfer in the EDAM).

WREGIS will be asked to put this information on an equivalent quantity of WREGIS Certificates from each such unit. This communication of quantity to WREGIS and WREGIS designation of an equivalent quantity will work with the timing differential between attribution in short-term markets and monthly issuance of WREGIS Certificates, as well as the hourly (vs. monthly) MWh format of the data. Market transaction/attribution data would be aggregated by generator and by month on monthly issued certificates.

Adoption of this recommendation would not set policy for any state or program. It would simply provide information to enable each state or program to make its own decision regarding the eligibility of this equivalent quantity of WREGIS Certificates based on the state's situation inside or outside of a certain GHG compliance zone and the value that it assigns to this information. Besides allowing for an up/down decision on REC eligibility in an evaluation of double counting by states, it may also enable states to use RECs (and if there is all-generation tracking in the future, certificates from other resources) to account for renewable (and other nonemitting) market imports to demonstrate compliance, if they so choose, depending on the respective definitions of renewable, clean, and/or specified imports and the objectives of the program.

3. Support for the Expansion of WREGIS to an All-generation Certificate System

In its current form, WREGIS tracks only renewable energy generation from units that register in the system by creating RECs for this generation. WREGIS could be expanded into an all-generation system, like the PJM Generation Attribute Tracking System (PJM-GATS), for example, in which certificates are created for generation from all resource types and all generation in the WREGIS footprint. This would enable the most consistent and precise accounting of delivered power and emissions across the West,

and complete tracking and reporting of fuel type and emissions in the EDAM. Other specific benefits might include an accurate region-wide residual resource mix, based on unused certificates, representing generation that was not included in specified transactions, which would be allocated to unfulfilled load and could be used for unspecified purchases. It could also produce a market-specific residual mix (with information from the market).

Expanding WREGIS is beyond the capabilities of CAISO. It would require a coalition of willing states and programs as well as interstate cooperation and data sharing. At a minimum, all generators must participate in the tracking system and all states must agree to use certificates for load-based compliance and tracking/reporting. But as a key stakeholder for WREGIS, CAISO could lend its support to the idea.