

## **Phase 2 of Baseline Assessment of Renewable Energy Capacity within Public Housing Agencies**

Welcome to the Baseline Assessment of Renewable Energy Capacity within Public Housing Agencies (PHAs). This survey is being conducted by the U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R), which provides reliable and objective research to help the Department make policy decisions.

This is phase two of a two-phase study that will assist the Department in meeting President Obama's Climate Action Plan (CAP), which calls for the installation of 100 megawatts (MW) of renewable energy capacity by 2020 at LIHTC properties (Treasury), Rural Development properties (USDA), and public housing and multifamily-assisted properties (HUD). The study's findings will be the Department's first step in establishing targets to meet the CAP goal.

In an effort to minimize the burden on participants and increase response rate, this study is being conducted in two phases. The initial phase will be a brief questionnaire that will provide a snapshot of the PHAs that have, do not have, and/or plan to install renewable energy systems in the future. In addition, the questionnaire will inquire about any challenges and/or barriers that may have been faced regarding these systems. The second phase will be more in-depth and sent to the PHAs that have indicated that they have (or there is informal evidence indicating that they have) installed renewable energy systems. This questionnaire will ask questions regarding the type, capacity, and financing and costs associated with the installed renewable energy systems.

Your agency is being asked to complete this questionnaire because you have indicated that you have (or there is informal evidence indicating that you have) installed renewable energy systems.

This survey was approved by the Office of Management and Budget [INSERT OMB CLEARANCE # AND EXP. DATE]. It is estimated that the phase two survey will take approximately 10-15 minutes to complete. Depending on the organization of your agency, different people (e.g., Executive Director, Energy Manager, Facilities Engineer) may need to complete different sections of the survey. If more than one person works on the survey, please make sure that each respondent enters his/her name, title, email address, and phone number on the first screen of questions.

If you have questions regarding the survey, please contact the study's Helpline at XXX-XXX-XXXX or Renewables@hud.gov. If you have questions about the study itself, please contact Mr. Michael Early, Energy Engineer, Office of Policy Development and Research, HUD at (202) 402-2566 or Ms. Crystal Bergemann, Energy Program Analyst, Office of Economic Resilience (OER), HUD at (202) 402-4592.

**Guide to the Survey:** This survey will ask questions about your agency's currently installed renewable energy systems and the financing and costs to purchase (and/or lease) and install the systems.

For the purposes of this survey, the Department is asking about energy that comes from natural resources that are continuously replenished, such as: sunlight, wind, geothermal heat, water, and biomass. In residential applications, energy derived from renewable energy systems is primarily associated with, but not limited to: solar (photovoltaic or solar thermal) power, geothermal heating, and wind power. Biomass, biofuel, and hydroelectric (water turbine) systems are less common renewable energy systems for residential applications.

The research team expects that most respondents will only have a few, if any, of the renewable energy systems.

The questions in this survey only relate to **on-site** renewable energy systems. Energy received from an **off-site** renewable energy sources, such as: renewable energy retail power markets, renewable energy utility providers, and/or renewable energy certificates (RECs), **are not** to be included in your agency's responses.

There are a total of 4 sections to the survey. You will see only those sections/questions relevant to your PHA (e.g., if your agency does not have any installed renewable energy systems, then you will not see or need to respond to the sections covering type, capacity, or financing/costs associated with the systems).

Section A covers agency and respondent information.

Section B asks about your agency's renewable energy systems.

Section C asks about the capacity of the installed renewable energy systems.

Section D asks about the financing and costs of the installed renewable energy systems.

In order to respond to the survey, you will need to understand the renewable energy systems that serve your agency's conventional (low-income) housing units.

Generally, you should provide information about your agency's renewable energy systems and viewpoints as they exist today; however, some questions will specifically ask for historical (e.g., a question may include a phrase such as "year of the initial installed system") information.

Please answer the questions by providing a response that comes closest to describing details related to your agency's renewable energy systems. If your agency has a multitude of renewable energy systems, please combine similar systems when responding.

Responses to this survey will be used for research purposes only and will NOT be used for compliance monitoring.

Following collection and analysis, HUD will publish the results of the combined collection effort for all interested parties (independent of participation in the collection) to use. The published data will consist of aggregated results and NOT contain information that can be used to identify specific housing authorities.

The Department is interested in highlighting the efforts and benefits that some agencies have had with renewable energy systems. At the conclusion of this study, HUD may contact your agency in an effort to develop a case study documenting your success(es) with renewable energy systems.

**Section A: Agency and Respondent Information**

**Reviewer Note: This section will be asked of all PHAs**

\*1. This section collects information about your agency as well as the name, title, and contact information for all individuals that assist in completing parts of the survey. In addition, please indicate which section(s) of the survey each respective person was responsible for answering. These details will inform the research team as to whom to contact if further clarification to a response is needed.

PHA Name: \_\_\_\_\_  
PHA Code: \_\_\_\_\_  
Your Name: \_\_\_\_\_  
Your Title: \_\_\_\_\_  
Your Phone Number: \_\_\_\_\_  
Your Email Address: \_\_\_\_\_  
Section(s) You Completed: \_\_\_\_\_

2. If Second Respondent

Second Respondent's Name: \_\_\_\_\_  
Second Respondent's Name: \_\_\_\_\_  
Second Respondent's Title: \_\_\_\_\_  
Second Respondent's Phone Number: \_\_\_\_\_  
Second Respondent's Email Address: \_\_\_\_\_  
Section(s) Second Respondent Completed: \_\_\_\_\_

3. If Third Respondent

Third Respondent's Name: \_\_\_\_\_

Third Respondent's Name: \_\_\_\_\_  
Third Respondent's Title: \_\_\_\_\_  
Third Respondent's Phone Number: \_\_\_\_\_  
Third Respondent's Email Address: \_\_\_\_\_  
Section(s) Third Respondent Completed: \_\_\_\_\_

\*4. The research team is aware that some Executive Directors manage more than one public housing agency. For the individuals who fall into this category, they will receive multiple invitations to participate because this survey is designed to send an invitation to the Director of every agency within HUD's PHA dataset.

In an effort to minimize the response burden placed on this subset of individuals, the research team provides participants the option of responding to one survey for multiple agencies.

Are you an Executive Director or personnel authorized to speak on behalf of the Director who manages more than one agency?

- Yes
- No (SKIP TO Question 6)
- Don't Know (SKIP TO Question 6)

\*5. Please specify the PHA Code for the additional agencies that you manage. Please separate each code by a comma (",") and blank space (" ").

Additional Managed Agencies:

**Section B: Your Agency's Renewable Energy Systems**

**Reviewer Note: This section will be asked of all PHAs**

\*6. Across your entire agency, do you have any installed renewable energy systems?

- Yes
- No (END of Survey)
- Don't Know (END of Survey)

\*7. What type(s) of renewable energy systems do you have installed at your agency?

	Yes	No	Don't Know
Solar Photovoltaic (PV) Panels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar Domestic Water Heating Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geothermal Heat Pumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Turbines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Renewable Energy System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify the type of renewable energy system): _____			

\*8. Do you know when your agency's renewable energy systems were installed?

- Yes
- No (SKIP TO Question 10)

\*9. Specify when (i.e., year of completion) your agency's renewable energy systems were installed. If your agency has a multitude of similar systems, please specify the completion year of the initial installed system. (Complete all that apply.)

	Completion Year
Solar Photovoltaic (PV) Panels	_____
Solar Domestic Water Heating Systems	_____
Geothermal Heat Pumps	_____
Wind Turbines	_____
Other Renewable Energy System	_____

\*10. Across your entire agency, do you know how many units receive energy from the installed renewable energy systems?

- Yes
- No (SKIP TO Question 12)

\*11. Specify the number of units that receive energy from an installed renewable energy system. Please aggregate your responses. (Complete all that apply.)

Solar Photovoltaic (PV) Panels: \_\_\_\_\_  
Solar Domestic Water Heating Systems: \_\_\_\_\_  
Geothermal Heat Pumps: \_\_\_\_\_  
Wind Turbines: \_\_\_\_\_  
Other Renewable Energy System: \_\_\_\_\_

\* 12. Across your entire agency, do any of your common areas or community facilities receive energy from the installed renewable energy systems?

- Yes
- No
- Don't Know

**Section C: Capacity of Installed Renewable Energy Systems**

**Reviewer Note: PHAs that answer 'No' or 'Don't Know' to Question 6 will not see or need to respond to this Section**

\* 13. If your agency has installed Solar Photovoltaic (PV) Panels, do you know the system's aggregated (rated) capacity?

- Yes
- No (SKIP TO Question 15)
- Not Applicable (SKIP TO Question 15)

\* 14. Specify the aggregated (rated) capacity of your agency's installed Solar Photovoltaic (PV) Panels. Please specify your response in one of the units of power listed below.

Kilowatts (kW) \_\_\_\_\_  
British Thermal Units per hour (BTU/hr) \_\_\_\_\_

\* 15. If your agency has installed Solar Domestic Water Heating Systems, do you know the system's aggregated (rated) capacity?

- Yes
- No (SKIP TO Question 17)
- Not Applicable (SKIP TO Question 17)

\*16. Specify the aggregated (rated) capacity of your agency's installed Solar Domestic Water Heating Systems. Please specify your response in one of the units of power listed below.

Kilowatts (kW) \_\_\_\_\_  
British Thermal Units per hour (BTU/hr) \_\_\_\_\_

\*17. If your agency has installed Geothermal Heat Pumps, do you know the system's aggregated (rated) capacity?

- Yes
- No (SKIP TO Question 19)
- Not Applicable (SKIP TO Question 19)

\*18. Specify the aggregated (rated) capacity of your agency's installed Geothermal Heat Pumps. Please specify your response in one of the units of power listed below.

British Thermal Units per hour (BTU/hr) \_\_\_\_\_  
-  
Refrigeration Tons (ton) \_\_\_\_\_  
-

\*19. If your agency has installed Wind Turbines, do you know the system's aggregated (rated) capacity?

- Yes
- No (SKIP TO Question 21)
- Not Applicable (SKIP TO Question 21)

\*20. Specify the aggregated (rated) capacity of your agency's installed Wind Turbines. Please specify your response in one of the units of power listed below.

Kilowatts (kW) \_\_\_\_\_  
-  
British Thermal Units per hour (BTU/hr) \_\_\_\_\_  
-

\*21. If your agency has installed an Other Renewable Energy System, do you know the system's aggregated (rated) capacity?

- Yes
- No (SKIP TO Question 23)
- Not Applicable (SKIP TO Question 23)

\*22. Specify the aggregated (rated) capacity of the Other Renewable Energy System installed at your agency. Please specify your response in one of the units of power listed below.

Kilowatts (kW) \_\_\_\_\_  
 British Thermal Units per hour (BTU/hr) \_\_\_\_\_  
 Refrigeration Tons (ton) \_\_\_\_\_

**Section D: Financing and Costs of Installed Renewable Energy Systems**

**Reviewer Note: PHAs that answer 'No' or 'Don't Know' to Question 6 will not see or need to respond to this Section**

23. How were your agency's installed renewable energy systems funded, financed, and/or leased? (Mark all that apply.)

	3 <sup>rd</sup> -Party Leasing	Power Purchase Agreement (PPA)	Energy Performance Contract (EPC)	Property Assessed Clean Energy (PACE)	Capital Funds / Capital Reserves	Direct Purchase	Private Financing	Other	Don't Know
Solar Photovoltaic (PV) Panels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar Domestic Water Heating Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geothermal Heat Pumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Turbines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Renewable Energy System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify the type of financing): _____									

\*24. If your agency's renewable energy systems were installed and/or financed by another entity, what do you expect will happen to the systems when the contract expires?



	Removal	Discounted Purchase	Market Rate Purchase	Renew Contract	Don't Know	Not Applicable
Solar Photovoltaic (PV) Panels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar Domestic Water Heating Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geothermal Heat Pumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Turbines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Renewable Energy System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify what you expect to happen): _____						

\*25. Do you know the total costs (i.e., system purchase or lease and installation charges) of your agency's installed renewable energy systems? For the purposes of this survey, 'total costs' are considered the gross amount (amount before incentives and/or tax benefits) paid for the systems.

- Yes
- No (SKIP TO Question 27)

\*26. Specify the total costs (i.e., system purchase or lease and installation charges) of your agency's installed renewable energy systems. (Complete all that apply.)

Solar Photovoltaic (PV) Panels: \_\_\_\_\_  
Solar Domestic Water Heating Systems: \_\_\_\_\_  
Geothermal Heat Pumps: \_\_\_\_\_  
Wind Turbines: \_\_\_\_\_  
Other Renewable Energy System: \_\_\_\_\_

\*27. Do you know the costs after incentives and/or tax benefits (i.e., system purchase or lease and installation charges) of your agency's installed renewable energy systems? For the purposes of this survey, 'costs after incentives and/or tax benefits' are considered the net amount paid for the systems.

- Yes
- No (SKIP TO Question 29)

\*28. Specify the costs after incentives and/or tax benefits (i.e., system purchase or lease and installation charges) of your agency's installed renewable energy systems. (Complete all that apply.)

Solar Photovoltaic (PV) Panels: \_\_\_\_\_

Solar Domestic Water Heating Systems: \_\_\_\_\_  
Geothermal Heat Pumps: \_\_\_\_\_  
Wind Turbines: \_\_\_\_\_  
Other Renewable Energy System: \_\_\_\_\_

\*29. Do you know the types of energy incentives and/or tax benefits that were leveraged in conjunction with your agency's installed renewable energy systems?

- Yes
- No (END of Survey)
- Not Applicable (END of Survey)

\*30. Specify the types of energy incentives and/or tax benefits that were leveraged in conjunction with your agency's installed renewable energy systems. (Complete all that apply.)

**Reviewer Note: The response choices will be randomized.**

- Personal Tax Credit/Deduction (Federal, State, and/or Local)
- Property Tax Exemption/Exclusion
- Renewable Energy Rebate Program
- Sales Tax Exemption
- Renewable Energy Grant Program
- Renewable Energy Bond Program
- Other (Please specify the incentive and/or tax benefit): \_\_\_\_\_

Thank you for completing this survey!