NEPR

Received:

Sep 14, 2020

4:40 PM

GOVERNMENT OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY INTEGRATED RESOURCE PLAN	**CASE NO. CEPR-AP-2018-0001** **SUBJECT:** MOTION FOR RECONSIDERATION

LOCAL ENVIRONMENTAL ORGANIZATIONS' MOTION FOR RECONSIDERATION OF THE FINAL RESOLUTION AND ORDER

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COME NOW, Comité Diálogo Ambiental, Inc., El Puente de Williamsburg, Inc. -Enlace Latino de Acción Climática, Comité Yabucoeño Pro-Calidad de Vida, Inc., Alianza Comunitaria Ambientalista del Sureste, Inc., Sierra Club and its Puerto Rico chapter, Mayagüezanos por la Salud y el Ambiente, Inc., Coalición de Organizaciones Anti-Incineración, Inc., Amigos del Río Guaynabo, Inc., Campamento Contra las Cenizas en Peñuelas, Inc., and CAMBIO Puerto Rico, Inc., ("Local Environmental Organizations"), to respectfully request that the Energy Bureau reconsider and/or clarify certain parts of the Final Resolution and Order, as detailed below.

TABLE OF CONTENTS

I. The Energy Bureau should add measures to maximize public participation in implementation of this Integrated Resource Plan and development of the next Integrated Resource Plan.

The Energy Bureau has set forth a host of new proceedings and upcoming filings, through which the Action Plan of the Integrated Resource Plan will be implemented. A partial list of the required filings is attached as Exhibit A. The Energy Bureau has recognized the contributions of intervenor witnesses, and noted that the public "provided a meaningful contribution in this process."[1] This Integrated Resource Plan process gathered great public interest because the implications of the Integrated Resource Plan's implementation on the quality of life, safety, and health of citizens is real. In order for those meaningful contributions to continue, Local Environmental Organizations request that PREPA be required to compile a list of stakeholders that would receive advance notice of Action Plan filings and proceedings, with the opportunity to comment.

The Energy Bureau has announced that a Spanish version of the Final Resolution and Order will be published.[2] Many or most of the island's citizens will be far more comfortable reading and understanding the Spanish version: and only at that point will they know whether there are issues they wish to ask for the Energy Bureau to reconsider or clarify. For that reason, Local Environmental Organizations request that the Energy Bureau grant an extension of the time for

[1] Puerto Rico Energy Bureau, Final Resolution and Order, at 2, para. 959, PREB Dkt. No. CEPR-AP-2018-0001 (Aug. 24, 2020) [hereinafter "Final Resolution and Order"].
[2] Final Resolution and Order, VII Conclusion, at 296. PREB also promised an Executive Summary in Spanish.

parties to file a Motion for Reconsideration to at least twenty days after publication of the Spanish version of the Final Resolution and Order.[3] This extension would not delay implementation of the Integrated Resource Plan because, as the Energy Bureau noted in the previous Integrated Resource Planning process, the filing and consideration of Motions For Reconsideration "...does not change the fact that there is an Integrated Resource Plan ("IRP") approved by the Commission through the Final Resolution."[4]

The Energy Bureau aided public contribution to this process through a prescient decision to increase the number of public hearings from one in San Juan to five public hearings across the island.[5] Local Environmental Organizations request that the Energy Bureau guarantee at least that many public hearings for the next Integrated Resource Planning process as well, especially in places where citizens will be directly affected by its approval and implementation.

The Energy Bureau further noted that "[t]he IRP process should be transparent and provide an opportunity for stakeholders to participate fully", especially on the topics of resilience and distributed resources.[6] The Energy Bureau noted that a great deal of public opposition to the Integrated Resource

[3] Pursuant to 3 L.P.R.A. 2165.
[4] Puerto Rico Energy Bureau, Resolution for Extension of Time for Just Cause, at 2, PREB Dkt. No. CEPR-AP-2015-0002 (December 15, 2016).
[5] Final Resolution and Order para. 158.
[6] As mandated by Act 57-2018. Final Resolution and Order para. 901: "The Energy Bureau is particularly interested in obtaining community and stakeholder input into the nature, number, critical and priority loading requirements, and identification of specific essential facilities that should be prioritized for targeted efforts to ensure operation following a severe weather event, as well as information regarding the investments that such facilities may have already made in distributed resilience solutions. The Energy Bureau is also interested in obtaining input on how to best balance a need for local resource provision, with a need to prevent unwarranted and costly overbuilding of energy or capacity resources for resiliency purposes."

Plan stemmed from PREPA's refusal to obtain public input.[7] To address that public sentiment, Local Environmental Organizations request that PREPA be required to provide documents using non-technical Spanish, and host public and stakeholder meetings "at the beginning stages of development" for the next Integrated Resource Plan.[8]

II. The Energy Bureau should rescind the finding that PREPA completed an adequate Environmental Impact Assessment.

PREPA's Environmental Impact Assessment failed to cover several required topics, including climate change.[9] Act 17, Section 1.9(3)(H) explicitly requires that the Environmental Impact Assessment include consideration of climate change.[10] The Energy Bureau correctly requires PREPA to address climate change in the next Integrated Resource Plan, as required by Act 17: but the Energy Bureau must recognize that this requirement also applies to the current IRP, and is unfulfilled.[11]

The need to understand PREPA's contribution to climate change is more important than ever, as Puerto Rico has already witnessed rapidly intensifying storm patterns: PREPA's 2020 Fiscal Plan notes that researchers link the severity

[7] Final Resolution and Order para. 977.
[8] *Id.*
[9] PREPA's Integrated Resource Plan Main Report does not even mention "climate change." As detailed in Section VI of Local Environmental Organizations' post-hearing brief, PREPA's Environmental Impact Assessment also failed to evaluate its preferred resources' safety hazards, water pollution impact, and air pollution impact.
[10] Specifically, the law requires that PREPA must "aggressively reduce the use of fossil fuels, minimiz[e] greenhouse gas emissions, and support[] initiatives in Puerto Rico that focus on the issue of climate change . . . .".
[11] Final Resolution and Order paras. 63, 131, 625, 626, 953, 982.

of Hurricanes Irma and María to climate change.[12] The United States National Oceanographic and Atmospheric Administration (NOAA) estimates the number of named storms this year could be between 19 and 25 – well above the yearly average of 12.[13]

PREPA's Preferred Plans were gas-heavy in part because PREPA failed to account for the climate impact of gas plants on the island. The Energy Bureau wisely rejected the majority of PREPA's gas buildout, even without the benefit of quantitative analysis of climate change impacts. A climate change analysis for gas plants would reveal the high methane emissions produced by well-documented leaks along the stream of gas extraction, transportation, liquefaction, shipping, regasification, and combustion. [14] Methane has a significantly worse greenhouse effect than does carbon dioxide.[15]

PREPA also failed to adequately examine the grid's resilience against extreme weather caused by climate change. Siemens acknowledged that it had not considered the risk presented by sea level rise, storm surge, or flooding to existing or proposed coastline facilities.[16] In particular: the fossil resources that PREPA proposes to build in Palo Seco would be in a tsunami flood area, which is at high

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[12] Puerto Rico Electric Power Authority, 2020 Fiscal Plan, at n.62 p. 57, (June 29, 2020), https://www.aafaf.pr.gov/wp-content/uploads/2020-PREPA-Fiscal-Plan-as-Certified-by-FOMB-on-June-29-2020.pdf. [hereinafter "PREPA 2020 Fiscal Plan"].
[13] Press Release, Climate Prediction Ctr,, NOAA 2020 Atlantic Season Outlook, Nat'l Weather Service (Aug. 6, 2020) https://www.cpc.ncep.noaa.gov/products/outlooks/hurricane.shtml
[14] Local Environmental Organizations, Legal Brief at 55-56, PREB Dkt. No. CEPR-AP-2018-0001 (March 6, 2020) [hereinafter "LEO's Legal Brief"].
[15] *Id.*
[16] LEO's Legal Brief at 57.

risk of liquefaction in the event of an earthquake.[17] PREPA's 2020 Fiscal Plan acknowledges that coastal flooding is already a risk to the electricity system and that current climate projections show that sea level rise over the next three decades will increase the risk of coastal flooding and inundation in the northeastern part of the island, where the Palo Seco plant would be located.[18]

For all of these reasons, consideration of climate change is an immediate concern that cannot be delayed to the next Integrated Resource Plan. Local Environmental Organizations request that the Energy Bureau rescind the finding that PREPA satisfied this requirement. Local Environmental Organizations further request that PREPA be required to include a climate change analysis, including a lifecycle GHG emissions estimate and a carbon pricing estimate, for any resource proposal, governed by the current Integrated Resource Plan or the next. Local Environmental Organizations finally request that PREPA be required to include analysis of extreme weather resiliency in all resource proposals, especially proposals at Palo Seco.

III. The Energy Bureau Should Rescind the Finding that PREPA may consider new fossil generation at Palo Seco.

Through paras. 565, 653-656, and 880-883, the Energy Bureau allows PREPA to spend $5M on a scoping and feasibility analysis for a new supply-side resource at Palo Seco. Local Environmental Organizations respectfully request

[17] LEO's Legal Brief at 50, 57.
[18] PREPA 2020 Fiscal Plan, at 57.

that the Energy Bureau rescind the portions of these paragraphs that allow PREPA to consider a fossil fuel resource as part of this analysis.

The Energy Bureau's allowance relied, in part, on the "recognition of a … situation at Palo Seco where some LNG infrastructure also exists…"[19] Presumably, PREB is referring to the LNG import terminal constructed by New Fortress Energy at the Port of San Juan. PREPA's projections in the proposed IRP, for cost and feasibility of a fossil fuel resource at Palo Seco, also relied on the assumption that PREPA could obtain fuel for that unit from the LNG Terminal constructed by New Fortress Energy at the Port of San Juan.[20] The Energy Bureau and PREPA must discard all assumptions that rely on the New Fortress Energy LNG Terminal, for four reasons.

First, New Fortress Energy denies that a pipeline could be constructed from the New Fortress Energy LNG Terminal to Palo Seco: "…in no uncertain terms will any such pipeline be constructed and connected to the [LNG Terminal]."[21] "New Fortress is not in the process of developing or constructing any such [pipeline]."[22]

Second, New Fortress Energy may have built this LNG Terminal illegally, without prior approval by the Federal Energy Regulatory Commission. In July, FERC issued an Order to Show Cause to New Fortress Energy, ordering the

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[19] Final Resolution and Order at para. 655.
[20] Specifically, a 4.2 mile, $3.5M pipeline from the LNG Terminal "to Palo Seco with max daily gas volume of 93.6 MMcf/day..." IRP Section 1.2, 5-14 Section 6.3.4.
[21] New Fortress Energy, Motion For Leave To Answer And Answer Of New Fortress Energy Inc. To The Motion For Leave To Reply And Reply Of The Joint Movants at 2-5, FERC Dkt. No. CP20-466-000 (Sept. 8, 2020).
[22] *Id.*

company to provide its claims for why the LNG Terminal did not fall under FERC jurisdiction.[23] The matter is still pending. If FERC decides to assume jurisdiction over the LNG Terminal, FERC has the authority to commence proceedings to seek an injunction to shut down the LNG Terminal,[24] require New Fortress Energy to disgorge all unjust profits back to PREPA ratepayers,[25] and issue a $500M penalty to the company.[26]

Third, the LNG Terminal is an unreliable fuel supply, and therefore a Palo Seco resource fueled through the New Fortress Energy LNG Terminal could not "protect against the uncertainty of … potential reliability concerns…"[27] At an August 14th Technical Conference, PREPA explained that at times when grid reliability is critically important, such as the day of the island's election primaries, PREPA burns diesel at San Juan 5 & 6 because it cannot rely on gas from New Fortress Energy.[28] Due to these reliability concerns, PREPA burned nearly three times as much diesel as it did methane gas in San Juan 5 & 6 in May and June of this year.[29] In short, units fueled by the New Fortress Energy LNG Terminal not

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[23]Federal Energy Regulatory Commission, Order To Show Cause, FERC Dkt. No. CP20-466-000 (June 18, 2020).
[24] 15 U.S.C. § 717s(a).
[25] *See* FERC's May 2008 Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156 at P. 6. Enf't of Statutes, Regulations & Orders, 123 FERC ¶ 61,156, 62009, at P 62009 (2008).
[26] *See* 15 U.S.C. § 717t-1 (authorizing a $1,000,000 penalty per day of illegal construction and/or operation of a facility under FERC's jurisdiction). New Fortress Energy, which has never submitted a permit application to FERC, began constructing its San Juan LNG import terminal on March 15, 2019, well over 500 days ago.
[27] Final Resolution and Order, para. 654.
[28] Negociado de Energía en vivo, *Conferencia Técnica / NEPR-AP-2020-0001* at 44:05 – 47:15, YouTube (Aug. 14, 2020) https://www.youtube.com/watch?v=U_pSmRkiL4s. Translated from the original Spanish (emphasis added).
[29] PREPA, May 2020 Reconciliation and Proposed Factors for the July to September 2020 Period Riders, Exhibit A: May 2020 Reconciliation at May-2020 Fuel Cost & Consumption tab, rows 45-

only fail to improve the reliability of the Puerto Rico grid, they may actually be harming it.

Finally, PREPA's cost forecasts for fuel from the New Fortress Energy LNG Terminal have aged very badly. The Energy Bureau's January 2019 approval of the contract to convert San Juan 5 & 6 relied on PREPA's claims of $1,186.4M in fuel savings over five years: over $200M per year.[30] PREPA's recent 2020 Fiscal Plan projected only $36M-$56M of annual savings.[31] PREPA's most recent forecasts show that electricity from San Juan 5 & 6, when burning gas, is $10.79/MMBtu, making these the most expensive baseload units on PREPA's system.[32]

Another consideration is that this fossil fuel resource allowed by the Modified Action Plan does not have the benefit of a quantitative analysis of climate change impacts, as required by Act 17. For these reasons, Local Environmental Organizations urge the Energy Bureau to rescind the finding that PREPA may consider a fossil resource at Palo Seco. In the alternative, if the Energy Bureau does not rescind this finding: the Energy Bureau Final Resolution and Order repeatedly finds, correctly, that a Palo Seco CCGT is not economically

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52, PREB Dkt. No. NEPR-MI-2020-0001, (June 17, 2020), and *See* PREPA's June 2020 Fuel Cost and Consumption report, Request For Approval of June 2020 Reconciliation and Revision of August and September 2020 FCA and PPCA Riders Factors, Exhibit A: Reconciliation June 2020, PREB Dkt, No. NEPR-MI-2020-0001, (July 20, 2020) [hereinafter "PREPA's Proposed Rider Factors"].

[30] Puerto Rico Energy Bureau, Resolution and Order at 3, PREB Dkt. No. CEPR-AI-2018-0001 (Jan. 25, 2019).

[31] PREPA 2020 Fiscal Plan at 62 (June 29, 2020) https://www.aafaf.pr.gov/wp-content/uploads/2020-PREPA-Fiscal-Plan-as-Certified-by-FOMB-on-June-29-2020.pdf.

[32] *See* PREPA's Proposed Rider Factors, Exhibit A.

competitive with renewable and storage additions.[33] The Energy Bureau's allowance of limited preliminary analysis of a fossil fuel option, was "protect against the uncertainty" that renewable and storage prices would be higher than expected.[34] Local Environmental Organizations request that PREPA be required to submit, with its quarterly report, a report of solar, storage, and gas prices along with the projected cost of Palo Seco gas-fired resources. Local Environmental Organizations further request that the Energy Bureau explicitly reserve the right to cut off the PREPA planning of fossil fuel resources at Palo Seco, if it finds that renewable and storage prices are falling steadily as predicted. The Energy Bureau should also reserve the right to stop PREPA planning of fossil resources at Palo Seco if the predicted cost of the Palo Seco fossil resource, including a carbon price estimate,[35] becomes higher than PREPA's projection of the costs.

[33] *See*, e.g., Final Resolution and Order paras. 14, 18, 73, 110, 586, 620, 643, 649, 653.
[34] *Id.*
[35] As required by Final Resolution and Order para. 626.

IV. The Energy Bureau Should Rescind the Finding that PREPA May Consider Conversion of the AES Plant to Gas in the Next Integrated Resource Plan.[36]

The 2027 conversion of the AES plant from coal to methane-powered generation is against the public interest, and any further consideration is unnecessary. [37]

Siemens forecasted the costs (through Net Present Value) and resiliency impact (through Energy Not Served) of adding a 2027 conversion of the AES coal plant to gas to Scenario 4, Situation 2, Base Load.[38] Siemens determined that the AES gas conversion would increase the cost of the Resource Plan and lower the Resource Plan's resiliency:

Resource Plan	Net Present Value	Energy Not Served
S4S2, with AES 2027 conversion	$14.951B	$406M
S4S2B	$14.339B	$247M
S3S2B	$13.843B	$206M

Note that PREPA's least cost scenario S3S2B with AES closing in 2027 with no conversion, outperforms both scenarios on cost and resiliency.[39] Fossil generation that cannot compete with renewables and storage today is unlikely to

[36] Table 3 also includes capacity provision from both AES units past 2027. n. 351 includes the possibility of keeping AES open past 2027. Para. 346, fifth bullet point includes the possibility of converting AES to gas.
[37] Final Resolution and Order para. 875.
[38] Final Resolution and Order Appendix C.
[39] *Id.*, n.883.

be able to do so in the future, for two reasons. First, the long term price trends of renewables and storage continue to fall steadily. Second, the economics of a future fossil conversion are set to worsen, because environmental compliance costs that penalize fossil generation (e.g., the carbon price that PREPA is required to consider in the next Integrated Resource Plan[40]) are likely to rise.

Moreover, the analyses of an AES gas conversion are unrealistically favorable, in that they failed to include several components that would further decrease the competitiveness of the proposal. First, Siemens failed to conduct a climate analysis, which will be required for any new resource included in the next Integrated Resource Plan. As detailed above, gas plants have a significant climate change impact.

Next, the analyses failed to account for the difficulty, high price, and environmental and health impacts associated with LNG import to southeastern Puerto Rico. PREPA has already attempted once to bring LNG to this part of the island; the failed attempt cost ratepayers $15M.[41] PREPA's current difficulties with importing LNG to operate San Juan Units 5 & 6—between its supplier's legal issues, inability to maintain a reliable supply, and the failure of expected fuel savings to materialize—demonstrate that another conversion of a legacy plant to methane is poorly advised.

[40] Final Resolution and Order para. 626.
[41] Puerto Rico Energy Bureau, Resolution on the Verified Motion For Reconsideration By The Puerto Rico Electric Power Authority at 44, PREB Dkt. No. CEPR-AP-2015-0002 (Feb. 10, 2017).

Finally, the analyses ignored the costs of clean up and community reparations for the significant environmental and health harms AES has already inflicted on neighboring communities. AES has poisoned groundwater, community soil, and air quality since it began operation.[42] Even operating the plant through 2027 will cause significant climate and air pollution impacts from burning coal, and land and water impacts from coal ash. The Coal Combustion Residual Rule of 2015 requires AES to effect a comprehensive cleanup. The Corrective Measures Assessment Report submitted by AES in January 2020 and the Report on Selection of Remedy submitted June 2020 do not provide for adequate cleanup of existing pollution and prevention of further pollution of land and the South Coast Aquifer, due to coal ash from the AES plant.

AES must restore the entirety of the hundreds of acres of land contaminated by AES to their pre-disturbance condition. 40 CFR 257.96(a). The plans outlined in the January and June 2020 reports do not come close to fulfilling that requirement; indeed it would not even put an end to ongoing contamination of the land, air and groundwater from coal ash deposits. An acceptable plan would, at the very least, include:

- robust public participation in development of the plan, in accordance with 40 CFR 257.97
- compliance with federal rule requirements for storage of waste for any coal ash stored onsite
- complete removal of AES' coal ash waste pile
- A plan for a just transition for AES workers
- cleanup and ongoing monitoring of all land and water contaminated by coal ash

[42] LEO's Legal Brief, Section VI(c).

Respectfully, the Energy Bureau should rescind the finding that PREPA may consider conversion of the AES plant to gas in the next IRP, and rule it out decisively before any more public money is wasted considering this bad idea.

V. The Energy Bureau Should Reconsider Its Order On Transmission Spending And Prioritize Spending On Alternatives That Minimize Burdens On The Transmission System, Such As Energy Efficiency, Demand Response, And Rooftop Solar + Storage.

The Energy Bureau authorized PREPA to spend up to $2B on transmission maintenance, and stated that PREPA must obtain Energy Bureau approval for specific transmission expenditures.[43] The Energy Bureau rejected the specific transmission spending proposals in PREPA's proposed Integrated Resource Plan, and stated that PREPA would have to submit each transmission spending request for the Energy Bureau's approval.[44] Local Environmental Organizations request that the Energy Bureau require that PREPA's transmission spending requests be submitted in a specific Energy Bureau docket, and require that the public have notice and an opportunity to comment before the Energy Bureau makes any decision on each spending request.

Local Environmental Organizations further urge the Energy Bureau to discourage spending on transmission infrastructure that is most vulnerable to intensifying storms: for example, the vulnerable South-to-North transmission

[43] Final Resolution and Order para. 746.
[44] *Id.*

lines. PREPA's 2020 Fiscal Plan acknowledges that the "system's dependence on north-south transmission creates operational inefficiencies and grid vulnerabilities."[45] The 2020 Fiscal Plan further notes that hurricanes can be "particularly devastating for these north-south lines, which cut through dense, forested terrain."[46] In 2018, a single tree fell on a transmission line from the Aguirre Power Plant to San Juan, causing nearly one million customer outages.[47] This incident demonstrates the extreme vulnerability of these north-south lines. As the Energy Bureau states throughout the Final Resolution and Order, investment into maximizing deployment of distributed solar + storage will minimize investments into transmission hardening. It will also reduce or eliminate reliance on vulnerable South-North transmission lines. The GridMod Plan and the London Economics Institute's analysis of the island's transmission system both concluded that maximizing deployment of distributed generation would lower the costs of transmission maintenance and upgrades.[48] Transmission investments, therefore, should be driven by the necessity to maximize distributed generation.

The Energy Bureau correctly rejected PREPA's $5.9B MiniGrid spending plan.[49] PREB noted the massive gas plant buildout that was tied to PREPA's MiniGrid proposal; it seems possible that the MiniGrid proposal could just have

[45] PREPA 2020 Fiscal Plan at 16.
[46] *Id.*
[47] PREPA 2020 Fiscal Plan at 58.
[48] LEO's Reply Brief at 25-26.
[49] Final Resolution and Order para. 120.

been a scheme by Siemens to justify a gas plant buildout.[50] In the Energy Bureau's MiniGrid Optimization Proceeding, the Energy Bureau must emphasize compliance with its Final Regulation 9028 on Microgrid Development.[51] The law on developing microgrids reflects a public preference for microgrids; MiniGrids, on the other hand, have no basis in public policy. For that reason, MiniGrids should not be built at the expense of microgrids. Where MiniGrids conflict with microgrids, microgrid planning should prevail. For example, MiniGrids should be required to prioritize renewable energy sources and especially distributed renewables, in order to ensure that MiniGrid development does not conflict with microgrids.[52]

VI. The Energy Bureau Should Ensure That The Renewables Procurement Plan Is Publicly Accessible, With Notice And Opportunity To Comment. The Energy Bureau Should Also Clarify And Strengthen Certain Requirements Of The Renewables Procurement Plan, And The Steps To Maximize Distributed Solar + Storage.

The Energy Bureau requires that PREPA submit a Renewables Procurement Plan by October 23, 2020, and a Status Update on progress towards the Plan by September 23.[53] The Energy Bureau's Final Resolution and Order

[50] Final Resolution and Order paras. 80, 81, 177.
[51] Puerto Rico Energy Commission, Regulation on Microgrid Development No. 9028, (May 18, 2018)https://energia.pr.gov/wp-content/uploads/2018/08/Reglamento-9028-Regulation-on-Microgrid-Development.pdf.
[52] *Id.*, Section 3.02. MiniGrids must prioritize renewables and distributed renewables to comply with Act 82-2010.
[53] Final Resolution and Order para. 860.

already recognized the expertise of intervenor witnesses on renewables and especially distributed renewables.[54] In order to allow the public to continue contributing expertise, Local Environmental Organizations request that the Energy Bureau clarify that the Status Update and Renewables Procurement Plan be submitted to this docket, with public notice and opportunity for the public to comment.

The Energy Bureau sets forth a presumed level of spending, as a limit for PREPA's proposed consideration of supply-side resources at Palo Seco.[55] The Energy Bureau also required PREPA to engage in renewables studies that PREPA had not itself proposed: for example, a hydroelectric feasibility study and renewables feasibility studies. Local Environmental Organizations request that the Energy Bureau set forth proposed minimum levels of spending on these programs to aid PREPA in allocating resources properly and creating its Fiscal Plan.

The Energy Bureau has recognized the value of distributed generation and distributed storage, and further recognized the synergy and added value when the two are paired.[56] The Energy Bureau has required that PREPA always choose distributed storage over utility-scale storage when the former is cost-effective.[57] Local Environmental Organizations propose that PREPA also be required to

[54] Final Resolution and Order para. 959: "Intervenor testimony compellingly demonstrates the inherent value of small-scale distributed resources in the form of microgrids, single-site solar PV and battery storage, and aggregated solar PV and battery storage (or VPPs) for Puerto Rico as a critical part of an overall solution to ensure resiliency."
[55] Final Resolution and Order paras. 565, 653-656, and 880-883.
[56] *See* e.g., Final Resolution and Order para. 82, 114.
[57] Final Resolution and Order para. 46.

choose distributed generation over utility-scale generation, when the former is more cost-effective. This would be supported by the Energy Bureau's findings that rapid deployment of distributed generation is a critical part of an overall resiliency solution, and that distributed generation lowers the overall line losses for PREPA.[58]

Local Environmental Organizations support the Energy Bureau requirement that PREPA quickly issue Requests For Proposals, tariffs, rates, and direct utility programs to encourage rapid deployment of distributed renewables + storage and Virtual Power Plants.[59] Rapid deployment of distributed resources would help PREPA to comply with Act 33-2019's requirement that PREPA provide 20% of the island's energy from renewables by 2023, and 40% by 2025.[60] Local Environmental Organizations urge that PREPA be required to include these specific steps in the Renewables Procurement Plan. Local Environmental Organizations request that PREPA be required to consider two specific direct utility programs:

- Law 17-2019, Section 1.5(8)(b) requires "expedited processes under the regulations for the interconnection of generators to the distribution system" and "an effective process to reduce the interconnection time." PREPA issued Comunicado Técnico 19-02 in December 2019, laying out some of the blueprints for this upgrade, but does not appear to have taken any steps to actually implement it.[61] The Energy Bureau should require PREPA to submit a timeline for implementation, as part of the Renewables Procurement Plan.

[58] Final Resolution and Order paras. 82, 83, 84, 411, 432, 493.
[59] Final Resolution and Order paras. 52, 496.
[60] Puerto Rico Climate Change Mitigation, Adaptation, and Resilience Act. Act 33-2019, Section 20.
[61] Final Resolution and Order para. 808.

- Dozens of PREPA's employees have completed training to install rooftop solar and storage systems. PREPA should be required to initiate a procurement process to obtain these systems, and then set these workers to the task of installing and interconnecting utility-owned rooftop solar + storage systems.

VII. The Energy Bureau Should Clarify and Strengthen Certain Energy Efficiency Requirements in the Final Resolution and Order.

Local Environmental Organizations support the Energy Bureau conclusion that Energy Efficiency is always the least-cost resource, and that the "maximum level of [Energy Efficiency] deployment should be a core provision of an approved Preferred Resource Plan."[62] In order to ensure that PREPA takes all steps necessary to achieve the maximum level of Energy Efficiency deployment, the Energy Bureau should require that PREPA set aside a budget for Energy Efficiency tasks in its next Fiscal Plan. In order to make the best use of that budget, the Energy Bureau should carefully review the proposed costs of PREPA's Energy Efficiency programs to ensure that money is being spent wisely. For example, for its residential Energy Efficiency program, PREPA plans to spend $5 per LED lightbulb.[63] PREPA also estimates that the administrative costs to provide five free lightbulbs to each household would be $40 per household. PREPA must ensure that the island's Energy Efficiency efforts begin with quick-start[64] programs that make the most of their budget.

[62] Final Resolution and Order paras. 634, 635.
[63] Upon information and belief: A 60-Watt LED Light Bulb Soft White retails for $1.24 per bulb, in a pack of 8 at the Home Depot in Puerto Rico. A Viribright 60 Watt LED Light Bulb, retails for $1.37 per bulb for a Pack of 12 at Walmart in Puerto Rico.
[64] Final Resolution and Order para. 92, 135, 808, 841, 889, 910.

The Energy Bureau's Final Resolution and Order recognizes that all parties, including Siemens, acknowledged that solar water heaters were a no-regret Energy Efficiency option.[65] Local Environmental Organizations ask that PREPA be required to submit a program for PREB approval, with a schedule to incentivize residential and commercial purchases of solar water heaters.

Finally: PREPA's Action Plan includes residential and commercial programs to incentivize replacement of lighting and air conditioners: but PREPA expects that less than ten percent of customers will participate annually in each program.[66] Local Environmental Organizations request that PREPA be required to design and implement programs to increase customer awareness of the cost savings potential of these programs, to ultimately increase participation. through a customer engagement plan "to educate citizens and electric power service customers on energy efficiency consumption reduction, distributed generation strategies, and other available tools to empower consumers to have more control over their energy consumption,"[67] Gerardo Cosme Núñez, an engineer with the Independent Consumer Protection Office, testifies that the greatest weakness of this IRP is "the lack of endemic data on consumer's energy behavior and preferences . . . ."[68] Eric Ackerman, a witness for the Not For Profit Entities with decades of experience in the energy sector, puts it succinctly: "PREPA needs to

[65] Final Resolution and Order paras. 234, 243, 244, 245, 247, 249, 260, 800, 808.
[66] Final Resolution and Order para. 227.
[67] Law 17-2019 Section 1.5(4)(b).
[68] Independent Consumer Protection Office's Mot. to Submit Expert Test., *Direct Test. of Núñez, PE, CPI* at 2, PREB Dkt. No. CEPR-AP-2018-0001, (Oct. 23, 2019) [hereinafter Nuñez Direct Test.].

analyze its customers!"[69] Local Environmental Organizations urge the Energy Bureau to require, as part of the Action Plan, the comprehensive customer engagement program recommended by Not-For-Profit Intervenors.

VIII. The Energy Bureau Should Clarify and Strengthen Certain Demand Response Requirements in the Final Resolution and Order.

PREPA has been negotiating Demand Response programs with large customers since at least May 2020, with the expectation that such programs could yield at least 250 MW of peak demand reduction.[70] Local Environmental Organizations request that PREPA be required to submit a Status Update with a final estimate of Programmatic Demand Response costs for 250 MW of demand response from large customers by December 2020. That deadline allows PREPA to base the estimate on information and experience gained through a full six months of negotiations. Local Environmental Organizations further request that PREPA be required to submit, by December 2020, a tariff that allows PREPA to pay distributed storage resource owners for Demand Response services, either through a Virtual Power Plant or other means. Under para. 271 of the Order, PREPA could incorporate the data from the use of that tariff into the next IRP.

[69] Not For Profit's Mot. to Submit Expert Test., *Direct Test. of Eric Ackerman* at 17, PREB Dkt. No. CEPR-AP-2018-0001 (Oct. 22, 2019), [hereinafter Ackerman Direct Test.].
[70] Final Resolution and Order para. 892. See also PREB Resolución Y Orden, PREB Dkt. No. NEPR-AP-2020-0001, (May 22, 2020).

For the reasons stated above, Local Environmental Organizations respectfully request that the honorable Energy Bureau reconsider certain paragraphs of the Final Resolution and Order.

Respectfully submitted on this day September 14, 2020,

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CERTIFICATE OF SERVICE

We hereby certify that, on September 14, 2020, we have filed this Motion for Reconsideration via the Energy Bureau's online filing system, and sent to the Puerto Rico Energy Bureau Clerk at secretaria@energia.pr.gov and to the following:

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Respectfully submitted on this day September 14, 2020,

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EXHIBIT A

Due Date	#	PUERTO RICO ENERGY BUREAU ORDER
Sept. 23, 2020; Oct. 23, 2020	860	The Energy Bureau ORDERS PREPA to on or before sixty (60) days from the notification date of this Final Resolution and Order, submit a draft renewable resource and battery energy storage resource procurement plan (Procurement Plan) to the Energy Bureau. The Energy Bureau FURTHER ORDERS PREPA to file a status report on the development of its draft Procurement Plan and associated Procurement Plan no later than thirty (30) days from the notification date of this Resolution and Order.
Fall 2020	736	The Energy Bureau DETERMINES that rapid deployment of points of distributed resiliency, including the use of microgrid, single-site solar PV and battery resources, or aggregated VPPs must form a part of PREPA's near-term approaches to developing a more resilient grid. The Energy Bureau ORDERS PREPA as part of the modified Action Plan to provide analysis of the least cost options and incorporate such deployment, for the initial MiniGrid region chosen for analysis undertaken as part of the Optimization Proceeding discussed in the Modified Action Plan.
Dec. 2020	847	The Energy Bureau ORDERS PREPA to issue a series of new RFPs for provision of renewable energy in support of Act 82's RPS goals, and for the provision of battery energy storage in support of capacity requirements needed to meet PREPA's peak load requirements and in support of integration requirements for renewable energy generation. The quantities of procured renewable energy and battery energy storage associated with the RFPs will reflect the overall renewable energy and storage needs reflected in the Modified Preferred Resource Plan and ultimately account for existing renewable resources, renewable resources from re-negotiated PPOAs, and newly installed renewable resources in future years.
Starting no later than Jan. 1, 2021	656	The Energy Bureau also ORDERS PREPA to submit quarterly reports, commencing no later than January 1, 2021 describing the work performed [on the Palo Seco capacity resource], the staffing or consultant resources used to complete the work, and the status of the overall preliminary efforts. If PREPA determines that additional funding in exceedance of the $5 million allocated is required, PREPA shall file a request for approval before the Energy Bureau for such additional budget. The mentioned request shall provide substantiating data for such budget increase.

Feb. 22, 2021	868	In the Proposed IRP analysis, PREPA assumed that hydropower resources could be refurbished to a capacity of 70 MW, with a capacity factor of 28%, up from current operating levels of 34 MW and 15% capacity factor. However, PREPA did not include any actions related to this refurbishment in its Proposed Action Plan. Mr. Alemán, testifying for the NFPs, provides convincing evidence that further evaluation of PREPA's hydro facilities is prudent and could identify cost-effective renewable resources. The Energy Bureau ORDERS PREPA to complete a feasibility study of refurbishing each of its hydroelectric facilities, including the expected cost and likely change in electricity production, as well as the potential to control production to produce at the times of greatest value in the context of increasing solar and battery storage. The Energy Bureau ORDERS PREPA to file the results of this study with the Energy Bureau, along with a proposed action plan for each facility informed by the study, within 180 days from the notification date of this Final Resolution and Order.
Bi-annual status reports starting on April 1, 2021	872	The Energy Bureau ORDERS PREPA to file with the Energy Bureau bi-annual status reports, commencing on April 1, 2021, that provide a near-term forecast (two years forward of the reporting date of PREPA's expected capacity resource balance on a seasonal basis and its ability to meet peak load and operating reserve requirements with existing and anticipated resources on its system at each of the forecasted intervals. PREPA shall include in these reports an explanation of how this expected capacity resource balance informs PREPA's plans to retire the oil-fired steam units or the Aguirre combined cycle units, or to convert certain steam units to synchronous condensing operation. Caveat Number 17 in PREPA's Proposed IRP indicates that retirement shall only be implemented after new resources are fully operational. PREPA must indicate in these reports the threshold capacity balance at which retirement for these units can commence, or continue, and provide an explanation of its rationale for decisions to retire, or retain, these units prior to or past the retirement dates listed in the resource development scenarios in the Proposed IRP.

Quarterly Reports starting June 1, 2021	882	The Energy Bureau ORDERS PREPA to submit quarterly reports, commencing no later than June 1, 2021 describing the work performed related to new generation at Palo Seco, the staffing or consultant resources used to complete the work, and the status of the overall preliminary efforts. If PREPA determines that additional funding in exceedance of the $5 million allocated is required, PREPA must explicitly request such funding and must provide substantiating data. In the event that PREPA requires funds in excess of $5 million in order to achieve the objectives identified herein, it shall request the Energy Bureau's approval prior to expending any additional funds. The Energy Bureau ORDERS PREPA to include in any filing requesting additional funds, the preliminary results of the work completed, clear scope and limits on the amount and use of additional funds, and data substantiating such request.
Aug. 24 2021	921	There are a number of areas in which PREPA would benefit from improving its internal organization and process, which in turn will result in an improvement to the quality of its IRP filing and the timeliness of information submittals. The Energy Bureau ORDERS PREPA to submit, no later than a year from the notification date of this Final Resolution and Order, a detailed report describing how PREPA will improve its resource planning process.
Aug. 24 2021	922	This proceeding demonstrated the impact of having to fully rely on the services of an outside technical consultant on the timeliness and efficiency with which those submissions are prepared and filed. Additionally, the standardized selection of a qualified technical consultant is important given that the cost of such engagement is borne by the ratepayers. Therefore, the Energy Bureau ORDERS PREPA's selection of technical consultant for IRP-related services to comply with the following requirements: a. No later than one (1) year from the notification date of this Final Resolution and Order, PREPA shall submit for the Energy Bureau's review and approval a draft Request for Qualification ("RFQ") for IRP consulting services. Such draft RFQ shall set forth the minimum qualification requirements for providing IRP-related consulting services.
Ongoing for the next 5 years (2025)	870	The Energy Bureau APPROVES PREPA's plans for retirement of the oil-fired steam resources over the next five (5) years, at San Juan, including units 7, 8, 9 and 10; at Palo Seco, including units 3 and 4 and at Aguirre including steam units 1 and 2. PREPA will retire these units based on the installation schedule and location of any new peaking generation, new solar PV, and energy storage resources to address overall and local resource adequacy. The exact retirement sequence will be contingent on the amount and location of replacement resources procured by PREPA. However, the Energy Bureau ORDERS this to occur during the term of this Modified Action Plan and WARNS PREPA that undue delays in the retirement of these units will result in stringent penalties.

Ongoing for the next 5 years (2025)	871	The Energy Bureau also APPROVES PREPA's plans for retirement of the Aguirre combined cycle units 1 and 2 over the next five (5) years. PREPA will retire these units based on the installation schedule and location of new peaking generation, new solar PV, and energy storage resources to address overall and local resource adequacy. The exact retirement sequence will be contingent on the amount and location of replacement resources procured by PREPA but shall occur during the term of this Modified Action Plan.
By 2025	850	By 2025, S4S2B solar PV installations range from 2,580 MW to 3,300 MW across all loading scenarios (and up to 4,680 MW if there are no limits placed on solar PV installation rates); and S3S2B solar PV installations range from 3,060 MW to 3,900 MW across all loading scenarios (and up to 5,220 MW if there are no limits placed on solar PV installation rates).
By 2025	851	By 2025, S4S2B battery energy storage installations range from 1,360 MW to 1,520 MW across all loading scenarios (and up to 2,000 MW if there are no limits placed on battery energy storage installation rates); and S3S2B battery energy storage installations range from 1,360 MW to 1,640 MW across all loading scenarios (and up to 1,720 MW if there are no limits placed on BESS installation rates).
By 2038	852	By 2038, the level of solar PV and battery energy storage installations increase across all Scenarios, and under any of the loading levels. For S3S2B, under the "low EE" loading level, solar PV installations by 2038 are 5,640 MW, and battery energy storage installations reach 3,040 MW.

2023 IRP	214	PREPA did not identify correctly and clearly the variables used in the commercial sector load forecast, in addition to CDD and a monthly dummy variable: the Proposed IRP language states that the forecast used GNP (and not population), while the workpapers show that the forecast used population (and not GNP). In order to determine the net result of this discrepancy, the Energy Bureau conducted a regression analyses using 1) GNP and the weather and dummy variables only, and 2) GNP, population, and the weather and dummy variables. This regression analysis found that the alternate linear fits have somewhat better adjusted r-squared values (0.65 for the fit with GNP only and 0.67 using both GNP and population, compared with 0.59 using population only). However, the regression analysis using all variables produces the nonsensical result that the commercial load is inversely related to population (for a given GNP, the fit would project that commercial energy load rises as population falls). The regression analysis using only GNP (that is, consistent with the text of the Proposed IRP itself) produces a load forecast that is relatively close to the forecast that PREPA used in the Proposed IRP: the two forecasts are within 500 GWh per year throughout the analysis period. This range is small compared with the uncertainty reflected in the high and low load forecasts. The relatively low r-squared for the commercial sector regression fit (relative to the residential and industrial sectors) indicates that there are other dynamics or drivers of commercial load that PREPA has not taken into account in its load forecast. The net effects of this uncertainty, and of PREPA's lack of explanation of its choice of regression variables, are relatively small. Notwithstanding the foregoing, the Energy Bureau ORDERS PREPA to undertake further analysis of the commercial load forecast in its next IRP, including analysis of the use of other independent variables.
2023 IRP	219	While the Energy Bureau is concerned that PREPA did not include EV loads explicitly in its load forecast, based on the evidence presented by PREPA and RMI, we believe that the impact on the load within the next few years will be small, and well within the range of uncertainty expressed by the range of load forecasts examined in the Proposed IRP. However, the Energy Bureau is also aware that EV loads could be large in the future. In order to fully explore this source of uncertainty, the Energy Bureau ORDERS PREPA to develop and incorporate EV forecasts into the next IRP. These EV forecasts must include a range of potential EV adoption rates that are consistent with Puerto Rico's stated public policy, be informed by Puerto Rico and mainland U.S. automobile markets, and account for the impact of controlled and uncontrolled EV charging on peak demand.
2023 IRP	265	Evaluation of EE in the next PREPA IRP should be informed by further actions and studies. The Energy Bureau intends to undertake market baseline and potential studies within the next year, in order to inform itself, PREPA, and other stakeholders regarding the current level of efficiency in Puerto Rico homes and businesses, and the achievable scale and pace of efficiency improvements. For the next IRP, the Energy Bureau ORDERS PREPA to utilize the results of these studies in developing projections of future EE.

2023 IRP	266	This proceeding did not develop evidence regarding the relative cost and performance of the EE programs modeled by PREPA with best practice in efficiency programs achieved elsewhere in the United States. For the next IRP, the Energy Bureau ORDERS PREPA to compare the costs and performance of the EE programs modeled in the Proposed IRP with similar and best-practice programs elsewhere.
2023 IRP	267	PREPA did not account for non-utility actions that increase EE explicitly in its load forecast or efficiency projection. For the next IRP, the Energy Bureau ORDERS PREPA to account for federal appliance standards, building codes, and relevant governmental programs, such as weatherization assistance or other local programs (i.e., from the central government and/or municipalities) to improve EE in government facilities, in developing its load forecast and EE projections.
2023 IRP	268	PREPA modeled a DR resource that reaches a level of somewhat less than 5% of PREPA's peak load in 2038. Based on the evidence presented, this appears to be a reasonable starting point for the potential of traditional DR, although the actual cost and performance of Puerto Rico DR programs are uncertain because they have not been designed or implemented. In particular, PREPA presents little justification for either the programmatic cost or avoided cost for DR, and no intervenors presented additional or contrary evidence. The Energy Bureau ACCEPTS the evidence on the cost-effectiveness of DR that PREPA has presented, for the purposes of the Proposed IRP. Notwithstanding the foregoing, the Energy Bureau ORDERS PREPA to promptly develop programmatic costs based on market response to the Energy Bureau's Regulations on Demand Response after they are issued, and informed by PREPA's process of negotiation, coordination and scheduling with commercial and industrial customers as required by the Energy Bureau's Order and Resolution of May 22, 2020 in case NEPR-AP-2020-0001.
2023 IRP	271	The Energy Bureau ACCEPTS PREPA's projection regarding the quantity of DR for the purposes of the Proposed IRP, and ORDERS that distributed storage resources that can provide DR services be accounted for as part of the utility storage resource modeled in the next IRP.
2023 IRP	272	The Energy Bureau expects to finalize its Regulation on Demand Response, as required by Act 17-2019, within the next few months. This Regulation will enable PREPA and other stakeholders to develop a more concrete picture of the DR resource available in Puerto Rico. For the next IRP, the Energy Bureau ORDERS PREPA to develop a DR resource projection that reflects information gained through implementation of the Energy Bureau's forthcoming Regulation on Demand Response. The Energy Bureau further ORDERS PREPA to explicitly account for distributed storage resources as DR resources, part of a VPP, or both. As part of this projection, the Energy Bureau further ORDERS PREPA to account for the potential of interruptible load tariffs for large commercial and industrial customers.

2023 IRP	313	PREPA provides anticipated capital expenditures for 2019 and 2020, but PREPA does not provide the yearly capital expenditures in the body of the Proposed IRP anticipated for the following eight years, as required under Section 2.03(D)(1)(c).310 The requirement provides useful information to assess the future economics of PREPA ‘s existing resources. The missing information could support future retirement schedules by identifying plants in need of major capital expenditures in the next ten years. The Energy Bureau therefore DETERMINES that PREPA's supplemental description of the existing resources DOES NOT COMPLY with Section 2.03(D)(1)(c). In the next IRP, the Energy Bureau ORDERS PREPA to comply with all requirements of Section 2.03(D)(1)(c).
2023 IRP	339	Regulation 9021 requires provision of a load and resource balance table for such existing conditions, inclusive of resource requirements considering a PRM in addition to a peak load forecast.345 Regulation 9021 also requires identification of an "annual net position" relative to expected needs. Proposed IRP Section 5 as filed by PREPA does not directly provide an annual load and resource balance table for existing conditions, nor does it provide an "annual net position" under any set of resource or load combinations. The Energy Bureau ORDERS PREPA to provide these two elements in the body of its next IRP filing, with supporting data contained in workpapers.
2023 IRP	466	Considering the balance of the evidence in this proceeding, the Energy Bureau FINDS that the use of the uniform sixteen percent (16%) cost adder IS ACCEPTABLE for the planning purposes of the Proposed IRP. However, the Energy Bureau looks forward to the discovery of actual costs and prices that will come from the competitive solicitations envisioned in the Action Plan (and discussed in Part IV). Furthermore, for the next IRP, the Energy Bureau ORDERS PREPA not to rely on a cost factor of this sort, and instead base its analysis on the results of actual solicitations and market-available prices for development and installation in Puerto Rico.
2023 IRP	475	The Energy Bureau therefore ORDERS PREPA to conduct an offshore wind study tailored to Puerto Rico's wind resource and electric grid that evaluates the cost, generation profile, and other characteristics of anchored and floating wind turbine options, informed by industry experiences in Europe and the U.S., and submit the study to the Energy Bureau within two years from the date of this Final Resolution and Order. The study should consider locations on all sides of Puerto Rico while accounting for the value of locating generation closer to load (such as in the North). We further ORDER PREPA to solicit and incorporate feedback from the Energy Bureau regarding the scope for this study prior to issuing any RFP for the preparation of such study.

2023 IRP	478	The Energy Bureau ACCEPTS the utility-scale battery energy storage cost and performance assumptions that PREPA made for the purposes of planning in the Proposed IRP. As with other technologies under consideration in this planning process, the Energy Bureau ORDERS PREPA to test the actual market-delivered price for energy storage, both as stand-alone installations and coupled with solar PV, through competitive procurement processes prior to determining the specific investments to make or contracts to sign. The Energy Bureau further ORDERS PREPA to use the results of competitive procurement processes to establish and/or confirm the storage costs assumed for modeling in the all subsequent IRP proceedings.
2023 IRP	485	After considering the evidence presented in this proceeding, the Energy Bureau ACCEPTS PREPA's utility-scale solar PV costs as presented in the Proposed IRP, for the purposes of planning. As with each of the other generation technologies discussed in this Part III(E) of this Final Resolution and Order, PREPA lacks recent market-tested pricing for solar PV at the utility scale. Even in the few years since PREPA last solicited new solar PV projects, the cost of solar PV projects around the world has fallen substantially. As detailed further in Part IV (Action Plan) of this Final Resolution and Order, PREPA must test the market and determine up-to-date solar PV prices for development in Puerto Rico. The Energy Bureau ORDERS PREPA to use these processes both to acquire solar PV, and to develop prices for use in its next IRP analyses.
2023 IRP	488	Upon consideration of the various evidence and arguments presented by the parties, the Energy Bureau FINDS that PREPA's analysis of the DG resource using a fixed forecast is ACCEPTABLE for the limited purposes for which it is used in this proceeding. In effect, it does nothing but modify the load forecast. As discussed in Parts III(A) and III(B) of this Final Resolution and Order, the load forecast is highly uncertain across a number of dimensions (regarding economic growth and EE, for example). The amount of DG deployment is one more source of uncertainty for utility-scale resource planning. The Action Plan must be robust against uncertainties in the net load to be served by the utility, as discussed in Part IV of this Final Resolution and Order. This extends to being robust regarding different rates of customer adoption of DG. As further discussed below (under "grid defection") and in Parts III(I) and IV (Action Plan), distributed resilience solutions that use DG may be shaped by utility action or programs that could change the DG deployment trajectory. The Energy Bureau ORDERS PREPA to take these impacts into account in the next IRP.
2023 IRP	495	PREPA did not integrate its modeling of the costs of customer self-supply into its analysis, nor did it model customer behavior. PREPA shows that within the next decade it will be less expensive for a typical residential customer to fully supply their needs with solar and batteries than to get service from PREPA, yet PREPA did not take this fact into account when

		developing the DG adoption forecast or accounting for distributed storage. The Energy Bureau agrees with intervenor witnesses that, under current rate designs and policies, such customers would likely retain their grid connections in order to use the grid as backup supply (and potentially reduce wear and tear on batteries). As a result, customers might only install enough batteries and solar to ensure continuous energy to critical loads within their homes. Neither PREPA nor any Intervenor presented quantitative analysis of the impacts of changes in rate structure (including the provisions of the RSA) on the adoption trajectory. In the face of these uncertainties, the Energy Bureau ORDERS PREPA to include, in the next IRP, a model of DG solar and storage adoption that accounts for the impact of PREPA rates and programs, along with Puerto Rico public policy, and reflects the risk of grid defection.
2023 IRP	626	As noted, Section 1.9(3)(H) of Act 17 states that the integrated resource plan shall include, but not be limited to PREPA's environmental impact assessments related to air emissions and water consumption, solid waste, and other factors such as climate change. The Energy Bureau FINDS that although PREPA's IRP does consider environmental impact assessments, it did not fully and adequately address climate change. Therefore, the Energy Bureau ORDERS PREPA in its next IRP to do an environmental impact assessment related to climate change as required by law, and must explicitly include carbon price scenarios in any initial modeling exercises.
2023 IRP	665	However, PREPA provides no direct means of assessing the relative weights given to the color-coding assigned to each of the parameters, thus rendering the "overall" color assignment arbitrary. Under questioning at the Evidentiary Hearing, PREPA confirmed that one "shouldn't give too much weight to that scorecard" when comparing results across Scenarios, as more specific metrics have been provided in the metrics files of the Proposed IRP. The Energy Bureau FINDS that PREPA's score card as presented in this Proposed IRP is not useful to compare the scenarios, and ORDERS PREPA to explicitly include specific quantitative weightings for any attribute, with accompanying explanation and rationale for any assigned weights, if PREPA chooses to use a score card in the next IRP.
2023 IRP	752	The Energy Bureau FINDS that PREPA did not properly consider an optimized transmission plan and ORDERS that the Modified Action Plan include the development of a resource plan or implementation strategy to optimize transmission spending. The Energy Bureau ORDERS PREPA to improve this aspect of its planning in the next IRP.
2023 IRP	875	The Energy Bureau APPROVES PREPA's plans for continued operation and year-end 2027 retirement of the AES units in line with the Act 17 prohibition of coal fired generation starting in 2028. The Energy Bureau is open to the evaluation of the conversion of the AES units to natural gas as a possible alternative as part of the next IRP.

2023 IRP	877	The Energy Bureau ACCEPTS PREPA's conversion of the San Juan Units 5 and 6 to burn natural gas as a fixed decision (constraint) in the Proposed IRP. The New Fortress Energy contract expires in 2025. Accordingly, the Energy Bureau ORDERS PREPA to include the renewal and extension of the New Fortress Energy contract as an option, not as a constraint, in the next IRP.
2023 IRP	883	The fastest timeline described by PREPA in the Proposed IRP for new generation at Palo Seco would lead to commissioning in 2025, with engineering, procurement, and construction beginning no earlier than 2022. This date falls before the required date for PREPA to file its next IRP. In the event that, following the preliminary work described above, PREPA decides that it wishes to proceed to project development at Palo Seco before the filing of the next IRP, the Energy Bureau WILL ALLOW PREPA to make a substantive filing requesting approval. PREPA must make such a filing at a time that allows at least six (6) months between the filing and PREPA's target date to begin project development. This filing must include PREPA's best current information regarding the need, cost, and performance of new generation and/or storage at Palo Seco, along with associated fueling infrastructure, including economic and environmental analysis demonstrating the need for and role of the proposed facility in a least-cost portfolio consistent with Puerto Rico public policy.
2023 IRP	911	Regarding Energy Efficiency and Demand Response, as part of its preparation for the next IRP, PREPA shall: Incorporate the results of the Energy Efficiency market baseline and potential studies as part of its projections of energy efficiency; Compare the costs and performance of the Energy Efficiency programs modeled in the IRP with similar and best-practice programs in other jurisdictions; Demonstrate that the Energy Efficiency programs modeled in the IRP are cost-effective; Incorporate a Demand Response resource projection that shall reflect the Energy Bureau’s forthcoming Demand Response Regulations. This should result in a decrease in peak demand that may be modeled in the load forecast and/or as a supply resource; and account for the potential of interruptible load tariffs for large commercial industrial customers.

2023 IRP	914	Regarding Distributed Generation and Storage, as part of its preparation for the next IRP, PREPA shall: Incorporate the impacts of shaping distributed resilience solutions that use Distributed Generation (as discussed in Part III.(I) and Part IV of this Final Resolution and Order) by utility action or programs that could change the Distributed Generation deployment trajectory; Test the market and determine up-to-date solar PV prices for development in Puerto Rico. It should use these processes both to acquire solar PV, and to develop prices for use in its next IRP analyses. PREPA shall no longer rely on a uniform 16% cost adder factor for solar PV, batteries, or any renewable resources for planning purposes, and instead base its analysis on the results of actual solicitations and market-available prices for development and installation in Puerto Rico; Incorporate distributed storage resources that can provide Demand Response services as a modeled resource. This may result in the resource being treated as a Demand Response resource and/or as part of a virtual power plant as a supply resource; Include in its Distributed Generation and Storage adoption rates considerations that include, but not be limited to, PREPA rates, programs, Puerto Rico policy considerations, and reflects grid defection; and Use the results of its efforts to acquire distributed storage resources to provide grid services to inform its assumptions regarding the cost, availability, and performance of distributed storage. For Wind Resources - Conduct an offshore wind study tailored to Puerto Rico's wind resource and electric grid that evaluates the cost, generation profile, and other characteristics of anchored and floating wind turbine options; Properly and fully account for market-based costs and evening peak performance of onshore wind resources, and especially considering the performance of onshore wind resources designed for "low wind" regimes, using the most up-to-date information available; and properly and fully account for market-based costs and evening peak performance of offshore wind resources, using the most up-to-date information available.
2023 IRP	916	With respect to Resource Need Assessment PREPA shall include in the body of its IRP: A load and capacity resource balance by year for all years of the planning period based on the then-existing system, including all resources that are contracted to be deployed at the time of the IRP; and A forecast of "annual net position" by year for all years of the planning period based on the then-existing system, including all resources that are contracted to be deployed at the time of the IRP and based on use of a threshold planning reserve margin.
2023 IRP	917	With respect to Caveats and Limitations, if PREPA chooses to use a scorecard, it shall include specific quantitative weightings for any attribute, with accompanying explanation and rationale for any assigned weights.

2023 IRP	918	Regarding Transmission and Distribution, PREPA shall: Incorporate how resource plans could affect requirements for T&D spending; Consider how to optimize the development of a resource plan or implementation strategy with considerations for transmission spending; and Incorporate the results of any and all ongoing integrated distribution system planning, and hosting capacity analyses.