



## **Request for Proposals**

### **Preparation and Support of the Integrated Resource Plan**

March 10, 2018

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# 1 PROPOSAL REQUIREMENTS

## 1.1 General Information

The Puerto Rico Electric Power Authority (“PREPA”) is interested in identifying a Professional Services Company in connection with performing a study to create and to support an Integrated Resource Plan (“IRP”). This effort is required by Puerto Rico Act 57 of 2014, as amended. Proposals will be submitted in accordance with this Request for Proposal (“RFP”) document and the Invitation Letter. Proposals shall include the specific Scope of Work. The Proponent’s responses shall not deviate from the requirements stated in this RFP.

## 1.2 Definitions

For purposes of this RFP, the following terms and phrases shall have the meaning specified under this Section 1.2, unless otherwise specifically set forth in this RFP:

- 1 Addendum – A formal written notice issued before the Proposal submittal due date and time by PREPA to inform the Proponents about any changes, modifications, clarifications, additional instructions, document requirements incorporated or to be incorporated in the conditions established in this RFP, forms, appendixes, or related documents.
- 2 Calendar day – shall mean each and every 24 hours period as shown on a calendar, beginning and ending at midnight.
- 3 Clarifications – Additional information issued by PREPA in writing, at its sole discretion, and as response to a Request for Clarification (“RFC”) or Request for Information (“RFI”) submitted by Proponents before or on the date established in the RFP schedule provided herein.
- 4 Contract – shall mean a binding written agreement entered into by the selected Proponent and PREPA pursuant to this RFP, except where the word “contract” is not capitalized and is used in a more general sense or has a different meaning in context in this RFP. The agreement may be memorialized in one or more documents.
- 5 Day – shall mean each and every 24 hours period.
- 6 Evaluation Criteria – Set of requirements established in this RFP document with which PREPA is to evaluate the Proponents’ Proposals.
- 7 IRP means an integrated resource plan that complies with this RFP, subject to any and all Addendums. This term includes the plan plus any and all deliverables that are required to be part of or to accompany the IRP when it is filed with the Puerto Rico Energy Commission (the “Energy Commission” or “PREC”) or any successor. (References to the PREC are intended to include any successor when applicable in context.)
- 8 Proponent – An eligible party that submits a proposal to PREPA in response to this RFP.
- 9 RFP Schedule – Set of events, milestones, dates and times, or deadlines established by PREPA for the RFP process.
- 10 Selection Committee – PREPA’s specialized technical staff that could be either internal employees, or external consultants, and advisors selected at PREPA’s sole discretion,

assigned to evaluate and rank duly submitted Proposals from Proponents, in accordance with this RFP.

### **1.3 Introduction to PREPA**

PREPA was created by the Puerto Rico Electric Power Authority Act, Act 83 of May 2, 1941, as amended (“Act 83”), serving the Commonwealth of Puerto Rico. PREPA was created as a public corporation and governmental instrumentality of the Commonwealth of Puerto Rico for the purpose of conserving, developing and utilizing, and aiding in the conservation, development and utilization of the water and power resources of the Commonwealth, in order to promote its general welfare and increase commerce and prosperity. PREPA seeks to provide efficient, clean, and reliable power to the ratepayers. PREPA is seeking to modernize its infrastructure while complying with Puerto Rico law related to the Renewable Portfolio Standard, federal and Puerto Rico law related to environmental compliance, and the move toward energy sector transformation, among others.

PREPA is currently a Debtor under Title III of the federal Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”), 42 USC §§ 2101-2241, and as such is working with the Government of Puerto Rico and the Government’s statutory fiscal agent for PREPA (the Fiscal Agency and Financial Advisory Authority or “AAFAF”) in order to reach restructuring and electricity sector transformation, which as the Governor of Puerto Rico recently stated, is proposed to involve the privatization of PREPA’s generation assets and the operation by a private party of the transmission and distribution system owned by PREPA.

On February 1, 2018, PREPA’s Governing Board established a Vision for the Future of Power in Puerto Rico. This needs to guide all the work to be done in the IRP, and the IRP needs to address all these points in the recommended course of action.<sup>1</sup> The IRP also needs to comply with all other requirements of this RFP, subject to any and all Addendums.

First and foremost, the system is Customer-Centric

The system serves the customer with affordable, reliable power, with transparent metrics for quality of service and with equitable consideration across all customers. Quality/Reliability can be differentiated for customers in a manner that serves their total cost and risk objectives. Customers are engaged by innovative products and value added services that provide choice among rate plan and risk management options, and provide access to wholesale contracting options for large customers. Customers are empowered with behind-the-meter alternatives for energy efficiency, demand management, and distributed generation, with the ability to become prosumers if they so choose.

Second, the system promotes Financial Viability

The system is premised on positive economics on both sides of the meter. Rates are reasonable and create value for the customer, while pricing is sufficient to cover costs.

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<sup>1</sup> See February 1, 2018, PREPA Governing Board Press Release. The Press Release may be found here: <https://www.aepr.com/Noticias/noticiasread.asp?r=YQVATMSJWX>

Rate and market design create incentives to purchase, consume or produce energy in a manner that benefits the entire system. Subsidies are minimized, and those that remain have a non-distortionary impact. Operational excellence and sound long term planning reduce the cost to serve. Rates are affordable within a model that allows the utility to earn a reasonable rate of return and service its debt. The business model is robust to changes such as outmigration and reduction in energy demand, and does not create disincentives for adoption of cheaper energy resources, either at the grid level or at the customer premises.

Third, the system is Reliable and Resilient

The grid is thoughtfully planned, well maintained and safely operated to achieve defined reliability and resiliency goals. There is visibility into the system at all levels, and control where appropriate. Standards for recoverability create a measure for resilience. The choice of architecture (distributed vs. regionalized vs. centralized) is intentionally made to balance reliability/resilience and cost objectives while also taking advantage of advancements in technology and innovation.

Fourth, the system is a Model of Sustainability

There is a progressive focus on diversifying energy resources and reducing the carbon intensity of the power sector, in both primary generation and backup generation. Power generation is efficient and minimizes emissions. Customers have incentives to use energy wisely and to generate their own clean energy. The grid and grid systems are designed to take maximum advantage of increasingly cost effective renewable power generation alternatives and to integrate emerging technologies.

Finally, the power system serves as an Economic Growth Engine for Puerto Rico

The quality, reliability, and cost of power attracts new commercial and industrial development to Puerto Rico, and encourages existing commercial and industrial customers to expand their operations. Transformation and reinvestment in the power system creates new jobs. Innovation in the generation and delivery of power creates a local ecosystem of businesses that provide for evolving needs for equipment, technology and services in Puerto Rico and beyond.

## **1.4 Proposal Presentation**

PREPA reserves the right to request a proposal presentation from a short list of proponents who respond to the RFP. The presentation will explain the Proponent's capabilities and strategies to perform the IRP and the experience of the proposed staff. The Presentation will be less than 3 hours in length. The selected proponents and the schedule of presentations will be established after PREPA has been able to review the submitted proposals for the IRP.

## 1.5 PREPA's Public Disclosure Requirements

PREPA is required by law to file a copy of the final executed Contract with the Puerto Rico Comptroller's Office (at which time the contract becomes registered and effective). Upon filing, the Contract will become subject to open records requirements. The content of the Proposals submitted pursuant to this RFP are not subject to mandatory public filing, nevertheless, PREPA could be required to disclose information from the Proposals to comply with a future audit of the RFP process; as part of the filing of the IRP with, or subsequent processes regarding the IRP conducted before, the PREC; or pursuant to some other legal or public policy requirement.

## 1.6 Disclaimers

PREPA reserves the right to modify the terms of this RFP, prior to the submittal date of the Proposals or to cancel it, at any time. PREPA reserves the right to reject any or all Proposals, to postpone (or accelerate) the date and time of Proposal's submittal, by prior written notice, if it is in the best interest of PREPA. This RFP shall not be construed as an offer, and PREPA is not bound to purchase services from any Proponent pursuant to this RFP. PREPA is under no obligation whatsoever to Proponents to enter into a contract. Each prospective Proponent shall bear its own respective costs for all consulting, legal, accounting fees, and other expenses incurred by it in connection with participation in this RFP process, including Proposal and presentation expenses, among others. PREPA shall have no responsibility for any or all such costs.

## 1.7 Communications with PREPA

All communications regarding this RFP and the Proposal submission shall be addressed to the Selection Committee through:

Rfp-irp@prepa.com

Communications during the RFP process shall **only** be accepted through the above address. **Direct Communications with PREPA personnel or representatives of PREPA during the RFP process is strictly prohibited.** Questions, Requests for Clarifications and Requests for Information shall only be considered when presented in writing. The Selection Committee will determine if it is reasonable to proceed with Proponent's request(s). PREPA shall endeavor to provide and issue an Addendum, with written answers, to all timely and reasonable requests from any and all Proponents.

PREPA will not respond, nor will it be responsible, for other explanations or interpretations of the RFP documents that are not submitted pursuant to these instructions. Proponents shall not contact any PREPA employee, agent, advisor, consultant, or other representative regarding the RFP or Proposals under evaluation during such period nor shall they follow any other procedures for clarifications or additional information than those stated above.

## 1.8 RFP Schedule / Deadlines

PREPA acknowledges the condensed schedule of this project and recognizes that commensurate resources will be needed to complete the Scope of Work in accordance with the timeline detailed below.

All responses to the RFP will be due to PREPA by 5:00 pm Atlantic Standard Time two weeks from the issuance date of the RFP. The RFP will be sent out on March 10, 2018.

PREPA anticipates that the contract resulting from this RFP is estimated to be executed within ten days of the Award Notification. However, the final contract execution day will be subject to final contract documents.

The preferred completion date for the IRP is September 28, 2018. However, the proponent should offer the most expeditious timeline in which it can feasibly complete the scope of work, even if the projected completion date is after the preferred completion date.

## **1.9 RFP Packaging and Delivery**

Proponents shall submit the electronic version of the original Proposal with attachments. A non-editable format for the electronic copies, such as a searchable PDF is acceptable. Proponent shall sign all documents. All pages of the original Proposal must be sequentially numbered (i.e., 1 of the total number of pages, such as 1 of 20) including those pages that are intentionally left blank, if any. Proposals shall be clearly identified and shall be delivered according to Section 1.8.

## **1.10 Confidentiality**

PREPA will take reasonable precautions and use reasonable efforts to protect any claimed proprietary and confidential information of the Proponent contained in a Proposal, provided that such information is clearly identified by the respondent as *Proprietary and Confidential*. Nevertheless, this process may be subject to review from the PREC, which may issue determinations regarding which information is or is not confidential. PREPA also may need to engage in disclosures as provided in Section 1.5.

## **1.11 Legal and Regulatory**

The IRP must conform to established laws and regulations, which include

1. Act 57-2014, as amended
2. Act 4-2016, as amended
3. Act 82-2010, as amended
4. Act 114-2007, as amended
5. Puerto Rico Energy Commission Regulation No. 8594, as amended, in particular Article II. Please note that on February 8, 2018, the PREC issued a Resolution and proposed Regulation of Integrated Resource Plan that would repeal and replace Regulation No. 8594 as currently amended. The proposed regulation might or might not become effective, and may be adopted in a modified form if and when it goes into effect.
6. EPA regulations, including MATS and the proposed Clean Power Rules.
7. PREPA Government Board Vision Statement February 1, 2018.
8. The forthcoming PROMESA board-certified Fiscal Plan for PREPA. Please note that PREPA's proposed Fiscal Plan is in the process of certification by the PROMESA board and certification is expected in the near future.

9. PROMESA Title III Court orders.

The Proponent's response to this RFP must describe in appropriate and sufficient detail how the Proponent will comply with this RFP, including but not limited to the relevant provisions of all of the foregoing laws and regulations. See also Section 3.5.

The Proponent also must be prepared, able, and willing to comply with any and all federal and Puerto Rico legal and regulatory requirements and principles for the protection of critical infrastructure information and other confidential information and controls to ensure the lawful use and disclosure of intellectual property and other confidential information of PREPA and third parties.

The Proponent also should be familiar with the PREC's September 23, 2016, final order in PREPA's first IRP case (case no. CEPR-AP-2015-0002), and the PREC's subsequent orders regarding requests for clarification, reconsideration, and rehearing.<sup>2</sup>

## 1.12 Proposal Contents

The document must include:

1. Topics that the Proponent considers necessary for the success of the IRP.
2. A detailed description of the procedure and methodology to be used to prepare and support the IRP and accomplish the IRP objectives.
3. A detailed description of the data and other information that PREPA must share. Given PREPA's limited resources, also include alternatives to estimate or work with limited data availability.
4. If the Proponent uses computer programs and systems other than the ones used by PREPA, provide a technical description of such systems that will be used by the proponent to prepare the IRP, and how the data from such models can be transferred into PREPA's existing analysis systems at the conclusion of the study.
  - 4.1. PREPA's current software systems:
    - 4.1.1. PROMOD
    - 4.1.2. STRATEGIST
    - 4.1.3. PSS/E
    - 4.1.4. EVIEWS
5. The Proponent's plans for protecting critical infrastructure information and other confidential and proprietary information provided by PREPA and for ensuring adequate computer and information systems security.
6. Provide a total cost for the completion of the IRP as well as a milestone payment schedule.

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<sup>2</sup> The PREC's orders in that case currently may be found here:  
<http://energia.pr.gov/en/dockets/?docket=cepr-ap-2015-0002>

7. Include a contingency for discovery, public and evidentiary hearings, written and oral testimony, and additional studies before regulatory and administrative agencies, such as the PREC, the PROMESA board, and the PREPA Governing Board, among others.
8. Provide a schedule to complete intermediate deliverables and the final IRP.

### 1.13 Evaluation Process & Criteria

Proposals shall be evaluated on a Best Acceptable Value (“BAV”) criteria basis. Under these evaluation criteria, the successful Proponent will not necessarily be the one submitting the lowest cost Proposal.

#### 1.13.1 Pricing Analysis

The Selection Committee will evaluate pricing of Proposals only on a US Dollar basis. The Selection Committee will rank Proposals from lowest to highest prices.

#### 1.13.2 Non-Pricing Analysis

The Selection Committee will also evaluate and consider the following criteria of the submitted Proposals:

1. Proposed Strategy to complete the IRP: methodology, scope, deliverables, etc.
2. Proposals consistent with the terms and conditions of the RFP
3. Proposals consistent with all the Technical Specifications.
4. Proponent’s personnel experience
5. Proposed delivery date of the IRP

#### 1.13.3 Agreement Execution Probability Evaluation

In addition to evaluating the Proposals on a commercial basis (pricing and non-pricing considerations), PREPA will evaluate each Proposal to determine the probability that the parties can successfully execute a contract.

#### 1.13.4 Selection of Successful Proponent

PREPA will rank the Proposals based on the analysis stated above or as further detailed here-in and will identify the responsive and best acceptable value (“BAV”) Proposals to select the successful Proponent.

PREPA has assigned weights to the Pricing and Non-Pricing elements of its evaluation of the Proposals. PREPA will apply those weights to the evaluation scores obtained by Proponents throughout its evaluation process.

### Best Acceptable Value Criteria

(Weights for Pricing and Non-Pricing Evaluation Elements)

<b>Element</b>	<b>Weight</b>
1. Price	25%
2. Proposed strategy - Compliance with IRP methodology, scope, deliverables, etc.	40%
3. Proponents’ personnel experience	35%
<b>Total</b>	<b>100%</b>

## **1.14 Instructions to Proponents**

Please read and carefully follow these instructions. Ignorance or misinterpretation of the instructions shall not be an excuse for failing to comply with them.

### **1.14.1 Interpretation of Documents**

Should any Proponent have questions regarding the RFP documents, the Proponent may submit a written Request for Information or Clarification as provided under Communications with PREPA (Section 1.7), within the specified time and as included above herein. PREPA is not responsible for other explanations or interpretations of the RFP documents that are not submitted pursuant to these instructions. Requests for Information or Clarification submitted out of the specified time or form shall not be considered as submitted and the requesting Proponent assumes full responsibility for its reply and interpretation.

### **1.14.2 Selection and Rejection**

1. The contract shall be awarded to the Best Acceptable Value Proponent that meets the specifications and requirements of this RFP and PREPA's needs in order to be able to successfully complete and commission this IRP. The contract shall not be assigned, ceded, mortgaged, or in any other way transferred without the previous written consent of PREPA's Contracting Officer or authorized representative.
2. PREPA reserves the right to reject any or all of the Proposals, as well as to overlook any minor informality in the Proposals received.
3. Proposals with insufficient information to identify and appropriately qualify the strategy and services offered to complete the IRP shall be rejected.

### **1.14.3 Postponements**

Requests for postponements of the submittal date will be considered by PREPA only when done in writing, shall include the reasons for the postponement request, and shall be submitted at least two (2) days in advance of the submittal date, March 24, 2018. Postponements will only be considered in the best interests of PREPA and in accordance, granted, at its sole discretion.

### **1.14.4 Award Notification**

1. Award will be made to that Proponent whose Proposal represents the Best Acceptable Value to PREPA, considering all elements and criteria evaluated during the Proposal evaluation process as well as the requirements set forth in the RFP, and which are responsive to the best interests of PREPA.
2. PREPA will notify the successful Proponent by a letter sent by e-mail to the address shown on the Proposal, that the Proposal has been accepted and that it has been selected to complete the award procedure. This document shall be used only to establish the intention of PREPA to retain services from a particular Proponent.
3. The Proponent to which a contract is to be awarded shall provide all the required documents to execute the contract within ten (10) calendar days after the day of the award notification.
4. No Proposal shall be considered binding upon PREPA, until a contract has been signed and registered pursuant to the laws of Puerto Rico.

### 1.14.5 Insurance and Bonds

Insurance - The successful Proponent (also referred to here and in the next Section as the “Consultant”) shall comply with all insurance requirements stated hereunder. These requirements will be incorporated in the Contract.

The Consultant shall obtain and maintain in full force and effect during the life of the contract and thereafter as provided herein, policies of insurance covering all the Consultant and its sub consultant operations engaged in by the contract, which shall be formally agreed upon with insurance companies from Puerto Rico, and to that effect it shall provide in original certificates of insurance and endorsements, as follows:

- 1 Workmen’s Compensation Insurance  
The Consultant shall provide Workmen’s Compensation Insurance as required by the Workmen’s Compensation Act of the Commonwealth of Puerto Rico, as applicable. The Consultant shall also be responsible for compliance with said Workmen’s Compensation Act by his subcontractors, agents, and invitees. The Consultant shall furnish PREPA a certificate from the State Insurance Fund showing that all personnel employed in the work are covered by the Workmen’s Compensation Insurance, in accordance with the Contract.
- 2 Employer’s Liability Insurance  
The Consultant shall provide Employer’s Liability Insurance with minimum bodily injury limits of \$1,000,000 for each employee and \$1,000,000 for each accident, covering against the liability imposed by Law upon the consultant as a result of bodily injury, by accident or disease, including death arising out of and in the course of employment, outside of and in the course of employment, and outside of and distinct from any claim under the Workmen’s Compensation Act of the Commonwealth of Puerto Rico.
- 3 Commercial General Liability Insurance  
The Consultant shall provide a Commercial General Liability Insurance with limits of \$1,000,000 per occurrence and \$1,000,000 aggregate.
- 4 Automobile Liability Insurance  
The Consultant shall provide proof of Automobile Liability Insurance with limits of \$1,000,000 combined single limit covering all owned, non-owned and hired automobiles.
- 5 Professional Liability Insurance  
The Consultant shall provide a Professional Liability Insurance with limits of \$5,000,000 per occurrence and \$5,000,000 aggregate.
- 6 Requirements under the Policies  
The Commercial General Liability and Automobile Liability Insurance required under this service contract shall be endorsed to include:

7 As additional insured:

Puerto Rico Electric Power Authority  
Risk Management Office  
PO Box 364267  
San Juan, PR 0093-4267

- 8 A 30 days cancellation or nonrenewable notice to be sent by certified mail with return receipt to the above address.
- 9 An endorsement including this contract under contractual liability coverage and identifying it by number, date and parties to the contract.
- 10 Waiver of Subrogation in favor of PREPA.
- 11 The Breach of any Warranties or Conditions in these policies by the Consultant shall not prejudice PREPA's rights under the policies.

#### **1.14.6 Income Tax Withholding**

1. PREPA will deduct and withhold at source to the Consultant the equivalent of seven percent (7%) from payment for services rendered under this Contract, in compliance with the 1994 Puerto Rico Internal Revenue Code, section 1143, as amended. Notwithstanding, the withholding to be done by PREPA as herein stated could be increased to twenty percent (20%) in the event that the Contractor is a non-resident individual, which is a U.S. citizen, as provided by the 1994 Puerto Rico Internal Revenue Code, section or twenty-nine percent (29%) in the event that the Contractor is a non-resident and non U.S. citizen individual; or a foreign corporation or partnership which is not dedicated to industry or business in Puerto Rico, as provided by the 1994 Puerto Rico Internal Revenue Code, sections 1147 and 1150.
2. If a Release Letter has been issued to the Contractor by the Treasury Department, the Contractor shall be responsible to submit a copy of said Release Letter to PREPA for every calendar year; otherwise, payments under the Contract shall remain subject to withholding at source. All invoices shall be segregated by concepts (services, materials, equipment, etc.), to identify the amounts subject to withholding and avoid undue deductions.
3. PREPA will deduct and withhold a Special Contribution to the Consultant the equivalent of one point five percent (1.5%) from payment for services under the Contract, in compliance with Article 1, Act 48-2013. Notwithstanding, advertising spots, reimbursable expenses, and the costs of equipment and materials are excluded.

## **2 PROJECT DESCRIPTION**

The Scope of Work must address PREPA Governing Board’s Vision for the Future of Power in Puerto Rico (Section 1.3 and below) and the other requirements of this RFP and any Addendums. The Vision includes the following elements: a) Customer-Centric, b) Financial Viability, c) Reliable and Resilient, d) Model of Sustainability, and e) Economic Growth Engine for Puerto Rico, as quoted in Section 1.3.

### Customer-Centric, Reliability and Resiliency

Each customer class has a different requirement for reliability and quality of service. Large commercial and industrial customers require the highest level of reliability and power quality. Critical facilities also require the highest level of reliability. Rural customers cannot tolerate long duration of outages, and the remaining customers require good power quality and can tolerate some minimal outages. These customer requirements will drive the definition for resource adequacy, as well as the assumptions around microgrid and distributed generation deployment.

Reliability and resiliency can be addressed from both supply and grid perspectives. Supply options may include smaller and more dispersed generation, and diversification of fuel types, and renewables. Grid enhancements may include minigrids, microgrids, distributed generation and storage.

### Financial Viability and Economic Growth Engine

These goals may be satisfied by meeting customer objectives while minimizing total system costs. Total system costs include: a) Capital costs, b) Operating expenses, c) Fuel costs, and d) Business interruption cost (or value of lost load, or “VOLL”). Fuel costs, especially fossil fuels, have different volatility characteristics than capital and operating costs, and that volatility must be accounted for in the analysis. Diversification of fuel types also can minimize fuel cost and volatility.

The VOLL may be different for each customer class, and may be mitigated using different supply and demand strategies. Total system cost can be calculated as a net present value to capture the trade-offs and varying characteristics between the different cost components.

### Sustainability and Environmental Protection

The IRP must provide for meeting, at the earliest practical date, as a minimum requirement, the renewable integration targets as established by Act 82-2010, as amended. The optimization methodology should not constrain the quantity of renewable energy, but should allow economic builds. The targets should be considered a floor quantity that is forced in only if the economic builds do not meet the minimum. The renewable portfolio standard statute does provide grounds for non-compliance, including but not limited to “insufficiency of sustainable renewable energy

or alternate renewable energy providers” and “the excessive cost of acquisition of the electric power generated by a renewable energy producer”. If the IRP does not provide for promptly meeting the renewable integration targets, then it must adequately and credibly explain and support the reason(s).

The IRP also must bring PREPA into EPA MATS compliance in an expeditious manner. All other current EPA and other applicable environmental regulations also must be considered and met.

Given the ongoing reconstruction efforts after the impacts of Hurricanes Irma and María, the IRP should consider the possible federal government reconstruction initiatives.

### **3 SCOPE OF WORK AND TOPICS TO BE INCLUDED IN THE IRP**

The IRP services must provide for an IRP that conforms with established laws and regulations (Section 1.11), conform with the PREPA Governing Board’s Vision for the Future of Power in Puerto Rico (see Sections 1.3 and 2), and conforms with all other requirements of this RFP and any Addendums. The IRP services should include the following tasks and analytical elements. The Proponent can modify and/or add to these items if those modifications enhance the ability to deliver on the Board goals in Sections 1.3 and 2.

#### **3.1 Stakeholder Engagement**

The stakeholder engagement component will be a critical part of the IRP process. Given the emphasis on the transformation of the PREPA system, the Proponent should anticipate a significant amount of engagement with both internal stakeholders at PREPA and external stakeholders, including the public, industry groups, current investors, and potential investors. PREPA will expect concise, but continuous, communications with the Proponent.

1. Engage internal stakeholders
  - a. Interface with PREPA management and planning staff to align goals and deliverables
  - b. In-person kick-off meeting at the start of the project
  - c. Prepare a clearly defined work plan with schedule and interim deliverables
  - d. The Proponent will maintain weekly communications with PREPA staff to update project progress, data issues, questions on scope and methodology, etc.
  - e. The Proponent will present the results of the IRP to PREPA at a meeting at the PREPA offices
2. Engage external stakeholders
  - a. Initial public meeting to present IRP methodology and principal assumptions
    - i. Listen to concerns of the public, industry groups, environmental groups, current bondholders, and potential investors
    - ii. Discuss the role the IRP will play in reliability and resiliency

- b. Meetings with potential project investors and industry groups to solicit visions and solutions for grid transformation
- c. Second public meeting to present the incorporation of comments into the IRP assumptions, and to solicit additional comments
- d. At the conclusion of the IRP, and presentation of results to PREPA, a final public meeting to present the results of the IRP to the public
- e. PREPA will provide the facilities for all meetings at no cost to the Proponent
- f. The Proponent will prepare the presentations for all meetings, and will be required to present to the public. Each public meeting will be scheduled for a 4-hour time frame.

### **3.2 Demand**

1. Load forecasts will be produced for a planning period of twenty (20) years
2. PREPA currently utilizes three separate economic models to develop the peak demand and energy forecasts for residential, industrial and commercial customers.
  - a. This RFP asks the Proponent to evaluate the PREPA economic models, and either use them or the Proponent's own load forecast model
3. Produce a range of demand forecast scenarios
  - a. At a minimum, low, reference and high cases must be considered
  - b. Load decline scenario assuming current economics
  - c. Load growth scenario assuming PREPA transformation drives economic growth
4. Energy Efficiency
  - a. Summary of higher efficiency technologies
  - b. Account for measure penetration and adoption rates unique to Puerto Rico
  - c. Technical, Economic and Achievable potentials
  - d. Comply with all mandated energy efficiency targets
5. Demand Response
  - a. Current programs
  - b. Technical, Economic and Achievable potentials
6. Potential impact of smart grid technologies on load growth and load shape
7. Potential to reduce Technical and Non-Technical Losses
8. Produce final peak demand and energy forecasts netted for energy efficiency and demand response

### **3.3 Resource Adequacy**

While the system must have enough resources to maintain reliability and resiliency, reducing the planning reserve margin may also reduce total system costs.

1. Planning reserve margin calculation methodology

- a. Must be dynamic and change over time to account for changes in the characteristics of the supply portfolio
  - b. Reliability requirements driven by the customer class requirements in Customer-Centric information provided by PREPA
2. Factors that may drive changes in Planning Reserve Margin
- a. Improved availability of existing generation under privatization
  - b. Improved availability from new generation
  - c. Smaller generators in more diverse locations
  - d. More renewable generation in diverse locations, some with storage
  - e. Impact of minigrids/microgrids around critical infrastructure and large C&I customers

### 3.4 Supply-Side Plan

1. Methodology Requirements
- a. Must be able to dynamically select the optimal portfolio given a view of the future (e.g., demand, fuel prices, generation cost). Not an evaluation of pre-selected supply portfolios.
  - b. Minimizes Total System Costs
    - i. Capital, operating expenses, fuel and VOLL
    - ii. Both supply-side and demand-side resource options
  - c. Satisfies and iterates with the Planning Reserve Margin
  - d. The selected portfolio should represent the best options across an efficient frontier of possible outcomes
  - e. All references to costs in the IRP must be clear and specific as to whether they are real or nominal figures, as of what date, and, if they include inflation or other factors, the values and sources of those factors.
2. Existing Generation
- a. Impact of the Governor's plan to divest and privatize all current PREPA generation
    - i. Potential performance and availability improvements
    - ii. Repowering and conversion opportunities
    - iii. Potential retirement
    - iv. Potential limited use designations
    - v. Potential use for transmission system support, such as system black start and frequency regulation
  - b. Evaluation of the effect of a cancelation/renegotiation/extension of current PREPA purchase power agreements
    - i. AES and EcoEléctrica
    - ii. Current renewables contracts
3. New Generation

- a. Cost and performance of new resources as deployed in Puerto Rico, with appropriate financing costs
    - i. New fossil fuel generation using new or existing fuel options
      - 1. Combined-cycle and simple-cycle turbines
      - 2. Internal combustion engines
    - ii. New renewable generation of all types (wind, solar, biomass, etc.) with and without storage
    - iii. Storage resources
    - iv. Distributed energy resources
  - b. Application of storage co-located with generation and/or dispersed on the grid
  - c. New generation must be placed in the right locations and in appropriate quantities to alleviate transmission constraints. The Proponent and PREPA will use existing transmission studies, to the extent practical, to determine the appropriate quantity and locations.
4. Fuel Supply and Prices
- a. Forecast of fuel prices delivered to Puerto Rico, or similar island locations
  - b. Quantitative treatment of fossil fuel supply and price risk
  - c. The fuels should include delivered costs of liquefied natural gas, liquefied petroleum gas, bunker fuel, diesel, and any other alternatives
  - d. Produce a range of fuel prices; at a minimum low, reference, and high fuel prices
  - e. Potential fuel projects
    - i. Aguirre Offshore Gasport
    - ii. Natural Gas to the North plants
    - iii. Other alternatives
5. Minigrids/Microgrids for industrial, large commercial, and critical infrastructure loads
6. New transmission and distribution infrastructure, with consideration of hardening for system resiliency
7. Environmental and renewable portfolio standard compliance
- a. Puerto Rico Renewable Portfolio Standard
  - b. US EPA Mercury and Air Toxics Standards Compliance
  - c. All current EPA and other environmental Regulations

### 3.5 Deliverables

The IRP report contents are set by PREC regulations, as amended, and consist of the following in PREC's pending proposed IRP regulation referenced in Section 1.11. The main body of the report will contain the following sections based on and assuming the adoption of that proposed regulation. **Please refer to the PREC proposed IRP regulation attached to this RFP for details on the contents of each section. PREPA can help assemble some of the required information.**

1. Part One - Introduction and Summary of Conclusions
2. Part Two - Planning Environment
3. Part Three - Load Forecast
4. Part Four - Existing Resources
5. Part Five - Resource Needs Assessment
6. Part Six - New Resource Options
7. Part Seven - Assumptions and Forecasts
8. Part Eight - Resource Plan Development
9. Part Nine - Caveats and Limitations
10. Part Ten - Action Plan

The Technical Appendices shall include all ancillary information and descriptions required by PREC regulations but not are included in the main body of the report.

1. Appendix 1 - Transmission and Distribution Planning
2. Appendix 2 - Prior Action Plan Implementation Status
3. Appendix 3 - Renewable Energy Project Status
4. Appendix 4 - Demand-Side Resources
5. Appendix 5 - New and Existing Supply-Side Resources Supplemental Data
6. Appendix 6 - Additional information, as required by the Commission through an Order, that may address additional subjects related to integrated resource planning.

The deliverables also shall include source references and documents, work papers, and written testimony as provided in the PREC's proposed IRP regulation.

The deliverables listed in this Section 3.5 are not intended to be exhaustive. The Proponent must plan to comply with all applicable requirements.

## **4 QUALIFICATIONS**

The qualifications required are a reflection of the scope of work described in Sections 2 and 3. Proponents can leverage information already provided in the response to the prior Request for Information issued by PREPA, with clarifications on how those qualifications meet these requirements. Proponents are also encouraged to partner if necessary, because the proper execution of this IRP will depend on the capabilities of the project team. If Proponents partner, they shall submit a unified (combined) response to this RFP.

### **4.1 Background of Proponent**

1. Provide Proponent's legal name, address, structure, nature of business and description, number of years in business, and number of permanent employees.
2. Two years (the most recent) of audited financial statements.

3. The name, address, telephone number, e-mail and facsimile number of a representative who is authorized to execute letter agreements, memorandum of understandings (“MOU”), or contracts under the submitted proposal with the Puerto Rico Electric Power Authority.
4. Provide a listing and background of principal officers, owners, or partners.

#### **4.2 IRP Team and Organizational Chart**

1. The proponent shall submit a listing and background of project technical staff and management team, including any sub-contractors that will participate in the study.
2. The proponent shall provide an organizational chart showing the management and technical team for the IRP.
3. A résumé for each member of the team shall be provided for evaluation.

#### **4.3 Experience**

1. Provide a listing of the IRPs or similar projects performed by the company, by the technical team, and by the management team. Place special emphasis on studies performed for electrically isolated power systems similar to PREPA.
  - a. Provide examples and references for IRP’s done for island (or other electrically isolated) systems similar to PREPA
  - b. Provide examples and references for IRP’s done for large utilities
  - c. Indicate which IRP’s or similar projects were performed by and/or managed by the members of the technical team and management team, and their roles in those projects
  - d. Indicate the IRP projects on which the technical team and the management team had previously worked together
2. Given the PREPA governing board’s Vision for the Future of Power in Puerto Rico, it is important that this IRP be more comprehensive than a traditional IRP. When considering staffing for the IRP, please address the following areas of expertise
  - a. The modeling methodology must be able to select an optimal portfolio of resources, instead of simply testing pre-defined portfolios
  - b. Forecasting of fuel prices delivered to Puerto Rico, or similar island locations, including Quantitative treatment of fossil fuel risk. The fuels should include delivered costs of liquefied natural gas, liquefied petroleum gas, bunker fuel, diesel, and any other alternatives
  - c. The cost of new generation specific to Puerto Rico or similar island locations, including the cost of conventional generation, renewable generation, storage, and microgrids. Generic cost estimates for projects on the mainland will not be sufficient
  - d. Integration cost of new renewables, storage and microgrids.
  - e. Integration of weather risk to optimization models with respect to renewables.
  - f. Load forecasting, including potential load and load shape evolution due to economic changes and the penetration of microgrids. Explain whether load forecasting algorithms are deterministic, dynamic, or probabilistic.
  - g. Energy efficiency and demand-side management
  - h. The modeling of storage and its impact on the grid

- i. The modeling of microgrids and their impact on system reliability and resilience
  - j. Analysis of transmission and distribution infrastructure and reliability
  - k. Quantitative Analysis of system wide infrastructure resilience
  - l. Environmental regulations and compliance
  - m. Utility (including integrated and restructured utilities and generation) performance metrics
  - n. Diversification of energy sources
3. Experience with protecting critical infrastructure information, confidential and proprietary information of other parties, and computer and information systems security.
  4. Provide a detailed list of all prior work completed in Puerto Rico.
  5. Experience with discovery in investigations, regulatory proceedings, and/or court litigation.
  6. Provide a list of prior relevant written/oral testimony experience, in particular defending IRP's. The chosen consultant will be required to present and provide sworn testimony regarding the presented IRP, as indicated earlier in this RFP.
  7. Indicate compliance with Article 3 of Act 458-2000.

#### **4.4 Equal Opportunity Employer**

Be an equal opportunity employer and comply with the local and federal laws which prohibit discrimination based on age, race, color, gender, national or social origin, social status, political ideas or affiliation, religious creed, for being or perceived to be a victim of domestic violence, sexual aggression or harassment; civil status, war veteran and handicap or disability status.

#### **4.5 Authorized to work in Puerto Rico**

Be duly organized under applicable Puerto Rico laws and authorized to do business in Puerto Rico. All Proponents that are out-of-state corporations must have filed the necessary documents with the Puerto Rico State Department requesting authorization to conduct business in Puerto Rico and open, maintain, and operate a full time operating office in Puerto Rico, through which all issues related to the project will be channeled, resolved, managed, and completed.

#### **4.6 Spanish Language Experience**

Detail the Spanish language abilities (speaking/reading/writing) of all key team members. At least one member of the team must have advanced Spanish language experience/abilities.

#### **4.7 Conflict of Interest**

1. Proponent must disclose any and all conflicts of interest against PREPA or the Government of Puerto Rico and any agencies and instrumentalities thereof. Please inform of any engagements, current or recent (five years or less), with any of PREPA's bondholders or other creditors or contractual counter-parties.
2. Please report contracting by any government agency, corporation, or other legal entity in Puerto Rico
3. Please report any contracting by any advocacy group in Puerto Rico or the US Mainland.

4. Describe any and all completed, pending, and potential litigation and regulatory proceedings that could affect the viability of the Proponent's proposal in response to this RFP or the Proponent's financial stability or legal eligibility to enter into the Contract. This includes, without limitation, any civil or criminal proceeding involving any principals of the Proponent.
5. Non-disclosure of any conflict of interest or other required information can lead to the termination of the RFP, or the study process.

## **5 DATA AVAILABLE FROM PREPA**

The following is data available from PREPA to support the IRP analysis, subject to possible requirements relating to critical infrastructure information and confidential and proprietary information.

1. Data required for Demand Forecasting
2. Electricity Sales Records
3. Demand Records
4. Macro-Economic Data
5. Population/Demographic Data
6. Energy End-Use Data
7. Plant and T&D system configuration and data
8. PREPA Planning and Studies Tools
  - a. PROMOD v 11 with HMC module – Generation System Planning, Dispatch and Cost Allocation
  - b. Strategist (Proview) Generation capacity expansion planning
  - c. Eviews v8 - Econometric Analysis
  - d. PSS/E v32 - Transmission system load flow and dynamic analysis (long and short term)
9. The proponent must be able to use or convert the data files from PREPA's existing software systems.
10. Other sales and demand data will be provided in Excel, Access, or text files, depending on data volume