REGULATION ON MICROGRID DEVELOPMENT

(PROPOSED RULES)

TABLE OF CONTENTS

REGULATION ON MICROGRID DEVELOPMENT

CHAPTER I - GENERAL PROVISIONS

ARTICLE 1.- GENERAL PROVISIONS

Section 1.01.- Title.

This Regulation shall be known as the Regulation on Microgrid Development of the Puerto Rico Energy Commission.

Section 1.02.- Legal Basis.

This Regulation is adopted pursuant to Act 57-2014, as amended, known as the Puerto Rico Energy Transformation and RELIEF Act; Act 82-2010, as amended, known as the Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act; Act 83-2010, known as the Green Energy Incentives Act; and Act 38-2017, known as the Uniform Administrative Procedure Act of the Government of Puerto Rico ("LPAU", for its Spanish acronym).

Section 1.03.- Purpose and Executive Summary.

The Puerto Rico Energy Commission ("Commission") adopts and enacts this Regulation to assist in the development of microgrids throughout Puerto Rico. The prolonged outages and its impacts on the citizens of Puerto Rico caused by Hurricanes Irma and Maria highlights the need to foster the creation of microgrids as a means of delivering energy services to customers in need, while integrating new technology and industry trends into Puerto Rico's energy market.

The Commission seeks to harness the potential of decentralized energy resources including those identified as sustainable renewable or alternative renewable energy resources, as defined by Act 82-2010; and combined heat-and-power, and other distributed resources, to strengthen the resiliency of the electric grid, empower customers, and increase reliance on renewable and highly-efficient resources across the Commonwealth.

Because microgrids can operate in an "islanded" mode, disconnected from the electric grid system, they are able to independently provide electric service during grid outage periods or interruptions (for example, the prolonged outage across the Commonwealth in the aftermath of Hurricanes Irma and Maria). Microgrids can contribute to rapid restoration of service, as there are areas where power could be restored quicker by the deployment of microgrids rather than waiting reconnection to the grid at large.

With this Regulation, the Commission intends to provide a stable and predictable regulatory framework, capable of fostering innovation and economic growth through continued investments in the development and deployment of microgrid systems.

Section 1.04.- Application.

This Regulation shall govern the registration, contract terms, incorporation of preexisting utility equipment, and rates for proposed microgrids that serve end-use customers.

Section 1.05.- Interpretation.

This Regulation shall be interpreted in a way that promotes the highest public good and the protection of the interests of the residents of Puerto Rico, and in such a way that the proceedings are carried out rapidly, justly, and economically.

Section 1.06.- Provisions of Other Regulations.

This Regulation may be supplemented by the provisions of other regulations of the Puerto Rico Energy Commission that are compatible with the provisions of this Regulation.

Section 1.07.- Unforeseen Proceedings.

When a specific proceeding has not been planned for in this Regulation, the Commission may conduct them in any way that is consistent with Act 57-2014.

Section 1.08.- Definitions.

A. These definitions are to be used for this Regulation and are not intended to modify the definitions used in any other Commission regulations or orders.

B. For the purposes of this Regulation, the following terms will have the meaning established below, except when the context of the content of any provision clearly indicates something else:

    1. "Alternative Renewable Energy" means that energy produced or generated from the following resources, as defined in Section 1.4 of Act 82-2010:

        i. Conversion of municipal solid waste;

        ii. Landfill gas combustion;

        iii. Anaerobic digestion;

        iv. Fuel cells; and

        v. Any other energy that the Commonwealth Energy Public Policy Office may define in the future through regulations as alternative renewable energy.

    2. "Ancillary services" mean the services necessary to support the delivery of electric power from generator to consumer while maintaining reliable operation of an interconnected transmission and distribution system.

    3. "Combined heat-and-power" means equipment used to produce electric energy and forms of useful thermal energy (such as heating an energy transfer medium or steam), used for

industrial, commercial, heating, or cooling purposes, through the sequential use of energy.

4. "Commission" means the "Puerto Rico Energy Commission" created by virtue of Act 57-2014.

5. "Cooperative" means a non-profit entity consisting of a group of customers who share ownership of a microgrid system.

6. "Community Solar" a voluntary program whereby a solar-electric system provides power and/or financial benefit to multiple community members in which community members may or may not own the system itself.

7. "Customer" means any natural person or legal entity who consumes or uses electric power or energy services.

8. "Distributed Generator" means any natural person or legal entity that owns an electric power generation facility in Puerto Rico connected to the distribution system or to a microgrid.

9. "Distribution Infrastructure" or "Distribution System" mean the physical equipment used to distribute electric power at voltages below 38,000 volts, including but not limited to poles, primary lines, secondary lines, service drops, and transformers.

10. "Distributed Renewable Energy" means a Distributed Generator powered by sustainable renewable energy or alternative renewable energy supplying electric power to an electric power service company or generated for self-consumption or for sale to third-parties. Community Solar projects are considered distributed renewable energy at the residential level.

11. "Electric Power Distribution" or "Distribution" means the delivery of electric power from any electric substation or generator to any customer or consumer at voltages below 38,000 volts through Distribution Infrastructure throughout the Commonwealth.

12. "Electric Power Generation Company" means any natural person or legal entity engaged in the production or generation of electric power in the Commonwealth of Puerto Rico. This term shall include cogenerators already established in Puerto Rico that supply energy to PREPA through a Power Purchase Agreement, and renewable energy producers.

13. "Electric Power Grid" means the electric power transmission and distribution infrastructure of the Commonwealth of Puerto Rico currently operated, supported, and administered by the Puerto Rico Electric Power Authority ("PREPA").

14. “Electric Power Service” or “Energy Service” means any service provided to a Customer in Puerto Rico by a certified electric power company.

15. “Energy Producer” means any natural person or legal entity that owns an electric power production facility in Puerto Rico that is an eligible business in accordance with to the provisions of Act No. 73-2008, known as the Economic Incentives Act for the Development of Puerto Rico.

16. "Electric Bill" means the document sent periodically by the Electric Service Company to a Customer listing all the components, charges, or rates that make up the final consumption cost each Customer must pay.

17. "Electric Service Company" means any natural person or legal entity engaged in the generation, billing, or resale of electric power. In the case of PREPA, it shall also include transmission and distribution.

18. “Energy Storage” means any resource capable of receiving electric energy from the grid or any other generation resource, to store for later injection of electricity back to the grid or to any load, regardless of where the resource is located on the transmission system, distribution system, or behind a customer’s meter.

19. “Green Energy” refers jointly to Sustainable Renewable Energy, Alternative Renewable Energy and Distributed Renewable Energy.

20. “Grid Services” include ancillary services and other services such as demand response [consider both services offered from the grid to the microgrid and from the microgrid to the grid, such as delivering power to PREPA during peak demand periods, also consider a “back-up” tariff from PREPA to microgrids].

21. “Interconnection” or “Electric Interconnection” means the connection of power plants to the same electric power transmission and/or distribution systems.

22. “Interconnection Charge” means the fair and reasonable amount of money that a person shall pay to PREPA for the right to connect his/her facility to the Electric Power Grid.

23. “Load” means a customer’s use of energy and/or grid services.

24. “Meter” means the equipment used to measure consumption and/or generation of energy at the point of connection between an individual customer and a distribution network. Meters may, but are not required, to be equipped with advanced communications and control capabilities.

25. “Microgrid,” means a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to PREPA’s grid. The goal of microgrids is to

reduce energy consumption based on fossil fuels through local renewable

energy generation and strategies to reduce energy consumption including the inherent efficiency increases attributable to CHP applications. A microgrid can connect and disconnect from PREPA's grid to enable it to operate in both grid-connected or off the grid.

26. "Municipality" means the local government legal entity, composed of a Legislative and an Executive Power, subordinate to the Constitution of the Commonwealth of Puerto Rico and its laws, that is responsible for a geographical demarcation with all of its wards ("barrios"), and which has a specific name.

27. "Net Meter" means a tool used to measure and register the two-way flow of power (bidirectional), that is, supplied and received energy in kilowatt-hour by a customer who has a distributed generation system interconnected to the power grid of PREPA.

28. "Person" means natural person or legal entity created, organized, or existing under the laws of the Commonwealth of Puerto Rico, the United States of America, any state of the union, or any foreign state or country.

29. "Power Purchase Agreement" or "PPA" means any agreement or contract approved by the Commission whereby an electric power generation company is bound to sell electric power to a person, and such person is, in turn, bound to acquire said electric power at a just and reasonable rate.

30. "PREPA" means the Puerto Rico Electric Power Authority, a corporate entity created by virtue of Act No. 83 of May 2, 1941, as amended.

31. "Sustainable Renewable Energy" refers to that energy generated from renewable resources as defined in Section 1.4 of Act 82-2010, including:

    i. Solar energy;

    ii. Wind energy;

    iii. Geothermal energy;

    iv. Renewable Biomass Combustion;

    v. Renewable Biomass Gas Combustion;

    vi. Combustion of biofuel derived solely from renewable biomass;

    vii. Qualified hydropower;

    viii. Marine and hydrokinetic renewable energy, as defined in Section 632 of the "Energy Independence and Security Act of 2007" (Public Law 110-140, 42, U.S.C. § 17211);

    ix. Ocean thermal energy; or

x. Any other clean and/or renewable energy that the Commission may define in the future through regulation or order as renewable energy. [What consideration is given to clean hydrocarbon based fuels such as natural gas, landfill biogas or liquefied petroleum gases in CPH micro-grid or renewable micro-grid applications?]

32. "Transmission Infrastructure" and "transmission system" mean the physical equipment used to transmit electric power at voltages of at least 115,000 volts, including but not limited to poles, lines, and transformers.

C. Every word used in the singular in this Regulation shall be understood to also include the plural unless the context indicates otherwise.

Section 1.09.- Controlling Version.

Should any discrepancy between the Spanish version and the English version of this Regulation arise, the provisions of the English version shall prevail.

Section 1.10.- Severability.

If any article, provision, word, sentence, paragraph, or section of this Regulation is disputed, for any reason, before a court and declared unconstitutional or void, such ruling shall not affect, damage, or invalidate the remaining provisions of this Regulation, but their effect shall be limited to the article, provision, word, sentence, paragraph, or section that is declared unconstitutional or void. The nullity or invalidity of any article, word, sentence, paragraph, or section in any specific case, shall not affect or jeopardize in any way its application or validity in any other case, except when it specifically and expressly invalidates for all cases.

Section 1.11.- Forms.

The Commission shall establish the forms it deems necessary to conduct the proceedings pursuant to this Regulation, and shall inform the public via its website. Notwithstanding, the fact that the Commission has not adopted one or more forms, is in the process of reviewing them, or the Internet website is out of service, shall not relieve any party of its obligation to comply with the provisions stated herein, provide the information required by this Regulation or otherwise comply with any applicable Commission order.

Section 1.12.- Mode of Submission.

The forms, documents, and appearances required by virtue of this Regulation or any order of the Commission must be submitted before the Commission in electronic format according to the instructions which, from time to time, the Commission establishes through an order in relation to the electronic filing system.

If the electronic filing system is temporarily not operating or functioning, the forms, documents, and appearances required by virtue of this Regulation or by any order of the Commission shall be submitted before the Commission in accordance with any instructions that the Commission shall provide at that time through an order.

Section 1.13.- Effect of Submission.

The presentation of a document whose content has been formulated by the undersigned party shall be equivalent to certifying that the content of said document is true and that, according to the signer's best knowledge, information, and belief, formed after reasonable inquiry, the document is based on facts, arguments, judicial sources, and correct information.

Section 1.14.- Confidential Information.

If in compliance with the provisions of this Regulation or any of the Commission's orders, a person has the duty to disclose information to the Commission considered to be privileged, pursuant to applicable evidentiary privileges, said person shall identify the alleged privileged information and request in writing for the Commission to treat such information as confidential, pursuant to Article 6.15 of Act 57-2014. In identifying privileged information and requesting confidential treatment by the Commission, the requesting party shall follow the rules and procedures established by the Commission in Resolution CEPR-MI-2016-0009, as such resolution may be amended from time to time, for the filing, handling and treatment of confidential information. Except in the case of information protected under the attorney-client privilege, the claim of confidential treatment shall, under no circumstances, be grounds for denying such information from being filed with the Commission.

Section 1.15.- Validity.

Pursuant to Section 2.8 of LPAU, this Regulation shall enter into effect thirty (30) days after its submission to the Department of State and the Legislative Library of the Office of Legislative Services.

Section 1.16.- Penalties

Any person who fails to comply with any of the requirements set forth in this Regulation may be subject to a Notice of Non-Compliance pursuant to Chapter IV of Regulation 8543[1] and may, as a result of such non-compliance, be subject to the imposition of a penalty, as provided in Article 6.36 of Act 57-2014 or any other administrative sanction deemed appropriate by the Commission.

CHAPTER II - MICROGRID PROVISIONS

ARTICLE 2.- MICROGRID CATEGORIES

Section 2.01.- Microgrid Classification.

A. Microgrids shall be classified by ownership structure, size, and whether or not they engage in off-system sales of energy and/or other grid services to entities other than PREPA.

B. Microgrids may be owned by any of the following:

[1] Regulation on Adjudicative, Notice of Noncompliance, Rate Review and Investigation Procedures.

1. Individuals;
2. Partnerships;
3. Customer cooperatives of at least three or more members;
4. Single municipalities;
5. Groups of municipalities or any other administrative division of the Commonwealth;
6. Single non-profit or for-profit entities and government entities, other than municipalities, and administrative divisions, excluding PREPA (hereafter referred to as "third-parties");
7. PREPA;
8. Other ownership arrangements that are submitted to the Commission for review. Upon review of the proposed arrangement, the Commission will determine the applicable provisions of this Regulation.

C. Microgrids shall be classified based on size according to the following:
   1. Individual systems are those with one or two customer-owners;
   2. Small systems are those with at least three (3) and no more than ten (10) customers or customer-owners and total generating capacity of no more than 250 kW; or,
   3. Large systems are those with more than 10 customers or generating capacity over 250 kW.

D. Microgrids that produce energy primarily for consumption by the owner(s) of the system shall be referred to as "self-supply" systems. Self-supply microgrids may not sell energy and/or other grid services outside of their self-supply system to entities other than PREPA.

E. Microgrids shall be subject to various requirements based on their classification, as follows:
   1. There are no requirements for individual self-supply systems under this Regulation.
   2. The requirements for small cooperative systems engaged in self-supply (hereafter referred to as "small cooperative microgrids") are described in Article 4 of this Regulation.
   3. The requirements for large cooperative systems engaged in self-supply (hereafter referred to as "large cooperative microgrids") are described in Article 5 of this Regulation.

4. The requirements for small municipal systems, large municipal systems and third-party systems are described in Article 6 of this Regulation.

5. The requirements for systems owned by groups of municipalities or other administrative divisions, are the same as those for systems owned by single municipalities.

6. The requirements for systems owned by PREPA are outside the scope of this Regulation.

7. The requirements for systems of types not listed above are the same as those for third-party systems except as determined by the Commission under the exemptions process described in Article 8 of this Regulation.

ARTICLE 3.- MICROGRID TECHNICAL REQUIREMENTS

Section 3.01.- Microgrid Composition

A microgrid shall consist, at a minimum, of generation assets, loads and distribution infrastructure. Microgrids shall include sufficient generation, storage assets and advanced distribution technologies[2] to serve load under normal operating and usage conditions. If a microgrid includes metering technologies, all members of each customer class must be equipped with comparable metering infrastructure. Microgrids must qualify as either "renewable," "combined heat-and-power," or "hybrid" depending on the composition of the generation assets on the system. [Given the efficiency requirements of CHP's, cases could exist where the compliant CHP meets less than the full electrical load of the thermal "host".]

Section 3.02.- Renewable Microgrids

A. "Renewable" microgrids have the following qualifications:

1. The primary energy source of the system must be a renewable energy resource(s) as defined in Section 1.08 of this Regulation.

2. "Primary energy source" means that:

   a. Seventy-five percent (75%) of the total energy input of the system (in MWh) on an annual basis must be from a renewable energy resource(s); and

   b. The installed renewable energy generating capacity (in MW) of the system exceeds the expected peak load of the microgrid.

[2] Advanced distribution technologies are equipment such as sensors, power conditioning equipment and other equipment suitable for regulation of voltage and/or frequency, control systems, communication systems, and automation technologies

3. Use of any grade of fuel oil or natural gas by a microgrid is limited to those purposes identified in 18 C.F.R. §292.204(b)(2).[3] In particular, such use should be limited to the minimum amounts of fuel required to alleviate or prevent outages of electrical service to microgrid customers.

4. Use of any grade of fuel oil or natural gas by a microgrid may not, in the aggregate, exceed twenty-five percent (25%) of the total energy input of the system during the 12-month period beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.

5. Renewable microgrids may not use solid fossil fuels.

B. Renewable microgrids must demonstrate compliance with the qualifications in part (A) of this section, in the form and manner described in the forthcoming provisions.

C. Any microgrid registered as "renewable" that is found by the Commission to be non-compliant with the qualifications in part (A) of this Section, may be subject to a Notice of Non-Compliance pursuant to Chapter IV of Regulation 8543 and may, as a result of such non-compliance, lose its status as a licensed microgrid system or be subject to any other administrative sanction or penalty deemed appropriate by the Commission.

Section 3.03.- Combined Heat-and-Power Microgrids

A. "Combined heat-and-power" (CHP) microgrids have the following qualifications:

1. The Total Thermal Efficiency [replaced "useful thermal energy output"] of the system must be no less than fifty percent (50%) of the total energy output during the 12-month period beginning with the date the facility first produces electric energy, and any calendar year subsequent to the year in which the facility first produces electric energy.

2. The gross fuel input energy, minus the useful thermal energy output sold or provided to the "Thermal Host", yielding the net energy attributable to electrical generation shall be no more than 7,000 Btu per kWh of generator output, averaged over the 12-month period beginning with the date the facility first produces electric energy, and any calendar year subsequent to the year in which the facility first produces electric energy. Our recommendation is to eliminate CHP Heat Reat 7,000 BTU/KW because will limit many cogeneration options that are available to supply specific Clients' energy needs. There are just a few CHP that can achieve 7,000 BTU/kwh.

[3] Use of oil, natural gas and coal by a facility, under section 3(17)(B) of the Federal Power Act, is limited to the minimum amounts of fuel required for ignition, startup, testing, flame stabilization, and control uses, and the minimum amounts of fuel required to alleviate or prevent unanticipated equipment outages, and emergencies, directly affecting the public health, safety, or welfare, which would result from electric power outages. Such fuel use may not, in the aggregate, exceed twenty-five percent (25%) of the total energy input of the facility

during the 12-month period beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.

B. CHP microgrids must demonstrate compliance with the qualifications in part (A) of this section. The acceptable forms of demonstration vary by system classification and are described in the relevant Articles below.

C. Any microgrid registered as "CHP" that is found by the Commission to be non-compliant with the qualifications in part (A) of this Section, may be subject to a Notice of Non-Compliance pursuant to Chapter IV of Regulation 8543 and may, as a result of such non-compliance, lose its status as a licensed microgrid system or be subject to any other administrative sanction or penalty deemed appropriate by the Commission.

Section 3.04.- Hybrid Microgrids

A. Each hybrid system must show that the renewable portion of its generation capacity will comply with the requirements in Section 3.02 and that the combined heat-and-power portion of its generation capacity will comply with the requirements in Section 3.03 of this Regulation.

B. Each hybrid microgrid application must explain how the renewable, CHP and any storage and backup capacity will operate and show that the operation complies with the requirements and the qualification procedures described in Sections 3.02 and 3.03 of this Regulation.

Section 3.05.- Codes and Standards

Microgrids shall be compliant with existing safety standards; namely, IEEE Standard 1547 for design; UL Standard 1703, UL Standard 1741, or IEEE Standard 1547 for equipment; and the National Electric Code, or any successor code or standard, as such code or standard may be revised, amended or updated from time to time.

ARTICLE 4.- REQUIREMENTS FOR SMALL COOPERATIVE SYSTEMS

Section 4.01.- Ownership and Sales Restrictions

In accordance with the goals of Act 133-2016, Small Cooperative Systems may sell energy and/or other grid services to customers of the microgrid or to PREPA, subject to the following requirements and restrictions:

A. No single member of a cooperative system may possess or control more than thirty-five percent (35%) ownership stake.

B. Cooperative-owned microgrids may distribute energy and grid services among its members and may sell excess energy or other grid services to PREPA. Such microgrids may not sell energy or grid services to customers, other than PREPA, who have no ownership stake in the system.

Section 4.02.- Registration

Any person interested in developing a small cooperative microgrid must submit an application for registration as described in Article 7 of this Regulation. This application form shall contain at least the following information:

A. Contact information:

   1. The application must provide, for registration of the proposed microgrid, the contact information; specifically:

      a. Cooperative name;

      b. Mailing address;

      c. E-mail address; and

      d. Phone number.

   2. Cooperative systems must designate at least one member as the primary contact for the system.

B. Ownership structure: The application for registration shall identify the proposed system as a small cooperative.

C. Location: The application for registration must identify the municipality in which the microgrid is located and the addresses of each customer to be served.

D. Number of customers: The application for registration shall identify the number of customers that will be served by the microgrid, by customer type, including the numbers of:

   1. Public housing buildings and households,

   2. Other multi-family buildings and households,

   3. Other single-family households,

   4. Critical facilities (e.g. hospitals, other medical facilities, water- and waste-water-treatment facilities, critical infrastructure, police stations and fire stations, schools, universities and public buildings)

   5. Irrigation customers,

   6. Retail stores, and

   7. Other commercial and industrial buildings.

E. Microgrid classification: The application for registration must identify the proposed systems as renewable; CHP; or hybrid systems.

F. Microgrid resource plan: The application for registration must list the planned sizes and types of assets (including, as applicable, generation, storage, inverters, and other major electrical equipment) to be added or connected to the system.

G. Microgrid equipment vendor: The application for registration shall include the name and contact information for the primary vendor(s) or installer(s) of the system.

H. Certification of inspection: The application for registration shall include a certification of inspection signed by a Licensed Electric Engineer. The certification must indicate that the Microgrid is in compliance with all regulations including, but not limited to, regulations of the US EPA, all safety standards as listed in Section 3.05 of this Regulation, and local siting regulations and ordinances.

Section 4.03.- Rate for Service

A. The cost-per-share shall be determined by the members of the cooperative.

B. Cooperatives may collect deposits at the discretion of the members of the cooperative. Deposit amounts shall be fair, just, and reasonable, and shall not discriminate against any individual members of the cooperative.

C. Cooperatives may charge rates based on consumption, peak load, or another metric at the discretion of the members of the cooperative. Rates shall be fair, just, and reasonable, and shall not discriminate against any individual members of the cooperative.

Section 4.04.- Fee for Use of PREPA Infrastructure

If the microgrid will use PREPA infrastructure located within the boundary of the microgrid, the cooperative shall pay PREPA the amount of $25 per month per customer to use such infrastructure, including meters and distribution equipment, up to an aggregate of $250 per month. [Is private metering to be allowed with centralized meters to measure net flows to and from the PREPA interconnections?]

Section 4.05.- Interconnection with PREPA's System

Microgrids can interconnect with PREPA's system in accordance with applicable regulations adopted by PREPA [what standard will be used to govern the regulations of PREPA?].

ARTICLE 5.- REQUIREMENTS FOR LARGE COOPERATIVE SYSTEMS

Section 5.01.- Ownership and Sales Restrictions

In accordance with the goals of Act 133-2016, Large Cooperative Systems may sell energy and/or other grid services to members of the microgrid or to PREPA, subject to the following requirements and restrictions:

A. No single members of a cooperative system may possess more than thirty-five percent (35%) percent ownership stake.

B. Cooperative-owned microgrids may distribute energy and grid services among its members and may sell excess energy or other grid services to PREPA including energy produced by a third party owner/operator which has a service contract with the Cooperative. Such microgrids may not sell energy or grid services to customers, other than PREPA, who have no ownership stake in the system.

Section 5.02.- Registration

Any person interested in developing a large cooperative microgrids must submit an application for registration as described in Article 7 of this Regulation. This application form must contain at least the following information:

A. Contact information:

1. The application must provide, for registration of the proposed microgrid, their contact information; specifically:

a. Cooperative name;

b. Mailing address;

c. E-mail address; and

d. Phone number.

2. Cooperative systems must designate at least one member as the primary contact for the system.

B. Ownership structure: The application for registration shall identify the proposed system as a large cooperative.

C. Location: The application for registration must identify the geographical bounds of the microgrid. Location information must include the municipality of the microgrid and a map showing the geographical boundaries of the proposed system.

D. Number of customers: The application for registration shall identify the number of customers that will be served by the microgrid, by customer type, including the numbers of:

1. Public housing buildings and households,

2. Other multi-family buildings and households,

3. Other single-family households,

4. Critical facilities (e.g. hospitals, other medical facilities, water- and waste-water-treatment facilities, police stations and fire stations)

5. Irrigation customers,

6. Retail stores, and

7. Other commercial and industrial buildings.

E. Microgrid classification: The application for registration must identify the proposed systems as renewable; CHP; or hybrid systems.

F. Microgrid resource plan: The application for registration must list the planned sizes and types of assets (including, as applicable, generation, storage, inverters, and other major electrical equipment) to be added or connected to the system.

G. Microgrid equipment vendor: The application for registration shall include the name and contact information for the primary vendor(s) or installer(s) of the system.

H. Certification of inspection: The application for registration shall include a certification of inspection signed by a Licensed Electric Engineer. The certification must indicate that the Microgrid is in compliance with all regulations including, but not limited to, regulations of the US EPA, all safety standards as listed in Section 3.05 of this Regulation, and local siting regulations and ordinances.

I. Use of PREPA infrastructure: The application for registration shall include a listing of the PREPA infrastructure needed by the system, if any, and an estimate of the total fee for purchase or monthly fee for lease of such infrastructure, as provided in Section 5.05 of this Regulation.

Section 5.03.- Demonstration of Qualifying Composition

A. Renewable microgrids must demonstrate compliance with the qualifications in Section 3.02 of this Regulation. Three forms of demonstration are acceptable:

1. Microgrid applications may include an operational plan describing the type of generation assets on the system and how they will be used to meet anticipated demands. Microgrids will then be required to submit annual operational reports detailing fuel usage and demonstrating compliance with the qualification in Section 3.02 of this Regulation.

2. Oil- and gas-fired generators.

   Any renewable microgrid with generating assets limited to solar photovoltaics and oil- or natural gas-fired generators shall be assumed to comply with these requirements if it consumes less than a monthly fuel oil limit as calculated using the template provided in Appendix B. To use this provision, a cooperative must state their intention to do so in their applications to the Commission, submit calculations following the template provided in Appendix B, maintain monthly records of fuel consumption, and submit an annual fuel consumption report.

3. Diesel-fired generators.

   Any renewable microgrid with generating assets limited to solar photovoltaics and diesel-fired generators shall be assumed to comply with these requirements if it consumes less than 12.5 gallons of diesel fuel per month per kilowatt of photovoltaic capacity. To use this provision, a cooperative must state their intention to do so in their applications to the Commission, maintain monthly records of fuel consumption, and submit an annual fuel consumption report.

B. CHP microgrids must demonstrate compliance with the qualifications in Section 3.03 of this Regulation.

   1. Microgrid applications shall include a description of the generation and heat-recovery equipment to be installed and the use of the thermal energy, as well as a heat flow plan showing the fuel input, electric generation and useful thermal energy output and consumption for typical operating conditions. Where more than one generator is to serve the microgrid, the application shall describe all the generation assets on the system and how they will be dispatched to meet anticipated electric and thermal demands.

   2. Microgrids shall be required to submit annual operational reports detailing fuel usage, electric generation, and thermal energy consumption, demonstrating compliance with the qualification in Section 3.03 of this Regulation.

C. Hybrid microgrids shall submit separate demonstrations of compliance for each, renewable portion and CHP portion of the system.

Section 5.04.- Rate for Service

A. The cost-per-share shall be determined by the members of the cooperative.

B. Cooperatives may collect deposits at the discretion of the members of the cooperative. Deposit amounts shall be fair, just, and reasonable, and shall not discriminate against any individual members of the cooperative.

C. Cooperatives may charge rates based on electricity and thermal consumption, peak energy load, capital investment required, reactive power requirements, ancillary services and [or] another metrics at the discretion of the members of the cooperative. Rates shall be fair, just, and reasonable, and shall not discriminate against any individual members of the cooperative.

Section 5.05.- Fee for Use of PREPA Infrastructure

A. In cases where the cooperative intends to use PREPA Infrastructure, such cooperative shall pay PREPA for the use of such infrastructure located within the boundary of the microgrid, including meters and distribution equipment.

B. The cooperative shall pay a fee as calculated using the template provided in Appendix A of this Regulation.

C. The cooperative shall include the following with their applications:

1. The calculated monthly fee to be paid to PREPA; and

2. Supporting calculations, following the template provided in Appendix A, as an attachment to the application.

Section 5.06.- Reporting

A. The cooperative shall submit an annual report on fuel usage, generation, and sales to the Commission. This report shall include:

1. Electric generation by resource type;

2. Thermal generation by resource type, for CHP systems;

3. Fuel use by resource type;

4. Total sales;

5. Any change in the number of customers, including additions and departures of customers; and

6. Any other information that the Commission may require.

B. Cooperatives must maintain and submit to the Commission copies of any reports required by the US EPA, Puerto Rico Environmental Quality Board.

Section 5.07.- Interconnection with PREPA's System

Microgrids can interconnect with PREPA's system in accordance with applicable regulations adopted by PREPA.

ARTICLE 6.- REQUIREMENTS FOR SMALL MUNICIPAL SYSTEMS, LARGE MUNICIPAL SYSTEMS, AND THIRD-PARTY SYSTEMS

Section 6.01.- Ownership and Sales Restrictions

In accordance with the goals of Act 133-2016, Small Municipal Systems, Large Municipal Systems and Third-Party Systems may sell energy and/or other grid services to customers of the microgrid including a Cooperative within authorized microgrid boundaries or to PREPA, subject to the following requirements and restrictions:

A. Small and Large Municipal systems must be owned by a single municipality, a group of municipalities, or another administrative division of the Commonwealth.

B. Third-party systems may be owned by any for-profit or non-profit entity, or governmental agency apart from municipalities, other administrative divisions, and PREPA.

C. Small Municipal Systems, Large Municipal Systems and Third-Party Systems may sell energy and/or other grid services to PREPA as well as to other customers who are directly connected to the microgrid system, subject to the non-discrimination requirements in Section 6.10 below.

Section 6.02.- Certification

Any microgrid owner considered as an Electric Service Company, as such term is defined in Section 1.08(A)(5) of Regulation 8701,[4] shall, in addition to complying with the requirements set forth in this Regulation, comply with any and all applicable requirements set forth in Regulation 8701.

Section 6.03.- Registration

Any person interested in owning a Small or Large Municipal System or a Third-Party System must submit an application for registration as described in Article 7 of this Regulation. This application form must contain at least the following information:

A. Contact information:

    1. The application must provide, for registration of the proposed microgrid, their contact information; specifically:

        a. Name of System Owner;

        b. Mailing address;

        c. E-mail address; and

        d. Phone number.

    2. The application shall identify the name of the person that will serve as Authorized Representative and the contact information of the Authorized Representative described in items (b), (c) and (d) above, if different from that of the owner.

B. Ownership structure: The application for registration shall identify the proposed system as a Small Municipal System, Large Municipal System or Third-Party System.

C. Location: The application for registration shall identify the geographical bounds of the microgrid. Location information must include the municipality of the microgrid and a map showing the geographical boundaries of the proposed system.

D. Number of customers: The application for registration must include the total expected number of customers to be served by the microgrid.

[4] Amendment to Regulation No. 8618 on Certification, Annual Fees, and Operational Plans for Electric Service Companies in Puerto Rico.

E. Microgrid classification: The application for registration must identify the proposed systems as renewable; CHP; or hybrid systems.

F. Microgrid resource plan: The application for registration must list the planned sizes and types of assets (including, as applicable, generation, storage, inverters, and other major electrical equipment) to be added or connected to the system.

G. Microgrid equipment vendor: The application for registration shall include the name and contact information for the primary vendor(s) or installer(s) of the system.

H. Certification of inspection: The application for registration shall include a certification of inspection signed by a Licensed Electric Engineer. The certification must indicate that the Microgrid is in compliance with all regulations including, but not limited to, regulations of the US EPA, all safety standards as listed in Section 3.05 of this Regulation, and local siting regulations and ordinances.

I. Use of PREPA infrastructure: The application for registration shall list the PREPA infrastructure needed by the system, if any, and an estimate of the total fee for purchase or monthly fee for lease of such infrastructure, as provided in Section 6.12 of this Regulation.

J. Model contract: The application for registration shall include the following:

    1. A model contract for Commission review and approval, in accordance with Section 6.09 of this Regulation.

    2. A sample bill for Commission review and approval.

    3. Any changes to the model contract or the bill format must be approved by the Commission prior to its implementation.

K. Alternative billing model: Systems unable to bill on a per-kWh basis must submit their proposed alternative payment structure as well as calculations supporting that structure, as described in Section 6.05(D) of this Regulation.

Section 6.04.- Demonstration of Qualifying Composition

A. Renewable microgrids must demonstrate compliance with the qualifications in Section 3.02 of this Regulation. Three forms of demonstration are acceptable:

    1. Microgrid applications may include a detailed operational plan describing the type of generation assets on the system and how they will be used to meet anticipated demands. Microgrids will then be required to submit annual operational reports detailing fuel usage and demonstrating compliance with the qualification in Section 3.02 of this Regulation.

    2. Oil- and gas-fired generators.

Any renewable microgrid with generating assets limited to solar photovoltaics and oil- or natural gas-fired generators shall be assumed to comply with these requirements if it consumes less than a monthly fuel oil limit as calculated using the template provided in Appendix B. To use this provision, microgrid owners must assert their intention to do so in their applications to the Commission, submit calculations following the template provided in Appendix A, maintain monthly records of fuel consumption, and submit an annual fuel consumption report.

3. Diesel-fired generators.

   Any renewable microgrid with generating assets limited to solar photovoltaics and diesel-fired generators shall be assumed to comply with these requirements if it consumes less than 12.5 gallons of diesel fuel per month per kilowatt of photovoltaic capacity. To use this provision, microgrid owners must assert their intention to do so in their applications to the Commission, maintain monthly records of fuel consumption, and submit an annual fuel consumption report.

B. CHP microgrids must demonstrate compliance with the qualifications in Section 3.03 of this Regulation.

   1. Microgrid applications shall include a description of the generation and heat-recovery equipment to be installed and the use of the thermal energy, as well as a heat flow plan showing the fuel input, electric generation and useful thermal energy output and consumption for typical operating conditions. Where more than one generator is to serve the microgrid, the application shall describe all the generation assets on the system and how they will be dispatched to meet anticipated electric and thermal demands.

   2. Microgrids shall be required to submit annual operational reports detailing fuel usage, electric generation, and thermal energy consumption, demonstrating compliance with the qualification in Section 3.03 of this Regulation.

C. Hybrid microgrids shall submit separate demonstrations of compliance for each renewable portion and CHP portion of the system.

Section 6.05.- Rate for Service

A. System owners must charge uniform rates across all customers of the same customer class of a single microgrid system. Within a customer class, rate structures such as inclining- or declining-block, time-of-use, and seasonal pricing may be used.

B. The average rate at which energy [does the term energy encompass thermal energy as well?] and grid services are sold shall not at the time of application exceed PREPA's average rate of 20.22 cents per kilowatt-hour as of June 2017, however the rates for electricity and energy may be subdivided into capacity and variable charges the

combination of which shall not at the time of application exceed PREPA's average rate of 20.22 cents per kilowatt-hour as of June 2017.

C. The rate charged by system owners for energy and grid services may escalate yearly at a rate no greater than one-quarter (¼) of the percentage change in average fiscal-year "Other Goods and Services Consumer Price Index" from the Government Development Bank[5] over the FY 2017 average of 116.4. However, in no event shall the rate exceed the greater of (1) the maximum rate established in in part (B) of this section or (2) the whole-system average rate charged by PREPA, as measured over the most-recent twelve-month period for which sufficient data is available. The Electric Power Generation Company may at the time of application petition the Commission to approve a rate making mechanism based on the provision of capacity including fixed and variable operating costs with a defined escalation mechanism and a separate "pass-through" element for fuel related variable costs.

D. For non-metered systems, system owners may charge for energy and grid services on an alternative basis (for example, per kilowatt of installed or diversified load, or per month). In this case, microgrid owners must provide, along with their applications, calculations supporting this alternative charge, demonstrating that it does not exceed the maximum rate established in parts (B) and (C) of this section.

Section 6.06.- Deposits

A. Microgrid owners may require deposits not to exceed the customer's expected average monthly bill prior to the commencement of service delivery.

B. Deposit requirements must be uniform for all customers of the same class of a single microgrid system.

Section 6.07.- Billing

A. Bills shall be rendered in regular periodic intervals for all customers taking service from the microgrid and in accordance with the terms of the contract. Payment shall be due within thirty (30) days of the issuance of the bill which may be issued electronically or by mail.

B. All bills must be drafted clearly and plainly so that they are easy to understand without requiring that readers possess any specialized knowledge for their comprehension.

Section 6.08.- Bill Objections and Suspension of Service

All bill objections and suspension of service procedures will be conducted in accordance with Regulation 8863, Regulation on the Procedure for Bill Review and Suspension of Electric Service, or any future regulation approved by the Commission to that effect.

Section 6.09.- Standard Contract

A. Microgrid owners shall develop a standard form contract to be used for all customers with the exception that rates may vary for each customer class. The contract shall be written in plain language and shall include, but not be limited to:

1. The effective date of the contract;

[5] Available at http://www.gdb-pur.com/economy/documents/05-PRICE-2017-10-23.xls

2. The termination date of the contract;

3. All rates and charges for which the customer shall be charged;

4. The name and contact information for the entity to whom customers shall address all inquiries and complaints;

5. A mechanism for resolving disputes, other than bill objections. If binding arbitration is used, both parties must agree to the arbitrators chosen.

6. The contact information for the Puerto Rico Energy Commission and the Independent Consumer Protection Office;

7. Provisions for termination of the contract by either party in accordance with Section 6.11 below;

8. A provision that if the contract is assigned, ceded or transferred, the same terms and conditions shall apply; and,

9. The contract shall be governed and construed in accordance with the laws and under the jurisdiction of the Commonwealth of Puerto Rico.

Section 6.10.- Non-Discrimination

A. Microgrid owners covered under Article 6 of this Regulation are prohibited from discriminating against individual customers in the immediate vicinity of the microgrid if those customers do not have access to PREPA service and would like to take service from the microgrid.

B. In order to demonstrate non-discrimination:

1. Microgrid owners must submit a map of the proposed microgrid boundaries showing the loads to be interconnected to the system.

2. The Commission at its discretion may review the maps and determine whether or not the proposed system boundaries constitute discrimination.

C. Microgrid owners may request reconsideration of a Commission determination of discrimination, in which case they shall demonstrate either of the following:

1. That based on cost, it is not feasible to connect the customers who have been excluded. In this case, the microgrid owners shall be required to submit a calculation showing that providing service to a specific customer would exceed the average cost of providing service to the other customers of the same customer class such that the average rate charged to the excluded customer would not permit the microgrid owner to recover its costs plus a reasonable return, if applicable.

2. That it is technically not feasible to connect the customer. In this case, the microgrid owner shall be required to submit an affidavit signed by a licensed professional engineer describing the technical barriers that prevent delivery of service to a specific customer.

Section 6.11.- Contract Length and Exit Requirements

A. The length of the microgrid contract shall be sufficient to allow the microgrid owner to recover its costs plus a reasonable return, but in no event, shall the contract term exceed twenty (20) years if a residential customer is one of the contracting parties.

B. Microgrid owners may terminate operation and/or remove equipment upon receiving permission from the Commission.

C. Termination of service:

1. All contracts shall contain language in which each party agrees that either party can seek a termination of service.

2. Termination of service may be triggered by either a microgrid owner or a microgrid customer.

3. Contracts may require a notice period for service termination, not to exceed sixty (60) days. The notice period will be the same for termination initiated by the customer or by the Microgrid owner.

4. Microgrid owners may charge a reasonable exit fee for termination of service on non-metered systems during the first five (5) years of the contract period.

Section 6.12.- Fee for Use of PREPA Infrastructure

A. In cases where the owner of a microgrid intends to use PREPA Infrastructure, such owner shall pay PREPA for the use of such infrastructure located within the boundary of the microgrid, including meters and distribution equipment.

B. For Small Municipal Systems, the owner(s) of the microgrid shall pay PREPA the amount of $25 per month per customer, for the use of PREPA Infrastructure located within the boundary of the microgrid, including meters and distribution equipment, up to a maximum of $250 per month [what mechanism will exist to determine a just and reasonable rate for monthly charges?]. A microgrid may at its cost and discretion elect to replace PREPA equipment within the boundaries of the microgrid resulting in an equitable adjustment of infrastructure payments to PREPA.

C. For Large Municipal Systems and Third-Party Systems, the owner(s) of the microgrid shall pay a fee as calculated using the template provided in Appendix A.

D. The owner(s) of the microgrid shall include the following with their applications:

1. The calculated monthly rate to be paid to PREPA; and

2. Supporting calculations, following the template provided in Appendix A, as an

attachment to the application, as applicable.

Section 6.13.- Reporting

A. Microgrid owners shall be required to submit an annual report on fuel usage, generation, and sales to the Commission. This report shall include:

    1. Electric generation by resource type;

    2. Thermal generation by resource type, for CHP systems;

    3. Fuel use by resource type;

    4. Total sales;

    5. Any change in the number of customers, including additions and departures of customers; and

    6. Any other information that the Commission may require.

B. Microgrid owners must maintain and submit to the Commission copies of any reports required by the US EPA and the Puerto Rico Environmental Quality Board.

Section 6.14.- Rate Review

A. Any owner or customer of a municipal or third-party microgrid system may petition the Commission to conduct a rate review of service provided by that microgrid, subject to the following restrictions and requirements:

    1. Microgrid rates shall not be subject to review by the Commission for the first three (3) years after the approval of their applications for registration by the Commission.

    2. Petitions for rate review may be brought by either customers or system owners.

        a. Customers may petition for rate review on the basis of unjust or unreasonable rates, on the basis of undue burden, or on the basis of imprudence or inadequate service on the part of the system owner.

        b. Microgrid owners may petition for rate review on the basis of unjust or unreasonable rates or on the basis of insufficient cost recovery.

Section 6.15.- Interconnection with PREPA's System

Microgrids can interconnect with PREPA's system in accordance with applicable regulations adopted by PREPA.

CHAPTER III PROCEDURES

ARTICLE 7.- REGISTRATION PROCESS

Section 7.01.- Registration Form

A. Any person interested in developing a Cooperative, Municipal or Third-Party microgrid system, must complete a registration form, as applicable, for the classification of their system.

B. Registration forms will be provided on the Commission website. Applicants must submit this form to the Commission in electronic or written format.

C. The Commission will provide a notice with the web page of the registration form as soon as the form is released on the website.

D. If the registration form is not available, applicants may provide the information required for the relevant system type to the Commission in a written or electronic format of their choice.

Section 7.02.- Commission Review

A. The Commission shall review all applications for completeness and compliance with this Regulation pursuant to the provisions of LPAU.

B. The Commission shall issue a determination on each application within thirty (30) days of receipt which shall:

1. Grant permission to operate as a microgrid;
2. Require additional information and/or specific revisions; or
3. Deny permission to operate as a microgrid.

C. The Commission may issue a determination of denial of permission to any application to operate as a microgrid on the basis of system location, cost, composition, or other considerations.

Section 7.03.- Filing Fee

A. Except for microgrid systems covered under Section 6.02 of this Regulation, any application for registration of a microgrid system shall include payment of a filing fee as follows:

1. Small Cooperative Systems: $50.00
2. Large Cooperative, Municipal (Small and Large) and Third-Party Systems: $100.00

B. Microgrid systems covered under Section 6.02 of this Regulation shall pay the applicable filing fees established in Regulation 8701. Proof of payment of the filing fee

under Regulation 8701 shall be provided in order to claim the exemption from payment established herein.

ARTICLE 8.- EXEMPTIONS

Any microgrid owner may file a request for exemption or modification of any of the requirements applied to the relevant system type as described in Chapter II of this Regulation. Any request for exemption shall describe the provision from which the applicant seeks exemption or of which the applicant requests of a modification and shall include a clear justification of the applicant's request. In ruling on such motions, the Commission will take into account factors including, but not limited to: alternatives to microgrid service available to the customers in question; the justness and reasonableness of costs; the prudence of incurred or anticipated costs; and the system owner's ability to recover prudently-incurred costs and earn a fair rate of return, when applicable.

ARTICLE 9.- RECONSIDERATION AND JUDICIAL REVIEW

Section 9.01.- Request for Reconsideration

Any person that is not satisfied with a decision made by the Commission under this Regulation may file, within the term of twenty (20) days from the date copy of the notice of such decision is filed by the Commission's Clerk, a request for reconsideration before the Commission wherein the petitioner sets forth in detail the grounds that support the request and the decisions that, in the opinion of the petitioner, the Commission should reconsider.

Section 9.02.- Judicial Review

Any person dissatisfied with a final decision of the Commission under this Regulation may, within thirty (30) days from the date copy of notice of a final decision addressing a request for reconsideration is filed by the Commission's Clerk, or within thirty (30) days from the date copy of the notice of a Commission final decision is filed by the Commission's Clerk, if a request for reconsideration has not been filed, appear before the Court of Appeals of the Commonwealth of Puerto Rico by way of writ of judicial review, pursuant to Section 4.2 of LPAU and the applicable Rules of the Court of Appeals.