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

IN RE: THE IMPLEMENTATION OF THE PUERTO RICO ELECTRIC POWER AUTHORITY INTEGRATED RESOURCE PLAN AND MODIFIED ACTION PLAN	**CASE NO.:** NEPR-MI-2020-0012 **SUBJECT:** Evaluation of Draft Procurement Plan.

RESOLUTION AND ORDER

I. INTRODUCTION

On August 24, 2020, the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") issued its Final Resolution and Order ("IRP Order") in Case No. CEPR-AP-2018-0001 regarding the Integrated Resource Plan ("IRP") of the Puerto Rico Electric Power Authority ("PREPA"). In the IRP Order, among other things, the Energy Bureau ordered PREPA to submit a Draft Procurement Plan within (60) sixty days of the notification of the IRP Order.[1]

On September 23, 2020, as required by the IRP Order, PREPA filed a document titled *Presentation of Status Report on the Development of PREPA's Draft Procurement* Plan ("September 23 Motion").[2] PREPA requested the Energy Bureau to schedule a Technical Conference to discuss the status report submitted as part of the September 23 Motion.

On October 9, 2020, the Energy Bureau held a Technical Conference in response to PREPA's request to obtain feedback from the Energy Bureau.[3] On October 23, 2020, PREPA filed a document titled *Motion Submitting Draft Procurement Plan* ("October 23 Motion"). As part of the October 23 Motion, PREPA submitted its Draft Procurement Plan, in compliance with the IRP Order.

On November 5, 2020, PREPA filed a document titled *Request for Technical Conference* ("November 5 Motion"). Through the November 5 Motion, PREPA requested a second technical conference to discuss the Draft Procurement Plan submitted through the October 23 Motion. On November 17, 2020, PREPA filed a document titled *Motion to Submit Presentation for Technical Conference* ("November 17 Motion"). On November 23, 2020,

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[1] IRP Order, ¶ 860, p. 266.

[2] PREPA filed the September 23 Motion under Case No. CEPR-AP-2018-0001. On October 6, 2020, the Energy Bureau issued a Resolution and Order opening the instant docket and taking notice of the September 23 Motion.

[3] The Technical Conference, which was held remotely to avoid contamination with COVID-19, was broadcasted live via the Energy Bureau's YouTube Channel.

PREPA filed a document titled *Motion to Reiterate Request for Technical Conference* ("November 23 Motion"). On December 2, 2020, PREPA filed a document titled *Third Motion Reiterating Request for Technical Conference* ("December 2 Motion").

The Energy Bureau **FINDS** that the Draft Procurement Plan speaks for itself and given the necessity of implementing the Procurement Plan due to pending issuance of the Request for Proposals ("RFP"), a Technical Conference at this time would only cause undue delay. Therefore, PREPA's request for a second Technical Conference, per the November 5 Motion, the November 17 Motion, the November 23 Motion and the December 2 Motion, is **DENIED**.

II. REQUIREMENTS FOR THE IRP PROCUREMENT PLAN

The Final Procurement Plan should be viewed as the roadmap by which PREPA implements the directives of the Energy Bureau as set forth in the IRP Order. The IRP Order describes the Competitive Procurement Process[4] through issuing new RFPs for PREPA to comply with the Renewable Portfolio Standard ("RPS") of 40% renewable energy by 2025, as required by Act 82-2010[5] as amended by Act 17-2019[6].

The IRP Order found that PREPA's plan to use RFPs to solicit solar PV and battery energy resource capabilities was acceptable. The Energy Bureau determined that the competitive procurements to obtain Power Purchase and Operating Agreements ("PPOAs") for these resources must be open to all forms of renewable energy, including, but not limited to, wind, hydro, solar PV, Virtual Power Plants ("VPPs"), and storage. The Energy Bureau also determined that PREPA should not unnecessarily limit the level of overall procurement to 250 MW blocks. Rather, the Energy Bureau ordered PREPA to pursue a strategy that attempts to procure the resources required under Scenario S3S2B. The Energy Bureau noted unequivocally that all resources and storage amounts can be aggregates of smaller installations, so VPPs are explicitly allowed and able to compete on fair terms; and, combined or individual bids for renewable generation, battery, or combinations of renewable generation and battery resources are permitted.[7]

This Resolution and Order sets forth the changes that PREPA must incorporate to the Draft Procurement Plan and orders PREPA to make the necessary changes to the associated Request for Proposal ("RFP") in order to align the Final Procurement Plan and associated RFPs with the Energy Bureau's IRP Order, applicable regulations and laws. This Resolution and Order approves some of the core elements of PREPA's Draft Procurement Plan, modifies other elements and includes two Technical Appendices:

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[4] IRP Order, ¶¶ 856-867, pp. 265-269. The Energy Bureau establishes the requirements of the Procurement Plan and a schedule for semi-annual releases of RFPs starting in December 2020 and concluding in June 2023.

[5] Known as the *Puerto Rico Energy Diversification through Sustainable and Alternate Renewable Energy Public Policy Act*, as amended.

[6] Known as the *Puerto Rico Energy Public Policy Act*, §1.6(10).

[7] IRP Order, ¶¶ 865 and 866, p. 270.

- Appendix A: Specific Modifications to the Procurement Plan; and
- Appendix B: Procurement Process Questions and Ongoing Technical Issues for Parallel Resolution
    - Part I: Questions requiring PREPA responses to inform the Energy Bureau as the procurement process proceeds; and,
    - Part II: Statement of the technical issues for resolution to proceed in parallel with the RFP issuance and initial selection and contracting stage.

The Energy Bureau **ORDERS** PREPA to carry out the terms of its Procurement Plan as modified and set forth in the Technical Appendices in this Resolution and Order.

III. SUMMARY OF KEY ASPECTS OF PREPA'S FILED PROCUREMENT PLAN

PREPA's Draft Procurement Plan contains a plan description, and additional details including: the intentions for addressing counter-party risk, an RFP template, a PPOA template, planned installation timeline and circumstances under which PREPA will be flexible with that timeline, an RFP schedule, proposed adjustments to its plan to reflect distributed generation ("DG"), evaluation parameters and other considerations.

The Energy Bureau will not reiterate the details of PREPA's Draft Procurement Plan here. However, the Energy Bureau identifies certain key aspects of the following six (6) core procurement plan elements as proposed by PREPA, which will be modified or approved by the Energy Bureau in Part IV and Appendix A of this Resolution and Order. This will ensure that the Final Procurement Plan is aligned with the IRP Order:

1. **Overall Process**. PREPA proposes to combine the Request for Qualification ("RFQ") into the Request for Proposal ("RFP") process.

2. **Type and Quantities of Products to be Procured**. PREPA proposes to modify the minimum quantities required for tranche 1 to reflect interconnection capability concerns.[8] PREPA first proposes an RFP for 450 MW of new renewable energy, which combined with the 594 MW of "shovel ready" solar PV projects[9] would meet the tranche 1 "guidance" requirement of 1,000 MW of renewable energy.[10] However, in

[8] Draft Procurement Plan, p. 17 and pp. 29-31.

[9] *Id.*, p. 30.

[10] IRP Order, Table 17, p. 268.

the Draft Procurement Plan[11] and in the November 17 Motion,[12] PREPA indicates that its ability to interconnect new renewable energy is limited, and increasing the ability to interconnect tranche 1 levels of renewable energy would depend on the extent to which system upgrades and improvements can be made. PREPA does not indicate in the Draft Procurement Plan any particular timetables associated with such improvements. PREPA does not indicate the extent to which new distributed generation could be interconnected in the near-term to support tranche 1 targets before making required system upgrades and improvements. PREPA proposes to defer procurement of distributed resources or VPP to later tranches.[13] PREPA also proposes to link renewable energy quantities to minimum technical requirements that include on-site battery storage.[14] PREPA proposed "at least" 225 MW of battery energy storage procurement, which is less than the required 500 MW for tranche 1, but also indicated that it "can and should" target 500 MW of battery storage capacity resources.[15] PREPA proposes minimum quantities of renewable energy and battery installations (20 MW for utility scale, and 5 MW for VPPs). PREPA states that resources that serve VPPs will not be allowed to participate in any "net-metering" programs offered by PREPA.[16]

3. **Timeline for Installations**. PREPA states that proposals that demonstrate an ability to achieve commercial operation in less than 36 months (from contract) "may" be given a more favorable consideration.[17]

4. **Minimum Technical Requirements (MTR)**. PREPA proposes to retain the existing MTR construct.[18] This would require paired battery energy storage at all new renewable energy sites.

5. **Interconnection**. PREPA notes that system upgrades and improvements will have to meet the renewable energy requirements.[19] PREPA states that all proposals must

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[11] Draft Procurement Plan, p. 30.

[12] November 17 Motion, Exhibit A, "Renewables and Energy Storage" Presentation, November 6, 2020, slide 8.

[13] Draft Procurement Plan, p. 17. *See, also*, November 17 Motion, Exhibit A, "Renewables and Energy Storage" Presentation, November 6, 2020, slide 16.

[14] Draft Procurement Plan, p. 15. "...paired and integrated with battery energy storage at a capacity and hours storage compliant with the respective PREPA MTR."

[15] *Id.*, pp. 29-30.

[16] *Id.*, p. 15.

[17] *Id.*, p. 21.

[18] *Id.*, p. 15.

[19] *Id.*, page 30. *See, also*, November 17 Motion, Exhibit A, "Renewables and Energy Storage" Presentation, November 6, 2020, slide 8.

include transmission interconnection costs, and that proponents will also need to pay for any network transmission upgrades required.[20]

6. **Selection Criteria**. PREPA proposes a two-staged selection process, with Phase IIA and Phase IIB after an initial eligibility screening (Phase I) under Regulation 8815. PREPA lists qualitative and quantitative metrics it will consider for selecting projects.

IV. SUMMARY OF THE ENERGY BUREAU'S FINDINGS WITH RESPECT TO THE PROCUREMENT PLAN

A. Energy Bureau Summary Approval and Modifications to PREPA's Procurement Plan

The modifications to PREPA's Draft Procurement Plan are described below. Further detail associated with modifications is provided in Appendix A of this Resolution and Order.

1. Process

The Energy Bureau **FINDS** that the competitive bid process shall follow Regulation 8815[21] and that the Request for Qualifications ("RFQ") be folded into the RFP process to expedite the procurement of renewable energy to comply with Act 17-2019. Thus, as part of the RFP process, PREPA shall include the request for qualifications as one of the criteria to be evaluated in determining the winning bidder(s). PREPA **is not authorized** to conduct a separate RFQ process.

The Energy Bureau will conduct ongoing oversight of the procurement required by the IRP Final Order. Therefore, this Resolution and Order is targeted at ensuring that the procurement of the first tranche of renewable energy and storage is successful and meets the goals of the Approved IRP. PREPA **SHALL** consider the Procurement Plan to be a living document subject to continued revision and application of lessons learned from each tranche of procurement and for other proceedings. For example, the Optimization Proceeding required by the IRP Final Order[22] will be well underway by the time that the second tranche of resources is procured in mid-2021. PREPA **SHALL** file an updated Procurement Plan reflecting the specific plans for the second tranche **on or before May 1, 2021** and incorporate into that document both lessons learned from the first tranche and any requirements that originate from the Optimization Proceeding or any other intervening Resolutions or Orders by the Energy Bureau.

2. Types and Quantities of Products to be Procured

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[20] Draft Procurement Plan, p. 22.

[21] *Joint Regulation for the Procurement, Evaluation, Selection, Negotiation and Award of Contracts for the Purchase of Energy and for the Procurement, Evaluation, Selection, Negotiation and Award Process for the Modernization of the Generation Fleet*, September 1, 2016.

[22] IRP Final Order, ¶ 899, p. 279.

The Energy Bureau **ORDERS** PREPA to modify the types and quantities of products procured in accordance with the details listed below and discussed in further detail in Appendix A of this Resolution and Order.

a. The Energy Bureau **DIRECTS** PREPA to expeditiously select renewable energy and battery storage projects for tranche 1 procurement to meet the quantity thresholds set out in the IRP Order. To meet these thresholds, both stand-alone and paired renewable energy and battery storage projects must be considered. If "shovel ready" utility scale projects are available for expedited installation under earlier purchase agreements, PREPA **SHALL** procure stand-alone battery storage projects with multiple hour duration and roughly one-half of their projected capacity (*e.g.*, if "shovel ready" utility scale projects have an aggregated capacity of 150 MW, then PREPA should procure at least 75 MW of battery storage)[23] to be

[23] The Draft Procurement Plan indicates PREPA's consideration of 593.5 MW of authorized "shovel ready" solar PV projects. *See* Draft Procurement Plan, p. 30. However, PREPA informed the Energy Bureau its intention to retire such projects from consideration based on a Fiscal Oversight and Management Board's ("FOMB") determination regarding these projects. *See* In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Xzerta-Tec Solar I, LLC), Case No. NEPR-AP-2020-0003; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (SolarBlue Bemoga, LLC), Case No. NEPR-AP-2020-0004; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Solaner Puerto Rico One, LLC), Case No. NEPR-AP-2020-0005; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Blue Beetle III, LLC), Case No. NEPR-AP-2020-0006; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (PBJL Energy Corporation), Case No. NEPR-AP-2020-0007; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (CIRO One Salinas, LLC), Case No. NEPR-AP-2020-0008; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Guayama Solar Energy, LLC), Case No. NEPR-AP-2020-0009; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Solar Project San Juan, LLC), Case No. NEPR-AP-2020-0010; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Vega Baja Solar Project, LLC), Case No. NEPR-AP-2020-0011; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Renewable Energy Authority, LLC), Case No. NEPR-AP-2020-0012; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (REA Energy Hatillo Solar Plant), Case No. NEPR-AP-2020-0013; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Caracol Solar, LLC), Case No. NEPR-AP-2020-0014; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Sierra Solar Farm, LLC), Case No. NEPR-AP-2020-0015; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Desarrollos del Norte Inc. d/b/ab Atenas Solar Farm, LLC), Case No. NEPR-AP-2020-0016; In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional (Morovis Solar, LLC), Case No. NEPR-AP-2020-0017; y In Re: Enmiendas a Contrato de Compraventa de Energía Renovable: Proyectos No-Operacional ReSun (Barceloneta), Case No. NEPR-AP-2020-0018. On a letter dated August 17, 2020, the FOMB determined that the renegotiated contracts associated with the "shovel ready" projects violated PREPA's Fiscal Plan. Therefore, the FOMB determined that PREPA should limit the "shovel ready" projects to 150 MW, conditioned to such projects meeting certain parameters as established by FOMB. *See* Letter from Natalie A. Jaresko Executive Director of the Financial Oversight and Management Board to Eng. Ralph A. Kreil Rivera, Chairman of PREPA's Governing Board dated August 17, 2020.

expedited for installation,[24] either at utility scale or at distributed scale as a VPP, as part of tranche 1 selections.

b. Each procurement tranche shall include renewable energy for delivery at transmission or distribution locations, at "utility scale"[25] or "distributed generation" ("DG") scale. Minimum quantity thresholds as considered by PREPA for contracting with proposing parties apply, but PREPA **SHALL** allow those minimum quantities to be met through provision of energy aggregated at multiple locations and sites, for both utility-scale and VPP resources.

c. Each procurement tranche must include battery storage capacity resources to contribute to meeting peak load and ancillary service requirements, at utility or distributed scale. Minimum quantity thresholds as considered by PREPA for contracting with proposing parties apply, but PREPA **SHALL** allow those minimum quantities to be met through the provision of battery storage capacity at multiple locations and sites, for both utility-scale and VPP resources.

d. Distributed generation and distributed storage resources (such as VPP) and utility scale resources are eligible at quantities indicated for tranche 1 and all tranches. PREPA's request[26] to delay DERs and VPP procurement is **DENIED**, given the letter and spirit of the IRP Order explicitly designed to encourage DERs and VPPs. Enabling the existing VPP storage resources should be at the top of PREPA's priority list given its potential to facilitate further renewable integration and lower grid operating costs. Enabling new VPP capacity and distributed energy resources in early tranches will better enable PREPA to meet the requirements of Act 17-2019 and the IRP Order regarding capacity and energy and mitigate possible transmission or system constraints.

e. Differentiating between utility-scale and distributed scale resource procurement is important to allow for application of different value criteria (*e.g.*, resiliency benefit and loss avoidance for DG), and thus the procurement plan **SHALL** proceed simultaneously for two groupings of resources: utility scale and distributed scale. However, with commonality

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[24] The amount of battery storage selected in tranche 1 might be lower than one-half of the "shovel-ready" project MWs if some battery storage is already planned by those projects to meet MTRs.

[25] For purposes of procurement, "utility scale" renewable energy is delivered to the transmission system at 38 kV or higher voltage interconnection points. "Distributed generation" is renewable energy connected at voltages lower than 38 kV.

[26] November 17 Motion, Exhibit A, "Renewables and Energy Storage" Presentation, November 6, 2020, p. 16 states "In the interest of efficiency and cost minimization, PREPA should be permitted to defer the procurement of DERs and VPPs into later phases of the renewables RFP process."

of purpose (accelerated contracting and deployment) and the likely extensive overlap of many submission requirements (*e.g.*, respondent capabilities, pricing, locations), PREPA **SHALL** conduct a single procurement process.

3. Timeline for Installations

   a. PREPA **SHALL** use all reasonable means to ensure that it contracts with enough renewable generation comprised of both energy and renewable energy credits ("RECs") or otherwise acquire RECs from other renewable generation in Puerto Rico, to meet the 2022 and 2025 RPS requirements. In particular, PREPA **SHALL** use all reasonable means to ensure that the commercial operation date of contracted resources will enable those resources to contribute the energy required during the milestone years of 2022 and 2025. Therefore, PREPA **SHALL** establish in the RFP that commercial operation commencement date should not exceed twenty-four (24) months from signing of the contract. Consideration may be given to proposals with commercial operation commencement dates not to exceed thirty (30) months from contract, but to a lesser extent.

   b. PREPA **SHALL NOT** delay contracting processes to meet RPS requirements because of concerns over the ability of the PREPA system to integrate the level of renewable energy required by Act 17-2019 and ordered by the Energy Bureau in the IRP Order. As noted in Appendix B of this Resolution and Order, PREPA **SHALL** work in parallel with procurement processes to ensure that all renewable energy and capacity resources are reliably interconnected to the system.

4. Minimum Technical Requirements ("MTRs") for Interconnection

   a. PREPA **SHALL** ensure that to the **maximum extent possible**, MTRs associated with providing battery storage capacity are applied across the system, and not at individual locations **unless PREPA demonstrates to the Energy Bureau it is technically necessary to do so**. The Energy Bureau takes explicit note of PREPA's description in the filed IRP that site-specific energy storage may not be a binding constraint because "...important levels of BESS will be installed in the system with the dual purpose of providing frequency regulation and shifting energy from day peak to night peak."[27] Other site-specific MTRs, such as adherence to voltage ride-through, frequency ride-through, and voltage regulation requirements, are acceptable on a site-specific basis, as necessary for technical or reliability reasons.

[27] PREPA IRP, page 6-27.

b. PREPA **SHALL** expedite battery procurement with the same effort as expediting renewable energy deployment to ensure that system-wide MTR constraints can be relieved with system-deployed battery storage resources at either or both utility and distributed scale. This will mitigate against potential delays in renewable energy installations at either utility or distributed scale and contribute to reducing barriers to participation in the competitive procurement process.

5. Interconnection

a. Any limitations on the ability of the existing transmission system to interconnect the levels of renewable resources required by Act 17-2019 **SHALL NOT** delay PREPA's imminent procurement processes for renewable energy. Specifically, PREPA **SHALL PROCEED** with procurement planning and contracting to meet 2022 and 2025 RPS goals and must expeditiously also contract for battery storage capacity resources needed to support renewable energy needs in the short term period of 2022-2025, with attention to accelerating renewable energy acquisition in subsequent years consistent with the IRP Order.

b. PREPA **SHALL,** with all due speed, pursue deployment of renewable resources and battery storage capacity at the best technical locations for either or both utility-scale and distributed scale, while simultaneously proceeding with the integration study and targeted transmission support and reinforcements required to allow such resource installations. PREPA's current study processes, aims and preliminary findings and analysis[28] with Sargent and Lundy must not interfere with accelerated efforts to proceed with contracting for required renewable energy and battery storage resources to meet Act 17-2019 requirements and comply with the provision of the Energy Bureau's IRP Order.

c. PREPA **SHALL** include in the RFP (directly, or as a technical appendix) clear and specific indications, through a non-confidential listing, of **all** the best technical locations to allow for reliable interconnection of capacity and renewable energy resources. These locational listings **SHALL** distinguish, if technically applicable, between renewable energy and battery capacity preferential interconnection locations. These locations shall be of finer geographical or locational granularity than the MiniGrid regional boundaries stated in PREPA's IRP filing, and preferably will be at or close to the level of specific substations. This list should include conditionality or caveats as required by technical uncertainties associated with the broadcast of the "best" locations. However, PREPA **SHALL** give diligent attention to the importance of conveying to potential proposers

[28] November 17 Motion, Exhibit A, "Renewables and Energy Storage" Presentation, November 6, 2020, p. 8.

and developers a clear indication of which locations allow for the earliest installations of resources with a greater assurance of reliability of interconnection with an expected minimum of operational constraints.

d. PREPA **SHALL NOT** exclude locations that could serve as host sites for utility-scale battery capacity installations that have connected (operational or inoperative) fossil-fuel capacity anticipated to be retired under the IRP Order during the Action Plan period of the IRP.

e. For prospective VPP installations, PREPA **SHALL** indicate, to the best of its ability, the extent to which any transmission or distribution locational limitations could affect the overall quantity or location of components of the distributed generation comprising a portion of a VPP proposal.

f. PREPA **SHALL** give priority to proposal respondents able to provide resource installations at or technically close to the indicated priority locations.

g. PREPA **SHALL** proceed to contracting with winning bidders expeditiously in parallel with implementing other aspects of the Procurement Plan and consistent with final resolution of interconnection issues.

h. PREPA **SHALL** cluster those successful respondents to the first RFP which do not yet have completed interconnection agreements for interconnection studies. PREPA **SHALL** consider the effects of integration analysis of a group or cluster of potential capacity and renewable energy locations when ranking or selecting potential projects for installation, especially in regard to assessing any required network upgrades or the potential to utilize shared interconnecting facilities across multiple projects.

6. Selection Criteria

a. Priority locations to be incorporated in the RFP shall include locations for utility scale and distributed generation renewable energy projects with energy storage.[29] PREPA shall state, with specificity, which locations are preferred to most reliably and speedily allow for interconnection of required energy and storage resources, such as proximity to substations, and to load where the system is constrained. PREPA **SHALL** clearly describe in the Final Procurement Plan any expected synergies between battery energy storage and renewable energy locations, such as would exist with same-site pairings of solar PV and battery energy storage, but

[29] The Energy Bureau emphasizes the importance of including the "relevant findings" and additional detailed locational information, as stated in the Draft Procurement Plan, p. 30.

might also exist with separately-sited battery storage and renewable energy locations where sufficient connecting transmission exists.

b. An explicit value for DG providing resiliency benefits such as avoiding T&D costs **SHALL** be directly considered in the evaluation phase. PREPA may include an adder for DG resources that provide resilience at the site of critical and priority loads identified in the analysis in Appendix 1 of the IRP. PREPA must directly include as part of a benefits consideration the avoided system losses from DG relative to utility-scale resources. PREPA must provide a transparent indication in the RFP as to at least a range of potential values for the identified benefits that distributed generation resources provide compared to utility-scale connected resources.

c. A strong preference for faster-installation projects **SHALL** also be considered to ensure adherence to timely meeting the RPS requirements of Act 82-2010, as amended by Act 17-2019.

d. PREPA **SHALL** incorporate scoring system modifications to ensure fairness in comparing costs and benefits across and between utility-scale and distributed resource deployment proposals.

The Energy Bureau **ORDERS** PREPA to incorporate these modifications to the Draft Procurement Plan into a Final Procurement Plan and ensure that the final RFP is modified to conform to the changes incorporated into the Final Procurement Plan.

B. Energy Bureau Findings in Appendix A

Appendix A of this Resolution and Order contains further detail on the Draft Procurement Plan modifications summarized in Part IV(A) above. Appendix A is hereby incorporated as part of this Resolution and Order and should be included in the Final Procurement Plan.

C. Energy Bureau Questions and List of Ongoing Technical Issues in Appendix B

Appendix B of this Resolution and Order contains certain technical questions for PREPA to inform the Energy Bureau as the procurement process proceeds and matters which require attention and resolution during the procurements to be carried out over the next few years. Appendix B is hereby incorporated as part of this Resolution and Order.

Part I of Appendix B of this Resolution and Order contains technical questions requiring an immediate PREPA response. The Energy Bureau **ORDERS** PREPA to file responses to the technical questions in the first part of Appendix B **on or before fourteen (14) days** of the notification date of this Resolution and Order.

Part II of Appendix B contains a list of "Ongoing Technical Issues for Parallel Resolution", which will require attention and resolution during the procurements to be

carried out over the next few years. The Energy Bureau understands the importance of PREPA's ongoing technical analyses to ensure its system can integrate the required levels of renewable energy and battery storage. The initial stages of the procurement plan **shall continue to proceed in parallel and without delay** even as technical integration and installation issues are defined, analyzed, and eventually resolved in an expedited manner to allow Puerto Rico to timely meet the RPS requirements of Act 82-2010 as amended by Act 17-2019.

V. CONCLUSION

The Energy Bureau **ORDERS** PREPA to revise its Draft Procurement Plan in accordance with the findings and orders in this Resolution and Order. Further, the Energy Bureau **ORDERS** PREPA to submit the Final Procurement Plan and associated RFP **within fourteen (14) days** of the notification date of this Resolution and Order. Preparing the revisions should not delay other actions required to implement the RFP process as described in the Procurement Plan and revised by the Energy Bureau.

The Energy Bureau **ORDERS** PREPA to file responses to the technical questions in Part I of Appendix B **on or before fourteen (14) days** of the notification date of this Resolution and Order.

The Energy Bureau **WARNS** PREPA that noncompliance with any of the provisions of this Resolution and Order will be construed as a violation to the Energy Bureau's orders and could carry the imposition of administrative fines of up to twenty thousand dollars ($25,000) per day, per violation as well as any other sanctions the Energy Bureau deems necessary, in accordance with the applicable laws and regulations.

Be it notified and published.

Edison Avilés Deliz
Chairman

Ángel R. Rivera de la Cruz
Associate Commissioner

Lillian Mateo Santos
Associate Commissioner

Ferdinand A. Ramos Soegaard
Associate Commissioner

Sylvia B. Ugarte Araujo
Associate Commissioner

NEGOCIADO DE ENERGÍA DE PUERTO RICO
NEPR
JUNTA REGLAMENTADORA DE SERVICIO PÚBLICO

CERTIFICATION

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on December 8, 2020. I also certify that on December 8, 2020 a copy of this Resolution and Order was notified by electronic mail to the following: astrid.rodriguez@prepa.com, jorge.ruiz@prepa.com, n-vazquez@aeepr.com, c-aquino@prepa.com and kbolanos@diazvaz.law. I also certify that today, December 8, 2020, I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today December 8, 2020.

Wanda I. Cordero Morales
Clerk

Appendix A
Modifications to PREPA's Draft Procurement Plan

I. Process

1. As determined by the Energy Bureau in the Resolution and Order, and as explicitly allowable under Regulation 8815, the Request for Qualifications ("RFQ") portion of PREPA's Draft Procurement Plan is to be folded into the Request for Proposals ("RFP") process for the purpose of increasing the procurement process efficiency to allow for an accelerated timeline for installation of the required renewable energy and storage resources.[1] PREPA is not authorized to conduct a separate RFQ process.

2. The Energy Bureau will conduct ongoing oversight of the procurement required by the IRP Final Order. Therefore, this Resolution and Order is targeted at ensuring that the procurement of the first tranche of renewable energy and storage is successful and meets the goals of the Approved IRP. PREPA **SHALL** consider the Procurement Plan to be a living document subject to continued revision and application of lessons learned from each tranche of procurement and from other proceedings. For example, the Optimization Proceeding required by the IRP Final Order[2] will be well underway by the time that the second tranche of resources is procured in mid-2021. PREPA **SHALL** file an updated Procurement Plan reflecting the specific plans for the second tranche **on or before May 1, 2021** and incorporate into that document both, lessons learned from the first tranche and any requirements that originate from the Optimization Proceeding or any other pertinent Resolutions or Orders by the Energy Bureau.

II. Products and Quantities to be Procured

1. The overall structure of the procurement will be to obtain two products: renewable energy and capacity provided by battery storage. Capacity products procured, at a minimum, must be able to provide delivered energy during PREPA's evening peak periods but may also provide ancillary service capability such as frequency response, regulating capacity or operating reserves. PREPA's selection and valuation criteria must account for and value such ancillary service product provision if capacity resources can provide it.

2. Within each procurement tranche, PREPA must differentiate not only between capacity and energy provision, but also between utility-scale (interconnected at 38 kV or above) and distributed scale (interconnected at voltages below 38 kV)

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[1] Draft Procurement Plan, p. 12.

[2] IRP Order, ¶ 899, p. 279.

resources, for each of renewable energy and capacity products, in order to account for different locational attributes when evaluating resource proposals.

3. Distributed resources procured as part of a VPP (aggregations of distributed resource under the control of a single third-party developer) must be evaluated considering the additional benefit these resources provide including (i) the potential to avoid T&D costs, (ii) local resiliency by serving critical or priority loads, and (iii) potentially completing installations in faster timeframes - or be available more immediately, as a capacity resource based on an existing battery storage installation that is currently not visible to PREPA.

4. PREPA shall procure tranche quantities as per Table 1-5 of the Draft Procurement Plan, aligned with the guidance for procurement contained in the IRP Order. As such, for tranche 1 PREPA must procure at least 1,000 MW of renewable energy resources and a minimum of 500 MW of battery storage resources with an effective duration of four (4) hours.

5. Furthermore, in direct consideration of PREPA's need to have resources available not only to meet peak loads during normal periods, but (for example) to serve critical and priority load in the event of an extreme weather event, and recognizing areas where "it would be impractical or excessively costly to try to maintain reliable electric supply with transmission after a major event",[3] some of the procured battery resources in tranche 1 and other tranches must be located on the distribution system and procured as part of a VPP offering.

6. The Energy Bureau thus **ORDERS** PREPA to "carve out" or ensure that at least 150 MW of battery storage resources procured as part of tranche 1 are distributed battery storage resources (to be operated as VPPs).[4] During normal system operations these resources can contribute to meeting PREPA's peak load needs. During extreme weather events, these resources can provide resiliency at their points of installation. These resources can include existing or new battery storage installations that are or may eventually be part of a microgrid or part of a single-site distributed resiliency solution.

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[3] As noted in PREPA's IRP, Exhibit 1.01C, the redacted version of Appendix 1, at page 2-8.

[4] Exhibit 2-4 in Exhibit 1.01C, Appendix 1 of PREPA's IRP indicates that a total of 192.8 MW of "MicroGrid Deemed" critical load exists across Puerto Rico, a further 24.1 MW of priority load exists across the island, and 118.6 MW of balance load exists. While not all critical load will need to be served from microgrid resources, this table illustrates that a sizable portion of critical load as defined by PREPA, as well as other load, exists in regions that are unlikely to be economically served from a hardened MiniGrid transmission system in the event of an extreme weather event. On this basis, it can be expected that at least a minimum of a few hundred MW of critical, priority and balance load is likely to require service from local, distributed resources.

7. During the ongoing implementation of the procurement process described in the IRP Order, and during the forthcoming Optimization Proceeding,[5] the Energy Bureau will continually evaluate the procurement plan and the methods used to value distributed resources in comparison to utility-scale resources.

8. At this stage of the procurement process, the Energy Bureau thus **DIRECTS** PREPA to carve out a portion of the required tranche 1 battery storage resource procurement for distributed resources as an initial step to ensure compliance with aspects of the IRP Order directing PREPA to capture distributed resource value, rapidly where feasible.[6]

9. The Energy Bureau **DIRECTS** PREPA to give equally aggressive attention to ensuring procurement, installation and eventual commercial operation of both renewable energy and battery storage capacity at tranche 1 quantities.

10. VPP projects are explicitly allowed and considered in tranche 1.[7] Furthermore, as reflected in part in the "carve out" provision above, PREPA must give initial preference to contracting for existing VPP capacity (not currently visible to PREPA) that can be obtained immediately.

III. Timeline for Installations / Milestones / Alignment of Procurements with RPS Requirements

1. The Draft Procurement Plan is entirely silent on expectations for capturing the existing potential VPPs that are composed of already-deployed battery storage systems. This resource has no construction time and is already interconnected. PREPA must allow for two options here: (1) clearly value VPP resources accordingly in this RFP process, especially recognizing an intention to capture this resource, with a fast expected timeline; and (2) explicitly declare its intention to capture this resource via a demand response program under the forthcoming Regulation on Demand Response. Getting this resource online will have immediate implications for grid operations (including potentially allowing greater than 650 MW of solar PV to be interconnected without grid upgrades in the short term) and should lower the cost of operation of PREPA's existing fossil fleet.

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[5] IRP Order, ¶ 899, p. 279.

[6] IRP Order, ¶ 496, p. 141 and ¶ 736, p. 227.

[7] IRP Order, ¶ 496, p. 141, which states ". . . the Energy Bureau ORDERS PREPA to quickly pursue VPP approaches to capture the grid value of distributed resources through RFPs, tariffs, rates, and/or direct utility programs."

2. The RFP evaluation process should last no longer than forty-five (45) days, accelerated from the current Regulation 8815 timelines (which are 90 days).[8]

3. PREPA shall establish in the RFP that commercial operation commencement date should not exceed twenty-four (24) months from signing of the contract. Consideration may be given to proposals with commercial operation commencement dates not to exceed thirty (30) months from contract, but to a lesser extent. Shorter development times must be given a much higher score in the RFP evaluation process.

IV. Minimum Technical Requirements (MTR)

1. PREPA states:

   "Projects must comply with PREPA's appropriate Minimum Technical Requirements (MTR's) and current Interconnection Standards and Requirements. Compliance with MTRs and interconnection requirements will be part of the RFP selection criteria".[9]

2. Many of the MTRs reflect the need to limit upward and downward ramping from solar facilities, which is usually accomplished with paired storage. Ramp rate limits are required to allow for the lack of flexibility in the rest of PREPA's generating fleet. However, once the grid as a whole is more flexible, due to the utilization of battery energy storage systems ("BESS"), the MTRs at each location should be able to be relaxed unless the proposed project generation site is on a spot or isolated network, or a local issue requires it. The procurement plan does not allow for relaxing the site-level MTRs as the grid evolves. Therefore, the Energy Bureau **DIRECTS** PREPA to change this provision to reflect system-level needs, unless PREPA clearly demonstrates that extenuating circumstances (such as local transmission or distribution systems' constraints) dictate more stringent technical requirements (*e.g.*, for localized battery storage resources).

3. PREPA states:

   "Respondent shall be required to provide a detailed description of the scheduling or dispatch process, ramp rates, automatic generation control, existing or planned Inter-Control Center Protocol ties to PREPA and any energy magnitude and duration limitations... The Respondent shall be responsible for managing load reductions, including all notices,

[8] Draft Procurement Plan, p. 13.

[9] *Id.*, p. 15.

communications, controls, equipment, or other processes required. Communication terms shall be at the discretion of PREPA".[10]

4. In addition to the respondent providing a detailed description of the project's scheduling or dispatch operational flexibility, PREPA must provide as much information as possible in the solicitation regarding approximately how frequently or under what conditions the resources will be dispatched, and how much advance notice will accompany the utility activation signal ("trigger") notification. Deployment of smart inverters with advanced communication capabilities can facilitate optimal device trigger and notification practices. PREPA must also allow for flexibility on the part of communications terms if technically equivalent alternatives exist in addition to PREPA's desired terms for such equipment. The Energy Bureau **DIRECTS** PREPA to not use this requirement to exclude participation from otherwise qualified VPP or utility-scale providers, if negotiations with respondents can lead to reliable communications protocols without enforcing unneeded rigidity of standards.

V. Interconnection

1. PREPA states the following, concerning required system upgrades, in its Draft Procurement Plan:

   "PREPA does not yet know whether the existing power grid can support 1,000 MWs of renewable energy capacity without significant system upgrades. Given this uncertainty, PREPA has engaged the services of Sargent & Lundy to evaluate system impacts associated with new renewable energy resources, identify needed system upgrades, determine an approximate capacity value that results in minimal system impacts, and provide an initial screening for preferred interconnection locations. PREPA will communicate the results of the studies with the Energy Bureau once they become available."[11]

2. According to PREPA, preliminary analysis indicates that for the existing grid, the maximum acceptable penetration of renewable generation would be around 650 MW (existing plus new projects) before major system upgrades must be undertaken by PREPA.[12] However, PREPA does note "[t]his is using the current topology of the power grid without any additional electrical support".[13] While a phased procurement approach provides PREPA time to model the renewable

[10] *Id.*, p. 21 and p. 24.

[11] Draft Procurement Plan, p. 17.

[12] *Id.*, p. 5 and p. 30.

[13] *Id.*

integration and the T&D system to determine any needed system upgrades to minimize system impacts,[14] PREPA is required to determine how it will handle proposals that may require eventual substantial system upgrades.

3. One option is to rank these proposals lower than more preferentially located proposals. Another option is for the proponent, within a reasonable timeframe, to have the opportunity to identify another location for interconnection where the effects of renewable integration are not adverse or which can be mitigated without major system upgrades (*e.g.,* understanding how battery storage projects acquired through the first procurement tranches in "support of integration requirements for renewable generation"[15] might be identified and expedited for installation, to support technically complementary renewable energy project proposals). A third option might be to recognize how changing grid and resource configurations may support resource deployment prior to completion of major transmission system upgrades. A fourth option is for PREPA to directly consider operational limitations that may need to be incorporated initially for some projects, but relieved upon completion of ongoing network transmission system improvements and other synergistic system changes such as thermal plant retirement and battery storage resource deployment.

4. The Energy Bureau **DIRECTS** PREPA to carefully consider the synergies and the timing of (a) new battery storage resources; (b) staged transmission reinforcements whose initial components can be completed in advance of an entire transmission project; (c) complementary retirement of existing older thermal resources, and (d) operational guidance that can allow a project to proceed in stages, or with operational limitations based on system needs for curtailment under certain conditions. The Energy Bureau **DIRECTS** PREPA to consider the way in which combinations of the system changes noted above may help mitigate constraints that may otherwise indicate a need to delay renewable energy deployments. The Energy Bureau **DIRECTS** PREPA to carefully consider the assumptions used in interconnection analyses that account for the factors noted above.

5. PREPA states:

   "The renewable generation integration study will also identify, at a high-level, preferred interconnection locations on PREPA's T&D based on the current capacity of the system and needed electrical system upgrades".[16]

[14] *Id.*, p. 29.

[15] As noted in the Draft Procurement Plan, p. 29.

[16] Draft Procurement Plan, p. 30.

6. PREPA can attract higher-quality RFP responses by providing relevant customer and system data as a direct part of the solicitation (or an attachment). Establishing a common set of system data points to be provided in solicitations, including information about the timing, location, size of the reliability need, and interconnection requirements, will help RFP responders assemble more informed bid responses. For example, any system studies being conducted by Sargent & Lundy to provide an initial screening for preferred interconnection locations is valuable information that should be made available directly as part of the solicitation process.

7. Similarly, customer data such as demographics (*e.g.,* the percentage of residential, commercial, and industrial customers in any given subregion) or any information concerning preferred distribution system locations, or limitations that may exist across the distribution system may inform prospective responses that are considering distributed generation or virtual power plant solutions.

8. The Energy Bureau **DIRECTS** PREPA to specifically list and include as an attachment to the RFP those substations where interconnection is considered most preferable for utility scale installations, where it is technically feasible to do so. The list can, as necessary, include explanatory caveats if uncertainties exist as to the range of potential interconnection capacity. The Energy Bureau **DIRECTS** PREPA to explicitly include an initial estimate of the maximum amount of renewable energy or battery storage system MWs that can be connected at each of these locations, for purposes of indicating to developers where the best locations are. This does not bind PREPA to any given MW amount at any given connection point, pending further study as necessary after receiving proposals. This information should not be construed as a limitation on the maximum amount of renewable energy or battery storage system MWs that can be connected to the grid. The purpose of disclosing this information is to provide guidance regarding the best or optimal initial interconnection points.

9. The Energy Bureau **DIRECTS** PREPA to be flexible in its Respondent submission requirements listed at pages 21-22 of the Draft Procurement Plan. The Energy Bureau **DIRECTS** PREPA to incentivize maximum competitive participation in the procurement processes and not adhere to unnecessarily rigid submission requirements that might deter some potential respondents from participating in the procurement process. As part of this incentivization, PREPA MUST allow Respondents to propose pricing terms that deviate from the overly prescriptive nature of the terms listed on page 22 as long as those pricing proposals convey the essence of the resource cost to PREPA. The Energy Bureau **DIRECTS** PREPA to soften or eliminate any requirement that Respondents include an estimate of transmission network upgrade costs required to integrate the proposed project or projects, because some of these costs will depend on (i) PREPA actions pursuant to cluster study results or (ii) PREPA procurement of battery storage or other renewable energy projects situated in such a manner as to mitigate network upgrades or improvements that might otherwise be needed for a stand-

alone project. The Energy Bureau **DIRECTS** PREPA to allow for PPOA pricing terms for VPPs that are of similar durations (*e.g.,* 25 years) as those allowed or preferred for utility-scale resources. The Energy Bureau **DIRECTS** PREPA to allow respondents flexibility in providing interconnection plan specificity where numerous different locations could be utilized by the Respondent for the resource offered.

10. PREPA states the following, concerning the procurement timeline:

> *"Act 82-2010, as amended, demands from PREPA to procure renewable energy in the following milestones: 20% by 2022, 40% by 2025, 60% by 2040, and 100% by 2050. In order to accomplish the established targets, PREPA will be seeking proposals that can reach its commercial operation date within 36 months from the contract's execution date".* [17]

11. The Draft Procurement Plan consists of a series of RFPs that are spaced over a three-year timeline. While this approach allows for procurement flexibility, it is important to coordinate required battery storage installations that can relieve system constraints, and T&D system upgrades that may also be needed (after accounting for the effect of impending thermal plant retirements) with the sequences of installation following procurement in each tranche. If these are misaligned, then required timeliness of large-scale penetration of renewables on the grid at full operating capability may be jeopardized in the initial stages of the Puerto Rico power system transformation to one more fully dependent on renewable energy and battery storage. PREPA noted as much[18] and stated that through the Sargent & Lundy study, it will be able to determine the scale and scope of these system improvements and can schedule such improvements to support the future installations.

12. Thus, the Energy Bureau **DIRECTS** PREPA to develop, maintain, update and file with the Energy Bureau every six months commencing no later than June 1, 2021 a timeline for anticipated installations of battery storage and renewable energy resources. The Energy Bureau **DIRECTS** PREPA to prioritize complementary battery storage installations and "no regrets" necessary T&D system improvements that will support both near-term and longer-term increases in the interconnection of new renewable energy supplies. The Energy Bureau **DIRECTS** PREPA to streamline its interconnection analyses and allow for as rapid-as-possible installation of the required renewable and storage resources and T&D system improvements. Based on the 2025 RPS compliance and the tranche procurement schedule, allowing for commercial operation date within 36

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[17] *Id.*, p. 20.

[18] *Id.*, p. 7, which states " . . . the power grid . . . will not support 1000 MWs [of renewable energy] in the near-term...without system improvements and potentially unique PPOA provisions and payment structures to increase PREPA's operational and dispatch flexibility".

months from the contract's execution date will result in some of the procured capacity to be in operation after 2025. As stated in the IRP Order, the renewable capacity additions are essential to achieve the statutory mandate of 40% renewable generation by 2025. A 36-month operational date term will jeopardize achieving the 40% goal. Therefore, as stated before, a 24-months term is a more appropriate window.

13. PREPA states:

> *"It is expected that Respondents make their best effort to provide an accurate estimate of the transmission system interconnection and network upgrade costs."*[19] And, *"PREPA will evaluate the impact of the proposed resource on the PREPA T&D systems and identify to the Respondent where additional network upgrades are required."*[20]

14. The required levels of renewable energy installations through 2025 are on the order of 3,000 to 3,500 MW, for solar PV or an equivalent amount of energy from other mixes of renewable energy sources.[21] For this level of resources, it is reasonable to expect an eventual (though near term – prior to 2025) need for network transmission upgrades that would benefit not just one project, but all Puerto Rico load customers and will facilitate interconnections of multiple, if not many, projects. Also, it is reasonable to consider that some interconnection facilities could serve to interconnect more than one project, and thus it is reasonable that the cost of these facilities could be shared across more than one Respondent.

15. The Energy Bureau **DIRECTS** PREPA to incorporate into its planned assessments of the impact of resources on its T&D system[22] an efficient and time-saving method of analyzing clusters of potential projects. This type of cluster analysis can be similar to forms of cluster analysis used in the electric power industry but should be based at least on an initial selection of RFP responses that PREPA would rank relatively high on its list of projects for contracting in the first and then subsequent tranches.

16. The Energy Bureau also **DIRECTS** PREPA to incorporate into its planned assessments of Respondents' proposals the ability for multiple projects to share the same interconnecting facility, if reasonable and applicable for any given set of Respondent proposals. The purpose of such assessments is to be efficient in

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[19] *Id.*, p. 33.

[20] *Id.*, p. 34.

[21] IRP Order, Table 16, p. 260.

[22] As noted in the Draft Procurement Plan, p. 34, "PREPA will evaluate the impact of the proposed resource on the PREPA T&D system and identify to the Respondent where additional network upgrades are required".

both (a) the time required to conduct interconnection analysis of multiple projects in close proximity; and (b) to consider optimal interconnection arrangements where multiple projects utilize the same new interconnecting facilities.

17. Appendix B to the Resolution and Order indicates that one area of ongoing technical concern is how to efficiently work through a myriad of potential interconnection issues that could arise as Puerto Rico works towards meeting its renewable energy installation goals. The Energy Bureau notes that forthcoming Regulations will continue to address the interconnection-related concerns and needs expressed in the Resolution and Order.

VI. Evaluation Criteria, Scoring, Selection

1. PREPA states:

   "VPPs will be subject to the same selection criteria as other utility scale renewable energy resources except that the minimum capacity requirement will be reduced to 5 MW."[23]

2. The Energy Bureau **DIRECTS** PREPA to allow multiple sites for installations to meet the 5 MW minimum capacity requirement for VPPs. The Energy Bureau **ACCEPTS** PREPA's use of a 5 MW minimum, but only for the purpose of a minimal contracted quantity for all of the sites that combined make up a VPP. The Energy Bureau **NOTIFIES** PREPA that the minimum contracted quantity is not the only criteria difference that PREPA will incorporate when evaluating VPPs. The Energy Bureau **DIRECTS** PREPA to explicitly value resiliency benefit in the form of accounting for potentially avoided transmission expenditures, and transmission and distribution system loss savings. These benefits arise from broad penetration of DG resources, and DG locations on the distribution system that are in closer proximity to load, relative to utility-scale generation at locations connecting directly to the transmission grid.

3. PREPA states that the LCOE thresholds used as part of the IRP modeling process "define the target pricing parameters for PREPA's PPOA" under the RFP process."[24] The Energy Bureau **REMINDS** PREPA that LCOE thresholds used in the IRP modeling process **do not define the target pricing parameters for PPOAs** under the RFP process. **All renewable energy and battery storage procurements will be priced based upon competitive market pricing determined under the RFP process**.

[23] *Id.*, p. 23.

[24] *Id.*, p. 20.

4. PREPA states:

   "Organize the proposals into groups according to the proposed technology". [25]

5. In addition to considering the technology, such as differentiating between wind, solar PV, and battery resources, the Energy Bureau **DIRECTS** PREPA to recognize groupings that will allow for distributed generation benefits to be recognized, for resiliency and for avoided T&D cost purposes. When selecting winning bids, PREPA must also directly account for projects with faster installation timelines, and those with better technical locations for interconnection purposes.

6. PREPA states:

   "Develop an initial qualitative score according to the information supplied by the Respondent for the proposed technology. The qualitative score will be based on technical viability, development status, developer experience, and financing plan and qualifications. Calculate the LCOE for each proposal. Determine the composite Phase IIA score from the weighted qualitative score and LCOE. The Phase IIB pricing evaluation will refine the Phase IIA pricing evaluation and determine the cost effectiveness of the shortlisted proposals. The Phase IIB qualitative evaluation will refine the Phase IIA qualitative evaluation". [26]

7. For expediency, the Energy Bureau **DIRECTS** PREPA to combine Phase IIA and Phase IIB of its selection process into just a single phase. Separating Phase II into two parts duplicates efforts because some of the qualitative criteria from Phase IIA and Phase IIB overlap. Phase IIB has a more comprehensive set of qualitative criteria that should not necessarily be subordinate to criteria listed in Phase IIA. For example, "Community Impacts and Acceptance" is listed as part of Phase IIB. Gaining community support is an important part of a Project's viability, is implicit in Act 17-2019 aims and PREPA's "customer centric" IRP focus, and comprehensive community outreach and communications planning is likely essential for a developer to have as they work with various communities and stakeholders to gain their support for a Project.

8. As outlined in the Draft Procurement Plan, Phase II should be divided into a qualitative and pricing evaluation. A weighting should be assigned to each price-related criteria and qualitative criteria (*e.g.,* 40% pricing and 60% qualitative), respectively.

[25] *Id.*, p. 35.

[26] *Id.*, pp. 35-37.

9. For the qualitative criteria listed in Table 9-2 of the Draft Procurement Plan, the Energy Bureau **DIRECTS** PREPA to apply a weight system to the criteria in order to reflect the impact these categories have on achieving a timely and successful procurement. For example, Technical Viability, Development and Schedule Risk, and Community Impacts and Acceptance could be weighted more heavily than the other categories. For example, for the Development and Schedule Risk criteria, **proponents that can design for and commit to an earlier commercial operation date than required in the RFP should receive a higher score**, signaling to the development community the importance of projects that can proceed rapidly.

10. Using the levelized cost of energy (LCOE) to evaluate the lowest price solution in each technology group is a logical approach for energy projects, but not necessarily for battery energy storage, whose capacity attributes are most critical. LCOE approaches alone also do not necessarily capture additional benefit provided by DG projects. The Energy Bureau **DIRECTS** PREPA not take the time-consuming step of exercising production cost modeling as part of the evaluation process, as too many input assumption variations would render the exercise subject to input sensitivity modification and likely not be an effective use of PREPA resources.[27] **Production cost modeling is not necessary nor recommended for evaluating the cost effectiveness of proposals**.

11. However, it is important that PREPA clearly indicate how Puerto Rico's emergence from Title III bankruptcy could potentially impact contract prices so that the project developers can factor this into their cost of capital calculations and accurately reflect this scenario in the project's LCOE. PREPA states that it will give preference in its evaluation to bidders whose contracts consider the future emergence and contain a price adjustment for better credit quality at such time[28]. Therefore, the Energy Bureau **DIRECTS** PREPA to provide bidders with the necessary information for them to conduct a LCOE sensitivity analysis around Puerto Rico's pre- and post-emergence from Title III bankruptcy.

VII. Other – VPPs

1. PREPA states:

"Resources that serve VPPs will not be allowed to participate in any "net-metering" programs offered by PREPA."[29]

[27] *Id.*, p. 36, PREPA indicates the possible use of production cost modeling as part of proposal evaluation.

[28] *Id.*, p. 18.

[29] *Id.*, p. 15.

2. The Energy Bureau **DIRECTS** PREPA to loosen the requirement that resources that serve VPPs are unable to participate in net-metering. For example, the plan must allow for battery storage that participates in a VPP to be on the same site as a solar PV facility that participates in net metering. If an RFP respondent chooses to also offer the energy into the RFP process, then such energy would not be paid at net metering rates. But as written, this element is unnecessarily restrictive and could dissuade competition and participation in proposing VPP resources for procurement.

3. The Energy Bureau **DIRECTS** PREPA to use the process of capturing the initial VPP resource to inform how it pursues subsequent VPP resources. By the time PREPA is procuring the second or third tranche, it could have VPP resources from the first tranche operational and can be using the resource in daily operations. PREPA should be explicitly expecting to use data insights and lessons learned from its operation in the context of an RFP to (a) set realistic performance requirements (*e.g.*, commercial terms); (b) assess the value (*e.g.,* grid services) that VPPs can provide; and (c) better gauge and potentially shorten the timeline for deployment and operation of VPPs based on best practices.

Appendix B
Procurement Process Questions and Ongoing Technical Issues for Parallel Resolution

I. Technical Questions to be responded by PREPA

1. Provide the Sargent and Lundy renewable generation integration study.

2. Preferential locations for utility-scale interconnections - Generally:

    a. Describe generically the criteria PREPA uses to determine the best substation locations for interconnection of new renewable energy and battery storage resources. Describe the rough magnitudes of interconnection capacity for renewable energy and battery storage capacity PREPA anticipates is available at its substations according to the classification or major size groupings given for substations.

    b. Explain generically how anticipated retirements over the Action Plan period of oil-fired thermal generation at power plants in the North (San Juan, Palo Seco) and in the South (Aguirre) will affect the available interconnection capacity for new renewable energy and battery storage locations.

3. Preferential locations for utility-scale interconnections – Specifically:

    a. Provide in an Excel file a comprehensive list of substation locations for utility scale renewable energy interconnection that are the most preferable technical locations for interconnection.

    b. Provide in the same Excel file a comprehensive list of substation locations most preferable for locating utility-scale battery energy storage resources.

    c. Include in the Excel file an estimate of the maximum nameplate MW of renewable energy interconnection at each substation. Indicate the voltage connection preferred at each substation (*e.g.,* 38 kV, and/or 115 kV).

    d. Include in the Excel file an estimate of the maximum nameplate MW of battery energy storage interconnection at each substation. Indicate the voltage connection preferred at each substation (*e.g.,* 38 kV, and/or 115 kV).

    e. Include in the Excel file any additional information about the technically preferred locations for renewable energy or battery storage interconnection, including the extent of and the drivers of any uncertainty concerning interconnection capacity at any given location.

    f. Provide a map, or maps, of Puerto Rico indicating the locations of the preferable technical locations for interconnection of renewable energy and

battery energy storage resources. Indicate substation names on this map or maps.

4. Provide in an Excel file a comprehensive indication of PREPA's currently known preferred locations for distributed generation resources, both renewable generation and battery storage resources.

5. Explain the basis for using a five (5) MW minimum capacity requirement for VPPs, and a twenty (20) MW minimum capacity requirement for utility scale resources.

6. Provide a specific proposal for determining evaluation criteria associated with the benefits from distributed generation or distributed storage resources relative to the value of utility-scale renewable generation or battery storage resources. Explain how PREPA will consider each of the following three attributes: (a) T&D loss savings for DG; (b) resiliency benefit; and (c) timeliness of installation.

7. Discuss approaches that PREPA can take to undertake fast-tracked interconnection analyses including (a) a form of cluster analysis to determine network upgrade needs; and (b) a form of common interconnection facilities analysis for multiple projects. Provide any additional insights on innovative methods PREPA can speedily initiate to allow for an accelerated process of interconnection study and renewable resource deployment relative to the timelines initially presented in PREPA's early draft procurement plans.

8. The "Ongoing Technical Issues for Parallel Resolution" below identifies transmission, interconnection, and Demand Response Regulation issues for ongoing attention and resolution. Please discuss how each of the issues identified will affect PREPA's procurement plans going forward.

9. What additional technical issues can PREPA identify and foresee a need to resolve in order to ensure renewable energy deployment at a pace that allows for meeting RPS requirements?

II. Ongoing Technical Issues for Parallel Resolution

The Energy Bureau has identified four major issues (below) that will require ongoing analysis and eventual resolution, to proceed in parallel with the procurement processes required for energy and capacity resources.

1. **Linkage to Optimization Proceeding.** The Energy Bureau anticipates opening a new Optimization Proceeding to address tradeoffs between resiliency provision through distributed generation resources, and resiliency provision through PREPA's proposed MiniGrid approach. At a minimum, this proceeding will address the relative level of benefit that distributed generation can provide (in comparison to utility scale resources). This has implications for how PREPA will assign benefit to DG resources

(relative to utility scale resources) in the procurement process when selecting projects for deployment.

2. **Linkage to Approved Transmission Spending**. As part of the IRP Order, the Energy Bureau approved roughly $2 billion in spending for the existing transmission system assets. To some extent, reinforcement, hardening and repair of the transmission system associated with this approval can affect the capability of the transmission system to support deployment of new renewable and battery storage resources, including specific capacity issues for direct interconnection, and system capacity issues associated with the transmission network backbone. This can affect cost allocation and cost responsibility that might be associated with Respondents' proposals in respect of the procurement process.

3. **Linkage to Interconnection Issues**. Sargent and Lundy is in the process of completing an initial renewable integration analysis, which should at a minimum begin to address interconnection capacity issues. The Energy Bureau is in the process of developing Interconnection Regulations that will cover both microgrid and non-microgrid resource interconnection. Ongoing procurement processes will need to align with both the Interconnection Regulation construct, and the requirements for system improvements that may arise from Sargent and Lundy's analysis.

4. **Linkage to Demand Response (DR) Regulation**. The Energy Bureau is on the process of finalizing the Regulation on Demand Response, which can allow for capacity resources and energy resources associated with VPPs being compensated through this Regulation and associated tariffs, as an alternative (to this procurement process) means to achieve deployment of small-scale resources. The Energy Bureau must ensure that procurement and deployment of DG resources contributing to Puerto Rico's RPS requirements is efficient. Furthermore, the Energy Bureau must consider any inconsistencies that might arise between these two different vehicles for small-scale renewable resource and battery storage deployment.