COMMONWEALTH OF PUERTO RICO
PUERTO RICO ENERGY COMMISSION

RE: INTEGRATED RESOURCE PLAN FOR THE PUERTO RICO ELECTRIC POWER AUTHORITY	**MATTER NO.:** CEPR-AP-2015-0002 **SUBJECT:** IRP COMPLIANCE; INFORMATION REQUIREMENTS; INTERVENORS' COMMENTS

ORDER ON IRP COMPLIANCE AND INTERVENORS' COMMENTS

Through Regulation No. 8594, known as the Regulation on the Integrated Resource Plan for the Puerto Rico Electric Power Authority ("Regulation 8594"), the Puerto Rico Energy Commission ("Commission") established the content requirements of PREPA's first Integrated Resource Plan ("IRP") proposal. These requirements were designed in light of what other jurisdictions generally require in an IRP filing, the best practices in the electric power industry, and PREPA's and Puerto Rico's unique situation.

PREPA submitted all parts of its IRP filing on September 30, 2015. Since then, the Commission has been evaluating PREPA's entire IRP proposal in light of the requirements established in Regulation 8594. As a result of this analysis, the Commission has identified multiple deficiencies in the IRP proposal, which prevent the Commission from considering and approving an IRP that represents the least-cost alternative to manage resources, promotes the public policy of energy efficiency and conservation, ensures an adequate management of demand, and complies with pertinent environmental regulations.

Pursuant to Section 3.05 of Regulation 8594, the Commission orders PREPA to amend and supplement its updated IRP filing per the requirements listed below in Part I, in order to address the identified deficiencies, and to place the Commission in a position to review and approve an IRP that complies with its purpose. Similarly, the Commission has identified areas where intervenors' input would aid the Commission in evaluating PREPA's IRP proposal. Therefore, the Commission invites all intervenors to answer the questions listed below in Part III. Finally, the Commission reserves the right to make additional requirements to PREPA in light of intervenors' answers.[1]

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[1] Intervenors and *amicus* have already identified their own concerns with PREPA's IRP proposal. NRG Energy, Inc. and its affiliates, York Capital Management Global Advisors, LLC and ITC Holdings (collectively, the "Consortium Members") stated that they have devised an alternative proposal to PREPA's IRP. Meanwhile, Enlace de Acción Climática, El Puente de Williamsburg, Inc., and Comité Diálogo Ambiental, Inc. (collectively, "El Puente-ELAC y Diálogo") commissioned a study titled "Oportunidad Para Un Nuevo Trayecto del Sistema Eléctrico de Puerto Rico". Lastly, Energy Answers Arecibo, LLC stated that PREPA's IRP filings did not properly consider Energy Answers' waste to energy generation project.

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I. Amendments to PREPA's updated IRP filing

To correct the IRP's deficiencies, PREPA shall amend its updated IRP filing as required below. **PREPA shall file the updated IRP amendments on or before March 4, 2016.** The following requirements describe modifications that must be made to all revised scenarios.

1. Demand Side Management ("DSM") - Energy Efficiency ("EE")

a. As a general matter, an evaluation of the impact of DSM is critical in integrated resource planning. In recognition of this, Section 6C of Act No. 83 of May 2, 1941, as amended, known as the Electric Power Authority Act, states in subparagraph (h)(ii)(B) that "every resource plan shall include, but not be limited to [...] an evaluation of the conservation resources available in the market, including the management of electricity demand, as well as an evaluation of the programs in effect and the necessary programs to improve energy conservation." PREPA's request for waiver on the requirements of section 2.03(B)(13) of Regulation 8594, filed on June 5, 2015, specifically identified that PREPA was unable to develop "lengthy empirical studies on the behavior of all of PREPA's customers". After careful evaluation, the Commission waived PREPA's compliance with the requirement to develop potential studies. However, said waiver did not include provisions that would permit PREPA to refrain from incorporating low cost demand-side resources in its IRP filing, which is inconsistent with reasonable least-cost planning. **Thus, PREPA must find a mechanism of incorporating these resources into its plan development.**

b. In recognition of the short time frame available to PREPA in the development of the initial and updated IRP, the Commission provides the following substitute assumptions for PREPA's planning, and **orders it to run the energy efficiency procurement schedule scenarios as outlined below:**

Starting in 2017, ramping from current penetrations of cost effective energy efficiency (or zero, if applicable) to 1.5% incremental additional savings per year as a fraction of total sales, at a ramp rate of 0.2% incremental savings per year, **run the following scenario, according to the table below.** For these scenarios, assume a cost of 4.5 cents per kWh for EE, using the dollar value for the year 2014, and assume that the load shape of EE is identical to the overall aggregate load requirement for PREPA. Also, break down load (peak, energy) by sector and class, including typical and peak day demand.

Year	Ramp Rate
2017	0.2%
2018	0.4%
2019	0.6%
2020	0.8%
2021	1.0%
2022	1.2%
2023	1.4%
2024	1.5%
2025 and thereafter	1.5%

2. **Distributed Generation ("DG")**

PREPA is ordered to clarify the baseline assumption of expected DG penetration as a modification to load. It shall make the representation explicit (i.e. baseline load conditions and as modified by DG, intermittent renewable energy and combined heat & power DG).

3. **Renewable Portfolio Standard ("RPS")**

PREPA is ordered to do the following:

a. Clarify the assumed costs used for the evaluation of utility-scale solar PV that led to the conclusion that full RPS compliance was unreasonable due to cost.

b. Run a scenario, where there is full RPS compliance, starting with a fifteen percent (15%) renewable penetration achieved by the year 2020, with clear and explicit assumptions about the prices and availability of renewable energy.

c. Examine whether or not Renewable Energy Certificates from renewable energy DG would allow PREPA to meet the RPS and the technical and financial implications.

4. **Demand Response**

PREPA is ordered to co-optimize the expected renewable energy load shape and demand response programs and do the following:

a. Assess opportunities for highly cost effective commercial- and industrial-scale programs.

b. If the evening peak remains problematic, seek alternative management options, focusing on the residential sector as appropriate.

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5. Central Station Build-out

PREPA is ordered to do the following:

a. Provide six (6) repowering scenarios as listed below that optimally meet demand, assuming the above build-out in distributed generation, energy efficiency, renewable energy and demand-side resources:

   i. Build-out optimized for presence of AOGP, AES & EcoEléctrica;

   ii. Build-out optimized for presence of both AES & EcoEléctrica but not AOGP;

   iii. Build-out optimized for presence of both AOGP & EcoEléctrica but not AES;

   iv. Build-out optimized for presence of EcoEléctrica but absence of both AOGP and AES;

   v. Build-out optimized for presence of AES, but absence of both AOGP and EcoEléctrica;

   vi. Build-out optimized for absence of AES, AOGP, and EcoEléctrica.

6. Transmission

PREPA's assumption of transmission projects required to reach and maintain a reliable system are premised on a portfolio and future that are inconsistent with PREPA's preferred portfolio. PREPA's transmission requirements are laid out in the IRP (Vol. II), but in all cases are analyzed against Portfolio 2, rather than PREPA's preferred Portfolio 3.

To rectify this inconsistency, PREPA shall:

a. List all major planned transmission upgrades in order of priority with any assumptions made clear and explicit and the basis for the prioritization clearly explained;

b. Provide a table elaborating the cost and timing of each major project; and

c. Evaluate transmission requirements for the revised scenarios, if different, and identify which elements of the planned transmission upgrades remain in place after the system is revamped to incorporate the maximum feasible amounts of renewable and distributed generation, demand response and energy efficiency.

7. Storage Options

PREPA is ordered to do the following:

a. Evaluate storage costs against the cost of curtailment for renewable energy resources (make storage cost assumptions clear); use data in Figure 7-27 of PREPA's Renewable Integration Study to plot the cost of storage and the cost of *curtailment versus* total installed storage capacity. Use present day cost numbers.

b. Additionally, evaluate cost of storage against cost of transmission upgrades that can be avoided due to storage installations.

8. Action Plan

PREPA's current IRP proposal fails to address the actions PREPA plans to take in the near term as a result of its analyses. Section 2.04(B)(7) of Regulation 8594 requires that PREPA "specify implementation actions that need to be performed during the early years of the planning period as a result of the Preferred Resource Plan." An action plan is crucial for the Commission to evaluate PREPA's proposed IRP and to supervise PREPA's compliance with the approved IRP, which includes, but is not limited to, evaluating and approving any contract PREPA plans to undertake with any power producer.

To address this deficiency, PREPA shall:

a. Set forth expected major capital expenditure requirements over the next five (5) years, by project, with references to the IRP as justification for the project;

b. Report with specificity the Requests for Proposals ("RFPs") that are expected to be issued over the next five (5) years and their basis in the IRP;

c. Inform this Commission about the current status of MATS negotiations, if any, with the United States Environmental Protection Agency ("EPA") and likely mitigations required by EPA;

d. Explicitly assess if and when each scenario explored comes into compliance with MATS; and

e. Explicitly discuss the terms of the PPOAs with EcoEléctrica and AES, including the potential for restatement/renegotiation of the contracts following their expiration date, and the potential for improved contract terms.

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PREPA may ask the Commission to clarify any of these requirements by **December 11, 2015**. As previously mentioned, PREPA shall file the amendments required above on or before **March 4, 2016**. The Commission reminds PREPA and all other parties that it reserves the right to issue a supplemental order requiring additional amendments to PREPA's updated IRP filing in light of intervenors' comments or any future analysis.

II. Additional Requirements

PREPA shall also submit to the Commission the following:

1. A description of its input assumptions concerning distributed generation, renewable energy, and demand response on or before **January 15, 2016**.

2. A description of the new central stations build-outs and the methodology used to develop them for the IRP supplement on or before **February 2, 2016**.

3. A description of its evaluation of transmission and storage in the IRP supplement on or before **February 26, 2016**.

III. Questions for Intervenors

The Commission invites intervenors to comment on some or all of the following questions:

1. The current IRP envisions replacing or repowering nearly all existing units within the next decade in order to accomplish both short- and long-term goals.

    a. How should PREPA weigh its immediate needs of system stability and compliance with environmental regulations versus planning for the long term?

    b. What should PREPA assume are its obligations with regards to MATS compliance and on what timeframe?

2. Act 82-2010, known as the Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, establishes Puerto Rico's Renewable Portfolio Standard ("RPS"). The RPS mandates PREPA, a retail electricity supplier, to supply certain percentage of its electricity from renewables (currently, 12.0% by 2019, 15.0% by 2027, and 20% by 2035).

    a. How can PREPA best build its system to meet RPS requirements?

    b. What is PREPA's best path towards RPS compliance?

3. Are PREPA's projections of future load, penetration of distributed generation, and implementation of demand-side management reasonable? Please explain.

4. Are PREPA's assumptions regarding future costs, especially of fuels, reasonable? Please explain.

5. Do PREPA's proposed portfolios incorporate a sufficiently wide range of resources? Please explain.

6. Do PREPA's scenarios (portfolio/future combinations) adequately explore costs and risks to the utility? Does PREPA evaluate the cost effectiveness of near term infrastructure and capital investment decisions? Please explain.

7. Are there any other areas, other than the ones identified in this Order, in which you believe PREPA's IRP is deficient? If so, please specify.

Intervenors shall submit their comments to these questions by **December 17 2015**. Comments received after that date will be considered only at the Commission's discretion.

Should PREPA fail to comply with this Order, it will be subject to administrative fines of up to a maximum of twenty-five thousand dollars ($25,000) per day of violation, without further notice, as well as any other sanction deem adequate by the Commission, pursuant to Act 57-2014 and the Commission's Orders and Regulations.[2]

Be it hereby notified and published.

Agustín F. Carbó Lugo
Chairman

Ángel R. Rivera de la Cruz
Associate Commissioner

José H. Román Morales
Associate Commissioner

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[2] See, Article 6.37 of Act 57-2014, as amended; Section 12.02 of Regulation No. 8543, known as the Regulation on Adjudicative, Notice of Noncompliance, Rate Review and Investigation Procedures.

I certify that the Puerto Rico Energy Commission has so agreed on December 4, 2015. I also certify that on this date a copy of the Order was notified by electronic mail sent to

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Brenda Liz Mulero Montes
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CERTIFICATION

I certify that his is a true and exact copy of the Order issued by the Puerto Rico Energy Commission. I further certify that today, December ___, 2015, I have proceeded with the filling of this Order and I have sent a copy thereof to the:

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For the record, I sign this in San Juan, Puerto Rico, today, December ___, 2015.

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Rafael O. García Santiago
Clerk of the Puerto Rico
Telecommunications Regulatory Board