Center for Resource Solutions (CRS) Responses to Request for Information - Carbon Pollution-Free Electricity

March 7, 2022

Center for Resource Solutions (CRS) appreciates this opportunity to respond to the Request for Information (RFI) regarding Carbon Pollution-Free Electricity (CFE) (CFE RFI SP0604-22-0411). CRS is not an energy supplier or potential respondent to a future Request for Proposal (RFP). As a result, CRS is not positioned to respond per section 4.2 of the RFI. However, CRS provides responses to select elements of sections 3.2 and 4.1 with general input and resources to inform the United States Government's (USG's) procurement of CFE to meet the objectives of Executive Order 14057.

3.2 Contracting Guidelines
The response should include an overview of how the RECs / CFE claims will be managed, and the approximate price premium associated with inclusion of RECs / CFE claims.

Here we provide general information about how RECs and CFE claims should be managed without information about the prices of RECs or associated costs.

To claim use of specified CFE, the USG must exclusively own the fully aggregated environmental attributes associated with the CFE generation, whether the transaction/claim is hourly or annual. This applies to both voluntarily purchased CFE and CFE counted toward the federal target that is delivered by default or as part of a standard-delivery product. Specifically, the USG must require:

- Retirement of renewable energy certificates (RECs) associated with contracted or otherwise claimed renewable energy by or on behalf of the USG for renewable energy resources that are registered in the PJM Generation Attribute Tracking System (PJM-GATS), the Electric Reliability Council of Texas (ERCOT) REC Tracking System, the New England Power Pool Generation Information System (NEPOOL-GIS), the Midwest Renewable Energy Tracking System (M-RETS), the New York Generation Attribute Tracking System (NYGATS), or another renewable energy tracking system;
- Retirement of PJM-GATS, NYGATS, and NEPOOL-GIS Certificates associated with contracted or otherwise claimed non-renewable CFE in PJM, New York Independent System Operator (NYISO), and ISO New England (ISO-NE) by or on behalf of the USG for generating resources registered in PJM-GATS, NYGATS, and NEPOOL-GIS; and
- Contractual transfer and exclusive ownership of all environmental attributes associated with contracted or otherwise claimed renewable and other CFE by the USG in contracts for

generation from resources that are not registered in PJM-GATS, ERCOT, NEPOOL-GIS, M-RETS, NYGATS, or another renewable energy tracking system.

The USG can require that CFE resources used to supply USG CFE procurement, particularly those that are not already participating in voluntary and state renewable energy markets, register in a tracking system for certificate issuance.

Hourly RECs[1] or certificates representing the attributes of generation occurring in a specific hour may be available through M-RETS for Midcontinent ISO (MISO) load and potentially other tracking systems in the future. But otherwise, hourly CFE procurement and claims must include monthly issued RECs and certificates. Hourly claims cannot be made where monthly RECs or certificates have been or will be issued and sold to a different party.

More information regarding standard delivery renewable energy claims is available here:

- CRS. (2021). *Accounting for Standard Delivery Renewable Energy*. https://resource-solutions.org/document/030921/
- CRS. (2021). *Data Sources: Accounting for Standard Delivery Renewable Energy*. https://resource-solutions.org/document/03152101/

4.1.b. Contextual Narrative
Description of anticipated methodology for tracking and reporting the quantity of CFE (MWh) supplied on an annual and hourly basis.

The methodology used should follow existing best practices for tracking and reporting annual delivery of renewable and other specified power. In the US voluntary renewable energy market, these best practices are embodied in and verified using Green-e® certification. In that respect, Green-e® certification is a tool that is available now to suppliers of CFE and the USG. The USG can request Green-e® certification for renewable procurement to meet the annual CFE target in EO 14057.

In addition, CRS intends to update the Green-e® program to support federal procurement to meet EO 14057, in the form of an updated Federal Option under the Green-e® program, once additional guidance and requirements for federal procurement are released. The Green-e® Federal Option will include verification against both federal procurement requirements and existing Green-e® requirements.

[1] Also called "time-based RECs" and "granular certificates," and not necessarily restricted to renewable resources, but herein referred to generally as "hourly RECs."

Generally, the methodology for tracking and reporting hourly delivery of renewable and other CFE needs to include the same things that are required for credible annual transactions and claims. Delivery and use of CFE can only be determined contractually, and verification of exclusive delivery and use of CFE requires a contractual instrument or method. All tracking and reporting must be based on verified generation data; full aggregation, tracking, and retirement of generation attributes; and assurances that there has been no double sales or double claiming.

A 24x7 approach additionally requires verified hourly data, both hourly generation and hourly load data. The methodology should specify the source of hourly generation data. Depending on the structure of the transaction and the type of energy supplier, there may be technology and other institutional or logistical barriers to collecting and distributing that data to the energy supplier or the USG. The methodology should also identify requirements for hourly load data from the USG. There must be technology (e.g. smart metering etc.) to collect hourly load data, along with potentially personnel to monitor, process and analyze it, and a mechanism to deliver it to the energy supplier or the USG, or an appropriate estimation method. The methodology should address how it will accommodate data gaps, or incomplete or unavailable hourly data.

The methodology should specify hourly tracking and retirement capabilities. This could involve hourly RECs issued in tracking systems, where they are available. However, to the extent that hourly RECs are not yet widely available, suppliers and third parties can develop a method for hourly tracking and verification using hourly generation and load data and monthly issued RECs. CRS has begun work with certain LSEs to develop such options for verifying hourly delivery now, without hourly RECs. Nevertheless, hourly RECs may make substantiating hourly usage easier, and they may provide benefits in terms of increasing access to hourly CFE supply. The USG can engage with existing tracking systems to support integration of more granular vintage and location data to accommodate hourly tracking and claims.

The methodology should prevent double counting or double claiming, which may be more complex with hourly claims, particularly in the context of existing annual state and voluntary programs. State Renewable Portfolio Standard (RPS) and Clean Energy Standard (CES) program targets are increasing and nearly all currently use annual or multi-year targets and annual reporting and compliance. The renewable and CFE generators that are participating in those programs will be using existing REC and certificate systems. The methodology should specify how double counting will be avoided in the context of these programs—specifically, which generation or potion of generation gets transacted in hourly vs. annual and multi-year markets, and what the relationship is between hourly and monthly RECs where both exist.

In addition, the methodology should specify what, if any, "hourly residual mix" will be used for the portion of USG load that is not covered by voluntarily contracted CFE. A methodology that involves the use of hourly grid averages or other data that is not residual—meaning it does not represent the mix of unclaimed or publicly shared electricity or resources that are not being actively purchased by a particular user or group of users—ignores transactions of specified power and double counts. There may be significant differences between grid average and residual mix on an hourly basis and the proportion of transacted renewable energy in a given hour may be quite large since renewable energy generation tends to occur at specific hours of the day in specific regions. However, hourly residual mix data is not widely available. There are substantial data barriers preventing most regions from accurately calculating hourly residual mix now.

Additional or different reporting, tracking, and verification requirements may be required for unbundled procurement of hourly RECs. While unbundled purchasing of monthly issued RECs is a well-established option for annual renewable energy usage accounting and claims,[2] unbundled purchasing of hourly RECs for hourly usage claims is not yet common practice. Depending on the source of the hourly RECs, the location of the projects, and whether the RECs are issued in existing renewable energy and generation attribute tracking systems or a new instrument tracked using a blockchain, for example, the methodology for tracking and reporting hourly delivery should include information about how the certificates are created and traded relative to monthly RECs to avoid double counting and how double claims on the underlying electricity are avoided.

The methodology should address the manner and frequency of verification and disclosure, depending on how the hourly CFE product is sold to the USG. For example, it may be sold as a percentage hourly CFE averaged over a certain time frame. In this case, the methodology should specify whether the percentage is forward-looking based on projections or backward-looking based on historical data, and what, if any, true-up processes and/or compensation mechanisms are involved.

If storage resources are involved or where suppliers are claiming to deliver CFE in certain hours based on storage, the methodology should include accounting and verification procedures for stored CFE. However, while there are established and consistent renewable energy accounting rules and legal frameworks, there are not yet consistent rules or best practice for accounting for renewable or CFE that is stored and later discharged.

The methodology may also need to address whether and how transactions of excess generation in certain hours, where procured CFE exceeds USG load, will occur.

[2] See *Guide to Purchasing Green Power: Renewable Electricity, Renewable Energy Certificates, and On-Site Renewable Generation*. (2018). Joint US EPA, US DOE, WRI, CRS, and NREL. https://www.epa.gov/sites/production/files/2016-01/documents/purchasing_guide_for_web.pdf.

CRS has begun work with individual electricity providers on product specifications and verification for pilot 24x7/hourly products to begin to address some of these issues and develop consistent hourly tracking and reporting methodologies for different supply options. CRS can also work with the USG and specific agencies to verify transactions on a pilot basis in order to ensure credible hourly transactions and claims.

Finally, CRS has launched the Clean Energy Accounting Project (CEAP) to develop targeted clean energy and greenhouse gas (GHG) emissions guidance addressing outstanding questions in voluntary and regulatory markets—questions like, how to account for standard delivery renewable energy and how to account for stored renewable energy. CEAP uses a consensus-based stakeholder process to resolve these issues and build agreement around best practice accounting methodologies and reporting. Federal agencies can participate directly in CEAP working groups on specific topics and/or monitor its progress for guidance on certain topics related to tracking and reporting hourly delivery of CFE.

4.1.e Contextual Narrative
Respondent shall submit a company profile that includes: (a) company name and address; (b) brief description of company, including markets in which the company operates, the year the company was established, where it is incorporated, whether it is owned or controlled by another entity, and number of employees; (c) names of two points of contact (including title, telephone number and email addresses); (d) a detailed description of capabilities and examples / locations of similar experience from within the last five years that illustrate the firm's ability to respond to efforts of similar scope.

Company Profile

a. Center for Resource Solutions (CRS)
   1012 Torney Ave, 2nd Floor
   San Francisco, CA 94129
b. CRS is a 501(c)(3) nonprofit organization, established in 1997, that creates policy and market solutions to advance sustainable energy. CRS runs national and international programs that provide technical guidance to policymakers and regulators at different levels on renewable energy policy design, accounting, tracking and verification, market interactions, and consumer protection. CRS administers the Green-e® programs, the largest of which is Green-e® Energy, the leading independent certification for voluntary renewable electricity products in North America. In 2020, Green-e® Energy certified retail sales of over 90 million megawatt-hours (MWh), serving over 1.4 million retail purchasers including over 104,000 businesses. Nearly half

of all installed wind capacity in the US is supplying Green-e® certified transactions.[3] Green-e® Energy certifies renewable energy products that are available in all 50 states and the District of Columbia. CRS is not owned or controlled by another entity, and currently employs 18 permanent staff.

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d. CRS is not an energy provider or energy services company. CRS was influential in the development the voluntary renewable energy market and has helped advance the expansion of renewable energy purchasing options in the US. We have provided technical guidance and programmatic support to numerous states, utilities, tracking systems, and other non-governmental organizations (NGOs) on renewable energy policy and program design, tracking system design, accounting for renewable energy and GHG emissions, and electricity product disclosures, claims and consumer protection. We have worked with numerous utilities and other renewable energy providers on the development of new renewable energy products and to verify benefits. We have also worked with buyers—including large companies, educational institutions, and government agencies—on renewable energy procurement strategies to meet a variety of goals and objectives. The Green-e® programs, underpinned by the stakeholder driven Green-e® Standard for Renewable Energy, have been providing independent, third-party verification of renewable energy purchases in the US voluntary renewable energy market for 25 years and certify the majority of voluntary renewable energy sales in the US. CRS recently launched the Clean Energy Accounting Project (CEAP), which develops standardized, stakeholder-reviewed clean energy and GHG emissions accounting guidance addressing outstanding questions in voluntary and regulatory markets. CRS and the Green-e® programs have been a resource for federal agency renewable procurement for over two decades. We have worked directly with several agencies on procurement and accounting. During previous administrations, Green-e® certification has included a Federal Option, whereby participating sellers can offer a certified renewable energy product that meets both Green-e® and federal procurement requirements. CRS has led and also participates in a number of conversations and organized working groups and initiatives related to 24x7 CFE and procurement to match electricity consumption on an hourly basis, as well as related hourly data, accounting, and reporting and verification. CRS is currently working with electricity providers, both within and outside of the US, on the development of specifications for 24x7/hourly CFE and/or renewable energy products, and verification of sales of those products on a pilot basis.

[3] For more information, please see the 2021 Green-e® Verification Report (2020 Data), available at: https://resource-solutions.org/g2021/.