

Request for Information – Carbon Pollution-Free Electricity (CFE)

Transitioning the United States Government to a Carbon Pollution-Free Electricity (CFE) Supply – Market Capabilities in Competitive Retail Electricity Markets

This announcement constitutes a Request for Information (RFI) to obtain market information and capabilities for planning purposes from vendors and other interested parties in supplying carbon pollution-free electricity (CFE) to the United States Government (USG) in locations with competitive retail electric markets as described below. Responses to this notice are not offers and cannot be accepted by the USG to form a binding contract.

1 Introduction

Executive Order 14057 (EO 14057), *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* (Dec. 8, 2021), directs the USG to “lead by example in order to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050.”

Relevant to the information sought in this RFI, EO 14057 Sec. 203, *Transitioning to 100 Percent Carbon Pollution-Free Electricity*, further provides that “[e]ach agency shall increase its percentage use of carbon pollution-free electricity, so that it constitutes 100 percent of facility electrical energy use on an annual basis, and seek to match use on an hourly basis to achieve 50 percent 24/7 carbon pollution-free electricity, by fiscal year 2030.” (Referred to herein as, “Sec. 203 Targets”.)

EO 14057 defines “carbon pollution-free electricity” as “electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal), geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets [Environmental Protection Agency (EPA)] requirements.”

EO 14057 also defines “24/7 carbon pollution-free electricity” as “carbon pollution-free electricity procured to match actual electricity consumption on an hourly basis and produced within the same regional grid where the energy is consumed.”

2 Purpose

This RFI has the following objectives:

- Demonstrate intent to achieve targets set by EO 14057 using a whole-of-government approach
- Understand ability of industry to supply the scale of CFE needed, and gather indicative pricing information based on increments of scale
- Gather information from industry on potential approaches to and key considerations for meeting the targets set by EO 14057

The USG may combine CFE procurements of several agencies to achieve economies of scale, where appropriate. The USG’s procurement of CFE to meet the Sec. 203 Targets is currently expected to be integrated into existing electricity procurements in a phased approach over the course of several years, through both the transition of existing retail supply contracts and, where appropriate, new power generation procurements.

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Within this context, this RFI seeks responses for retail electricity supplied CFE from interested parties to meet a portion of USG electricity consumption requirements in some competitive retail markets of regional transmission organizations (RTOs) / independent system operators (ISOs), specifically PJM, Electric Reliability Council of Texas (ERCOT), ISO New England (ISO-NE), Midcontinent ISO (MISO), and New York ISO (NYISO) markets¹.

Across these markets, the USG competitively procures more than ~9 terawatt-hours (TWh) of electricity annually in total, with ~7500 gigawatt-hours (GWh) in PJM, ~1000 GWh in ERCOT, ~500 GWh in ISO-NE, ~200 GWh in MISO, and ~400 GWh in NYISO through aggregated, regional procurements executed by Defense Logistics Agency (DLA) and the U.S. General Services Administration (GSA). These volumes are shared to demonstrate the magnitude of CFE that the USG may ultimately require to meet the Sec. 203 Targets of EO 14057, but do not necessarily reflect the amount of CFE that will ultimately be procured.

3 Response guidelines

3.1 Overview of requested information

In alignment with the EO 14057 Sec. 203 Targets, Section 4 of this RFI is structured to capture the following information:

- **Section 4.1:** Overall context, proposed approach, and additional relevant details for proposals from respondents
- **Section 4.2:** Annual price for retail electricity supplied CFE in a specific RTO/ISO for a range of CFE supply quantities (contextualized by USG’s current approximate regional procurement volumes)
- **Section 4.3:** Baseline hourly matching percentage for the CFE supply outlined in Section 4.1 (with no storage or additional volume-firming generation)
- **Section 4.4:** Portfolio adjustments (e.g., storage or additional volume-firming generation) and annual price premium required to increase the hourly matching (24/7) percentage

For the entirety of the requested information in Section 4, distinct, independent responses should be provided for each RTO/ISO and CFE supply quantity range (where applicable for the respondent). This will allow the USG to capture and directly compare price, generation mix, and proposed approaches for meeting Sec. 203 Targets by RTO/ISO region and supply scale.

The following are target annual CFE retail supply quantity ranges, given historical demand:

- 100-250 GWh (responses of this scale applicable to all RTO/ISOs - PJM, ERCOT, ISO-NE, MISO, NYISO)
- 500-1000 GWh (responses of this scale applicable to ERCOT and PJM)
- 1000+ GWh (responses of this scale limited to PJM)

Note: Annual CFE retail supply quantity ranges reflect the scale of CFE required considering USG electricity consumption today, but do not necessarily reflect the scale of CFE that will be necessary to meet future demand requirements. If respondents are able to offer price or other advantages through different CFE supply options, please describe as part of response in Section 4.1(c).

¹ For purposes of obtaining meaningful feedback, this RFI makes certain assumptions about USG methodologies for CFE accounting that have not yet been established. See OMB Memorandum M-22-06 at pg 3: “[The USG] will develop methodologies for CFE accounting to measure progress toward the goals of [EO 14057].”

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3.2 Contracting guidelines

The following table outlines the USG’s contracting guidelines that all respondents should account for when responding to this RFI.

Table 1: Contracting guidelines

Contract items	Guidelines
CFE location	For the purposes of this RFI, CFE must be delivered within the ISO/RTO where the load is located.
CFE operation / ownership	USG does not intend to own, operate, or maintain any generating facilities as a result of the contemplated CFE procurement.
Contract start date and length	Current USG retail supply contracts are typically 2-5 years in duration, but the USG is interested in considering contract terms not to exceed 10 years in length (as per statutory authority from Federal Acquisition Regulation (FAR) Part 41), with a preference to begin phasing CFE into its FY22 competitive retail procurements with contract deliveries beginning in 2023.
Attributes representing the renewable or zero-carbon nature of purchased electricity	For purposes of this RFI, Renewable Energy Certificates (RECs) or other forms of CFE electricity tracking and accounting claims must be included with CFE supply. Bundled RECs / CFE claims are preferred. 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.
Impact	The USG expects that compliance with Sec. 203 of EO 14057 will catalyze the development of at least 10 gigawatts of new American clean electricity production by 2030. [Fact Sheet for EO 14057] There is a preference for CFE supply to be from new or previously underutilized generation sources.

3.3 Definitions

The following table provides definitions that should underpin and inform responses to this RFI.

Table 2: Definitions

Term	Definition
CFE supply types	“Carbon pollution-free electricity” (CFE) means electrical energy produced from resources that generate no carbon emissions, including, but not limited to: <ul style="list-style-type: none"> ● Marine energy ● Solar ● Wind

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	<ul style="list-style-type: none"> ● Hydrokinetic (including tidal, wave, current, and thermal) ● Geothermal ● Hydroelectric ● Nuclear ● Renewably sourced hydrogen ● Electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets EPA requirements. <p>[Defined in EO 14057, Section 603]</p>
24/7 CFE	<p>“24/7 carbon pollution-free electricity” means carbon pollution-free electricity procured to match actual electricity consumption on an hourly basis and produced within the same regional grid where the energy is consumed. [Defined in EO 14057, Section 603]</p>
Storage	<p>For the “100% carbon pollution-free electricity on an annual basis” and the “Baseline hourly matching (24/7) carbon pollution-free electricity percentage” portions of the response (sections 4.1 and 4.2), assume no electricity storage.</p> <p>Electricity storage capacity may be included as part of the response for “Additions to portfolio to increase hourly matching (24/7) percentage” section (section 4.3).</p> <p>Electricity storage projects should not be included independent of a CFE supply portfolio. Electricity storage technologies relevant to this RFI may include, but are not limited to:</p> <ul style="list-style-type: none"> ● Batteries (e.g., Lithium-ion) ● Thermal electricity storage ● Pumped hydroelectric ● Compressed air ● Flywheels ● Fuel cells ● Advanced long-duration electricity storage technologies (e.g., flow batteries)
Pricing	<p>For purposes of this RFI, pricing questions are focused on the cost of the CFE only; all other market charges associated with retail supply should be considered as a direct pass-through.</p>

4 Requested information

4.1 Contextual narrative

The purpose of this section is to capture the overall context, proposed approach, and additional relevant details for preparation of submittals from respondents. This RFI section should be answered in free response form and address the following points, at a minimum.

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- a. For each RTO/ISO in which the respondent operates, and for which the respondent intends to complete response Section 4.2 (noting that, for purposes of this RFI, responses should be limited to PJM, ERCOT, ISO-NE, MISO, and NYISO markets), please describe the following:
 - i. Proposed or recommended phased approach or strategy for reaching Sec. 203 Targets in the RTO/ISO
 - ii. For current suppliers of electricity to the USG in the RTO/ISO, a proposed approach for transitioning existing retail contracts and associated price impacts
 - iii. Barriers or constraints to reaching Sec. 203 Targets for the RTO/ISO
 - iv. Feasibility of the timing to support the Sec. 203 Targets in the RTO/ISO. The timeline should include any actions needed in preparation for facilitating the goals, including identifying current supply availability in place and source type, size and location, and those potential projects in the interconnection queue status if satisfying with new resources and location of project, as well as interconnection point, and the anticipated timing of commercial operation.
 - v. Any regulatory scheduling and performance risks associated with response, and description of how these identified risks can be avoided, mitigated, or resolved.
- b. Description of anticipated methodology for tracking and reporting the quantity of CFE (MWh) supplied on an annual and hourly basis.
- c. If applicable, describe price or other advantages available through broader aggregation resulting in larger CFE supply volumes across regions.
- d. Any requirements the respondent would have or further information the respondent would need in order to offer on a potential Request for Proposal (RFP).
- e. 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.

4.2 100% CFE on an annual basis

The purpose of this section is to capture the annual price for retail electricity supplied CFE in specific RTOs/ISOs for CFE supply ranges that are contextualized by USG’s current approximate regional procurement volumes.

Table 3: Annual supply, organized by aggregated delivered energy from a CFE supply source. For this portion of the response, assume no energy storage. *Note: If using the tables, copy and complete the below table for each RTO/ISO of interest and target range(s) of annual CFE supply quantity.*

- 100-250 GWh (responses of this scale applicable to all RTO/ISOs - PJM, ERCOT, ISO-NE, MISO, NYISO)
- 500-1000 GWh (responses of this scale applicable to ERCOT and PJM)
- 1000+ GWh (responses of this scale limited to PJM)

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There is a preference for CFE supply to be from new or previously underutilized generation sources.

The respondent may choose to use the table below to structure their response as useful, or to supply information from the table in narrative format.

Region: [RTO/ISO]								
Target supply quantity range: [GWh annually]								
Contract start date: [MM/DD/YYYY]								
	2023	2024	2025	2026	2027	2028	2029	2030
CFE amount delivered (GWh)								
Of the total amount, indicate the expected % from different sources. Note: % should sum to 100%.								
Wind (%)								
Solar (%)								
Other CFE (%, type of CFE)								
Total estimated capacity (MW)								
Wind (MW)								
Solar (MW)								
Other CFE (MW, type of CFE)								
Price range (\$/MWh)								
Describe location of supply								
CFE capacity that is new or additional to the grid (% of total estimated capacity; preference for CFE supply to be from new or previously underutilized generation sources)								
For this portfolio, describe what type of RECs or other CFE claims are included and any associated price. <i>[Fill in answer here]</i>								

4.3 Baseline hourly matching (24/7) CFE percentage

The purpose of this section is to capture the baseline hourly matching percentage for each CFE supply outlined in Section 4.2 (with no additional battery storage or volume-firming generation).

An illustrative load profile showing hour-by-hour electricity consumption for a period of one year and totaling 1000 GWh in annual electricity consumption will be provided as Supplementary Material to complete Sections 4.3 and 4.4 on a request-only basis. Requests can be made by sending an email to dlaenergy.eteam@dla.mil. Please include your company name and your full legal name along with your request.

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To complete Sections 4.3 and 4.4, please follow the following instructions:

- **Step 1:** For each hour in one year, calculate the *adjusted hourly electricity load* by scaling the illustrative load profile provided as Supplementary Material to match the scale of the supply or portfolio of supply outlined in Section 4.2. For example, if a supply of 500 GWh annually is outlined in Section 4.2, each hour in the illustrative load profile should be multiplied by a factor of (500 GWh/1000 GWh) to estimate the hourly electricity load.
- **Step 2:** Estimate the *hourly CFE supply*, the amount of CFE (MWh) that will be provided by the respondent’s electricity supply in each hour of the year, for the duration of the supply contract.
- **Step 3:** Calculate the *hourly-matched CFE supply*, the amount of CFE (MWh) that will be provided by the respondent’s electricity supply that matches the load, in each hour of the year, for the duration of the supply contract.
 - Equals the minimum value of the *hourly electricity load* and *hourly CFE supply*
- **Step 4:** Calculate the weighted average of the values calculated in Step 2 for one year (*Annual CFE Match %*) by summing the minimum of CFE supply and load for each hour over the year, and dividing that total by the total annual load. This is shown mathematically as:
 - $\sum_{i=1}^{8760} (\min(\text{Hourly load}, \text{Hourly CFE supply})) / \sum_{i=1}^{8760} (\text{Hourly load})$
 Repeat the Annual CFE Match % calculation for each year included in the supply contract and share the results. If using the tables for your response, complete Table 4 to the fullest extent possible.

An illustrative example of calculations described in Steps 1-4 using a period of 3 hours is provided below. This example assumes the respondent delivers an annual CFE supply of 500 GWh. These calculations should be extended to the 8760 hours in each year, for each year included in the supply contract:

	<i>Illustrative load profile</i> (MWh)	Step 1: <i>Adjusted hourly electricity load</i> (MWh)	Step 2: <i>Illustrative hourly CFE supply</i> (MWh)	Step 3: <i>Hourly-matched CFE supply</i> (MWh)
Calculation	n/a	= [Hourly illustrative load] * ([Annual CFE supply in GWh] / 1000 GWh)	n/a	Min (Hourly load, Hourly CFE Supply)
Hour 1	200	100	50	50
Hour 2	300	150	135	135
Hour 3	100	50	115	50
Total	600	300	300	235
Step 4: <i>Annual CFE Match %</i> (to apply to period of 8760 hours for actual annual calculation)				78.3% = 235/300 (total matched supply / total load)

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Table 4: Estimated Annual CFE Match % (percentage of load matched by generation on an hourly basis for the electricity supply or portfolio of supply described in Section 4.2). *Note: If using the tables, copy and complete the below table for each RTO/ISO and target annual CFE supply range addressed in Section 4.2. The respondent may choose to use the table below to structure their response as useful, or to supply information from the table in narrative format.*

Region: [RTO/ISO]								
Target supply quantity range: [GWh annually]								
Contract start date: [MM/DD/YYYY]								
	2023	2024	2025	2026	2027	2028	2029	2030
Estimated Annual CFE Match % (total matched supply/ total load)								

4.4 Additions to portfolio to increase hourly matching (24/7) percentage

The purpose of this section is to capture the portfolio adjustments (e.g., storage or additional volume-firming generation) and associated annual price premium required to increase the hourly matching (24/7) percentage.

For each RTO/ISO addressed, what energy storage, or adjustments to the supply or portfolio of supply, would the respondent make to increase the percentage CFE match on an hourly (24/7) basis? Use the same methodology outlined in Section 4.3 to perform calculations. If using the tables, complete Table 5 to the fullest extent possible.

Table 5: Adjustments to portfolio to increase matching on an hourly basis and associated price. *Note: If using the tables, copy and complete the below table for each RTO/ISO and target annual CFE supply range addressed in Sections 4.2 and 4.3. The respondent may choose to use the table below to structure their response as useful, or to supply information from the table in narrative format.*

Region: [RTO/ISO]								
Target supply quantity range: [GWh annually]								
Contract start date: [MM/DD/YYYY]								
	2023	2024	2025	2026	2027	2028	2029	2030
Estimated Annual CFE Match % (total matched supply/ total load)								
Storage								
Additional storage capacity needed (if any) (MW)								
Type of storage capacity (% , type)								
Anticipated annual electricity discharge (MWh)								
Generation								
Additional generation capacity needed (if any) (MW)								
Type of generation capacity (% , type)								
Price range for delivered electricity (\$/MWh)								

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5 Response guidelines

5.1 Response Format

Interested parties are requested to respond to this RFI by completing and submitting the requested information identified in Section 4, in both Portable Document Format (PDF) and Excel for Office 2000 compatible format. The response is limited to 20 single sided pages (12 point font Arial, 1 inch margins).

5.2 Submission

Responses are **due no later than 7 March 2022, 3:00pm EST**. Responses shall be submitted via e-mail only to dlaenergy.eteam@dla.mil. Emailed submissions shall not exceed 50 MB. If a respondent chooses to submit any business sensitive, proprietary, or otherwise confidential information, it must be marked as proprietary or restricted data in the response. Information received from respondents will not be shared with any other respondent. Respondents will not be notified of the results of this market research. Response to this RFI is not required in order to respond to any future solicitation that may possibly follow, but information gathered through this RFI may influence future solicitation development.

5.3 Request for Information only, not Request for Proposal

This RFI is issued solely for information and planning purposes – it does not constitute a RFP or a promise to issue a RFP in the future. This request for information does not commit the USG to contract for any supply or service whatsoever. Further, the USG is not at this time seeking proposals and will not accept unsolicited proposals. Respondents are advised that the USG will not pay for any information or administrative costs incurred in response to this RFI; all costs associated with responding to this RFI will be solely at the interested party's expense. Not responding to this RFI does not preclude participation in any future RFP, if any is issued. If a solicitation is released, it will be synopsisized on SAM.gov website. It is the responsibility of the potential offerors to monitor this site for additional information pertaining to this requirement.

6 Industry discussions

DLA Energy or other authorized USG representatives may or may not choose to meet with potential offerors. Such discussions would only be intended to get further clarification of potential capability to meet the requirements, especially any development and certification risks.

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7 Questions

Questions regarding this announcement shall be submitted in writing by e-mail to dlaenergy.eteam@dla.mil no later than 25 February 2022, 3:00pm EST. Please address the email subject line as, “CFE RFI SP0604-22-0411_ Company Name”. Verbal questions will NOT be accepted.

8 Summary

THIS IS A REQUEST FOR INFORMATION (RFI) ONLY to identify sources that can provide carbon pollution-free electricity to the USG. The information provided in the RFI is subject to change and is not binding on the Government. The USG has not made a commitment to procure any of the items discussed, and release of this RFI should not be construed as such a commitment or as authorization to incur cost for which reimbursement would be required or sought. All submissions become Government property and will not be returned.