EPA United States Environmental Protection Agency

CLIMATE POLLUTION REDUCTION GRANTS
U.S. Environmental Protection Agency

CPRG Implementation Grant Applications: Documentation of GHG Reduction Assumptions

December 18, 2023 | 4:00 PM Eastern

Welcome

- This webinar will be recorded, and a recording will be posted on EPA's website.
- The Question and Answer (Q&A) is closed for this meeting, but if you have additional questions, please send them to CPRG@epa.gov.

Today's Agenda

Climate Pollution Reduction Grants (CPRG) Implementation Grants

Peter Hansel, Special Advisor for Implementation, Office of Air Quality Planning and Standards

- Reporting Emissions Reductions
- Criteria 2a and 2b

Phil Assmus, Senior Policy Specialist, State and Local Climate and Energy Program

- Criteria 2c and 2d
- Technical Appendix

*If there are any discrepancies between information presented in this presentation and what is written in the Notice of Funding Opportunity (NOFO) please defer to the NOFO.

Impact of GHG Reduction Measures

- Applications should describe the magnitude of both near-term and long-term cumulative GHG emission reductions, the relative cost-effectiveness of those reductions, and the reasonableness and quality of the assumptions and calculations used to determine the reductions and cost-effectiveness of those reductions.
- Applicants should provide quantitative total cumulative GHG reductions from all measures for the period 2025 through 2030 and 2025 through 2050.
  - Emission reductions in metric tons of CO_2-equivalent from each measure and total for all measures
  - Discuss the extent to which the measures will result in permanent reductions
- For applications that include multiple GHG reduction measures, applicants should provide individual calculations, explanations, and documentation for each GHG reduction measure.
- Only quantify emission reductions that will occur as a result of EPA's CPRG implementation grant funding.

How to Report Emission Reductions

- The application should include estimated reductions for the following GHGs, as relevant, for each GHG reduction measure: carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorocarbons, and sulfur hexafluoride.

- Convert GHG reductions to "CO_2 equivalent" (CO_2e) reductions using Global Warming Potentials (GWPs) from IPCC's Fifth Assessment Report (see Appendix B of the NOFO).

- If CPRG funding represents a fraction of the total funding for a GHG measure (e.g., other federal and state grants or tax incentives are used), the total estimated GHG emission reductions from the measure should be scaled by the same fraction in order to quantify GHG emission reductions associated with CPRG funding.
  - Quantified GHG reductions from CPRG funding = [(Requested CPRG funding)/(Total funding to implement measure)] x (Total estimated GHG reductions of measure)

Evaluation Criteria: Section 2

Impact of GHG Reduction Measures	General Competition	Tribes & Territory Competition
2.a. Magnitude of GHG Reductions from 2025 through 2030 Provide cumulative reductions from 2025 to 2030 that directly result from CPRG grant funding. Also describe durability of reductions.	20	5
2.b. Magnitude of GHG Reductions from 2025 through 2050 Provide cumulative reductions from 2025 to 2050 that directly result from CPRG grant funding. Also describe durability of reductions.	10	5
2.c. Cost Effectiveness of GHG Reductions Calculate: CPRG grant dollars divided by cumulative 2025 to 2030 reductions. Include qualitative narrative describing factors affecting cost-effectiveness.	15	5
2.d. Documentation of GHG Reduction Assumptions Provide methodologies, assumptions, and calculations used for criteria 2.a thru 2.c.	15	5
SUBTOTAL	60 of 250 total	20 of 100 total

Criteria 2a: Magnitude of GHG Reductions from 2025 through 2030

- Applications should describe the magnitude of cumulative GHG emission reductions and the durability and permanence of the reductions that will be achieved through implementation of each GHG reduction measure for the period 2025 through 2030.
  - Cumulative reductions from 2025 through 2030.
  - Reported in metric tons of CO_2-equivalent.
  - For each measure and a sum total for all measures in the application
- Applicants should discuss the extent to which the measures will result in a permanent reduction in cumulative GHG emissions.

Criteria 2b: Magnitude of GHG Reductions from 2025 through 2050

- Applications should describe the magnitude of cumulative GHG emission reductions and the durability and permanence of the reductions that will be achieved through implementation of each GHG reduction measure for the period 2025 through 2050.
  - Cumulative reductions from 2025 through 2050.
  - Reported in metric tons of CO_2-equivalent.
  - For each measure and a sum total for all measures in the application
- Applicants should discuss the extent to which the measures will result in a permanent reduction in cumulative GHG emissions.

Criteria 2c: Cost Effectiveness of GHG Reductions

- Applicants should include a calculation of the requested CPRG implementation grant dollars divided by the quantified CO_2-equivalent GHG emission reductions for the period 2025 through 2030 calculated to meet criterion 2.a for the set of measures included in the application.
  - For applications with more than one GHG reduction measure, the quantified emission reductions of all measures should be added together before conducting the calculation.
  - Cost effectiveness of GHG reductions = (Requested CPRG funding) / (Sum of Quantified GHG reductions from CPRG funding from 2025 through 2030)

- Applicants may also provide a qualitative narrative explaining any factors that affect the measures' cost effectiveness (e.g., sector dynamics, expected beneficiaries of the measures, prevailing costs in the implementation areas, or other circumstances).

Criteria 2d: Documentation of GHG Reduction Assumptions

- Applicants must provide a technical appendix, along with the project narrative, demonstrating the reasonableness of their GHG emission reduction estimates.
  - Up to 10 additional pages.

- For each GHG reduction measure applications should demonstrate the quality, thoroughness, reasonableness, and comprehensiveness of the methodology, assumptions, and calculations described for developing the estimated GHG emission reductions.

- Applicants should document the methods for estimating GHG emission reductions using the latest available information, whenever possible, including enacted federal, state, tribal, territorial, local, and/or other requirements and policies, where applicable.

- All applicants should provide measure-specific assumptions and data elements needed to calculate GHG emission reductions.
  - Both the technical appendix and GHG emission reduction calculations will not count toward the 25-page limit for the workplan.
  - The rigor of the calculations should be commensurate with the level of funding requested in the application.

Appendix C. Required Technical Appendix

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- Applicants should "show their work" so that EPA can understand the basis for the GHG emission reductions estimated for each GHG reduction measure in the application.
- Provided information should include:
  - GHG Reduction Estimate Method
  - Model/Tools Used (as applicable)
  - Measure Implementation Assumptions
  - GHG Reduction Assumptions (key assumptions used in estimation method, such as emission rates; emission factors; input assumptions for modeling)
  - Reference Case Scenario (GHG emissions or activity level)
  - Measure-Specific Activity Data (e.g., energy savings, electrical output, vehicle miles traveled, units of equipment installed, or other metrics used to track implementation and/or effects of a GHG reduction measure)
  - GHG Emissions Reduced
- Applicants should describe uncertainties associated with the estimated GHG emission reduction estimates, including those related to key assumptions.

GHG Reduction Estimate Method

- Describe the methods used to arrive at the measure-related activity data or other outputs and the GHG emission reduction estimate.

- Such methods may be:
  - Engineering estimates
  - Modeling
  - Existing publicly available tool or calculator

Models/Tools Used

- As applicable, list or describe the specific models or tools used to develop the GHG emission reduction estimate; the name of the developer/provider of the model/tool (e.g., EPA); and any other detailed references (e.g., specific versions of the model or tool), as appropriate.

- Models or tools may be:
  - Economy-wide models
  - Sector-specific tools (e.g., power sector, transportation, industrial, etc.)
  - EPA or third-party resources

Measure Implementation Assumptions

- Provide key assumptions related to the implementation of the GHG reduction measure, such as:
  - Data supporting assumed rate of measure implementation
  - Implementation milestones
  - Measure lifetime
  - Capital cost assumptions
  - Operation and maintenance cost assumptions

GHG Reduction Estimate Assumptions

- Provide key assumptions used as part of the method for estimating GHG emission reductions, such as:
  - **Emission rates**: amount of GHG emissions per unit of activity (e.g., pounds of CO_2e per KWh of electricity generation or savings; per vehicle mile traveled; per unit of industrial output, etc.).
  - **Emission factors**: a unique value for determining an amount of GHG emitted for a given quantity of fuel or primary energy (e.g., metric tons of CO_2 emitted per barrel of fossil fuel burned or MMBtu of energy used).
  - Input assumptions if modeling is used, such as:
    - cost and performance data
    - energy prices

Reference Case Scenario

- Describe the reference scenario that is used to quantify GHG emission reductions for each measure:
  - Might include reference level power sector emission factor (CO_2 per kWh or MWh) to assess the impacts of measures that add low or zero-carbon emitting generation and/or reduce electricity use.
  - Might include a reference level of energy efficiency for a type of energy use equipment or GHG emission intensity under standard market practice for a type of activity, application, or equipment.
  - Might include documented base year GHG emissions for the application or sector where the GHG reduction measure will be implemented.
- For a reference scenario based on projected "business as usual" (BAU) GHG emissions, the timeframe of the BAU projection should align with the timeframe for quantified emission reduction estimates.

Measure-Specific Activity Data

- Provide relevant activity data that is used for estimating GHG emission reductions for each measure
  - This may include data such as energy savings (e.g., MMBtu by fuel or MWh saved), electrical output (e.g., MWh), vehicle miles traveled, units of equipment installed.
  - Applicants should use reasonable assumptions for measure implementation (e.g., market availability and level of use for a technology-related measure or level of participation for an activity-related measure).

GHG Emissions Reduced

- For each GHG reduction measure, provide measure-specific estimated annual GHG emission reductions
  - Absolute reduction in metric tons of CO_2 equivalent ($mtCO_2e$) and cumulative GHG emission reductions for the periods 2025 through 2030, and 2025 through 2050.
  - Applicants should use the GWP from the 2013 IPCC Fifth Assessment Report (AR5).

Global Warming Potentials (GWP) for Greenhouse Gases			
Greenhouse Gas	100-Year Global Warming Potential[a]	Greenhouse Gas	100-Year Global Warming Potential[a]
Carbon dioxide (CO_2)	1	HFC-245fa	858
Methane (CH_4)[b]	28	HFC-365mfc	804
Nitrous oxide (N_2O)	265	CF_4	6,630
HFC-23	12,400	C_2F_6	11,100
HFC-32	677	C_3F_8	8,900
HFC-41	116	C_4F_6[c]	0.003
HFC-125	3,170	c-C_5F_8	2
HFC-134a	1,300	C_4F_{10}	9,200
HFC-143a	4,800	c-C_4F_8	9,540
HFC-152a	138	C_5F_{12}	8,550
HFC-227ea	3,350	C_6F_{14}	7,910
HFC-236fa	8,060	SF_6	23,500
HFC-43-10mee	1,650	NF_3	16,100

Optional GHG Emission Reduction Calculations Spreadsheet

- Applicants may include GHG emission reduction calculations that quantify emission reductions for each GHG reduction measure in a spreadsheet file.
- This spreadsheet may show the specific formulas, assumptions, and/or model inputs used to determine the estimated GHG emission reductions.
- The GHG reduction calculations component has no page limit.

For More Information

Upcoming Webinars

- Additional overview webinars for potential applicants are being planned for January

Webinar Registration, NOFOs, Questions and Answers, and Newsletter Signup

www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants

Submit Questions to: cprg@epa.gov

REMINDER: Notice of Intent to Apply deadline is February 1, 2024 for General Competition and March 1, 2024 for the Tribes and Territories Competition