

District of Columbia
Department of Energy and Environment



**NOTICE OF FUNDING AVAILABILITY
AND
REQUEST FOR APPLICATIONS (RFA)**

Resilient, Innovative, Affordable Electrification in the District of Columbia
(Short name: DC Electrification and Mitigation Roadmap)
RFA # 2019-1916-EA

Publication Date: 3/8/2019

Application Deadline: 4/8/2019 at 4:30pm

Government of the District of Columbia
Department of Energy and Environment
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SECTION 1. GENERAL INFORMATION

1.1 Introduction

The Department of Energy and Environment (“DOEE”) solicits grant applications from eligible entities (called “Applicants”). The goals of this Request for Applications (RFA) are to improve the District’s air quality and minimize the District’s contribution to climate change. The District Government’s targets are a 50% reduction of the District’s energy use and greenhouse gas (GHG) emissions between 2006 and 2032. Concurrently, the use of renewable energy would increase by 50%. The objective of this RFA is to supplement DOEE’s Clean Energy DC Plan (<https://doee.dc.gov/cleanenergydc>) to implement the Sustainable DC Plan (<http://www.sustainabledc.org/in-dc/sdc2-0/>) with carefully calculated values. The grantee will recommend energy measures and practices, based on rigorous computer modeling that will assist the DC community in attaining the District Government’s 2032 climate and energy targets.

DOEE has determined that further, focused, effort is required to meet District policy targets. Presently, DOEE sees Clean Energy DC’s energy use reduction pathway delivering only a 30% reduction during the period 2006 to 2032. It also tentatively concludes that the plan’s transportation sector may not have been optimally examined.

Federal funds from U.S. Department of Energy (DOE), titled Resilient, Innovative, and Affordable Electrification in the District of Columbia will be used to fund this RFA and will require DOEE to supply an electrification and mitigation roadmap with six distinct tasks at end of the performance period.

<https://doee.dc.gov/release/notice-funding-availability-%E2%80%93-carbon-neutrality-strategy>
<https://doee.dc.gov/cleanenergydc>
<http://www.sustainabledc.org/in-dc/sdc2-0/>

DOEE seeks a suite of studies, as an electrification and mitigation roadmap, consisting of six distinct tasks. DOEE will accept an application from a single entity, or from a team working through a team leader. An applicant to this RFA must respond to all six (6) tasks, described below. The application must include a budget and budget narrative. The total available funding is \$300,000. The Energy Administration (EA) of DOEE will administer this RFA.

1.2 Purpose of the Grants

The purpose of this grant is to

- a. Estimate the increase in electric demand from electrification and the impact to the existing electrical distribution grid;

- b. Identify the buildings that can be (1) electrified cost-effectively based on available technology and established criteria, and (2) decarbonized using sources such as geothermal energy or sewer heat;
- b. Develop a phasing strategy for building electrification and deployment of charging stations;
- c. Advise on non-wires solutions using Distributed Energy Resources, for a few load-congested areas.
- d. Identify the maximum potential of building energy efficiency and thermal decarbonization of all buildings in the District of Columbia;
- e. Forecast the increase in electricity demand from new building and transportation electrification (optimized for minimal building energy footprint, and vehicle mile traveled per the District's Multimodal Long-Range Transportation Plan, at <http://www.wemovedc.org/>), and then identify the associated impacts on the District's GHG emissions and the distribution grid; and
- f. Develop strategies for cost-effective load management and peak demand reduction, using cost-effective distributed energy resources to provide resiliency and reduce infrastructure costs

1.3 Source of Funds

The source of funds for the grant is US Department of Energy Weatherization Assistance Program.

1.4 Competition for a Grant Award

This RFA is competitive. Each Applicant must demonstrate its ability to carry out the activities for the grant for which it applies (called a "project"). A review panel will evaluate the applications for each advertised grant according to the stated list of criteria in each project's description. The proposal/s with the highest score/s will be awarded the grant.

Specifically, grant awards will be made based on eligibility (Section 1.6), the extent to which the proposed project fits within the scope and available funding of the grant, strength of the application, and the organization's capacity to achieve the grant's goals.

Each Applicant may submit an application for more than one project, if applicable. If an Applicant responds to more than one project, it must do so in a separate proposal and submit all corresponding required documents.

1.5 Projects and Funds Available

DOEE seeks applications for:

| Project Name | Project Amount |
|---|-----------------|
| Resilient, Innovative, Affordable Electrification in the District of Columbia | \$300,000 |
| Task | Amount per Task |
| Energy Efficiency, Building Electrification, and Thermal Decarbonization Modeling | \$70,000 |
| Baseline Scenario Modeling for Transportation Electrification | \$35,000 |
| Correlation of GHG Emissions Rate of Electricity with EV Charging | \$25,000 |
| Suitable Locations in the Pepco DC Grid for Electrification | \$55,000 |
| New System Capacity Needs Due to Electrification | \$65,000 |
| Cost-effective Alternatives to Meet Increased Demand | \$50,000 |

1.6 Eligibility

The following are eligible to apply if an “x” appears:

- ☒-Nonprofit organizations, including those with IRS 501(c)(3) or 501(c)(4) determinations;
- ☒-Faith-based organizations;
- ☐-Government agencies;
- ☒-Universities/educational institutions; and
- ☒-Private Enterprises.

Continuing conditions of eligibility are that the information in the application is complete and truthful and that the Applicant at all times is able to meet any material conditions stated in its application. For instance, if an Applicant’s ability to fulfill the terms of the grant is based on the availability of skilled staff and those staff should leave after the application’s submittal or the grant award to the Applicant, the Applicant has the responsibility to advise DOEE in writing of this change in material conditions. Another example of change in material conditions that could result in the loss of eligibility would be the loss of the Applicant’s tax-exempt status.

1.7 Definitions

District - The District of Columbia.

Grantee - The person provided a grant by the District, including a sub-grantee.

Person - A natural person or a legal entity, including a partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, cooperative, the District government and its agencies, and the federal government and its agencies.

Writing - A tangible or electronic record of a communication or representation, including handwriting, typewriting, printing, photostat, fax, photography, word processing computer output, and e-mail. A "signed" writing includes an electronic symbol or process attached to, or logically associated with a writing, and executed or adopted by a person with the intent to sign the writing.

1.8 Permissible Use of Grant Funds

A Grantee may use grant funds only for allowable grant project expenditures. Grant funds related to work performed will be provided on a reimbursement basis, except that an advance of funds may be provided for grant administration expenses in limited circumstances for good cause approved by DOEE at its sole discretion.

1.9 Grant Monitoring

In its sole discretion, DOEE may use several methods to monitor the grant, including site visits, periodic financial reports and the collection of performance data. Each grant is subject to audit.

1.10 General Terms and Conditions

Appendix 1, "General Terms and Conditions" is incorporated by reference in this RFA. Applicants and Grantees must comply with any and all applicable terms and conditions outlined in Appendix 1.

1.11 RFA Conditions - Promises, Certifications, Assertions, and Assurances

Appendix 2, "Applicant's Promises, Certifications, and Assurances" ("PCA"), is incorporated by reference in this RFA.

1.12 DOEE's Authority to Make Grants

DOEE has grant-making authority under:

- The Renewable Energy Portfolio Standard Act of 2004 (D.C. Law 15-340, D.C. Official Code §§ 34-1431-40), including § 34-1436(b) and (c)
- The Water Pollution Control Act of 1984, effective March 16, 1985, as amended, (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*);
- The District Department of the Environment Establishment Act of 2005, effective February 15, 2006, as amended, (D.C. Law 16-51, D.C. Official Code § 8-151.01 *et seq.*);
- The Comprehensive Stormwater Management Enhancement Amendment Act of 2008, effective March 25, 2009, (D.C. Law 17-371; D.C. Official Code § 8-152.01 *et seq.*); and
- Other applicable laws and regulations.

1.13 Conflicts between RFA and Applicable Law

If any requirement of this RFA conflicts with a provision of any applicable law, including a District or federal law or regulation, the applicable legal provision shall control.

SECTION 2. SUBMISSION OF APPLICATION

2.1 RFA Release Date

The release date of this RFA is 3/8/2019.

2.2 Obtaining a Copy of the RFA

A person may obtain a copy of this RFA at doee.dc.gov or by requesting a copy through any of the methods listed in Section 2.6. Please add to any note the heading “RE: RFA 2019-1916-EA.”

2.3 Applications: When, What, and Where

When: All applications must be received at the address below by 4:30 p.m. on 4/8/2019.

Applications will be dated and recorded as “received” pending review by DOEE for completeness. DOEE considers an application to be “filed” only if all the required materials are submitted. Late or incomplete applications will be considered received, not filed.

What: The contents of the Application are specified in Section 3. Each applicant must submit:

Five paper copies of the application; and

One electronic copy.

The Department will not receive faxed copies.

Where: The paper copies must be filed with DOEE at the following address:

District of Columbia Department of Energy and Environment

**RFA – Grants
1200 First Street NE
5th Floor
Washington, DC 20002**

Attn: RFA 2019-1916-EA

Email an electronic copy, formatted as a .pdf file, to: DCElectrificationRoadmap@dc.gov

2.4 Award Announcement

DOEE expects to notify each Applicant in writing of its award status within six to twelve weeks after the application due date.

2.5 Updates and Questions and Answers (Q & A)

Additional information may become available before the application is due. It is the Applicant's responsibility to stay up-to-date on the status and requirements of the grant for which it is applying.

DOEE welcomes questions seeking clarification of matters in this RFA. Questions about the RFA should be sent to DCElectrificationRoadmap@dc.gov with "RE: RFA 2019-1916-EA" in the subject line.

DOEE will publish updates and Questions and Answers (Q&A) regarding the RFA at doee.dc.gov. DOEE will also create an email list to send updates and information regarding the RFA. A person can be put on the email list by immediately emailing DCElectrificationRoadmap@dc.gov with the subject line "RE: RFA 2019-1916-EA – Add me to the email list."

DOEE will provide the information to those on the email list at the same time the information is uploaded to the DOEE website. Paper copy updates will be available for pickup at DOEE's offices by appointment. DOEE will not mail out updates or Q&A materials.

The cut-off date for receipt of any questions is one week prior to the application deadline.

2.6 DOEE Contacts

DOEE can be contacted about this RFA (use the RFA's short name and number whenever possible) by:

- (a) **Emailing** DCElectrificationRoadmap@dc.gov with “RE: RFA 2019-1916-EA” in the subject line;
- (b) **In person** by making an appointment with Eric Campbell at (202) 671-1744 and mention this RFA by name; or
- (c) **Write** DOEE at 1200 First Street NE, 5th Floor, Washington, DC 20002, Attention: Eric Campbell RE: RFA 2019-1916-EA on the envelope.

SECTION 3. APPLICATION CONTENT

3.1 Format

Proposals must be formatted as follows:

- (a) Use plain, white, 8 ½” x 11” recycled paper with one-inch margins.
- (b) Applications should be double-sided to the extent possible;
- (c) Limit each project description to 10 double-spaced pages. Budget tables, flowcharts, photographs, the work plan, and other supporting documentation may be attached in addition to the project description
- (d) Staple the application in the top left-hand corner. Do not use a plastic cover or other form of binding.

3.2 Proposal Content

DOEE intends to fund a project that will benefit the environment, and, in particular, the environment of the District. The proposal should use the following format and explain, in increasing levels of detail, how the Applicant will accomplish this.

(Note: Before drafting the proposal, please read the project description very carefully to see if there are restrictions for the DOEE grant. For instance, certain activities might be required to take place in the District or the scoring might give extra points to labor sourced in the District.)

(a) Cover Sheet

Include a cover sheet in the format specified in Appendix 3. Make certain that the funding amount requested on the cover sheet matches total amount requested in your budget and budget narrative.

(b) Project Summary

Provide a brief one paragraph summary that explains the project. This summary is not part of the 10-page proposal limit.

(c) Project Description

Organize this 10-page section of your application in accordance with the scoring rubric of section 7 of this RFA. As an exposition to the specific line items in the scoring rubric, state the following at the start of the proposal:

(1) Purpose and Objectives

State how this project will benefit the environment and the specific objectives this project will achieve.

(2) Target Audience

Identify the target audience. Who will this project engage? Who will benefit from the project?

(3) Project Outcomes, Outputs, and Activities

The proposal should connect the funded activities to quantifiable outputs and ultimately desired outcomes. This enables reviewers to evaluate what the proposed project will achieve if funded.

Activities are undertaken to achieve the outputs and outcomes. For example, a proposal could request funding to support a tree-planting activity in a city. This activity will yield a quantifiable output.

An **output** is a short-term result achieved as a result of an activity. For example, at the end of the project period, after several sessions of tree-planting, X number of trees will be in the city. This quantifiable output will yield various project outcomes.

A **project outcome** is a medium to long-term result that occurs and/or continues after the project ends. For example, after several sessions of tree-planting activities, this project yielded an output of X number of trees planted in the city. Medium to long-term outcomes of this project include: beautification of the city, increased environmental awareness of residents, and improved air quality.

(4) Methods

Describe how activities will be accomplished.

(5) Measurement of Project Success

Provide quantifiable measurements. For example, a tree planting project might measure the number and kinds of trees planted. A trash removal project might measure the pounds of trash removed. A stormwater project might measure the amount of stormwater captured.

(6) Project Budget

You must submit a numeric budget and a separate budget narrative as part of your application package. For the numeric budget, DOEE strongly urges applicants to use the budget template format provided (Appendix 4). The budget narrative must explain and justify every line item in the numeric budget. The explanation should be thorough enough to allow a reviewer to understand why expenditure levels were chosen and how the line item amounts were derived. For example: “personnel will be paid \$xx per hour times xx hours.”

If the Applicant seeks an advance payment, it must request advance payment in its proposal and explain why an advance payment is requested. See Section 6.2.

Resources provided by the applicant should appear in the column titled “Non-DOEE Match,” meaning the Applicant intends to provide the indicated resources (i.e., the “match,” and that the resources do not come from DOEE). Entries in this column could include both dollars and the value of the in-kind contributions. For example, in-kind contributions can include staff time, volunteer services, already-paid licensing fees, materials, supplies, and the use of equipment or real estate.

Volunteer hours provided to a grantee or sub-grantee must be valued at rates consistent with those the Applicant’s organization ordinarily pays for similar work, including salary and fringes. If the grantee or a sub-grantee does not have employees performing similar work, the rates must be valued the same as rates ordinarily paid by employers in the same labor market for similar work.

The Applicant must verify that all costs in the budget are allowable.

Typical allowable costs are:

1. Rental of office space, some vehicles, and some equipment;
2. Employee salaries and benefits;
3. Contractor labor, including professional services;
4. Accounting and bookkeeping services;
5. Communications, including telephone and data services;
6. Printing, reproduction, including signage;
7. Materials and supplies;
8. Computers and printers;
9. Small tools;
10. Some field equipment, typically below \$5,000 in value;

11. Postage and shipping;
12. Necessary travel, meals and lodging; and
13. Insurance.

Non-Allowable costs include:

1. Most major equipment, like vehicles;
2. Lobbying, including salaries and overheads and out-of-pocket expenses;
3. Entertainment;
4. Interest payments on loans;
5. Most food; and
6. Land purchases.

DOEE will require documentation for grant payments, and the entire grant will be subject to audit.

(d) Applicant

(1) Organization

Describe the organization's history, mission, and current or past projects that demonstrate the organization's capacity to achieve the project's goals. This section should be limited to one page. To provide further information, the Applicant can reference its website or attach organizational brochure or resume.

(2) Key personnel

Identify the key team members for the project and provide brief biographies or their resumes. The team members can be staff, volunteers or contractors.

(3) Past performance on District Grants/Contracts

Identify District agencies from which the Applicant has received funding as a contractor, grantee, or partner in the past five years and provide specific information including:

- The grant(s) or contract(s) title;
- The District agency/agencies;
- The grant number(s), contract number(s), or other identifier(s);
- The amount(s) paid; and
- What was accomplished as a result of the funding(s).

Briefly describe any disputes, investigations, or audits related to any of these District grants or contracts, grants, or partnerships in the past five years.

(4) Partners

Sometimes partnerships can improve the success of a project. These partnerships might be with government agencies, nongovernmental organizations (NGOs), companies, or individuals. If a partner is to be involved in the project, the Applicant must describe the partner's involvement and resource commitments. The proposal must identify and attach a letter of support on the partner's letterhead, signed by an authorized official if the partner is a government agency, NGO, or business entity.

In lieu of a letter, an Applicant may attach an email from the partner (or an authorized official if the partner is a government agency, NGO, or business entity) that states support of the project and identifies the partner's name, address, website, and a contact name, telephone number, and email address.

For the following types of partners, provide the documentation indicated.

i. District of Columbia Public Schools

If the Applicant will work with the District of Columbia Public Schools (DCPS), it must include a letter of support from the principal of each school with which it will work, and, if available, from each participating teacher. Teachers and principals may send a joint letter.

ii. Property Owner

If the Applicant will work on public land, it must submit a letter of support from the managing agency. Similarly, if the Applicant is to work on private land, it must submit a letter of support from each property owner. If the project includes construction or installation, the letter must acknowledge that the property owner will be responsible (either directly or through an agreement with another entity) for project maintenance.

iii. Partnering Organization

If the Applicant has identified a project partner, it must include a letter of intent from the collaborating organization(s) agreeing to participate in the proposed project, describing the partner's involvement and resource commitments, and explaining the activities and/or services the partner will provide. The letter should demonstrate that the partnering organization understands the project presented for funding and the activities and/or services that the partner will provide. The Applicant must submit the partnering organization's Certificate of Good

Standing (from the DC Department of Consumer and Regulatory Affairs) and documentation of the partner's tax exempt status.

iv. National Park Service

Projects that would be carried out on National Park Service (NPS) property will require NPS permission. Sometimes the paperwork supporting such permission takes extra time to complete. DOEE will accept more informal statements generated by responsible NPS officials, including emails.

3.3 Work Plan

The application must include a proposed work plan that describes the timeline for project implementation.

3.4 Required Documents

Each of the following documents must be filed as part of the proposal package. If the document is not in this filing, DOEE may classify the grant application as "received" but not "filed," as specified in Section 2.3. However, if a government agency must issue a required document, and the Applicant has requested the document but not received it, DOEE may accept a copy of the Applicant's request to the agency for the purpose of deeming the Application "filed."

(a) Certificate of Good Standing

Each Applicant must submit a current Certificate of Good Standing from the District Department of Consumer and Regulatory Affairs. DOEE requires that the submitted Certificate of Good Standing reflect a date within a six-month period immediately preceding the application's submission.

(b) Promises, Certifications, Assertions, and Assurances

Each Applicant must sign and submit the "Promises, Certifications, Assertions, and Assurances" ("PCA") in Appendix 2. Signing the PCA is a condition of eligibility for this grant. If the Applicant is not prepared to sign the PCA, it should not apply for a grant. Compliance with the promises, certifications, and assurances in the PCA is a continuing condition of eligibility for this grant.

The PCA must be signed by the Applicant or, if the Applicant is an organization, by a duly authorized officer of the organization.

The PCA also includes a sworn statement verifying that the Applicant is not in arrears (i.e. is "current") on all obligations outstanding to the District, including all District agencies. The Applicant must be "current" as of the date of the application and the date of a grant award.

DOEE requires, as a condition of continuing eligibility, that a grantee stay current on such obligations during the period of the grant.

(c) IRS W-9 Tax Form

The Applicant must submit a current completed W-9 form prepared for the U.S. Internal Revenue Service (IRS). DOEE defines “current” to mean that the document was completed within the same calendar year as that of the application date.

(d) Tax Exemption Affirmation Letter

The tax exemption affirmation letter is the IRS’s determination letter of non-profit status. If this letter is not available, then the Applicant should provide its most recent IRS Form 990 tax return, if one was submitted. If no return has yet been filed, the organization can submit its application for tax-exempt status. If the group has a supporting organization with an IRS tax-exempt status determination, then that organization’s tax exemption affirmation letter should also be submitted.

If there is no IRS tax exemption affirmation letter because the organization is a religious organization, then the Applicant may submit the best evidence it can of its status. Examples of potential best evidence for this purpose include, but are not limited to (i) a letter from the leader of the organization verifying that the organization is a religious group; (ii) a letter from the group’s board chair or similar official, verifying that the organization is a religious group; (iii) the Applicant’s most recently submitted state sales or other tax exemption form, if it exists (Form 164 in the District of Columbia); or (iv) the state’s issued tax exemption certificate or card, if it exists. (*See IRS publication no. 1828, Tax Guide for Churches and Religious Organizations.*)

(e) Applicant’s Current Fiscal Year Budget

The Applicant must submit its full budget, including projected income, for the current fiscal year, using a format at least as detailed as that presented in Appendix 4. Also, the Applicant should submit a comparison of budgeted versus actual income and expenses of the fiscal year to date.

(f) Applicant’s Financial Statements

If the Applicant has undergone an audit or financial review, it must provide the most recent audited financial statements or reviews. If audited financial statements or reviews are not available, the Applicant must provide its most recent complete year’s unaudited financial statements.

(g) Separation of Duties Policy

The Applicant must state how the organization separates financial transactions and duties among people within the organization in order to prevent fraud or waste. This may be a statement that

already exists as a formal policy of the organization, or the Applicant may create the statement for purposes of the application. The applicant should state which of these situations apply.

This statement should:

- Describe how financial transactions are handled and recorded;
- Provide the names and titles of personnel involved in handling money;
- Identify how many signatures the financial institution(s) require on the organization's checks and withdrawal slips; and,
- Address other limits on staff and board members' handling of the organization's money.

(h) System for Award Management (SAM) with federal government

If a project within this RFA is funded wholly or partially by federal funding sources, applicants for that project must be registered in the System for Award Management at www.sam.gov and provide evidence of this registration as part of its application package to DOEE.

(i) Partner Documents

The Applicant must submit the partnering organization's Certificate of Good Standing (from the DC Department of Consumer and Regulatory Affairs) and documentation of the partner's tax exempt status.

SECTION 4. Review Panel and Application Scoring

4.1 Review Panel

This is a competitive grant. The review panel for the RFA will be composed of individuals with knowledge in the areas directly related to the RFA. The review panel will review, score and rank each Applicant's proposal.

The panel will recommend the top scorer for award of the grant.

Review panels vary in size, but typically are made up of three to five people. At least two members of the review panel will be from DOEE staff. Whenever practicable, each panel will include at least one person from outside of DOEE.

4.2 Scoring Criteria

The reviewers score each proposal according to a list of criteria and the points available for each criterion. See section 7 of each project.

The applicant should read the grant description carefully to determine if matching funds or resources are required or if preference points are offered for matching funds.

SECTION 5. GRANTEE DOCUMENT REQUIREMENTS

5.1 Submissions If Applicant Will Receive the Grant

Upon acceptance of a grant award, the Grantee must provide the following documents.

(a) Certificate of Insurance

The Grantee shall submit a certificate of insurance giving evidence of the required coverage outlined in Appendix 1, General Terms and Conditions. DOEE will presume that the budget covers the cost of this required insurance and will not later adjust the grant award for this amount.

(b) Assurance of Continued Truth and Accuracy

Upon acceptance of the grant award the Grantee shall notify DOEE of any changes that may have occurred to its organization since the time of submission of its original application. See also Section 1.6.

SECTION 6. FILING REQUIREMENTS GENERAL PROVISIONS

6.1 Reporting Requirements

The grantee must submit the following reports as a condition of continuing eligibility for funding.

(a) Quarterly Status Reports

DOEE will provide a quarterly status report template with the grant award. These reports, which discuss grant activities for the preceding quarter, will be due on each of the following dates.

| | |
|---------------------------------|------------|
| Quarter 1 (January - March): | April 15 |
| Quarter 2 (April - June): | July 15 |
| Quarter 3 (July - September): | October 15 |
| Quarter 4 (October - December): | January 15 |

If a report's due date falls on a weekend or District holiday, the report will be due the next business day.

The report must detail: actions taken in the quarter preceding the report date, highlight outputs achieved, provide a financial update, and describe unforeseen changes to project timetable, staffing, or partnerships, as well as any other changes that may affect project outcomes.

(b) Final Report

DOEE will provide a final report template with the grant award. This report includes quantification by the grantee of the project's outputs and describes the extent to which project outcomes met or will meet the objectives of the funded proposal. The template requires submission of data and analysis of the data.

6.2 Reimbursement of Project Expenditures and Disbursement of Funds

DOEE will not reimburse the Grantee for any work undertaken before DOEE notifies the recipient of the final award of the grant.

DOEE will reimburse the Grantee only for expenditures incurred to perform work under the grant. In limited cases, DOEE may advance funds at the beginning of the grant period for good cause approved by DOEE at its sole discretion. If the Applicant seeks an advance payment, it must request such payment in its proposal and explain why an advance payment is being requested.

DOEE operates on the District's fiscal year, which starts October 1 of a calendar year and ends September 30 of the next calendar year. The grantee may submit a reimbursement request or an invoice at any time during the fiscal year for work performed within that same fiscal year. Each request/invoice must include supporting documentation.

Reimbursements will be mailed to the address on file for the grantee. DOEE may make electronic payments in lieu of mailing checks. DOEE generally pays grant invoices 30 days after DOEE receives them.

DOEE will withhold the final 10% invoiced under a grant until all required activities have been completed, including receipt of the final report.

SECTION 7. PROJECTS PROPOSED FOR GRANT FUNDING

7.1 Summary: Project Title and Available Funds

Project Name

Resilient, Innovative, Affordable Electrification in the District of Columbia

Introduction

Background:

Clean Energy DC developed a credible pathway with the goal of reducing GHG by 50% from the 2006 levels by 2032. However, additional work and modeling is needed to guide Clean Energy DC in its current form, to where it can provide necessary pathways to achieve the District's energy and emissions goals.

See:

<https://doee.dc.gov/release/notice-funding-availability-%E2%80%9393-carbon-neutrality-strategy>
<https://doee.dc.gov/cleanenergydc>
<http://www.sustainabledc.org/in-dc/sdc2-0/>

DOEE intends to adopt the results of the grantee's technical work and integrate the results into the referenced District policy documents. DOEE plans to compile all of the task reports, and integrate them into a final Roadmap Document that will accomplish the "Purposes" stated in section 1.2 of this RFA.

| Name | \$/Task |
|---|----------|
| Task 1: Energy Efficiency, Building Electrification, and Thermal Decarbonization Modeling – Use a computer model to generate at least two building-use pathways, or scenarios that advance the District's objectives. Analyze the number of buildings that can electrify and/or could utilize non-electric, low carbon heating and cooling measures. The analysis should show optimized investments, cost-effective electrification, and energy resilience effect of each scenario. | \$70,000 |
| Task 2: Baseline Scenario Modeling for Transportation Electrification – Model the effects of the increased use of electric vehicles. Clean Energy DC has roughly modeled the greenhouse gas savings from public transit and ridesharing electrification; however, it has not adequately modeled the potential for electrification of privately owned vehicles. Criteria for optimal charging locations will be developed and the number of electric vehicles and charging stations by 2032 will be forecasted along with the resulting increase of electric demand. | \$35,000 |
| Task 3: Correlation between GHG Emissions Rate of Electricity and EV Charging – Determine the optimal hours for electric vehicle charging based on present generation emission rates for the consumed electricity and wholesale power prices. For a reference case, identify the year's hourly rates, consumption and demands. Project the concomitant GHG emissions. | \$25,000 |

| | |
|--|----------|
| Task 4: Suitable Locations in the Pepco DC Grid for Electrification - Distribution system characteristics and potential charging stations localities will be evaluated to determine ideal areas for beneficial electrification. Identify locations and in-service dates with specificity. Findings and draft report will be reviewed by peer reviewers for feedback before finalization. | \$55,000 |
| Task 5: New System Capacity Needs Due to Electrification - Identify for the 2032 forecasted electric demand those grid locations best suited to absorb demand increases due to electric vehicles. The cost, and timing, of capacity upgrades to meet electrification needs will be estimated. | \$65,000 |
| Task 6: Cost-effective Alternatives to Meet Increased Demand - After forecasting system energy, demand and resources, develop cost-effective non-wires solutions for the identified high demand “hot spots” in the distribution grid due to the forecasted building and vehicle electrification. Propose distributed energy resource (DER) measures to reduce the peak load in the hot spots, and characterize their use. These proposals should identify and justify DER assets that would be customer-owned and those that would be utility-company-owned. Solutions proposed should avoid capacity exceedances in those substation zones, and cost less than traditional “pole and wire” solutions. | \$50,000 |

Project Period

While some of the projects are able to run independently of each other, some projects are required to be completed before others can start. For example, task 5 will rely on first generating solid numbers from tasks 1 through 4.

In recognition of the complexity of the tasks, and the need to integrate results among them, DOEE has determined that the grant period will run from the date of the award through December 31, 2021. DOEE’s federal grant ends on February 1, 2021. DOEE will need 60 days to analyze results and report to its grantor, the US DOE. This grant may be amended, pending the availability of additional funds, the sub-grantee’s performance, and the District’s need for the project to be amended.

Available Funding

\$300,000

7.2 Project Description

DOEE seeks the grantee’s analysis to **carry out the tasks identified in the above table**. This analysis will enable DOEE to develop an electrification roadmap for the referenced District plans. **Additional description** of the above-identified work appears here:

Task 1.

Energy Efficiency, Building Electrification, and Thermal Decarbonization Modeling, addresses Clean Energy DC; however, in its current form does not provide the pathways to achieve the 50% energy use reduction goal. Additional identification is needed to determine the potential to use high Coefficient of Performance equipment for additional

energy savings and non-electric sources of thermal energy for heating, cooling, and domestic hot water for buildings. “Right-sizing” the energy footprint for the District is a critical first step in the electrification and decarbonization planning in order to optimize investments and increase cost-effectiveness and energy resilience. This part of the project should build on, and modify as needed, the work of Clean Energy DC, and use additional publicly available data and simulated modeling data.

Task 2.

Baseline Scenario Modeling for Transportation Electrification, forecast for 2032 should be developed regarding the number of electric and alternative zero-emission vehicles (buses, District government fleets, ride-sharing, and passenger) and the amount of electric demand increase through vehicle electrification per vehicle typology.

Task 3.

Correlation between GHG Emissions Rate of Electricity and EV Charging, using assumptions regarding the regional grid’s fuel mix through 2032. These assumptions including a generalized forecast to account for the changing fuel mix and the resulting temporal variability in emissions rate of the grid. The analysis should consider factors that can influence the above projects and how “real time” versus “Time-of Use” charging mechanisms respond to the changing grid fuel mix.

Task 4.

Suitable Locations in the Pepco DC Grid for Electrification, seeks analysis of substation load characteristics for Pepco DC’s distribution system to identify grid locations that can currently accommodate load increases without capacity upgrades. This analysis should 1) include a review of the main feeders and substations zones and incorporate the hosting capacity information Pepco has provided for their main feeders; 2) identify areas in the distribution grid with a low load factor and low peak load; and 3) identify ideal charging stations areas for mass transit, fleet and passenger vehicles from both transportation planning and grid management perspectives.

Task 5.

New System Capacity Needs Due to Electrification, seeks the development of a baseline scenario of electric demand forecast in the Pepco DC territory to 2032 that excludes building and vehicle electrification. Add new scenarios, based on the results of Task 1-4, accounting for the amount of net load increases from building and transportation electrification and the locational impact on the current distribution system. The analysis should include a preliminary cost estimate for capacity upgrades using traditional utility assets. The report for this project should include the development of a locational and temporal phasing schedule for electrifying buildings and transportation per each substation zone to maximize load utilization factor and minimize grid upgrades.

Task 6.

Cost-effective Alternatives to Meet Increased Demand, seeks an illustrative/instructive analysis for how distributed energy resources can be used for the identified areas in the distribution grid that may experience capacity constraints due to increased building and transportation electrification by 2032. DOEE does not expect that all capacity constrained areas will be examined for this exercise; rather, the project involves identifying several specific situations in which different types of distributed energy resources may be used to provide cost-effective solutions.

7.3 Project Outcomes, Outputs, and Deliverables

Project Outcomes

With the results of the 6 tasks, DOEE will be able to identify additional energy efficiency and electrification measures needed to meet the city's target for the identified 50% energy and GHG reductions from 2006 by 2032. DOEE should be able to measure for, government, businesses, and residents, their realistic potential to contribute to the District's climate and energy goals. The measures will address the building and transportation sectors, identify costs and benefits, and identify increases to grid resiliency and cost-effectiveness.

Project Outputs

Each task area has multiple expected outputs:

Task 1: Energy Efficiency, Building Electrification, and Thermal Decarbonization Modeling

- 1) Presentation of the number of buildings that can be electrified, and the number of buildings that should consider utilizing non-electric, low carbon sources of heating and cooling;
- 2) New assumptions for modeling that would achieve the 50% energy use reduction per capita goal for all buildings;
- 3) Peer Reviewer/Stakeholder meeting with up to 15 participants from Utilities, User groups and PSC to review framework;
- 4) At least two (2) model pathways/scenarios to reach an energy reduction goal of 50% by 2032;
- 5) Review of scenarios and a draft report of the review; and
- 6) Stakeholder meeting to review findings of the report and provide feedback.

Task 2: Baseline Scenario Modeling for Transportation Electrification

- 1) Criteria developed for identifying optimal EV charging locations;
- 2) Peer reviewers/stakeholders meeting to review criteria and adjust based on input; and
- 3) Identification of the number of charging stations and amount of electricity consumption per station forecasted.

Task 3: Analyze Correlation between GHG Emissions Rate of Electricity and EV Charging

- 1) The representation of the hourly generation of GHG emission rate in East region for 2017 calculated;

- 2) Identification of the optimal hours for charging based on emission rates and Locational Marginal Pricing nodes for D.C. identified; and
- 3) Report on emissions and optimal hours for charging based on emission rates.

Task 4: Analyze Suitable Locations in the Pepco DC Grid for Electrification

- 1) Identification of the substation zones and feeder groups where cost-optimal/beneficial electrification for buildings could occur. Locations must be confirmed with Pepco;
- 2) Identification of the locations for EV charging based on grid perspective (existing grid load conditions such as utilization rate and hourly peak loads) and transportation perspective (vehicle traffic patterns); and
- 3) Report on optimal charging station locations and forecasted energy consumption.

Task 5: Estimate New System Capacity Needs Due to Electrification

- 1) A baseline scenario of electric demand by 2032 without beneficial electrification;
- 2) Identification of grid locations with existing excess capacity as well as capacity-constrained locations, and determination of the utility assets that will be needed to meet the increased load from electrification;
- 3) An estimate of the cost of new utility assets; and
- 4) Report with GIS maps drafted & feedback collected from peer reviewers.

Task 6: Cost-effective Alternatives to Meet Increased Demand

- 1) Description and evaluation of the non-wires solutions/DER-measures to meet the increased load;
- 2) A pairing of the cost-effective non-wire solutions to each identified “hot spot” in the distribution grid;
- 3) Determination of the number of solutions that avoid capacity exceedances and cost less than traditional “pole and wire” solutions; and
- 4) A report and submit it to peer review before finalizing it.

Deliverables

A written report will be submitted to DOEE upon completion of each task. Each report should include an executive summary, a report addressing principal findings conclusions and sensitivities, and an appendix that fully describes a model used, includes a list explaining acronyms used, and a list of the assumptions used.

Additional deliverables, needed to assist DOEE in meeting its grant responsibilities to US DOE, are:

Task 1: Energy Efficiency, Building Electrification, and Thermal Decarbonization

Modeling

- 1) Brief summary and analysis on the number of buildings that can be electrified, and the number of buildings that should consider utilizing non-electric, low carbon sources of heating and cooling;

- 2) Summary of new assumptions for modeling that would achieve the 50% energy use reduction per capita objective for the building sector;
- 3) Meeting agenda, attendee list, summary and action items for peer reviewer/stakeholder meeting with up to 15 participants from utilities, user groups and DC PSC to review framework;
- 4) Quantitative data from modeling for two (2) model pathways/scenarios to reach an energy reduction goal of 50% by 2032;
- 5) Draft report detailing the methodology, assumptions, and findings for scenarios modeled; and
- 6) Meeting agenda, attendee list, summary and action items for stakeholder meeting held to review findings and provide feedback.

Task 2: Baseline Scenario Modeling for Transportation Electrification

- 1) Report identifying optimal EV charging locations;
- 2) Meeting agenda, sign-in sheet, meeting notes, action items for peer reviewer/stakeholder review, and summary of each adjustment from meeting input; and
- 3) Report forecasting energy consumption of EV charging stations.

Task 3: Analyze Correlation between GHG Emissions Rate of Electricity and EV Charging

- 1) Data for GHG emissions per hour of generation for 2017, in a format that is easily manipulated;
- 2) The hourly wholesale power prices used in the modeling
- 3) Identification of optimal hours for charging based on emission rates and locational marginal pricing nodes; and
- 4) Final report and accompanying data.

Task 4: Analyze Suitable Locations in the Pepco DC Grid for Electrification

- 1) A list and a map of substation zones and feeder groups where cost-optimal/beneficial electrification for buildings could occur;
- 2) Report identifying locations, addressing the modeler's initial choices, and as modified after stakeholder feedback; and
- 3) Final report and accompanying GIS maps and tools.

Task 5: Estimate New System Capacity Needs Due to Electrification

- 1) Data supporting a baseline scenario of electric demand by 2032, that is one without beneficial electrification;
- 2) Data identifying grid locations (a) with existing excess capacity and (b) that are capacity-constrained;
- 3) For the new utility assets needed to meet the increased load from electrification, the following information: operating characteristics, cost, availability, manufacturer, installation/commissioning time; and
- 4) A final report and GIS maps detailing each project.

Task 6: Cost-effective Alternatives to Meet Increased Demand

- 1) List of DER solutions for capacity-constrained locations with cost comparison between DER vs. traditional capacity upgrades; and
- 2) Report of the analysis.

Proposal Scoring

All proposals will be scored according to the criteria below.

| Scoring Criteria | Points |
|--|--------|
| Applicant's team has the necessary qualifications, experience, education, training and technical capability to competently execute the tasks. | 20 |
| Applicant will likely develop creative, innovative, insightful findings and recommendations. | 10 |
| Applicant has substantial, relevant experience in analysis of grid-related EV charging, charging station location, and optimizing time-of-day use. | 10 |
| Applicant has substantial, relevant experience in building efficiency and electrification modeling. | 10 |
| Applicant has substantial experience in electric system energy and demand forecasting. | 10 |
| Applicant has substantial experience in electric system energy and demand forecasting for the urban distribution system. | 10 |
| Applicant has substantial experience analyzing DER non-wires solutions. | 10 |
| Applicant understands the District's energy and climate plans, including policy goals. | 5 |
| The applicant team can work together well to deliver the project on time and on budget. | 10 |
| The application provides a clear and reasonable budget, and budget narrative. | 5 |

SECTION 8. CHECKLIST FOR APPLICANTS

| | | |
|--|---|--|
| <p>Instructions for applicants: Ensure that the answers to all of the questions below are answered. In the column to the right, indicate Yes, No, or NA for not applicable. Include this completed document with application submission.</p> | | |
| 1. | Is the cover sheet (appendix 3) completed and signed – and included as part of the application? | |
| 2. | Is a Table of Contents included in the application? | |
| 3. | Is the applying organization eligible for funding from DOEE according to section 1.6 of the RFA? | |
| 4. | Is the proposal formatted in accordance with section 3.1 of the RFA? | |
| 5. | Does the proposal include a project description and all of the information required of the scoring rubric outlined in section 7 of the RFA? | |
| 6. | Is a numeric budget, and budget narrative justifying each line item, included in the application? | |
| 7. | Do the line items in the proposal budget consider the allowable and non-allowable costs in section 3.2 of the RFA? | |
| 8. | Does the application package include the first page and signed last page of the DOEE Promises, Certifications, Assertions, and Assurances? | |
| 9. | Does the application package include a Certificate of Good Standing that reflects a date within 6 months of the deadline date? | |
| 10. | Does the application package include IRS W-9 Tax Form? | |
| 11. | Does the application package include a Tax Exemption Affirmation Letter? | |
| 12. | Does the application package include the applicant's current fiscal year budget? | |
| 13. | Does the application package include the applicant's most recent audited financial statements? | |
| 14. | Does the application package include a Separation of Duties Policy as described in section 3.4.g. of the RFA? | |
| 15. | Is the applicant registered in the System for Award Management (SAM)? | |
| 16. | If applicable, does the application package include letters of support from other entities? | |
| 17. | If applicable, does the application include resumes of key personnel mentioned in the proposal? | |

APPENDICES

Appendix 1 – General Terms and Conditions

Appendix 2 – Promises, Certifications, Assertions, and Assurances

Appendix 3 – Cover Sheet

Appendix 4 – Example of Grant Budget

Appendix 5 – Points for Local Entities