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Received:

Sep 26, 2024

5:56 PM

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

In Re:	Case no. NEPR-MI-2019-0009
INTERCONNECTION REGULATIONS	Subject: Revised Technical Bulletin

MOTION IN SUPPORT OF REVISED TECHNICAL BULLETIN ON SMART INVERTER SETTING SHEETS

TO THE HONORABLE ENERGY BUREAU:

COMES NOW, the **PUERTO RICO SOLAR ENERGY INDUSTRIES ASSOCIATION CORP. DBA SOLAR AND ENERGY STORAGE ASSOCIATION OF PUERTO RICO** ("SESA"), represented by the undersigned legal counsel and respectfully states as follows:

1. On March 22, 2024, LUMA Energy ServCo, LLC and Luma Energy, LLC ("LUMA") published on its website a document titled "Smart Inverter Settings Sheets – Technical Bulletin"[1] ("March 22 Technical Bulletin"). LUMA stated that the March 22 Technical Bulletin would become effective on April 1, 2024, despite not being reviewed, much less approved by the Puerto Rico Energy Bureau ("Energy Bureau" or "PREB"). LUMA later removed the March 22 Technical Bulletin from the website.

2. On April 1, 2024, LUMA published another document titled "Smart Inverter Settings Sheets – Technical Bulletin"[2], (hereinafter, "April 1 Technical Bulletin"). While the April 1 Technical Bulletin was slightly different from the March 22 Technical Bulletin, the most significant change was its effective date, which according to LUMA would be June 1, 2024. This publication also occurred without the Energy Bureau having reviewed or approved the document.

3. On April 15, 2024 the Energy Bureau issued a Resolution and Order ("April 15 R&O") indicating there would be a Technical Conference on May 16, 2024 "to discuss…the measures proposed by LUMA, in the MTR or the Bulletin, to reduce or manage the operational challenges of the high penetration of DGs and avoid or postpone having to make improvements

[1] This document is already part of the record in this proceeding.
[2] This document is already part of the record in this proceeding.

in the distribution network."[3]

4. On May 13, 2024, the Energy Bureau issued a Resolution and Order ("May 13 R&O") determining that the Technical Conference was going to be postponed to June 18, 2024 after LUMA indicated Mr. Babak Enayati was not going to be available on May 16, 2024[4].

5. On June 18, 2024, the Energy Bureau held the Technical Conference ("June 18 Stakeholder Workshop") at which the issues associated with the adoption of Smart Inverter Settings were discussed.

6. On June 28, 2024, the Energy Bureau issued a Resolution and Order ("June 18 R&O") addressing the June 18 Stakeholder Workshop. The Resolution acknowledged the robust participation of various stakeholders, including SESA, LUMA, and other relevant entities. The Resolution and Order granted stakeholders a ten-business-day period to submit detailed comments on the specific functions and certification requirements of smart inverters. Furthermore, the Resolution and Order provides that LUMA shall not mandate changes to Inverter Settings Profiles for new interconnections until further guidance is issued by the Energy Bureau.[5]

7. On September 13, 2024, LUMA filed with the Energy Bureau a motion titled "MOTION TO SUBMIT REVISED TECHNICAL BULLETIN REGARDING SMART INVERTER SETTINGS SHEETS ISSUED BY LUMA" ("September 13th Motion") in which it submitted as Exhibit 1 an updated version of LUMA's Technical Bulletin on Smart Inverter Settings Sheets ("Technical Bulletin"), relating to the compliance by distributed energy resources with the IEEE 1547-2018 standard for smart distributed energy resources settings, and informed that this updated Technical Bulletin took into consideration the comments and suggestions shared by stakeholders. In addition, LUMA submitted as Exhibit 2 to the September 13th Motion, a redline version of the updated Technical Bulletin showing the changes made to the previous version of the Technical Bulletin submitted to the Energy Bureau on June 21, 2024.

8. On September 17, 2024, LUMA filed a motion titled "MOTION TO SUBMIT REVISED TECHNICAL BULLETIN REGARDING SMART INVERTER SETTINGS SHEETS AND REQUEST TO SUBSTITUTE EXHIBITS 1 AND 2 SUBMITTED ON SEPTEMBER 13, 2024" ("September 17th filing") indicating that the version of the Technical Bulletin included in its

[3] See April 15 R&O, at page 2.
[4] See May 13 R&O, at page 1-2.
[5] See June 18 R&O, at page 2, Part III states: "The Energy Bureau **WILL** provide guidance about the adoption of the discussed smart inverter requirements after evaluating the stakeholder comments. LUMA **SHALL NOT** require modifications to Inverter Settings Profiles for new interconnections until the Energy Bureau provides further guidance."

September 13th Motion was not the final version due to an inadvertent omission of revisions addressing stakeholder comments. LUMA submitted a corrected Technical Bulletin as Exhibit 1 and a redline comparison as Exhibit 2, reflecting the intended changes. LUMA further requested that the Energy Bureau replace the original exhibits with the updated ones for their evaluation and proposed an effective date of October 17, 2024, for the revised Technical Bulletin.

9. With a couple of exceptions noted below, SESA expresses its strong support for the content of the Technical Bulletin included in LUMA's September 17th filing. These settings are essential for enhancing grid reliability and facilitating the integration of renewable energy resources, ensuring a more efficient and stable energy supply for all stakeholders involved.

10. Accordingly, SESA respectfully requests a series of minor but important modifications to the Technical Bulletin in LUMA's September 17th filing, which are attached to this filing as **Attachment 1**.

11. Therefore, SESA respectfully requests that the Honorable Energy Bureau issue a Resolution and Order establishing the requirements as presented in LUMA's September 17th filing, after making the modifications detailed in **Attachment 1**. Additionally, SESA urges the Honorable Energy Bureau to establish in its Resolution and Order that the Volt-Watt functionality rather than being "[d]eactivated for at least 6 months since deployment of this bulletin" as presented in the September 17th filing, shall be subject to a subsequent Resolution and Order issued by the Energy Bureau.

12. Without question, the Energy Bureau has the power and authority to "[r]eview and approve proposals to the interconnection regulations and minimum technical requirements (MTRs), additional technical requirements (ATRs), and any other type of requirement established for the interconnection of distributed generators and microgrids to the electric power grid, and oversee compliance therewith."[6] In addition, the Energy Bureau is empowered to grant any remedy regarding any regulatory or legal provision under its jurisdiction.[7]

13. Hence, SESA respectfully requests that to ensure the stability of the interconnection regime, the PREB should forcefully assert its jurisdiction over the approval of

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[6] *Puerto Rico Energy Transformation and RELIEF Act*, Act 57 of May 27, 2014, at sec. 6.3(w). 22 L.P.R.A. § 1054b.

[7] Id., Sec. 6.3(pp) (4) provides that the powers and duties of the Energy Bureau include the "Fil[ing] [of] any recourse, issue **orders**, and seek and grant any legal remedies that may be necessary **to enforce the provisions of this Act**, as well as its rules, regulations, orders, and determinations. For instance, among the actions and remedies that PREB may take and grant are the following… (4) To direct that all actions shall be taken in compliance with the provisions of this Act, the regulations of PREB, or any other legal provision whose interpretation and enforcement is under the jurisdiction of the Bureau" (emphasis provided). 22 L.P.R.A. § 1054b.

Smart Inverter Settings and require that any modifications will only be implemented following due process with stakeholder engagement and subject to the issuance of a further Resolution and Order.

14. Also, SESA has concerns regarding the October 17th implementation date outlined in the Technical Bulletin. Consequently, SESA respectfully requests that this date be reconsidered, as it does not allow sufficient time for the requested modifications in **Attachment 1**, the publication of the final version of the Technical Bulletin, and adequate training for companies to correctly implement the changes to the Smart Distributed Energy Resources Settings. In previous filings, SESA has advocated for an implementation timeline of at least three (3) months post-final regulatory approval from the Energy Bureau. However, given the circumstances at hand, SESA would support an implementation date of 30 days following the Energy Bureau's issuance of the Resolution and Order approving the Smart Inverter Settings, contingent upon the incorporation of SESA's proposed modifications into a revised final version of the Technical Bulletin.

15. Furthermore, SESA requests that the Honorable Energy Bureau facilitate regular meetings to discuss potential future changes to the Smart Inverter Settings Sheets following their initial approval. Recognizing the need for ongoing dialogue as LUMA, solar companies, and solar customers gain experience with this new technology, SESA proposes bi-annual meetings that include key stakeholders such as LUMA, OIPC, SESA, and other interested parties. These discussions should address critical issues impacting prosumers, including customer protections related to abnormal service voltage and the implications of Volt-Watt Activation on solar output and financial viability. Specifically, SESA seeks clarity on reporting procedures for voltage issues, acceptable levels of curtailment, and mechanisms for customer recourse in cases of financial harm due to excessive curtailment. This collaborative approach will ensure that the Smart Inverter Settings are effectively adapted to Puerto Rico's unique grid situation and benefit all stakeholders involved.

WHEREFORE, SESA respectfully requests that the Honorable Energy Bureau **take notice** of the aforementioned and issue a Resolution and Order determining that (a) the Technical Bulletin outlined in LUMA's September 17th filing is approved, contingent upon the incorporation of SESA's suggestions (**Attachment 1**) into a revised final version of the Technical Bulletin; (b) the activation of Volt-Watt functionality in the Technical Bulletin, as well as any other changes to Smart Inverter Settings Sheets, shall be subject to public input from

stakeholders and a subsequent Resolution and Order from the Energy Bureau; (c) the implementation date of the Technical Bulletin will be 30 days following the issuance of the aforementioned Resolution and Order; and (d) establishing a bi-annual meeting that includes key stakeholders such as LUMA, OIPC, SESA, and other interested parties to discuss potential changes to the Smart Inverter Setting Sheets and other critical issues impacting prosumers as described above.

Respectfully submitted, on September 26, 2024, in San Juan, Puerto Rico.

We hereby certify that we filed this motion using the electronic filing system of this Puerto Rico Energy Bureau and that copy of this motion was notified to Agustin.irrizary@upr.edu; javrua@sesapr.org; hrivera@jrsp.pr.gov; contratistas@jrsp.pr.gov; aconer.pr@gmail.com; john.jordan@nationalpfg.com; Lionel.santa@prepa.pr.gov; arivera@gmlex.net; mvalle@gmlex.net; laura.rozas@us.dlapiper.com; valeria.belvis@us.dlapiper.com; julian.angladapagan@us.dlapiper.com; pjcleanenergy@gmail.com; gcordero@crmjv.com; steven.rymsha@sunrun.com; jberdner@enphaseenergy.com; jalmodovar@enphaseenergy.com; markb@enphaseenergy.com; mrosenfeldt@enphaseenergy.com; gferrer@enphaseenergy.com; kkock@tesla.com; Andrew.cote@generac.com; john.jordan@nationalpfg.com.

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Attachment 1

CORRECTIONS TO LUMA SEPTEMBER 17TH VERSION OF THE TECHNICAL BULLETIN

1. On page 8 of the September 17th filing or page IV of the Technical Bulletin, the "Table Of Contents" has many items listed which are mis-named. Below is an exhaustive list of what needs to be updated in the Table of Contents:

What appears in LUMA's September 17th Filing:	**How it should appear:**
1.2 Control Modes	1.2 Smart Inverter Functions and Control Modes
Smart Inverter Function Settings	2. Smart Inverter Function and Control Mode Settings
2.1 Anti-Islanding Settings	2.1 Anti-Islanding
2.2 Voltage Settings	2.2 Response to Abnormal Voltage
2.2.2 Voltage Ride-Through Settings	2.2.2 Voltage Ride-Through
2.3 Frequency Settings	2.3 Response to Abnormal Frequency
2.3.2 Frequency Ride-Through Settings	2.3.2 Frequency Ride-Through
<< MISSING >>	2.6 Frequency Droop (Frequency-Watt)[1]
<< MISSING>>	2.7 Enter Service Settings
2.6 Ramp Rate Settings	2.8 Ramp Rate Settings
Table 1-1 – Minimum Requirements for Communication and Interface	Table 1-1 – List of eligible communication protocols
Table 2-7- Volt-Watt Settings – ACTIVATED	Table 2-7- Volt-Watt Settings - Deactivated
<< MISSING>>	Table 2-8- Frequency Droop Settings[2]
Table 2-8- Enter Service Settings	Table 2-9- Enter Service Settings

2. On page 14 of the September 17th filing or page 6 of the Technical Bulletin, "Table 2-6- Volt-Var Settings – ACTIVATED" needs an update to include missing Volt-Var settings to align with IEEE 1547-2018. Below the Vref parameter, include the following parameters, definitions, default values, and allowable range of setting:

Volt-Var Parameters	**Definitions**	**Default Values (% of nominal rating)**	**Allowable Range**	
			Minimum	**Maximum**
Autonomous Vref adjustment enable	Enable/disable autonomous Vref adjustment	Disabled	Disabled	Enabled

[1] See paragraph #5 of **Attachment 1**.
[2] See paragraph #5 of **Attachment 1**.

Vref adjustment time constant	Adjustment range for Vref time constant	300 s	300 s	5000 s

3. On page 16 of the September 17th filing or page 8 of the Technical Bulletin, the "Table 2-8- Enter Service Settings" is missing a header in the middle column. There should be a column header that says: "Default Setting".

Table 2-8- Enter Service Settings

Enter Service Criteria			Ranges of allowable settings
Permit Service		Enabled	Enabled/Disabled
Applicable voltage within range	Minimum value	≥ 0.88 p.u.	0.88 p.u. to 0.95 p.u.
	Maximum value	≤ 1.06 p.u	1.05 p.u. to 1.06 p.u.
Frequency within range	Minimum value	≥ 59.5 Hz	59 Hz to 59.9 Hz
	Maximum value	≤ 60.1 Hz	60.1 Hz to 61.0 Hz
Enter Service Delay		300 s	0 seconds to 600 seconds
Enter Service Randomized Delay		N/A	1 second to 1000 seconds
Enter Service Ramp Rate		50 s	1 second to 1000 seconds

4. On page 16 of the September 17th filing or page 8 of the Technical Bulletin, the highlighting in "Table 2-8- Enter Service Settings" on the letter s, where is says "300 s" and "50 s" should be removed.

5. On page 10 of the September 17th filing or page 2 of the Technical Bulletin, "Table 1-2- Smart Inverter Control Modes indicates all the applicable "Function/ Control Mode of Operation" ("Modes") for the Smart Distributed Energy Resources Settings ("DERs"). However, whereas all the Modes applicable for the DERs have a specific subsection containing its default settings, the "Frequency Droop (Frequency – Watt)" Mode does not have a subsection in the Technical Bulletin containing the applicable default settings for it. Consequently, there should be another subsection inserted, just after "Voltage-Active Power Control Mode Settings" and just before "Enter Service Settings", called "Frequency Droop Settings", and numbered accordingly[3]. In alignment with the default settings and settings range requirements found in Table 24 of IEEE 1547-2018, the content of this subsection should be the following

Freq-Watt Parameters	**Default Setting**	**Range of allowable settings**	
		Category I / Category II	**Category III**
dbOF, dbUF	0.036	0.017 – 1.0	0.017 – 1.0
kOF, kUF	0.05	0.03 – 0.05	0.02 – 0.05
Open Loop Response Time	5 s	1 seconds – 10 seconds	0.2 seconds –10 seconds

[3] As portrayed in paragraph #1 of **Attachment 1**.