

**COMMONWEALTH OF PUERTO RICO  
STATE OFFICE OF ENERGY POLICY**

**GREEN ENERGY FUND  
Tier 1 Reference Guide**  
(Revised on August 17, 2017)



**STATE ENERGY PROGRAM**  
GOVERNMENT OF PUERTO RICO

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Chapter One  
**General**

**I. Title and Introduction**

This Guide shall be known as the “**Tier 1 Reference Guide**” or the “**Guide**” for fiscal year 2016-2017. **This version has been revised as of August 17, 2017.**

As per the State Office of Energy Policy (SOEP) Regulation Num. 8601 of June 1, 2015, also known as the Green Energy Fund Tier 1 and Tier 2 Regulation (the “Regulation”), this guide publishes and defines the requirements and eligibility criteria for the Tier 1 Program of the Green Energy Fund (GEF). At least every fiscal year, an updated Guide shall be issued. Otherwise, the terms of the previous Guide will be deemed extended to the following period. Applicants may apply for incentives under the GEF through the Green Energy Fund website ([www.prgef.com](http://www.prgef.com)).

The purpose of this Guide is to define Green Energy Technologies that are eligible to participate in the Tier 1 program, the maximum reimbursement percentage established for each one of these technologies, approved reference costs, among other requirements.

**II. Definitions**

The following terms used in this Guide shall have the meaning described to them below. Terms not defined herein shall have the meaning described to such term in Act No. 83 of July 19, 2010 and in the Regulation.

- 2.1 **Act** shall mean Act No. 83 of July 19, 2010 as amended.
- 2.2 **Administrative Service Fee** shall mean the non-refundable monetary amount to be invoiced to Applicants for administrative services such as information request notices, additional inspections and others. Details of such amounts will be published in the Reference Guides.
- 2.3 **Green Energy Technologies (GETs)** shall mean the eligible green energy technologies for the production of Alternative Renewable Energy and Sustainable Renewable Energy, as approved from time to time by SOEP, listed in Section IV of Chapter Two of this Guide.
- 2.4 **Reference Costs** shall mean the maximum acceptable Total Project Cost per installed Watt of System Capacity. The Reference Costs will vary according to the technology and system size, as described in this Guide. Reference Costs are used to cap the Total Incentive Amount to be granted. Reference Costs are based on reasonable and supported criteria, including but not limited to the following:

- 2.4.1. National market reports;
  - 2.4.2. Local market statistics, which may be compiled by SOEP based on previous years Green Energy Projects developed in the island;
  - 2.4.3. Local constraints and particular conditions to develop Green Energy Projects in the island. As will be further specified in this Guide, a higher Reference Cost may be granted to economically deprived or underdeveloped areas in Puerto Rico, as is the case with Vieques and Culebra under Act No. 153 of August 10, 2002, "Act to Create the Special Vieques-Culebra Economic Development Zone."
- 2.5 **Solar Photovoltaic (PV)** shall mean a system that produces electricity directly from sunlight.
- 2.6 **System Capacity** shall be defined as follows:
- 2.6.1. For Photovoltaic (PV) System, shall be based on the sum of the individual DC nameplate capacity ratings of PV Modules. Incentives may be reduced by SOEP because of potential production losses associated with shading, system orientation, tilt angle, and other factors.
  - 2.6.2. For Small Wind Power System, shall be based on the "AWEA Rate Power" definition provided in AWEA Small Wind Turbine Performance and Safety Standard (Standard 9.1-2009) for small wind power systems (turbines with rotor areas up to 200m<sup>2</sup>). Larger turbines shall be based on the turbine rated power output at 11 m/s per IEC 61400-12.
  - 2.6.3. The applicability of these standards may be revised from time to time by SOEP and published in the Reference Guides, as the GETs available in the market are improved and modified.
- 2.7 **Tier 1** shall mean any GEP that has a System Capacity of up to and including one hundred (100) kilowatts (kW).
- 2.8 **Total Incentive Amount** shall mean the total amount determined by SOEP to be reserved for a GEP as notified in an incentive reservation notice, calculated as stated in Section V of Chapter Two of this Guide.
- 2.9 **Total Project Cost** shall mean the total eligible project cost as defined in the Regulation.
- 2.10 **Small Wind Turbine** shall mean a system that produces electricity through the conversion of the kinetic energy of wind, captured by turbines.

Chapter Two  
**Tier 1 Projects**

**I. Fund Assignments**

The total fund assignment under the Tier 1 Program is \$4,000,000 for fiscal year (FY) 2017-2018.

**II. Funding Cycles and Distribution of Funds**

The total fund assignment will be distributed in Funding Cycles as described below. Unused funds will be added to the next funding cycle of the same Fiscal Year.

<b>Funding Cycles</b>	<b>Available Funds</b>
September 29, 2017	\$1,000,000*
December 5, 2017	\$1,000,000*
March 1, 2018	\$1,000,000*
May 1, 2018	\$1,000,000*

\*Additional funds may become available for this cycle and/or a reduction in funds can be applied depending on previous quarter incentive demand.

These funds will be available to residential, commercial and industrial customers.

For the first funding cycle of Fiscal Year 2017-2018, the above amounts will be further divided by GEP System Capacity as follows:

<b>GEP System Capacity</b>	<b>Available Funds</b>
Less than or equal to 15 kW	\$700,000*
Greater than 15 kW, up to 100 kW	\$300,000*

\*Funds could be redistributed, depending on incentive demand per each quarter.

For the second funding cycle of Fiscal Year 2018-2019, the above amounts will be further divided by GEP System Capacity as follows:

<b>GEP System Capacity</b>	<b>Available Funds</b>
Less than or equal to 15 kW	\$700,000*
Greater than 15 kW, up to 100 kW	\$300,000*

\*Funds could be redistributed, depending on incentive demand per each quarter

For the third funding cycle of Fiscal Year 2018-2019, the above amounts will be further divided by GEP System Capacity as follows:

<b>GEP System Capacity</b>	<b>Available Funds</b>
Less than or equal to 15 kW	\$700,000*
Greater than 15 kW, up to 100 kW	\$300,000*

\*Funds could be redistributed, depending on incentive demand per each quarter

For the fourth funding cycle of Fiscal Year 2018-2019, the above amounts will be further divided by GEP System Capacity as follows:

<b>GEP System Capacity</b>	<b>Available Funds</b>
Less than or equal to 15 kW	\$700,000*
Greater than 15 kW, up to 100 kW	\$300,000*

\*Funds could be redistributed, depending on incentive demand per each quarter

### **III. Application and Reservation Fees**

#### Application Fee

Applicants will be required to pay a non-refundable Application Fee in order to submit an Application. The Fee structure is described below:

#### **Application Fees**

<b>GEP System Capacity</b>	<b>Application Fee</b>
Less than or equal to 15 kW	\$250
Greater than 15 kW, up to 100 kW	\$1,000

For any Funding Cycle, if a Customer or Applicant submits more than one Application for the same project or Customer, all Applications submitted during that Funding Cycle for the same project or Customer will be cancelled.

#### Reservation Guarantee

Once an incentive reservation notice is issued, Applicants will be required to provide a Reservation Guarantee and present evidence thereof for execution of the Reservation Agreement. This Guarantee will assure completion of the GEP, on schedule, and in accordance with the terms and conditions of Act 83, the Regulation and the Reservation Agreement executed thereunder.

The Reservation Guarantee may be satisfied by Applicant through (i) the deposit with SOEP of the amount provided below, payable as shall be instructed by SOEP, or (ii) presenting SOEP a Performance Bond in form and substance acceptable to SOEP to secure an amount equal to the Reservation Guarantee. SOEP may make draws under the Reservation Guarantee to the extent that, as determined by SOEP, Applicant fails to develop, construct and initiate operation of the GEP on schedule or in accordance with the terms and conditions of Act 83, the Regulation and the Reservation Agreement. Forfeiture of the Reservation Guarantee shall be in addition to not receiving the incentive. The Reservation Guarantee shall be maintained until the later of six (6) months after the date of scheduled completion of the GEP or the date when claims thereunder shall have been paid to SOEP.

SOEP will return the Reservation Guarantee to the Applicant upon successful completion of the GEP. The applicable Reservation Guarantee structure is detailed below:

**Reservation Guarantees**

<b>Proposed GEP System Capacity</b>	<b>Reservation Guarantee</b>
Less than or equal to 15 kW	\$1,000
Greater than 15 kW, up to 100 kW	The highest of \$1,000 or 1% of Total Project Cost

**IV. Eligible Green Energy Technologies (GET)**

Applicants will be eligible to submit Proposals during FY 2018-2019 for GEPs utilizing GETs that fall within the following categories:

- Solar Energy (photovoltaic “PV”), including its battery backup.
- Small Wind Turbine

Unless otherwise published by SOEP, the same technologies will be eligible for subsequent Funding Cycles.

**V. Energy Audit Requirement**

As a requirement to participate in the program, the applicant need to present an energy audit of the proposed facility. The purpose of the audit, is to provide a better understanding of the facility energy needs to the participant. The audit must be accompanied by recommendations to lower the energy bill and its impact on the participant budget. For example, changes to more efficient lighting (LED technology) and how much money, the participant will save by implementing the measure. The participant must sign the audit, and a copy of it will be submitted to the GEF Team, within three weeks after the participant receive that incentive reservation notice. The audit must include a verification of the electrical system and it recommendations.

The participant will receive a reimbursement of \$450 per audit, once the project is completed, inspected and the incentive claim package is being process. Only Professional Engineers, Professional Architects or a license electrical technician will be authorized to perform the energy audits.

## VI. Incentive Amounts

Upon compliance with all requirements and criteria under the Regulation and this Guide, the following methodology will be used to calculate the Total Incentive Amount:

1. Total Project Cost is multiplied by the respective GET reimbursement percentage to determine the requested incentive amount.
2. The Total Project Cost is divided by the System Capacity to determine the cost per Watt installed, expressed in (\$/W).
3. If the cost per installed Watt is less than (<), or equal to (=) the applicable Reference Cost (\$/W), then: Total Incentive Amount = Requested incentive amount
4. If the Cost per installed Watt is greater than (>) the applicable Reference Cost, then: Total Incentive Amount = System Size multiplied by the Reimbursement Percentage (%) multiplied by the Reference Cost

Under no circumstances, will the Total Incentive Amount exceed the reimbursement percentages of the Total Project Cost indicated below nor will Total Project Cost per installed Watt (System Capacity) exceed the Reference Cost (as shown above). The following reimbursement percentages and Reference GEPs will be used to determine the Total Incentive Amount to be awarded to eligible GEPs:

Eligible GET	System Capacity	Reimbursement Percentage (%)	Reference Cost
Solar Photovoltaic (PV) + Battery backup	Less than or equal to 10 kW	40%	4.00 \$/W**
Solar Photovoltaic (PV) Grid Tie	Less than or equal to 15 kW	40%	2.00 \$/W*
	Greater than 15 kW, up to 100 kW	40%	2.00 \$/W*
Small Wind Turbine (SWT) + Battery backup	Less than or equal to 10 kW	40%	4.00 \$/W**



Small Wind Turbine (SWT) Grid Tie	Less than or equal to 15 kW	40%	2.00 \$/W*
	Greater than 15 kW, up to 100 kW	40%	2.00 \$/W*

Reimbursement Percentages may be revised for subsequent Funding Cycles

**\*Grid tie projects, with Total System Costs over \$2.85 per Watt, will be disqualified. The GEF team will perform a manual review of each electronically awarded project, and if the project Total System Cost exceeds \$2.85/W, the project will be disqualified. Application fees will not be reimbursed.**

**Total System Cost = (Total Project Cost / DC System Size in Watts )**

**\*\*System with battery backup, must take into consideration a minimum supply of 8 continuous hours, of the critical load (to be supplied with the batteries). The critical load will be 40% of the total DC output. Batteries must be OGPE's certified.**

Higher GET Reference Costs will be allowed for GEPs to be developed in the Special Vieques-Culebra Economic Development Zone, as defined in Act No. 153 of August 10, 2002. The following reference costs will apply for GEPs sited in Vieques or Culebra:

Eligible GET	System Capacity	Reimbursement Percentage (%)	Reference Cost for GEP in Vieques or Culebra
Solar Photovoltaic (PV) + Battery backup	Less than or equal to 10 kW	40%	4.50 \$/W**
Solar Photovoltaic (PV)	Less than or equal to 15 kW	40%	2.10 \$/W
	Greater than 15 kW, up to 100 kW	40%	2.10 \$/W
Small Wind Turbine (SWT) + Battery backup	Less than or equal to 10 kW	40%	4.50 \$/W**
Small Wind Turbine (SWT)	Less than or equal to 15 kW	40%	2.10 \$/W
	Greater than 15 kW, up to 100 kW	40%	2.10 \$/W

Reimbursement Percentages may be revised for subsequent Funding Cycles.

**\*\*System with battery backup, must take into consideration a minimum supply of 8 continuous hours, of the critical load (to be supplied with the batteries). The critical load will be 40% of the total DC output. Batteries must be OGPE's certified.**

The maximum eligible PV (DC) array to inverter (AC) ratio is 1.30. Any GEP with a larger ratio will only receive incentives that correspond to the aforementioned ratio. For example, a GEP with a 10 kW inverter may install up to 13 kW DC in PV modules.

$$10 \text{ kW AC} \times 1.30 = 13 \text{ kW DC}$$

The AC capacity of the inverters that exceeds the DC capacity of the PV modules will not be eligible for incentives.

## VII. Technology-Specific Requirements

Eligible GET	Technical Requirements
Solar Photovoltaic (PV)	<p>Estimated production (kWh) shall be based either on a precise system modeling using local resource and meteorological data or on at least six (6) months of solar resource data at the site.</p> <p>Under no circumstances shall the estimated annual production for a given Solar PV system be less than eighty percent (80%) of the established minimum rated output.</p> <p>The PV system shall not be sized so that the annual production of the system is greater than the facility's annual consumption based on the past twelve (12) months' of metered usage data. Any solar system sized above this amount will not be eligible to receive an incentive. Additional information may be requested in order to confirm facility consumption.</p>
Wind	<p>Applicant must have collected at least six (6) months of wind resource data at the propose hub height or have a wind resource assessment report from a qualified meteorological station or a professional and reputable wind mapping service, provided any such source or service is typically acceptable to financial institutions when evaluating bankability of a project.</p> <p>Estimated production (kWh) shall be calculated based on wind resource data, and all energy production calculations should use a field-tested power curve for the wind turbine and consider key factors such as tower height, wind shear, turbulence, Weibull K factor, and site altitude.</p> <p>The tower height must be a minimum of 60 feet and wind turbine blades must be 30 feet above any obstruction objects (i.e. trees, building or other obstacles within a 300-foot radius). At the applicant's chosen eligible hub height, there must be a minimum annual average wind speed of 10 mph (approximately 4.5 m/s).</p> <p>The equipment shall not be sized greater than the facility's highest peak load in any one hour, based on the past twelve (12) months' of usage data. Any wind system sized above this amount will not be eligible to receive an incentive.</p>

## VIII. Insurance Requirements

Applicants, directly or through Installers or System Owners, must meet and maintain the same policies of insurance required in OGPe Joint Regulation of Permits for Construction Works and Land Use (Joint Regulation), Title XII, Chapter 55, Rule 55.6(d), as such requirements may be amended from time to time. Policies shall be issued by insurance companies authorized to do business in Puerto Rico, and to that effect they shall provide in original certificates of insurance and endorsements, as follows:

- (a) Include as Additional Insured, using ISO Additional Insured Endorsement CG 20 26 11 85 or a substitute providing equivalent coverage:

State Office of Energy Policy  
P.O. Box 41314  
San Juan, Puerto Rico 00940  
Tel.787-332-0914  
Fax: 787-332-0915

- (b) Include as Additional Insured, using ISO Additional Insured Endorsement CG 20 26 11 85 or a substitute providing equivalent coverage:  
Puerto Rico Electric Power Authority
- (c) A thirty (30) Days' cancellation or non-renewal notice to be sent by certified mail with return receipt to the above address.
- (d) An endorsement including the GEP under contractual liability coverage and identifying it by application number, Customer and project address.
- (e) Waiver of Subrogation in favor of SOEP.
- (f) The breach of any of the Warranties or Conditions in these policies by the Applicant, Installer or System Owner, as applicable, shall not prejudice SOEP's rights under the policies.

## IX. Supplemental Information; Incentive Calculation Examples

**Example #1:** A home-owner decides to install a 3,000 watt or 3 kW Solar PV system at a residence. According to the project price quote, the Total Project Cost is \$7,500.00. Applicant enters the eligible GET, system capacity, and Total Project Cost to the online application system.

The system will use this information to determine the Total Incentive Amount applicable to the Applicant's GEP. The following calculations are performed in accordance to the methodology described above:

1. Total Project Cost (\$) X Reimbursement (%) = Requested incentive amount  
= \$7,500 X 40% = **\$3,000**
2. System calculates if the Cost per installed Watt (\$/W) is greater than, less than or equal to (<,>, =) the Reference Cost (\$/W)

$$\$7,500/3,000= 2.50 \$/W$$

Since,  $2.5 \$/W > 2.00 \$/W$ , then,

3. Total Incentive Amount= 3,000 (W) X 20% X 2.00 (\$/W)

$$\underline{\text{Total Incentive Amount}}= \mathbf{\$1,200.00}$$

**Example #2:** A Commercial Applicant decides to install a 20,000 watt or 20 kW Solar PV system at his facility. According to the project price quote, the Total Project Cost is \$35,000. Applicant enters the eligible GET, system capacity, and Total Project Cost to the online application system.

The system will use this information to determine the Total Incentive Amount applicable to the Applicant's GEP. The following calculations are performed in accordance to the methodology described above:

1. Total Project Cost (\$) X Reimbursement (%) = Requested incentive amount

$$= \$35,000 \times 20\% = \mathbf{\$7,000}$$

2. System calculates if the Cost per installed Watt (\$/W) is less than, greater than or equal to (<,>, =) the Reference Cost (\$/W)

$$\$35,000/20,000=1.75 \$/W$$

Since,  $1.75 \$/W < 2.00 \$/W$ , then,

3. Total Incentive Amount= Requested incentive amount

$$\underline{\text{Total Incentive Amount}}= \mathbf{\$7,000}$$

## **X. System Performance Metering Requirements**

As required in the GEF Regulation, all GEP recipients are required to install, as part of their Total Project Cost, a System Performance Meter to account for and to determine the amount of green energy production of the GEP.

Meters should be in the California Energy Commission's list of Eligible System Performance Meters.

The California Energy Commission's list of Eligible System Performance Meters can be found on the GoSolarCalifornia website or currently under the following link:

[http://www.gosolarcalifornia.ca.gov/equipment/system\\_perf.php](http://www.gosolarcalifornia.ca.gov/equipment/system_perf.php)

All System Performance Meters **must** be installed with some form of communication capability that will provide energy production data that can be collected, accessed remotely through the internet, and downloaded for processing by SOEP without the need to

purchase or install additional software. Energy production data shall clearly demonstrate the energy production in kWh by day, month, and year.

All GEF Customers must provide SOEP staff with access to their facilities in order to re-inspect and/or verify reported production. Customer shall have the right to accompany SOEP staff during such visits. Re-inspections may occur when production data is not available at any moment during the first five (5) years of operation of the GEP or for any other malfunction of the system.

A Customer may be invoiced an amount not to exceed \$350, if more than one(1) inspection is required due to any malfunction or non-performance of the metering system. If these visits occur prior to disbursing incentive to Customer, inspection costs may be deducted from the final incentive amount.

In the future, only meters marked with a Y(Yes) in the PBI Eligible Column will be eligible in this Program.

#### **XI. Minimum application documentation required**

Minimum documentation required to apply for an incentive under this program is listed below:

- 11.1 Last electric utility bill for the facility where the GEP will be installed. Electric utility bill shall be under the Customer's name. If the facility is off the grid or is new and has yet to be connected to the electric utility, an electrical load estimate should be provided signed by an electrical engineer duly licensed and registered as a Professional Engineer (PE) in Puerto Rico.
- 11.2 Site drawing and Layout – A single page document in PDF format and prepared using computer drawing software, indicating at a minimum the locations of major components (e.g. photovoltaic panels, inverters, wind turbines, meter), layout, positioning, true north orientation symbol, and property lines;
- 11.3 Signed project price quote - containing the following components:
  - a. Equipment brand, model number, quantity and costs;
  - b. Engineering design and permitting cost;
  - c. Construction & installation costs;
- 11.4 When applicable for a commercial application, a corporate resolution by a company's official indicating the names of individuals of that same corporation authorized to act and sign documents on behalf of the corporation. For DBA, Societies, and other legal entities, a letter of authorization;
- 11.5 For commercial applications, a sworn statement, indicating if the Customer belongs to a Controlled Group. If the Customer does

belong to a Controlled Group, a list of the EINs of all corporations must be listed in the Sworn Statement. In addition, all shareholders or partners of the Customer entity shall be listed;

- 11.6 When applicable for a Customer renting the facility from a landlord, a Tenant Authorization Form (available at the website stated in Section 6.2.1 of Chapter One of this Regulation);
- 11.7 A valid GEF Orientation Certificate issued to the Customer;
- 11.8 Government Certifications specified in Section 6.19 of the First Chapter of the GEF Regulation corresponding to the Customer; and
- 11.9 Any other document required by SOEP as part of the application process.

## **XII. Reservation Agreement documentation**

For awarded GEPs, Applicants and/or Customers will then be required to present the following at the time the Reservation Agreement is signed:

- 12.1 PREPA initial evaluation of proposed project for the Facility. SOEP may cancel applications whose PREPA evaluation notes any issues that may result in interconnection or construction delays (ex. Right-of-way issues, equipment replacement other than electrical meter, outstanding debts, and major construction). In lieu of the PREPA initial evaluation, SOEP may accept evidence of having submitted the request for evaluation to PREPA within five (5) business days of the opening of the corresponding Funding Cycle;
- 12.2 Evidence of payment of Reservation Guarantee;
- 12.3 Evidence of insurance to cover the construction;

## **XIII. Incentive Claim documentation**

Once the GEP is Completed, the Applicant shall submit an Incentive Claim, including all documents indicated in the Reservation Agreement. Required documents to be submitted with the Incentive Claim include, but shall not be limited to, the following:

- 13.1 Evidence of payment of GEP costs, when the GEP is purchased by the Customer, and a final project cost certification when the

GEP is financed by a Third Party. Evidence of payment must be signed by both Customer and Sales Representative;

- 13.2 Executed Interconnection Agreement with PREPA;
- 13.3 Renewable Energy System Installation Certificate in accordance with OGPe Joint Regulation, Title XII, Chapter 55, Rule 55.6;
- 13.4 Metering Communication information including webpage address, system name, and if applicable username and password;
- 13.5 Project Closing Report; and
- 13.6 Any other documentation specified in the Reservation Agreement or required by SOEP at the time of payment.

#### **XIV. Administrative Service Charges**

In order to cover the administrative costs of several services, Applicants shall pay the following Administrative Service Fees prior to receiving the services by SOEP or its consultants:

- 14.1 Information Request Notices caused by Applicant's omissions or errors - \$150
- 14.2 Reservation period extension requests (maximum of 6 months) - \$350 or 0.5% of Total Incentive Amount whichever is higher
- 14.3 Second extension request (maximum of 6 additional months) - \$350 or 0.5% of Total Incentive Amount whichever is higher
- 14.4 Additional inspections - \$350
- 14.5 Project specific queries - \$150