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PILOT PROJECTS GOVERNANCE BOARD

Meetings No. 12a, 12b, and 12c

June 17, 2021, June 24, 2021, and July 1, 2021

Ms. Brinda Westbrook-Sedgwick
Commission Secretary
Public Service Commission
of the District of Columbia
1325 G Street, N.W., Suite 800
Washington, D.C. 20005

Re: *The Investigation into Modernizing the Energy Delivery System for Increased Sustainability, GD-2020-02-M*

Dear Ms. Westbrook-Sedgwick,

Attached please find the Pilot Projects Governance Board's June and July 1, 2021 meeting minutes. The Governance Board held three consecutive meetings in order to complete their initial review of the pilot project scopes of work, the current drafts of which are attached to the minutes. Should you have any questions regarding this filing, please contact me directly.

Best Regards,

/s/ Anjali G. Patel

Anjali G. Patel
Pilot Projects Governance Board Secretary

Pilot Project Governance Board

Meeting No. 12a, 12b, and 12c

June 17, 2021, June 24, 2021*, and July 1, 2021**

Meeting Minutes

Commission Facilitator called the Meeting to Order on each of the respective days between 3:00 and 3:10 PM.

List of Attendees:
Board Member Organizations in Attendance (Quorum present)

- Solar United Neighbors of DC – ***Present***
- DC Chapter of the Sierra Club – ***Present, *, ****
- DC Consumer Utility Board ("DC CUB") – ***Present, *, ****
- Office of the People's Counsel for the District of Columbia ("OPC") – ***Present, *, ****
- Maryland-DC-Delaware-Virginia Solar Energy Industries Association ("MDV-SEIA") – ***Present, *, ****
- District Department of Energy and Environment (DOEE) – ***Present, *, ****
- Greater Washington Urban League ("GWUL") – ***Present, ****
- Apartment and Office Building Association of Metropolitan Washington ("AOBA") – ***Present, ****
- Commission Staff – ***Present, *, ****

II. General Business

Purpose of the meeting was to discuss the Value of DER (VDER) study and to review the project scopes of work for the requests for proposals. The Board added meeting sessions in order to complete their review of the scopes of work.

III. June 17, 2021 Meeting

- **Update on VDER Study (Melissa Whited and Tim Woolf)**
  *Discussed experience with District, including the original Value of Solar study for OPC;
  *Melissa Whited is the Project Manager, Team also includes Tim Woold and Shannon Liburd from Synapse; Zach Wilson, Foroud Arsanjani, Larry Martin, and Mike Oldak from New City Energy; Andrew Aurbach and *****, and PSC Staff
  * Six tasks: (1) VDER Survey across the country, (2) Feeder Analysis,
  (3) Methodological Framework, (4) Related Efforts Analysis, (5) Recommended Roadmap, and (6) Final Consolidated Report
  *Looking to a model specific to the District to see where DER's can be optimized, want to look at benefits such as enhance resilience, cost effectiveness, etc

*Will review a sample of feeders (too many to review each feeder), but will examine these specific locations to determine what investments could be deferred by the DERs
*Will not be looking at net impact to specific customers but will look at system-wide benefits, e.g. peak shaving reduction in PJM costs.
*Plan to look at PV impact now and the future

- **Scope of Work: Transactive Neighborhood Microgrid**
  *Wanted to emphasize beyond raw benefits of solar and batteries
  *In discussing the number of microgrid projects, the group shared that practically one project may be best, but for informational purposes more than one may be useful. Will depend on the budget. There is a floor on how small a microgrid can be in order to get transactive benefits.
  *Some concerns about neighborhood location, proposal to include 2-3 candidate neighborhoods in project proposal
  *Questions were raised about the association formation and how much of the neighborhood should agree to participate if the microgrid is feasible
  *There was a proposal to require the proposals to provide a plan for contacting the neighborhood, developing a power association, etc.
  *Proposer should identify what data is needed from the utility
  *Need to build in guarantees that representative of real world
  *Question about whether to include a nonbinding contract of terms
  *Discussion around funding, one Board Member commented that we shouldn't expect grant to pay for Green Bank loan so consideration must be made for how that will be paid back

- **Scope of Work: Virtual Power Plant**
  *Should increase focus on diversity within teams and ensure that project is inclusive as to the communities that are asked to participate in the program
  *Discussion re effectiveness and whether we need a control group, and who the program will be open to.
  *Discussion on need for the proposal to provide metrics for assessment
  *Discussion on need for proposal to define targeted buildings and savings

III. June 24, 2021 Meeting

- **Scope of Work: Aggregated Solar & Communication**
  *Discussion on differentiation between aggregation in the Virtual Power Plant and communication function under this pilot.
  *Recommendation to include a storage piece.

- **Scope of Work: High Efficiency Heat Pump**
  *Discussion on what types of heat pumps are being targeted.
  *Decision by the members present to refocus the scope of work on district heating systems versus individualized heat pump replacement as the latter has been well studied.

III. July 1, 2021 Meeting

- **Scope of Work: Microgrid**
  *There was discussion on whether the microgrid scope of work should explicitly provide for a peer to peer transactions and it was determined that the transactive nature should be left more general to allow the applicant to provide more information.
  *The RFP was revised to encourage the applicant to include community partners that have experience with developing microgrids in DC.
  *There was a long discussion about the regulatory requirements re to microgrids, whether the Commission has authorization to regulate microgrids, and if so, whether the Commission could waive regulatory requirements re to the pilot.

- **Scope of Work: District Heat Pump**
  *There was discussion about having the Governance Board and Commission staff and/or Commission Project Manager provide oversight over each phase of the project. This wording will be standardized through all of the scope of works.
  *There was a discussion about the phrase "reductions to customer bills" and was decided to make this more general to "customer-specific benefits" to allow the applicants to specific what those benefits will be. This language will be standardized in all of the scope of works.

- **Scope of Work: Solar Communication**
  *There was discussion about the benefits and how prescriptive to make the outcomes.
  *There was also discussion about whether the phrase "seeking experts" refers to singular individuals or firms, the language was modified to make clear that it referred to teams/entities. This language will be standardized in all of the scope of works.

- **Scope of Work: Virtual Power Plant**
  *There was discussion about the installation of storage/solar and a decision to reflect similar language to the microgrid RFP about leveraging existing DER resources.

VI. Next steps

There was an extended discussion on the role of utilities in reviewing the scope of works as the PSC Order was clear that the utilities may be neither a formal or informal member of the Governance Board. There was general agreement that the utilities may be invited to provide informal input onto the scopes of work at the July meeting. The Board chair will send an email to the utility representatives conveying that invitation.

The draft scopes of work will be revised and attached to the minutes. The general description of the pilot projects and general RFP requirements have been distributed to the Governance Board members, but have not yet been reviewed as such that document will not be included with these minutes.

There was a discussion on whether the PSC staff could organize a time to discuss the jurisdictional question more in-depth with the Governance Board. The issue will continue to be addressed at future meetings.

VI. Adjournment

Commission Chair adjourned the meeting between 5:00 and 5:10 pm.

Attachments to the Minutes

Attachment A	Draft Scope of Work: Transactive Neighborhood Renewable Microgrid
Attachment B	Draft Scope of Work: Virtual Power Plant / DER Management and Aggregation
Attacment C	Draft Scope of Work: District Heat Pump Pilot
Attachment D	Draft Scope of Work: Aggregated Solar-to-Grid and Communications Pilot

DRAFT SCOPE OF WORK: TRANSACTIVE NEIGHBORHOOD RENEWABLE MICROGRID

[TO BE INSERTED INTO RFP TEMPLATE SCOPE OF WORK, SECTION B]

PROJECT OUTCOMES

The development of a multi-customer microgrid and transactive platform acting as a single distributed energy resource that demonstrates the following using controllable grid-connected assets:

1) Expanded hosting capacity and additional grid services provided to the distribution system (e.g., grid resilience, frequency response and regulation, inertial response, reactive power, voltage control, and operating reserves; reduction of transmission and distribution line losses)

2) GHG reductions

3) Customer bill savings

4) Increased customer resilience and other non-energy benefits through sustained power to community-designated critical loads during grid disturbances (e.g. weather forecasting, islanding capability)

PROJECT DESCRIPTION

The Commission seeks one or more experts in microgrid development to create a multi-customer neighborhood microgrid demonstration project(s) within the District of Columbia. The Commission's rules define microgrid as follows:[1]

> a collection of interconnected loads, generation assets, and advanced control equipment, installed across a limited geographic area and within a defined electrical boundary that is capable of disconnecting from the larger Electric Distribution System. A Microgrid may serve a single customer with several structures or serve multiple customers. A Microgrid can connect and disconnect from the

[1] 15 DCMR § 4099.1

distribution system to enable it to operate in both interconnected or island mode.

The microgrid proposal should demonstrate it will be able to achieve the project outcomes listed above. Optionally, the project could also demonstrate:

- Leveraging existing microgrid or DER assets
- Demonstrating the interaction between networked microgrids

[Placeholder: Regulatory Framework still under consideration.] This pilot is designed to demonstrate that the community members living in the microgrid can have an ongoing decision-making influence over the project. Although this is a demonstration project, the expectation is that this project will continue to operate after the conclusion of the pilot period, as such it should be designed with a continuity plan in place.

The project should be sized to target a neighborhood of between 50-200 residences and other buildings but can be larger. As further outlined in the description of the project phases below, the project should involve a final neighborhood boundary selection and community engagement process, followed by the installation of the microgrid components (e.g. solar, storage, microgrid controls, energy efficiency improvements, smart appliances) and the integration of these resources with a transactive energy platform. Upon certification and interconnection, the microgrid should go through an operational period (including iterations to streamline operation of the system and/or the market structure). Finally, the outcomes of the project should be analyzed, and a final report should be submitted to the Commission.

PROJECT PHASES

These following Phases are intended as a guide, and reorganization of the tasks between Phases, or a proposal that includes additional tasks, is allowable. Each phase will require approval by the Pilot Project Governance Board and the Commission before proceeding to the next phase.

Project Phase I

In Phase 1, the offeror will engage in finalizing the microgrid footprint. This phase should involve community outreach, education, and gauging residents' receptivity, followed by an assessment of the neighborhood's existing loads. The offeror will establish a working relationship with Pepco, moderated by the Commission, relating to local grid architecture, the use of Pepco equipment, interconnection, account set-up and billing, and provision of grid

services. The Commission will facilitate any necessary information gathering or data requests to Pepco.

Finally, the offeror will assess the candidate neighborhood(s) and make a final boundary selection. The offeror should interface with the Pilot Project Governance Board and the Commission throughout this process and if applicable, obtain final approval from other financing entities before proceeding to Phase 2.

Project Phase II

In Phase 2, the offeror will continue neighborhood education and assist in the formation of a neighborhood power association. The offeror will design the system for energy transactions within the microgrid, demand and supply management, and other capabilities relevant to the project's intended outcomes (note: the transactive capabilities could be moved to a later Phase). The offeror will conduct modeling of software and equipment to ensure proper operation and determine building upgrade and equipment installation requirements. The offeror, in coordination with the neighborhood power association, will determine critical loads and system performance metrics for the transactive platform.

The offeror will provide an implementation roadmap to the Pilot Project Governance Board and Commission, including any schematics, maps, and other documentation for the microgrid. The roadmap will detail the interaction between the microgrid operator, the neighborhood power association, and the microgrid customers. The roadmap will also include a detailed description of the transactive platform, the role of the microgrid operator in overseeing the platform, and the manner in which peer-to-peer transactions will occur. The offeror will present the microgrid operations (and transactive platform, if applicable) for the Pilot Project Governance Board and Commission.

The offeror will formalize the relationship with the neighborhood power association under an ownership/operations contract, and formalize the relationship with the microgrid customers with contracts covering billing, safety, and provision of services The contract will be subject to review by the Pilot Project Governance Board and Commission.

The Commission will govern any dispute resolution between the microgrid and its customers. If customers wish to dispute anything covered in the contracts, they should contact the DC Office of the People's Counsel.

Project Phase III

Phase III will consist of construction/installation of the microgrid assets, along with required building retrofits (e.g. DER installation, smart appliance installation, weatherization, electrification). The offeror will acquire the necessary permits for installation of electrical equipment from the Commission, and DC Department of Regulatory Affairs, and the District Department of Transportation as applicable. The offeror will manage interconnection with Pepco's distribution system at the Point of Common Coupling (PCC). The interconnection process will be governed by the District of Columbia Small Generator Interconnection Rules (DC Municipal Regulations, Title 15, Chapter 40). Once the microgrid has received Authorization to Operate from Pepco, the microgrid will begin operation. **[Placeholder: Billing structure between Pepco, microgrid and customers still under consideration]**

Project Phase IV

Phase IV will involve the ongoing operation and monitoring of the system. It is expected that the transactive platform may require fine-tuning over the course of this phase. Adjustments should be judged against a common set of system performance metrics.

Throughout this process:

- The offeror will maintain an online, real-time dashboard available to the public demonstrating the microgrid operation.
- The offeror will conduct ongoing communication with the neighborhood power association.
- The Commission will be the arbiter of any consumer complaints regarding billing, safety, and consumer protection.
- **[under consideration: The microgrid operator's relationship with Pepco will be fully governed by the Commission.]**

Project Phase V

In Phase V, the offeror will initiate project close-out, including a final report covering accomplishments in comparison with initial plans, how the project demonstrated the intended outcomes, and requirements/recommendations for scaling up multi-customer microgrids in the District.

ESTIMATED FUNDING RANGE

GD-2020-02-M
Pilot Project Governance Board
Draft Scope of Work: Transactive Neighborhood Renewable Microgrid
July, 2021

$5-10 million

PROJECT DELIVERABLES

Community education and engagement, modeling, implementation report, microgrid infrastructure, ongoing microgrid operation, monthly reporting during implementation, post-completion monitoring & evaluation, skill development/job training, and technical and regulatory lessons for future microgrid development.

[TO BE INSERTED INTO RFP TEMPLATE SECTION E.3]

PROJECT SPECIFIC RFP RESPONSE REQUIREMENTS:

(1) MicroGrid Technical Specifications

Offeror should provide the following:

- Specifically address how the microgrid infrastructure will achieve each of the project outcomes.
- Describe the project value stack of your proposal using NSPM model https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/
- Propose how the microgrid will be interoperable with the distribution system, including compliance with technical standards (i.e. IEEE 1547, IEEE 2030.7), and proposed communications protocol(s) both internal to the microgrid and interfacing with the distribution system.
- Describe specifically how decision making for microgrid behavior occurs (including the operator's role, the use of controls, pricing, and community-level savings).
- Give an overview of how the transactive model would play out. Describe scenarios for peak load event, grid outage, and 'typical day'

(2) MicroGrid Community

Offeror should provide the following:

- A draft community engagement plan
- To the extent known, please identify specific community members, community partners (commercial, non-profit, or governmental), who will be involved with the project team, including their organizational affiliation.

- Provide a list of 1-3 candidate microgrid footprint configurations and contacts for each candidate neighborhood and/or configuration
- Address whether every residential/commercial building in the microgrid footprint must be interconnected to the microgrid.
- A description of the process that will be used to develop the neighborhood power association, including whether the neighborhood power association will follow an opt-in or opt-out model.
- Sample contract or contract provisions (between microgrid developer/operator and neighborhood power association and between microgrid operator and microgrid customers)
- A draft customer rights and customer data protection plan
- A draft proposal for the publicly available dashboard that will be used to display the operations of the microgrid. To the extent the proposer has developed such a dashboard before, please provide links to those sites

(3) Data Needs:

Offeror should identify any additional data or information that will be needed in order to make the project successful, including data information that will be needed from the utility and how customer data will be received (i.e. Green Button Connect My Data or similar platform).

(4) Implementation Roadmap:

The offeror must provide an implementation roadmap that includes, at a minimum, the project phases outlined in the scope of work, which would cover a period of three to five years. These Phases are intended as a guide, and reorganization of the tasks between Phases is allowable.

(5) Continuity Plan:

Provide a continuity plan for the operation and sustainable management of the Microgrid after the pilot phase is completed.

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GD-2020-02-M
Pilot Project Governance Board
Draft Scope of Work: Transactive Neighborhood Renewable Microgrid
July, 2021

Priority: Highest

Other Considerations:

Role of the Governance Board. The Governance Board would act as an intermediary for project implementation supervision on behalf of the Commission.

Post-completion monitoring and evaluation. The proposal should include a plan to ensure periodic monitoring, maintenance, and evaluation of the performance of the microgrid for at least five years after completion of the project.

Risk mitigation. The RFP would require offerors to specify risks and how they would be dealt with, and require that in the event of the winning offeror withdrawing from the project at any point, all assets created with grant financing (software, documentation, hardware, except installations already made at residences) would be property of the District of Columbia.

Financing. Offerors would be permitted to present financing plans including debt financing (e.g. from the Green Bank) or equity financing in addition to the pilot project grant. If customers are invited to contribute equity, they would be allowed to do so at any time during the life of the project.

Customer group. This pilot is aimed at neighborhoods, but that can include small institutions and commercial establishments that are part of a neighborhood. To the extent possible, the microgrid(s) could leverage existing infrastructure (e.g. an existing campus microgrid could be the basis to create a microgrid in a surrounding neighborhood).

DRAFT SCOPE OF WORK: VIRTUAL POWER PLANT / DER MANAGEMENT AND AGGREGATION

[TO BE INSERTED INTO RFP TEMPLATE SCOPE OF WORK, SECTION B]

PROJECT OUTCOMES

The development of a Virtual Power Plant (VPP) or Distributed Energy Resource Management System (DERMS) that aggregates a portfolio of demand side management and DERs and that demonstrates the following:

1) Grid benefits from aggregating load or managing DER (e.g. peak load reduction, volt/VAR control, power quality, frequency response, etc)
2) GHG emissions reductions
3) Customer-specific benefits
4) Maximization of total Distributed Energy Resource ("DER") interconnection and output
5) A VPP/DERMS model that is non-discriminatory, equitable, and scalable and that provides easy customer enrollment, especially for low-moderate income customers.

PROJECT DESCRIPTION

The Commission seeks one or more experts to serve as an aggregator, and develop a pilot Virtual Power Plant ("VPP") and/or DER Management System ("DERMS") that will demonstrate the grid interactivity and interoperability of buildings and DER, and their ability to act as grid assets. The VPP/DERMS proposal should demonstrate that it will meet the outcomes listed above and is also encouraged to include the incentivization and/or purchase of DER (for example, distributed storage could be owned by the aggregator, or could be provided in a lease-to-own model), particularly distributed energy storage, and building energy management systems, as necessary. Optionally, the project could also demonstrate leveraging existing DER assets.

PROJECT PHASES

These following Phases are intended as a guide, and reorganization of the tasks between Phases, or a proposal that includes additional tasks, is allowable. Each phase will require approval by the

Pilot Project Governance Board and the Commission Representative before proceeding to the next phase.

Project Phase I

In Phase 1, the offeror should engage in outreach and education of building owners and community members to develop the initial cohort of participants, and put together an implementation plan for the program to be approved by the Pilot Project Governance Board and Public Service Commission. The implementation plan should include detailed program design, including the expected number of participants (including LMI participants), planned DER and building EMS installation, method for providing grid services and GHG reduction, and an explanation of how benefits will accrue to participants, including any additional incentive to be offered to LMI participants. The Commission will facilitate any necessary information gathering or data requests to Pepco.

Project Phase II

In Phase 2, the project should enter the implementation Phase. This will include, as applicable, retrofit, installation, and/or interconnection of storage, other DER, building energy management systems, or smart appliances. Interconnection, if applicable, of DER will be governed by the District of Columbia Small Generator Interconnection Rules (DC Municipal Regulations, Title 15, Chapter 40). The offeror will maintain a publicly available dashboard displaying the operations of the program, including peak load shaving and reduced GHG emissions. The offeror will engage in ongoing customer uptake. It is expected that the implementation phase may include iterative changes to the platform as more customers come on-line and more information is gathered. The offeror will provide regular quarterly progress reports to the Pilot Project Governance Board and Commission.

Project Phase III

In Phase 3, the offeror will initiate project close-out, final report covering accomplishments in comparison with initial plans; provision of grid services, GHG emissions reduction, customer bill savings and other benefits; lessons learned; and requirements/recommendations for scaling up the program in the District and estimates of potential.

ESTIMATED FUNDING RANGE

$3-5 million

GD-2020-02-M
Pilot Project Governance Board
Draft Scope of Work: Virtual Power Plant / DER Management and Aggregation
July, 2021

PROJECT DELIVERABLES

Implementation plan, provision of operational data, publicly available platform and data visualization, reporting of VPP performance related to the Project Outcomes, roadmap of how to scale the program and project the city-wide potential GHG and cost savings from optimized management of DER and demand flexibility, demonstrated benefits to participants.

[TO BE INSERTED INTO RFP TEMPLATE SECTION E.3]

PROJECT SPECIFIC RFP RESPONSE REQUIREMENTS

(1) VPP/DERMS Technical Specifications: Offeror should provide the following:

- Detailed explanation of how software platform will achieve the desired project outcomes
- Explanation of how the software platform will track grid conditions (including under various levels of available grid data)
- Estimate of the targeted population size for aggregation including, the number of customers/buildings, the customer class, and estimated average and peak load that from that pilot customers
- List of potential project risks and plans to mitigate those risks
- Propose how buildings and DER will be interoperable with the distribution system, including the use inverter functionalities under IEEE 1547-2018 and communication protocol(s)
- Describe specifically how the platform decision-making will occur, and how the provision of grid services will be weighed against needs of the host customer
- Explain how the program effectiveness of the program will be monitored and assessed (E, M &V)

(2) Customer Interaction: Offeror should provide the following:

- a draft community engagement plan
- a draft customer rights and customer data protection plan
- draft proposal for the publicly available dashboard that will be used to display the operations of the program, including peak load shaving and reduced GHG emissions. To the extent the proposer has developed such a dashboard before, please provide links to those sites

(3) Data Needs: Offeror should identify any additional data or information that will be needed in order to make the project successful, including data information that will be needed from the utility and how customer data will be received (i.e. Green Button Connect My Data or similar platform).

(4) Implementation Roadmap: The offeror must provide an implementation roadmap that includes, at a minimum, the project phases outlined in the scope of work, which would cover a period of two to three years. These Phases are intended as a guide, and reorganization of the tasks between Phases is allowable.

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Priority: High

OTHER CONSIDERATIONS

Role of the Commission. The Commission will be the supervisory body for the program.

Role of the Governance Board. The Governance Board would act as intermediary for project implementation supervision on behalf of the Commission.

Risk mitigation. The RFP would require offerors to specify risks and how they would be dealt with, and require that in the event of the winning offeror withdrawing from the project at any point, all assets created with grant financing (software, documentation, hardware, except installations already made at residences) would be property of the District of Columbia.

Financing. Offerors would be permitted to present financing plans including debt financing (e.g. from the Green Bank) or equity financing in addition to the pilot project grant. If customers are invited to contribute equity, they would be allowed to do so at any time during the life of the project.

DRAFT SCOPE OF WORK: DISTRICT HEAT PUMP PILOT

[TO BE INSERTED INTO RFP TEMPLATE SCOPE OF WORK, SECTION B]

PROJECT OUTCOMES

The development of a district heat pump system that will replace existing fossil fuel space conditioning systems and will demonstrate the following:

1. A reduction in GHG emissions attributable to heating and cooling buildings
2. The cost effectiveness of utilizing a district heating and cooling systems versus traditional, disaggregated heat and cooling sources
3. Customer-specific benefits
4. Grid impacts of a district heating and cooling system

PROJECT DESCRIPTION

The Commission seeks one or more experts to develop a pilot project that replaces existing fossil fuel space conditioning systems with a large "District" or "Community" electric heat pump system capable of serving aggregations of buildings. These aggregations may be multifamily residences, single-family residences, and/or commercial/institutional buildings, and the offeror may propose to place large heat pumps serving aggregations of buildings in more than one location. Moreover, the selected offeror will work with Washington Gas and Pepco, as necessary, to ensure a smooth and efficient transition from fossil-fuel space conditioning to heat pump space conditioning. The district heat pump proposal should demonstrate that it will meet the outcomes listed above and is also encouraged to make use of a nontraditional heating source (e.g. raw sewage water, geothermal, etc.). During the term of the pilot, the selected offeror will manage the operation and maintenance of the heat pump system, and continually monitor performance including electricity use by time of day, cost of heating and cooling, and participant satisfaction. Although this is a pilot project, the expectation is that the district heat pump will continue to operate after the conclusion of the pilot period, as such it should be designed with a continuity plan in place.

PROJECT PHASES

These following Phases are intended as a guide, and reorganization of the tasks between Phases, or a proposal that includes additional tasks, is allowable. Each phase will require approval by the

Pilot Project Governance Board and Commission Representatives before proceeding to the next phase.

Project Phase I

In Phase 1, the offeror will engage in outreach and education of building owners and community members to develop the cohort of participants, and put together an implementation plan for the program to be approved by the Pilot Project Governance Board and Public Service Commission. The implementation plan should include detailed program design, including an identification of the heat pump energy source, the expected number of participants (including LMI participants), detailed identification of costs (including equipment that must be purchased an other expected costs, such as electrical panel upgrades or certain efficiency upgrades as necessary), actions by any cooperating agencies, and how benefits will accrue to participants, including any additional incentive to be offered to LMI participants. The implementation plan should also include how peak load may be managed in buildings that utilize the District heat pump. The offeror should establish a working relationship with Pepco and Washington Gas, moderated by the Commission, to ensure a smooth transition to district heat pump space conditioning, including, but not limited to, with respect to interconnection to the existing distribution system, conversion from natural gas heating to district heating.

The Commission will facilitate any necessary information gathering or data requests to the utilities involved.

Project Phase II

In Phase 2, the project will enter the implementation Phase. This will include ongoing engagement with participants to inform them of progress and to resolve problems during the purchase and construction of the heat pump system, its startup, and its operation. The offeror will provide regular quarterly progress reports to the Pilot Project Governance Board and Commission covering installation and operation, customer satisfaction, and achievement of the project objectives.

Project Phase III

In Phase 3, the offeror will initiate project close-out, and produce for the Commission a final report covering accomplishments in comparison with initial plans; GHG emissions impact; customer bills impact; costs and benefits (social, economic and financial); lessons learned; and requirements/recommendations for scaling up the program.

GD-2020-02-M
Pilot Project Governance Board
Draft Scope of Work: District Heat Pump Pilot
July, 2021

ESTIMATED FUNDING RANGE

$3-5 million

PROJECT DELIVERABLES

Implementation plan, well-functioning heat pump-based heating and cooling system, reporting on program performance related to the Project Outcomes, demonstrated benefits to participants, roadmap of how to scale the program.

[TO BE INSERTED INTO RFP TEMPLATE SECTION E.3]

PROJECT SPECIFIC RFP RESPONSE REQUIREMENTS

(1) District Heat Pump Technical Specifications

Offeror should provide the following:

- Detailed explanation of elements of the project - the number, capacity and efficiency of the heat pumps; the heat reservoir of the heat pumps (air, ground, or water, including wastewater); the number and type of buildings served; the general socioeconomic category of occupants of the targeted buildings; the role of any cooperating organizations.
- If applicable, a description of how the project will manage peak load
- A description of expected project benefits including lessons learned, how each outcome would be achieved, and estimated value of quantifiable benefits.
- List of potential project risks and plans to mitigate those risk

(2) Customer Interaction: Offeror should provide the following:

- a draft community engagement plan
- a draft customer rights and data protection plan
- A draft plan for measuring customer satisfaction

(3) Data Needs: Offeror should identify any additional data or information that will be needed in order to make the project successful, including data information that will be needed from the utility and how customer data will be received (i.e. Green Button Connect My Data or similar platform)

(4) Implementation Roadmap: The offeror must provide an implementation roadmap that includes, at a minimum, the project phases outlined in the scope of work, which would cover a period of two to three years. These Phases are intended as a guide, and reorganization of the tasks between Phases is allowable.

(5) **Continuity Plan:** Provide a continuity plan for the operation, maintenance, and sustainable management of the district heat pump after the pilot phase is completed.

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Priority: Medium-High

Other Considerations:

Role of the Commission. The Commission will be the supervisory body for the program.

Role of the Governance Board. The Governance Board would act as intermediary for project implementation supervision on behalf of the Commission.

Risk mitigation. The RFP would require offerors to specify risks and how they would be dealt with, and require that in the event of the winning offeror withdrawing from the project at any point, all assets created with grant financing (software, documentation, hardware) would be property of the District of Columbia.

Financing. Offerors would be permitted to present financing plans including debt financing (e.g. from the Green Bank) or equity financing in addition to the pilot project grant.

DRAFT SCOPE OF WORK: AGGREGATED SOLAR-TO-GRID AND COMMUNICATIONS PILOT

PROJECT OUTCOMES

The development of a pilot program that aggregates a significant portfolio of existing and/or new solar and DER projects and utilizes IEEE 1547-2018 standard-compliant inverter systems and inverter settings profiles to automatically manage hosting capacity and communications with the aggregated DER systems to demonstrate the following:

1. Maximization of solar hosting capacity using IEEE 1574-2018 compliant inverter systems and/or storage
2. Effectiveness of alternatives to proprietary telemetry equipment for communications with the utility using standardized communication protocol(s),
3. Customer-specific benefits
4. Aggregation-specific grid benefits including demonstrated peak shaving

PROJECT DESCRIPTION

The Commission seeks one or more entities with expertise in solar aggregation and solar-to-grid communication to operate a pilot project(s) that uses advanced inverters and aggregation of renewable, distributed energy resources in order to achieve the dual objectives of maximizing solar capacity and deploying a replicable, lower-cost alternative to standard telemetry equipment required by the utility. The pilot project should aggregate a total of forty to one thousand kilowatts of capacity on public or privately owned buildings on the same feeder line in the District, and should seek to include existing solar/DER projects within the aggregation pool. The proposal should demonstrate that it can achieve the outcomes listed above and should also demonstrate the secure communication functionalities of inverters and transducers to provide data at regular intervals.

Project Phases

These following Phases are intended as a guide, and reorganization of the tasks between Phases, or a proposal that includes additional tasks, is allowable. Each phase will require approval by the Pilot Project Governance Board and Commission Representatives before proceeding to the next phase.

Phase I

In Phase 1, the offeror will put together an implementation plan for the program to be approved by the Pilot Project Governance Board and Public Service Commission. The implementation plan should include detailed program design, draft contract with participants, number/size/location of DER systems that will be included in the aggregation pool, identification of equipment (including existing and new) that will be utilized in the pilot, planned functionalities and operations, and the metrics that will be used to assess the project. The Commission will facilitate any necessary information gathering or data requests to Pepco. To the extent customer information is considered in Phase I, it must be provided in a manner that is consistent with the privacy laws set forth in the DC Code and PSC regs.

Phase II

In Phase 2, the project will enter the implementation Phase. Construction, installation, and interconnection of the DER system hardware and software (or retrofitting inverters and controls as necessary). Interconnection of any new DER will be governed by the District of Columbia Small Generator Interconnection Rules (DC Municipal Regulations, Title 15, Chapter 40). Implement data sharing info. The offeror will provide regular progress reports (detailing progress towards the stated project objectives) to the Pilot Project Governance Board and Commission.

Phase III

In Phase 3, the offeror will initiate project close-out, final report covering accomplishments in comparison with initial plans; provision of grid services, GHG emissions, energy and bill savings; lessons learned; and requirements/recommendations for scaling up the program in the District and estimates of potential.

ESTIMATED FUNDING RANGE

$3-4 million

PROJECT DELIVERABLES

Project Deliverables (physical infrastructure, report, roadmap, usable metric, etc.)

- Outline each deliverable, including the expected beneficiaries and timeline for receiving the deliverable

GD-2020-02-M
Pilot Project Governance Board
Draft Scope of Work: Aggregated Solar-to-Grid and Communications Pilot
July, 2021

[TO BE INSERTED INTO TEMPLATE SECTION E.3]

PROJECT SPECIFIC RFP RESPONSE REQUIREMENTS

(1) Aggregated Solar and Communications Pilot Specifications

Offeror should provide the following:

- A description of inverter and/or controller functionalities and how they can be used to accomplish the stated project objectives, including but not limited to:
    - An explanation of how the project will seek to maximize solar hosting capacity, including a description of the customer's role, if any, in achieving that goal
    - A description of how the solar and other DER systems will be interoperable with the distribution system, including the use inverter functionalities under IEEE 1547-2018
    - A description of the proposed communication protocol(s) and the available data streams/frequency
- An explanation of whether the project will interact with real-time price signals and, if so, how.
- List of potential project risks and plans to mitigate those risks
- A description of the ownership structure of the equipment used in the pilot
- Proposed grid region(s) or feeder(s)
- To the extent the pilot includes the installation and aggregation of storage projects please explain the role of storage in achieving the project objectives
- Propose metrics

(2) Customers

Offeror should provide the following:

- Identify the target audience for project participation including target community(ies), and existing solar/DER systems in each target community
- A description of plan to engage and educate the community about the project and to recruit volunteers
- a draft customer rights and customer data protection plan
- a draft plan for measuring customer satisfaction

(3) Data Needs: Offeror should identify any additional data or information that will be needed in order to make the project successful, including data information that will be needed from the utility and how customer data will be received (i.e. Green Button Connect My Data or similar platform)

(4) Implementation Roadmap: The offeror must provide an implementation roadmap that includes, at a minimum, the project phases outlined in the scope of work, which would cover a period of two to three years. These Phases are intended as a guide, and reorganization of the tasks between Phases is allowable.

(5) **Continuity Plan:** Provide a continuity plan for the operation, maintenance, and sustainable management of the inverters after the pilot phase is completed.

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Priority: Medium-High

Role of the Commission. The Commission will be the supervisory body for the program.

Role of the Governance Board. The Governance Board would act as intermediary for project implementation supervision on behalf of the Commission.

Risk mitigation. The RFP would require offerors to specify risks and how they would be dealt with, and require that in the event of the winning offeror withdrawing from the project at any point, all assets created with grant financing (software, documentation, hardware) would be property of the District of Columbia.

Financing. Offerors would be permitted to present financing plans including debt financing (e.g. from the Green Bank) or equity financing in addition to the pilot project grant. If customers are invited to contribute equity, they would be allowed to do so at any time during the life of the project.

Required Experience:

- Interconnection, especially experience working in the District of Columbia / Pepco.
- Information about previous similar projects

- References**:** Please note at least two completed similar projects, detailing project name, description, size, and how the project relates to the one proposed. Please include client names and contact information.