

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

**IN RE:** INTERCONNECTION REGULATIONS

**CASE NO.:** NEPR-MI-2019-0009  
CEPR-MI-2018-0008

**SUBJECT:** Consolidation of Cases No. CEPR-MI-2018-0008 and No. NEPR-MI-2019-0009, Notice of Availability of Preliminary Draft on Proposed Regulation and Request for Feedback on the Preliminary Draft.

**RESOLUTION AND ORDER**

**I. Regulation for the Interconnection of Microgrids**

On May 16, 2018, the Energy Bureau of the Puerto Rico Public Service Regulatory Board approved the Regulation on Microgrid Development ("Regulation 9028").<sup>1</sup> On the same day, the Energy Bureau issued an Order under Case No. CEPR-MI-2018-0008 ("May 16 Order") through which it required the Puerto Rico Electric Power Authority ("PREPA") to develop a regulation to govern the interconnection of microgrid systems to the electric grid and to file the proposed regulation before the Energy Bureau within 120 days from the date of the notification of the May 16 Order.<sup>2</sup>

Regulation 9028 sets forth the regulatory framework required to promote and encourage the development of microgrid systems in Puerto Rico, enable customer choice and control over their electric service, increase system resiliency, foster energy efficiency and environmentally sustainable initiatives and spur economic growth by creating a new and emerging market for microgrid services. An essential component for the successful implementation of microgrid systems as a solution to Puerto Rico's energy needs is the ability of these systems to interconnect to Puerto Rico's electric grid owned by PREPA and operated by LUMA ServCo, LLC ("LUMA").

On September 17, 2018, PREPA filed before the Energy Bureau a document titled *The Puerto Rico Electric Power Authority's Motion to Stay or Extend Due Date for Proposed Interconnection Regulation* ("September 17 Motion"). On September 24, 2018, the Energy

<sup>1</sup> See Regulation on Microgrid Development, Regulation No. 9028 of May 18, 2018; *In Re: Regulation on Microgrid Development* Case No. CEPR-MI-2018-0001, Resolution, May 16, 2018.

<sup>2</sup> See *In Re: Regulation on the Interconnection of Microgrids*, Case No. CEPR-MI-2018-0008 Order, May 16, 2018.



Bureau denied the September 17 Motion and ordered PREPA to file the draft regulation on or before October 31, 2018.<sup>3</sup>

On October 31, 2018, PREPA filed a document titled *The Puerto Rico Electric Power Authority's Second Motion to Stay or Extend Due Date for Proposed Interconnection Regulation* ("October 31 Motion"). PREPA argued that Regulation 9028 is "an unusual and novel regulation" that provides an extraordinary degree of optionality to PREPA's customers that could create potential financial risks for PREPA and may be inconsistent with the public policy of the Government of Puerto Rico.

On November 8, 2018, the Energy Bureau issued a Resolution and Order ("November 8 Resolution") denying PREPA's request to stay the May 16 Order, or to extend the due date for filing the draft of the proposed regulation to February 2019. The Energy Bureau noted that it would commence the process for the adoption of the microgrid interconnection regulation, in accordance with Act 57-2014<sup>4</sup>. Also, the Energy Bureau ordered PREPA to file with the Energy Bureau copies of any information and or documentation PREPA received, compiled, gathered and/or prepared regarding the microgrid interconnection regulation on or before ten (10) days from the notification date of the November 8 Resolution.

On December 20, 2018, the Energy Bureau issued an Order to Show Cause ("December 20 Order"), in which PREPA was ordered to, within five (5) days of the notification of the December 20 Order, show cause for which it should not be fined for its noncompliance with the November 8 Resolution.

On December 26, 2018, PREPA filed a document titled *PREPA's Compliance Filing* ("Compliance Filing"). In its Compliance Filing PREPA argued that together with the September 17 Motion it had filed with the Energy Bureau a 14-page partial draft of the Regulation for Interconnection of Microgrids ("Partial Draft Regulation").

On January 31, 2019, the Energy Bureau issued a Resolution ("January 31 Resolution") denying PREPA's request to dismiss the December 20 Order and the request to return preparing the microgrid interconnection regulation. Also, as part of the January 31 Resolution, the Energy Bureau clarified that PREPA did not file the Partial Draft Regulation as an attachment to the September 17 Motion, as alleged, and that it was not until December 26, 2018, that PREPA filed the Partial Draft Regulation under Case No. CEPR-MI-2018-0008.

<sup>3</sup> See *In Re: Regulation on the Interconnection of Microgrids*, Case No. CEPR-MI-2018-0008, Resolution and Order, September 24, 2018. Although the September 17, 2018, Motion was filed under Case No. CEPR-MI-2018-0001, it corresponds to Case No. CEPR-MI-2018-0008.

<sup>4</sup> Known as the *Puerto Rico Energy Transformation and RELIEF Act*, as amended ("Act 57-2014").



## II. Interconnection Regulations

On May 20, 2019, the Energy Bureau issued a Resolution and Order ("May 20 Resolution") through which it opened Case No. NEPR-MI-2019-0009<sup>5</sup> to address the process for the modification of PREPA's interconnection regulations. The Energy Bureau began this proceeding with the ultimate goal of properly aligning interconnection regulations with public policy. The latter being imperative to provide efficient mechanisms for the timely integration of Distributed Generators ("DGs") to the electric grid.<sup>6</sup>

To fulfill its statutory mandate to establish clear standards and technical requirements for the interconnection of DGs, the Energy Bureau determined that stakeholder input was essential in developing such standards and technical requirements. Therefore, through the May 20 Resolution, the Energy Bureau invited stakeholders to participate in two (2) Stakeholder Workshops to gather input from participants and inform the Energy Bureau in its efforts to amend PREPA's interconnection regulations. The Energy Bureau held said workshops on June 7, 2019, and June 21, 2019. Further, the Energy Bureau provided stakeholders the opportunity to present their written comments on the current interconnection regulations after the Stakeholders Workshops were held.<sup>7</sup>

## III. Joinder of Cases

When deemed appropriate, the Energy Bureau may consolidate cases pending before it that encompass common questions of fact or law.<sup>8</sup> Therefore, because both Case No. NEPR-MI-2019-0009 and Case No. CEPR-MI-2018-0008 deal with matters related to the interconnection of electrical systems to Puerto Rico's electric grid, the Energy Bureau **DETERMINES** appropriate to consolidate both cases under Case No. NEPR-MI-2019-0009.

In the process to formulate and require modifications to the existing interconnection regulations (*i.e.*, PREPA Regulations 8915<sup>9</sup> and 8916<sup>10</sup>) the Energy Bureau decided it would be appropriate to reconfigure said regulations into one sole document which would

<sup>5</sup> See *In Re: Interconnection Regulations*, Case No. NEPR-MI-2019-0009, Resolution and Order, May 20, 2019.

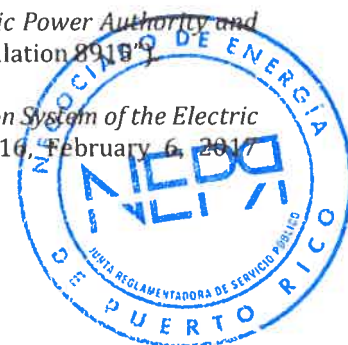
<sup>6</sup> Act 57-2014, Section 1.2 (g) defines the term "Distributed Generation" as the electric power delivered to the distribution grid that is generated from an energy source in a facility near where it will be used.

<sup>7</sup> See Stakeholder Comments in the instant case docket provided by Marinsa Caribbean, LLC., PREPA, ACONER, OIPC, National, SESA-PR and Sunrun submitted from July 3-5, 2019.

<sup>8</sup> *Regulation on Adjudicative, Notice of Noncompliance, Rate Review and Investigation Procedures*, Regulation 8543, Section 5.06, December 18, 2014.

<sup>9</sup> *Regulation to Interconnect Generators to the Electric Distribution System of the Electric Power Authority and Participate in the Net Metering Programs*, Regulation No. 8915, February 6, 2017 ("Regulation 8915").

<sup>10</sup> *Regulation to Interconnect Generators to the Electric Transmission and Sub-transmission System of the Electric Power Authority and Participate in the Net Metering programs*, Regulation No. 8916, February 6, 2017 ("Regulation 8916").



encompass distribution, sub-transmission, and transmission interconnection voltages. Having only one comprehensive interconnection regulation will streamline the process while giving stakeholders a clear signal on the steps and progress of their applications. Also, the principles that apply to the interconnection of microgrids are similar to other DGs. The Energy Bureau concluded that integrating the procedures and requirements to interconnect microgrids into the same document used to interconnect other DGs would simplify and harmonize the processes of interconnection.

#### IV. Preliminary Draft Rule

The Energy Bureau has developed a draft for a new comprehensive interconnection regulation ("Preliminary Draft") that will govern the interconnection of DGs and microgrids. The Preliminary Draft establishes the rules and the processes for the interconnection of generating facilities and microgrids to the Electric Power System in Puerto Rico, in accordance with Act 57-2014, Act 114-2007<sup>11</sup> and Act 17-2019.<sup>12</sup> Also, through this Resolution and Order the Energy Bureau establishes the process for the general public to review and provide feedback to the Energy Bureau on the Preliminary Draft.

The objective of the Preliminary Draft is to apply to any generating facility or microgrid seeking to interconnect to the Electric Power System, except those that only operate independently of the Electric Power System (*i.e.*, not in parallel operation). Customers may participate in Net Metering Programs in accordance with Article 7 of Act 114-2007, as amended.

Several Attachments (*e.g.*, application forms, agreements, etc.) are referenced throughout the Preliminary Draft. In some instances, the referenced attachments could be similar to the ones already developed by PREPA, which are used for Regulations 8915 and 8916. As part of the Preliminary Draft, the Energy Bureau included several attachments, some of which may need to be modified. Some attachments to the Preliminary Draft were not included and will need to be developed. The Energy Bureau requests stakeholders to comment and suggest modifications to the included attachments as well as to propose content and format for those attachments not included.

#### V. Stakeholder Input

Before initiating the rulemaking procedure established in Act 38-2017,<sup>13</sup> the Energy Bureau deems appropriate to provide stakeholders and other interested persons with the opportunity to submit comments on the Preliminary Draft. The Energy Bureau's intention is to improve the Preliminary Draft before the formal rulemaking process commences. The

<sup>11</sup> Known as the *Electric Power Authority Net Metering Program*, as amended ("Act 114-2007").

<sup>12</sup> Known as the *Puerto Rico Energy Public Policy Act* ("Act 17-2019").

<sup>13</sup> Known as the *Uniform Administrative Procedures Act of the Government of Puerto Rico*, as amended ("Act 38-2017").





Energy Bureau invites the stakeholders who have submitted comments under Case No. CEPR-MI-2018-0008 and Case No. NEPR-MI-2019-0009, as well as any other person or groups who frequently appear before the Energy Bureau, to provide their feedback on the Preliminary Draft.

This request for feedback shall not be interpreted, construed or deemed in any way as a rulemaking process under Act 38-2017. The Energy Bureau will evaluate and consider the feedback it receives before publishing a final version of the Preliminary Draft subject to the rulemaking process under Act 38-2017.

Therefore, the Energy Bureau hereby invites PREPA, LUMA, stakeholders and any other person or groups interested to provide their comments<sup>14</sup> and feedback to the Preliminary Draft **on or before July 30, 2021**.

Feedback may be filed through any of the following means:

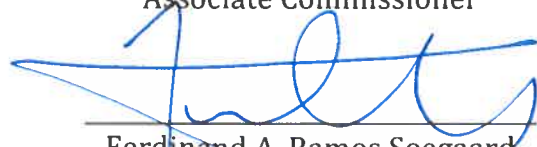
- a. By email to the following address: [comentarios@jrsp.pr.gov](mailto:comentarios@jrsp.pr.gov);
- b. Online, using the Energy Bureau's Electronic Filing System, at the following address: <https://radicacion.energia.pr.gov>.
- c. By postal mail addressed to the Puerto Rico Energy Bureau's Clerk's Office, at World Plaza Building, 268 Muñoz Rivera Ave., Suite 202, San Juan, PR 00918-1925; or
- d. In person at the Energy Bureau's Clerk's Office, at the address set forth above.

Be it notified and published.

  
Edison Avilés Deliz  
Chairman

  
Angel R. Rivera de la Cruz  
Associate Commissioner

  
Lillian Mateo Santos  
Associate Commissioner

  
Ferdinand A. Ramos Soegaard  
Associate Commissioner

  
Sylva B. Ugarte Araujo  
Associate Commissioner

<sup>14</sup> See In Re: Public Policy on Receiving and Managing Comments and Appearance at Public Hearings, Case No. NEPR-MI-2021-0010, Resolution, June 18, 2021.



## CERTIFICATION

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on July 13, 2021. I also certify that on July 15, 2021 a copy of this Resolution and Order was notified by electronic mail to: mario.hurtado@lumamc.com; wayne.stensby@lumamc.com; Ashley.engbloom@lumamc.com; Legal@lumamc.com; astrid.rodriquez@prepa.com, Marisol.pomales@prepa.com, lionel.santa@prepa.com;; Elias.sostre@aes.com; jesus.bolinaga@aes.com; cfl@mcvpr.com; ivc@mcvpr.com; notices@sonnedix.com; leslie@sonnedix.com; victorluisgonzalez@yahoo.com; tax@sunnova.com; jcmendez@reichardescalera.com; r.martinez@fonroche.fr; gonzalo.rodriquez@gestampren.com; kevin.devlin@patternenergy.com; fortiz@reichardescalera.com; jeff.lewis@terraform.com; mperez@prrenewables.com; coterro@landfillpr.com; geoff.biddick@radiangen.com; hjcruz@urielrenewables.com; carlos.reyes@ecoelectrica.com; brent.miller@longroadenergy.com; tracy.deguise@everstreamcapital.com; agraitfe@agraitlawpr.com; h.bobea@fonrochepr.com; ramonluisnieves@rlnlegal.com; hriviera@jrsp.pr.gov; info@sesapr.org; yan.oquendo@ddec.pr.gov; acarbo@edf.org; pjcleanenergy@gmail.com; nicolas@dexgrid.io; javrua@gmail.com; JavRua@sesapr.org; lmartinez@nrhc.org; thomas.quasius@aptim.com; rtorbert@rmi.org; lionel.orama@upr.edu; nolozeus@gmail.com; aconer.pr@gmail.com; dortiz@elpuente.us; wilma.lopez@ddec.pr.gov; gary.holtzer@weil.com; ingridmvila@gmail.com; rstgo2@gmail.com; agc@agcpr.com; presidente@ciapr.org; cpsmith@unidosporutuado.org; jmenen6666@gmail.com; cpares@maximosolar.com; CESA@cleanegroup.org; acasepr@gmail.com; secretario@ddec.pr.gov; julia.mignuccisanchez@gmail.com; professoraviles@gmail.com; gmch24@gmail.com; ausubopr88@gmail.com; carlos.rodriquez@valairlines.com; amaneser2020@gmail.com; acasellas@amgprlaw.com; presidente@camarapr.net; jmarvel@marvelarchitects.com; amassol@gmail.com; jmartin@arcainc.com; eduardo.rivera@afi.pr.gov; leonardo.torres@afi.pr.gov; carsantini@gmail.com; directoralcaldes@gmail.com; imolina@fedalcaldes.com; LCSchwartz@lbl.gov; thomas@fundacionborincana.org; cathykunkel@gmail.com; joseph.paladino@hq.doe.gov; adam.hasz@ee.doe.gov; Sergio.Gonsales@patternenergy.com; Eric.Britton@hq.doe.gov; energiaverdepr@gmail.com; Arnaldo.serrano@aes.com; gustavo.giraldo@aes.com; accounting@everstreamcapital.com; mgrpcorp@gmail.com; jczayas@landfillpr.com; Jeanna.steele@sunrun.com; mildred@liga.coop; rodrigomasses@gmail.com; presidencia-secretarias@seguros multiples.com; cpsmith@cooperativahidroelectrica.coop; maribel@cooperativahidroelectrica.coop; apoyo@cooperativahidroelectrica.coop; john.jordan@nationalpfg.com; info@marinsacaribbean.com; aconer.pr@gmail.com. I also certify that today, July 15, 2021, I have proceeded with the filing of the Resolution issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today July 15, 2021.

  
Sonia Seda Gaztambide  
Clerk  




GOVERNMENT OF PUERTO RICO

Public Service Regulatory Board  
Puerto Rico Energy Bureau

## Generating Facility and Microgrid Interconnection Regulation



## **TABLE OF CONTENTS**

	<b><u>Page</u></b>
ARTICLE 1. GENERAL PROVISIONS .....	1
SECTION 1.01. Title .....	1
SECTION 1.02. Legal Basis .....	1
SECTION 1.03. Purpose and Executive Summary .....	1
SECTION 1.04. Applicability .....	1
SECTION 1.05. Interpretation.....	1
SECTION 1.06. Provisions of Other Regulations .....	1
SECTION 1.07. Unforeseen Proceedings .....	2
SECTION 1.08. Dates and Time Periods.....	2
SECTION 1.09. Definitions .....	2
SECTION 1.10. Controlling Version .....	11
SECTION 1.11. Severability.....	11
SECTION 1.12. Cyber Portal and Forms.....	12
SECTION 1.13. Mode of Submission .....	12
SECTION 1.14. Effect of Submission.....	12
SECTION 1.15. Confidential Information .....	12
SECTION 1.16. Validity .....	13
SECTION 1.17. Compliance with Other Applicable Legal Requirements.....	13
ARTICLE 2. INTERCONNECTION APPLICATION PROCESS .....	13
SECTION 2.01. Process Overview.....	13
SECTION 2.02. Pre-Application Report and Interconnection Application Filing Mechanisms.....	14
SECTION 2.03. Electronic Signatures.....	14
SECTION 2.04. Communications .....	14
SECTION 2.05. Pre-Application Requests and Reports .....	15
SECTION 2.06. Submittal of the Interconnection Application .....	17
SECTION 2.07. Modification of the Interconnection Application .....	18
SECTION 2.08. Site Control.....	19
SECTION 2.09. Queue Position .....	20
ARTICLE 3. DISTRIBUTION SYSTEM FAST TRACK PROCESS.....	20





SECTION 3.01.	Applicability and eligibility requirements .....	20
SECTION 3.02.	Initial Review.....	22
SECTION 3.03.	Customer Options Meeting.....	26
SECTION 3.04.	Supplemental Review.....	26
ARTICLE 4. STUDY PROCESS.....		30
SECTION 4.01.	Purpose .....	30
SECTION 4.02.	Scoping Meeting. ....	30
SECTION 4.03.	Feasibility Study.....	30
SECTION 4.04.	System Impact Study .....	32
SECTION 4.05.	Facilities Study.....	34
ARTICLE 5. PROVISIONS THAT APPLY TO ALL INTERCONNECTION APPLICATIONS .....		36
SECTION 5.01.	Interconnection Agreement.....	36
SECTION 5.02.	Energy Bureau’s Approval for Microgrids Above 5 MW.....	37
SECTION 5.03.	Time Frames and Extensions .....	37
SECTION 5.04.	Interconnection Metering and Telemetry .....	38
SECTION 5.05.	Non-Warranty .....	39
SECTION 5.06.	Commissioning, Inspection, Testing, Authorization .....	39
SECTION 5.07.	Authorization Required Prior to Parallel Operation .....	40
SECTION 5.08.	Confidentiality.....	40
SECTION 5.09.	Insurance.....	41
SECTION 5.10.	Comparability.....	41
SECTION 5.11.	Design, Procurement, Installation and Construction of Interconnection Facilities and Upgrades .....	41
SECTION 5.12.	Export Capacity of a Generating Facility or Microgrid .....	43
ARTICLE 6. TECHNICAL REQUIREMENTS .....		46
SECTION 6.01.	General Technical Requirements.....	46
SECTION 6.02.	Approval of Use of Certified Equipment .....	46
SECTION 6.03.	Unintentional Island Detection.....	47
SECTION 6.04.	Intentional Islanding for Microgrids .....	47
SECTION 6.05.	Voltage and Frequency Disturbances .....	48
SECTION 6.06.	Enter Service and Synchronization.....	50
SECTION 6.07.	Limitation of rapid voltage changes .....	51



SECTION 6.08.	Power Factor .....	51
SECTION 6.09.	Power Quality .....	52
SECTION 6.10.	Frequency Droop .....	53
SECTION 6.11.	Accessible Disconnect Switch .....	54
SECTION 6.12.	Additional Requirements for Microgrids.....	55
ARTICLE 7.	NET ENERGY METERING.....	55
SECTION 7.01.	Participation in Net Metering Programs.....	55
SECTION 7.02.	Basic Net Metering Program.....	56
SECTION 7.03.	Aggregate Net Metering Program.....	56
SECTION 7.04.	Shared Net Metering Program .....	56
SECTION 7.05.	Energy Compensation for Customers that Participate in the Net Metering Programs.....	57
ARTICLE 8.	DISPUTE RESOLUTION .....	59
ARTICLE 9.	PENALTIES .....	60
ARTICLE 10.	PUBLIC REPORTING AND RECORD RETENTION .....	60
SECTION 10.01.	Public Queue .....	60
SECTION 10.02.	Annual Interconnection Report.....	61
SECTION 10.03.	Record Retention .....	62
ARTICLE 11.	RECONSIDERATION AND JUDICIAL REVIEW .....	62
SECTION 11.01.	Reconsideration .....	62
SECTION 11.02.	Administrative Review .....	62
SECTION 11.03.	Judicial Review.....	63



ATTACHMENT 1	GENERATOR INTERCONNECTION APPLICATION
ATTACHMENT 2	SIMPLIFIED INTERCONNECTION APPLICATION AND AGREEMENT
ATTACHMENT 3	CERTIFICATION CODES AND STANDARDS
ATTACHMENT 4	CERTIFICATION OF GENERATOR EQUIPMENT PACKAGES
ATTACHMENT 5	FEASIBILITY STUDY AGREEMENT
ATTACHMENT 6	SYSTEM IMPACT STUDY AGREEMENT
ATTACHMENT 7	FACILITIES STUDY AGREEMENT
ATTACHMENT 8	INTERCONNECTION AGREEMENT
ATTACHMENT 9 PROGRAM	AGREEMENT FOR PARTICIPATION IN THE SHARED NET METERING



## **ARTICLE 1. GENERAL PROVISIONS**

Compliance with this Regulation shall relieve no Party affected by this Regulation from complying with other applicable legal and regulatory requirements enforced by any other Government Entity.

### **SECTION 1.01. Title**

This Regulation shall be known as the *Generating Facility and Microgrid Interconnection Regulation* (“Regulation”).

### **SECTION 1.02. Legal Basis**

The Energy Bureau of the Public Service Regulatory Board (“Energy Bureau”) adopted this Regulation pursuant to Act 82-2010, as amended, known as the *Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act*; Act 17-2019, known as the *Puerto Rico Energy Public Policy Act*; Act 57-2014, as amended, known as the *Puerto Rico Energy Transformation and RELIEF Act*; and Act 38-2017, known as the *Uniform Administrative Procedures Act of the Government of Puerto Rico* (“LPAU” for its Spanish acronym).

### **SECTION 1.03. Purpose and Executive Summary**

This Regulation provides the rules and procedures for the interconnection of Generating Facilities and Microgrids to the Electric Power System in Puerto Rico.

### **SECTION 1.04. Applicability**

This Regulation applies to any Generating Facility or Microgrid seeking to interconnect to the Electric Power System, except those that only operate independently of the Electric Power System (*i.e.*, not in Parallel Operation). Customers may participate in Net Metering Programs pursuant to Article 7 of this Regulation and Act 114-2007, known as the Puerto Rico Net Metering Act, as amended.

### **SECTION 1.05. Interpretation**

This Regulation shall be interpreted so it promotes the highest public benefit and consumer protection, and in such a way that proceedings are carried out rapidly, justly, and economically.

### **SECTION 1.06. Provisions of Other Regulations**

This Regulation may be supplemented by other regulations of the Energy Bureau consistent with this Regulation.



## **SECTION 1.07. Unforeseen Proceedings**

When a specific proceeding has not been planned for in this Regulation, the Energy Bureau may attend to it in any way that is consistent with Act 114-2007, Act 57-2014, Act 17-2019, and any other applicable laws.

## **SECTION 1.08. Dates and Time Periods**

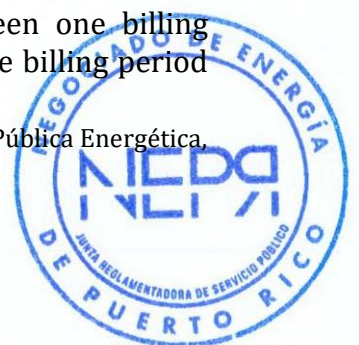
In computing any time period established in this Regulation, or by Order of the Energy Bureau, the day of the act, event, or noncompliance that triggers the period shall not be counted, and the established period shall begin to elapse on the following calendar day. Whenever a due date falls on a Saturday, Sunday, or legal holiday, said due date shall be extended until the next Business Day.

## **SECTION 1.09. Definitions**

- A. These definitions are to be used for this Regulation and are not intended to modify the definitions used in any other Energy Bureau Regulation or Order.
- B. For this Regulation, the following terms will have the meaning established below, unless the context of the content of any provision clearly indicates something else:
  - (1) “Aggregate Net Metering Program” – means the extension of the Basic Net Metering Program, created as fulfillment of the Puerto Rico Energy Bureau’s Amended Order CEPR-MI-2014-0001<sup>1</sup>. This allows a participant to accredit the excess energy produced by a Generating Facility using Renewable Energy Sources between service agreements under the same customer name, located at the same location as the Generating Facility or at different locations, as long as it meets the conditions set out in Article 7, Section 7.03 of this Regulation.
  - (2) “Basic Net Metering Program” – means the service provided to customers with Generating Facilities that use Renewable Energy Sources, interconnected with the EPS, as provided by Act 114-2007. This program allows for the accounting of the energy flow to and from the customer premises through the bidirectional meter. This system supplies part or all of the electrical demand consumed at the site where the system is located. At the end of the billing period, the EPS Operator shall bill net consumption by the customer or will credit on the next bill any excess of energy exported to the electrical grid.
  - (3) “Billing Period” – means the interval of time between one billing statement date and the next billing statement date. The billing period

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<sup>1</sup> See, Resolución y Orden, In Re: Autoridad de Energía Eléctrica, Oficina Estatal de Política Pública Energética, Case No. CEPR-MI-2014-0001, July 22, 2016.





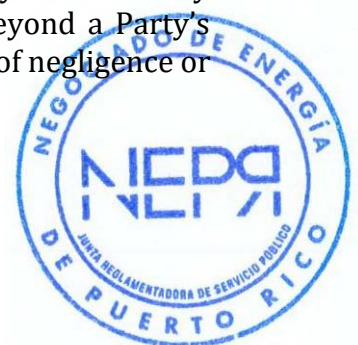
is the time for which energy use and credits for energy exports are calculated.

- (4) “Business Day” – means Monday through Friday, excluding Federal and local holidays.
- (5) “Cease to Energize” – means the cessation of active power delivery under steady-state and transient conditions and limitation of reactive power exchange. This does not necessarily imply, nor exclude disconnection, isolation, or a Trip. Limited reactive power exchange may continue as specified (*e.g.*, through filter banks).
- (6) “Confidential Information” - means any confidential and/or proprietary information provided by one Party to the other Party clearly marked or otherwise designated “Confidential.” For purposes of this Regulation all design, operating specifications, and Metering data provided by the Interconnection Customer shall be deemed confidential information regardless of whether it is clearly marked or otherwise designated as such. Confidential Information does not include information previously available in the public domain, required to be publicly submitted or divulged by Governmental Authorities (after notice to the other Party and after exhausting any opportunity to oppose such publication or release), or necessary to be divulged in an action to enforce this Regulation. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under this Regulation, or to fulfill legal or regulatory requirements.
- (7) “Credit for Energy Export” – means a credit in kilowatt hour (kWh) for the excess of exported energy during a billing period. This credit applies for the next billing period.
- (8) “Cyber Portal” – means an internet site where Parties can electronically submit all documents required by this Regulation, monitor the Fast Track Process and Study Process, and approve the interconnection. This site also provides the ability to electronically sign agreements required in this Regulation.
- (9) “Distribution System” – means the physical equipment used to distribute electric power at voltages below 38,000 volts, including but not limited to poles, primary lines, secondary lines, service drops, transformers and Meters.
- (10) “Distribution Upgrades” – means the additions, modifications, and upgrades to the Distribution System at or beyond the Point of Common Coupling to facilitate interconnection of the Generating Facility(ies) or

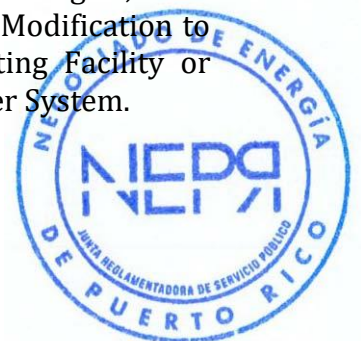


the Microgrid and render the distribution service necessary to effectuate the connection to the Distribution System. For Microgrids with multiple Generating Facilities connected to the Distribution System, Distribution Upgrades may occur behind the Microgrid Point of Common Coupling. Distribution Upgrades do not include Interconnection Facilities.

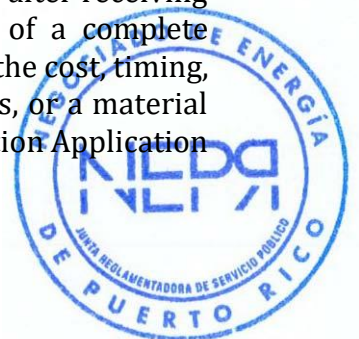
- (11) “Electric Power System” or “EPS” – means the Puerto Rico electric power Transmission and Distribution System, excluding equipment owned by Interconnection Customers.
- (12) “Electric Power System Operator” or “EPS Operator” – means the entity that controls or operates the Electric Power System.
- (13) “Energy Bureau” – means the Puerto Rico Energy Bureau, established by virtue of the Reorganization Plan of the Puerto Rico Public Service Regulatory Board, and Act No. 211-2018, known as the *Reorganization Plan Execution Act of the Public Service Regulatory Board*, formerly the Puerto Rico Energy Commission created under Act 57-2014, which is a specialized independent entity in charge of regulating, overseeing, and enforcing the public policy on energy of the Government of Puerto Rico.
- (14) “Energy Storage” – means a device that captures energy produced at one time, stores that energy for a period of time, and delivers that energy as electricity for use at a future time.
- (15) “Enter Service” – means begin operation of the Generating Facility or Microgrid with an energized EPS.
- (16) “Export Capacity” - means the Nameplate Rating of a Generating Facility or Microgrid in alternating current (AC), unless such capacity is limited by an acceptable means as identified in Section 5.12.
- (17) “Fast Track Process” – means the procedures in Article 3 for evaluating an Interconnection Application that meets the eligibility requirements of Section 3.01 and includes the initial review screens, customer options meeting, and optional supplemental review.
- (18) “Force Majeure Event” – means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party’s control. A Force Majeure Event does not include an act of negligence or intentional wrongdoing.



- (19) “Generating Facility” – means the device(s) for the production and/or storage for later injection of electricity identified in the Interconnection Application. This shall include the Generating Facility and Microgrid’s Interconnection Facilities, but not the EPS Operator’s Interconnection Facilities.
- (20) “Good Utility Practice” – means the practices, methods and acts engaged in or approved by a significant portion of the electric industry during the time period, or the practices, methods and act which, in exercising reasonable judgment, given the facts known when the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.
- (21) “Governmental Authority” or “Government Entity” - means the government of Puerto Rico, any political subdivision thereof, and any agency, authority, instrumentality, regulatory body, board, bureau, court, or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government.
- (22) “Host Load” - means the electrical power consumed at the interconnection site.
- (23) “Inadvertent Export” - means the unscheduled export of power exceeding a contractually specified magnitude and for a limited duration.
- (24) “Intentional Island” – means a planned electrical Island capable of being energized by one or more Generating Facilities. These (1) have Generating Facility(ies) and load, (2) have the ability to disconnect from and to operate in Parallel with the EPS, (3) include one or more customers, and (4) are intentionally planned.
- (25) “Interconnection Agreement” – means the agreement provided in Attachment 8 to this Regulation.
- (26) “Interconnection Application” – means the Interconnection Customer’s request to interconnect a new Generating Facility or Microgrid, or to increase the Nameplate Rating of, or make a Material Modification to the operating characteristics of, an existing Generating Facility or Microgrid that is interconnected with the Electric Power System.



- (27) "Interconnection Customer" – means any entity or individual, including PREPA, the Electric Power System Operator, their affiliates and subsidiaries, that proposes to interconnect to the Electric Power System.
- (28) "Interconnection Facilities" – means the EPS Operator's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities (collectively, "Interconnection Facilities") which include all facilities and equipment between the Generating Facility or Microgrid and the Electric Power System, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facilities and/or Microgrid to the Electric Power System. For Microgrids with multiple Generating Facilities, Interconnection Facilities may occur behind the Microgrid Point of Common Coupling. Interconnection Facilities are facilities used solely by the Interconnection Customer's Generating Facility and shall not include Distribution Upgrades or Network Upgrades.
- (29) "Interconnection Ombudsperson" – means a person appointed by the Energy Bureau to facilitate resolution of disputes regarding the interconnection process and to track and monitor the interconnection process, amongst other duties, as defined by the Energy Bureau.
- (30) "Interconnection Transformer" – means the transformer through which the Generating Facility interconnects with the EPS. This may also be the electrical transformer that supplies energy to the Host Load.
- (31) "Island" – means a condition in which a portion of an EPS is energized solely by one or more Generating Facilities while that portion of the EPS is electrically separated from the rest of the EPS on all phases to which the Generating Facility is connected. When an Island exists, the Generating Facility energizing the Island may be said to be "Islanding" or "Islanded." Islands may be Intentional or Unintentional.
- (32) "Limited Export" - means the exporting capability of a Generating Facility or Microgrid whose Export Capacity is limited below the Nameplate Rating by any configuration or operating mode described in Section 5.12.
- (33) "Material Modification" – means a modification to machine data or equipment configuration or to the interconnection site after receiving notification by the Electric Power System Operator of a complete Interconnection Application with a material impact on the cost, timing, or design of any Interconnection Facilities or Upgrades, or a material impact on the cost, timing or design of any Interconnection Application



with a later queue priority date. A Material Modification shall include, but may not be limited to, a modification from the approved Interconnection Application that: (1) increases the Nameplate Rating, Export Capacity, Operating Profile, or output characteristics of the proposed interconnection; (2) changes or replaces generating equipment, such as generator(s), inverter(s), transformers, relaying, controls, etc., and substitutes equipment that is not a like-kind substitution in certification, size, ratings, impedances, efficiencies or capabilities of the equipment; (3) changes transformer connection(s) or grounding; and/or (4) changes to certified inverters with different specifications or different inverter control specifications or set-up.

A Material Modification shall not include a modification from the approved Interconnection Application that: (1) changes in ownership; (2) changes the address, so long as the proposed interconnection remains on the same parcel(s); (3) changes or replaces generating equipment such as generator(s), inverter(s), solar panel(s), Energy Storage device(s), transformers, relaying, controls, etc. and substitutes equipment that is a like-kind substitution in certification, size, ratings, impedances, efficiencies or capabilities of the equipment; and/or (4) changes the DC/AC ratio but does not increase the maximum AC output capability of the proposed interconnection.

- (34) “Meter” or “Metering” – means the equipment or instruments which function is to measure and register the bi-directional flow of electric energy (*i.e.*, energy delivered and received) by a Generating Facility or Microgrid interconnected to the EPS.
- (35) “Microgrid” – means a group of interconnected loads and Generating Facilities within clearly defined electrical boundaries that acts as a single controllable entity that can connect and disconnect from the Electric Power System to enable it to operate in either Parallel (grid-connected) or Islanded (off-the-grid) mode. This shall include the Interconnection Customer’s Interconnection Facilities. In some cases, the EPS Operator’s Interconnection Facilities may also be included in the Microgrid.
- (36) “Minor System Modifications” – means modifications to the Electric Power System or other minor system changes that the Electric Power System Operator estimates will entail less than ten (10) hours of work and five thousand dollars (\$5,000) in materials. The Electric Power System Operator may also deem other more substantial work, including the upgrade of transformers, as Minor System Modifications at its discretion.





- (37) “Nameplate Rating” – means the sum of the maximum rated output of all generators, prime movers, Energy Storage systems, or other electric power production equipment under specific conditions designated by the manufacturer and usually indicated on a nameplate physically attached to the power production equipment. The Nameplate Rating may be distinct from the Export Capacity where a facility uses export controls pursuant to Section 5.12 and Section 5.12.A.
- (38) “Nationally Recognized Testing Laboratory” or “NRTL” – means an accredited laboratory that performs certification tests required by Institute of Electrical and Electronics Engineers and American National Standards Institute (ANSI) standards .
- (39) “Net Consumption” – means the resulting amount from subtracting the Interconnection Customer’s consumed energy from the energy exported to the EPS and credits for energy export, if any. Applied when the energy the Customer consumes is greater than the energy exported and any applicable exported energy credits.

$$C_{net} = kWh_{con} - kWh_{exp} - CR_{exp}$$

Where:

$C_{net}$  = net consumption

$kWh_{con}$  = kWh kilowatt-hours consumed

$kWh_{exp}$  = kWh kilowatt-hours exported

$CR_{exp}$  = credit for energy export (from previous billing period)

- (40) “Net exports” – means the resulting amount when the sum of the energy exported by the Interconnection Customer’s to the EPS and credits for energy export, if any, are subtracted from the energy consumed by the Customer. Applied when the energy consumed by the Customer is less than the sum of the energy exported and any applicable credits for energy exports.

$$E_{net} = kWh_{exp} + CR_{exp} - kWh_{con}$$

Where:

$E_{net}$  = net export

$kWh_{con}$  = kWh kilowatt-hours consumed

$kWh_{exp}$  = kWh kilowatt-hours exported

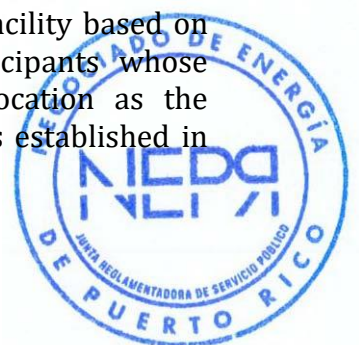


CRexp = credit for energy export (from previous billing period)

- (41) “Net Metering Program”- means the Basic Net Metering Program established in Act 114-2007; the Aggregate Net Metering Program established by the Energy Bureau’s Amended Order CEPR-MI-2014-0001; and the Shared Net Metering Program established by the Energy Bureau’s Amended Order CEPR-MI-2014-0001. The rules for these programs are described in -Article 7 of this Regulation.
- (42) “Net Metering System” – means a Generating Facility based on one or more Renewable Energy Sources that participates in the Basic Net Metering Program, the Aggregate Net Metering Program, or the Shared Net Metering Program.
- (43) “Network Upgrades” – means additions, modifications, and upgrades to the Transmission System to accommodate the interconnection. Network Upgrades are at or beyond the Point of Common Coupling. Network Upgrades do not include Distribution Upgrades.
- (44) “Non-Export” or “Non-Exporting” - means the Generating Facility or Microgrid is sized and designed using any of the methods identified for non-export in Section 5.12 and Section 5.12.A, such that the output is used for Host Load only and no electrical energy (except for any Inadvertent Export) is transferred from the Generating Facility or Microgrid to the Electric Power System.
- (45) “Operating Profile” - means how the Generating Facility or Microgrid is designed to be operated, as designated in the Interconnection Application, including the amount of export, the times of year, hours of the day and other relevant conditions.
- (46) “Operator” – means any natural or legal person responsible for the interconnection, operation, and/or maintenance of a Generating Facility.
- (47) “Parallel Operation” – means the simultaneous operation of the Generating Facility or Microgrid such that power can be transferred across the Point of Common Coupling from or to the Electric Power System. This is also referred to as operating in “grid connected” mode, operating in parallel, or paralleling.
- (48) “Party” or “Parties” – means the Electric Power System Operator and the Interconnection Customer, individually or collectively, as applicable.



- (49) “Point of Common Coupling” or “PCC” – means the point of connection between the Generating Facility or Microgrid and the Electric Power System.
- (50) “Power Control System” – means systems or devices which electronically limit or control the steady state AC currents, or DC currents, to a programmable limit or level.
- (51) “Puerto Rico Electric Power Authority” or “PREPA” – means the Puerto Rico Electric Power Authority, a corporate entity created by virtue of Act No. 83 of May 2, 1941, as amended, known as the *Puerto Rico Electric Power Authority Act* (“Act 83-1941”), and any of its affiliates or subsidiaries.
- (52) “Pre-Application Report” – means the report issued by the EPS Operator under Section 2.05 of this Regulation.
- (53) “Queue Position” – means the sequential order of a valid Interconnection Application, relative to all other pending valid Interconnection Applications, that is established based upon the date and time of receipt of the valid Interconnection Application by the EPS Operator.
- (54) “Reasonable Efforts” – means regarding an action required to be attempted or taken by a Party under this Regulation, efforts timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.
- (55) “Renewable Energy Source” – means continuously renewing sources, including but not limited to solar, wind and geothermal, renewable biomass and its derivatives, hydroelectric, hydrokinetic and renewable marine, thermal ocean, municipal waste conversion, combustion of gas derived from a sanitary fill system, anaerobic digestion, and fuel cells. This definition also includes alternate renewable and sustainable renewable energy, as defined in Act 82-2010, as amended.
- (56) “Return to Service” – means the reentry into service following recovery from a Trip.
- (57) “Shared Net Metering Program” – means the extension of the Basic Net Metering Program, created as fulfillment of the Puerto Rico Energy Bureau’s Amended Order CEPR-MI-2014-0001. This permits the use of renewable energy produced by a single Generating Facility based on Renewable Energy Sources between multiple participants whose service agreements are within the at the same location as the Generating Facility, as long as it meets the conditions established in Article 7, Section 7.04 of this Regulation.



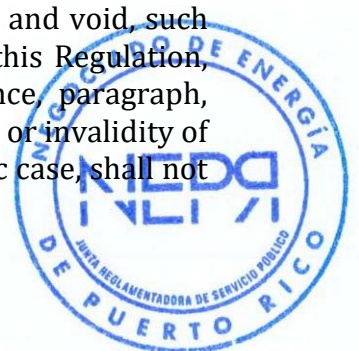
- (58) “Simplified Process” – means the expedited procedure for evaluating an Interconnection Application available to small inverter-based systems that interconnect to the Distribution System. The eligibility requirements are found in Section 3.01.C and the Simplified Interconnection Application and Agreement is found in ATTACHMENT 2. The Simplified Process uses the Fast Track screens found in Section 3.02.B with a more expedited timeline, as described in Section 3.02.A(1), and simplified testing requirements, as described in Section 5.06.D.
- (59) “Study Process” – means the procedure for evaluating an Interconnection Application that includes the scoping meeting, the system impact study, and the facilities study established under Article 4 of this Regulation.
- (60) “Transmission System” – means the facilities used to provide subtransmission (38kV) and transmission (115kV) service.
- (61) “Trip” – means inhibition of immediate Return to Service, which may involve disconnection. Trip executes or is subsequent to Cessation of Energization.
- (62) “Unintentional Island” – means an unplanned Island event.
- (63) “Upgrades” – means the required additions and modifications to the Electric Power System. For an application to interconnect, Upgrades must be at or on the Electric Power System side of the Point Common Coupling. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.
- (64) “Voltage Flicker” - means a voltage fluctuation or instability in the EPS that can cause changes in lighting, damage equipment, or that may adversely affect the quality of customer’s electric service.

#### **SECTION 1.10. Controlling Version**

Should any discrepancy between the Spanish version and the English version of this Regulation arise, the English version shall prevail.

#### **SECTION 1.11. Severability**

If any article, provision, word, sentence, paragraph, subsection, or section of this Regulation is disputed before a court and declared unconstitutional or null and void, such ruling shall not affect, damage, or invalidate the remaining provisions of this Regulation, rather the effect shall be limited to the article, provision, word, sentence, paragraph, subsection, or section declared unconstitutional or null and void. The nullity or invalidity of any article, word, sentence, paragraph, subsection, or section, in any specific case, shall not



affect or jeopardize in any way its application or validity in any other case, unless it has been specifically and expressly invalidated for all cases.

#### **SECTION 1.12. Cyber Portal and Forms**

The EPS Operator shall commence the operations of the Cyber Portal required under this Regulation on or before ninety (90) calendar days from the effective date of this Regulation. Until the commencement of operations of the Cyber Portal, the filing, processing and notification of any document required under this Regulation will be executed by the Parties via electronic mail and digital files (*i.e.*, in PDF format).

The Energy Bureau shall establish the forms (printed or electronic) it deems necessary to conduct the proceedings pursuant to this Regulation and shall timely inform the public via its website and/or the EPS Operator's website, as applicable. Consistent with the foregoing, the EPS Operator shall submit for the Energy Bureau's evaluation and approval the Cyber Portal before its commencement of operations. The fact that the Energy Bureau has not approved or adopted one or more forms, including the Cyber Portal, is reviewing them, or the Internet website is out of service, shall relieve no party of its obligation to comply with the provisions stated, provide the information required by this Regulation, or otherwise comply with any Energy Bureau Order.

#### **SECTION 1.13. Mode of Submission**

The forms, documents, and appearances required by this Regulation or any Order of the Energy Bureau must be submitted before the Energy Bureau or the EPS Operator, as applicable in electronic format according to the instructions which, from time to time, the Energy Bureau and the EPS Operator publish in their respective websites.

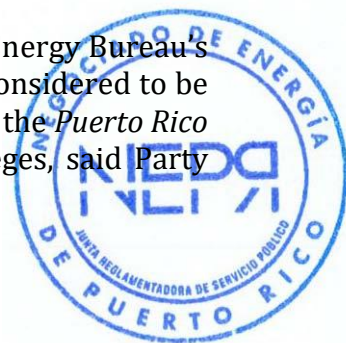
If the electronic filing system is temporarily not operating or functioning, the forms, documents, and appearances required by this Regulation or by any Order of the Energy Bureau shall be submitted before the Energy Bureau in accordance with any instructions the Energy Bureau shall provide through an Order from time to time.

#### **SECTION 1.14. Effect of Submission**

In filing any document before the Energy Bureau, the party undersigning such document shall be deemed to have certified that the content of the document is true and that, according to the signer's best knowledge, information, and belief, formed after reasonable inquiry, the document is based on reliable and trustworthy facts, arguments, judicial sources, and information.

#### **SECTION 1.15. Confidential Information**

If in compliance with the provisions of this Regulation or any of the Energy Bureau's Orders, a Party has the duty to disclose information to the Energy Bureau considered to be confidential, a commercial or industrial secret under Act 80-2011, known as the *Puerto Rico Trade Secrets Act*, or privileged, pursuant to applicable evidentiary privileges, said Party





shall identify the alleged privileged information and request in writing for the Energy Bureau to treat such information as confidential, pursuant to Article 6.15 of Act 57-2014. In identifying privileged information and requesting confidential treatment by the Energy Bureau, the requesting party shall follow the rules and procedures established by the Energy Bureau in Resolution CEPR-MI-2016-0009<sup>2</sup>, as such resolution may be amended from time to time, for the filing, handling, and treatment of confidential information. Except with information protected under the attorney-client privilege, the claim of confidential treatment shall, under no circumstances, be grounds for denying such information from being filed with the Energy Bureau.

#### **SECTION 1.16. Validity**

Pursuant to Section 2.8 of LPAU, this Regulation shall enter into effect thirty (30) days after its submission to the Puerto Rico Department of State and the Legislative Library of the Office of Legislative Services.

#### **SECTION 1.17. Compliance with Other Applicable Legal Requirements**

Compliance with this Regulation shall relieve no Party affected by this Regulation from complying with other applicable legal and regulatory requirements enforced by any other Government Entity.

### **ARTICLE 2. INTERCONNECTION APPLICATION PROCESS**

#### **SECTION 2.01. Process Overview**

- A. Generating Facilities and Microgrids may apply to interconnect to the Distribution System or Transmission System.
- B. The quickest path to interconnection is the Simplified Process, which is available to small inverter-based systems that interconnect to the Distribution System. The eligibility requirements for the Simplified Process are found in Section 3.01.C. Both the Simplified Process and the Fast Track Process use the screens found in Section 3.02.B, however the Simplified Process expedites the screening timeline, as described in Section 3.02.A(1) and relies on a combined application and agreement in ATTACHMENT 2.
- C. The Fast Track Process is available to an Interconnection Customer proposing to interconnect a certified system with the Distribution System, if the proposed interconnection does not exceed the size limits and other eligibility requirements identified in Section 3.01.A. The Fast Track Process includes the optional supplemental review.

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<sup>2</sup> See, In re: Policy on Management of Confidential Information in Procedures Before the Commission, Case No.: CEPR-MI-2016-0009, August 31, 2016.



- D. An application to interconnect that does not meet the eligibility requirements of Section 3.01, or does not pass the Fast Track Process, shall be evaluated under the Study Process in Article 4. The Study Process may include a feasibility study, a system impact study, a Transmission System impact study, and a facilities study.
- E. Microgrids with an Export Capacity above five (5) MW must apply to interconnect to the Transmission System and must be approved by the Bureau in a process that includes citizen participation in Section 5.02.

#### **SECTION 2.02. Pre-Application Report and Interconnection Application Filing Mechanisms**

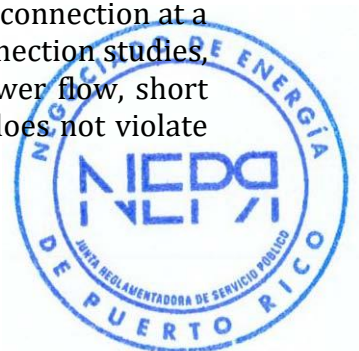
Interconnection Customers shall submit all Pre-Application Report requests and Interconnection Applications through the Cyber Portal.

#### **SECTION 2.03. Electronic Signatures**

All required applications, agreements and forms must be signed using electronic signatures.

#### **SECTION 2.04. Communications**

- A. The EPS Operator shall designate an Interconnection Coordinator(s) and this person or persons shall serve as a single point of contact from which information on the status of an application process can be obtained through informal requests from the Interconnection Customer presenting a proposed project for a specific site.
- B. The name, telephone number, and e-mail address of such contact employee or office shall be made available on the EPS Operator's website.
- C. The EPS Operator may have several Interconnection Coordinators assigned, based on the geographical size of its electrical service territory and/or the amount of Interconnection Applications.
- D. The Interconnection Coordinator(s) shall be available to answer questions, connect Interconnection Customers with persons who can address and resolve questions, and otherwise help facilitate communication with the EPS Operator about the status of the Interconnection Application.
- E. Upon request, EPS information provided to the Interconnection Customer should include materials useful to an understanding of an interconnection at a particular point on the EPS, including system studies, interconnection studies, workpapers, and supporting documentation (*i.e.*, relevant power flow, short circuit and stability databases), to the extent such provision does not violate



confidentiality provisions of prior agreements or critical infrastructure requirements.

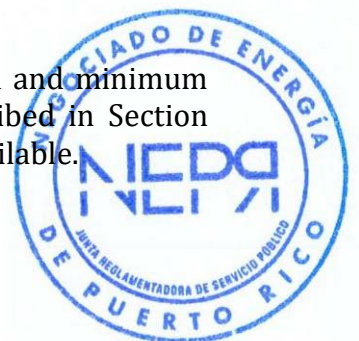
- F. Upon request of either party, the EPS Operator and the Interconnection Customer shall each identify one (1) point of contact with technical expertise for their respective organizations.
- G. Upon the request of either party, status calls could be established every other week.

## **SECTION 2.05. Pre-Application Requests and Reports**

- A. Besides the information described in Section 2.04, which may be provided in response to an informal request, an Interconnection Customer may submit a formal written request form along with a non-refundable fee of three hundred dollars (\$300.00) for a Pre-Application Report on a proposed project at a specific site.
- B. The EPS Operator shall provide the Pre-Application Report described in Section 2.05.G to the Interconnection Customer within fifteen (15) Business Days of receipt of the completed request form and payment of the \$300 non-refundable fee.
- C. The Pre-Application Report produced by the EPS Operator is non-binding, confers no rights, and the Interconnection Customer must still apply to interconnect to the Electric Power System.
- D. The written Pre-Application Report request form shall include the information in Section 2.05.E below to clearly and sufficiently identify the location of the proposed Point of Common Coupling .
- E. The Pre-Application Report request shall include the following information:
  - (1) Project contact information, including name, address, phone number, and email address;
  - (2) Project location (street address(es) with nearby cross streets and town, or place registered with the Property Registry Office);
  - (3) Meter number, pole number, or other equivalent information identifying proposed Point of Common Coupling(s), if available;
  - (4) For Microgrids, Microgrid type (*e.g.*, Personal, Cooperative, Third-Party);
  - (5) Generator type(s) (*e.g.*, solar, wind, combined heat and power, etc.);
  - (6) Nameplate Rating and Export Capacity (*i.e.*, alternating current kW);



- (7) Single or three phase generator configuration; and
  - (8) Whether new service is requested. If there is existing service, include the customer account number(s), site minimum, and maximum current or proposed electric loads in kW (if available) and specify if the load is expected to change.
- F. Using the information provided in the Pre-Application Report request form, the EPS Operator will use best efforts to identify the substation/area bus, bank, or circuit likely to serve the proposed Point of Common Coupling . This selection by the EPS Operator does not necessarily indicate, after application of the screens and/or study, this would be the circuit the project ultimately connects to. The Interconnection Customer must request additional Pre-Application Reports if information about multiple Points of Common Coupling is requested.
- G. Subject to Section 2.05.H, the Pre-application Report shall include the following information:
- (1) Total capacity (in megawatts (MW)) of substation/area bus, bank or circuit based on normal or operating ratings likely to serve the proposed Point of Common Coupling .
  - (2) Existing aggregate Nameplate Rating and Export Capacity (in MW) interconnected to a substation/area bus, bank or circuit (*i.e.*, amount of generation online) likely to serve the proposed Point of Common Coupling .
  - (3) Aggregate queued Nameplate Rating and Export Capacity (in MW) for a substation/area bus, bank or circuit (*i.e.*, amount of generation in the queue) likely to serve the proposed Point of Common Coupling .
  - (4) Available Nameplate Rating and Export Capacity (in MW) of substation/area bus or bank and circuit likely to serve the proposed Point of Common Coupling (*i.e.*, total capacity less the sum of existing aggregate Export Capacity and aggregate queued Export Capacity).
  - (5) Substation nominal distribution voltage and/or transmission nominal voltage if applicable.
  - (6) Nominal circuit voltage at the proposed Point of Common Coupling .
  - (7) Approximate circuit distance between the proposed Point of Common Coupling and the substation.
  - (8) Relevant line section(s) actual or estimated peak load and minimum load data, including daytime minimum load as described in Section 3.04.C(1) below and absolute minimum load, when available.



- (9) Number, type and rating of protective devices, and number, type and rating (standard, bi-directional) of voltage regulating devices between the proposed Point of Common Coupling and the substation/area. Identify whether the substation has a load tap changer.
  - (10) Number of phases available at the proposed Point of Common Coupling. If only a single phase is available, specify the distance from the three-phase circuit.
  - (11) Limiting conductor ratings from the proposed Point of Common Coupling to the distribution substation.
  - (12) Whether the Point of Common Coupling is located on a spot network, grid network, or radial supply.
  - (13) Based on the proposed Point of Common Coupling, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.
- H. The Pre-Application Report need only include existing data. A Pre-Application Report request does not bind the EPS Operator to conduct a study or other analysis of the proposed generator in the event that data is not readily available. If the EPS Operator cannot complete all or some of a Pre-Application Report due to lack of available data, the EPS Operator shall provide the Interconnection Customer with a Pre-Application Report that includes the data that is available and shall list what additional data is not provided, if any. The provision of information on “available capacity” pursuant to Section 2.05.G(4) does not imply that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, and data provided in the Pre-Application Report may become outdated at the time of the submission of the complete Interconnection Application. Notwithstanding the provisions of this section, the EPS Operator shall, in good faith, include data in the Pre-Application Report that represents the best available information at the time of reporting.

#### **SECTION 2.06. Submittal of the Interconnection Application**

- A. The Interconnection Customer shall submit its Interconnection Application (ATTACHMENT 1) or Simplified Interconnection Application and Agreement (ATTACHMENT 2) to the EPS Operator, together with the applicable processing fee or deposit specified in the Interconnection Application. Additional fees or deposits shall not be required, except as otherwise specified in this Regulation or by an Energy Bureau Order.





- B. The Interconnection Application shall be date- and time-stamped upon receipt. The original date- and time-stamp applied to the Interconnection Application at the time of its original submission shall be accepted as the qualifying date- and time-stamp for the purposes of any timetable in this Regulation.
- C. The Interconnection Customer shall be notified of receipt by the EPS Operator within one (1) Business Day of receiving the Interconnection Application; this may be an automatic e-mail that includes the date and time stamped on the Interconnection Application.
- D. For Interconnection Customers using the Simplified Interconnection Application and Agreement, the EPS Operator shall notify the Interconnection Customer within three (3) Business Days of receiving the Simplified Interconnection Application whether the Simplified Interconnection Application is complete. If the Interconnection Application is incomplete, the EPS Operator shall provide, along with the notice that the Interconnection Application is incomplete, a written list detailing all information that must be provided to complete the Interconnection Application. The Interconnection Customer will have five (5) Business Days after receipt of the notice to submit the listed information. The EPS Operator shall review the additional material and notify the Interconnection Customer that the Interconnection Application is complete within three (3) Business Days. If the Interconnection Customer does not provide the listed information within the deadline, the Interconnection Application will be deemed withdrawn.
- E. For Interconnection Customers using the Interconnection Application, the EPS Operator shall notify the Interconnection Customer within five (5) Business Days of receiving the Interconnection Application whether the Interconnection Application is complete. If the Interconnection Application is incomplete, the EPS Operator shall provide, along with the notice that the Interconnection Application is incomplete, a written list detailing all information that must be provided to complete the Interconnection Application. The Interconnection Customer will have ten (10) Business Days after receipt of the notice to submit the listed information. The EPS Operator shall have an additional three (3) Business Days to review the additional material and notify the Interconnection Customer that the Interconnection Application is complete. If the Interconnection Customer does not provide the listed information within the deadline, the Interconnection Application will be deemed withdrawn.
- F. An Interconnection Application will be deemed complete upon submission of all of the listed information or documentation to the EPS Operator.

#### **SECTION 2.07. Modification of the Interconnection Application**

- A. At any time, including after receiving Simplified Process, Fast Track, supplemental review, feasibility, system impact, and/or facilities study results,



the Interconnection Customer or the EPS Operator may identify modifications to the planned interconnection that may improve the costs and benefits (including reliability) of the interconnection, and/or the ability of the EPS Operator to accommodate the interconnection. The Interconnection Customer shall submit to the EPS Operator, in writing, all proposed modifications to any information provided in the Interconnection Application.

- B. Within ten (10) Business Days of receipt of a proposed modification, the EPS Operator shall evaluate whether a proposed modification constitutes a Material Modification.
- C. If the proposed modification is determined to be a Material Modification, then the EPS Operator shall notify the Interconnection Customer in writing that the Interconnection Customer may: (1) withdraw the proposed modification; or (2) proceed with a new Interconnection Application for such modification. The Interconnection Customer shall notify the EPS Operator of its determination in writing within ten (10) Business Days after being provided the Material Modification determination results. If the Interconnection Customer does not provide its determination, the Interconnection Customer's Application shall be deemed withdrawn.
- D. If the proposed modification is determined not to be a Material Modification, then the EPS Operator shall notify the Interconnection Customer in writing that the modification has been accepted and that the Interconnection Customer shall retain its eligibility for interconnection, including its place in the interconnection queue.
- E. Any dispute as to the EPS Operator's determination that a modification constitutes a Material Modification shall proceed in accordance with Article 8 of this Regulation.
- F. Any modifications to an Interconnection Application not agreed to in writing by the EPS Operator and the Interconnection Customer may be deemed a withdrawal of the Interconnection Application and may require submission of a new Interconnection Application.

#### **SECTION 2.08. Site Control**

The Interconnection Application must include evidence of site control. Site control may be demonstrated through the following:

- A. Ownership of, a leasehold interest in, or a right to develop a site or sites for the purpose of constructing the Generating Facility or Microgrid;
- B. An option to purchase or acquire a leasehold site(s) for such purpose; or



- C. An exclusivity or other business relationship between the Interconnection Customer and the entity having the right to sell, lease, or grant the Interconnection Customer the right to possess or occupy a site(s) for such purpose.

#### **SECTION 2.09. Queue Position**

- A. The EPS Operator shall assign a Queue Position based upon the date- and time-stamp of the Interconnection Application.
- B. The Queue Position of each Interconnection Application will be used to determine the cost responsibility for the Upgrades required to accommodate the interconnection. The EPS Operator shall maintain a single sequential queue.
- C. Subject to the provisions of Section 2.06, Section 2.07, and Section 2.08, Interconnection Customers shall retain the Queue Position assigned to their initial Interconnection Application throughout the review process, including when moving through the processes covered by Article 3 and Article 4.
- D. If a Generating Facility has a prior Queue Position and is now seeking to join or convert to a Microgrid then the prior Queue Position will be abandoned in favor of the Queue Position of the Microgrid.

### **ARTICLE 3. DISTRIBUTION SYSTEM FAST TRACK PROCESS**

#### **SECTION 3.01. Applicability and eligibility requirements**

The Simplified Process and Fast Track Process are available to an Interconnection Customer proposing to interconnect with the Distribution System if the proposed interconnection does not exceed the size limits and other requirements identified in this Section 3.01. However, eligibility is distinct from the Fast Track Process itself, and eligibility does not imply or indicate that an Interconnection Application will pass the Fast Track screens in Section 3.02 or the supplemental review screens in Section 3.04.

The Simplified Process is available to Interconnection Customers whose proposed interconnection meets both the eligibility requirements for the Fast Track process found in Section 3.01.A and the smaller size requirements for the Simplified Process found in Section 3.01.C. Both the Simplified Process and the Fast Track Process use the screens found in Section 3.02.B, however the Simplified Process expedites the screening timeline, as described in Section 3.02.A(1). The Simplified Interconnection Application and Agreement includes a standard interconnection agreement, therefore if the proposed interconnection passes the screens, the EPS Operator returns an executed Interconnection Agreement to the Interconnection Customer as described in Section 3.02.A(1).



A. Fast Track Eligibility

An Interconnection Application is eligible for Fast Track if the proposed interconnection includes:

- (1) A single Point of Common Coupling;
- (2) A Point of Common Coupling on a radial distribution circuit, or a spot network serving one customer;
- (3) No more than one service drop;
- (4) Only certified Generating Facilities; and
- (5) Has an Nameplate Rating under the thresholds found in Table 1 below.

**Table 1: Fast Track Eligibility Size Limit**

Line Voltage	Nameplate Rating Regardless of Location
< 5 kV	$\leq 500$ kW
$\geq 5$ kV and < 15 kV	$\leq 1$ MW

- B. In addition to the requirements of Section 3.01, the proposed interconnection must meet the technical requirements in Article 6 as well as the codes, standards, and certification requirements of ATTACHMENT 4 of this Regulation. Alternatively, if the proposed interconnection varies from those requirements, the EPS Operator may review the design and/or test the proposed interconnection to ensure it is safe to operate.

C. Simplified Process Eligibility

The Simplified Process is available to Interconnection Customers who submit the Simplified Interconnection Application and Agreement, and whose proposed interconnection meets the eligibility requirements for the Fast Track process found in Section 3.01.A and use inverter-based Generating Facilities with: a Nameplate Rating of 50 kW or less, and an Export Capacity of 25 kW or less.

The EPS Operator shall use the expedited timelines for the Simplified Process described in Section 3.02.A(1).



## **SECTION 3.02. Initial Review.**

### **A. Screening Timeline**

The EPS Operator shall perform an initial review using the Fast Track screens set forth below and shall notify the Interconnection Customer of the initial review results, and include with the notification copies of the analysis and data underlying the EPS Operator's determinations under the screening requirements.

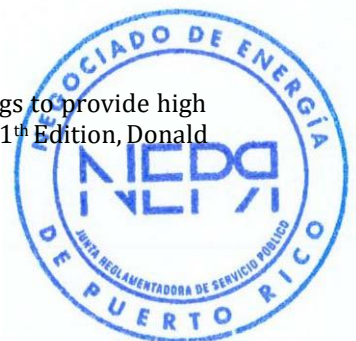
- (1) For the Simplified Process, the EPS Operator shall provide these results within seven (7) Business Days after notifying the Interconnection Customer it has received a complete Simplified Interconnection Application and Agreement. If the proposed interconnection passes the screens, the EPS Operator shall countersign the Simplified Interconnection Application and Agreement and provide the executed interconnection agreement to the Interconnection Customer when it provides the results of the screens.
- (2) For Interconnection Customers using the Interconnection Application, the EPS Operator shall provide these results within fifteen (15) Business Days after notifying the Interconnection Customer it has received a complete Interconnection Application.

### **B. Fast Track Screens:**

- (1) For interconnection to a radial distribution circuit, the aggregated Export Capacity, including the proposed Generating Facility or Microgrid, on the circuit shall not exceed fifteen percent (15%) of the line section annual peak load as most recently measured at the substation. A line section is that portion of the Distribution System connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line. This screen does not apply to a Non-Exporting Generating Facility or Non-Exporting Microgrid, or existing facilities proposing to add no new Export Capacity.
- (2) For interconnection to the load side of spot network protectors, the proposed interconnection must utilize an inverter-based equipment package and, the Nameplate Rating of the Generating Facility or Microgrid, together with the aggregated other inverter-based generation, shall not exceed the smaller of five percent (5%) of a spot network's maximum load or 50 kW.<sup>3</sup>

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<sup>3</sup> A spot network is a type of distribution system found within modern commercial buildings to provide high reliability of service to a single customer. See STANDARD HANDBOOK FOR ELECTRICAL ENGINEERS, 11<sup>th</sup> Edition, Donald Fink, McGraw Hill Book Company.





- (3) The Nameplate Rating of the proposed Generating Facility or Microgrid, in aggregate with the Nameplate Rating of other generation on the distribution circuit, shall not contribute over ten percent (10%) to the distribution circuit's maximum fault current at the point on the high voltage (primary) level nearest the proposed Point of Common Coupling. The EPS Operator may allow Generating Facilities or Microgrids with a Nameplate Rating of 50 kW or less to skip this screen.
- (4) The Nameplate Rating of the proposed Generating Facility or Microgrid, in aggregate with the Nameplate Rating of other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Customer equipment on the system to exceed ninety (90%) of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds ninety percent (90%) of the short circuit interrupting capability. The EPS Operator may allow Generating Facilities or Microgrids with a Nameplate Rating of 50 kW or less to skip this screen.
- (5) Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnection Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on the EPS due to a loss of ground during the operating time of any anti-islanding function.

This screen does not apply to Generating Facilities or Microgrids with a Nameplate Rating of 50 kW or less.

<b>Primary Distribution Line Type</b>	<b>Type of Interconnection</b>	<b>Result/Criteria</b>
Three-phase, three wire	Any type	Pass screen
Three-phase, four wire	Single-phase, line-to-neutral	Pass screen
Three-phase, four wire	Effectively-grounded three-phase	Pass screen
Three-phase, four-wire	All other types	Pass screen if the Nameplate Rating of the proposed Generating Facility or Microgrid, in aggregate with the Nameplate Rating of



Primary Distribution Line Type	Type of Interconnection	Result/Criteria
		other generation on the line section, is less than or equal to ten (10) percent of line section peak load
Three-phase, four-wire	All other types	To pass the screen when the Nameplate Rating of the proposed Generating Facility or Microgrid, in aggregate with the Nameplate Rating of other generation on the line section, is greater than ten (10) percent of line section peak load, the Generating Facility or Microgrid must be inverter-based and not prone to support ground fault overvoltage at the PCC

- (6) If the proposed interconnection is on single-phase shared secondary, the aggregate Export Capacity on the shared secondary, including the proposed Generating Facility or Microgrid, shall not exceed sixty five percent (65%) of the transformer nameplate rating.
- (7) If the proposed interconnection is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of over 20% of the nameplate power rating of the service transformer.
- (8) The Nameplate Rating of the Generating Facility or Microgrid, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit where the Microgrid proposes to interconnect shall not exceed 10 MW in an area where there are known, or posted, transient stability limitations to generating units located in the general electrical vicinity (*e.g.*, three (3) or four (4) transmission busses from the Point of Common Coupling).

#### C. Notifications and Execution of Applicable Agreements

If the proposed interconnection passes the screens, or if the proposed interconnection fails the screens, but the EPS Operator determines that the proposed interconnection may nevertheless be interconnected consistent with safety,



reliability, and power quality standards, the Interconnection Application shall proceed as follows:

- (1) For the Simplified Process, if the proposed interconnection requires construction of facilities or upgrades, it shall be treated like other Fast Track projects and follow the procedures below and be asked to sign the Interconnection Agreement in Attachment 8.
- (2) If the proposed interconnection does not use the Simplified Process and requires no construction of facilities on the Electric Power System, the EPS Operator shall provide the Interconnection Customer an executed Interconnection Agreement within five (5) Business Days after the determination.
- (3) If the proposed interconnection requires only Minor System Modifications, the EPS Operator shall notify the Interconnection Customer of such requirement when it provides initial review results and copies of the analysis and data underlying the determinations under the screens. Within five (5) Business Days, the Interconnection Customer must inform the EPS Operator if the Interconnection Customer elects to continue the Application. If the Interconnection Customer makes such an election, the EPS Operator shall provide an Interconnection Agreement, along with a non-binding good faith cost estimate and construction schedule for such upgrades, to the Interconnection Customer within fifteen (15) Business Days after the EPS Operator receives such an election.
- (4) If the proposed interconnection requires more than Minor System Modifications, the EPS Operator shall notify the Interconnection Customer of such requirement when it provides the initial review results and copies of the analysis and data underlying the screen determinations. Within five (5) Business Days, the Interconnection Customer must inform the EPS Operator if the Interconnection Customer elects to proceed with the proposed interconnection. If the Interconnection Customer makes such an election, the EPS Operator may elect to (i) provide an Interconnection Agreement, along with a non-binding good faith cost estimate and construction schedule for such upgrades, within twenty (20) Business Days after the EPS Operator receives such an election or (ii) notify the Interconnection Customer that an interconnection facilities study must be performed pursuant to Section 4.05, and provide a facilities study agreement within ten (10) Business Days after the EPS Operator receives such an election.
- (5) If the proposed interconnection fails the screens, and the EPS Operator cannot determine from the initial review that the proposed



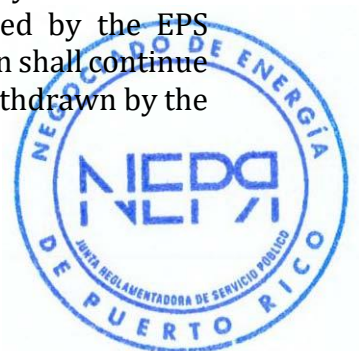
interconnection may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Customer considers minor modifications or further study, the EPS Operator shall provide the Interconnection Customer with the opportunity to attend the customer options meeting in Section 3.03 of this Regulation.

### **SECTION 3.03. Customer Options Meeting**

- A. If the EPS Operator determines the Interconnection Application cannot be approved without (1) a supplemental study or other additional studies or actions or (2) incurring significant cost to address safety, reliability, or power quality problems, the EPS Operator shall notify the Interconnection Customer of that determination and provide copies of all data and analyses underlying its conclusion.
- B. If requested by the Interconnection Customer, within ten (10) Business Days of the EPS Operator's determination, the EPS Operator shall convene a customer options meeting with the Interconnection Customer and the EPS Operator.
- C. At the customer options meeting, the Parties shall review the screen analysis and related results, possible Generating Facility or Microgrid modifications, and determine what further steps are needed to permit the safe and reliable interconnection.
- D. At the time of notification of the EPS Operator's determination, or at the customer options meeting, the EPS Operator shall:
  - (1) Offer to perform a supplemental review in accordance with Section 3.04 and provide a non-binding good faith estimate of the costs of such review; or
  - (2) Obtain the Interconnection Customer's agreement to continue evaluating the Interconnection Application under the Study Process in Article 4.

### **SECTION 3.04. Supplemental Review**

- A. To accept the offer of a supplemental review, the Interconnection Customer shall agree in writing and submit a deposit for the estimated costs of the supplemental review in the amount of the EPS Operator's good faith estimate of the costs of such review, both within fifteen (15) Business Days of the offer. If the written agreement and deposit have not been received by the EPS Operator within that timeframe, the Interconnection Application shall continue to be evaluated under the Article 4 Study Process unless it is withdrawn by the Interconnection Customer.



- B. The Interconnection Customer shall be responsible for the EPS Operator's actual costs for conducting the supplemental review. The Interconnection Customer must pay any review costs that exceed the deposit within twenty (20) Business Days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the EPS Operator will return such excess within twenty (20) Business Days of the invoice without interest.
- C. Within thirty (30) Business Days following receipt of the deposit for a supplemental review, the EPS Operator shall (1) perform a supplemental review using the screens set forth below; (2) notify in writing the Interconnection Customer of the results; and (3) include with the notification copies of the analysis and data underlying the determinations under the screens.
- (1) *Minimum Load Screen:* Where 12 months of line section minimum load data (including Host Load but not station service load served by the proposed Generating Facility or Microgrid) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Export Capacity of the Generating Facilities on the line section is less than 100% of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed interconnection. If minimum load data is not available, or cannot be calculated, estimated or determined, the EPS Operator shall include the reason(s) that it is unable to calculate, estimate or determine minimum load in its supplemental review results notification under Section 3.04.D This screen does not apply to a Non-Exporting Generating Facility or Non-Exporting Microgrid, or existing facilities proposing to add no new Export Capacity
- (2) *Type of generation:* The type of generation used by the proposed interconnection will be considered when calculating, estimating, or determining circuit or line section minimum load relevant for applying screening requirements of Section 3.04.C(1). Solar photovoltaic (PV) generation systems with no Energy Storage use daytime minimum load (i.e., 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems), while all other generation uses absolute minimum load. The EPS Operator shall apply this screen using the Operating Profile and system design designated in the Interconnection Application. For example, the EPS Operator shall evaluate the maximum Export Capacity only during the hours of the day designated by the customer as operational, and shall consider any export controls that comply with Section 5.12.
- (i) Only the net injection of power into the EPS will be considered as part of the aggregate Export Capacity.





- (ii) For the purposes of this screen, the EPS Operator will not consider as part of the aggregate Export Capacity any existing Export Capacity already reflected in the minimum load data.
- (3) *Voltage and Power Quality Screen:* In aggregate with existing generation on the line section: (1) the voltage regulation on the line section can be maintained in compliance with requirements under all system conditions; (2) the voltage fluctuation, including Rapid Voltage Change is within acceptable limits as defined by Institute of Electrical and Electronics Engineers (IEEE) Standard 1453 or Standard 1547-2018, or utility practice similar to IEEE Standard 1453 or Standard 1547-2018; and (3) the harmonic levels meet IEEE Standard 519 limits.<sup>4</sup>
- (4) *Safety and Reliability Screen:* The location of the proposed interconnection and the aggregate generation on the line section do not create impacts to safety or reliability that cannot be adequately addressed without application of the Study Process. The EPS Operator shall consider the following and other factors in determining potential impacts to safety and reliability in applying this screen.
- (i) Whether the line section has significant minimum loading levels dominated by a small number of customers (*e.g.*, several large commercial customers).
  - (ii) Whether the loading along the line section is uniform or even.
  - (iii) Whether the proposed interconnection is located in close proximity to the substation (*i.e.*, less than 2.5 electrical circuit miles), and whether the line section from the substation to the Point of Common Coupling is a Mainline rated for normal and emergency ampacity.
  - (iv) Whether the proposed interconnection reduces operational flexibility, such that transfer of the line section(s) of the Generating Facility or Microgrid to a neighboring distribution circuit/substation may trigger overloads or voltage issues.
  - (v) Whether the proposed interconnection employs equipment or systems certified by recognized standards organization to address technical issues such as, but not limited to, Islanding, reverse power flow, or voltage quality.

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<sup>4</sup> Voltage fluctuation and harmonics limits are both addressed by IEEE 1547-2018. However, until full adoption of IEEE 1547-2018 is complete, IEEE 1453 and IEEE 519 may be used for the respective requirements. Equipment tested to comply with the updated harmonics requirements of IEEE 1547-2018 will not be available until approximately 18 months or more after publication of the revision of IEEE 1547.1.



D. If the proposed interconnection passes the supplemental screens in Section 3.04.C above, or if the proposed interconnection fails the screens, but the EPS Operator determines that it may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the interconnection shall proceed as follows:

- (1) If the proposed interconnection passes the supplemental screens in Sections Section 3.04.C and does not require construction of facilities on the Electric Power System, the EPS Operator shall provide the Interconnection Customer an executed Interconnection Agreement at the time it provides the supplemental review results in accordance with the timeline in Section 3.04.C. If using the Simplified Process, the EPS Operator shall countersign the Simplified Interconnection Application and Agreement and provide the fully executed interconnection agreement to the Interconnection Customer at the same time it provides the supplemental review results.
- (2) If the proposed interconnection requires only Minor System Modifications, the EPS Operator shall notify the Interconnection Customer of such requirement when it provides supplemental review results. Within five (5) Business Days, the Interconnection Customer must inform the EPS Operator if the Interconnection Customer elects to continue. If the Interconnection Customer makes such an election, the EPS Operator shall provide an Interconnection Agreement, along with a non-binding good faith cost estimate and construction schedule for such upgrades, to the Interconnection Customer within fifteen (15) Business Days after the EPS Operator receives such an election.
- (3) If the proposed interconnection requires more than Minor System Modifications, the EPS Operator shall notify the Interconnection Customer of such requirement when it provides the supplemental review results. Within five (5) Business Days, the Interconnection Customer must inform the EPS Operator if the Interconnection Customer elects to proceed with the proposed interconnection. If the Interconnection Customer makes such an election, the EPS Operator may elect to (i) provide an Interconnection Agreement, along with a non-binding good faith cost estimate and construction schedule for such upgrades, within twenty (20) Business Days after the EPS Operator receives such an election or (ii) notify the Interconnection Customer that an interconnection facilities study must be performed pursuant to Section 4.05, and provide a facilities study agreement within ten (10) Business Days after the EPS Operator receives such an election.

E. If the proposed interconnection fails the screens, and the EPS Operator does not or cannot determine that it may nevertheless be interconnected consistent



with safety, reliability, and power quality standards unless the Interconnection Customer will consider minor modifications or further study, the EPS Operator shall provide the customer the option of commencing the Study Process in Article 4. If the Interconnection Customer wishes to proceed it shall notify the EPS Operator within fifteen (15) Business Days to retain its queue position.

## **ARTICLE 4. STUDY PROCESS**

### **SECTION 4.01. Purpose**

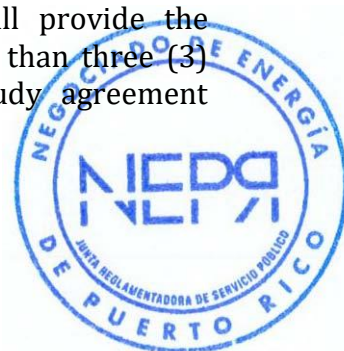
The Study Process shall be used by an Interconnection Customer proposing to interconnect with the EPS if the Interconnection Application (1) is not eligible for Fast Track Process, or (2) did not pass the Fast Track Process.

### **SECTION 4.02. Scoping Meeting.**

- A. The purpose of the scoping meeting is to discuss the Interconnection Application and review existing studies relevant to the Interconnection Application. The Parties shall further discuss whether the EPS Operator should perform feasibility study, or proceed directly to a system impact study or studies, a facilities study, or an Interconnection Agreement. If the EPS Operator and Interconnection Customer determine there is no potential for adverse system impacts, the Interconnection Customer shall proceed directly to a facilities study or an executable Interconnection Agreement, as agreed to by the Parties
- B. A scoping meeting shall be held within five (5) Business Days after the Interconnection Application is deemed complete and, if applicable, the Fast Track Process has been completed. The EPS Operator and the Interconnection Customer will bring the relevant personnel to the meeting, including system engineers and others that may be required to accomplish the purpose of the meeting.
- C. The scoping meeting may be waived by agreement of the Parties.

### **SECTION 4.03. Feasibility Study.**

- A. A feasibility study shall be conducted only upon the request of the Interconnection Customer. The EPS Operator shall not require a feasibility study.
- B. If the Parties mutually agree at the scoping meeting that the EPS Operator should perform a feasibility study, the EPS Operator shall provide the Interconnection Customer, as soon as possible, but not later than three (3) Business Days after the scoping meeting, a feasibility study agreement (ATTACHMENT 5).



- C. If the scoping meeting is omitted but the Parties agree that the EPS Operator should conduct a feasibility study, the EPS Operator shall provide the Interconnection Customer a feasibility study agreement within ten (10) Business Days after the Interconnection Application is deemed complete and, if applicable, the Fast Track Process has been completed.
- D. The scope of and cost responsibilities for the feasibility study are described in the attached feasibility study agreement (ATTACHMENT 5). The feasibility study agreement shall specify that the Interconnection Customer is responsible for the actual cost of the feasibility study, and require the Interconnection Customer to include with the signed agreement certain technical data identified in (ATTACHMENT A) to the Feasibility Study Agreement (ATTACHMENT 5). The EPS Operator may require a deposit of the lesser of (i) one thousand (\$1,000) dollars or (ii) fifty percent (50%) of the good faith estimated feasibility study costs, from the Interconnection Customer.
- E. If an Interconnection Customer requests that the feasibility study evaluate multiple potential Points of Common Coupling, any additional evaluations shall be paid for by the Interconnection Customer.
- F. To remain in consideration for interconnection, an Interconnection Customer must return the executed feasibility study agreement and pay the required study deposit within five (5) Business Days.
- G. The feasibility study shall consider a base case,<sup>5</sup> as well as all Generating Facilities and Microgrids (and any identified Network Upgrades) that, on the date the study commenced: (i) are directly interconnected to the EPS; (ii) have a pending higher queued Interconnection Application; and (iii) have no Queue Position but have executed an Interconnection Agreement. The feasibility study will consist of a power flow and short circuit analysis. The feasibility study shall consider the proposed interconnection's Export Capacity, design, and operating characteristics and study the project according to how it is proposed to be operated if the proposed interconnection complies with Section 5.12, uses devices tested to national standards, or is approved by the EPS Operator.
- H. A feasibility study report shall be completed and transmitted to the Interconnection Customer within twenty (20) Business Days after the feasibility impact study agreement is signed by the Parties. The feasibility study report shall identify any potential adverse system impacts that would result from the interconnection as proposed, including but not limited to:
- (1) Initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;

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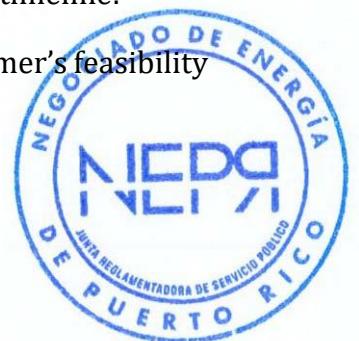
<sup>5</sup> Base case means the power flow, short circuit, and stability data reflecting the current system conditions.



- (2) Initial identification of any thermal overload or voltage limit violations resulting from the interconnection;
  - (3) Initial review of grounding requirements per IEEE C62.92.6 for inverter-based systems, and electric system protection; and
  - (4) Description and non-binding good faith estimated cost and construction schedule of facilities required to interconnect and to address the identified short circuit and power flow issues, including identification of potential increased expenses due to location, Distribution System assets, or other relevant factors. Good faith cost estimates provided in each instance should be itemized and break down costs by equipment, labor and other cost categories. They should also provide the components for direct, indirect, and other identified cost categories .
- I. The EPS Operator may not require a system impact study when the feasibility study concludes there is no adverse system impact, or when the study identifies an adverse system impact, but the EPS Operator is able to identify a remedy without the need for a system impact study.

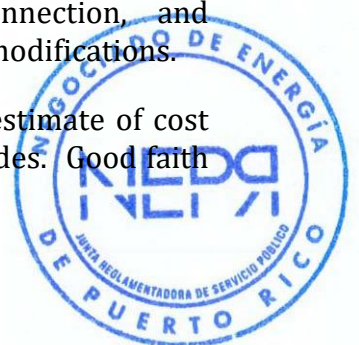
#### **SECTION 4.04. System Impact Study.**

- A. A system impact study shall identify and detail the incremental EPS impacts that would result if the proposed Generating Facility or Microgrid interconnected without project modifications or EPS modifications, and study potential impacts, including but not limited to those identified in the scoping meeting. A system impact study shall evaluate the impact of the proposed interconnection on the reliability of the EPS. This may include evaluation of impacts to portions of the EPS within the boundaries of a Microgrid. A system impact study shall consider all Generating Facilities and Microgrids (and any identified Network Upgrades) that, on the date the study commenced: (i) are directly interconnected to the EPS; (ii) have a pending higher queued Interconnection Application; and (iii) have no Queue Position but have executed an Interconnection Agreement. The system impact study shall consider the proposed interconnection's Export Capacity, design, and operating characteristics and study the project according to how it is proposed to be operated if the proposed interconnection complies with Section 5.12, uses devices tested to national standards, or is approved by the EPS Operator.
- B. The EPS Operator shall provide the Interconnection Customer a system impact study agreement (ATTACHMENT 6) according to the following timeline:
- (1) In tandem with the results of the Interconnection Customer's feasibility study.





- (2) If the feasibility study is omitted, as soon as possible, but not later than three (3) Business Days after the scoping meeting.
  - (3) If the scoping meeting and feasibility study are omitted, within ten (10) Business Days after the Interconnection Application is deemed complete and, if applicable, the Fast Track Process has been completed.
- C. The system impact study agreement (ATTACHMENT 6) shall include an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study. The scope of and cost responsibilities for a system impact study are described in the attached system impact study agreement. A deposit of the good faith estimated costs for each system impact study shall be provided by the Interconnection Customer when it returns the study agreements.
- D. To remain in consideration for interconnection, an Interconnection Customer who has requested a system impact study must return the executed system impact study agreement and pay the required study deposit detailed in (ATTACHMENT 6) within five (5) Business Days.
- E. A system impact study shall be completed and the results transmitted to the Interconnection Customer within twenty-five (25) Business Days after the system impact study agreement is signed by the Parties. The system impact study report shall provide:
- (1) The underlying assumptions of the study.
  - (2) A summary of the analyses.
  - (3) The results of the analyses, including detailed information on any impacts identified, the drivers and reasons for those impacts, including load, voltage, thermal and other limitations as well as the boundaries of the impacts to the extent possible.
  - (4) Identification of any equipment short circuit capability limits exceeded as a result of the interconnection and information regarding technical thresholds that drive modifications.
  - (5) Identification of any thermal overload or voltage limit violations resulting from the interconnection and information regarding technical thresholds that drive modifications.
  - (6) Identification of any instability or inadequately damped response to system disturbances resulting from the interconnection, and information regarding technical thresholds that drive modifications.
  - (7) A non-binding construction schedule and good faith estimate of cost and time to construct any required distribution upgrades. Good faith



cost estimates should be itemized and break down costs by equipment, labor and other cost categories. They should also provide the components for direct, indirect, and other identified cost categories.

- F. Where the system impact study shows potential for Transmission System adverse system impacts, within five (5) Business Days following the identification of such impacts, the EPS Operator shall send the Interconnection Customer a Transmission System impact study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- G. To remain in consideration for interconnection, an Interconnection Customer must return the executed Transmission System impact study agreement within fifteen (15) Business Days.
- H. A Transmission System impact study, if required, shall be completed within thirty (30) Business Days and the results transmitted to the Interconnection Customer after the Transmission System impact study agreement is signed by the Parties.

#### **SECTION 4.05. Facilities Study**

- A. The EPS Operator shall provide the Interconnection Customer a facilities study agreement according to the following timeline:
  - (1) In tandem with the results of the system impact study or, if required, Transmission System impact study.
  - (2) If no system impact studies are required and feasibility study is performed, in tandem with the results of the feasibility study.
  - (3) If no studies are performed, as soon as possible, but not later than five (5) Business Days after the scoping meeting.
  - (4) If the scoping meeting is omitted by agreement and no studies are performed, within ten (10) Business Days after the Interconnection Application is deemed complete and, if applicable, the Fast Track Process has been completed.
- B. The facilities study agreement shall come with an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the facilities study. The scope of and cost responsibilities for the facilities study are described in the attached facilities study agreement. A deposit of the good faith estimated costs for the facilities study shall be provided by the Interconnection Customer when it returns the study agreement.



- C. To remain under consideration for interconnection, the Interconnection Customer must return the executed facilities study agreement and pay the required study deposit within ten (10) Business Days.
- D. The facilities study shall specify and estimate the cost of the equipment, permitting, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the system impact study(s).
- E. Design for any required Interconnection Facilities and/or Upgrades shall be performed under the facilities study agreement. The EPS Operator may contract with consultants to perform activities required under the facilities study agreement. The Interconnection Customer and the EPS Operator may agree to allow the Interconnection Customer to separately arrange for the design of some of the Interconnection Facilities. In such cases, facilities design will be reviewed and/or modified before acceptance by the EPS Operator, under the provisions of the facilities study agreement. If the Parties agree to separately arrange for design and construction, and provided security and confidentiality requirements can be met, the EPS Operator shall provide sufficient information to the Interconnection Customer in accordance with confidentiality and critical infrastructure requirements to permit the Interconnection Customer to obtain an independent design and cost estimate for any necessary facilities.
- F. The facilities study must be completed and provided to Interconnection Customer within twenty-five (25) Business Days of receiving the executed facilities study agreement. The facilities study shall estimate the cost of the equipment, engineering, procurement and construction work, including overheads, needed to implement the conclusions of the interconnection feasibility study and the interconnection system impact study. Good faith cost estimates shall be itemized and break down costs by equipment, labor and other cost categories. They should also provide the components for direct, indirect, and other identified cost categories. The facilities study shall consider the proposed interconnection's Export Capacity, design and operating characteristics and study the project according to how it is proposed to be operated if the proposed interconnection complies with Section 5.12, uses devices tested to national standards, or is approved by the EPS Operator. The facilities study shall identify:
- (1) The electrical switching configuration of the equipment, including transformer, switchgear, meters and other station equipment.
  - (2) The nature and estimated cost of the EPS Operator's interconnection facilities and upgrades necessary to accomplish the interconnection.

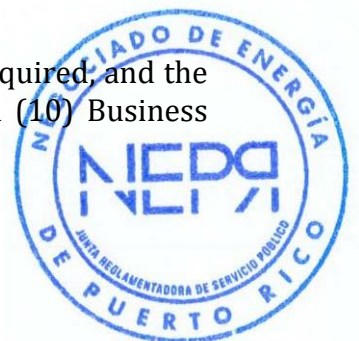


- (3) A good faith estimate for the time required to complete the construction and installation of the facilities.
- G. Once the facilities study is completed, a draft facilities study report shall be prepared and transmitted to the Interconnection Customer. Upon request, the EPS Operator shall provide Interconnection Customer supporting documentation, workpapers, and databases or data developed to prepare the facilities study, subject to confidentiality arrangements consistent with these Regulations and the facilities study agreement.
- H. Within three (3) Business Days of providing a draft Facilities Study Report to the Interconnection Customer, the EPS Operator and Interconnection Customer shall meet to discuss the results of the facilities study.
- I. Interconnection Customer may, within eight (8) Business Days after receipt of the draft report, provide written comments to the EPS Operator, which the EPS Operator shall include in the final report.
- J. The EPS Operator shall issue the final facilities study report and provide it to the Interconnection Customer within nine (9) Business Days of receiving Interconnection Customer's comments or within five (5) Business Days upon receiving Interconnection Customer's statement it will not provide comments.

## **ARTICLE 5. PROVISIONS THAT APPLY TO ALL INTERCONNECTION APPLICATIONS**

### **SECTION 5.01. Interconnection Agreement**

- A. Except as provided in Section 5.02, the EPS Operator shall provide the Interconnection Customer an executable Interconnection Agreement according to the following timeline:
- (1) Within five (5) Business Days after completing the final facilities study report.
  - (2) If no facilities study is required, within five (5) Business Days after completing the system impact study or, if required, Transmission System impact study.
  - (3) If no facilities or system impact study is required, within five (5) Business Days after completing the feasibility study.
  - (4) If no feasibility, facilities, or system impact study is required, within five (5) Business Days after the scoping meeting.
  - (5) If no feasibility, facilities, or system impact study is required, and the scoping meeting is omitted by agreement, within ten (10) Business



Days after the Interconnection Application is deemed complete and, if applicable, the Fast Track Process has been completed.

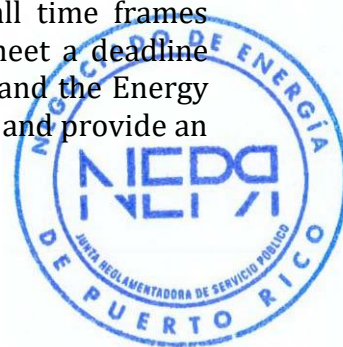
- B. After receiving an Interconnection Agreement from the EPS Operator, the Interconnection Customer shall have thirty (30) Business Days to sign and return the Interconnection Agreement.
- C. The Interconnection Agreement must be signed by the Interconnection Customer and include a signed certification from a professional engineer that the interconnection meets the specifications established through regulations by the Energy Bureau and that the same was completed according to the laws, regulations, and rules applicable to interconnections.
- D. If the Interconnection Customer does not sign the Interconnection Agreement or request an extension pursuant to these Regulations, within thirty (30) Business Days, the Interconnection Application shall be deemed withdrawn.
- E. The EPS Operator shall provide the Interconnection Customer an executed Interconnection Agreement within two (2) Business Days after receiving a signed Interconnection Agreement from the Interconnection Customer.
- F. The EPS Operator shall install (if necessary) and configure any meters required for operation of the Generating Facility within twenty (20) working days after the Interconnection Customer signs the executed Interconnection Agreement, provided that the Interconnection Application included such a request,
- G. After the Interconnection Agreement is signed by the Parties, the interconnection of the Microgrid shall proceed under the provisions of the Interconnection Agreement, except to the extent these Regulations remain applicable, including, but not limited to, Section 5.04, Section 5.06, Section 5.07, Section 5.11 and Article 6.

#### **SECTION 5.02. Energy Bureau's Approval for Microgrids Above 5 MW**

For Microgrids with an Export Capacity above 5 MW, after the Facilities Study has been completed according to Section 4.05, the Interconnection Customer or the EPS Operator shall submit the completed System Impact Study and Facility Study to the Energy Bureau for approval. If approved by the Energy Bureau, the EPS Operator shall issue the corresponding Interconnection Agreement in accordance with Section 5.01, as applicable.

#### **SECTION 5.03. Time Frames and Extensions**

- A. The EPS Operator shall make Reasonable Efforts to meet all time frames provided in these Regulations. If the EPS Operator cannot meet a deadline provided herein, it shall notify the Interconnection Customer and the Energy Bureau, explain the reason for the failure to meet the deadline, and provide an





estimated time by which it will complete the applicable interconnection procedure in the process.

- B. The Energy Bureau may fine the EPS Operator one thousand dollars (\$1,000) per day if it fails to comply with the time frames and other requirements of this Regulation. The Energy Bureau also maintains the authority to impose other applicable fines or administrative penalties to enforce its orders and regulations.
- C. For all applicable time frames described in this Regulation, the Interconnection Customer may request in writing one extension equivalent to half of the time originally allotted (*e.g.*, ten (10) Business Days for a twenty (20) Business Day original time frame). No further extensions shall be granted absent a Force Majeure Event or other similarly extraordinary circumstances.

#### **SECTION 5.04. Interconnection Metering and Telemetry**

For a Generating Facility with a capacity of over 1 MW interconnected with the Transmission System, the Interconnection Customer is responsible for providing, installing, and maintaining two power meters at the Point of Common Coupling for exclusive use of the EPS Operator; one located at the exit of the generator for the measurement of its production, instantaneous power (active and reactive) and power factor; and the other meter for metering instantaneous power (active and reactive) of the Energy Storage system. All Metering needed shall be installed at the Interconnection Customer's expense in accordance with local regulatory requirements or the EPS Operator's specifications. The EPS Operator provides the specification of these meters and equipment to use for communication with the SCADA system. The meters will energize through a current transformer (CT) and potential transformer (PT) with metering measurement class. The meter of the Energy Storage system must provide as a minimum the following digital signals:

- 1) Active power in the storage system (kW)
- 2) State of charge (SOC)
- 3) System availability: enabled or disabled
- 4) Energy equivalent available for the requirement of frequency response
- 5) Average solar radiation (inclined plane)

If necessary, any other signal that cannot be obtained by means of meters, the Interconnection Customer will be required to establish an additional communication from the plant controller (PPC) of the Generating Facility towards the required communication equipment.



## **SECTION 5.05. Non-Warranty**

Neither by inspection, if any, or non-rejection, nor in any other way, does the EPS Operator give any warranty, expressed or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed, or maintained by the Interconnection Customer or leased by the Interconnection Customer from third parties, including without limitation the Generation System and any structures, equipment, wires, appliances, or devices pertinent thereto.

## **SECTION 5.06. Commissioning, Inspection, Testing, Authorization**

- A. The Interconnection Customer shall test and inspect its Generating Facility, Microgrid, and Interconnection Facilities before interconnection in accordance with the commissioning tests required by IEEE 1547. Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards and the EPS Operator's interconnection handbook.
- B. The Interconnection Customer shall notify the EPS Operator<sup>6</sup> of such activities at least ten (10) Business Days (or as agreed to by the Parties) before such testing and inspection. The Interconnection Customer shall send the notification electronically if the Cyber Portal is available. If the Cyber Portal is not available, the Interconnection Customer shall use a notification form provided by the EPS Operator, if such a form is posted on the EPS Operator's website. Testing and inspection shall occur on a Business Day. The EPS Operator may, at its own expense, send qualified personnel to the interconnection site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the EPS Operator a written test report within five (5) Business Days when such testing and inspection is completed.
- C. The EPS Operator shall provide the Interconnection Customer written acknowledgment it has received the Interconnection Customer's written test report within three (3) Business Days of its receipt. Such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the EPS Operator of the safety, durability, suitability, or reliability of the interconnection.
- D. For interconnections using the Simplified Process, the field inspection and testing process shall conform with, and not exceed, the following:
  - (1) The field inspection shall include verification that the installation matches the EPS Operator's evaluation of the design, including:

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<sup>6</sup> If PREPA is the EPS Operator, the Interconnection Customer shall notify the PREPA Office of Inspections in the appropriate region.



- (2) Inverter model matches application;
- (3) Certified inverter(s) is utilized;
- (4) Correct labeling/signage;
- (5) Installation matches application one-line (*i.e.*, connections, location of protection, disconnect switch, Metering, etc.);
- (6) Electrical inspection sticker;
- (7) Operational and protection settings;
- (8) Field testing; and
- (9) On-off testing shall be completed.

#### **SECTION 5.07. Authorization Required Prior to Parallel Operation**

- A. The EPS Operator shall use Reasonable Efforts to list applicable Parallel Operation requirements in an attachment to the Interconnection Agreement. Additionally, the EPS Operator shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The EPS Operator shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements for the Interconnection Customer to commence Parallel Operations by the in-service date.
- B. The Interconnection Customer shall not operate its Generating Facility or Microgrid in Parallel with the EPS without prior written authorization of the EPS Operator. The EPS Operator will provide such authorization within three (3) Business Days from when the EPS Operator receives notification that the Interconnection Customer has complied with all applicable Parallel Operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.
- C. If the EPS Operator identifies a Generating Facility Operating in Parallel without an Interconnection Agreement, the EPS Operator may disconnect the Generating Facility.

#### **SECTION 5.08. Confidentiality**

- A. Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Party as it employs to protect its own Confidential Information.
- B. Each Party may have equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information.



without bond or proof of damages and may seek other remedies available at law or in equity for breach of this provision.

#### **SECTION 5.09. Insurance**

- A. The EPS Operator may only require an Interconnection Customer to purchase General Public Liability Insurance covering damages to the EPS Operator or PREPA, and then only in the following amounts:
- B. Up to one million dollars (\$1,000,000) per occurrence and up to one million dollars (\$1,000,000) in the aggregate if the Generating Facility or Microgrid's Export Capacity is greater than 300 kW;
- C. No insurance is required if the Generating Facility or Microgrid's Export Capacity is less than or equal to 300 kW.

#### **SECTION 5.10. Comparability**

The EPS Operator shall receive, process and analyze all Interconnection Applications as set forth in this Regulation. The EPS Operator shall use the same Reasonable Efforts in processing and analyzing Interconnection Applications from all Interconnection Customers, whether the proposed interconnection is owned or operated by the EPS Operator, PREPA, their subsidiaries or affiliates, or others.

#### **SECTION 5.11. Design, Procurement, Installation and Construction of Interconnection Facilities and Upgrades**

- A. The Interconnection Customer shall pay for the cost of the Interconnection Facilities and Distribution Upgrades as described and itemized pursuant to the Interconnection Agreement and its attachments.
- B. If Network Upgrades are required, the actual cost of the Network Upgrades, including overheads, shall be borne initially by the Interconnection Customer; provided, however, that the Interconnection Customer may have a cash repayment pursuant to the Interconnection Agreement. As stated in the Interconnection Agreement, the EPS Operator shall provide a best estimate cost, including overheads, for the purchase and construction of the Interconnection Facilities, Distribution Upgrades, and Network Upgrades, and provide a detailed itemization of such costs (i.e. the estimates shall break out the materials, labor and other costs for major components of the Upgrades).
- C. The Interconnection Customer and the EPS Operator shall agree on milestones for which each Party is responsible and list them in an attachment to the Interconnection Agreement. To the greatest extent possible, the Parties will identify all design, procurement, installation and construction requirements associated with a project, and clear associated timelines, at the beginning of the design, procurement, installation and construction phase, or as early within the



process as possible. All timelines shall comport with industry best practices. In addition, whenever possible to capture additional efficiency, the EPS Operator will rely on template designs applicable to certain types of interconnections. These templates shall be publicly available on the EPS Operator's web site and/or provided directly to any interested entity upon request.

- D. Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Force Majeure Event, it shall immediately notify the other Party of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) request appropriate amendments to the Interconnection Agreement and its attachments. The Party affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless (1) it will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment. If the Party affected by the failure to meet a milestone disputes the proposed extension, the affected Party may pursue dispute resolution pursuant to Article 8 of this Regulation.
- E. At least twenty (20) Business Days before the commencement of the design, procurement, installation, or construction of a discrete portion of the EPS Operator's Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the EPS Operator, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security reasonably acceptable to the EPS Operator and is consistent with the Puerto Rico Uniform Commercial Code. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the portion of the EPS Operator's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the EPS Operator under the Interconnection Agreement during its term. In addition:
- (1) The guarantee must be made by an entity that meets the creditworthiness requirements of the EPS Operator and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.
  - (2) The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the EPS Operator and must specify a reasonable expiration date.





- F. The EPS Operator shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs of Interconnection Facilities and Upgrades described in the Interconnection Agreement monthly, or as otherwise agreed by the Parties in the Interconnection Agreement. The Interconnection Customer shall pay each bill within twenty (20) Business Days of receipt, or as otherwise agreed to by the Parties in the Interconnection Agreement.
- G. Within three (3) months of completing the construction and installation of the EPS Operator's Interconnection Facilities and/or Upgrades described in the Interconnection Agreement and its attachments, the EPS Operator shall provide the Interconnection Customer with a final accounting report of any difference between (1) the Interconnection Customer's cost responsibility for the actual cost of such facilities or Upgrades, and (2) the Interconnection Customer's previous aggregate payments to the EPS Operator for such facilities or Upgrades. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the EPS Operator shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall pay to the EPS Operator within twenty (20) Business Days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility under the Interconnection Agreement, the EPS Operator shall refund to the Interconnection Customer an amount equal to the difference within twenty (20) Business Days of the final accounting report.

#### **SECTION 5.12. Export Capacity of a Generating Facility or Microgrid**

- A. The technical specifications in this Section 5.12 are intended to identify acceptable Export Control methods to facilitate the interconnection and Parallel Operation of Limited-Export and Non-Export Generating Facilities and Microgrids with the EPS.

If a Generating Facility or Microgrid uses any configuration or operating mode in this Section 5.12, to limit the export of electrical power across the Point of Common Coupling, then the Export Capacity shall be only the amount capable of being exported (not including any Inadvertent Export). To prevent impacts on system safety and reliability, any Inadvertent Export must comply with the limits identified in this section. The Export Capacity specified in the Interconnection Application will be included as a limitation in the Interconnection Agreement. An Interconnection Customer seeking to interconnect using the operating modes under this Section 5.12 shall submit proposed control and/or protection settings in their Interconnection Application for review by the EPS Operator to verify compliance with the requirements of this Section.

- B. The export controls identified in this subsection are for Non-Exporting systems only.

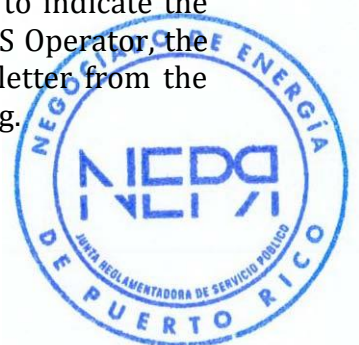


- (1) Reverse Power Protection: To limit export of power across the Point of Common Coupling, a reverse power protective function is implemented using a utility grade protective relay. The default setting for this protective function shall be 0.1% (export) of the Interconnection Transformer's nominal base Nameplate Rating, with a maximum 2.0 second time delay to limit Inadvertent Export.
- (2) Minimum Power Protection: To limit export of power across the Point of Common Coupling, a minimum import protective function is implemented utilizing a utility grade protective relay. The default setting for this protective function shall be 5% (import) of the generating unit's total Nameplate Rating, with a maximum 2.0 second time delay to limit Inadvertent Export.
- (3) Relative Generating Facility Rating: This option requires the Generating Facility or Microgrid's Nameplate Rating to be so small compared to the minimum Host Load that using additional protective functions does not have to ensure that power will not be exported to the EPS. This option requires the Generating Facility or Microgrid's Nameplate Rating be no greater than 50% of the verifiable minimum Host Load over the past 12 months.

For Generating Facilities or Microgrids with a Nameplate Rating above 250 kW, the EPS Operator may require additional assurances, equipment or agreements based upon evaluation of the stability and reliability of the minimum Host Load data.

C. The export controls identified in in this subsections are for Limited Export systems only.

- (1) Directional Power Protection: To limit export of power across the Point of Common Coupling, a directional power protective function is implemented using a utility grade protective relay. The default setting for this protective function shall be the Export Capacity value, with a maximum 2.0 second time delay to limit Inadvertent Export.
- (2) Configured Power Rating: A reduced output active or apparent power rating utilizing the power rating configuration setting may be used to ensure the Generating Facility or Microgrid does not generate power beyond a certain value lower than the Nameplate Rating. The reduced power rating shall be indicated with a Nameplate Rating replacement, or by a supplemental adhesive Nameplate Rating tag to indicate the reduced Nameplate Rating. At the discretion of the EPS Operator, the applicant may additionally be required to provide a letter from the manufacturer confirming the reduced Nameplate Rating.



D. The export controls identified in this subsection are for either Non-Export or Limited Export systems.

- (1) Power Control Systems: This option is not available for interconnections to Networked Secondary Systems. A Generating Facility or Microgrid may utilize a NRTL certified Power Control System<sup>7</sup> and inverter system with a maximum open loop response time of no more than 30 seconds. Failure of the control or inverter system resulting from abnormal conditions must result in the Generating Facility or Microgrid entering an operational mode where no energy is exported across the Point of Common Coupling to the EPS.

If a Generating Facility or Microgrid with a Nameplate Rating greater than 1 MW uses an NRTL certified Power Control System, the EPS Operator and the Interconnection Customer must mutually agree on an acceptable open loop response time.

- (2) Limited Export Using Mutually Agreed-Upon Means: Generating Facilities or Microgrids may be designed with other control systems and/or protective functions to limit export and Inadvertent Export by agreement between the EPS Operator and the Interconnection Customers. The limits may be based on technical limitations of the Interconnection Customer's equipment or EPS equipment. To ensure Inadvertent Export remains within mutually agreed-upon limits, the Interconnection Customer may use an uncertified Power Control System, an internal transfer relay, energy management system, or other customer facility hardware or software if approved by the EPS Operator.

E. If the Interconnection Application proposes to limit export pursuant to this Section 5.12, the Fast Track screens, and feasibility, system impact, and transmission studies shall study the project according to how it intends to operate. When performing these studies, the EPS Operator:

- (1) Shall consider the proposed design, operating characteristics, Export Capacity, and Operating Profile found in the Interconnection Application.
- (2) Shall use the Export Capacity unless assessing fault current contribution, when the use of the Nameplate Rating may be appropriate. The EPS Operator may use Export Capacity when assessing fault current contribution if the Interconnection Customer demonstrates that fault currents are controlled by some means. The

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<sup>7</sup> NRTL testing to the UL Power Control System Certification Requirements Decision shall be accepted until similar test procedures for Power Control Systems are included in a standard.



Fast Track screens identify when it is appropriate to use Export Capacity or Nameplate Rating.

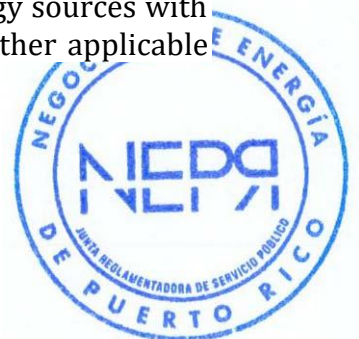
## **ARTICLE 6. TECHNICAL REQUIREMENTS**

### **SECTION 6.01. General Technical Requirements**

- A. The technical requirements in the following sections apply to Generating Facilities and Microgrids when designed to operate in Parallel, and shall be met at the Point of Common Coupling.
- B. The technical requirements in this Article are in accordance with standards from IEEE, UL and ANSI, as applicable for the interconnection of Generating Facilities and Microgrids to the EPS. Compliance with these requirements is intended to prevent the Generating Facility or Microgrid from causing adverse effects to the EPS such that it may have to be disconnected due to unsafe operating conditions.
- C. This regulation incorporates IEEE Std 1547-2003 (inclusive of IEEE Std 1547a-2014). Where conflicts exist between IEEE Std 1547 and this regulation, this regulation shall take precedence.
- D. A Generating Facility interconnecting to the Distribution System must interconnect through an Interconnection Transformer. A direct interconnection to the Distribution System without a transformer is not permitted.
- E. For Microgrids, the technical requirements of Section 6.03, Section 6.05 and Section 6.06 may be satisfied by the individual Generating Facilities within the Microgrid, by other Microgrid equipment, or by coordination between Generating Facilities and other Microgrid equipment.
- F. For further information regarding these interconnection requirements, see the EPS Operator's interconnection handbook.

### **SECTION 6.02. Approval of Use of Certified Equipment**

- A. All equipment that forms part of a Generating Facility system based on renewable energy sources must be approved by the Public Energy Policy Program ("PEPP"), of the Department of Economic Development and Commerce ("DEDC") including, but not limited to, photovoltaic modules, wind turbines, synchronous generators, induction generators, inverters and control systems. PEPP must certify that the inverters and control systems that interconnect the renewable energy sources with the electrical network comply with the IEEE 1547, UL 1741, and other applicable



standards. The list of equipment and components certified by the PEPP is available on the Energy Bureau's website (<http://energia.pr.gov>).

- B. The EPS Operator allows the use of equipment with inverter technology, generators, relays and other devices that comply with applicable standards and codes. These have to be evaluated and approved by the EPS Operator.
- C. The EPS Operator has a list of approved inverters and control systems periodically updated. If a proposed inverter or control system is not included in the list, the Interconnection Customer must send the manufacturer's manual, in PDF digital file, to the EPS Operator for its evaluation. This process is besides the certification issued by the "Oficina de Gerencia de Permisos" (OGPe) after approval by the PEPP.
- D. If the equipment has not been evaluated and approved by the EPS Operator, it may request that the manufacturer, distributor or owner send to the EPS Operator, in digital file in PDF format, documents certifying that the inverter complies with the following:
  - (1) Are certified by a Nationally Recognized Testing Laboratory. This ensures that they meet the acceptance criteria of the tests required in the IEEE 1547 or UL 1741 standard, as applicable, for equipment that operates continuously in parallel with the systems of the electricity companies.
  - (2) Comply with the permitted harmonic content distortion limits, according to the IEEE 519 standard and other applicable ones.
  - (3) Comply with the Voltage Flicker limits, depending on the IEEE 1453 standard and other applicable.
  - (4) Comply with these regulations. Should any conflict arise with other standards, these regulations will prevail.
  - (5) Have the ability to Operate in Parallel with the EPS.
  - (6) Have the ability to adjust in the field of frequency, voltage and operating times.

### **SECTION 6.03. Unintentional Island Detection**

The Generating Facility or Microgrid must be equipped with the devices and protection programming designed to prevent energization of a de-energized EPS circuit. If a situation arises that an electrical Island activates, the Generating Facility or Microgrid must Cease to Energize the EPS and Trip in less than two seconds response time.

### **SECTION 6.04. Intentional Islanding for Microgrids**

- A. A Microgrid may disconnect<sup>8</sup> from the EPS and Intentionally Island in accordance with the following:

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<sup>8</sup> Disconnection implies isolation.

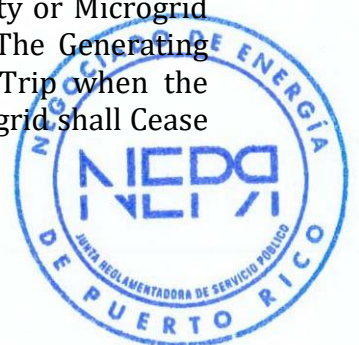




- (1) As an alternative to Trip in response to Unintentional Island detection as required by Section 6.03.
  - (2) As an alternative to Trip in response to voltage disturbances as required by Section 6.05.B.
  - (3) As an alternative to Trip in response to frequency disturbances as required by Section 6.05.C.
  - (4) When issued a planned Island request by the EPS Operator, and shall meet the criteria of either Section 6.04 B(1) or B(2).
  - (5) When Paralleling a Microgrid to the EPS, the Enter Service and synchronization requirements of Section 6.06 shall be met.
- B. A Microgrid may Cease to Energize the EPS and Trip without limitations if any of the following applies:
- (1) The net active power exported across the Point of Common Coupling into the EPS is continuously maintained at a value less than 10% of the aggregate Nameplate Rating of Generating Facilities connected to the Microgrid, and the Microgrid disconnects from the EPS, along with Microgrid load to form an Intentional Island, or
  - (2) An active power demand of the Microgrid load equal or greater than 90% of the pre-disturbance aggregate Generating Facility active power output is shed within 0.1 seconds of when the Generating Facility Ceases to Energize the EPS and Trips.
  - (3) If the Microgrid does not meet the criteria of Section 6.04 B(1) or B(2) the transition to the Microgrid shall meet the rapid voltage change requirements of Section 6.07.
- C. Microgrid systems designated by the authority having jurisdiction as emergency, legally required, or critical operations power systems providing backup power to hospitals, fire stations or other emergency facilities as defined by industry code, shall be exempt from the Intentional Islanding requirements specified in this section and may Cease to Energize the EPS and Trip without limitations.

## **SECTION 6.05. Voltage and Frequency Disturbances**

- A. The system of protection and control of the Generating Facility or Microgrid must detect electrical disturbances that occur on the EPS. The Generating Facility or Microgrid shall Cease to Energize the EPS and Trip when the electrical disturbance occurs. The Generating Facility or Microgrid shall Cease



to Energize before the first recloser operation of the circuit.<sup>9</sup> Once Tripped, the Generating Facility or Microgrid shall measure the voltage and frequency of the EPS at the Point of Common Coupling.<sup>10</sup> The Generating Facility or Microgrid shall Return to Service once the voltage and frequency remain at adequate levels as described in Section 6.06 for at least fifteen (15) seconds. Generating Facility or Microgrid programming shall be adjusted so the Generating Facility or Microgrid Ceases to Energize and Trips according to the following requirements:

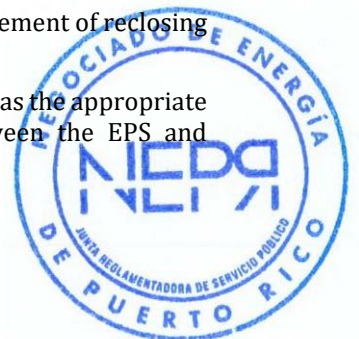
- B. In the face of variations in voltage magnitude from electric service at the Point of Common Coupling, the Generating Facility or Microgrid shall Cease to Energize the EPS and Trip by the clearing time, as established in **Table 2**.
- C. In the face of variations in frequency, the Generating Facility or Microgrid shall Cease to Energize the EPS and Trip by the clearing time, as established in **Table 3**. The protection and control system programming must include, at a minimum, four independent functions (two (2) for underfrequency and two (2) for over frequency) to enable it to fulfill the frequency ranges and time outs, as detailed on the table.

**Table 2: Trips for Voltage Variations**

<b>Voltage Range (% of Nominal Voltage)</b>	<b>Clearing Time (seconds)</b>	<b>Adjustable Clearing Time Range Up to and including (seconds):</b>
V<45	0.16	0.16
45≤ V< 60	1	11
60≤ V< 88	2	21
110 <V< 120	1	13
V≥ 120	0.16	0.16
<b>Note:</b> These settings have to be programmed into the inverter or the protective equipment before the Generating Facility or Microgrid testing process. The EPS Operator may require other Trip times or frequency ranges, as established in the IEEE 1547.		

<sup>9</sup> Ceasing to Energize without Tripping (known as “momentary cessation”) meets the requirement of reclosing coordination.

<sup>10</sup> For Microgrids, this may be accomplished at the individual Generating Facility(ies) as long as the appropriate voltage and frequency is monitored and zero-sequence continuity is maintained between the EPS and Generating Facility measurement point.



**Table 3: Trips due to Frequency Variations**

Function	Frequency (Hz)	Clearing Time (seconds)
Under-frequency 1	$f < 57.5$	10
Under-frequency 2	$57.5 \leq f < 59.2$	300
Over-frequency 1	$60.5 < f \leq 61.5$	300
Over-frequency 2	$f > 61.5$	10
<b>Note:</b> These settings have to be programmed into the inverter or the protective equipment before the Generating Facility or Microgrid testing process. The EPS Operator may require other Trip times or frequency ranges, as established in the IEEE 1547.		

**SECTION 6.06. Enter Service and Synchronization**

When Entering Service, the Generating Facility or Microgrid shall not energize the EPS until voltage and system frequency are within the ranges specified in **Table 4** below.

**Table 4: Enter Service voltage and frequency criteria**

Enter Service Criteria		Default Settings
Voltage within range	Minimum value	$\geq 0.917$ p.u.
	Maximum value	$\leq 1.05$ p.u.
Frequency within range	Minimum value	$\geq 59.5$ Hz
	Maximum value	$\leq 60.1$ Hz

The Generating Facility or Microgrid shall Parallel with the EPS without causing step changes in the root mean square (RMS) voltage at the Point of Common Coupling exceeding three percent (3%) of nominal when the Point of Common Coupling is at high or medium voltage, or exceeding five percent (5%) of nominal when the Point of Common Coupling is at low voltage.

Generating Facilities or Microgrids that produce fundamental voltage before connecting to the EPS shall not be synchronized outside of the tolerances specified in **Table 5** below. The synchronization limits stated in **Table 5** below may be waived by the EPS Operator if Paralleling does not exceed the rapid voltage change requirements of Section 6.07 nor applicable flicker requirements.



**Table 5: Synchronization parameter limits for interconnection to the EPS**

<b>Aggregate rating of DER units (kVA)</b>	<b>Frequency difference (<math>\Delta f</math>, Hz)</b>	<b>Voltage difference (<math>\Delta V</math>, %)</b>	<b>Phase angle difference (<math>\Delta \Phi</math>, °)</b>
0–500	0.3	10	20
> 500–1500	0.2	5	15
> 1500	0.1	3	10

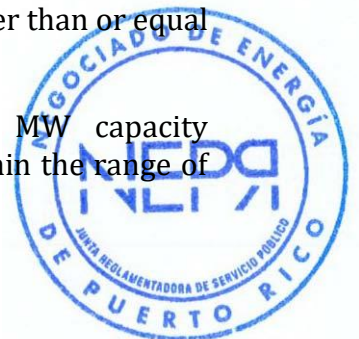
**SECTION 6.07. Limitation of rapid voltage changes**

- A. When the Point of Common Coupling is at high or medium voltage, the Generating Facility or Microgrid shall not cause step or ramp changes in the RMS voltage at the Point of Common Coupling exceeding three percent (3%) of nominal and exceeding three percent (3%) per second averaged over a period of one second. When the Point of Common Coupling is at low voltage, the Generating Facility or Microgrid shall not cause step or ramp changes in the RMS voltage exceeding five percent (5%) of nominal and exceeding five percent (5%) per second averaged over a period of one (1) second. Any exception to the limits is subject to approval by the EPS Operator with consideration of other sources of rapid voltage changes within the EPS.
- B. These rapid voltage change limits shall apply to sudden changes due to frequent energization of transformers, frequent switching of capacitors or from abrupt output variations caused by Generating Facility or Microgrid maloperation. These rapid voltage change limits shall not apply to infrequent events such as switching, unplanned Tripping, or transformer energization related to commissioning, fault restoration, or maintenance.

**SECTION 6.08. Power Factor**

The Generating Facility or Microgrid must be set to maintain a continuous unity power factor (PF = 1.0) at the Point of Common Coupling, in accordance with the following:

- A. Generating Facilities or Microgrids interconnected to the Distribution System must operate within the range of 0.98 absorbing to 0.98 injecting for all real power output greater than or equal to 25% of rated capacity (kW rated).
- B. Generating Facilities or Microgrids with lesser than 500 kW capacity interconnected to the Transmission System must operate within the range of 0.98 absorbing to 0.98 injecting for all real power output greater than or equal to 25% of rated capacity (kW rated).
- C. Generating Facilities or Microgrids with 500 kW to 1 MW capacity interconnected to the Transmission System must operate within the range of



0.98 absorbing to 0.98 injecting for all real power output between 25% and 75% of rated capacity (kW rated). For real power output above 75% of rated capacity, it must operate within the range of 0.99 absorbing to 0.99 injecting.

- D. Generating Facilities or Microgrids with greater than 1 MW Nameplate Rating interconnected to the Transmission System must operate within the range of 0.999 absorbing to 0.999 injecting for all real power output greater than or equal to 25% of rated capacity (kW rated). The flow of reactive power at the Point of Common Coupling, either absorbing or injecting, should not exceed 4.5% of its nominal capacity (kW rated).

## **SECTION 6.09. Power Quality**

Generating Facilities or Microgrids shall comply with the following power quality requirements:

- A. The Generating Facility or Microgrid shall meet the quality requirements of the electrical signal specified in the IEEE 519, IEEE 1453, IEEE 1159, IEEE 1547-2003, UL 1741 and other applicable standards.
- B. The interconnection of the Generating Facility or Microgrid may not cause degradation in the quality of the signal of the EPS. Some examples of degradation in the quality of the electrical signal include, but are not limited to: imbalance and regulation, harmonic distortion, flicker, low voltage (sags), ferro-resonance interruptions, and transient phenomena. If these events arise, the Generating Facility or Microgrid has to be disconnected from the EPS until the Interconnection Customer makes the modifications to mitigate the problems with the quality of the electrical signal caused by Generating Facility or Microgrid. In those facilities without a manual switch as described in Section 6.11 or that do not provide access to EPS Operator to operate the switch, the disconnection will be from the disconnect device located at the Interconnection Customer's substation, which would interrupt electric service provided by the EPS to the Interconnection Customer.
- C. If the Generating Facility or Microgrid uses the EPS for start-up, it cannot cause voltage drops in the primary side of the interconnection of over 3%.
- D. The EPS Operator may specify the configuration of the connection of the windings on the primary and secondary side of the 3-phase Interconnection Transformer of the Generating Facility or Microgrid, to assure that it does not degrade the quality of service.
- E. Generating Facilities or Microgrids are interconnected to the Transmission System through an Interconnection Transformer, which can be the transformer that provides electric service to the customer loads. For interconnection to the Transmission System, the configuration of the interconnection of the windings





on the primary (EPS) side is delta and in the secondary (customer) is star to Earth. The connection of this transformer has to be the type who produces in the primary side a voltage this advance  $30^\circ$  with respect to the secondary side voltage.

- F. The Interconnection Customer is responsible to make and for the costs of the modifications to mitigate the problems with the quality of the electrical signal that cause their Generating Facility or Microgrid to the EPS or other customers and to comply with the requirements set out in the standards outlined above.
- G. If the Generating Facility or Microgrid includes induction generators, the Interconnection Customer is responsible for providing the reactive power compensation at start up to control any abrupt changes in voltage. The strategy to compensate for reactive power must be implemented through technologies that guarantee the absence of discontinuity, that is, maintain a continuous control of reactive power.
- H. The Interconnection Customer is responsible for the injections of voltage and current with harmonic content and do not increase the thermal warming in the transformers and reactors, nor can cause failure, overloads or malfunction of equipment and resonant voltages, among others, to the EPS. They can interfere with the circuits and telecommunication systems or from signals.

#### **SECTION 6.10. Frequency Droop**

Generating Facilities with a Nameplate Rating greater than 1 MW interconnected to the Transmission System shall comply with the following:

- A. The Generating Facility must provide a primary response to variations in frequency. This has to be proportional to the deviation of the nominal frequency, similar to a governor response for its conventional generator. The reason for the frequency variation response has to be 5% or lesser, which is the slope used in conventional generators. This reason has to be determined with the nominal AC capacity of Generating Facility. The Generating Facility has to provide, as a minimum, positive and negative frequency variation response until 0.3 Hz beyond dead band of 0.02% or 0.012 Hz.
- B. Where Energy Storage systems are used, the design has to contemplate, as a minimum, a useful energy for situations in which the frequency decrease equivalent to a 10% response of the nominal capacity AC by nine minutes and take a minute to reduce this participation at the rate of 10 per cent of the capacity AC per minute. The design has to contemplate this same Energy Storage capacity for when the frequency increases. The operational range of the Generating Facility to frequency response has to be from 10% to 100% capacity AC of the Generating Facility.

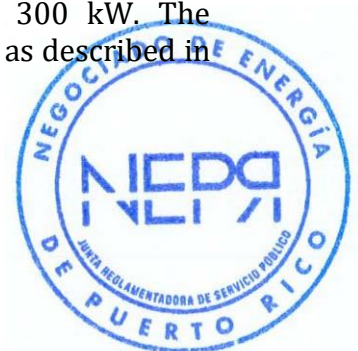


- C. For Microgrids, the requirements in subsection A and B apply to any individual Generating Facility with a Nameplate Rating above 1 MW.

#### **SECTION 6.11. Accessible Disconnect Switch**

The EPS Operator must not require the installation of an accessible manual disconnect switch for inverter-based Generating Facilities with a Nameplate Rating of up to 300 kW. If an Interconnection Customer elects not to install an accessible disconnect switch, the EPS Operator may disconnect electric service to the Host Load if the EPS Operator must take the Generating Facility offline. The EPS Operator may require an accessible disconnect switch for Generating Facilities with Nameplate Rating greater than 300 kW. The features required for this disconnect switch are:

- A. Be visible and accessible to the EPS Operator personnel twenty-four hours a day, seven days a week, without requiring the presence of the Interconnection Customer or equipment operator. If it is not accessible to EPS Operator's personnel, the Interconnection Customer must permit and facilitate access to the disconnect switch with previous coordination from EPS Operator personnel as required.
- B. Be appropriate for the voltage levels of the installation.
- C. Be able to interrupt the current flow to which it will be exposed. The disconnect switch need not be rated for load breaking, as long as it is installed combined with an automatic switch or other device capable of interrupting current flow.
- D. Have provision for ensuring that it remains open or closed with EPS Operator padlock.
- E. Able to open all poles simultaneously.
- F. Be able to withstand inclement weather (weatherproof).
- G. Be labeled with the phrase: "CAUTION – DG MANUAL INTERRUPTOR. DO NOT TOUCH TERMINALS AT BOTH ENDS; THEY COULD BE ENERGIZED". In addition, it must identify open and closed positions.
- H. When operating, the accessible disconnect switch only disconnects the Generating Facility from the EPS, without interrupting electrical service from the EPS to the Host Load.
- I. For Microgrids, the requirement for the manual switch applies to any individual Generating Facility with a Nameplate Rating greater than 300 kW. The switch(es) shall be placed at the individual Generating Facility as described in subsection H.



## **SECTION 6.12. Additional Requirements for Microgrids**

- A. Additional technical requirements for Microgrids with two or more customers may be required by the EPS Operator to protect EPS equipment where that equipment is utilized during Islanded operation.
- B. Additional technical requirements for Microgrids with more than one Point of Common Coupling may be required by the EPS Operator.<sup>11</sup>

## **ARTICLE 7. NET ENERGY METERING**

### **SECTION 7.01. Participation in Net Metering Programs**

- A. A Generating Facility fueled by Renewable Energy Sources may participate in net metering if the Interconnection Application includes a request to participate in one of the following Net Metering Programs: the Basic Net Metering Program, the Aggregate Net Metering Program and the Shared Net Metering Program.
- B. **Energy Storage Paired with Net Metering Systems**
  - (1) While an Energy Storage device may be paired with a Net Metering System, an Energy Storage device standing alone does not qualify as a Net Metering System.
  - (2) When an Energy Storage Device is paired with a Net Metering System, the Generating Facility shall be programmed with one or both of the following operating restrictions:
    - (i) Restricted from exporting electricity to the Electric Power System, beyond Inadvertent Export, and/or
    - (ii) Restricted to being charged solely from the customer's Net Metering System and not from the Electric Power System.
  - (3) An election to operate an Energy Storage Device with an operating restriction shall be identified in the Application, including a description of the operating restriction.
  - (4) A signed attestation of the operating restriction shall be provided by the Operator of the Energy Storage Device.
  - (5) The customer may propose to modify the operating restriction by submitting a revised attestation to the EPS Operator. The EPS Operator

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<sup>11</sup> For example, coordination between multiple disconnection devices may be required to safely isolate the Microgrid from the EPS.



must approve the proposed revision in writing; approval shall not be unreasonably withheld or delayed.

**SECTION 7.02. Basic Net Metering Program**

- A. In the Basic Net Metering Program, a Generating Facility connected to the Distribution System shall have a maximum installed AC capacity of 25 kW for residential customers and 1 MW for commercial, governmental, industrial, agricultural, educational institutions and hospital medical facilities. Generating Facilities connected to the subtransmission or transmission systems shall have a maximum installed AC capacity of 5 MW for commercial customers, governmental, industrial, agricultural, educational institutions and hospital medical facilities.

**SECTION 7.03. Aggregate Net Metering Program**

- A. The Aggregate Net Metering Program applies only to governmental Entities and non-profit academic institutions.
- B. For customers with service on distribution voltages, the maximum installed AC capacity of the Generating Facility must be 1 MW. For customers with service on transmission or subtransmission voltages, the maximum installed AC capacity of the Generating Facility must be 5 MW.
- C. All locations with service agreements that take advantage of this program must be included in the same account.
- D. The locations may be interconnected to primary distribution, secondary distribution, subtransmission, or transmission systems. However, all participating locations must receive service at the same voltage level.
- E. The service agreements to which the energy is to be accredited must be (1) within the same location where the Generating Facility is installed or (2) in other locations interconnected to the same power line at a distance not greater than two miles from the Generating Facility.

**SECTION 7.04. Shared Net Metering Program**

- A. The Shared Net Metering Program applies exclusively to residential and commercial customers with primary and secondary voltage distribution services under the horizontal property regime, such as residential, commercial or mixed-use condominiums. This Program also applies to public housing managed by the Department of Housing.
- B. The location of the service agreements to which the energy is to be accredited must be within the same location where the Generating Facility is installed.

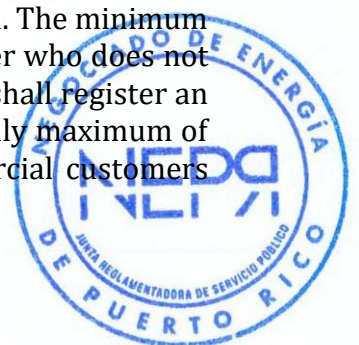


- C. All service agreements must be serviced from the same point of delivery to which the Generating Facility is interconnected. The point of delivery can be the interconnection transformer in secondary distribution systems or the private substation in primary distribution systems.
- D. For residential cases, the maximum capacity of the Generation Facility is 25 kW per participating customer or the capacity of the Interconnection Transformer, whatever smaller, up to a maximum of 1 MW.
- E. For commercial or mixed use cases, the maximum capacity of the Generating Facility is the same as the capacity of the Interconnection Transformer, up to a maximum of 1 MW.
- F. As required by these regulations, the owner of the Generating Facility must sign an Interconnection Agreement with the EPS Operator and Participate in the Net Metering Program. The owner of the Generating Facility can be the Board of Owners, the Owners Association, the owner of the building or any natural or legal entity with similar functions.
- G. Each participating customer that is not the owner of the Generating Facility must sign an Agreement for Participation in the Shared Net Metering Program (see Attachment 9).

#### **SECTION 7.05. Energy Compensation for Customers that Participate in the Net Metering Programs**

Energy exported by the customer shall be compensated as described below; except in those cases in which any federal law or regulation expressly and specifically orders otherwise:

- A. Energy compensation will be effective at the beginning of the billing period after the installation or configuration of the meter.
- B. For each billing period, the EPS Operator will measure the energy that the customer consumes from and the energy that the customer exports to the EPS.
- C. If during a billing period, the EPS Operator supplies the customer more energy than the customer exports, the customer will be charged for their Net Consumption.
- D. If during a billing period, the customer exports more energy than supplied by the EPS Operator, the customer will be charged the minimum invoice amount corresponding to the rate at which the service is being received. The minimum invoice is the amount that the EPS Operator charges a customer who does not consume electricity during a billing period. The EPS Operator shall register an excess in exported energy during any billing period up to a daily maximum of 300 kWh for residential customers and 10 MWh for commercial customers.





connected to the Distribution System. For customers connected to the Transmission System, any excess in exported energy during a billing period will be registered up to a daily maximum of 50 MWh. The excess in exported energy will be carried over to the invoice for the next billing period.

- E. Any excess in exported energy, that the customer accumulates during the year and that has not been used by the close of the June billing period of each year, will be compensated as described below:
- (1) The EPS Operator shall use the greater of (a) ten cents per kilowatt-hour or (b) the price per kilowatt-hour that results from converting the average of the total price charged to customers throughout the year and subtracting the average of the fuel and power purchase adjustments.
  - (2) The customer will receive a credit on their monthly bill equal to 75% of the surplus energy and the remaining 25% of the surplus energy will be credited to the power bill of the Department of Education.
- F. For customers who participate in the **Aggregate Net Metering Program**, besides paragraphs A to E of this Section, the following applies:
- (1) Service agreements at the same location: The maximum amount of energy to be credited to all participating service agreements at the location where the Generating Facility is installed may be up to 100% of the consumption of all the service agreements. This energy will be credited first to the service agreement associated with the Generating Facility and the excess will be credited equally to the rest of the service agreements on the same account.
  - (2) Service agreements at different locations: The maximum amount of energy to be credited to all participating service agreements may be up to 120% of the consumption of the service agreements at the location where the Generating Facility is installed. This energy will be credited first to the service agreement associated with the Generating Facility and the excess will be credited equally to the rest of the service agreements, up to 100% of the consumption of the service agreements within the location where the Generating Facility is installed and the remaining 20% of the energy production will be credited equally to the service agreements in the other locations on the same account.
- G. For customers participating in the **Shared Net Metering Program**, besides the provisions of paragraphs A to E of this Section, 100% of the energy produced by the Generating Facility will be credited equally among all participants of this program.

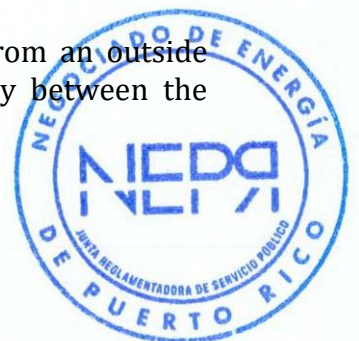


## ARTICLE 8. DISPUTE RESOLUTION

- A. The Parties agree to attempt to resolve all disputes arising out of the interconnection process and associated studies and Interconnection Agreements according to this Article.
- B. If a dispute occurs, the disputing Party shall provide the other Party a written Notice of Dispute containing the relevant known facts pertaining to the dispute, the specific dispute and the relief sought, and express notice by the disputing Party it is invoking the procedures under this Article. The notice shall be sent to the non-disputing Party's email address and physical address in the Interconnection Agreement or Interconnection Application, if there is no Interconnection Agreement. A copy of the notice shall also be sent to the Interconnection Ombudsperson at the Energy Bureau.

The non-disputing Party shall acknowledge the notice within three (3) Business Days of its receipt and identify a representative with the authority to decide for the non-disputing Party regarding the dispute.

- C. If the dispute is principally related to one or both Parties' compliance with timelines specified in these Regulations or associated agreements, the Parties shall seek assistance from the Interconnection Ombudsperson if the Parties cannot mutually resolve the dispute within eight (8) Business Days.
- D. If the dispute is not principally about one or both Parties' compliance with a timeline, then the non-disputing Party shall provide the disputing Party with all relevant regulatory and/or technical details and analysis regarding any interconnection requirements under dispute within ten (10) Business Days of the date of the notice of dispute. The confidentiality provisions of Section 5.08 apply here. Within twenty (20) Business Days of the date of the notice of dispute, the Parties' authorized representatives will have to meet and confer to try to resolve the dispute. Parties shall operate in good faith and use best efforts to resolve the dispute.
- E. If a resolution is not reached in thirty (30) Business Days from the date of the notice, either:
  - (1) A Party may request to continue negotiations for an additional twenty (20) Business Days;
  - (2) The Parties may by agreement make a written request for mediation to the Interconnection Ombudsperson; or
  - (3) Both Parties by agreement may request mediation from an outside third-party mediator with costs to be shared equally between the Parties.



- F. If the results of the mediation are not accepted by one or more Parties and there is still disagreement, the dispute shall proceed to the Energy Bureau's process for reconsideration in accordance with Article 11.
- G. At any time, either Party may request reconsideration by the Energy Bureau in accordance with Article 11.

## **ARTICLE 9. PENALTIES**

- A. Anyone who infringes this Regulation or who alters all or part the EPS or an electric installation in a manner such that the operation of a Generating Facility or Microgrid cannot be accurately monitored including, but not limited to, its bi-directional energy flow shall be penalized by the EPS Operator and/or Energy Bureau with the corresponding administrative sanctions and penalties established in Act 83-1941 and Act 57-2014 and the regulations adopted pursuant to the same.
- B. The EPS Operator is authorized to investigate matters regarding the interconnection of Microgrids with the EG, including the veracity of the information stated in the certifications, inspection reports and any other documents filed with the EPS Operator under this Regulation and can take the appropriate actions (administrative and judicial) authorized by laws.
- C. If the EPS Operator and/or Energy Bureau, as applicable, determines that a Generating Facility or Microgrid was interconnected in violation of applicable legal provisions, or detects any irregularity, deficiency, omission or fraud in the certifications filed, the EPS Operator and/or Energy Bureau, as applicable, may impose the administrative sanctions established in Act 83-1941 and Act 57-2014, to the professional responsible of such violation and to refer the professional to the pertinent professional association, to the Public Energy Policy Program of the Department of Economic Development and Commerce for the corresponding disciplinary action.

## **ARTICLE 10. PUBLIC REPORTING AND RECORD RETENTION**

### **SECTION 10.01. Public Queue**

The EPS Operator shall maintain a public interconnection queue pursuant to Section 2.09 on its website in a tabular format, *i.e.*, a sortable spreadsheet, which it shall update on at least a monthly basis. The date of the most recent update shall be clearly indicated. The public queue should include, at a minimum, the following information about each Interconnection Application:

- A. Queue Position, *i.e.*, queue number
- B. Nameplate Rating

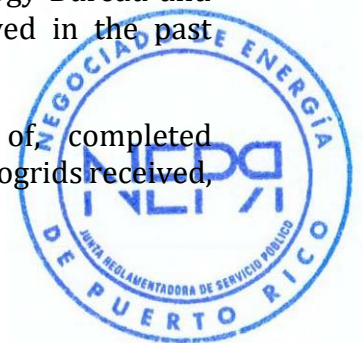


- C. Export Capacity
- D. Primary fuel type (*e.g.*, solar, wind, bio-gas, etc.)
- E. Secondary fuel type (if applicable)
- F. Exporting or Non-Exporting
- G. City
- H. Zip code
- I. Substation
- J. Feeder
- K. Status (active, withdrawn, interconnected, etc.)
- L. Date application deemed complete
- M. Date of notification of Fast Track screen results, if applicable
- N. Fast Track Screen results, if applicable (pass or fail, and if fail, identify the screens failed)
- O. Date of notification of supplemental review results, if applicable
- P. Supplemental review results, if applicable (pass or fail, and if fail, identify the screens failed)
- Q. Date of notification of feasibility study results, if applicable.
- R. Date of notification of system impact study results, if applicable
- S. Date of notification of Transmission System impact study results, if applicable
- T. Date of notification of Facilities Study results and/or construction estimates, if applicable
- U. If upgrades were needed, the estimated and final cost of the upgrades

#### **SECTION 10.02. Annual Interconnection Report**

By April 1 of each year, the EPS Operator shall submit to the Energy Bureau and publish on its website a report on Interconnection Applications reviewed in the past calendar year, including:

- A. The number, Nameplate Rating, and Export Capacity of completed Interconnection Applications for Generating Facilities and Microgrids received,



approved, studied, installed, withdrawn, and denied under the Simplified Process, the Fast Track Process, and the Study Process.

- B. The fuel type, number, Nameplate Rating, and Export Capacity of Generation Facilities and Microgrids approved for interconnection.
- C. The fuel type, number, Nameplate Rating, and Export Capacity of all Generation Facilities and Microgrids currently interconnected to the EPS.
- D. A narrative description of the data provided, including any trends identified by the EPS Operator.
- E. The underlying data in tabular format, *i.e.*, a searchable spreadsheet.

### **SECTION 10.03. Record Retention**

- A. The EPS Operator shall maintain the records and reports specified in this Article for at least five years.
- B. The EPS Operator shall retain copies of studies it performs to determine the feasibility of, Distribution system impacts of, Transmission System impacts of, or facilities required by a proposed interconnection.

## **ARTICLE 11. RECONSIDERATION AND JUDICIAL REVIEW**

### **SECTION 11.01. Reconsideration**

- A. Any person who is not satisfied with a decision made by the EPS Operator under this Regulation may first follow the process identified in Article 8, or may file, within the term of twenty (20) days from the date copy of the notice of such decision is filed by the Energy Bureau's Clerk, a request for reconsideration before the Energy Bureau wherein the petitioner sets forth in detail the grounds that support the request and the decisions that, in the opinion of the petitioner, the Energy Bureau should reconsider.
- B. Any person who is not satisfied with a decision made by the Energy Bureau under this Regulation may file, within the term of twenty (20) days from the date copy of the notice of such decision is filed by the Energy Bureau's Clerk, a request for reconsideration before the Energy Bureau wherein the petitioner sets forth in detail the grounds that support the request and the decisions that, in the opinion of the petitioner, the Energy Bureau should reconsider.

### **SECTION 11.02. Administrative Review**

Any person who is not satisfied with a decision made by the EPS Operator under this Regulation may file, within the term of twenty (20) days from the date copy of the notice of





such decision is issued and notified by the EPS Operator, a request for review before the Energy Bureau, pursuant to the provisions of Act 57-2014 and Regulation 8543.

### **SECTION 11.03. Judicial Review**

Any person dissatisfied with a final decision of the Energy Bureau under this Regulation may, within thirty (30) days from the date copy of notice of a final decision addressing a request for reconsideration is filed by the Energy Bureau's Clerk, or within thirty (30) days from the date a copy of the notice of an Energy Bureau final decision is filed by the Energy Bureau's Clerk, if a request for reconsideration has not been filed, appear before the Puerto Rico Court of Appeals by way of writ of judicial review.



**ATTACHMENT 1**  
**GENERATOR INTERCONNECTION APPLICATION**

(Application Form)

PREPA Designated Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Preamble. An Interconnection Application is considered complete when it provides all applicable and correct information required below. \

Filing Instructions: An Interconnection Customer who requests interconnection must submit this Interconnection Application by [to be filled in with Cyber Portal submittal details].

Processing Fee or Deposit:

- *Fast Track Process* If the Interconnection Application is submitted under the Fast Track Process, the non-refundable processing fee is \$100 plus \$1.00 per kW of Microgrid capacity.
- *Study Process* - If the Interconnection Application is submitted under the Study Process, whether a new submission or an Interconnection Application that did not pass the Fast Track Process, the Interconnection Customer shall submit to PREPA a deposit not to exceed \$1,000 plus \$2.00 per kW of Microgrid capacity towards the cost of the first study.
- Additional fees or deposits shall not be required, except as otherwise specified in the Microgrid Interconnection Regulations.

**Interconnection Customer Information:**

Legal Name of the Interconnection Customer (or, if an individual, individual's name)

Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Facility Location (if different from above): \_\_\_\_\_

\_\_\_\_\_



Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

**Alternative Contact Information** (if different from the Interconnection Customer)

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Application is for: ☐ New Microgrid ☐ Capacity addition to Existing Microgrid

If capacity addition to existing facility, please describe: \_\_\_\_\_  
\_\_\_\_\_

Will the Microgrid be used for any of the following?

Net Metering? Yes ☐ No ☐

To Export Power across the POI? Yes ☐ No ☐

For installations at locations with existing electric service to which the proposed Microgrid will interconnect, provide the Existing Account Number(s) (provide all accounts to be included within the Microgrid): \_\_\_\_\_  
\_\_\_\_\_

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Requested Point of Common Coupling (describe or provide coordinates):  
\_\_\_\_\_



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Interconnection Customer's Requested In-Service Date: \_\_\_\_\_

**Microgrid Information<sup>12</sup>:**

Energy Source(s): (check those that apply)

Solar ☐

Wind ☐

Energy Storage ☐

Identify type (*e.g.*, lithium ion battery):

Hydro ☐

Identify type:

Diesel ☐

Natural Gas ☐

Fuel Oil ☐

Other ☐

Prime Mover(s): (check those that apply)

Fuel Cell ☐

Recip Engine ☐

Gas Turbine ☐

Steam Turbine ☐

Microturbine ☐

PV ☐

Other ☐

Type of Generator(s) (check all that apply): ☐ Synchronous ☐ Induction ☐ Inverter

Aggregate Generator Nameplate Rating: \_\_\_\_\_kW (Typical).

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<sup>12</sup> Data apply only to the Microgrid, not the Interconnection Facilities.



Aggregate Generator Nameplate kVAR: \_\_\_\_\_.

Interconnection Customer or Customer-Site/Microgrid Load: \_\_\_\_\_ kW (if none, so state)

Typical Reactive Load (if known): \_\_\_\_\_

Maximum Physical Export Capability Requested: \_\_\_\_\_ kW

List components of the Microgrid or Generating Facility equipment currently certified:

	Equipment Type	Certifying Entity
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

If a certified protective relay package is used with any Generating Facility, is the prime mover compatible with the relay package? ☐ Yes ☐ No

Generator (or solar module) Manufacturer, Model Name & Number: \_\_\_\_\_

Version Number: \_\_\_\_\_

Nameplate Output Power Rating in kW: \_\_\_\_\_

Nameplate Output Power Rating in kVA: \_\_\_\_\_

Individual Generator Power Factor

Rated Power Factor: Leading: \_\_\_\_\_ Lagging: \_\_\_\_\_

Total Number of Generators in wind farm to be interconnected pursuant to this

Interconnection Application: \_\_\_\_\_ Elevation: \_\_\_\_\_ ☐ Single phase ☐ Three phase

Inverter Manufacturer, Model Name & Number (if used): \_\_\_\_\_

List of adjustable set points for the Generating Facility(s) protective equipment or software (provide for all Generating Facilities in Microgrid): \_\_\_\_\_

List of adjustable set points for the Microgrid interface protective equipment or software (provide for all interfaces that apply): \_\_\_\_\_

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Application.

Generating Facility Characteristic Data (for inverter-based machines)

Max fault current: ☐ Instantaneous ☐ RMS?





**Generating Facility Characteristic Data (for rotating machines)**

RPM Frequency: \_\_\_\_\_

(\*) Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

**Synchronous Generators:**

Direct Axis Synchronous Reactance,  $X_d$ : \_\_\_\_\_ P.U.

Direct Axis Transient Reactance,  $X'_d$ : \_\_\_\_\_ P.U.

Direct Axis Subtransient Reactance,  $X''_d$ : \_\_\_\_\_ P.U.

Negative Sequence Reactance,  $X_2$ : \_\_\_\_\_ P.U.

Zero Sequence Reactance,  $X_0$ : \_\_\_\_\_ P.U.

KVA Base: \_\_\_\_\_

Field Volts: \_\_\_\_\_

Field Amperes: \_\_\_\_\_

**Induction Generators:**

Motoring Power (kW): \_\_\_\_\_

I<sup>2</sup>t or K (Heating Time Constant): \_\_\_\_\_

Rotor Resistance,  $R_r$ : \_\_\_\_\_

Stator Resistance,  $R_s$ : \_\_\_\_\_

Stator Reactance,  $X_s$ : \_\_\_\_\_

Rotor Reactance,  $X_r$ : \_\_\_\_\_

Magnetizing Reactance,  $X_m$ : \_\_\_\_\_

Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_

Exciting Current: \_\_\_\_\_

Temperature Rise: \_\_\_\_\_

Frame Size: \_\_\_\_\_

Design Letter: \_\_\_\_\_

Reactive Power Required In Vars (No Load): \_\_\_\_\_

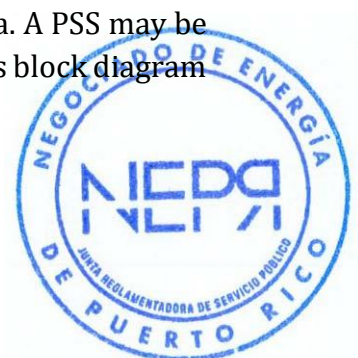
Reactive Power Required In Vars (Full Load): \_\_\_\_\_

Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

Note: Please contact PREPA before submitting the Interconnection Application to determine if the specified information above is required.

**Excitation and Governor System Data for Synchronous Generators Only**

If required, provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with PREPA criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.



Will a transformer be used between the Microgrid and the Point of Common Coupling?

Will the transformer be provided by the Interconnection Customer? \_\_\_\_Yes \_\_\_\_No

Is the transformer:      single phase      three phase?      Size:            kVA

Transformer Impedance: \_\_\_\_\_% on \_\_\_\_\_kVA Base

Transformer Primary: \_\_\_\_\_ Volts \_\_\_\_\_ Delta \_\_\_\_\_ Wye \_\_\_\_\_ Wye Grounded

Transformer Secondary: \_\_\_\_\_ Volts \_\_\_\_\_ Delta \_\_\_\_\_ Wye \_\_\_\_\_ Wye Grounded

Transformer Tertiary: \_\_\_\_ Volts \_\_\_\_ Delta \_\_\_\_ Wye \_\_\_\_ Wye Grounded

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Size: \_\_\_\_\_ Speed: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_

Load Rating (Amps): \_\_\_\_\_ Interrupting Rating (Amps): \_\_\_\_\_ Trip Speed (Cycles): \_\_\_\_\_

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

Setpoint Function	Minimum	Maximum
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer:\_\_\_\_\_ Type:\_\_\_\_\_ Style/Catalog No.:\_\_\_\_\_ Proposed Setting:\_\_\_\_\_

Manufacturer:\_\_\_\_\_ Type:\_\_\_\_\_ Style/Catalog No.:\_\_\_\_\_ Proposed Setting:\_\_\_\_\_

Manufacturer:\_\_\_\_\_ Type:\_\_\_\_\_ Style/Catalog No.:\_\_\_\_\_ Proposed Setting:\_\_\_\_\_

Manufacturer:\_\_\_\_\_ Type:\_\_\_\_\_ Style/Catalog No.:\_\_\_\_\_ Proposed Setting:\_\_\_\_\_



Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Style/Catalog No.: \_\_\_\_\_ Proposed Setting: \_\_\_\_\_

Current Transformer Data (If Applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Potential Transformer Data (If Applicable):

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

**General Information**

Enclose copy of site electrical one-line diagram showing the configuration of all Microgrid equipment, current and potential circuits, and protection and control schemes. The one-line diagram shall include:

- Interconnection Customer name.
  - Application ID.
  - Installer name and contact information.
  - Install location(s).
  - Correct positions of all equipment, including but not limited to panels, inverter, and DC/AC disconnect, including distances between equipment, and any labeling found on equipment.
- Equipment labels must meet minimum NEC or NESC labeling requirements. Labels should be durable and permanently attached, such as engraved or etched plastic, which can be riveted or adhered to the device.



- If required for the Generating Facilities, a visible, lockable and accessible AC disconnect must be installed and located according to 8915 section IV.B.13 or 8916 section V.B.15.

- Meter information, including amp rating and service voltage
- Production Meter wiring, either:
  - 1-Phase, 3 Wire; or
  - 3-Phase, 4-Wire

This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Microgrid is larger than 1 MW.

Is One-Line Diagram Enclosed? ☐ Yes ☐ No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Microgrid (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) \_\_\_\_\_

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes of the Microgrid interface. If the Microgrid contains portions of PREPA's EPS, provide documentation on details of Islanded operation as well.

Is Available Documentation Enclosed? ☐ Yes ☐ No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

Are Schematic Drawings Enclosed? ☐ Yes ☐ No

### **Professional Engineer<sup>13</sup> Certification**

I hereby certify that the Microgrid meets the specifications established through regulations by the Bureau for this Microgrid and that the same was completed according to the laws, regulations, and rules applicable to the interconnection of microgrids into the distribution and transmission system.

Professional Engineer: \_\_\_\_\_ Date: \_\_\_\_\_

### **Interconnection Customer Signature**

<sup>13</sup> The Professional Engineer must be duly licensed engineer to practice the profession in Puerto Rico.



I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Application is true and correct.

For Interconnection Customer: \_\_\_\_\_ Date: \_\_\_\_\_

Preliminary Draft





**ATTACHMENT 2**  
**SIMPLIFIED INTERCONNECTION APPLICATION AND AGREEMENT**

Preliminary Draft



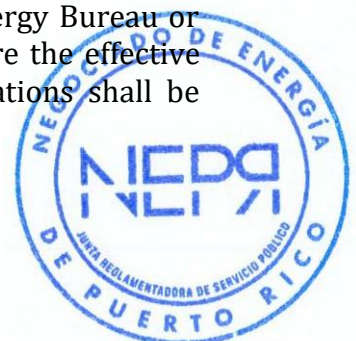
**ATTACHMENT 3**  
**CERTIFICATION CODES AND STANDARDS**

- 1) IEEE1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity);
- 2) UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems;
- 3) IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems;
- 4) NFPA 70 (2002), National Electrical Code;
- 5) IEEE Std C37.90.1-1989 (R1994), IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems;
- 6) IEEE Std C37.90.2 (1995), IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers;
- 7) IEEE Std C37.108-1989 (R2002), IEEE Guide for the Protection of Network Transformers;
- 8) IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors;
- 9) IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits;
- 10) IEEE Std C62.45-1992 (R2002), IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits;
- 11) ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz);
- 12) IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms
- 13) NEMA MG 1-1998, Motors and Small Resources, Revision 3;
- 14) IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems; and
- 15) NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1



**ATTACHMENT 4**  
**CERTIFICATION OF GENERATOR EQUIPMENT PACKAGES**

- 1.0 Generating Facilities or Microgrid equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the codes and standards in ATTACHMENT 3, (2) it has been labeled and is publicly listed by such NRTL at the time of the Interconnection Application, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
- 2.0 The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
- 3.0 Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site commissioning test by the parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
- 5.0 Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the customer side of the Point of Common Coupling shall have to meet the requirements of this interconnection procedure.
- 6.0 An equipment package does not include equipment provided by the EPS Operator.
- 7.0 Any equipment package approved and listed by the Puerto Rico Energy Bureau or another state agency for interconnected operation in the state before the effective date of these Generating Facility Microgrid Interconnection Regulations shall be considered certified under these Regulations for use in the state.



**ATTACHMENT 5**  
**FEASIBILITY STUDY AGREEMENT**

Preliminary Draft



**ATTACHMENT 6**  
**SYSTEM IMPACT STUDY AGREEMENT**

THIS AGREEMENT is made and entered into this \_\_\_\_ day of \_\_\_\_\_ 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of Puerto Rico, ("Interconnection Customer,") and the Puerto Rico Electric Power Authority ("PREPA") a corporate entity existing under the laws of Puerto Rico. Interconnection Customer and PREPA each may be referred to as a "Party," or collectively as the "Parties."

**RECITALS**

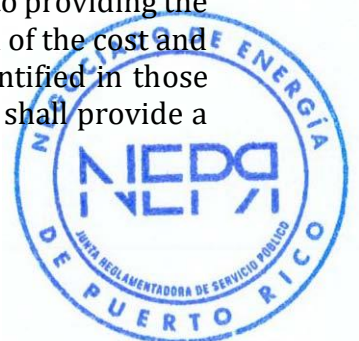
**WHEREAS**, the Interconnection Customer is proposing to develop a Microgrid or generating capacity addition to an existing Microgrid consistent with the Interconnection Application completed by the Interconnection Customer on \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Microgrid with the Electric Power System;

**WHEREAS**, the Interconnection Customer has requested PREPA to perform a system impact study(s) to assess the impact of interconnecting the Microgrid with the Electric Power System, and of any Affected Systems;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 Consistency with Microgrid Interconnection Regulation. The Interconnection Customer elects and PREPA shall cause to be performed a system impact study(s) consistent with the Microgrid Interconnection Regulation.
- 2.0 Scope of the System Impact Study. The scope of a system impact study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 3.0 Basis for the System Impact Study. A system impact study will be based upon the technical information provided by Interconnection Customer in the Interconnection Application. PREPA reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the system impact study.
- 4.0 System Impact Study. A system impact study shall consist of a short circuit analysis, a stability analysis, a power flow analysis, voltage drop and flicker studies, protection and set point coordination studies, and grounding reviews, as necessary. A system impact study shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. A system impact study shall provide a





list of facilities required as a result of the Interconnection Application and non-binding good faith estimates of cost responsibility and time to construct.

- 5.0 Distribution System Impact Study. A distribution system impact study shall incorporate a distribution load flow study, an analysis of equipment interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, grounding reviews, and the impact on Electric Power System operation, as necessary.
- 6.0 Queue. If PREPA uses a queuing procedure for sorting or prioritizing projects and their associated cost responsibilities for any required Network Upgrades, the system impact study shall consider all Generating Facilities and/or Microgrids (and regarding paragraph 8.3 below, any identified Upgrades associated with such higher queued interconnection) that, on the date the system impact study is commenced –
- 6.1. Are directly interconnected with the Electric Power System; or
- 6.2. Have a pending higher queued Interconnection Application to interconnect with the Electric Power System.
- 7.0 Deposit. A deposit of the equivalent of the good faith estimated cost of a distribution system impact study and the good faith estimated cost of a Transmission System impact study shall be required from the Interconnection Customer when the signed Agreement is provided to PREPA.
- 8.0 Basis of Study Fees. Any study fees shall be based on PREPA's actual costs and will be invoiced to the Interconnection Customer within twenty (20) Business Days after the study is completed and delivered and will include a summary of professional time.
- 9.0 Payment of Study Costs. The Interconnection Customer must pay any study costs that exceed the deposit without interest within twenty (20) Business Days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, PREPA shall refund such excess within twenty (20) Business Days of the invoice without interest.
- 10.0 Interpretations, Governing Law, Regulatory Authority, and Rules. When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Microgrid Interconnection Regulations. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the of Puerto Rico. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the



right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

- 11.0 Amendment. The Parties may amend this Agreement by a written instrument duly executed by both Parties.
- 12.0 No Third-Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character for any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.
- 13.0 Waiver.
- 13.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- 13.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from PREPA. Any waiver of this Agreement shall, if requested, be provided in writing.
- 14.0 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 15.0 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.
- 16.0 Severability. If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.
- 17.0 Subcontractors. Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement



in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

17.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that PREPA shall not be liable for the actions or inactions of the Interconnection Customer or its subcontractors regarding obligations of the Interconnection Customer under this Agreement. Any obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

17.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

18.0 Inclusion of PREPA Tariffs and Rules. The interconnection services provided under this Agreement shall be subject to the terms and conditions set forth in the tariff schedules and rules applicable to the electric service provided by PREPA, which tariff schedules and rules are hereby incorporated into this Agreement by this reference. Notwithstanding any other provisions of this Agreement, PREPA shall have the right to unilaterally file with the Bureau, pursuant to the Energy Bureau's rules and regulations, an application for change in rates, charges, classification, service, tariff, or rule or any agreement relating thereto. The Interconnection Customer shall also have the right to unilaterally file with the Energy Bureau, pursuant to the Bureau's rules and regulations, an application for change in rates, charges, classification, service, tariff, or rule or any agreement relating thereto. Each Party shall have the right to protest any such filing by the other Party and/or to participate fully in any proceeding before the Energy Bureau in which such modifications may be considered, pursuant to the Energy Bureau's rules and regulations.

**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**PREPA**

**[Name of Interconnection Customer]**

Name (print): \_\_\_\_\_

Name (print): \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_



## **Attachment A to System Impact Study Agreement**

### **Assumptions Used in Conducting the System Impact Study**

The system impact study shall be based upon the following assumptions:

- 1) Designation of Point of Common Coupling and configuration to be studied; and
- 2) Designation of alternative Points of Interconnection and configuration.

Items 1) and 2) are to be completed by the Interconnection Customer. Other assumptions (to be listed below) are to be provided by the Interconnection Customer and PREPA.

Assumptions:



**ATTACHMENT 7**  
**FACILITIES STUDY AGREEMENT**

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of Puerto Rico, ("Interconnection Customer,") and the Puerto Rico Electric Power Authority ("PREPA") a corporate entity existing under the laws of the Commonwealth of Puerto Rico. Interconnection Customer and PREPA each may be referred to as a "Party," or collectively as the "Parties."

**RECITALS**

**WHEREAS**, the Interconnection Customer is proposing to develop a Microgrid or generating capacity addition to an existing Microgrid consistent with the Interconnection Application completed by the Interconnection Customer on \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Microgrid with the Electric Power System;

**WHEREAS**, PREPA has completed Fast Track, supplemental review, and/or a system impact study and provided the results of the review to the Interconnection Customer, or determined none was required; and

**WHEREAS**, the Interconnection Customer has requested PREPA perform a facilities study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the above noted review in accordance with Good Utility Practice to physically and electrically connect the Microgrid with the Electric Power System.

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

8.0 Scope of the Facilities Study. The Interconnection Customer elects and PREPA shall cause a Facilities Study consistent with the Microgrid Interconnection Regulation to be performed. The scope of the Facilities Study shall be subject to data provided in Attachment A to this Agreement.

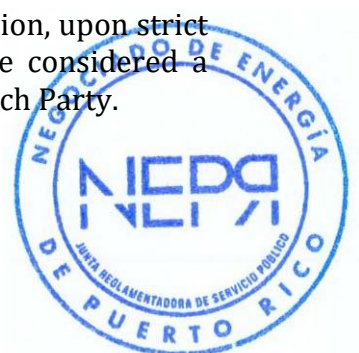
9.0 Content of the Facilities Study. The Facilities Study shall specify and estimate the cost of the equipment, permitting, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the system impact study(s). The Facilities Study shall also identify (1) the electrical switching configuration of the equipment, including, without limitation, transformer, switchgear, Meters, and other station equipment, (2) the nature and estimated cost of PREPA's Interconnection Facilities and Upgrades necessary to accomplish the



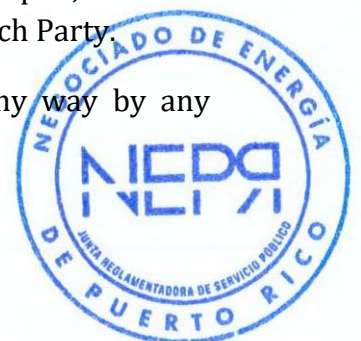


interconnection, and (3) an estimate of the time required to complete the construction and installation of such facilities.

- 10.0 Minimization of Costs. PREPA may propose to group facilities required for more than one Interconnection Customer to minimize facilities costs through economies of scale, but any Interconnection Customer may require the installation of facilities required for its own Microgrid if it is willing to pay the costs of those facilities.
- 11.0 Deposit. A deposit of the good faith estimated facilities study costs shall be required from the Interconnection Customer and provided when the signed Agreement is provided to PREPA.
- 12.0 Basis of Study Fees. Any study fees shall be based on PREPA's actual costs and will be invoiced to the Interconnection Customer within twenty (20) Business Days after the study is completed and delivered and will include a summary of professional time.
- 13.0 Payment of Study Fees. The Interconnection Customer must pay any study costs that exceed the deposit without interest within twenty (20) Business Days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, PREPA shall refund such excess within twenty (20) Business Days of the invoice without interest.
- 14.0 Interpretation, Governing Law, Regulatory Authority, and Rules. When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Microgrid Interconnection Regulations. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the of Puerto Rico. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.
- 15.0 Amendment. The Parties may amend this Agreement by a written instrument duly executed by both Parties.
- 16.0 No Third-Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character for any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.
- 17.0 Waiver.
- 17.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.



- 17.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver regarding any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from PREPA. Any waiver of this Agreement shall, if requested, be provided in writing.
- 18.0 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 19.0 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.
- 20.0 Severability. If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.
- 21.0 Subcontractors. Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.
- 21.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that PREPA shall not be liable for the actions or inactions of the Interconnection Customer or its subcontractors regarding obligations of the Interconnection Customer under this Agreement. Any obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.
- 21.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.



22.0 Inclusion of PREPA Tariffs and Rules. The interconnection services provided under this Agreement shall be subject to the terms and conditions set forth in the tariff schedules and rules applicable to the electric service provided by PREPA, which tariff schedules and rules are hereby incorporated into this Agreement by this reference. Notwithstanding any other provisions of this Agreement, PREPA shall have the right to unilaterally file with the Bureau, pursuant to the Energy Bureau's rules and regulations, an application for change in rates, charges, classification, service, tariff, or rule or any agreement relating thereto. The Interconnection Customer shall also have the right to unilaterally file with the Energy Bureau, pursuant to the Bureau's rules and regulations, an application for change in rates, charges, classification, service, tariff, or rule or any agreement relating thereto. Each Party shall have the right to protest any such filing by the other Party and/or to participate fully in any proceeding before the Energy Bureau in which such modifications may be considered, pursuant to the Energy Bureau's rules and regulations.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or representatives on the day and year first above written.

**PREPA**

**[Name of Interconnection Customer]**

Name (print): \_\_\_\_\_

Name (print): \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

**Attachment A to Facilities Study Agreement  
Data to Be Provided by the Interconnection Customer  
with the Facilities Study Agreement**



Provide location plan and simplified one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, transmission circuits, etc.

- 1) On the one-line diagram, indicate the generation capacity attached at each Metering location. (Maximum load on CT/PT); and
- 2) On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT) Amps

One set of Meters is required for each generation connection to the new ring bus or existing PREPA station. Number of generation connections: \_\_\_\_\_

Will an alternate source of auxiliary power be available during CT/PT maintenance?

Yes \_\_\_\_ No \_\_\_\_

Will a transfer bus on the generation side of the Metering require that each Meter set be designed for the total plant generation? Yes \_\_\_\_ No \_\_\_\_  
(Please indicate on the one-line diagram).

What type of control system or PLC will be located at the Microgrid?

\_\_\_\_\_  
\_\_\_\_\_

What protocol does the control system or PLC use?

\_\_\_\_\_  
\_\_\_\_\_

Please provide a 7.5-minute quadrangle map of the site. Indicate the plant, station, transmission line, and property lines.

Physical dimensions of the proposed interconnection station:

\_\_\_\_\_

Bus length from generation to interconnection station:

\_\_\_\_\_

Line length from interconnection station to the Transmission System.

\_\_\_\_\_



Tower number observed in the field. (Painted on tower leg)<sup>14</sup>:

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Number of third-party easements required for transmission lines<sup>15</sup>:

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Please provide the following proposed schedule dates:

Commencement of Construction Date: \_\_\_\_\_

Generator step-up transformers  
receive back feed power Date: \_\_\_\_\_

Generation Testing Date: \_\_\_\_\_

Commercial Operation Date: \_\_\_\_\_

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<sup>14</sup> To be completed in coordination with PREPA.

<sup>15</sup> *Id.*



**ATTACHMENT 8**  
**INTERCONNECTION AGREEMENT**

Preliminary Draft





**ATTACHMENT 9**  
**AGREEMENT FOR PARTICIPATION IN THE SHARED NET METERING PROGRAM**

Preliminary Draft

