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

Jun 28, 2021

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IN RE: THE IMPLEMENTATION OF THE PUERTO RICO ELECTRIC POWER AUTHORITY INTEGRATED RESOURCE PLAN AND MODIFIED ACTION PLAN

SUBJECT: Updated Procurement Plan

CASE NO.: NEPR-MI-2020-0012

MOTION IN COMPLIANCE WITH ORDER ENTERED ON JUNE 14, 2021 SUBMITTING REDLINE VERSION OF THE UPDATED PROCUREMENT PLAN

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW the Puerto Rico Electric Power Authority, through its counsel of record and respectfully submits and follows.

1. On June 15, 2021, the Puerto Rico Electric Power Authority (PREPA) presented Motion to Submit Updated Procurement Plan Addressing Plans for the Second Renewable Generation and Energy Storage Resource Procurement Tranche (the "June 15 Motion"). With the June 15 Motion PREPA submitted for the consideration and approval of the Puerto Rico Public Service Regulatory Board (the "Energy Bureau") the Updated Procurement Plan and a redline revision of the Tranche 1 RFP document to reflect the changes that will be implemented in the Tranche 2 RFP document. See June 15 Motion, exhibits A and B.

2. On June 24, 2021, the Energy Bureau entered a Resolution and Order noting the filing of the June 15 Motion and, among other directives, ordering PREPA to submit a redline of the Updated Procurement Plan reflecting the proposed changes (the "June 24 Order"). In compliance with the Order, the Authority herein submits a redlined version of the Updated Procurement Plan filed with the Energy Bureau on June 15, 2021. Exhibit A.

WHEREFORE, PREPA respectfully requests the Energy Bureau to file PREPA in compliance with subpart (i) of the June 24 Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 28th day of June 2021.

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Exhibit A

RENEWABLE ENERGY GENERATION AND **BATTERY**-ENERGY STORAGE RESOURCE PROCUREMENT PLAN – UPDATE NO. 1

Submission to the Puerto Rico Energy Bureau

Date Issued: December 22June 15, 20202021



CONTENTS

Section	Page
Executive Summary	<u>+</u>
I. INTRODUCTION	<u>1</u>
II. EXECUTIVE SUMMARY	<u>1</u>
1. Background & Context	<u>1</u>
2. Content of Procurement Plan	<u>3</u>
3. Lessons Learned from Tranche 1 RFP Process	<u>4</u>
III. PROCUREMENT PLAN	<u> </u>
1. Procurement Plan Description	4 <u>7</u>
 1.1 PREPA Vision Statement 1.2 Key Regulatory Drivers 1.3 Procurement Process 1.4 Forms of Renewable Resources 	
1.5 1.4 Procurement Schedule 1.6 1.5 Uncertainties and Unknowns	16 17
2. Counter-Party Risk	<u>1718</u>
3. Request for Proposals (RFP) Template	18
 3.1 Purpose of Background Information for the RFP 3.2 IRPRFP General Overview 3.3 Specific RFP Requirements 	19
4. <u>Proposal/</u> Contract Terms & Conditions	26<u>28</u>
 4.1 General 4.2 Contract Exceptions 4.3 Final Proposal Version of Contracts 4.4 Interconnection Studies; Interconnection Agreement Negotiations 4.5 Effectiveness of Contracts 	27 <u>30</u> 28 <u>30</u> 28 <u>31</u>
5. Procurement Flexibility	28 Seels / Type 21
6. Planned Installation Implementation Timeline	29<u>32</u>

Renewable Resource and <mark>Battery</mark> Energy Storage Resource **PROCUREMENT PLAN <u>– UPDATE NO. 1</u>**

7.	RFP Schedule	<u>2932</u>
8.	Adjustments to Procurement Plan to Reflect for Distributed Generation (DG)	<u>2932</u>
9.	Evaluation Parameters	<u>3033</u>
	 9.1A General 9.1B Minimum Requirements of RFP Responsel 	30 <u>33</u> 30 <u>Response</u>
	 9.2 Phase I Quality Control Review 9.3 Phase II Project Committee Review and Recommendation 	<u>3437</u> <u>3437</u>
10.	. Other Considerations	39<u>42</u>

APPENDICES

1. RFP Draft Template	4	F
2.—PPOA Draft Template	42	2
3ESSA Draft Template		3

4

<u>1</u> .	Joint RegulationsRegulation 8815	.44
<u>2.</u>	<u>RFP Template</u>	<u>45</u>
<u>3.</u>	<u>Solar PPOA</u>	<u>46</u>
<u>4.</u>	ITC Compliant ESSA	<u>47</u>
<u>5.</u>	Standalone ESSA	<u>48</u>
<u>6.</u>	GSA	<u>49</u>

I. INTRODUCTION

Executive Summary

Following the devastation caused by Hurricanes Irma and Maria, the Puerto Rico Energy Bureau ("Energy Bureau") issued a Resolution and Order on March 15, 2018 that directed the Puerto Rico-Electric Power Authority ("PREPA") to file an updated Integrated Resource Plan ("IRP"). The impacts that the hurricanes had on Puerto Rico and PREPA led to an IRP that sought the supply and delivery of infrastructure improvements to ensure that the utility was much better prepared for futureweather events. As a result of these disasters, PREPA has focused on the need to increase the resilience and survivability of its systems, with due consideration to system hardening, distributed generation, decreased dependence on fuel oil, and increased reliance on renewable energy resources.

As directed by

This version of the Renewable Energy and Energy Storage Resource Procurement Plan updates the version which the Puerto Rico Electric Power Authority ("PREPA") submitted to the Puerto Rico Energy Bureau ("Energy Bureau") on December 22, 2021 (as updated, the "Procurement Plan"). as required by the Energy Bureau's May 11, 2021 Resolution and Order in Case No. NEPR-MI-2020-0012, In Re: The Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan. The Procurement Plan seeks proposals from Proponents interested in designing, constructing, installing, operating and maintaining all forms of renewable generation as defined by Act 82 (defined below), energy storage and/or virtual power plant projects at one or more sites across Puerto Rico. This version of the Procurement Plan incorporates (i) the lessons PREPA learned in administering Request for Proposals No. 112648, Renewable Energy Generation and Energy Storage Resources, Tranche 1 of 6 (the "Tranche 1 **RFP**"), and (ii) those requirements that originated from the planned Optimization Proceeding and other Energy Bureau Resolutions and Orders issued after the publication of the Tranche 1 RFP. For the Tranche 1 RFP, PREPA has administered and will continue to administer the RFP process through the award of all Contracts. However, it is possible that for Tranches 2-6 of the RFP, the Puerto Rico Public-Private Partnerships Authority ("P3A") will administer each process for, on behalf of, and working in collaboration with PREPA.

II. EXECUTIVE SUMMARY

1. Background & Context

As background and context for the preparation of this Procurement Plan:

a. on March 15, 2018, the Energy Bureau, and issued a Resolution and Order which directed <u>PREPA to file an updated Integrated Resource Plan ("IRP")</u>, as required under Puerto Rico Act 57 of May 27, 2014 (Act 57-2014), PREPA prepared an IRP intended to consider all reasonable resources to satisfy the demand for electrical services over a twenty (20) year planning horizon. On February 13, 2019, PREPA filed its IRP along with supporting workpapers and other documentation with the Energy Bureau. PREPA subsequently amended and refiled this IRP on June 7, 2019_{\pm}

<u>b</u>.

- On August 24, 2020, the Energy Bureau issued a "Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan" (hereinafterthe "Final Order") that approved, in part, and rejected, in part, PREPA's proposed IRP. The Final Order modified PREPA's Action Plan and ordered that PREPA adopt and implement <u>a this</u> modified Action Plan (the "Modified Action Plan"). In the Final Order, the Energy Bureau found that:
 - **a**<u>i</u>. increased deployment of solar photovoltaic (PV) and battery resources should be pursued if the results of procurement processes produce costs that reflect the parameters associated with Scenario S3S2 (for all loading levels under that scenario) and if those resources are available for faster installation than was assumed for PREPA's ESM Plan; and
 - **bii**. a Modified Preferred Resource Plan for the purpose of initial procurement planning includes the solar PV and battery energy storage quantities contained in Scenario S3S2B for the first five years of the Action Plan period:
- <u>c</u>.
- The the Final Order's Modified Action Plan contains specific directives and requirements, which included the formulation of a Renewable Resource and Battery Energy Storage Resource Procurement Plan (the "Procurement Plan"). As summarized in Section A3 of the Final Order, the Energy Bureau ordered:
 - **a**<u>i</u>. PREPA to develop, with the Energy Bureau's guidance and approval, a detailed procurement plan for renewable resources and battery energy storage to achieve compliance with the renewable portfolio standard ("**RPS**");
 - bii. PREPA to issue a series of RFPs for the provision of (a) renewable energy in support of Act 82's RPS goals, and (b) battery energy storage in support of (i) capacity requirements needed to meet PREPA's peak load requirements and (ii) requirements for integration of renewable energy generation;
 - eiii. that competitive procurements to obtain Power Purchase and Operating Agreements (PPOA) for these resources must be open to all forms of renewable energy, including, but not limited to wind, hydro, solar PV, Virtual Power Plant (VPP), and storage ... that PREPA should not unnecessarily limit the level of overall procurement to 250 MW blocks, but rather needs to pursue a strategy that attempts to procure the amount of resources required under S3S2B; and

div. PREPA to submit to the Energy Bureau a draft renewable resource and battery energy storage resource procurement plan (Procurement Plan) on or before sixty (60) days from the notification date of the Final Resolution and Order.

PREPA filed a Status Reportstatus report on the development of its draft Procurement Plan with the Energy Bureau on September 23, 2020. The Energy Bureau opened a new docket for the consideration of PREPA's Procurement Plan on October 6, 2020, designating the new docket as Case No. NEPR-MI-2020-0012. On October 9, 2020, at PREPA's request, the Energy Bureau convened a Technical Conference to address PREPA's Procurement Plan status report. PREPA submitted its draft Procurement Plan by Motion dated October 23, 2020. PREPA subsequently sought a further Technical Conference, and reiterated this request on three occasions in November and December; and

<u>d</u>.

On on December 8, 2020, in Case No. NEPR-MI-2020-0012, the Energy Bureau issued a Resolution and Order (the "**Procurement Plan Resolution**") which specifiesspecified changes to PREPA's draft Procurement Plan and directsdirected PREPA to make corresponding changes to the draft Request for Proposals ("**RFP**") document that accompanied that draft Procurement Plan. Finding that these changes will align the Final Procurement Plan and associated RFPs with its Final Order, and applicable regulations and laws, the Energy Bureau approved some of the core elements of PREPA's draft Procurement Plan, modified others and directed certain questions relating to technical issues to PREPA. The Energy Bureau ordered PREPA to carry out the terms of the Procurement Plan as modified by the Procurement Plan Resolution and as specified in the included Technical Appendices.

2. Content of Procurement Plan

This Procurement Plan is intended to (i) position positions PREPA to satisfy the requirements of the Final Order and the Procurement Plan Resolution, and (ii) provide provides a thoughtful approach to building out future renewable energy and energy storage resources in accordance with the requirements of Act 82. This, informed by the lessons learned in the administration of the Tranche 1 RFP to date. Ultimately, the Procurement Plan aims to:

- a. increase the availability of renewable energy and energy storage resources as part of <u>PREPA's generation system</u>;
- b. reduce energy prices to levels consistent with PREPA's 2020 Certified Fiscal Plan projections; and
- c. increase the resiliency of PREPA's transmission and distribution system (the "T&D System") as required by the IRP.

<u>As set out in Article III, the</u> Procurement Plan follows the format indirectly specified in Section IV, Subsection D(4)(b) of the Final Order, as follows:

- <u>a.</u> •-(Procurement Plan Description) This introductory section Section 1 provides a detailed description overview of the entire current iteration of the Procurement Plan.
- **b.** •(Counter-Party Risk) This section Section 2 discusses the manner in which the how this Procurement Plan ishas been structured to minimize <u>PREPA</u> counter-party risk and thus potentially incentivize bidders to offer lower prices, given PREPA's current financial status and prospects for its improvement over time.
- **<u>c.</u>** •(Request for Proposals (RFP) Template) Section 3 discusses the template which PREPA has developed for the RFPs to be issued under Tranche 1 RFP, as updated to reflect lessons learned in the administration of that RFP Tranche (as defined below) and the specifics of this iteration of the Procurement Plan, and Appendix 1 includes the RFP document being issued in RFP Tranche 1. PREPA will enter into a Renewable PPOA with RFP.
- d. (Proposal/Contract Terms & Conditions) Section 4 describes key contract terms and conditions under which respondents proposing each type of energy resource (each, a "Proponent") which propose selected renewable energy resources, and an Energy Storage Services Agreement ("ESSA") with Proponents of selected will develop, finance and install renewable generation and energy storage resources. Appendices 2_{*} and 3 of this Plan set forth a template Renewable PPOA and template ESSA (each, a "Contract"). In referring to "Battery Energy Storage Systems" or "BESS," PREPA acknowledges that technologies, other than batteries, may become viable storage options for PREPA. Therefore, references to BESS systems are intended to include other energy storage technologies.make such resources available for dispatch by the T&D Operator (as defined below) (each, a "Contract").
- (Contract Templates) Forms of a Renewable PPOA and an ESSA are included in Appendices 2 and 3.
- (Procurement Flexibility) This Procurement Plan provides PREPA with the flexibility in RFP Tranche 1 to select an aggregate of at least 1,000 MW of solar PV or energy equivalent other renewable resources and 500 MW of battery energy storage, 4-hour duration equivalent, with consideration for 2-hour and 6-hour storage if either or both are cost effective and if their installation is feasible.
- (Planned Installation Timeline) This Procurement Plan describes the planned timeline for selection of resources through project completion. In accordance with the Energy Bureau's directive (see Procurement Plan Resolution at Part IV.A.3.a (p. 8)), the RFP specifies that commencement of commercial operation of selected resources should not exceed twenty-four (24) months from Contract signing. The RFP provides that PREPA may give consideration to proposals that contemplate commercial operation commencement not to exceed thirty (30) months from Contract signing, albeit with preference to be given to proposals specifying shorter periods between signing and commercial operation. PREPA will perform a Feasibility Study for short-listed candidate projects to assess order-of-magnitude

interconnection and required Transmission and Distribution System ("**T&D** System") upgrade costs. Proponents will be allowed to adjust their proposed pricing to reflect the results of this study, and these results and any associated cost impacts will be taken into account in initial project selection. For those projects that are selected for further analysis in Phase II (described below), PREPA will require a System Impact Study, followed by a Facilities Study, the costs of which will be borne by Proponents. Proponents will be responsible for the procurement and installation of all equipment necessary to interconnect the proposed facility to the T&D System. PREPA will not execute a Contract before the results of the Feasibility Study, System Impact Study and Facilities Study are available and the Proponent has adjusted its proposal to reflect those results and incorporated any additional interconnection or transmission facilities that may be required.

- (RFP Schedule) The RFPs to be issued under this Procurement Plan are expected to be released every six (6) months, over the next three (3) years, for a total of six (6) tranches of RFP releases. The procurement of resources may be front-loaded within the five-year Action Plan period in order to allow time for construction, interconnections, and commissioning within the five-year Action Plan period. This section summarizes the schedule of minimum RFP quantities, which is laid out in the Final Order and the Procurement Plan Resolution.
- e. (Procurement Scale / Type) Section 5 discusses the scale and type of energy resources which PREPA intends to procure in accordance with this Procurement Plan.
- <u>f.</u> (Planned Implementation Timeline) Section 6 presents a planned timeline for the selection and development of energy resources through the achievement of commercial operation.
- g. (**RFP Schedule**) Section 7 describes the current schedule for the issuance and administration of RFPs for Tranches 2-6.
- h. •(Adjustments to Procurement Plan to Reflectfor Distributed Generation) PREPA mayadjust Section 8 describes how resource quantities requested in individual RFP Tranches subsequent to the first two (2) tranches as necessaryTranches may be adjusted to account for installations of distributed generation ("DG") resources that contribute to meeting overallthe resource quantities targeted in the Modified Preferred Resource Plan, and for resources that PREPA identifies and contracts with in excess of the minimum amounts required in each of the earlier RFPs that may be selected and developed.
- i. (Evaluation Parameters) This section provides a listing of proposal evaluation Section 9 sets forth the parameters to be applied in evaluating energy resource proposals as discussed in the Final Order and the Procurement Plan Resolution.
- j. •(Other Considerations) Considerations Section 10 (i) discusses considerations specific to combined or individual bidsproposals for renewable generation, BESS, energy storage or combinations of renewable generation and battery energy storage resources, and to resource proposals that which aggregate smaller installations (that is energy storage and other energy)

resources for connection to the distribution system (each, a "Virtual Power Plants ("VPPs"), are discussed in this section. This section alsoPlant" or "VPP"), and (ii) discusses the renewable generation integration study that PREPA has commissioned in orderbeen performed to assess the current capability of the T&D System to accommodate increased levels of renewable generation capacity. This study will identify, at a high level, preferred interconnection locations on T&D System based on the current capacity of the system and needed electrical system upgrades, in addition to providing a modeling basis for transmission Feasibility, System Impact, and Facility Studies. Findings from the renewable generation integration study will be shared through the RFP process to assist Proponents with their proposals. In accordance with Energy Bureau directives, the RFP will include an attachment that lists those substations where interconnection is considered preferable for utility scale installations. In addition, the RFP will identify those locations at which interconnection of required energy and storage resources will enhance T&D System reliability and can be accomplished quickly. This section addresses other requirements identified in the Procurement Plan Resolution.

3. Lessons Learned from Tranche 1 RFP Process

While PREPA has not commenced its evaluation of Proponent proposals submitted through the Tranche 1 RFP process as of the date of this Procurement Plan, PREPA has identified the following three (3) lessons learned from the Tranche 1 RFP process to date:

- a. (Peak Irradiance Period Curtailment) Notwithstanding the parallel scale-up of energy storage resource capacity connected to the T&D System, the rapid scale-up of utility-scale renewable energy resources within the Puerto Rico generation mix likely means that PREPA will need to curtail the dispatch of material quantities of energy sourced from PV energy resources in the future, primarily during the peak irradiance levels between 11 am and 3 pm each day, which will expose PREPA to the risk of accruing take-or-pay liability under each Solar PPOA (as defined below) (the "Peak Irradiance Period"). To mitigate such risk, PREPA recommends the deployment of strategies for shifting daily energy production to either side of, and enhancing demand during, the Peak Irradiance Period, including:
 - i. deploying energy storage resources in accordance with the amounts and timeline specified by the Energy Bureau for Tranches 1-6;
 - taking actions to support the development and selection of non-solar renewable energy resources, such as wind power projects, which make available material quantities of energy for dispatch into the T&D System outside of the Peak Irradiance Period. This may require (A) carve-outs for wind turbine projects in future RFP Tranches, and/or (B) the prioritization during the RFP selection process of non-solar renewable energy resources such as wind power projects;
 - iii. prioritizing (during the RFP selection process) VPP resources, which provide demand-build services during the Peak Irradiance Period;

- iv. prioritizing (during the RFP selection process) to the extent that PREPA determines the potential additional costs of such resources to be in the best interest of ratepayers, additional utility-scale energy storage resources, which store the excess energy, produced during the Peak Irradiance Period;
- v. adopting a time-of-dispatch price structure under which PREPA pays for energy at (A) when made available for dispatch outside of the Peak Irradiance Period, the bid price, and (B) when made available for dispatch within such period, a material discount from the bid price;
- vi. coordinating the T&D System capacity upgrades with the scale-up of new PV energy resources; and
- vii. requiring accurate day-ahead and week-ahead renewable energy production forecasts, which allow the T&D Operator to balance electrical supply with demand, plan for and minimize potential renewable curtailment and maximize system reliability, during the Peak Irradiance Period.

While thermal generation resources interconnected with the T&D System would ideally 'fit around' and support the scale-up of renewable energy resources, which PREPA will procure, many of PREPA's current thermal energy resources lack the flexibility and reliability to provide such support, which will exacerbate the curtailment problem.

- (Parallel Procurement of GCCC System) PREPA's existing communication infrastructure b. has the capability to integrate utility-scale renewable energy and, with some modifications, energy storage resources connected to the transmission system. PREPA, however, does not have the communications and energy management infrastructure in place, required for the integration of VPP resources connected to the distribution system. Thus, in parallel with its procurement of VPP resources, PREPA will need to separately procure an Energy Management System, Advanced Distribution Monitoring System, GIS System, Advanced Metering Infrastructure and other systems (collectively, the "Grid Control Center Communication System" or "GCCC System") which will allow PREPA to communicate with, dispatch and integrate VPP resources. The March 2021 version of the PREPA 10-Year Infrastructure Plan prepared for submission to the Central Office for Recovery, Reconstruction and Resiliency, the Federal Emergency Management Agency ("FEMA") and the Energy Bureau allocates approximately \$ 380 Million of Federal funding for the purchase of various components of the Grid Control Center Communication System. As PREPA does not have control over the deployment of these funds by FEMA and the other involved federal and Puerto Rico agencies, PREPA cannot currently forecast when it will purchase and install the GCCC System. Nor can PREPA identify the vendors that will supply the GCCC System or the types of systems and technologies which the selected vendors will supply. The uncertainty around the timing and final specifications of the GCCC System:
 - i. exposes PREPA to the risk of accruing liability for delays in commissioning under each Grid Service Agreement due to the likelihood that PREPA may not have the

ability to integrate VPP resources selected as part of the Tranche 1 RFP process within the two year period in which Proponents have to install, test and commission such resources; and

ii. prevents PREPA from finalizing MTRs for VPP resources, which heavily depend on the specifications of systems that collectively comprise the GCCC System.

For the foregoing reasons, PREPA recommends suspending the procurement of VPP resources as part of the RFPs for Tranche 1 and Tranche 2 until such time as PREPA purchases the GCCC System.

(Source Code Access) To dispatch resources, VPP Proponents will utilize a Grid Services <u>c.</u> Delivery System (the "GSDS"), which depends upon multiple bespoke and proprietary computer source code for its operation (the "Source Code"). The owner of the Source Code incorporated in each GSDS will typically grant the VPP aggregator a non-exclusive license to use the Source Code for purposes of operating the GSDS. Due to the proprietary nature of Source Code, a third party such as PREPA cannot take over the operation of a VPP without first obtaining license rights to use the relevant Source Code. Source Code access could become essential to the operation of the VPP in the event that either (i) the VPP aggregator enters into bankruptcy or otherwise fails to perform under the Grid Services Agreement with PREPA, or (ii) a Source Code owner enters into bankruptcy or otherwise fails to update and maintain the Source Code For this reason, a State-owned utility in at least one other US electricity market requires (A) VPP aggregators to place a human readable version of the Source Code into escrow, and (B) each Source Code owner to grant such utility a non-exclusive license to use the escrowed Source Code upon the occurrence of either of the foregoing events (collectively, the "Escrow & Licensing Requirements"). With each GSDS utilizing up to thirty (30) or more separate assemblies of Source Code, compliance with the Escrow & Licensing Requirements involves a highly complex, time-consuming and cost intensive process with as many as thirty (30) or more Source Code owners. For the Tranche 1 RFP. PREPA initially prepared a template Grid Service Agreement which, among other things, obligated a VPP aggregator to comply with specific Escrow & Licensing Requirements. Two (2) VPP Proponents, however, vigorously pushed back on the Escrow & Licensing Requirements and in the end, PREPA withdrew these requirements from the Proposal form of Grid Service Agreement. Thus, the terms of the current Grid Service Agreement expose PREPA to the risk of the permanent loss of access to VPP resources arising out of PREPA's inability to utilize the Source Code incorporated into a GSDS. This risk will not become material until the aggregate size of VPP Resources becomes so large that the T&D Operator will be unable to source replacement capacity from other resources connected to the T&D System to compensate for the loss of VPP resources as to which PREPA or its successor lacks the necessary rights to step in and use the required Source Code. To safeguard the secure and resilient operation of the T&D System, PREPA recommends that the Escrow & Licensing Requirements should apply when VPPs connected to the distribution system achieve an aggregate resource capacity of at least 100 MW.

III. PROCUREMENT PLAN

1. Procurement Plan Description

The Energy Bureau has endorsed PREPA's plan to (i) use RFPs to solicit for the solicitation of new renewable generation and energy storage resources and toon a competitive basis, based on terms and conditions set forth in template Contracts, and (ii) engage selected Proponents through the negotiation finalization and execution of Contracts covering these resources. The Procurement Plan envisions the issuance of a series of six (6) RFPs (each, a "Tranche" and collectively, the "Tranches"), spaced over a three-year timeline, in order in accordance with the guidance provided by the Final Order on minimum energy resource quantities and timing, as set out in Table 1-4 of Section 1.4 (*Procurement Schedule*) below.

With this approach, PREPA aims to secure the following benefits:

- a. PREPA will have an opportunity to model the renewable integration and the T&D System to determine any needed system upgrades and the preferred interconnection locations to which projects can be connected (minimizing system impacts). These locations will likely evolve, over time, as <u>PREPA improves</u> the T&D System <u>improves and PREPA allocates preferred</u> interconnection locations to selected Proponents in earlier RFP Tranches.
- b. This approach allows <u>PREPA and</u> LUMA Energy, LLC<u>and LUMA Energy ServCo</u> (collectively, the future "T&D System operator Operator") jointly acting in their capacity as the "Operator" under the Operation & Maintenance Agreement, dated June 22, 2020, with P3A and PREPA, to plan for system improvements that support large-scale renewable energy and <u>BESS</u>energy storage integration.
- c. PREPA will be able tocan spread procurement commitments associated with each Contract over time and take advantage of future technological gains as well as reduced capacity and energy pricing.
- d. This approach buys additional time for PREPA to improve its credit position as it navigates the Title III process. PREPA expects that renewable resource capacity and energy pricing will improve as its credit position improves.

The Final Order has provided guidance on minimum renewable energy quantities, referred to as RFP Tranches, and the associated timing of RFPs. The following table summarizes the Final Order's guidance.

Table 1-1 - Guidance for Solar PV/Renewables and Battery Energy Storage RFP Tranches

		Solar PV or equivalent other energy, MW		ther 4 hr. Battery Storage equivalent, MW ⁴	
RFP Target	Procurement	Minimum	Cumulative	Minimum	Cumulative
Release Date	Tranche				
Dec-20	1	1000	1000	500	500

Jun 21	2	500	1500	250	750
Dec-21	3	500	2000	250	1000
Jun 22	4	500	2500	250	1250
Dec 22	5	500	3000	125	1375
Jun 23	6	750	3750	125	1500

1) Other storage durations (i.e. 2-hour and 6-hour) will be considered.

PREPA must file an updated Procurement Plan reflecting the specific plans for Tranche 2 on or before May 1, 2021. This updated Plan is to incorporate both the lessons learned from RFP Tranche 1 and any requirements that originate from the planned Optimization Proceeding or any other intervening Resolutions or Orders from the Energy Bureau.

PREPA has engaged the services of Sargent & Lundy to evaluate system impacts associated with the addition of 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. Through the work Sargent & Lundy continues to perform, PREPA will identify the scale and scope of the system improvements required to accommodate the addition of both renewable generation and battery energy storage resources procured under the RFP. PREPA will prioritize the procurement of complementary battery<u>energy</u> 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<u>resources</u>.

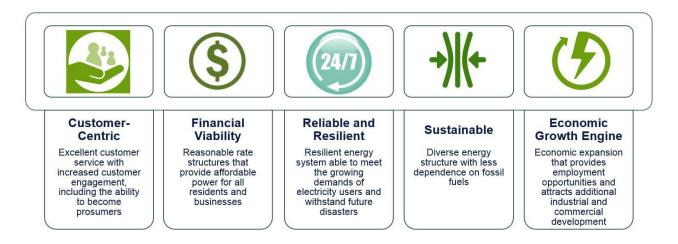
As the <u>The</u> Procurement Plan Resolution requires, PREPA willto develop, maintain, update and file with the Energy Bureau every six (6) months, commencing no later than June 1, 2021, a timeline for anticipated installation of battery energy storage and renewable energy resources. <u>The first of these timelines will be submitted on or before July 30, 2021, in accordance with the Energy Bureau's June 3, 2021 Resolution and Order granting extensions of time in Case No. NEPR-MI-2020-0012. In addition, PREPA will attempt to streamline its interconnection analyses and allow for installations of the required renewable and storage resources and T&D System improvements as rapidly as possible.</u>

The following provides a discussion of PREPA's Vision Statement, key regulatory drivers, the procurement process, acceptable renewable energy resources, the status of the development of an RFP and the Contracts, and uncertainties and unknowns.

1.1 PREPA Vision Statement

Noting the need for an efficient and resilient system, on February 1, 2018, the PREPA Governing Board released its vision statement to guide the future of the utility.

Figure 1-21 – PREPA's Five Pillars



The Governing Board's vision addresses the reliability and resilience of the system, the transition to a system that is sustainable both financially and environmentally, and its importance in acting as an economic growth engine for Puerto Rico. These elements were noted and factored into the structuring of the IRP submissions. The resulting Procurement Plan takes a positive step towards realizing this vision through the procurement of renewable energy and storage resources, designed for reliability and resilience, which will reduce PREPA's dependence upon fossil fuel resources. The following table presents the Vision Statement:

Table 1-31 – 2018 Governing Board Vision Statement

Pillar	Summary
System is Customer-Cent ric	The system serves the customer with affordable, reliable power, with transparent metrics for quality of service and with equitable consideration across all customers. Quality/Reliability can be differentiated for customers in a manner that serves their total cost and risk objectives. Customers are engaged by innovative products and value-added services that provide choice among rate plan and risk management options and provide access to wholesale contracting options for large customers. Customers are empowered with behind-the-meter alternatives for energy efficiency, demand management, and distributed generation, with the ability to become prosumers if they so choose.
System Promotes Financial Viability	The system is premised on positive economics on both sides of the meter. Rates are reasonable and create value for the customer, while pricing is sufficient to cover costs. Rate and market design create incentives to purchase, consume or produce energy in a manner that benefits the entire system. Subsidies are minimized, and those that remain have a non-distortionary impact. Operational excellence and sound long-term planning reduce the cost to serve. Rates are affordable within a model that allows the utility to earn a reasonable rate of return and service its debt. The business model is robust to changes such as outmigration and reduction in energy demand and does not create disincentives

Pillar	Summary
	for adoption of cheaper energy resources, either at the grid level or at the customer premises.
System is Reliable and Resilient	The grid is thoughtfully planned, well maintained and safely operated to achieve defined reliability and resiliency goals. There is visibility into the system at all levels, and control where appropriate. Standards for recoverability create a measure for resilience. The choice of architecture (distributed vs. regionalized vs. centralized) is intentionally made to balance reliability/resilience and cost objectives while also taking advantage of advancements in technology and innovation.
System is a Model of Sustainability	There is a progressive focus on diversifying energy resources and reducing the carbon intensity of the power sector, in both primary generation and backup generation. Power generation is efficient and minimizes emissions. Customers have incentives to use energy wisely and to generate their own clean energy. The grid and grid systems are designed to take maximum advantage of increasingly cost-effective renewable power generation alternatives and to integrate emerging technologies.
System serves as an Economic Growth Engine for Puerto Rico	The quality, reliability, and cost of power attracts new commercial and industrial development to Puerto Rico and encourages existing commercial and industrial customers to expand their operations. Transformation and reinvestment in the power system creates new jobs. Innovation in the generation and delivery of power creates a local ecosystem of businesses that provide for evolving needs for equipment, technology and services in Puerto Rico and beyond.

1.2

<u>1.2</u> Key Regulatory Drivers

The Final Order provided a summary of Puerto Rico's laws and regulations as they apply to the IRP and the Modified Action Plan. This <u>sectionSection 1.2</u> restates these "regulatory drivers," in part to reinforce the importance of these legislative initiatives. The Energy Bureau structured the Modified Action Plan to support compliance with these laws and regulations, and PREPA has developed this Procurement Plan in accordance with the Modified Action Plan.

a. Act 82-2010: Act 82-2010, as amended ("Act 82"), known as the Puerto Rico Energy Diversification Policy through Sustainable and Alternative Renewable Energy Act, established the first renewable energy portfolio standard in Puerto Rico and required that a retail energy provider procure twelve percent (12%) of its power needs through renewable energy by 2015, fifteen percent (15%) by 2020 with a goal of reaching twenty percent (20%) by 2035. Act 82 was amended in 2019 to, among other things, establish new RPS milestones: twenty percent (20%) by 2022, forty percent (40%) by 2025, sixty percent (60%) by 2040 and

one hundred percent (100%) by 2050. Act 82 created Renewable Energy Certificates (RECs) that encompassed all the environmental and social attributes of one megawatt- hour (MWh) of electricity and that could be traded beyond the borders of Puerto Rico.

- b. Act 83-2010: Act 83-2010, as amended ("Act 83"), known as the Puerto Rico Green Energy Incentives Act, was established to, among other things: achieve the diversification of energy sources; reduce the dependency on fossil fuels; reduce and stabilize energy costs; reduce the flight of capital caused by the import of fossil fuels; and preserve and improve the environment. Act 83 also created a Green Energy Fund to fund the development of sustainable energy systems that further energy use savings and efficiency. The legislation also contained Green Energy Initiatives and tax benefits to encourage consumers and businesses to use renewable energy.
- c. Act 120-2018: Act 120-2018, as amended ("Act 120"), known as the Puerto Rico Electric Power System Transformation Act, created the legal framework required for the sale, disposition, and/or transfer of the assets, operations, functions, and services of PREPA. Under Act 120, any contract related to a PREPA Transaction has to obtain<u>must have</u> an Energy Compliance Certificate from the Energy Bureau. Moreover, the legislation grants PREPA and the Public Private Partnership Authority (P3)∆ the authority to sell PREPA assets related to electric power generation and—to transfer or delegate any of PREPA's operations, functions, or services. The legislation also notes, however, that the regulatory framework must be consistent with the new realities in Puerto Rico and the energy industry; it must_a therefore, among other things, allow for the use of DG, microgrids; and more renewable energy. The Legislature also notes that the electric system must be resilient to weather events and the effects of climate change on the Islandisland. Act 120–2018-2018 also points out "…the importance of regulating the energy industry and the need to have an independent regulatory entity that carries out its duties firmly and resolutely."
- Act 17-2019: Act 17-2019 ("Act 17"), known as the Puerto Rico Energy Public Policy Act, d. built upon the foundation created for integrated resource planning in Act 57 and sharpened the focus on accelerated renewable energy provision, energy conservation and efficiency, DR₅ and DG. In so doing, Act 17 increased the renewable portfolio to a minimum of twenty percent (20%) by 2022, forty percent (40%) by 2025, sixty percent (60%) by 2040 and one hundred percent (100%) by 2050 and created an energy efficiency target of thirty percent (30%) by 2040. Act 17 also emphasizes the role of "prosumer" generation, and envisions an enhanced role for microgrids. Further, Act 17 reinforces the authority of the Energy Bureau to conduct IRP proceedings. Act 17 also states that the IRP will be prepared by the electric power company responsible for the operations of the electrical system and shall be approved by the Energy Bureau. Allowance for preparation by an entity other than PREPA acknowledges the changes contemplated under future IRPs as a result of the implementation of Act 120. The legislation also set forth more detail than that contained within Act 57 on the content of the IRP, but the content requirements are consistent with the Energy Bureau's IRP requirements contained in Regulation 9021. A central point throughout the legislation is that actions taken regarding generation and related matters must conform to the approved IRP,

thereby highlighting the importance of the IRP as a central planning tool. Any changes or amendments to the IRP shall be approved by the Energy Bureau.

<u>1.3</u> Procurement Process

The Final Order addressed the Procurement Process by referencing Regulation 8815, attached to this document for ease of reference as Appendix 41 (the "Joint Regulation 8815"). As stated in the Final Order, "PREPA or the T&D Operator, with oversight by the Energy Bureau under the processes of Regulation 8815, shall run all competitive auctions in accordance with this Modified Action Plan." Joint Regulation 8815, also known as the 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 ("Joint Regulation 8815"), governs the processes for contracting with third parties for the purchase of energy. The following flowchart represents a high-level summary of the procurement process required by Joint Regulation 8815.

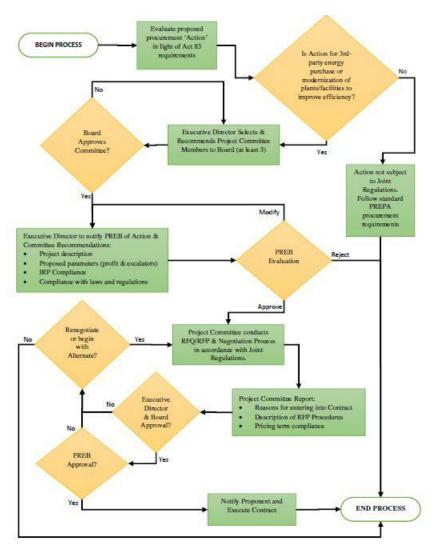


Figure 1-41 – Summary Procurement Process - Joint Regulations 8815

PREPA and the Puerto Rico Energy Commission (the Energy Bureau's predecessor) developed and promulgated Joint Regulation 8815 in 2016. This regulation addresses the formation of a Project-Committee an evaluation committee, the Process to Issue RFQs/RFPs, the Evaluation and Selection Process, Selection of Proponents, Contract Award, and Reconsideration and Review.

A high-level summary of the key components of Joint Regulation 8815 as it applies to this Procurement Plan follows.

a. (Project Committee Evaluation Committees) A Project committee (the "Evaluation Committee") with at least five (5) members, appointed by the Executive Director and approved by PREPA's Governing Board, manages will manage the Procurement Plan. The

<u>Page</u>16

Project Committee oversees the preparation of Requests for Qualifications ("**RFQ**") and RFPs, the evaluationadministration of, and selection of evaluate all proposals submitted by Proponents, and the finalization of the terms of each Contract relating to, the RFP(s) in accordance with this Procurement Plan.

- b. (**RFP Issuance**) The Procurement Plan Resolution directs PREPA to consolidate the RFQ and the RFP process to expedite the procurement process. Thus, as part of each RFP, PREPAwill include the consideration of each Proponent's qualifications as one of will be incorporated into the criteria for evaluation of individual resource proposals in determining the winning Proponents. For the issuance of an RFP, the ProjectEvaluation Committee shall advertise the RFP by means of a public notice in one newspaper of general circulation, the internet sites for PREPA and the Energy Bureau, and, at the discretion of the ProjectEvaluation Committee, in one or more national or international journals. The RFP shall include the following provisions:
 - i. <u>Aa</u> description of the Project and its importance based on the IRP;
 - ii. <u>Aa</u> description of the proposed schedule for the procurement process;
 - iii. A<u>a</u> due date, time, and method for submission of requests for clarification(s) and proposals (and the place for submission of proposals);
 - iv. <u>Instructions instructions</u> as to the format of proposals and the information required for a proposal to be considered complete;
 - v. <u>Anyany</u> options or alternative proposals allowed;
 - vi. <u>Applicable applicable</u> proponent eligibility requirements, scoring criteria, and minimum resource size;
 - vii. <u>Applicable applicable</u> proposal evaluation criteria that will be used to evaluate proposals and proponents;
 - viii. <u>Applicable</u> proposal security;
 - ix. A<u>a</u> statement regarding funding contingencies or other conditions, contingencies, approvals, authorizations, or certifications which are required to award a Contract;
 - \mathbf{x} . A draft of the proposed Contract or summaries of key terms and conditions;
 - xi. <u>Parameters parameters</u> approved by the Energy Bureau in connection with profit margins and pricing escalators;
 - xii. PREPA's authorized representative for RFP communications;
 - xiii. **Policypolicy** statements encouraging local participation; and

xiv. <u>Otherother</u> applicable terms and conditions as determined by <u>thePREPA's</u> Governing Board.

Proposals received on or before the due date set forth in the RFP will be stamped (date and time of receipt) and will be kept in the custody of PREPA. PREPA will not disclose the proposals publicly and only members of the <u>ProjectEvaluation</u> Committee, the Energy Bureau and other members designated by the Governing Board or Executive Director of <u>PREPA</u> shall have access to the proposals during the selection and evaluation period.

- (Evaluation and Selection Process) Joint Regulation 8815 establishes a three-phase c. selection process: (i) quality control review ("Phase I"), (ii) project evaluation committee review and recommendation ("Phase II"), and (iii) contract negotiation. The quality control review phase ("Phase III"). Phase I allows PREPA to determine which proposals satisfy the minimum requirements outlined in the RFP. PREPA will notify each Proponent whether such Proponent's proposal passed the quality control review Phase I evaluation and whether it will advance to phase twoPhase II. During phase twoPhase II, the ProjectEvaluation Committee will review and evaluate each proposal in accordance with the selection criteria. The ProjectEvaluation Committee may select one or more proposals to advance to phasethree (Contract negotiation). For Phase III evaluation. To comply with the Procurement Plan, the Project Committee PREPA will likely selectrequire more than one Proponent. Therefore, the **Project**Evaluation Committee will likely make recommendations to the PREPA's Executive Director and the Governing Board to carry out discussions and negotiations with more than one Proponent at the same time for proposals that fall within a competitive range as defined in the regulation. Assuming negotiations will proceed with more than one Proponent, during phase threePhase III, each Proponent will receive written notification containing the details and describing the following procedures:
 - i. No statement or action shall bind PREPA. <u>Only the other than a</u> Contract, <u>when with a Proponent</u>, <u>duly executed and delivered by PREPA</u>, <u>which has become</u> effective in accordance with its terms, <u>will bind PREPA</u>.
 - ii. The <u>ProjectEvaluation</u> Committee may invite each Proponent to one or more meetings to discuss and answer questions.
 - iii. The <u>Evaluation Committee shall determine the</u> content and scope of each meeting will be determined by the Project Committee.
 - iv. If the Evaluation Committee convenes any meetings are held with a Proponent whofallsof energy resources that fall within the competitive_price range, then the Evaluation Committee will give all Proponents that fallpropose a similar energy resource and a price that falls within the such competitive price range will be given, an opportunity to discuss and review their proposals with the an authorized representative_ of the Evaluation Committee.

- v. The <u>ProjectEvaluation</u> Committee shall establish procedures and schedules to control meetings, advise <u>proponentsProponents</u> on deficiencies and allow an opportunity to cure, resolve uncertainties or otherwise clarify the terms and conditions of the proposal, address any suspected mistakes, provide an opportunity to modify economic terms, technical aspects, or other aspects which may result from the discussions, and keep a record of the date, time, place, and attendees of the meetings.
- vi. The <u>ProjectEvaluation</u> Committee may require Proponents to submit, in writing, confirmation of any clarification of a proposal.
- vii. Authorized Representatives of the <u>ProjectEvaluation</u> Committee may carry out negotiations in whole or in part through written or telephone communications, at the discretion of the <u>ProjectEvaluation</u> Committee.
- viii. The <u>ProjectEvaluation</u> Committee may request "Best and Final Offers" or proceed to negotiations with one (or more) proponents within the competitive range.
- ix. Additional negotiations may follow receipt of Best and Final Offers.

Subject to PREPA's right to reject any or all proposals, PREPA shall select the proposal(s) considered most advantageous to PREPA, PREPA's <u>customers,ratepayers</u> and Puerto Rico. -ByProposals judged to be "most advantageous," PREPA means that the proposal(s) meetswill meet minimum requirements and demonstrates, demonstrate economic benefits, reliability, and resiliency, and fit with the overall needs of the T&D System. In accordance with the Energy Bureau's directive (*see Procurement Plan Resolution, Appendix A, Part III.2*), the RFP evaluation process will last no more than fortyduring Phase I and II shall not exceed seventy-five (4575) days unless circumstances require that the ProjectEvaluation Committee extend such process. The ProjectEvaluation Committee will evaluate proposals, based on price/cost and relevant estimated system upgrade costs as well as non-price terms such as construction and operational experience, risks and risk mitigation measures, and other pertinent criteria. The RFP will clearly define the scoring system and all evaluation criteria.

- d. (Selection of Proponents) Joint Regulation 8815 prohibits the Project Committee fromselectingselection of Proponents that have been convicted of any of the offenses set forth in Act 458-2000. Other grounds for disqualification include when a Proponent:
 - i. is insolvent or bankruptenters into insolvency or bankruptcy;
 - ii. makes a formal, public announcement that it is unable, or intendsdoes not intend, to pay its debts and obligations;
 - iii. has been convicted of any of the criminal offenses set forth in Act 428-2004;

- iv. has not fulfilled its obligations relating to the payment of taxes under the laws of the Commonwealth or the relevant jurisdiction in which it maintains its principal operations;
- v. has engaged in collusive acts or is guilty of serious misrepresentations;
- vi. has experienced material changes to its business;
- vii. fails to comply with substantive requirements of the RFP; or
- viii. is otherwise in material breach of Joint Regulation 8815.

When assessing the financial condition of a Proponent, PREPA may consider bank statements, financial statements (<u>last</u> three (3) fiscal years), or other information that would allow the Project Committeeit to assess the financial condition of the Proponent. The <u>ProjectEvaluation</u> Committee shall specify in the RFP the financial information which the Proponent must provide to comply with the applicable minimum standards of financial condition.

- (Approval of Contract(s)) Upon completion of the negotiation of the Contract(s) with a e. Proponent, the ProjectEvaluation Committee shall prepare a report which shall include the reasons for entering into such Contract(s), the reasons for selecting the Proponent(s), a description of the procedures followed, and other information pertinent to the procedures followed and the evaluations conducted. The **Project**Evaluation Committee shall oversee provide the report and proposed Contract(s) to the Executive Director and the Governing Board of PREPA within thirty (30) days for approval. The Governing Board shall have the right to reject, accept, or return the proposed Contract for renegotiation. If the Governing Board of PREPA approves the report and Contract(s), PREPA shall provide a copy of the report and the Contract(s) to the Energy Bureau for its evaluation and approval. If the Energy Bureau approves the Contract(s), the **ProjectEvaluation** Committee will notify Proponents of the RFP results. Once approved by the Energy Bureau approves a Contract, PREPA shall have no right to modify the Contract(s) or the scope of the project Project in any material way without the approval of the Energy Bureau. Subject to (i) the completion of the required Feasibility, System Impact and Facilities Studies, (ii) the approval by the Governing Board and the Energy Bureau, and to(iii) the review and approval by the Financial Oversight and Management Board for Puerto Rico ("FOMB"), PREPA and the Proponent may execute the Contract(s).
- f. <u>f.</u> (Reconsideration and Review) Proponents may request <u>PREPA to reconsider its</u> determination<u>reconsideration</u> of the final awarding of a <u>contractContract</u> in accordance with applicable <u>Administrative Law. PREPA shall describe suchadministrative law. These</u> reconsideration and judicial review rights <u>will be described</u> in the notifications <u>it sendssent</u> to <u>proponents.</u>
- 1.4 Forms of Renewable Resources

In the Final Order, the Energy Bureau ruled that PREPA must undertake competitive procurements to obtain Contracts for renewable energy and energy storage resources which must be open to all forms of renewable energy including, but not limited to, wind, hydro, solar PV, VPPs, and energy storage. The Final Order requires that PREPA not unnecessarily limit the level of overall procurement to 250 MW blocks, but rather directs PREPA to pursue a strategy that attempts to procure the resource capacity required under scenario S3S2B evaluated in the IRP. To meet these thresholds, PREPA must consider both stand alone and co-located renewable energy and battery storage projects. If "shovel ready" utility scale renewable projects are available for expedited installation under agreements previously executed by PREPA, PREPA shall procure stand alone battery storage projects with multiple hour duration and roughly one-half of the projected capacity of these "shovel ready" projects to be expedited for installation, either at utility scale or at distributed scale as a VPP, as part of RFP Tranche 1 selections.

PREPA will seek proposals from Proponents interested in designing, constructing, installing, operating and maintaining renewable energy and BESS projects for installation at one or more sites across Puerto Rico. In accordance with the Final Order and the Procurement Plan Resolution, PREPA affirmatively states that the RFP will be open to all forms of renewable energy including solar photovoltaic, wind, energy storage, hydro, VPPs, or any combination of these mentioned technologies.

Projects must comply with the appropriate PREPA Minimum Technical Requirements ("MTRs"), as adjusted for site-level MTRs as the grid evolves, and with PREPA's current Interconnection Standards and Requirements. A Proponent's ability to comply with MTRs and interconnection requirements will form part of the RFP selection criteria.

For all projects except VPPs, PREPA will request the submission of all-inclusive turnkey proposals. Utility scale renewable energy projects (PV solar and wind) shall have a minimum of 20 MW of renewable generation capacity for installation at one or more sites within the main island of Puerto-Rico, paired and integrated with battery energy storage at a capacity and hours of storage compliantwith the relevant MTR. PREPA will also consider options for additional storage (in excess of MTRrequirements) from utility scale renewable projects. For the standalone energy storage, such offerings will be required to have a minimum nominal rating of 20 MW and 4-hours of storage. Alternatives offering 2-hours and 6-hours of storage will also be considered. Proposals for hydrogeneration resources will not require BESS support.

PREPA will apply the same criteria used for the selection of utility scale renewable energy resources for VPPs, except with a minimum capacity requirement of 5 MWs, which the Proponent may spread across multiple sites to meet such capacity requirement. A Proponent may source energy and capacity for VPPs from existing facilities that do not currently sell such energy and capacity to PREPA. Proponents of VPPs will be responsible for all metering, SCADA, and other forms of telemetry to create the VPP. VPPs will comply with applicable MTRs and interconnection standards. Other considerations applicable to VPPs include:

a. The VPP must use existing proven technology.

- b. PREPA shall give preference to VPPs whose resources are located within a relatively compact geographical area.
- c. The performance characteristics of the VPPs must be the same as those required from other utility scale renewable energy resources, as applicable.
- d. VPP projects will be responsible for all required changes/additions to the distribution and transmission system required by the project.
- e. <u>PREPA will value and consider resiliency benefits provided by VPPs in its evaluation of</u> individual VPP project proposals by accounting for potentially avoided transmission expenditures and transmission and distribution system loss savings.
- f. PREPA shall use the process of capturing the VPP resources in its initial RFP Tranche to inform its subsequent pursuit of VPP resources. It plans to use data gathered and lessons learned through this initial RFP Tranche 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.
- For each project, the Proponent shall enter into a Contract and an Interconnection Agreement underwhich the Proponent would sell, and PREPA would purchase: (a) for renewable generation, the net electric output, subject to specific energy delivery guarantees; (b) for BESS resources, energy storage capacity subject to specific energy delivery and operating guarantees; and (c) associated rights, benefits and credits of the Project, including environmental attributes (or "RECs"). The Renewable Generation and BESS facilities may be co-located and integrated on a single project site<u>Proponents</u>.

<u>1.5</u> <u>1.4</u> Procurement Schedule

As specified in <u>the</u> Final Order, the Procurement Plan communicates the expected timeline for the release <u>by PREPA</u> of subsequent RFPs in sequence (i.e., every six (6) months, over the next three (3) years for a total of six (6) tranches of RFP releases). <u>PREPA will issue a series of RFPs (These RFP Tranches) for contemplate</u> the <u>provisionprocurement</u> of renewable energy to <u>meetresources in quantities and within timelines conforming with</u> Act 82's RPS goals, and <u>for</u> the <u>provisionprocurement</u> of <u>renewable energy needed to meet PREPA's peak load requirements and in support of renewable energy generation integration requirements.</u>

The schedule of minimum RFP quantities, in conformance with quantities targeted in the Modified Preferred Resource Plan, is as follows:

a. **1st Tranche**: at least 1,000 MW solar PV (or energy-equivalent other renewable), at least 500 MW (2,000 MWh or equivalent) battery energy storage-:

- b. **2nd Tranche**: at least 500 MW solar PV (or energy-equivalent other renewable), at least 250 MW (1,000 MWh or equivalent) battery energy storage.
- c. **3rd Tranche**: at least 500 MW solar PV (or energy-equivalent other renewable), 250 MW (1,000 MWh or equivalent) battery energy storage-:
- d. **4th Tranche**: at least 500 MW solar PV (or energy-equivalent other renewable), 250 MW (1,000 MWh or equivalent) battery energy storage-:
- e. **5th Tranche**: 500 MW solar PV (or energy-equivalent other renewable), 125 MW (500 MWh or equivalent) battery energy storage-<u>; and</u>
- f. **6th Tranche**: 750 MW solar PV (or energy-equivalent other renewable), 125 MW (500 MWh or equivalent) battery energy storage.

Table 1-54 - Guidance for Solar PV/Renewables, and Battery Energy Storage RFP Tranches

		Solar PV or equivalent other energy, MWRenewables, MW		4-hr. Battery Storage equivalent, MW ¹	
RFP Target Release Date	Procurement Tranche	Minimum	Cumulative	Minimum	Cumulative
Dec-20	1	1000	1000	500	500
(actually released Feb-22)					
Jun-21	2	500	1500	250	750
Dec-21	3	500	2000	250	1000
Jun-22	4	500	2500	250	1250
Dec-22	5	500	3000	125	1375
Jun-23	6	750	3750	125	1500

1) Other storage durations (i.e., 2-hour and 6-hour) will be considered.

The RFP for PREPA issued the Tranche 1 will be issued as early in 2021 as possible, once the Energy-Bureau approves RFP on February 22, 2021 and expects the RFP for issuance Tranche 2 RFP to be issued by the end of June 2021. The expected timeline of the target release of dates for subsequent RFPs will be six (6) month intervals to be issued in sequence (i.e., occur every six (6) months, over the next three (3) years, for a total of six (6) tranches of RFP releases). The procurement of resources may be front- loaded within the five-year period in order to allow time for construction, interconnections, and commissioning within the five-year Action Plan.

<u>1.6-1.5</u> Uncertainties and Unknowns

As part of a competitive procurement plan, PREPA must describe internal or external staffing resources, constraints, and potential solutions to any constraints, as required, in order to meet the renewable energy <u>generation</u> and <u>battery</u> storage resource levels specified in the Modified Preferred Resource Plan.

PREPA does not currently have the internal capability and staff to evaluate project feasibility, system impacts or facility requirements. PREPA intends to will rely on (i) external staffing resources until PREPA has hired or otherwise secured alternate capabilities. As part of PREPA's transformation process, the P3 Authority has selected LUMA to manage the operations and maintenance of the T&D system. PREPA has commenced consultations with LUMA about its capacity to provide support for the required study and modeling activities, and (ii) support made available by LUMA as the Operator of the T&D System.

PREPA anticipates that integration of some proposed projects will require substantial T&D System upgrades. In evaluating such proposals, PREPA will attempt to identify 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, subject to curtailment under certain conditions. PREPA will consider ways in which combinations of new storage resources and phased T&D System improvements may help mitigate constraints that may otherwise limit renewable energy deployments, and will consider the assumptions used in interconnection analyses that account for these factors.

While Proponents have shown a high level of interest in the Tranche 1 RFP process, PREPA cannot yet determine whether this process will yield a sufficient number of high-quality, competitive proposals to procure the minimum quantities of renewable energy, energy storage and VPP resources, contemplated for Tranche 1. In addition, recent modeling and analysis by PREPA and its advisors indicates that the T&D System will require more than 1,500 MW (6,000 MWh) of energy storage resources to support appropriate levels of resource adequacy in the future. PREPA recommends that the Energy Bureau, PREPA and the T&D Operator discuss ways to ensure the deployment of a level of energy storage capacity that will support resource adequacy. PREPA has also commenced the assessment of (i) the quantities of renewable energy, required to ensure that the T&D Operator can fully charge the energy storage resources on a daily basis, and (ii) the risks and potential shortfalls of such an approach.

2. Counter-Party Risk

PREPA's current credit rating of CA, a non-investment grade rating reflecting PREPA's Title III status, presents a significant factor in the determination of Contract prices. A lower credit rating indicates a higher counter-party risk, which <u>developersProponents</u> will factor into their cost of capital calculations. This results in higher cost of capital and a higher levelized cost of energy ("LCOE") in generating and energy storage resource proposals than would be appropriate if PREPA had a better credit rating, all else held equal. <u>DevelopersProponents</u> will usually determine contract price based on LCOE. As <u>thePREPA's</u> credit rating improves, particularly as PREPA reaches an investment grade rating, PREPA-<u>expects that its's</u> cost of capital willshould decrease, its riskiness as a contract counter-party will decline, and the LCOE <u>wouldshould</u> decrease as well, all else being equal. PREPA expects its credit rating to improve upon emergence from the ongoing PROMESA Title III proceeding. <u>As PREPA desires to minimize the impact of counter party risk on Contract prices</u>, <u>PREPA will consider the timing of the RFP Tranches to reflect that Contracts signed after PREPA's</u>

emergence from Title III should reflect better pricing, all else held equal. For earlier Tranches, which may be entered intoresult in Contracts executed prior to <u>PREPA's</u> emergence from its Title III proceedings, PREPA will give preference in its evaluation to Proponents that accept an automatic step-down in Contract price upon such emergence.

3. Request for Proposals (RFP) Template

PREPA will request combined Statements of Qualifications ("SOQs") and responses to the RFP from companies and consortia interested in designing, constructing, installing, operating and maintaining renewable energy and BESS projects, to be installed at one or more sites across Puerto-Rico. The renewable energy projects may include but are not limited to solar PV, wind, energy storage, hydro, VPPs, or any combination of these technologies. The utility scale renewable energy projects for solar PV and wind generation will have a minimum nominal rating of 20 MW. VPP projects will have a minimum nominal rating of 5 MW. The standalone BESS offerings will have a minimum nominal rating of 20 MW and 4 hours storage. Storage alternatives offering 2-hours and 6 hours of storage will also be considered. All technologies will be required to comply with respective PREPA MTRs which shall be included in the RFP. In the event that the utility scale solar PV or wind generation projects offer to provide energy storage in excess of requirements of the relevant MTRs, the additional energy storage for these projects will be considered as an option (i.e., combination of renewable generation and energy storage). Appendix 1 sets forth the RFP template for renewable energy and BESS resources.

3.1 Purpose of RFP

PREPA plans to solicit proposals for the design, permitting, construction, operation, and maintenance of renewable energy and BESS resources, to achieve the following objectives for PREPA's generation system:

- a. increase the availability of renewable energy resources as part of PREPA's generation system;
- b. reduce energy prices to levels consistent with the 2020 Certified Fiscal Plan projections; and
- c. increase PREPA's grid resiliency as required by the recently approved IRP.

This RFP is intended to identify Proponents that meet the minimum requirements necessary to carry out the development of renewable energy and/or BESS resources in compliance with Act 120, the PPP Act and other applicable laws. Proponents should demonstrate:

- a. capability and experience developing, constructing, installing, testing, and operating renewable energy resources;
- b. capability and experience managing renewable energy and energy storage technology;
- e. financial strength and capital resources engaged for project funding;

d. strong technical expertise, with a track record of high-quality operations; and

e. experience complying with regulatory and permitting approvals in Puerto Rico.

PREPA encourages

Appendix 2 (*RFP Template*) sets forth the current version of the RFP template for energy resources, and this Section 3 provides a high level overview of the template.

3.1 Background Information for the RFP

Each RFP will encourage Proponents to review the following documents, which provide further technical background:

- a. **PREPA** Integrated Resource Plan: https://aeepr.com/es-pr/QuienesSomos/Paginas/ley57/Plan-Integrado-de-Recursos.aspx
- b. Energy Bureau Final Order on the PREPA IRP: https://energia.pr.gov/wp-content/uploads/2020/08/AP20180001-IRP-Final-Resolution-and-Order.pdf
- c. Energy Bureau Procurement Plan Resolution: https://energia.pr.gov/en/dockets/?docket=nepr-mi-2020-0012

TheEach RFP will <u>also</u> encourage Proponents to review the following additional documents, which are available for download at http://www.p3.pr.gov or at https://energia.pr.gov/en/laws/, for further background and the legal framework:

- a. PREPA Organic Act, Act No. 83-1941, as amended;
- b. Public-Private Partnership Authority Act, Act No. 29-2009, as amended (the "PPP Act");
- c. Regulation for the Procurement, Evaluation, Selection, Negotiation and Award of Participatory Public-Private Partnerships Contracts under Act No. 29-2009, as amended (the "PPP Regulation");
- d. Puerto Rico Energy Transformation and RELIEF Act, Act No. 57-2014, as amended;
- e. PREPA Revitalization Act, Act No. 4-2016, as amended;
- f. Law for Diversification through Sustainable and Alternative Energy in Puerto Rico, Act No. 82-2010, as amended ("Act 82");
- g. Act 83-2010, as amended ("Act 83"), known as the Puerto Rico Green Energy Incentives-Act83;

- h. Act 17-2019 ("Act 17"), known as the Puerto Rico Energy Public Policy Act17; and
- i. <u>Puerto Rico Electric System Transformation Act, Act No. 120-2018, as amended ("Act 120")</u>.

3.2—IRP

The Energy Bureau issued its Final Order on August 24, 2020. Through that Order and the subsequent Procurement Plan Resolution, the Energy Bureau established the manner in which PREPA shall procure new renewable generation and energy storage resources, take advantage of energy efficiency and plan for the retirement of most of its fossil-fueled generating units.

3.2 **RFP General Overview**

Proponent Qualifications

Each RFP Tranche will solicit combined Statements of Qualifications and responses from companies and consortia interested in designing, constructing, installing, operating and maintaining renewable energy generation, energy storage and/or VPP resources at one or more sites across Puerto Rico. Proponents should demonstrate:

- a. capability and experience developing, constructing, installing, testing, and operating renewable energy resources;
- b. capability and experience managing renewable energy and energy storage technology;
- c. financial strength and capital resources engaged for project funding;
- d. strong technical expertise, with a track record of high-quality operations; and
- e. experience complying with regulatory and permitting approvals in Puerto Rico.

Energy Resource Characteristics

In accordance with the Final Order, the proposed resources may include, but are not limited to, solar PV, wind or hydro, energy storage, VPPs, or any combination of these technologies. The Final Order requires that PREPA not unnecessarily limit the level of overall procurement to 250 MW blocks, but rather directs PREPA to pursue a strategy that attempts to procure the resource capacity required under scenario S3S2B evaluated in the IRP. PREPA will seek renewable energy resources and energy storage projects on approximately a 2:1 MW ratio to conform to the overall targets for each Tranche of the RFP. To meet these thresholds, PREPA must consider both stand-alone and co-located renewable energy and energy storage projects on an integrated and non-integrated basis. If "shovel ready" utility scale renewable projects are available for expedited installation under agreements previously executed by PREPA, PREPA shall procure stand-alone energy storage projects with multiple hour duration and roughly one-half of the projected capacity of these "shovel"

ready" projects to be expedited for installation, either at utility scale or at distributed scale as a VPP, as part of RFP Tranche 1 selections.

All project proposals must comply with the appropriate PREPA Minimum Technical Requirements ("MTRs"), and with PREPA's current interconnection standards and requirements. A Proponent's ability to comply with MTRs and interconnection requirements will form part of the RFP selection criteria.

Proponents of all projects except VPPs shall submit all-inclusive turnkey proposals. The utility-scale renewable energy resources must have a minimum nominal rating of 20 MW, measured at the electrical interconnection point with the T&D System. VPP projects must have a minimum nominal rating of 5 MW made available through multiple electrical interconnections that do not exceed 1 MW AC of capacity. The standalone energy storage resources will have a minimum nominal rating of 20 MW and four (4) hours of storage. Storage alternatives offering two (2) hours and six (6) hours of storage will also be considered.

Proponents may also offer energy storage projects paired with a utility scale renewable energy project. For standalone energy storage, such offerings will be required to have a minimum nominal rating of 20 MW and four (4) hours of storage. Alternatives offering two (2) hours and six (6) hours of storage may also be considered. Proposals for hydro generation resources will not require energy storage support.

The same criteria used for the selection of utility scale renewable energy resources will apply to the evaluation of VPP proposals, except that the minimum capacity requirement shall be 5 MWs, which the Proponent must secure from multiple sites with different points of electrical interconnection that do not exceed 1 MW AC of capacity at each electrical interconnection. A Proponent may source energy and capacity for VPPs from existing facilities that do not currently sell such energy and capacity to PREPA. Proponents of VPPs will be responsible for all metering, SCADA, and other forms of telemetry to create the VPP. VPPs will comply with applicable MTRs and interconnection standards.

<u>Resultant Contracts</u>

For each selected project, the Proponent shall enter into a Contract and an Interconnection Agreement under which the Proponent would sell, and PREPA would purchase: (a) for renewable generation, the net electric output, subject to specific energy delivery guarantees; (b) for energy storage resources, energy storage capacity subject to specific energy delivery and operating guarantees; (c) for VPP resources, capacity subject to specific energy delivery and operation guarantees; and (d) in each case, associated rights, benefits and credits of the Project, including environmental attributes (or "RECs").

3.3 Specific RFP Requirements

With the RFP process described in this Procurement Plan, PREPA seeks to comply with the requirements of the IRP and the Energy Bureau's Final Order and Procurement Plan Resolution.

PREPA will contract with renewable energy and battery energy storage resources procured under this Plan-on a competitive basis, and <u>PREPA</u> will evaluate and select resource proposals, on a competitive basis in accordance with the process set forth in this Procurement Planbelow and in the RFP.

- a. (Renewable Procurement Implementation Timeline) Act 82, as amended by Act 120, requires PREPA to procure renewable energy resources sinin the following quantities by the end of specified years: twenty percent (20%) by 2022, forty percent (40%) by 2025, sixty percent (60%) by 2040, and one hundred percent (100%) by 2050. In order to comply with these targets, PREPA will solicit proposals to develop renewable generation and energy storage resources that can achieve commercial operation within twenty-four (24) months from the relevant Contract's execution date. This timeline, the Energy Bureau has concluded, should provide the Proponent with enough time to finalize all-its arrangements required to proceed, which are expected to include:
 - i. Site Control;
 - ii. Transmission Interconnect:
 - iii. Permitting and Licensing:
 - iv. Environmental Assessment:
 - v. Engineer, Procure, & Construct (EPC) contract: and
 - vi. Financial Closure:

and with enough time to execute the work required to install the project to achieve commercial operation, which will include:

- <u>ivii</u>. Final engineering and design:
- iiviii. Equipment procurement, fabrication and delivery:
- iii construction; and
- ivx. Startup and commissioning.

Proposals should demonstrate the Proponent's ability to achieve commercial operation in a timeframe not to exceed twenty-four (24) months from the signing of the Contract. PREPA may also give consideration to consider proposals with commercial operation dates not to exceed thirty (30) months from signing of the Contract, but projects proposing a shorter timeline will be preferred, and shorter development times will be given a higher score in the RFP evaluation process.

- b. (**Proposal Submission Requirements**) <u>PREPA asks Each RFP Tranche will require</u> Proponents of utility scale renewable energy and <u>BESS projects energy storage resources</u> to provide a project description, which shall cover the following, as relevant to the proposal:
 - Basic project description, including (a1) project name; (b2) site location (including map and site layout); (e3) technology; (d4) generating or storagedischarge capacity; (e5) MTR compliance strategy; (f6) grid connection point and electrical one-line diagrams; (g7) ancillary service capabilities; (h8) forecasted commercial operation date; and (i9) ownership structure;
 - ii. Site ownership, usage, and development status-:
 - iii. Current permitting and licensing status, including water rights, of issuance of all permits, licenses and other authorizations required for the implementation of the project;

iv.

- iv. A detailed operation and maintenance plan, covering the proposed supply term;
- <u>v.</u> Environmental permitting plan addressing all potentially applicable environmental permits (federal and local) including the following, as applicable:
 - List of potentially applicable permits evaluated or to be evaluated;
 - 2. •Result of applicability analysis for each potentially applicable permit or status of evaluation; and
 - <u>3.</u> •-Planned approach to obtain applicable permits including the following:
 - A. List of key activities necessary to obtain each applicable permit(s) and associated timing;
 - B. Identification of key individuals or consultants; and
 - C. Experience of those individuals in specific jurisdictions of $project_{\overline{a}}$
- <u>vvi</u>. Transmission <u>or distribution</u> upgrade plans<u>including:</u>, <u>as applicable, demonstrating</u> <u>compliance with the requirements of Regulation 8915 or Regulation 8916, as applicable, status of interconnection or transmission service requests, and status of related transmission agreements and approvals;</u>
- <u>vii.</u> A detailed description and drawings of transmission <u>or distribution</u> and substation facilities associated with the <u>resourceproposed project</u>, and descriptions of any special protection schemes associated with the resource and their use.

- A demonstration that a new project offers PREPA and the T&D Operator require Energy Resources that offer operational flexibility. Proponents shall be required tomust 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. Proponents shallmust also describe the capability, if any, of the new projectresource to provide reactive support ancillary service and dynamic reactive reserve;
- ₩i
- viii. Proponents' design and development experience with the proposed technology-
- vii or, in the case of proponents of VPPs, with the aggregation of multiple energy supply, storage or controllable load resources into a VPP;
- ix. Proponents' operating experience with the proposed technology-
- viii or, in the case of proponents of VPPs, with the aggregation of resources into a VPP and the management of such resources effectively to provide capacity and energy in response to dispatch instructions issued by the T&D Operator:
- X. Financing plan, including (a1) sources of debt and equity; (b2) equity percentage by sponsor; (c3) financing rates and other terms; (d4) level of commitment by potential lenders for construction financing and permanent financing; and (c5) tax credit qualifications;
- ixxi. Proponents' management team and key individuals responsible for project permitting, financing, design, construction, and operation-:
- Major milestone schedule, including provisions for (a1) site acquisition, control, and development; (b2) permitting and licensing; (c3) transmission upgrades and interconnection, if applicable and as relevant to the project location; (d4) financing; (c5) engineering, procurement, and construction; and (f6) testing;
- xixiii. For each of the above categories, Proponents shall provide references to any supporting documents or attachments. Proponents' design and development experience and operating experience with the proposed technology shall include a list with the following information:
 - <u>facility name</u>,
 - <u>facility location</u>,
 - technology configuration and capacity,

- major equipment manufacturers,
- engineering, procurement, and construction contractor, and
- commercial operation year.
- xii.

<u>xiv.</u> Pricing terms which convey the essence of the proposed resource cost.

- xiii. For renewable energy generation proposals, Proponents may opt to break down pricing terms into three components:
 - MTR-Compliant Renewable Energy: This shall be the cost of energy generated by the MTR-compliant energy generation resource, not including interconnection costs and the costs associated with any additional energy storage.
 - Additional Energy Storage: This shall be the cost for any energy storage co-located with a renewable generation resource in excess of the MTRrequirements.
 - Project Interconnection Costs: This shall be an estimate of the cost for transmission infrastructure necessary to deliver energy to the PREPA T&D System. This may include transmission facilities and network upgrade costs required to integrate the project into the T&D System.

xiv. The pricing proposal shall indicate:

- <u>1.</u> •-Construction Start Date<u>& Commercial Operation Date</u>;
- Suppy term
- MTR-Compliant
- 2. <u>Supply Period;</u>
- <u>3.</u> <u>For</u> Renewable Energy
 - A. Indexed Payments: Energy payments (\$/MWh, first year value, and escalation index)
 - B. Non-Indexed Payments: Energy payments (\$/MWh, specified by Proponent for each year)

- Additional or Stand-Alone Energy Storage
 - A. Indexed Payments: Capacity payments (\$/kW/year, first year value, and escalation index)
- B. Non Indexed Payments: Capacity payments (\$/kW/year, specified by Proponent for each year) Resource proposals, the "Base Rate" as defined in the relevant Final Proposal Version of Contract, representing the unit price of electricity, expressed in U.S. Dollars per kWh¹;
- <u>4.</u> For Energy Storage Resource proposals:
 - A. the "Capability Payment Price" or "CPP" as defined in the relevant Final Proposal Version of Contract, representing the monthly price of Energy Storage Resource capacity, expressed in U.S. Dollars per MW of discharge capacity; and
 - B.the "Variable O&M Price" or "VOMP" as defined in the relevant FinalProposal Version of Contract, representing additional compensation for
variable usage of the Facility, expressed in U.S. Dollars per MWh of
discharge energy; and
- <u>5.</u> For stand-alone BESS projects, Proponents should propose either <u>VPP</u> proposals:
 - A. Indexed Payments: Capacity payments (\$/kW/year, first year value, and escalation index)
 - B. Non-Indexed Payments: Capacity payments (\$/kW/year, specified by Proponent for each year)the "Demand Build Price" or "DB\$" as defined in the relevant Final Proposal Version of Contract, representing the monthly price of Demand Build Services, expressed in U.S. Dollars per kW-Month; and
 - B. the "Demand Reduction Price" or "DR\$" as defined in the relevant Final Proposal Version of Contract, representing the monthly price of Demand Reduction Services, expressed in U.S. Dollars per kW-Month;
- xv. For all projects, Proponents shall estimate Project Interconnection Costs- to (A) for Renewable Energy Resources and Energy Storage Resources, design, supply, install, test and commission the interconnection infrastructure required for the delivery of the project's energy or energy storage capacity (as applicable) to the T&D System, and

¹Note: PREPA will consider time-of-dispatch pricing following consultation with PREB.

(B) for VPPs, install communication and metering systems that will enable the T&D Operator to issue dispatch instructions to the VPP aggregator or its agent:

- xvi. For all projects, Proponents shall specify performance:
 - **1.** For renewable energy generation proposals, the Energy Production Forecast shall indicate, as applicable given the nature of the proposed resource (i.e., solar PV, wind or hydro), the forecasted P10, P50, and P90 annual energy forecast in MWh for each day and hour (8,760 entries). The forecasted values shall account for long term performance degradation.; and
 - For stand-alone-BESS and optional combination renewable generation and energy storage proposalsresources, the guaranteed performance shall indicate:
 - A. Guaranteed Capacity (MW / MWh):
 - B. Peak Charging Time (hours):
 - C. Peak Discharging Time (hours):
 - D. AC-AC Round Trip Efficiency (%); and
 - E. Equivalent Availability Factor (%):

The guaranteed values shall account for long-term performance degradation:

- xvii. Proponents shall indicate the anticipated suppliers, models, and countries of manufacture for major plant equipment;
- xviii Proponents must provide specific evidence demonstrating their ability to raise <u>financing</u>;
- xix. To the extent that a Proponent currently owns, or holds leasehold rights in, each parcel of land forming part of the site of the proposed project, such Proponent shall submit a certified true and correct copy of the deed of title or lease agreement, evidencing such ownership over, or leasehold interest in, such parcels of land. To the extent that a Proponent does not yet own or exercise control over a parcel of land that will form part of the proposed project site, the Proponent shall submit either:
 - 1. the original version of a letter from the registered title holder of such parcel (A) confirming such owner's intention to transfer ownership of, or grant a lease over, such parcel to Proponent for the purpose of implementing the proposed project upon the award of a Contract by PREPA to the Proponent, and (B) attaching a certified true and correct copy of the deed of title for such parcel; or

- 2. <u>a certified true and correct copy of a legally-binding agreement evidencing</u> <u>that the registered title holder of such parcel has granted the Proponent an</u> <u>option to purchase or lease such parcel upon the award by PREPA of a</u> <u>Contract for the implementation of the proposed project in form and substance</u> <u>reasonably satisfactory to PREPA;</u>
- xx. For Energy Resource proposals other than a Demand Resource proposal, the Proponent shall submit a detailed breakdown of the fixed and variable costs to operate and maintain the proposed resource in ten (10) year increments during the supply period;
- xxi. Each Proponent shall submit a business continuity plan, detailed by scenario, with the aim of ensuring service continuity during all identified potential threats to the operation of the proposed resource, including the occurrence of bomb threats, war, hurricanes, tornadoes (including waterspouts), earthquakes, tsunamis, active shooters, pandemics and other threats to public health and plane crashes; and
- xxii. Each Proponent must submit a summary of all legal proceedings, claims, actions, or suits against the Proponent, the guarantor, or involving the facility or site.
- (Virtual Power Plants:--) As specified in the Final Order, quantities sought in Tranches c. subsequent to the first two RFP Tranches may be adjusted as necessary to account for installations of distributed generation that contribute to meeting overall quantities in the Modified Preferred Resource Plan. To that end, PREPA will support the deployment of DG resources under existing programs. In addition, each RFP will be structured such that all resources and storage amounts can be aggregates of smaller installations (also known as VPPs). As specified in the Final Order and in the Procurement Plan Resolution, VPPs are explicitly allowed and must be able to compete on fair terms. - TheEach RFP Tranche_will allow Proponents of VPPs to submit responses, with the assumption that the characteristics of the VPPs, including pricing and reliability, will be comparable to those provided on a utility scale. 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 MWs, which maymust be spread across multiple sites with different points of electrical interconnection that do not exceed 1 MW AC of capacity at each electrical interconnection for installations to meet the minimum capacity requirement. Energy and Capacity capacity for VPPs may be sourced from existing facilities that do not currently sell such Energy and Capacity or capacity to PREPA. Proponents of VPPs will be responsible for all metering, SCADA, and other forms of telemetry to create the VPP. VPPs will be required to comply with applicable MTRs and interconnection standards, which will reflect the distributed nature of VPP generating and storage resources, their location on the T&D System (typically on distribution-level circuits) and their limited ability to provide certain services (e.g., voltage regulation). Other considerations applicable to VPPs include the following:
 - i. <u>The VPP must use existing, proven technology.</u>

- ii. Preference may be given to VPPs whose resources are located within a relatively close geographical area.
- iii. The performance characteristics of the VPPs must be the same as those required from other utility scale renewable energy resources, as applicable, taking into account the distributed nature of the resource and its location on
- i. the Proponent shall source energy and capacity from VPPs aggregating only newly-installed energy resources or existing energy resources, which do not currently make available energy or capacity for dispatch by the T&D Operator;
- ii. the Proponent shall install and maintain all metering, SCADA and other forms of telemetry to establish, monitor, control and dispatch such VPP at its own cost and expense;
- iii. VPPs shall comply with applicable MTRs and PREPA's standards for interconnection with the T&D System.
- iv. VPP projects;
- iv. VPPs shall be capable of supplying a minimum of 5 MW of dependable capacity, which the Proponent must aggregate from multiple sites;
- v. VPPs must use existing, proven technology;
- <u>vi.</u> all VPPs other than VPPs consisting exclusively of Demand Response Resources shall satisfy the same performance requirements as this RFP requires for a utility-scale Energy Resource;
- vii. the supply period for a VPP shall extend for a period of ten (10) to twenty-five (25) years from the Commercial Operation Date:
- <u>viii. VPP Proponents</u> will be responsible for <u>the cost offunding</u> all <u>upgrades and required</u> <u>changes/</u>additions to the <u>T&D System</u><u>distribution and transmission system</u> required to <u>accommodateby</u> the project-
- PREPA will use the process of capturing:
- ix. the Proponent shall demonstrate that each Energy Resource and Demand Response Resource forming part of a proposed VPP can effect capacity responses / load reductions within the response time required when the T&D Operator curtails generation or sheds load on the T&D System throughout the entire supply period. PREPA will favor VPPs incorporating Energy Resources that can provide a rapid response and/or ramp up or down in response to specific control signals. VPP Proponents should detail the full, demonstrated capability of the proposed resource:

- x. the Proponent shall contractually undertake to, and demonstrate its capability to, manage all capacity dispatch and load reduction instructions, including all notices, resource participation registration and deregistration, communications, controls, equipment, and other processes required to satisfy the T&D Operator's dispatch instructions;
- xi. contract prices for VPP proposals shall cover all property and local taxes and tax abatements related to such VPP; and
- xii. the resiliency benefits provided by VPPs will be taken into account in the evaluation of individual VPP project proposals by, among other things, accounting for potentially avoided transmission expenditures and transmission and distribution system loss savings.

Lessons learned through the solicitation of VPP resources in the initial RFP Tranche to inform how it pursues1 RFP will be applied to the procurement of VPP resources in subsequent Tranches. PREPA will use dataData and insights obtained and lessons learned in procuring VPP resources in the consideration of VPP resource proposals will be used to (a1) set realisticrefine performance requirements (e.g., commercial terms); (b2) more precisely assess the value that VPPs can provide (e.g., grid services); and (e3) gauge and potentially shorten the timeline for deployment and operation of VPPs based on its procurement experience and best practices.

- PREPA will only consider proposals Proposals for VPPs havingmust, at minimum, have the following characteristics:
- i.— The VPP PPOA term must be a minimum of ten (10) years. VPP Proponents may propose Contract terms of up to twenty five (25) years.
- ii. The generation and storage <u>facilitiesresources</u> aggregated into the VPP must be complete, commercially operable, and available to commence operation under the <u>VPP PPOAa Grid Service Agreement with PREPA (each, a "GSA")</u> within a maximum of twenty-four (24) months from <u>Contract signing</u>.
- iii. The facilities aggregated into the VPP must use existing, proven technologythe date on which PREPA and a Proponent satisfy all of the conditions precedent for the effectiveness of such agreement.

iv. <u>ii.</u> VPP Proponents shall provide:

<u>1.</u> the contractual framework under which the Proponent would supply capacity and (if applicable) energy, as well as other grid services, to PREPA from Energy Resources owned by third parties:

- 2. <u>the responsibilities of the Proponent relating to the assembly, registration and confirmation of the status of resources to be provided by third parties;</u>
- <u>3.</u> <u>certified true and correct copies of each agreement that would govern the</u> <u>relationship between the Proponent, as an aggregator and individual third</u> <u>parties committing their resources for aggregation into the VPP;</u>
- <u>4.</u> <u>the manner in which the Proponent would coordinate and dispatch resources;</u>
- 5. the nature of the assets, including software, servers, network communications equipment, resource control equipment, sensors and monitoring equipment required to support the dispatch of resources committed to the VPP;
- <u>6.</u> the geographical location of each Energy Resource, and, where applicable, Demand Response Resource, forming part of the proposed VPP;
- -a description of the aggregation of the program participants, and expected generating capacity and load drop values (MW), equipment, and technology;
- <u>8.</u> a description of the <u>ProponentsProponent's</u> plans for recruiting, engaging, <u>monitoring the performance of and maintaining the participation of program participants</u>; and
- <u>9.</u> the experience, qualifications, and financial strength of the Proponent and other key contributors. Responses should indicate whether the Proponent has ever been assessed for each Energy Resource forming part of a <u>VPP</u>, each performance penalty <u>imposed on either the third party which owns such</u> resource or the Proponent in association with a <u>VPPsuch</u> resource <u>within the</u> past five (5) years; and, if so, when any penalties were assessed.
- v. For Curtailment Events initiated by PREPA the Proponent shall agree to meet, and be capable of meeting throughout the entire term of the PPOA, the capacity response/load reduction capability within the response time indicated by the Proponent in its response.
- vi. PREPA prefers resources that can provide a more rapid response and/or ramp up or down in response to specific control signals. VPP Proponents will be urged to detail the full, demonstrated response and ramping capabilities of the proposed resource.
- vii. The Proponent shall be responsible for managing capacity dispatch and load reductions, including all notices, resource participation registrations and deregistration, communications, controls, equipment, or other processes required. Communication terms shall be at the discretion of PREPA.

- viii. Costs of any property and local taxes and tax abatements shall be identified and included.
- ix. The financing plan shall include either the Proponent's or its guarantors' senior unsecured debt and/or corporate issuer ratings documentation from Fitch, Moody's and Standard & Poor's showing the name of the rating agency, the type of rating, and the rating of the Proponent or guarantor.

x.—Any

- <u>10.</u> <u>any</u> material actions, suits, claims, or proceedings (threatened or pending) against the Proponent shall be identified.
- xi. Performance guarantees indicated in the proposal shall be subject to performance tests and remedies such as liquidated damages to be negotiated with PREPA, relating to each Energy Resource forming part of the proposed <u>VPP</u>.

4. <u>4. Proposal/</u>Contract Terms & Conditions

4.1-<u>4.1</u>General

PREPAEach RFP Tranche will **seeksolicit** proposals for turn-key systems that will be fully operational upon testing and commissioning. Proponents shall procure, install, and operate all transmission facilities that will be part of the Proponent's facilities, such as the interconnection line and breakers, that are necessary to interconnect the Proponent's project to the T&D System. Proponents will also be responsible for all necessary upgrades to transmission facilities required to accommodate the interconnection of the project. Equipment and real property required to support such upgrades shall be transferred to PREPA upon commissioning. <u>PREPA intends to enter into</u> Contracts with Proponents <u>under whichwill obligate</u> Proponents <u>willto</u> provide operation, maintenance, and monitoring services for the renewable generation and <u>BESS resources.</u>

PREPA will only consider proposals for renewable energy generation and storage facilities with resources they propose.

<u>Proposals must meet</u> the following <u>characteristics</u>requirements:

- a. The Contract term must be a minimum of fifteen (15) and up to twenty five (25) years and a minimum of ten (10) years for VPPs.
- a. each Proponent may submit more than one (1) proposal if each proposal separately complies with the RFP requirements on a standalone basis;
- b. Proposals must be site specific.the price submission set forth in each proposal to develop and construct an Energy Resource shall cover all of the Proponent's costs to (i) install, test and commission the transmission or distribution infrastructure required to connect such resource

<u>Page</u>39

to the T&D System, and (ii) ensure that such resource complies with all Applicable Law currently in effect:

- c. The energy resource must qualify as a renewable energy resource.each Proponent shall identify all property and local taxes and tax abatements, related to its proposed project and Contract prices shall cover all such taxes;
- d. The utility scale generation resource (PV solar, wind and hydro) must have a minimum nominal capacity of 20 MW. The VPP generation resource must have a minimum nominal capacity of 5 MW. Standalone BESS must have a minimum nominal capacity of 20 MW and 4 hours storage. Please note that PREPA may consider BESS proposals that offer different storage durations (2, 4, 6 hours, etc.), if such alternatives are deemed to be advantageous.
- e. The
- <u>d.</u> proposals should demonstrate an ability to achieve commercial operation in a timeframe not to exceed twenty-four (24) months from the signing of the Contract. PREPA will also consider proposals with a guaranteed commercial operation date not to exceed thirty (30) months from signing of the Contract, but such proposals will receive a lower score in the RFP evaluation process than those proposing shorter development times;
- e. for Renewable Energy Resource proposals, Proponents shall report project capacity and P50 Energy Yield for such resources during the proposed supply period;
- f. prior to the date on which PREPA will sign a Contract, each Proponent shall provide evidence of its ability to provide equity funding at least equal to thirty percent (30%) of the forecasted costs to develop the proposed project by the forecasted date on which the Proponent will first draw down on loan facilities made available by lenders to the project;
- g. the supply period under each Contract (i) for both utility-scale and VPP resources, may extend for a duration of up to twenty-five (25) years, and (ii) for VPP resources, extend for a minimum of ten (10) years for VPPs;
- h. proposals must be site-specific;
- i. each renewable energy resource proposal must qualify as a renewable energy resource;
- <u>j.</u> the facility will comply with PREPA MTRs applicable to the technology-
- f. Specific:
- <u>k.</u> proposals should identify specific point(s) of interconnection shall be identified.
- g. Costs;

- <u>l.</u> proposals should identify and include costs of any property and local taxes and tax abatements shall be identified and included.
- h. The facility and the facility site shall be owned (or leased pursuant to a Sale Leaseback Financing; a Substitution of Leasehold Property; or any other lease arrangement meeting the Site Control requirements and otherwise acceptable to PREPA) by Proponent during all periods of the PPOA Term from and after the Construction Commencement Milestone.
- i. The facility must be complete, commercially operable, and available for commercial operation within a maximum term of twenty four (24) months from Contract signing. Proposals identifying a period from Contract signing to commercial operation of as long as thirty (30) months will be considered, but will be scored lower than those proposing a twenty-four (24) month signing to commercial operation timeframe.
- j:
- <u>m</u>. <u>Thethe</u> asset must use an existing proven technology:
- <u>n</u>.
- k. <u>Any proposals should explain any</u> identified environmental liabilities (e.g., potential site remediation requirements) shall be explained:
- <u>0</u>.
- I. <u>Any proposals should identify any</u> material actions, suits, claims, or proceedings (threatened or pending) against the Proponent-shall be identified.;
- m. The Contract pricing shall include all costs associated with constructing and operating a completed facility for which full output will be accredited to the delivery point.
- n. The
- p. the financing plan shall include either the Proponent's or guarantors' senior unsecured debt and/or corporate issuer ratings documentation from Fitch, Moody's and Standard & Poor's showing the name of the rating agency, the type of rating, and the rating of the Proponent or guarantor-<u>; and</u>
- og. Production production forecasts for renewable energy facilities and performance guarantees shall be subject to performance tests and remedies such as liquidated damages to be negotiated with PREPA. <u>SupportingProposals should provide supporting</u> energy production reports (PVsyst, wind resource assessment, hydro assessment, etc.) documenting assumptions used in the production forecasts <u>must be provided</u>.

TheEach RFP Tranche will include draft Contract templates for a RenewableSolar PPOA and an, ITC Compliant ESSA, Standalone ESSA and GSA each as defined in Section 4.3 (*Final Proposal Version of Contracts*).

4.2 <u>4.2</u> Contract Exceptions

Following its delivery of a Notice of Intent to Respond, each responding Proponent should (ia) review the preliminary template version of the Renewable PPOA or the ESSArelevant Contract set forth in the Appendices of the RFP, and (iib) submit to PREPA a revised version of such form of Contract that shows all of the material changes proposed by such Proponent proposes to be made to the relevant Contract template, in blackline form together with a brief explanation of the rationale for each such change as a comment linked to the relevant provision containing such change (the "Contract Exceptions"). Proponents are encouraged to make minimalminimize the number of changes to the contract template they suggest. The Contract Exceptions need not include changes related to the contextualization of the Contract for such Proponent's specific project proposal(s), which PREPA will allowbe done during the final negotiation of a Contract with the Proponents of selected proposals.

4.3 <u>4.3</u> Final Proposal Version of Contracts

Upon-its receipt of Proponents' Contract Exceptions, PREPAthe Evaluation Committee will review and assess all such proposed exceptions, and prepare and issue to all Proponents either a final form Renewable PPOA or a final form revised ESSA, inversion of each easeContract template, that takes into account in each case the Contract Exceptions but only to the extent that PREPAthe Evaluation Committee deems this necessary in its sole discretion (each, a "Final Proposal Version of Contract"). Appendices 3-6 of this Procurement Plan set forth the Final Proposal Version of Contract for (a) the Power Purchase & Operating Agreement for Solar PV Facilities (the "Solar **PPOA**"), (b) the Energy Storage Services Agreement for ITC Compliant Energy Storage Resources (the "ITC Compliant ESSA"). (c) the Energy Storage Services Agreement for Standalone Energy Storage Resources (the "Standalone ESSA"), and (d) the GSA for VPP Resources, in each case for the Tranche 1 RFP. Each Proponent should submit their proposals in response to PREPA an RFP on the assumption that the relevant Final Proposal Version of Contract shall govern the terms and conditions under which such Proponent will design, construct, install, own, operate and maintain its proposed project as well as make available renewable energy and/or energy storage capacity and related services (as applicable) for sale to PREPA. To the extent that a Proponent intends to submit a proposal for a Renewable Energy Resource other than solar PV technology, PREPA should develop and issue a Contract template that accommodates such other resource as part of the package of documents representing the Final Proposal Version of Contracts.

4.4 <u>**4.4**</u> Interconnection Studies; Interconnection Agreement Negotiations

During the proposal evaluation <u>process</u>, PREPA will <u>independently modelarrange to have</u> interconnection <u>studies performed</u> and system upgrade <u>costs</u>. <u>This modeling will be conductedcost</u> <u>estimates prepared</u> as follows:

- a. <u>PREPA will perform a Feasibility Studya feasibility study</u> for short-listed candidate projects_ <u>will be performed</u> to <u>assessdevelop</u> order-of-magnitude interconnection and T&D System upgrade <u>costs.cost estimates</u>;
- b. Proponents will be allowed to adjust pricing to reflect Feasibility Study results-
- c. Feasibility Study results will influence the selection of a final short-list of projects, and may be iterative; and
- d. PREPA will require <u>completion of a System Impact Study</u> followed by a Facilities Study for short-listed projects.

PREPA's study costs The Proponent shall be borne by bear the Proponent interconnection and system upgrade study costs. Additionally, the Proponent will be responsible for the procurement and installation of all equipment shown by these studies to be necessary to interconnect the Proponent's proposed facility to the T&D System. PREPA and the Proponent shall execute an Interconnection Agreement that reflects the study results in coordination with the execution of the Contract. PREPA expects to use a *pro forma* interconnection agreement, wherein the primary points of negotiation will be related to the physical interconnection requirements.

4.5<u>**4.5**</u>**Effectiveness of Contracts**

Subject to Joint Regulation 8815 and relevant directives of the FOMB, each Contract executed by PREPA shall only enter into full force and effect upon approval from PREPA's Executive Director, PREPA's Governing Board, the Energy Bureau and the FOMB.

<u>5. 5.</u> Procurement <u>FlexibilityScale / Type</u>

The Final Order requires flexibility in the award of renewable energy contracts. As stated in the Final Order, "*The[t]he* Procurement Plan must allow for PREPA to choose to select resources for PPOAs in excess of the 1,000 MW minimum (solar PV or energy- equivalent other renewable) or 500 MW minimum (battery energy storage, 4-hour duration equivalent) for either or both renewable energy and battery storage capacity if cost-effective economically and if installation feasibility allows. The Procurement Plan may contemplate contracting a lower quantity of resources than the minimum solicitation amount, depending on the responses received."

PREPA will strive to contract for the minimum quantities of renewable and **BESS**<u>energy storage</u> resources identified in the Final Order, and if circumstances warrant, will present opportunities to theits Governing Board and the Energy Bureau, in accordance with Regulation 8815, to exceed the specified minimum quantities. Further, if <u>PREPA's</u>-transmission studies indicate that significant system upgrades are required to support the Tranche 1 and 2 RFPs, <u>PREPA will communicate</u> these costs and upgrades will be communicated to the Energy Bureau.

6. 6. Planned Installation Implementation Timeline

As the Energy Bureau has directed and as described in Section 3.2a, PREPA will be seekingproject3.3 (Specific RFP Requirements), each RFP Tranche will solicit energy resource proposals that can reach commercial operation within twenty-four (24) months of the Contract's execution date_ each Contract. PREPA may consider proposals with commercial operation commencement dates not to exceed thirty (30) months from Contract signing the Closing Date, but such proposals will be disfavored; shorter development times will be given a higher score in the RFP evaluation process.

7.<u>7.</u>RFP Schedule

As described in Section 1.51.3 (*Procurement Process*), PREPA is developinghas developed, with the Energy Bureau's guidance and approval, a series of RFPsProcurement Plan to comply with the Modified Action Plan for renewable generation and energy storage resources and BESS to achieve compliance with the RPS. In accordance with Energy Bureau directives, PREPA plans to issue a series of RFPs (RFP Tranches) for the provision of renewable energy in support of attainment of Act 82's RPS goals, and for the provision of battery energy storage capacity in quantities needed to meet PREPA's peak load requirements and to satisfy requirements for the integration of renewable energy generation.

The RFP for PREPA issued the Tranche 1 will be issued as early as possible in 2021. <u>RFP on</u> February 22, 2021. It expects to issue Tranche 2 on June 30, 2021. The expected timeline of the release of subsequent RFPs will be six (6) month intervals to be issued in sequence (i.e., every six (6) months, over the next three (3) years for a total of six (6) tranches of RFP releases). The procurement of resources may be front-loaded within the five-year period in order to allow time for construction, interconnections, and commissioning within the five-year Action Plan.

8.8. Adjustments to Procurement Plan to Reflect for Distributed Generation (DG)

As specified in the Final Order, quantities of resources sought subsequent to the first two RFP Tranches may be adjusted if or as necessary to account for installations of DG that contribute to meeting overall quantities specified in the Modified Preferred Resource Plan, and for resources that PREPA identifies and contracts with in excess of the minimum amounts required in each of the earlier RFPs. For purposes of the Procurement Plan, DG resources are resources added to the system outside of the RFP process.

PREPA will support the deployment of distributed generation resources under existing programs (i.e.g., net metering). In addition, <u>PREPA will structure</u> the RFPs issued under this Procurement Plan will be structured such that all resources and storage amounts can be aggregates of smaller installations (that is, VPPs are explicitly allowed and will be able to compete on fair terms). As long as <u>PREPAthe T&D Operator</u> has visibility into the VPP, and the characteristics of the distributed resource, including pricing and reliability, are comparable to those provided on a utility scale, there is no reason VPPs cannot compete with utility-scale resources for provision of energy and storage capacity. Proponents of such resources may respond to the RFP

<u>9</u>.9.—Evaluation Parameters

9.1A General

The Final Order and the Procurement Plan Resolution specified certain evaluation parameters to be employed in evaluating responses to thean RFP. Proposals made in response to each RFP issued under this Procurement Plan shall indicate the proposed RFP Tranche, and shall address at least the following evaluation parameters:

- a. Least-cost, energy basis (measured on the basis of levelized cost of energy).
- b. Least-cost, capacity basis. The proposal should specifically describe the manner in which the project will provide ancillary services (<u>e.g.</u>, frequency response, operating reserve, reactive support) in addition to capacity to meet peak load.
- c. Recognition of T&D System loss benefits associated with the selection of VPP and DG bids.
- d. Recognition of the potential that proposed resources will provide additional resiliency benefits; and/or will permit avoidance of incremental T&D System costs.
- e. Estimated timeline for completing installation of resources, with faster installation timelines to be accorded preference.
- f. Technical superiority of location for interconnection purposes.
- g. Adherence to locational preferences closer to load.
- h. Community impacts and acceptance of proposed resource.
- i. Locational diversity around the <u>Islandsisland</u> of Puerto Rico in proportion to load, within each MiniGrid region, and especially in MiniGrid regions exhibiting relatively less existing capacity in proportion to existing peak load.

9.1B Minimum Requirements of RFP ResponselResponse

a. (General) As a minimum, proposals will be expected to identify clearly their pricing structure, estimate the project's connection costs and impacts upon the existing T&D System, and provide a timeline for completing installation as described herein.

b. (Technical and Operational Capabilities Minimum Criteria) Proponents must be abletoshall demonstrate the following:

i. Ownership / establishment by Proponent (or, for a Proponent consortium, at least one

 member of such consortium) of one (1) or more existing renewable energy and/or

 BESS energy storage resources, including VPPs, (each, a "Reference Project"), with
 each Reference Project satisfying the following requirements:

- **<u>1</u>** •For renewable energy and/or **BESS**<u>energy storage resources</u> other than VPPs:
 - A. experience developing, financing, constructing and operating such project;
 - B. compliance with the initial development timeline for such project;
 - C. utilization of cost-effective technology;
 - D. installed capacity of at least 20 MW;
 - E. utilization of technology similar to that which the Proponent intends to submit in its proposal under this RFP; and
 - F. direct or indirect ownership by the Proponent or its Affiliate of at least thirty-five percent (35%) of the legal entity which directly owns such Reference Project.
- 2. •For <u>BESS</u><u>energy storage resources</u>, experience developing and assembling the proposed system for such resource in at least one (1) commercial (non-demonstration) grid-connected installation;
- <u>3.</u> For VPPs:
 - A. experience aggregating multiple generation and/or storage resources; and
 - B. installed VPP capacity either (i) currently in commercial operation, supplying capacity and energy to one (1) or more purchasers, or (ii) contractually committed to supply capacity and energy prior to the second anniversary of the issuance of this RFP;
- ii. For each existing energy and/or **BESS**<u>energy storage project</u> designated as a Reference Project, a certification confirming no material or sustained violation of Applicable Law, relating to any environmental matter involving the development, construction or operation of such project during the past three (3) years;
- iii. For each Reference Project, a certification confirming such project's compliance with energy-related policies, practices, and regulations and all other Applicable Law during the past three (3) years; and
- iv. For each Reference Project, a certification confirming no record of Unsatisfactory Performance.

Each RFP shall require that all Proponents shall also comply with each of the specificsatisfy the minimum eligibility requirements set forth in Section 3.2 of the Tranche 1 RFP.

- c. (Interconnection Requirements) A_PREPA will view a Proponent's T&D System interconnection plan will beas a crucial factor in evaluating the delivery risk associated with each proposal submitted as part of thein response to an RFP. PREPA intends toshall indicate to Proponents, to the best of its ability, the extent to which any transmission or distribution locational limitations could affect the cost and feasibility of interconnecting utility scale renewable or BESS energy storage projects at various points on the T&D System. It will also, insofar as is practicable, identify limitations that could limit the location or geographic dispersion of resources to be aggregated as VPPs. Proponents must consider the following factors in any proposal submitted pursuant to this any RFP_Tranche:
 - i. The physical limitations on the delivery of energy to the <u>PREPA</u> transmission system<u>T&D System</u>.
 - 1. •Utility-scale <u>projectsenergy resources (i.e., Energy Resources other than</u> <u>VPPs)</u> can interconnect to <u>either</u> the <u>PREPA</u><u>transmission systems at a voltage</u> <u>level of at least</u> 38 kV-<u>system or .</u>
 - $\underline{2.} \qquad \text{the } \frac{115 \text{ kV system.}}{2}$
 - <u>Individual projects capacity of an energy resource</u> connecting to the 38 kV system cannot exceed 25 MW.
 - 3. the power generation / discharge capacity of a renewable energy resource and/or energy storage resources that will form part of a VPP at each point of interconnection to the T&D System cannot exceed 1 MW and shall comply with the applicable interconnection regulations; and
 - 4. Distributed scale projects (such as distributed for all VPP resources aggregated into VPPs and distributed battery energy storage resources) may interconnect to the PREPA distribution system at voltages below 38 kV, with proposals, PREPA will give a preference to be given to distributed those resources that connect connected to 13.2 kV feeders, the highest distribution voltage in Puerto Rico.
 - ii. Projected system upgrade costs required by the additional energy injected onto the gridT&D System by the proposed resource.
 - iii. Rights-of-way necessary to be able to construct the transmission lines and interconnection facilities needed to connect the proposed resource to the PREPA-transmission or distribution system, as the case may be T&D System.

Proponents should(other than those proposing a VPP resource) shall (i) provide a detailed transmission system or distribution system<u>T&D System</u> interconnection plan with their proposals. Proponents must, and (ii) ensure that allthe proposed transmission system or distribution system interconnection plan satisfies all applicable MTR requirements, as well as relevant requirements of the<u>Regulation 8915 or Regulation 8916, as</u> applicable-<u>PREPA-MTRs are met when developing this plan.</u> Proponents should use their best efforts to provide an accurate estimate of the transmission or distribution system interconnection and network-upgrade costs.

Individual projects that will form part of a VPP and will be interconnected at distributionvoltage levels cannot exceed 1 MW, and shall comply with the corresponding interconnectionregulations. Preference will be given to projects interconnected at 13.2 kV feeders, as this is the highest distribution voltage on the island and is better able to handle DG/DER resources. In addition to this, PREPA's plans call for the eventual conversion of most of the distribution circuits to this voltage level. Proponents must include a detailed interconnection plan with their proposals.

During the proposal evaluation period, PREPA will independently model interconnection and system upgrade costs, where possible analyzing clusters of potential projects, based on an initial selection of RFP responses that PREPA ranks high on its list of projects eligible for contracting in the first and subsequent RFP Tranches. In addition, PREPA will evaluate the extent to which multiple projects have proposed or can be made to share the same interconnecting facility, if reasonable and applicable for any given set of proposals. PREPA will give priority to proposals that provides resource installations at or technically close to the indicated priority locations. PREPA will evaluate the impact of the proposals will require additional network upgrades. The Proponents' offer should be inclusive of all estimated interconnection and network upgrade costs.

In its evaluation of short-listed candidate projects:

i. PREPA will perform

Each Proponent should exercise its best efforts to provide an accurate estimate of the Proponent's Estimated Interconnection Costs. Following PREPA's selection of proposals for further consideration in Phase II, PREPA will conduct a Feasibility Study on such projects to assess order-of-magnitude interconnection and systemrequired T&D System upgrade costs ("PREPA's Estimated Costs"). PREPA will cluster successful respondents to the Tranche 1-RFP which do not yet have completed interconnection agreements such proposals for interconnection studies. In suchSuch studies PREPA will analyze the impacts of integrating a group or cluster of renewable energy and/or BESS projectsEnergy Resources at specific locations when ranking or selecting potential projects for installation, especiallyproposals for further consideration, in particular with regard to assessing any required network upgrades or the potential to utilize shared interconnection facilities across multiple projects.

ii. Proponents will be allowed to adjust pricing to reflect the Feasibility Study results.

iii. The Feasibility Study results will influence the selection of a final short list of projects and may be iterative.

iv.PREPA will require a Following selection of proposals for Phase III, System Impact StudyStudies followed by a Facilities StudyFacility Studies will be completed for final short-listed projects.

PREPA's study costs shall be borne by the Proponent. Additionally, the Proponent will be responsible for the procurement and installation of all equipment necessary to interconnect the proposed facility to PREPA's transmission system. PREPA will assist the Proponent, as appropriate, in reviewing necessary rights of way. PREPA and the Proponent shall execute an Interconnection Agreement that reflects study results in coordination with the execution of the relevant Contract. PREPA will not execute a Contract before the results of the Feasibility. Study, System Impact Study and Facilities Study are available and the Proponent has adjusted its proposal to reflect those results and incorporated any additional interconnection or transmission facilities that may be required.

While each Proponent shall have the responsibility to fund all of the T&D System interconnection costs under the Contract, PREPA will permit a Proponent to adjust its price proposal in the Contract to the extent that PREPA's Estimated Costs exceed the Proponent's Estimated Interconnection Costs for purposes of allowing a Proponent to recover such excess costs through the Contract price. Where the Proponent's Estimated Interconnection Costs exceed PREPA's Estimated Costs, the Relevant Authority will correspondingly require a downward adjustment of the proposed Contract price to reflect a Proponent's need to recover interconnection Costs.

- d. (Minimum Specific Interconnection Technical Requirements for Projects) <u>PREPAThe</u> <u>Relevant Authority</u> will prepare MTRs describing minimum technical requirements required for transmission interconnection of each alternate technology group connected to the T&D <u>System</u> and include the MTRs in the RFP for:
 - i. Utility-Scale Solar:
 - ii. Wind<u>; and</u>
 - iii. Virtual Power Plants (VPPs)
 - iv.—BESS

iii. Energy Storage.

For VPP proposals, the RFP for Tranche 1 and Tranche 2 will invite Proponents to submit draft versions of MTRs together with their proposals. On the basis of this input, the Relevant

<u>Page</u>49

Authority will prepare standard form MTRs for VPPs for issuance during Tranches 3 through <u>6.</u>

e. (Financial Minimum Criteria)

- i. Financial Capacity of Team: Proponent must demonstrate adequate financial wherewithal to complete the development of its proposed project.
- ii. Financial Capability of Team: Proponent must demonstrate adequate financial wherewithal to fulfill the terms of the Contract and Interconnection Agreements.
- iii. The purpose of the quality control review is to determine which proposals satisfy the minimum requirements outlined in the RFP. Each Proponent shall be notified whether its proposal passed the quality control review and whether it will be advanced to Phase II.

9.2-9.2 Phase I Quality Control Review

As described in Section 1.3e (*Procurement Process*), Joint Regulation 8815 establishes a three-phase selection process: (ia) quality control review, (iib) Project the Evaluation Committee review and recommendation, and (iiic) Contract negotiation. The purpose of the quality control review is to determine which proposals satisfy the minimum requirements outlined in thean RFP. The Relevant Authority will notify each Proponent whether its proposal passed the Phase I quality control evaluation and whether such proposal will advance to Phase II.

<u>The Relevant Authority's quality control review will use the information supplied by the Proponents</u> <u>in each proposal.</u> Each Proponent shall <u>be notified</u>provide the information listed in the Proposal <u>Completeness Checklist by the Proposal Submission Deadline to be included in the evaluation.</u>

During the quality control review, the Relevant Authority will determine which proposals satisfy the minimum requirements outlined in the RFP. The Relevant Authority (i) will reject any proposal that fails to comply with the Financial and No Disbarment Criteria, and (ii) reserves the right to reject any proposal for any reason whatsoever regardless of whether such proposal complies with such requirements in accordance with the RFP, in each case without scoring, and any such proposal will not advance to the next phase. The Relevant Authority will notify each Proponent whether its proposal(s) passed the quality control review and whether its Proponent will be advanced advance to Phase II.

9.3-9.3 Phase II-Project Committee Review and Recommendation

As described in Section 1.3c, during

The Relevant Authority will publish a list of median price proposals for each technology group that will advance to Phase II on its website. Each selected Proponent shall deliver to the Relevant

Authority the Proposal Security within seven (7) business days of such Proponent's receipt of notification of such selection.

<u>During</u> Phase II, the <u>PREPA ProjectEvaluation</u> Committee will review and evaluate each proposal in accordance with the selection criteria. <u>The Project Committee may select one or more proposals to advance to Phase III.</u> For the Procurement Plan, <u>it is anticipated that</u> the <u>ProjectEvaluation</u> Committee will <u>likely</u> select more than one <u>proponentProponent</u>. Phase II will be divided into a qualitative evaluation and a pricing evaluation. <u>PREPA The Evaluation Committee</u> will assign weights for each of the price-related and qualitative criteria. <u>The Evaluation Committee may select</u> one or more proposals to advance to Phase III.

- a. (Phase II Qualitative Evaluation) PREPA's Project Committee will perform the initial screening and shortlisting of proposals in Phase II according to a qualitative evaluation. The evaluation will consist of the following steps
- a. (Phase II Qualitative Evaluation) In connection with its qualitative evaluation, the Relevant Authority will conduct Feasibility Studies and independently model interconnection and system upgrade costs, where possible analyzing clusters of potential projects, based on an initial selection of RFP responses that the Relevant Authority ranks high on its list of projects eligible for contracting. In addition, the Relevant Authority will evaluate the extent to which multiple projects have proposed or can be made to share the same interconnection facility, if reasonable and applicable for any given set of proposals. The Relevant Authority shall give priority to those proposals that provide resource installations at or technically close to the indicated priority locations. The Relevant Authority will evaluate the impact of each proposals will require additional network upgrades. The Proponents' proposal should include the Proponent's Estimated Interconnection Costs. The Relevant Authority's review will include:
 - i. <u>Verify verification</u> that the<u>a</u> Proponent has provided all information listed in the Proposal Completeness Checklist-:
 - ii. Organize organization of the proposals into groups according to (a1) the proposed technology, and (b2) groups that will allow for distributed generation benefits to be recognized, for resiliency and for avoided T&D System cost assessment purposes.
 - iii. <u>Reviewa review of</u> the information supplied by the Proponent in the <u>RFP</u> proposal data forms-:
 - iv. Assure compliance with the MTRs applicable to development of a qualitative score according to the information supplied by each Proponent for the proposed type of Energy Resource and technology, as well as the suitability, feasibility and cost of the proposed interconnect.based on the qualitative evaluation criteria specified below;

- v. <u>Developcalculation of</u> an initial qualitative score according to the information supplied by the Proponent for the proposed technology. The qualitative score will be based on technical viability, development status, developer experience, and financing plan and qualifications. <u>PREPAThe Evaluation Committee</u> will prefer projects with faster installation timelines, and those with better technical locations for interconnection purposes.
- vi. <u>Determine calculation of</u> the composite Phase II score from the weighted qualitative score; and
- vii. <u>Develop development of</u> a list of preferred proposals from the highest scoring proposals within each technology category.

The Phase II qualitative evaluation will also consider the following criteria:

А	Technical Viability
В	Development and Schedule Risk
С	Permitting Risk
D	Environmental Impacts
Е	Contractor Experience
F	Financing Plan and Qualifications
G	T&D System Integration
Н	Site Control
Ι	Community Impacts and Acceptance
J	Operations and Maintenance Plan
<u>K</u>	Additional Benefit of VPP
<u>₩</u>	<u>Contract</u> Exceptions to <u>Agreements(if</u> applicable)

Table 0-13 — Phase II Qualitative Criteria

The Phase II qualitative evaluation will use the information supplied by the Proponent in the proposal data forms and templates contained in the RFP Appendices, considering the following criteria:

- i. (Technical Viability) The <u>evaluation teamEvaluation Committee</u> will review each proposal for conformance to the technical requirements in the RFP including compliance with appropriate PREPA MTRs.
- ii. (Development and Schedule Risk) The <u>evaluation teamEvaluation Committee</u> will assess the completeness and feasibility of the proposed project implementation and evaluate the likelihood of meeting the milestone dates and expected performance.
- iii. (**Permitting Risk**) The <u>evaluation teamEvaluation Committee</u> will examine the Proponent's permitting plan and schedule and the likelihood that the Proponent can obtain required permits. This examination will consider whether the Proponent has identified the relevant permits and approvals necessary for construction and operation of the proposed project.
- iv. (Environmental Impacts) The evaluation teamEvaluation Committee will assess the project's overall impact on the environment, whether the project will likely result in potentially significant environmental impacts, and the degree to which potential impacts can be satisfactorily mitigated. This will include an examination of any known sensitive environmental features on or adjacent to the site such as waterways, wetlands, floodplains, archaeology and architectural resources, historic properties, degraded ambient air quality, contamination, ongoing hazardous materials remediation, threatened and endangered species, airports, residences or other sensitive noise receptors, and a discussion of storm-resistant features and other reliability features to determine the suitability of the project at the proposed site location.
- v. (Contractor Experience) The evaluation team<u>Evaluation Committee</u> will evaluate the Proponent's experience and success in developing projects of a design and size similar to the proposed project.
- vi. (Debt_Financing Plan and Qualifications) The evaluation teamEvaluation Committee will evaluate the Proponent's proposed financing plan and experience in successfully financing projects of a similar size and complexity. The evaluation will also determine if the Proponent has any financing commitment for the project that will be provided by a creditworthy entity that is likely to be acceptable in form and substance to PREPAthe Relevant Authority.
- vii. (**T&D System Integration**) The project's technical characteristics will be evaluated to identify those projects that address PREPA's system needs as defined in the RFP and <u>PREPA'sthe</u> IRP. The evaluation team will evaluate risks to reliability (voltage control, reactive capability, protection coordination, frequency response, etc.) and deliverability to the <u>PREPA</u> T&D System, as well as the potential for avoidance of

T&D System costs and enhancement of system resiliency associated with particular project locations or configurations.

- viii. (Site Control) Issues to be considered with respect to the project site will include whether the site is owned or leased (and for what term) by the Proponent or, if not, whether the Proponent has executed an option to lease/purchase, a Memorandum of Understanding or a Letter Of Intent for the project site; and whether there are any significant issues that could prevent the Proponent from obtaining timely site control or beginning construction on the proposed siteThe Project Committee will assess whether a Proponent owns or leases the project site (and, in the case of a lease, will consider the alignment of the term of such lease with the term of the applicable Contract) or otherwise has the ability to obtain control over, and access to, such site prior to the occurrence of the "Guaranteed Construction Start Date" set forth in the template Contract. This evaluation criterion does not apply to proposals for VPPs.
- ix. (Community Impacts and Acceptance) The evaluation teamEvaluation Committee will review the proposal for potential socioeconomic benefits and harm to the community. The committee will assess known community support for or opposition to a Proponent's project, including the Proponent's plan to manage community relations.
- x. (**Operations and Maintenance Plan**) Proponents are asked in Appendix C of the each RFP to provide information about their operations and maintenance plan, as applicable, including contract term, scope, experience, and pricing. <u>Proponents</u> <u>proposing a VPP as a resource should provide detailed information concerning their</u> <u>plans to identify, aggregate and contract for individual generation and storage</u> <u>resources that will be dedicated to such resource.</u>
- xi. (Exceptions to Agreements): Proponents are asked to review PREPA's draft Contract templates and (when available) form of Interconnection Agreement and identify any proposed exceptions as well as proposed alternative contract language. Proponents are encouraged to make minimal changes to the Contract template and Interconnection Agreement form. The evaluation team will review the proposed changes and alternative contract language to assess the number and extent of exceptions, the benefits and risks such exceptions impose on PREPA and the likelihood that PREPA would be able to negotiate an acceptable agreement with the Proponent
- <u>xi.</u> (Additional Benefit of VPPs) The Evaluation Committee will consider and evaluate the additional benefits that distributed resources procured as part of a VPP may provide, including (i) the potential to avoid transmission and distribution costs (including T&D System losses), (ii) the possible enhancement of local resiliency by serving critical or priority loads, and (iii) the potential for completion of any required

installation in shorter periods, or more immediate availability as a capacity resource based on an existing installation, than would be true of a new-build project.

During the screening process, the <u>ProjectEvaluation</u> Committee may request additional information or clarifications from the Proponents. These requests, and any communications with a Proponent during the evaluation process, shall not be construed as contract negotiations. Requests made by the <u>ProjectEvaluation</u> Committee for additional information or clarifications will be in writing via email. Proposals with outstanding requests beyond the response period may be removed from consideration and further evaluation.

At the conclusion of the Phase II qualitative evaluation, <u>the Relevant Authority will notify</u> Proponents <u>will be notified as to</u> whether their proposals <u>were shortlisted will advance</u> for further evaluation of pricing proposals.

- b. (Phase II Final-Pricing Evaluation) The Phase II pricing evaluation will determine the cost effectiveness of the shortlisted proposals. This detailed pricing evaluation will include and reflect information received in response to any clarifying questions, interviews, site visits, and other due diligence, and will consider the all-in costs that each proposal is expected towill likely impose on PREPA's customersRatepayers, to the extent that the evaluation team is able tocan quantify such costs. TheseSuch all-in costs will include:
 - i. <u>Contract_contract</u> charges, including pass through costs;
 - ii. <u>Costscosts</u> for required transmission reinforcements;
 - iii. <u>Costscosts</u> for required distribution reinforcements;
 - iv. <u>System system</u> impacts including, but not limited to, impact on transmission transfer capability, and PREPA capacity requirements and deliverability; and
 - v. LCOE or, in the case of <u>BESS</u><u>energy storage</u> proposals, LCOS.

The LCOE or LCOS, as applicable, is defined as the present value of the estimated annual costs of a proposal or cost component of a proposal over the evaluation period (i.e., the proposed Contract term) divided by the equivalent present value of the energy (or capacity) that resource is estimated to produce over the same period. Levelized cost is expressed in MWh or kW-year.

OtherParagraph (b) (*Pricing Evaluation*) of Section 6.2 (*Phase II: Evaluation Committee Review and Recommendation*) of the RFP template sets forth the other pricing-related factors to be considered the Evaluation Committee will consider in the final pricing evaluation are setforth in [Section 5.2.2] of the RFP Template.

The<u>assessment during</u> Phase II pricing evaluation will determine the cost effectiveness of the shortlisted proposals.

<u>Page 55</u>

The Phase II detailed pricing evaluation will include and reflect information received in response to any clarifying questions, interviews, site visits, and other due diligence. PREPAEvaluation Committee will give preference in its evaluation to Proponents whose pricing proposals consider the future emergence of PREPA from protection under PROMESA and contain a price adjustment mechanism that would reflect PREPA's improved credit quality at such time. PREPA anticipates that Puerto Rico's emergence from Title III bankruptcy will make PREPA a more attractive contract counter-party, that project developers will factor this into their cost of capital calculations and that they will incorporate the results in their project's LCOE or LCOS. PREPA invites Proponents to conduct a pricing sensitivity analysis around Puerto Rico's pre- and post-emergence from Title III bankruptcy.

Following completion of the Phase II pricing evaluations, the ProjectEvaluation Committee will recommend proposals to proceed with Phase III contract negotiations as described in Section 1.3e (*Procurement Process*). Selection of a proposal for contract negotiations shall not be construed as a commitment by PREPA to execute an agreementa Contract. During the period between PREPA the Relevant Authority's selection of proposals that shall proceed with contract negotiations for Phase III evaluation and the date of execution of any Contract, PREPA the Relevant Authority will conduct additional due diligence on the proposals. This may include, but not be limited to, onsite visits, management interviews, environmental, legal and regulatory due diligence, detailed engineering assessments, and facility dispatch modeling.

<u>10.</u> Other Considerations

PREPA will seek to procure more than 1000The Tranche 1 RFP solicits proposals for at least 1,000 MW of renewable energy orand 500 MW of battery storage capacity resources in response to the initial RFP Tranches if such. Greater quantities of renewable generation and energy storage resources are shown tomay be selected if Proponents submit cost-effective, and if the energy resource proposals with feasible installation pace is feasibleplans, thus accelerating the level of installations that would otherwise arise from subsequent RFPs. <u>Battery energy Energy</u> storage bids can include MW and MWh from existing resources currently not contracted to PREPA, if they meet technical requirements for visibility, control, or and other related technical needs.

All resources and storage amounts can be aggregates of smaller installations (that is, VPPs are explicitly allowed). Combined or individual bids for renewable generation, BESS, or combinations of renewable generation and battery resources are permitted. Options for additional energy storage beyond requirements of MTRs will be considered for combinations of renewable generation and battery resources.

This Procurement Plan treats DG renewable resources as resources built and operated by PREPA's customers which offset <u>consumptiondemand</u> and, for the most part, benefit from PREPA's net-metering programs. VPPs may aggregate DG_a renewable resources and <u>battery</u> energy storage resources such that the VPP behaves, from the utility's perspective, as a single renewable energy resource. Proponents may submit VPP resource proposals that aggregate smaller installations,

including existing facilities. VPP Proponents may participate in PREPA's net-metering programs to the extent that they elect this option, in accordance with the discussion of this subject set forth in Appendix A to the Procurement Plan Resolution, at item VII. 2.

PREPA will useLessons learned in the processsolicitation of capturing VPP resources resource proposals in itsthe initial RFP toTranches will inform how it pursues the procurement of VPP resources in subsequent RFP Tranches. In keeping with the Energy Bureau's directive in this regard, PREPA anticipates that it will use data, insights and lessons learned from its conduct of the initial RFP will be used in subsequent Tranches to (a) set realistic performance requirements (e.g., commercial terms); (b) assess the value that VPPs can provide (e.g., grid services); and (c) better gauge and potentially shorten the timeline for deployment and operation of VPPs based on its experience and best practices.

PREPA has commissioned a renewable generation integration study that willin order to assess the current capability of PREPA's power grid to accommodate increased levels of renewable generation capacity. This study addresses the penetration of the maximum PV generation and energy storage system required to comply with the RPS guidelines of 40% renewable energy penetration by 2025 and includes both electrical and production cost/economic dispatch analyses. It also identifies, at a high level, preferred interconnection locations on PREPA's T&D System based on the current capacity of the system and needed electrical system upgrades, in addition to providing a modeling basis for transmission Feasibility, System Impact, and Facility Studies. The relevant findings from the renewable generation integration study will be made available to assist Proponents with their proposals. Thus far, the ongoing renewable generation integration analysis indicates that for the existing grid, the maximum acceptable penetration of renewable generation, given the current topology of the power grid without any additional electrical support, would be around 650 MW (existing plus new projects) before major system upgrades must be undertaken.

TheEach RFP will include an attachment that lists those substations where interconnection is considered preferablefeasible for utility scale installations, where it is technically feasiblepossible to do sodetermine this. The list will furnish (a) explanatory caveats where uncertainties exist as to the range of potential interconnection capacity, and (b) the maximum quantities of renewable energy or battery storage system capacity that can be connected at each of these locations, for the purpose of indicating to developers where the bestfeasible locations are. PREPAThe Relevant Authority is not bound by this information to accommodate any given MW amount at any given connection point, and it 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.

Priority locations to be identified in the RFP and accompanying materials will include locations for utility scale and distributed generation renewable energy projects with energy storage. <u>PREPAThe</u> <u>Relevant Authority</u> will strive to identify those locations at which interconnection of required energy and storage resources will enhance reliability and can be accomplished quickly.

<u>PREPA The Relevant Authority</u> will reflect in its procurement process explicit performance incentive metrics related to the timeliness and effectiveness of <u>PREPAthe Relevant Authority</u>'s procurement

and interconnection of resources consistent with metrics reporting requirements being developed under Case No. NEPR-MI-2019-0007.

Appendix 1.RFP Draft Template Joint Regulation 8815

Appendix 2. PPOA DraftRFP Template

Appendix 3. ESSA Draft Template Solar PPOA

Appendix 4.Joint Regulations 8815 ITC Compliant ESSA

Appendix 5.

Appendix 6.

Appendix 7. <u>Standalone ESSA</u>

<u>Appendix 8. GSA</u>

Document comparison by Workshare Compare on Friday, June 25, 2021 11:44:57 AM

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