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**REGULATION ON INTEGRATED RESOURCE PLAN FOR  
THE PUERTO RICO ELECTRIC POWER AUTHORITY**

COMMONWEALTH OF PUERTO RICO  
ENERGY COMMISSION OF PUERTO RICO

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# **REGULATION ON INTEGRATED RESOURCE PLAN FOR THE PUERTO RICO ELECTRIC POWER AUTHORITY**

## **CHAPTER I - GENERAL PROVISIONS**

### **ARTICLE I.- GENERAL PROVISIONS**

#### **Section 1.01.- Title.**

This Regulation shall be known as the Regulation on Integrated Resource Plan for the Puerto Rico Electric Power Authority.

#### **Section 1.02.- Legal Basis.**

This Regulation is adopted pursuant to Articles 6.3, 6.20 and 6.23 of Act 57-2014, as amended, known as the Puerto Rico Energy Transformation and RELIEF Act; to Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Electric Power Authority Act; and pursuant to Act No. 170 of August 12, 1988, as amended, known as the Uniform Administrative Procedure Act.

#### **Section 1.03.- Purpose and Executive Summary.**

The Puerto Rico Energy Commission (the Commission) adopts and enacts this Regulation in compliance with the mandate established in Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Electric Power Authority Act, and Section 6.23 of Act 57-2014, known as the Puerto Rico Energy Transformation and RELIEF Act, which requires the adoption of the necessary rules for the elaboration, presentation, evaluation, and approval of the Puerto Rico Electric Power Authority's (PREPA's) first Integrated Resource Plan (IRP).

Pursuant to this Regulation and resulting from a detailed planning process, the IRP will consider all the reasonable resources to satisfy the demand for electricity services during a twenty (20)-year planning period, taking into account both supply- and demand-side electric power resources. In broad terms, the IRP will include an assessment of the planning environment, a careful and detailed study of a range of future load forecasts, present generation resources, present demand resources, current investments in electricity conservation technologies, existing transmission and distribution facilities, and the relevant forecast and scenario analyses in support of PREPA's selected resource plan. It will also contain a proposed Action Plan for the implementation of the selected resource plan.

The purpose of this Regulation is to ensure that the IRP serves as an adequate and useful tool to guarantee the orderly and integrated development of Puerto Rico's electric power system, and to improve the system's reliability, efficiency, and transparency, as well as the provision of electric power services at reasonable prices. The provisions established herein will guide the IRP process along lines that

are consistent with the mandates of Act 57-2014 and Act No. 83 of May 2, 1941, and following the electric power industry's best practices in integrated resource planning. This Regulation, moreover, defines the terms related to the information required in the IRP, the procedures before the Commission, and the performance and incentive guidelines that PREPA will follow after the Commission has evaluated and reviewed the IRP. The Commission will evaluate the IRP as well as PREPA's performance thereafter in accordance with the provisions set forth in this Regulation.

#### **Section 1.04.- Application.**

This Regulation shall govern the information requirements, guidelines for analysis, action plans, performance measures, as well as the evaluation, approval, and review procedures related to the first Integrated Resource Plan for the Puerto Rico Electric Power Authority.

#### **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.**

The provisions of this Regulation may be supplemented by the provisions of other regulations of the Energy Commission of Puerto Rico that are not incompatible with the provisions of this Regulation.

#### **Section 1.07.- Unforeseen Proceedings.**

When a specific proceeding has not been planned for in this or another Commission regulation, the Commission may conduct them in any way that is not inconsistent with Act 57-2014, as amended.

#### **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 rules 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) "Action Plan" refers to a plan that specifies actions that PREPA shall perform during the first five (5) years of the planning period in order to implement the Preferred Resource Plan.

- 2) "Advanced meters" refers to a meter that records a customer's electricity usage for time intervals of one hour or less, and can transmit that information to the utility without the need for a human meter reader. The meter allows for the two-way flow of information and can notify the utility of a power outage.
- 3) "Baseline Load Forecast" refers to a load forecast of electricity demand and consumption that takes into account currently implemented demand-side resources and the expiration of such resources, but does not include any anticipated or required future demand-side resources.
- 4) "Capacity Expansion Model" refers to a computer model designed to seek a least cost, or "optimal", portfolio of electricity supply- and demand-side resources that meets the utility's load forecast, accounting for system constraints and the need to maintain the reliability of the system over the planning period.
- 5) "Cogeneration and Small Power Production" refers to the production of electric power using oil and/or its byproducts, natural gas, renewable energy sources, or any other electric power production method, including the production of electric power through distributed generators of 1MW or higher participating in PREPA's Net Metering Program.
- 6) "Commission", "Energy Commission" or "PREC" refers to the "Puerto Rico Energy Commission" created by virtue of Act 57-2014, as amended, known as the Puerto Rico Energy Transformation and RELIEF Act.
- 7) "Commonwealth Energy Public Policy Office" or "CEPPO" refers to the entity created by virtue of Act 57-2014, to develop the public policy on energy of the Commonwealth of Puerto Rico.
- 8) "Competitive bidding" shall mean a process to procure supply- and/or demand-side resources as set forth in Section 6.31 of Act 57-2014 and all regulations adopted by the Puerto Rico Energy Commission, pursuant Section 6.31 of Act 57-2014.
- 9) "Demand-Side Resource" refers to a program implemented by or on behalf of PREPA to reduce retail customer consumption (MWh) or shift the time of consumption of energy (MW) from end users, including energy efficiency programs, demand response programs, and distributed generation.

- 10) "Demand Response Program" shall mean a program that seeks to modify customer loads to make them more efficient by reducing or shifting load from hours with high electricity costs or reliability constraints. Demand Response programs may include but not be limited to any one or a combination of: direct load control programs, critical peak pricing, time-varying rates, other rate designs to encourage efficient electricity consumption, and other utility-designed or customer-managed programs that may become available through deployment of advanced meters or other technologies.
- 11) "Distributed Generation" shall mean generation facilities owned by retail customers and located on the customer side of the meter, that is primarily for the use and consumption of energy by retail customers, and that may provide any electric power generated in excess to PREPA. Distributed generation resources may include combined heat and power, renewable and non-renewable generators, and storage technologies including electric vehicles. Distributed generation includes both customer owned and leased resources.
- 12) "Electric power grid" shall mean the electric power transmission and distribution infrastructure of the Commonwealth of Puerto Rico, which is operated, supported, and administered by PREPA.
- 13) "Electricity consumption" shall mean the amount of electricity required by customers over the course of a year or smaller time period, as measured in gigawatt hours (GWh).
- 14) "Electricity demand" shall mean the amount of electricity required by customers at a given hour of the year, as measured in megawatts (MW).
- 15) "Energy Efficiency Measure" shall mean an installed piece of equipment or system, or modification of equipment, systems, or operations on end-use customer facilities that reduces the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of end-use service.
- 16) "Energy Efficiency Program" shall mean a program provided by or on behalf of PREPA to retail customers, using a set of energy efficiency measures to reduce the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of end-use service.
- 17) "Energy Relief Plan" or "ERP" shall mean the short-term plan that PREPA shall draft and submit in accordance with the provisions of

Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Electric Power Authority Act, and Section 6.32 of Act 57-2014.

- 18) "Environmental Regulations" shall mean the rules and regulations promulgated by the United States Environmental Protection Agency ("EPA") or the Environmental Quality Board of Puerto Rico ("EQB").
- 19) "Independent Consumer Protection Office" or "ICPO" refers to the entity created by virtue of Act 57-2014, to assist and represent electric power service customers of the Commonwealth of Puerto Rico.
- 20) "Integrated Resource Plan" or "IRP" shall mean a plan that considers all reasonable resources to satisfy the demand for electric power services during a specific period of time, including those relating to the offering of electric power, whether existing, traditional, and/or new resources, and those relating to energy demand such as energy conservation and efficiency or demand response and localized energy generation by the customer.
- 21) "Intervenor" refers to any party who has filed for and been granted intervention in this proceeding pursuant to Section 5.05 of Regulation No. 8583, *Reglamento de Procedimientos Adjudicativos, Avisos de Incumplimiento, Revisión de Tarifas e Investigaciones*.
- 22) "Load Forecast" refers to a long-term forecast of electricity demand (MW) and electricity consumption (GWh).
- 23) "Major Change" shall mean any new procurement effort or addition, retirement or modification of generation plant having a nameplate capacity of 50 megawatts or greater; the addition of pollution control equipment to the Action Plan of the IRP; or the unanticipated termination of a Power Purchase Agreement.
- 24) "New Resource or Facility" refers to any resource or facility that is in planning, unbuilt, undelivered, under construction, or is otherwise incomplete and that is not providing useful customer service.
- 25) "Person" includes any natural person, company or legal entity, independent of how it is organized.
- 26) "Planning Environment" refers to the statutes, rules, regulations, and other exogenous considerations that impact or guide electric system planning.
- 27) "Planning Period" shall mean the period for which resources must be



planned to meet customer load requirements.

- 28) "Planning Reserve Margin" refers to the reserve margin required to operate the utility system reliably. In its IRP, PREPA shall set forth the expected reserve margin it proposes for the use in developing the Preferred Resource Plan and Action Plan.
- 29) "Potential intervenor" refers to any person or party in interest eligible to appear in Commission proceedings in accordance to the provisions of Act No. 170, as amended, and its interpretative case law. This term includes, but is not limited to, the ICPO, CEPPPO, representatives from regulatory agencies, associations or groups of retail, wholesale, and transmission customers of PREPA, consumer and environmental advocacy groups that are duly constituted and organized as such and that have members located within Puerto Rico.
- 30) "Power Purchase" refers to a transaction to purchase wholesale capacity and/or energy from another electric power supplier as approved by the Commission.
- 31) "PREPA", "Authority" or "utility" refers to the Puerto Rico Electric Power Authority, a corporate entity created by virtue of Act No. 83 of May 2, 1941, as amended, which, according to statutory provisions, is currently an electric power generation, transmission, and distribution company.
- 32) "Preferred Resource Plan" shall mean a portfolio of resource additions selected by the utility from amongst those evaluated in the IRP representing the best performing resource mix to be implemented in the Action Plan.
- 33) "Rate Design" shall mean the allocation of costs to customers and customer classes and the means by which those costs are recovered in rates in order to recover costs for the delivery of service and to promote efficient use of electricity services, including considerations for effective conservation and management of peak loads.
- 34) "Reference Case" refers to the forecast of load and associated system requirements, commodity prices, capital costs and risks representing the utility's best understanding of expected circumstances or median probability outcomes.
- 35) "Resource Plan" refers to a selection of supply-, demand-side, and transmission resources that best serves a utility's needs under a given forecast scenario.

36) "Scenario" refers to a combination of system requirements needed to serve load, commodity prices, capital costs and risks that influence the choice of resources serving the utility's future load.

37) "Supply-Side Resource" shall mean an electric generation, transmission, or distribution facility, either owned or operated by PREPA, or the output of which is purchased by PREPA at wholesale.

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.- Dates and Terms.**

In computing any time period established in this Regulation, or by order of the Commission, the day of the occurrence of the event, act or omission that triggers the period shall not be counted and the fixed period shall begin to accrue the day after. If a period ends on a Saturday, Sunday or legal holiday, the period shall be extended until the next day that is not a Saturday, Sunday or legal holiday.

#### **Section 1.10.- Language.**

- A) If there is a discrepancy between the Spanish version and the English version of this Regulation, the provisions of the English version shall prevail.
- B) The proceedings heard before the Commission shall be conducted in the Spanish language. Notwithstanding, at the petition of a party, or when warranted, the Commission may order that the proceedings be conducted in the English language, as long as it is not incompatible with the fair resolution of the case.
- C) All allegations, appeals and motions should be filled out in Spanish or English, according to the appearing party's preference. Any written document undersigned by a party or person who does not understand Spanish or English may be filled out in the vernacular language of said party or person, as long as a certified translation into Spanish or English is provided.
- D) Documents submitted in English need not be translated. Notwithstanding, when the translation of a submitted document is considered indispensable for the fair resolution of a case, the Commission shall order the translation of allegations, motions or documents into Spanish.
- E) All documents submitted in any language that is not Spanish or English shall be accompanied by a certified translation into Spanish or English.

**Section 1.11.- 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 1.12.- 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 anyone of their obligation to comply with the provisions stated herein or the Commission's orders.

**Section 1.13.- 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 through the means, in the forms, in the place, and terms of the instructions that, from time to time, the Commission establishes by way of an order.

**Section 1.14.- 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 1.15.- 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 the Rules of Evidence, said person shall identify the

allegedly privileged information, request the Commission the protection of said information, and support, in writing, its arguments for a claim of information of privileged nature. The Commission shall evaluate the petition and, if it understands the material merits protection, proceed according to what is set forth in Article 6.15 of Act 57-2014, as amended.

#### **Section 1.16.- Validity.**

Pursuant to Article 6.20 of Act 57-2014, as amended, this Regulation shall enter into effect immediately after its submission to the Department of State and the Legislative Library of the Office of Legislative Services.

### **CHAPTER II – INTEGRATED RESOURCE PLANNING**

#### **ARTICLE II.- PLANNING PERIOD, CONTENT AND SCHEDULE**

##### **Section 2.01.- Planning Period; Effectiveness.**

The IRP shall use a default planning period of twenty (20) years.

All IRP, IRP Action Plans and any proposed updates to the IRP must be submitted to the Commission for its evaluation and approval. No IRP or any amendment to an IRP will be effective until it is approved by the Commission.

##### **Section 2.02.- Presentation of the First IRP.**

PREPA will submit to the Commission its first IRP on or before July 1, 2015.

##### **Section 2.03.- IRP Information and Requirements.**

- A) By submitting the IRP, PREPA shall certify if the IRP presented to the Commission was previously consulted with the CEPPO and submitted for its review and comments prior to its filing to the Commission. In case PREPA did not make such consultation with the CEPPO, PREPA shall explain the reasons why the CEPPO was not consulted.
- B) The IRP shall include:
  - 1) Planning Environment.- PREPA shall present a description of significant planning and regulatory factors that affect the environment in which it operates as well as the way in which these factors impact PREPA's system. Such factors should include at a minimum: federal, state, or municipal standards or requirements for energy efficiency, renewable energy, or other resource requirements; and environmental regulations and standards that impact existing utility resources or resource choices both at the present time and as expected over the planning period.

2) Load Forecast.- PREPA shall present a load forecast that includes the following elements and analysis:

a) Historic Peak Demand and Energy.- Historic data shall be reported covering the ten-year (10-year) period prior to the first year of the IRP planning period, and shall include:

- i. The total annual electricity consumption for the utility and for each customer class determined in accordance with tariffs for billing.
- ii. The summer and winter utility peak demands as well as, coincident peak electricity demand for each customer class.
- iii. Monthly electricity consumption for the utility and for each customer class.

b) Prior Load Forecast Evaluation. To the extent the information is available, each IRP shall contain the following historical data:

- i. An assessment of the annual accuracy of the previous forecasting including a comparison of forecasted versus actual data;
- ii. An explanation of the cause of any significant deviation between the previous forecasts and the actual annual peak demand and energy that occurred;
- iii. An explanation of the impact that historical demand-side resources had on the prior load forecast.

c) Load Forecast Development.- PREPA shall develop peak electricity demand and annual electricity consumption forecasts for each year of the IRP Planning Period, and shall prepare at least three (3) baseline load forecasts to reflect a reasonable range of future uncertainties:

- i. A reference case representing PREPA's best understanding of expected circumstances or median probability outcomes;
- ii. A low case where customer electricity demand and consumption are significantly below utility median expectations through the planning period; and

- iii. A high case where customer electricity demand and consumption are significantly above utility median expectations through the planning period.

The forecasts shall be established using methods that examine the effect of economic factors on electricity consumption, as well as the effect of the use of lands under the Land Use Plan for Puerto Rico.

- d) A reasonable set of assumptions for econometric and/or end use variables shall be included in the development of the long-term Load Forecasts.
- e) For each Load Forecast, energy usage by customer class should be separately identified, along with usage by major industry types.
- f) A description of the the process by which the Load Forecast is developed.
- g) The baseline forecasts shall take into account all anticipated naturally occurring energy efficiency, as well as all existing and expected building codes and appliance standards.
- h) The Load Forecasts shall reflect normal weather and the IRP shall include the following information for the planning period:
  - i. An explanation of the method used to reflect loads under normal weather conditions;
  - ii. The significant determinant variables that were incorporated in the Load Forecast methodology;
  - iii. The total annual electricity consumption for the utility and for each customer class;
  - iv. The summer and winter utility peak demands. Also, coincident peak demands for each customer class;
  - v. Monthly electricity consumption for the utility and for each customer class; and
  - vi. The annual load factor for the utility and for each customer class.

3) Additional Load Forecast Documentation.- Each IRP shall contain the

following additional load forecast information:

- a) A description of the impact that existing demand-side resources, anticipated changes to rate design, building codes and standards, distributed generation, and other important factors are expected to have on the load forecast; and
  - b) A discussion of the amount of line losses included in the forecast, including the extent to which the forecast includes the effects of current and planned line loss reduction programs.
- 4) Reserve Margin Assessment.- PREPA shall determine and document the Planning Reserve Margin.
- 5) Types of Existing Supply-Side Resources.- PREPA shall describe in its IRP all existing supply-side resources, including:
- a) Utility-owned generation;
  - b) Power purchase transactions of any type, one (1) year or longer in duration, from any supplier including a detailed description of the term of the contract, the expiration date, the pricing provisions, the source of the power, the fuel source, and other relevant information;
  - c) Power purchase transactions from other entities or on a wholesale basis of any type that are one (1) year or longer in duration and a detailed discussion of same, including the term of the contract, the expiration date, the pricing provisions, the source of the power, the fuel source, and other relevant information;
  - d) Sale transactions of any type, one (1) year or longer in duration, to any purchaser;
  - e) Exchange energy;
  - f) Cogeneration and Small Power Production;
  - g) Distributed Generation;
  - h) Pooling or coordination agreements that reduce resource requirements; and
  - i) Any other supply-side resources.

6) Description of Existing Supply-Side Resources.- The following information concerning supply-side resources shall be supplied:

- a) Resource type;
- b) Nameplate and peak available capacity;
- c) Annual capacity factor over the last five (5) years;
- d) Fuel type;
- e) Ownership information, including the portion of the resource owned by PREPA, by a private project developer, or by a customer;
- f) Location (street, neighborhood and municipality);
- g) Commercial operation date;
- h) Expected useful life;
- i) Condition of the resource;
- j) Average annual heat rate over the last five (5) years;
- k) Annual operational costs over the last five years, including:
  - i. Fuel costs;
  - ii. Fixed operations and maintenance (O&M) costs;
  - iii. Variable O&M costs; and
  - iv. Capital expenditures.
- l) Expected capital expenditures over the remaining life, including any improvements to operational efficiencies or extensions of the useful life;
- m) Expected retirement date for any resource expected to retire within the next ten (10) years, and an explanation of the reason for the retirement;
- n) Compliance schedule with current, proposed, and reasonably anticipated regulatory and legal (including environmental regulatory) requirements, to the extent applicable;



- o) Expected capital and operating costs for compliance with current, proposed, and reasonably anticipated regulatory and legal (including environmental regulatory) requirements, to the extent applicable;
  - p) Dates for renewal of operating licenses, to the extent applicable; and
  - q) Any important changes to the resources that occurred since the last IRP (or, in the case of the first IRP, any public announcements concerning capital plans and resource strategies) was filed or expected to occur prior to when the next IRP will be filed, including:
    - i. Large capital projects;
    - ii. Changes in fuel types, or procurement sources or strategies; and
    - iii. Expected operational changes from economic restrictions or environmental regulations.
- 7) Description of existing Demand-Side Resources.- PREPA shall describe in its IRP all demand-side resources currently being implemented by or on behalf of PREPA. The resource descriptions should be consistent with the most recent Energy Efficiency and Demand Response Annual Report and Energy Efficiency and Demand Response Plan, as described in Section 4.01 of this Regulation. If PREPA assumes or expects any changes to existing demand-side resources relative to what is in the Annual Report and Plan, those changes shall be fully documented.
- 8) Description of existing advanced meters and other advanced grid technologies.- PREPA shall identify the areas of its service territory where advanced meters and other advanced grid technologies have been installed, along with any plans to expand the integration of any such technologies into its system. PREPA shall include a brief description of the installed advanced grid technologies.
- 9) Description of existing Transmission Facilities.- PREPA shall provide a brief narrative description of the existing electric transmission system and identify any transmission constraints and critical contingencies. The information shall include at a minimum:
- a) A summary of the characteristics of all existing transmission and subtransmission facilities of thirty eight kilovolts (38 kV) or

higher;

- b) A discussion of whether the transmission system constrains the transfer of electricity from existing projects, potential new projects, or projects under development or considerations;
- c) A schematic map of the transmission and subtransmission network showing transfer limits; and
- d) A map showing the actual, physical routing of the transmission and subtransmission lines, geographic landmarks, major metropolitan areas, and the location of substations and generating plants, interconnects with distribution, and interconnections with other electric transmission owners. PREPA shall provide two copies of this map on a 1:250,000 scale, for Commission use.

10) Description of existing Distribution Facilities.- PREPA shall characterize the distribution system, including a detailed description of its ability to receive increasing penetration of distributed generation, particularly intermittent distributed generation, and its ability to receive new loads over time, such as increasing penetrations of electric vehicles.

11) Identification of New Supply-Side Options.- PREPA shall identify and evaluate a wide range of new supply-side resource options, including renewable and non-renewable options, to be used in the development of the IRP. For each potentially feasible supply-side resource option identified for further examination, the utility shall include in its IRP at least the following information:

- i. Description of the option;
- ii. Resource type;
- iii. Capacity;
- iv. Fuel type;
- v. Heat rate;
- vi. Availability;
- vii. Capacity factor;
- viii. Effective load carrying capacity (ELCC) or capacity contribution to peak;

- ix. Ownership information including the portion of the resource owned by PREPA, by a private project developer, or by a customer;
  - x. Location (if identified);
  - xi. Anticipated life;
  - xii. Operating costs, including fixed and variable operation and maintenance (O&M) costs, property taxes as applicable, and ongoing capital additions;
  - xiii. Capital Cost and allowance for funds used during construction ("AFUDC") assumptions;
  - xiv. Lead time necessary to plan and build, or acquire through a power purchase contract;
  - xv. Any constraints on the acquisition or construction of the resource as applied by the utility in the Capacity Expansion Model, including first potential date of construction, maximum units feasible to acquire or construct per year, and total number of the resources allowed in the utility model through the Planning Period;
  - xvi. Potential environmental costs associated with the operation of the resource during the planning period; and
  - xvii. Evaluation of the interconnection of renewable energy projects and other independent power producers to the utility system in order to comply with Act 82-2010.
- 12) Identification of new Distributed Generation Resources.- The IRP shall include a projection of the expected types and amounts of customer-owned distributed generation, by customer class, and shall provide an analysis that forms the basis of its projections.
- 13) Identification of new Demand-Side Resources.- The IRP shall identify and include a wide range of new energy efficiency and demand response programs.
- a) The programs shall be developed and analyzed in accordance with current Commission orders and directives.
  - b) PREPA shall identify, and include in its analysis, programs

currently being offered by or on behalf of PREPA.

- c) PREPA shall identify, and include in its analysis, additional energy efficiency measures and programs to ensure that programs are offered to all customer classes.
  - d) PREPA shall provide a detailed description of the energy efficiency activities occurring within the various local and regional branches of government to comply with Act 57-2014 and its impact on PREPA's resource portfolio.
  - e) PREPA shall seek to ensure that all potentially cost-effective efficiency and demand response measures and programs are considered comprehensively.
  - f) The utility shall propose bundles of demand-side resources at varying levels of cost and effectiveness through the planning period, and list constraints on the acquisition of those resources, such as ramp rate, expected lifetime or decay, and year availability.
  - g) The utility shall prepare estimates of the cost of sufficient bundles of demand-side resources such that the utility could achieve at least two percent (2%) incremental energy efficiency savings per year, for at least 10 years.
- 14) Identification of new Transmission Facilities.- PREPA shall provide a detailed narrative description of any planned electric transmission and subtransmission, and identify any transmission constraints and critical contingencies and a description of the plans for development of facilities during the study period. The description shall include, at a minimum, all information regarding:
- a) New lines requiring new rights-of-way;
  - b) Lines in which changes in capacity, either in terms of current, voltage or both, are scheduled to take place; and
  - c) Other changes in transmission lines or rights-of-way, which would be considered as substantial additions.

#### **Section 2.04.- IRP Analyses.**

- A) Resource Needs Assessment.- A resource needs assessment shall be performed and shall consider factors including the utility's load forecast, reliability target, existing supply- and demand-side resources, and any

committed additions, retrofits, and retirements (both supply- and demand-side). The result of the resource needs assessment will indicate the utility's capacity and energy needs over the planning period.

B) Development of Planning Scenarios

1) PREPA shall identify key factors that will influence the most important forecasts (such as electricity demand, electricity consumption, fuel prices), and develop a range of possible outcomes for those forecasts encompassing at least the fifth (5th) and ninety-fifth (95th) percentile outcomes as understood by the utility.

a) Forecasts should include exogenous elements beyond the utility's control, including but not limited to:

- i. Economic conditions;
- ii. Environmental regulations;
- iii. Changes in customer load not caused by utility Demand Side Resources;
- iv. Customer-sited distributed generation;
- v. Fuel prices;
- vi. Emissions costs; and,
- vii. Capital costs.

b) For each such forecast, PREPA shall identify a reference case forecast, and describe the basis of the forecast range identified.

c) PREPA shall then develop a group of scenarios that encompass the reasonable range of possible outcomes for uncertain forecasts.

- i. Scenarios may combine key forecasts in a manner that enables a reasonable exploration of the range of foreseeable risks to the safety, reliability, and affordability of retail services.
- ii. PREPA shall create a sufficient number of scenarios to both describe feasible or likely sets of forecasts, as well as capture a wide range of more extreme risks.

- iii. To the extent that PREPA relies on explicit or implicit relationships or correlations between forecasts, PREPA shall describe the basis of the relationships.
  - iv. PREPA shall justify the scenarios used and excluded from consideration, and describe why the combinations assessed represent a reasonable range of risks.
- d) PREPA shall identify a Reference Case Scenario, representing the utility's best understanding of expected circumstances or median probability outcomes.

## 2) Resource Plan Development

- a) PREPA shall use a Capacity Expansion Model or similar model structure to develop least cost resource plans that meet customer needs under the reference case scenario and various future scenarios. The Capacity Expansion Model shall at a minimum:
- i. Seek to optimize the present value of revenue requirements over the planning period;
  - ii. Consider demand-side resources in a competitive framework with supply-side resources;
  - iii. Recognize all utility-borne costs associated with the development of new resources;
  - iv. Recognize all utility-borne costs, as well as avoided costs, associated with the retirement or modification of existing resources.
- b) Unless specifically avoidable through the procurement of new assets or retirement or modification of existing assets, existing plant balances, committed capital expenditures, and rate-based costs shall not be assessed in the Capacity Expansion Model.
- c) The final Resource Plans resulting from the use of the Capacity Expansion Model shall be identified, and shall be described using tables that include at least the following, for each year of the planning period: load forecasts, reliability requirements, existing resources and their potential retirements, and each new resource included in the resource plan.
- d) PREPA shall develop a comprehensive set of Resource Plans to

include a variety of combinations of various supply-side, energy efficiency and demand response resources, with particular attention to resource choices made within the period of the Action Plan.

- i. Supply-side resources shall include various options for early retirement of existing power plants, for refurbishment or repowering of existing power plants, and for deferral of new power plants where feasible.
  - ii. Energy efficiency and demand response resources shall include programs with a variety of different cost levels, in order to assist in the identification of all cost-effective energy and demand response resources.
  - iii. Each resource plan shall be designed to ensure that PREPA complies with the renewable portfolio standard requirements of Act 82-2010.
- 3) Sensitivity Analyses.- Each of the remaining Resource Plans shall be subjected to sensitivity analyses exploring a reasonable range of uncertainty in forecast assumptions. The purpose is to examine the robustness of resource plans created in the optimization analysis (i.e., how each resource plan would be affected by changes in input assumptions).
  - a) The sensitivity analyses shall hold the resources developed in each Resource Plan constant, and examine the impacts of changing uncertain forecasts.
  - b) The following uncertain forecasts shall be examined, at a minimum:
    - i. forward-looking economic conditions;
    - ii. environmental regulations;
    - iii. changes in customer electricity demand and consumption;
    - iv. customer generation;
    - v. fuel prices;
    - vi. environmental costs or restrictions;
    - vii. construction costs; and,

viii. combinations thereof as reasonable.

- c) PREPA may choose to use either the developed Planning Scenarios as sensitivities, develop a broader range of sensitivities, including single-factor sensitivities and multiple factor sensitivities, or use a Monte Carlo analysis framework, wherein uncertain forecasts are chosen and combined stochastically. The utility shall describe and justify the basis of the sensitivity mechanism it has chosen.
- d) PREPA shall present the outcomes of the sensitivity analysis in present value revenue requirements. If the utility utilizes a Monte Carlo analysis, results should be presented as the median outcome and the fifth (5th) and ninety-fifth (95th) percentile costs. Otherwise, the utility should present the outcome of each sensitivity performed.
- e) These sensitivity analyses should be used to inform the selection of the Preferred Resource Plan.

4) Hybridized Alternative Resource Plan

- a) PREPA may choose to modify one or more of the optimized Resource Plans based on the outcomes of the sensitivity analysis, if such a modification results in a Resource Plan that is of a comparable cost and demonstrably robust in the sensitivity analysis.
- b) PREPA shall justify the modifications it has made to the Resource Plan.
- c) The use or analysis of this alternative Resource Plan does not preclude the complete analysis of other Resource Plans in the sensitivity analysis.

5) Selection of the Preferred Resource Plan.- PREPA shall select a Preferred Resource Plan from among the Resource Plans developed and evaluated in the optimization and sensitivity analyses.

- a) In selecting the Preferred Resource Plan PREPA shall use the minimization of the present value of revenue requirements as the primary selection criterion.
- b) PREPA shall also consider other criteria, including but not limited to system reliability; short and long-term risk;



environmental impacts; transmission needs and implications; distribution needs and implications; financial impacts on PREPA; and the public interest in general.

- c) PREPA shall include a detailed discussion of each of the above factors in its IRP to support the basis for selecting its Preferred Resource Plan as the best option. PREPA may opt to choose a plan that is not the lowest cost, but when doing so it shall fully document all the criteria that were used to select the Preferred Resource Plan and justify the reasoning for choosing a plan that is not the lowest cost.
  - d) After resource selection, an adjusted load forecast shall be provided to reflect the forecast of load after taking into account the results of anticipated future demand-side resources.
  - e) Reported net present-value revenue requirements shall be disaggregated by cost categories (e.g., generation capital recovery, transmission capital recovery, distribution capital recovery, fuel, energy-efficiency expenditures, demand response expenditures, environmental retrofits and upgrades, and possibly other categories defined by the utility).
- 6) Work Papers and Documents.- The IRP shall include a description of all models and methodologies used in performing the IRP, along with the utility's reasons for choosing those models and methodologies.
- a) PREPA shall provide to the Commission any computer model including the software and licensure necessary for the Commission, or its consultants, to independently run any analysis relied upon by PREPA. Alternatively, PREPA may provide the Commission reasonable access to the computer model at the Commission's offices or at another mutually agreeable location. Such access shall be adequate to enable the Commission to replicate the results and may include PREPA manipulating the computer model according to instructions or inputs from the Commission. Access shall also be reasonably made available to intervenors.
  - b) If PREPA relies on proprietary programs or applications for computations to support any part of its filing, copies of those programs must be provided to the Commission with explanations and instructions adequate to replicate the results. Alternatively, PREPA will provide the Commission reasonable access to the programs at the Commission's offices or at another mutually agreeable location. Such access shall be adequate to

enable the Commission to replicate the results and may include the utility manipulating the programs according to instructions or inputs from the Commission. Reasonable access shall be made available to intervenors. If PREPA seeks to limit access to the program or application to intervenors, the Commission will determine the appropriate access to the program or its output.

- c) Workpapers which are available in electronic form shall be provided electronically in native format. Electronic copies shall be clearly legible and complete. All formulae and viable links shall be left intact for all electronic files.
  - d) Any source documents not publicly available or readily accessible that are referenced in the testimony, exhibits, or Work Papers, shall also be provided. If a source document is publicly available on the Internet, a specific link (URL address) to the source document may be provided. If a source document is a study, report, book, periodical, or other publication not publicly available or readily accessible to PREPA, it may provide copies of the relevant pages from such source document rather than copies of the entire study, report, book, periodical, or other publication, but all pages necessary to understand the relevant pages in context shall be provided. Upon request, PREPA shall make available the entirety of such source document for inspection at the Commission's offices.
- 7) Action Plan.- The purpose of the Action Plan is to specify implementation actions that need to be performed during the early years of the planning period as a result of the Preferred Resource Plan. The Action Plan is not intended to replace or modify additional resource certification processes required by statute or other Commission rules and orders.
- a) The Action Plan shall be based on the Preferred Resource Plan described in paragraph (B)(5) of this Section, described above.
  - b) Elements of the Action Plan.- The action plan shall be included in the IRP, and at a minimum, shall include the following elements:
    - i. A timetable indicating important activities or milestones related to competitive solicitations (RFPs) for supply-side resources and energy efficiency, permitting requirements, construction activities, and other important events. This shall apply to potential acquisitions of demand-side and supply-side resources, transmission resources, retirements, retrofits, power purchase agreements, and any other

resource commitments.

- ii. A timetable of the expected commencement and completion of other studies, plan updates, and evaluations which may have been identified through the IRP process.
  - iii. A discussion of permitting issues and other regulatory actions that are required in order for the resource action to take place.
  - iv. A discussion of the implementation plan for demand-side management options.
  - v. Any other information required by the Commission.
- c) The Action Plan shall account for environmental impacts and shall discuss the plans to meet environmental regulatory requirements at existing resources subject to such requirements.
  - d) The Action Plan shall comply with all laws and regulations enacted that address requirements for demand-side resources and supply-side resources, including but not limited to the renewable portfolio standard.
  - e) The Action Plan shall cover a period of no less than five (5) years. Information shall be provided for any activities that are or will be underway or planned to take place within the action plan period.
  - f) For any major expected resource acquisitions, retirements, retrofits or power purchase agreements, the action plan shall provide information on the cost of the option chosen and the plan for financing that option.

#### **Section 2.05.- Schedule and Filing.**

- A) Every three (3) years, PREPA shall submit an IRP in accordance with the provisions of this Regulation on Integrated Resource Planning for the Puerto Rico Electric Power Authority. All IRPs shall be submitted to the Commission for its evaluation and approval. No IRP will be effective until it is approved by the Commission.
- B) When filing an IRP, PREPA shall simultaneously publish on its website a true and exact copy of the IRP or proposed IRP amendment submitted to the Commission, in order to provide complete access for those who want to examine the document.

- C) The filing of the IRP shall initiate a procedure at the Commission pursuant to the provisions of this Regulation, and to the provisions of Regulation No. 8543 to the extent compatible with the provisions of this Regulation and the IRP proceedings.

#### **Section 2.06.- Waivers.**

In accordance to the provisions of this Section, PREPA may file a request for a waiver of any of the filing requirements upon a demonstration of good cause shown.

- A) Any waiver request shall provide a detailed explanation as to why the waiver is being requested along with an analysis of the advantages and possible disadvantages, to allow the Commission to thoroughly evaluate the waiver request.
- B) Any waiver request shall include the specific filing requirements requested to be waived, identifying the corresponding sections, subsections or paragraphs of this Regulation stating the filing requirements to be waived.
- C) Waiver requests are limited to the following conditions which must be set forth in the request:
  - 1) Due to circumstances that are beyond its control, PREPA is unable to obtain all the data needed to file its plan; or
  - 2) The required information has already been made available to the Commission through a previous filing. In that event, PREPA will provide a citation as to where that information is available both in its request for the waiver, and also in the IRP if the waiver is granted.
  - 3) In the case of the first IRP due on July 1, 2015 only, PREPA may file a waiver requesting that the provision of select data be deferred. A schedule for providing information at a later date shall accompany the request for a waiver.
  - 4) Any waiver request shall be filed no later than thirty (30) days prior to the date on which the IRP is due to be filed and shall be docketed at the Commission. However, for the purposes of the first IRP, any waiver request shall be filed on or before June 5, 2015. Any potential intervenor may file a memorandum opposing the request for a waiver, within seven (7) days from the date that the waiver was filed.
  - 5) The Commission shall issue a ruling within twenty (20) days from the date that the request for a waiver has been filed. The Commission may grant, deny or modify the waiver request. If in the Commission's

judgment the requirements sought by PREPA to be waived may be obtained within a reasonable time frame after the filing deadline, the Commission may order PREPA to file updated information by a specified time. If the Commission fails to rule within twenty (20) days of the date that the waiver was requested, the request for the waiver shall be deemed to be denied.

#### **Section 2.07.- Update**

- A) PREPA may submit an updated IRP prior to the required submission of its next IRP. Reasons that might warrant PREPA to consider submitting an updated IRP include, but are not limited to:
- 1) It anticipates submitting an application for a certificate to construct, purchase or otherwise acquire a long-term supply-side or demand-side resource that was not previously included as part of the IRP;
  - 2) It anticipates the need to release an RFP for a demand-side or supply-side resource that was not previously included as part of an integrated resource plan;
  - 3) The basic data used in the formulation of its last IRP requires significant modification that affects the choice of a resource or use of an RFP that was included as part of the integrated resource plan; and
  - 4) Implementation of the approved IRP as set forth in the Action Plan in Section 2.04, paragraph (B)(7), and in Section 3.04, or a major change as defined in Section 1.08, paragraph (B)(23) of this Regulation.
- B) Notwithstanding paragraph (A) of this Section, the Commission shall have the authority to require PREPA to file an updated IRP, should it determine that conditions warrant the utility doing so.
- C) Should PREPA seek to make any major change to the action plan or capital plans before the filing of its next IRP, it shall file an updated IRP that demonstrates that its proposed alternative is the preferred option for providing safe, reliable, low-cost power over the long-term.
- D) Unless the Commission notifies the utility of any specific requirements, PREPA shall determine which components of the IRP analysis to incorporate in any update.
- E) The filing of an IRP update does not relieve PREPA from its obligation to file a new, complete IRP every three (3) years.

**Section 2.08.- Certification of Compliance with Requirement of Presentation to CEPPPO.**

On or before the 1<sup>st</sup> of August of each natural year in which presentation to CEPPPO is required pursuant to Section 6C (h)(vi) of Act No. 83 of May 2, 1941, as amended, PREPA will file before the Commission a certification that such presentation took place as well as the date of its occurrence.

**ARTICLE III. PROCEDURE BEFORE THE COMMISSION**

**Section 3.01.- Initial Technical Conference.**

Once the IRP is filed, the Commission will issue an Entry setting forth a technical conference for PREPA to present its IRP filing and answer questions from attendees. The technical conference shall be open to the public to attend.

**Section 3.02.- Intervening Parties.**

- A) Any person may file a petition to intervene in the IRP proceeding within thirty (30) days after the filing of the IRP. Nevertheless, the Commission shall retain the discretion to grant petitions to intervene filed after the expiration of the 30-day time period.
- B) The petition to intervene shall address each of the following points:
  - 1) The nature and extent of the petitioner's interest in the proceeding;
  - 2) The legal positions advanced by the petitioner and its probable relation to the merits of the case;
  - 3) Whether granting the petitioner intervention will contribute to the full development and just and equitable resolution of the facts in the case; and
  - 4) Whether granting the petitioner's intervention will not unduly prolong or delay the proceeding.
- C) Once a petition to intervene is filed, the petitioner shall be accorded full rights as an intervening party until such time as the Commission may issue a ruling denying the petitioner intervention. However, no petitioner shall be entitled to confidential information from PREPA until its petition to intervene has been granted by the Commission.
- D) The Commission will address petitions to intervene in accordance to Section 5.05 of Regulation No. 8543, and Act No. 170, as amended.

- E) A ruling accepting the petition to intervene shall grant the intervening party full rights to participate in the proceeding, including but not limited to the right to conduct discovery, present testimony and cross-examine witnesses, participate in any collaborative process, and file pleadings, in accordance to the Commission's orders and the provisions of Regulation No. 8543.
- F) After the technical conference and a discovery period, intervenors shall be given an opportunity to file comments on the proposed IRP for the Commission's consideration in accordance with the time schedule set forth by the Commission.
- G) PREPA and the intervenors are encouraged to work together in collaboration to the maximum extent possible to reach consensus.

**Section 3.03.- Commission's decision on the IRP.**

- A) Within one-hundred and eighty (180) days of the submission of the IRP -with the possibility of an extension at the Commission's discretion- the Commission shall assess the IRP submitted by PREPA, and determine:
  - 1) If the Plan submitted by PREPA is approved;
  - 2) If the Plan submitted by PREPA is disapproved;
  - 3) If the Plan is disapproved with recommendations and requirements for PREPA to execute various changes and resubmit the IRP by a certain date with the recommendations and requirements addressed.
- B) During the procedure for assessing the IRP, the Commission may require the CEPPPO and ICPO to evaluate the IRP and to submit in writing to the Commission its comments and recommendations regarding the IRP.
- C) PREPA shall publish on its website a true and exact copy of the IRP approved by the Commission. This plan must be accessible to the public, free of charge, from the date in which the Commission notifies PREPA of the approval.

**Section 3.04.- Approval, Disapproval or Disapproval with Requirements.**

- A) In approving, disapproving or disapproving an IRP with recommendations and requirements the Commission shall make determinations on the following:
  - 1) Whether the IRP filing is complete and complies with all applicable laws and regulations;
  - 2) Whether through the IRP process, PREPA faithfully and in a timely

fashion reasonably explored and presented to the Commission and intervenors, the viable alternatives for meeting customer needs during the planning period, given the circumstances foreseeable at the time;

- 3) Whether the IRP fully complies with the requirements of Section 2.03, paragraphs (B)(1) to (B)(3), of this Regulation, including but not limited to, the load forecast, system reliability assessment, and needs assessment;
- 4) Whether the IRP fully complies with the requirements of Section 2.03, paragraphs (B)(4) to (B)(10), of this Regulation, including but not limited to, the assessments of existing supply, demand, and transmission resources;
- 5) Whether the IRP fully complies with the requirements of Section 2.03, paragraphs (B)(11) to (B)(14), of this Regulation, including but not limited to, the planning environment assessment and assessments of new supply, customer, demand, and transmission resources;
- 6) Whether the scenario and plan development and analyses contained within the IRP performed under Section 2.04, paragraphs (B)(5) to (B)(5), of this Regulation meet the requirements of Section 2.04, paragraph (B)(7), of this Regulation;
- 7) Whether the Action Plan meets the requirements of Section 2.04, paragraph (B)(7), of this Regulation, and whether PREPA's Action Plan reflect the Preferred Resource Plan;
- 8) Whether the Energy Efficiency and Demand Response Plan and Report meets the requirements of Article IV of this Regulation;
- 9) Whether the Performance Metrics meet the requirements of Article V of this Regulation;
- 10) Whether the utility's IRP meets the reporting requirements of Section 2.04, paragraph (B)(6), of this Regulation.
- 11) Whether the IRP properly allows for reliance on the competitive bidding process to procure additional resources;
- 12) Whether PREPA's IRP is consistent with the statutory objectives for the sector with respect to energy efficiency, renewable sources of generation, and for the performance of fossil fuel generation; and
- 13) Whether the conclusions and recommendations in the IRP are in the



public interest and beneficial to all customers.

14) Any other determination the Commission deems necessary.

- B) The Commission's order shall also consider the comments of the intervenors in reaching its decision on whether to approve, disapprove or disapprove the IRP with recommendations and requirements.
- C) Approval of the IRP shall create a rebuttable presumption that the IRP is reasonable and that the resources and actions contained in the Action Plan of the IRP are reasonable.
- D) The approval, disapproval or disapproval of the IRP with recommendations and requirements by the Commission shall consist of conclusions of law and findings of fact based on the evidence presented in the proceeding to support its decision.

#### **Section 3.05.- Order for Amendments.**

If the Commission finds that the IRP is deficient in any of the required findings stated in Section 3.04 of this Regulation, the IRP may not be approved and the Commission at its discretion may order PREPA to amend its IRP so as to comply with said requirements.

#### **Section 3.06.- Action Plan.**

- A) If the Commission approves the IRP, the Commission shall explicitly set forth the provisions of the IRP Action Plan for which it shall require PREPA to file a notice of its intention to implement that provision. PREPA shall include with the filing either a sworn statement that there are no significant changes in circumstances to warrant reconsideration of the Commission's initial approval, or information describing in detail the changed circumstances. The Commission may also require PREPA to provide any additional information it deems relevant.
- B) The Commission's approval of the Action Plan shall only be applicable for the period up until approval of the next Action Plan. The approval of the next Action Plan shall occur either through the Commission approval of the next IRP or through any update to the current Action Plan.
- C) PREPA may not proceed with implementation of a project that is not included in the Action Plan without the Commission's authorization in accordance with paragraph (A) above, or through an independent review and determination after consideration of the IRP and the Action Plan. Failure to obtain Commission approval of the project may result in disallowance of all or a portion of the costs from ratepayers and the imposition of penalties, in

accordance with Article XII of Regulation No. 8543.

**Section 3.07.- Motion to Reconsider.**

Any party who is not satisfied with the final decision issued by the Commission may submit a motion to reconsider before the Commission. The motion to reconsider shall state in detail the reasons supporting the request, and the remedy that, according to the petitioner, the Commission should grant.

The motion to reconsider shall be filed and addressed in accordance with Act No. 170 of August 12, 1988, as amended, known as the Uniform Administrative Procedure Act.

**Section 3.08.- Judicial Review.**

Any party who is dissatisfied with the final decision issued by the Commission, may request the review of the Court of Appeals as provided in Act No. 170 of August 12, 1988, as amended, known as the Uniform Administrative Procedure Act.

**CHAPTER III – ENERGY EFFICIENCY DEMAND RESPONSE AND PERFORMANCE**

**ARTICLE IV. ENERGY EFFICIENCY AND DEMAND RESPONSE**

**Section 4.01.- Energy Efficiency and Demand Response Planning and Reporting.**

- A) By the end of the first quarter of each calendar year, PREPA shall file with the Commission any and all evaluation measurement and verification (EM&V) reports that address the energy efficiency and demand response programs implemented during the previous calendar year. PREPA shall file the first EM&V report upon completion of the first full year of energy efficiency and demand response programs. These EM&V reports shall be conducted by independent organizations with expertise in conducting energy efficiency and demand response EM&V studies. PREPA shall spend approximately four to five percent of the total energy efficiency and demand response program budgets on EM&V reports.
- B) By the end of the second quarter of each calendar year, PREPA shall file with the Commission an Energy Efficiency and Demand Response Annual Report (EE&DR Annual Report), which shall include detailed information on the historical performance of energy efficiency and demand response programs for the most recent complete calendar year. PREPA shall file the first EE&DR Annual Report upon completion of the first full year of energy efficiency and demand response programs. These Annual Reports shall include at a minimum the following information separately for each energy efficiency and demand response program. This information shall also be aggregated by

customer sector and for the portfolio of programs as a whole:

- 1) Costs, broken out by administration costs, marketing and delivery costs, program vendor costs, customer financial incentive, technical or training support offered to customers or other trade allies, customer payment, and other costs;
  - 2) Annual energy savings (MWh) for each year of the Planning Period;
  - 3) Lifetime energy savings (MWh);
  - 4) Peak demand savings (MW) for each year of the Planning Period;
  - 5) Annual cost savings, in dollars (\$) for each year of the Planning Period;
  - 6) Quantified non-energy benefits, in dollars (\$) for each year of the Planning Period;
  - 7) A discussion of qualitative non-energy benefits;
  - 8) Cumulative present value of program costs and program savings;
  - 9) Net savings, and benefit cost ratio;
  - 10) Eligible customers, program participants, and participation rate, for the past five (5) years in which efficiency programs were delivered and projected for the next three (3) years; and
  - 11) A description of the program, describing the market sector addressed, the customer sector addressed, the delivery mechanism, financial incentives offered to customers, training and technical assistance offered to customers, and other relevant information.
- C) By the end of the third quarter of each calendar year, PREPA shall file with the Commission Energy Efficiency and Demand Response Plan (EE&DR Plan), which shall include its plan for all energy efficiency and demand response programs to be implemented over the next three (3) years. PREPA shall file the first EE&DR Plan with the Commission within 120 days of selecting a third party administrator to implement the energy efficiency and demand response programs, as required by Section 4.01(D) of this Regulation. The EE&DR Plans shall be consistent with the Action Plan of the most recently approved IRP. Any deviations from the most recently approved Action Plan shall be justified with quantitative analyses of economic and other

implications of the deviation. The EE&DR Plans shall be designed to enable PREPA to identify and implement all cost-effective energy efficiency and demand response programs, consistent with the most recently approved IRP or any subsequent comparable economic analysis. The EE&DR Plans shall include a proposal for the type and the extent of EM&V reports to prepare for the next three (3) years. The energy efficiency and demand response programs shall conform to best practice program design principles; at a minimum, programs shall:

- 1) Address all relevant markets related to efficiency and demand response measures;
  - 2) Serve all customer types;
  - 3) Address all relevant end-uses;
  - 4) Attempt to overcome all relevant market barriers to adoption of energy efficiency and demand response measures;
  - 5) Promote customer equity, both by offering programs to all customer types and by achieving high participation rates across all customers;
  - 6) Ensure that low-income and hard-to-reach customers are marketed and served;
  - 7) Take full advantage of all relevant trade allies to maximize opportunities to market, deliver and install efficiency and demand response measures; and
  - 8) Avoid lost opportunities, which occur when efficiency measures are not installed when it is most cost-effective to do so.
- D) Within ninety (90) days of a Commission decision on this IRP, PREPA shall competitively bid for a third-party administrator to plan for and implement the energy efficiency and demand response programs. The third-party administrator would utilize ratepayer funds to implement all aspects of the energy efficiency and demand response programs, in lieu of PREPA implementation, consistent with the requirements of these regulations.
- E) Regardless of whether the energy efficiency and demand response programs are implemented by PREPA or a third-party administrator, the key programs shall be delivered through third-party contractors. These contractors shall be chosen through a competitive bidding process run by the program administrator on a periodic basis.

## **ARTICLE V. PERFORMANCE METRICS TARGETS AND INCENTIVES**

### **Section 5.01.- Performance Metrics Targets and Incentives.**

- A) Within sixty (60) days of the approval of the first IRP, the Commission shall open a docket to establish performance incentive mechanisms (PIMs) that will apply to PREPA. The PIMs shall include performance metrics, performance targets and performance incentives in order to monitor, guide and provide financial incentives regarding key areas of PREPA performance. The Commission shall issue an order on PIMs within six (6) months of the commencement of the first PIM docket. The Commission shall periodically open a new docket to review the PIMs to determine whether any updates, modifications or refinements are warranted.
- B) In the initial PIMs docket, the Commission shall establish performance metrics for the purpose of reporting on and monitoring key areas of utility performance. The Commission shall establish at least the following performance metrics:
  - 1) Reliability
    - a) System average interruption duration index;
    - b) System average interruption frequency index;
    - c) Customer average interruption duration index;
    - d) Momentary average interruption frequency index
  - 2) Customer Satisfaction
  - 3) Number of formal and informal customer complaints including response time to resolve complaints and a short description of the complaint and how it was resolved;
  - 4) Response time to service requests and outages;
  - 5) Residential customer satisfaction, based upon a survey of residential customers conducted by an independent entity with expertise in conducting customer surveys;
  - 6) Business customer satisfaction, based upon a survey of business customers conducted by an independent entity with expertise in conducting customer surveys.
  - 7) Plant Performance

- a) Average annual heat rates, by plant, by fuel type, and for all generators combined;
- b) Average annual capacity factors, by plant; by fuel type, and for all generators combined;
- c) Fuel costs for all generators combined, per million BTU, per kWh, and per customer.

#### 8) System Costs

- a) Revenue per kilowatt hour (kWh);
- b) Operation and maintenance costs per kilowatt hour (kWh);
- c) Operation and maintenance costs of the distribution system per customer;
- d) Costs for customer service per customer;
- e) General and administrative expenses per customer;
- f) The total cost of electric power services per capita;
- g) The total cost of electricity service per capita according to customer type (i.e. residential, commercial and industrial) and all customers combined;
- h) The total cost of electricity service per capita in urban areas according to customer type (i.e. residential, commercial and industrial) and all customers combined;
- i) The total cost of electricity service per capita in rural areas according to customer type (i.e. residential, commercial and industrial) and all customers combined;

#### 9) System Efficiency and Operations

- a) The total annual amount of energy use in Puerto Rico (MWh), per capita (MWh/person), in urban areas (MWh) and in rural areas (MWh);
- b) Metrics on PREPA's operational and administrative efficiency;
- c) Metrics on the transparency of the operations;

- d) Metrics on improvements in the effectiveness of intervenor participation in PREPA processes;
- e) Metrics on improvements in PREPA corporate governance as a company of the Commonwealth of Puerto Rico;
- f) Annual load factor;
- g) System transmission and distribution losses;
- h) Theft of electricity from the system, in terms of kWh and percent of total sales, separately for the residential, commercial, and industrial customers of the entire company, and separately for each municipality within the company.

#### 10) Customer Empowerment

- a) Energy efficiency: number and percent of customers served by programs, annual and lifetime energy savings, levelized program costs per lifetime energy saved;
- b) Demand response: number and percent of customers served by programs, annual and lifetime demand savings, levelized program costs per MW saved;
- c) Distributed generation: number of installations per year and cumulative, capacity (MW) of installations per year and cumulative;
- d) Energy storage: number of installations per year and cumulative, capacity (MW) of installations per year and cumulative;
- e) Electric vehicles: number of installations per year and cumulative, capacity (MW) of installations per year and cumulative;
- f) Information availability: number of customers able to access hourly usage;
- g) Time-varying rates: number of customers on time-varying rates.

#### 11) Network Support Services

- a) Advanced metering capabilities: number and percent of customers using advanced meters;

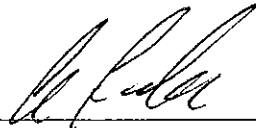
- b) Interconnection support; average number of days for customer interconnection;
- c) Third-party access to network services; open and interoperable network services.

#### 12) Environmental Goals

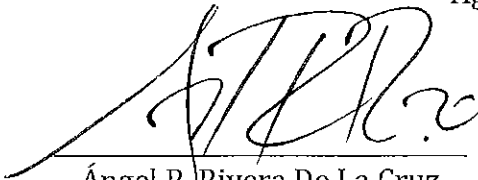
- a) System-wide emissions (tons), for SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub>, particulates, mercury, and other relevant pollutants;
  - b) System-wide emission rates (lb./mmbtu), for SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub>, particulates, mercury, and other relevant pollutants;
  - c) System-wide carbon intensity (tons/customer); Carbon rate (tons/MWh);
  - d) System-wide carbon emission rate, as defined by the final rule on the EPA Clean Power Plan;
  - e) System-wide fossil carbon rate (tons/MWh) for all fossil generation; and
  - f) System-wide renewable generation, in MWh and as a percent of total generation.
- C) In the initial PIMs docket, the Commission shall establish performance targets for the purpose of providing guidance to PREPA on expected levels of performance for certain priority performance areas.
- D) In the initial PIMs docket, the Commission shall investigate opportunities to establish rewards and/or penalties to be applied to PREPA for certain priority performance areas.
- E) Within three (3) months of the date of the final order from the first PIMs docket, PREPA shall create a PIM site on its web site that will be publicly available and readily available from a link that is prominently displayed on its home page. The PIM site will include graphic and tabular presentations of the performance metrics, performance targets and performance incentives established by the Commission, along with relevant information regarding historic performance and historic incentives applied to PREPA. The content and design of the PIM site will be developed during the first PIM docket.



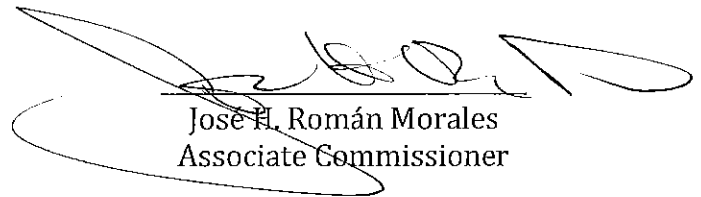
This was agreed upon by the Commission in San Juan, Puerto Rico, the 22 of May of 2015.



Agustín F. Carbó Lugo  
President



Ángel R. Rivera De La Cruz  
Associate Commissioner



José H. Román Morales  
Associate Commissioner