

**GOVERNMENT OF PUERTO RICO  
PUERTO RICO ENERGY BUREAU**

IN RE: REVIEW OF THE PUERTO RICO  
ELECTRIC POWER AUTHORITY  
INTEGRATED RESOURCE PLAN

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**No.** CEPR-AP-2018-0001

**SUBJECT:** Direct Testimony of  
Efran Paredes Maisonet

Direct Testimony of

**EFRAN PAREDES MAISONET**

Director, Planning and Environmental Protection Division  
Puerto Rico Electric Power Authority

June 14, 2019

*EPM*

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
A.	Witness Identification .....	1
B.	Summary of Direct Testimony.....	1
C.	Qualifications and Professional Background.....	3
II.	DISCUSSION .....	3
III.	PREPA’S COMPLIANCE WITH APPLICABLE REQUIREMENTS .....	7
IV.	CONCLUSION.....	8

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**I. INTRODUCTION**

**A. Witness Identification**

**Q. Please state your name, title, employer, and business address.**

A. My name is Efran Paredes Maisonet. I am Director, Planning and Environmental Protection Division, of the Puerto Rico Electric Power Authority (“PREPA” or the “Authority”). My business address is 1110 Ponce de Leon Avenue, San Juan, Puerto Rico 00907.

**Q. On whose behalf are you testifying before the Puerto Rico Energy Bureau (the “Energy Bureau”) (formerly known as the Puerto Rico Energy Commission)<sup>1</sup> in this proceeding?**

A. I am testifying on behalf of PREPA.

**Q. Have you previously provided testimony before the Energy Bureau?**

A. No. I have spoken at conferences and technical hearings before the Energy Bureau, but I have not submitted testimony.

**B. Summary of Direct Testimony**

**Q. What are the purposes and subjects of your Direct Testimony?**

A. My Direct Testimony addresses the following purposes and subjects:

- 1) PREPA’s retention of Siemens Power Technology International (“Siemens”) as PREPA’s integrated resource plan (“IRP”) consultant;

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<sup>1</sup> References in my testimony to the Energy Bureau include the former Puerto Rico Energy Commission.

- 20                   2)     PREPA's role in the development of the Integrated Resource Plan  
21                   ("IRP"), in particular PREPA's provision of information and documents to  
22                   Siemens for purposes of work on the IRP as well as guidance concerning  
23                   the melding of the Energy System Modernization Plan (the "ESM Plan")  
24                   and the Scenario 4, Strategy 2 ("S4S2"), Resource Plan into the Action  
25                   Plan that PREPA has identified as its Preferred Resource Plan; and  
26                   3)     PREPA's compliance with Energy Bureau requirements, in particular  
27                   PREPA's plan to post the IRP (subject to applicable redactions for  
28                   confidential material) on PREPA's web site.

29   Q.     **What are your conclusions and recommendations?**

30   A.     Siemens was retained in accordance with a request for proposal ("RFP"). PREPA  
31            complied appropriately with requests for information and documents by Siemens. The  
32            IRP appropriately incorporates input that PREPA management provided to Siemens  
33            concerning the enhancement of system reliability and resiliency, as well as the  
34            maintenance of options in the selection of generation resources in the face of uncertainty,  
35            that drove the development of the ESM Plan. PREPA has sought to comply with the  
36            Energy Bureau's requirements (subject to a Motion for limited waivers) and PREPA has  
37            posted the IRP (subject to applicable redactions for confidential information) on  
38            PREPA's web site. The basis for my conclusions and recommendations is presented  
39            below in my testimony.

40   Q.     **Are there any exhibits attached to your testimony?**

41   A.     Yes. My testimony includes the following attachment:

- PREPA Exhibit (“Ex.”) 7.01: My *curriculum vitae*.

**C. Qualifications and Professional Background**

**Q. How long have you been Director, Planning and Environmental Protection Division of PREPA and what are your duties and responsibilities in that position?**

A. I became Director, Planning and Environmental Protection Division of PREPA in Fall 2016. In brief, my duties are that I am responsible for the short and long-term development of the generation resources and T&D infrastructure necessary to provide the highest quality service at the lowest cost in harmony with current environmental regulations.

**Q. What positions have you previously held at PREPA?**

A. My prior positions at PREPA are described in PREPA Ex. 7.01.

**Q. Do you hold any professional licenses?**

A. Yes. I hold Puerto Rico Professional Engineer License #17776. I am a member of the Puerto Rico Professional College of Engineers and Land Surveyors.

**Q. What is your educational background?**

A. I have a M.S.S.E. - Power; University of Puerto Rico, Mayagüez Campus, 1999; and, a B.S.S.E - Power; University of Puerto Rico, Mayagüez Campus, 1997.

**II. DISCUSSION**

**Q. How did PREPA select Siemens as the consultant for the IRP?**

A. I was not personally involved in the process details. However, the process was performed by the area of PREPA that I lead, and the process was made under my

63 instructions. PREPA issued a Request for Proposals (RFP) in 2018, seeking proposals  
64 for professional services for performing the IRP. PREPA selected Siemens in accordance  
65 with this process. PREPA determined that Siemens' proposal qualified and was superior  
66 to the proposals of other bidders. The Energy Bureau, pursuant to one of its orders, later  
67 (in November 2018) was provided by PREPA with copies of the Siemens contract and of  
68 the one amendment of the contract.

69 Q. **Has PREPA provided Siemens with information and documents for the**  
70 **performance and completion of the IRP?**

71 A. I was not personally involved in the process and details. However, the process was  
72 performed in part by the area of PREPA that I lead, and, in my answer, I am answering  
73 on behalf of PREPA as a whole based on information that I have received from within  
74 PREPA.

75 Yes. As you would expect, Siemens, in order to perform its major role in  
76 preparing the analysis required for the IRP, needed, among other things, a vast range of  
77 information and documents from PREPA. Many PREPA personnel and departments  
78 were involved in collecting and providing the material requested by Siemens. To the best  
79 of my knowledge, at all times, PREPA sought to and did provide accurate and complete  
80 material to Siemens.

81 Q. **Can you comment on the input that PREPA management provided to Siemens as it**  
82 **developed and refined the IRP?**

83 A. Yes. Representatives of PREPA's Planning group and PREPA senior management  
84 interacted regularly with Siemens representatives, including Dr. Nelson Bacalao, who is



85       testifying in this proceeding, concerning the development of the Strategies and Scenarios  
86       that were analyzed in the IRP. PREPA management provided input to Siemens on the  
87       basis of PREPA's experience in operating, maintaining, and restoring its transmission  
88       and distribution system and its various generating resources on measures and resource  
89       selection alternatives that ought to be considered and included in the Long Term Capacity  
90       Expansion ("LTCE") model runs in the interest of enhancing system reliability and  
91       resiliency. PREPA management also provided input regarding steps that ought to be  
92       included in Resource Plans to hedge against uncertainties in load forecasting, the cost of  
93       new generation and battery storage resources, and the pace at which generation and  
94       storage resources will be added to the system. This input informed the development of  
95       the ESM Plan, which was considered along with the other cases that were analyzed as the  
96       IRP was developed. Dr. Bacalao discusses this in some detail in his testimony (PREPA  
97       Ex. 6.0) addressing the 35 final Resource Plans that Siemens studied most closely in  
98       developing the IRP.

**Q.   How was the ESM Plan evaluated in the course of the IRP development process?**

**A.**   As Dr. Bacalao explains, the ESM Plan was among the 35 Long Term Capacity  
Expansion Plans that were identified through Siemens' analyses as being worthy of  
detailed assessment. The ESM Plan, along with the 34 other LTCE Plans, were  
investigated in depth to assess their feasibility and to identify uncertainties, taking into  
account stakeholder input. Of those LTCE Plans, the ESM Plan, and the very similar  
Scenario 4, Strategy 2, Plan were identified through the IRP development process as  
being low cost and practical, with the ESM Plan having the advantage of leaving open

107 options that address uncertainties in load forecasts and future costs and availability of  
108 generation resources and battery storage. PREPA management believes that preserving  
109 these options is important given the critical importance of improving system reliability  
110 and resiliency as new renewable resources are deployed.

111 Q. **How do the ESM Plan and the S4S2 Plan relate to the Action Plan that PREPA is**  
112 **advocating?**

113 A. The Action Plan that PREPA recommends would generally implement the actions  
114 included in the ESM Plan that were also identified during the process of optimizing the  
115 S4S2 Plan. This would entail preliminary engineering and permitting activities for  
116 certain generation resources, including certain strategically located natural gas-fired  
117 combustion turbine generating facilities and related fuel delivery infrastructure, that  
118 would be pursued as a hedge against the possibilities that load grows more quickly than  
119 forecasted, renewable generation resources and battery energy storage systems cost more  
120 than projected, or generation resource or storage additions do not occur at the rapid pace  
121 required to meet system requirements. These activities can be suspended, and “off  
122 ramps” can be taken, before long-term commitments are made, if it is later determined  
123 that particular resources will not be needed. The Action Plan will permit PREPA to take  
124 the steps outlined in the ESM Plan as and to the extent they are required, and will give  
125 PREPA the flexibility to follow the S4S2 Plan more closely if load and new resource  
126 additions follow the trajectories assumed in the IRP. PREPA management feels that it is  
127 important for Puerto Rico to build this sort of optionality into the resource plan that is  
128 ultimately adopted. For this reason, as explained in the testimony being offered by Dr.



Bacalao, Mr. Filsinger, and Mr. Lee, PREPA has selected the Action Plan as its Preferred Resource Plan.

**III. PREPA'S COMPLIANCE WITH APPLICABLE REQUIREMENTS**

**Q. Has PREPA in its work with Siemens sought to develop an IRP filing that complies with all applicable Energy Bureau directives?**

A. Yes, provided that PREPA contemporaneously is filing a Motion seeking limited waivers of Energy Bureau directives. Setting that aside, PREPA has worked with Siemens to comply with all applicable Energy Bureau directives. That includes, but is not limited to, PREPA working with Siemens to comply with the Energy Bureau's March 14, 2019, order and later orders.

**Q. Has PREPA made the IRP accessible on its website?**

A. Yes. In compliance with Regulation No. 9021, § 2.04(B), PREPA has posted the public version of IRP filing on its website. Portions of the IRP that are designated as confidential are not included in the public version. PREPA filed a Motion with the Energy Bureau to support and confirm the confidentiality designations, which I understand the Energy Bureau to have approved. Many of the confidentiality designations involve Critical Energy Infrastructure Information ("CEII") protected from public disclosure by federal and Puerto Rico law. My understanding is that the Energy Bureau has been very consistent in protecting such materials. The Bureau did so with PREPA's February 13, 2019, IRP filing. Reg. No. 9021, § 2.04(B), provides for withholding of confidential material, including but not limited to CEII, from the website posting.

151 IV. CONCLUSION

152 Q. Does this complete your Direct Testimony?

153 A. Yes.

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ATTESTATION

Affiant, Efran Paredes Maisonet, being first duly sworn, states the following: The prepared Pre-Filed Direct Testimony and the information, documents and workpapers attached thereto and the portions of the IRP filing I am sponsoring constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the Pre-Filed Direct Testimony if asked the questions propounded therein at the time of the filing. Affiant further states that, to the best of his knowledge, his statements made are true and correct.

  
 Efran Paredes Maisonet

Affidavit No. 1544

Acknowledged and subscribed before me by Efran Paredes Maisonet, in his capacity as Director, Planning and Environmental Protection Division, for the Puerto Rico Electric Power Authority, who is personally known to me or whom I have identified by means of his driver's license number \_\_\_\_\_, in San Juan, Puerto Rico, this 14 day of June, 2019.

  
 Public Notary



# Efran Paredes Maisonet

## Degrees

M.S.S.E. - Power; University of Puerto Rico, Mayagüez Campus, 1999  
B.S.S.E - Power; University of Puerto Rico, Mayagüez Campus, 1997

## Experience

### **Puerto Rico Electric Power Authority (PREPA)**

#### **Director of Planning and Environmental Protection Directorate**

Responsible for the short and long-term development of the generation resources and T&D infrastructure necessary to provide the highest quality service at the lowest cost in harmony with current environmental regulations.

August 2016 – present  
Full Time

### **Puerto Rico Electric Power Authority (PREPA)**

#### **Planning and Research Division Head**

Supervise the main areas of the planning perspective – Generation, Transmission, Distribution, Renewables, Engineering Systems, Rates and Forecasts. Responsible of prepare PREPA's Capital Improvement Program.

October 2015 – August 2016  
Full Time

### **Puerto Rico Electric Power Authority (PREPA)**

#### **General Engineer Super (Planning and Research Division - Transmission Depart)**

Transmission System Planning, Load Flow Analysis, Breaker Duty Analysis, Short Circuit Analysis, Dynamic and Stability Studies, New Generation and Renewable Generation Interconnection Studies, Renewable Generation Evaluation of Compliance with PREPA's Minimum Technical requirements, Evaluation of Renewable Energy Utility Scale and Net Metering Projects Interconnection, Power Factor Correction, Research and Evaluation of New Technologies

January 2013 - October 2015  
February 2000 – March 2009  
Full Time

**Office of the Governor of Puerto Rico**

**Deputy Advisor to the Governor: Energy and Environment**

Evaluate and recommend necessary changes to existing energy and environmental public policy and regulations from various government agencies. Recommend and establish new policies and goals for energy efficiency and conservation, renewable and alternate energy sources.

March 2009 – December 2012

Full Time

**Academic Experience**

**Polytechnic University of Puerto Rico**

**Lecturer II**

Power System Analysis II, Power System Analysis Lab, Electromechanical Energy Conversion I, Electromechanical Energy Conversion Lab I, Circuit Analysis I

August 1999 – present

Part Time

BPM

**Certifications or Professional Registrations**

Puerto Rico, Professional Engineer (PE) License #17776

**Membership in Professional Organizations**

College of Engineers & Surveyors of PR (CIAPR)