

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

**IN RE:** PROJECT FOR HEWLETT-  
PACKARD INDUSTRIAL FACILITY

**CASE NO.:** NEPR-CT-2021-0004

**SUBJECT:** Certification as Third Party  
Microgrid

**RESOLUTION AND ORDER**

**I. Relevant Factual Background**

On November 12, 2022, the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") issued a Resolution and Order ("November 12 Resolution")<sup>1</sup> through which it certified Hewlett Packard Puerto Rico BV, LLC ("HP Puerto Rico") as an Electric Service Company pursuant to Regulation 8701,<sup>2</sup> subject to the conditions detailed in Part III.A of the November 12 Resolution ("Certification Conditions"). The Energy Bureau granted HP Puerto Rico twenty (20) days from the notification of the November 12 Resolution to submit the information required by Certification Conditions 1, 2, 3 and 5.

In the November 12 Resolution, the Energy Bureau also approved the registration of the CHP Plant<sup>3</sup> as a Third Party Microgrid, subject to filing documents and information required by Regulation 9028,<sup>4</sup> within twenty (20) days from the notification of the November 12 Resolution. Specifically, the Energy Bureau approved the CHP Plant, subject to the conditions established in Part III.B of the November 12 Resolution.

The Energy Bureau also granted authorization for HP Puerto Rico to operate the CHP Plant until December 31, 2022, subject to the filing of the documents described in Part III.C of the November 12 Resolution, and determined that: (i) the filing of such documents shall constitute authorization for HP Puerto Rico to immediately begin the operation of the CHP Plant with no additional action required from the Energy Bureau; (ii) the Energy Bureau will review the information provided by HP Puerto Rico and may require HP Puerto Rico to file any additional information the Energy Bureau deems necessary or convenient; and (iii) in the event of non-compliance or if the Energy Bureau determines that HP Puerto Rico fails to comply with the requirements in Regulation 9028, the Energy Bureau may, at its discretion, take any appropriate action to ensure the safety and reliability of the service provided to HP Caribe.<sup>5</sup>

Through the November 12 Resolution, the Energy Bureau also indicated that to continue operating the CHP Plant after December 31, 2022, HP Puerto Rico shall request prior authorization from the Energy Bureau, unless otherwise directed by the Energy Bureau through Resolution and/or Order.<sup>6</sup>

<sup>1</sup> The Energy Bureau discussed in more detail the instant case's procedural background in the November 12 Resolution.

<sup>2</sup> *Amendment to Regulation No. 8618 on Certification, Annual Fees, and Operational Plans for Electric Service Companies in Puerto Rico* ("Regulation 8701").

<sup>3</sup> Cogeneration plant developed by HP Puerto Rico to supply electric power to its affiliate, Hewlett Packard Caribe BV, LLC ("HP Caribe") (the "CHP Plant").

<sup>4</sup> *Regulation on Microgrid Development* ("Regulation 9028").

<sup>5</sup> November 12 Resolution, p. 17.

<sup>6</sup> November 12 Resolution, p. 17.



On December 2, 2022, HP Puerto Rico filed a letter ("December 2 Letter") and attached thereto: (i) an amended Request for Certification, (ii) an amended Operational Report, including confirmation of the wire transfer corresponding to the applicable \$800 filing fee, and (iii) the Microgrid Application. HP Puerto Rico requested an extension of time to provide the requested Engineer's Certification until December 31, 2022.

On December 5, 2022, HP Puerto Rico filed a document titled *Exhibits to Microgrid Application* ("December 5 Documents") which includes Agreements, Plans and Drawings, Tables, Technical Specifications, Technical Instructions, among others.

On December 23, 2022, HP Puerto Rico filed a letter ("December 23 Letter") through which it attached the Engineer's Certification and the CHP Plant's "as-built" design, signed and stamped by a Puerto Rico-licensed engineer, as requested through the November 12 Resolution.

On December 30, 2022, the Energy Bureau issued a Resolution and Order ("December 30 Resolution") through which, upon reviewing the documents submitted by HP Puerto Rico, it certified HP Puerto Rico as an Electric Service Company, subject to these conditions: (i) HP Puerto Rico must submit its amended Operational Report to the Energy Public Policy Program of the Department of Economic Development and Commerce ("DEDC") for review and comments and provide evidence of such submittal to the Energy Bureau; and (ii) HP Puerto Rico must submit any comments the DEDC's comments on its amended Operational Report to the Energy Bureau. The Energy Bureau granted HP Puerto Rico seven (7) business days to submit the evidence of the referral of the amended Operational Report to the DEDC and ordered HP Puerto Rico to submit the DEDC's comments right after that. Through the December 30 Resolution, the Energy Bureau also determined that the conditional approval of the CHP Plant as a Third-Party Microgrid remained unaltered, unless otherwise directed by the Energy Bureau through Resolution and Order.

The Energy Bureau extended, *motu proprio*, the conditional authorization for HP Puerto Rico to operate the CHP Plant, until March 31, 2023, subject to evaluating the documents filed through the December 2 Letter and December 5 Documents for the "Certification of the Third Party Microgrid," unless otherwise directed by the Energy Bureau through Resolution and Order.

On December 30, 2022, HP Puerto Rico filed a letter ("December 30 Letter") through which it stated that it attached evidence of the referral of the amended Operational Report to the Energy Public Policy Program of the DEDC, and that it had received no comments from the Energy Public Policy Program.

## II. Analysis

### A. Documents Submitted by HP Puerto Rico for the Certification of the CHP Plan as a Third Party Microgrid

As summarized above, through the November 12 Resolution, the Energy Bureau stated that it required multiple documents to certify the CHP Plant as a Third Party Microgrid, pursuant to Regulation 9028. Through the December 2 Letter, HP Puerto Rico filed: (i) Form NEPR-D01 (Microgrid Registration Form), and (ii) Form NEPR-Z01 (Complementary Sheet), in connection thereto (collectively, "Request for Registration"). Through the December 5 Documents, HP Puerto Rico submitted these documents as Exhibits A through H to the Request for Registration:

**Exhibit A.** *Operation and Maintenance Agreement* by and between Hewlett-Packard Puerto Rico, BV (*i.e.*, HP Puerto Rico), as Owner, and Accurate Solutions Corp. ("Accurate"), as Operator, dated as of November 19, 2021 (the "CHP Plant OMA").

**Exhibit B.** Description of the CHP Plant with electrical and structural plans attached thereto.



- Exhibit C.** Statement regarding HP Puerto Rico's payment of the applicable fee in connection with its Request for Registration.
- Exhibit D.** *Civil Improvements Plans* in connection with *New Combined Heat & Power (CHP) Cogeneration System at Hewlett Packard Aguadilla*.
- Exhibit E.** *List of System Resources*.
- Exhibit F.** *Civil Improvements Plans* in connection with *New Combined Heat & Power (CHP) Cogeneration System at Hewlett Packard Aguadilla*.
- Exhibit G.** *Energy Services and Power Purchase Agreement* by and between Hewlett-Packard Puerto Rico, BV LLC (*i.e.*, HP Puerto Rico) and Hewlett-Packard Caribe, BV LLC (*i.e.*, HP Caribe), dated as of May 21, 2021 ("PPOA").
- Exhibit H.** Statement regarding Articles 3 and 4 of the PPOA.

Upon reviewing the documents filed by HP Puerto Rico, through this Resolution and Order the Energy Bureau issues a determination regarding HP Puerto Rico's request for certification of the CHP Plant as a Third Party Microgrid.

1. *Contact Information*

(i) *Microgrid Owner*

In its Request for Registration, HP Puerto Rico informed the Energy Bureau it is the owner of the CHP Plant, and provided its physical address, mailing address, email, and telephone number. Therefore, HP Puerto Rico complied with Section 5.03(A)(1) of Regulation 9028.

(ii) *Microgrid Operator*

In its Request for Registration, HP Puerto Rico informed that, pursuant to the CHP Plant OMA, Accurate is responsible for the operation and maintenance of the CHP Plant. However, as stated in Part II.C(3) of the November 12 Resolution and reiterated herein, the Energy Bureau considers that HP Puerto Rico will serve as the sole owner and Microgrid Operator, as defined in Regulation 9028 since Accurate will perform limited technical functions in relation to the CHP Plant and will not be responsible for all the functions described in Section 1.08(B)(21) of Regulation 9028. Given the foregoing, the Energy Bureau determines that HP Puerto Rico complied with Section 5.03(A)(2) of Regulation 9028 since it provided the required contact information.

2. *Operational Structure*

In its Request for Registration HP Puerto Rico identifies the CHP Plant as a Third Party Microgrid, pursuant to Section 5.03(B) of Regulation 9028, and as determined by the Energy Bureau in the November 12 Resolution.

3. *Location of the CHP Plant*

Through Exhibit D to the Request of Registration, HP Puerto Rico provided a set of plans (8 sheets) that inform that the CHP Plant is in the Municipality of Aguadilla, Puerto Rico. Exhibit D also shows the geographical boundaries of the CHP Plant. Therefore, HP Puerto Rico complied with Section 5.03(C) of Regulation 9028.

4. *Number of Customers*

The Request for Registration specifies that the Third Party Microgrid (*i.e.*, the CHP Plant) will only serve one (1) customer, thus complying with Section 5.03(D) of Regulation



9028. HP Puerto Rico informed the Energy Bureau that its sole customer would be HP Caribe.

5. *Type of Generation and Compliance with Sections 3.03(B) and 3.04(B)(1) of Regulation 9028*

In the Request for Registration the CHP Plant is described as a Combined Heat-and-Power Microgrid consisting of, (i) two Jenbacher, Model JMS 612 GS-N.L cogeneration units ("Cogen Units") using liquified natural gas ("LNG") as fuel, (ii) two absorption chillers ("Absorption Chillers"), and (iii) an energy storage system used for spinning reserve and to manage the load fluctuations while the Cogen Units operate at a stable base load setting.<sup>7</sup> HP Puerto Rico states that the CHP Plant is an integrated/functional system, including heat recovery units, chiller units, energy storage system, fuel tanks and associated buildings and equipment.<sup>8</sup> Notably, HP Puerto Rico describes, (i) the generation and heat-recovery equipment to be installed, (ii) the use of thermal energy, (iii) the heat flow plan showing fuel input, electric generation, and the useful thermal energy output and consumption for typical operating conditions.<sup>9</sup>

The energy input to each Cogen Unit, while operating at 100% capacity, is 15,440 MBTU/hr which is equivalent to 4,525 kWh<sup>10</sup>, and an electric power output of 1,975 kW.<sup>11</sup> Each Cogen Unit has an associated absorption chiller rated at 568 tons producing chilled water. The chillers use the thermal energy output from the Cogen Unit as well as heat recovered from the exhaust. of chilled water. The total thermal energy usage of each absorption chiller is 6,814 MBtu/hr which is equivalent to 1,997 kWh.<sup>12</sup> In addition, 620<sup>13</sup> MBTU/hr (equivalent to 182kW) of rejected heat is recovered in the second stage intercooler circuit of each Cogen Unit and used to vaporize the LNG fuel to feed each Cogen Unit. Given the foregoing, the total useful thermal output of the CHP Plant is the sum of the thermal output used by each Absorption Chiller and the thermal output used to vaporize the LNG feed to each Cogen Unit, that is: 1997 kW + 182 kW = 2,179 Kw.

Section 3.03(B)(1) of Regulation 9028 requires that the useful thermal energy output of the CHP Microgrids is no less than fifty percent (50%) of the total energy output. In the instant case -based on one-hour of operation- the electrical energy output is 1,975 kWh and the useful thermal energy output is 2,179 kWh. Therefore, the total energy produced by the system is equal to 2,179 kWh + 1,975 kWh = 4,174 kWh. The percentage of useful thermal energy produced by the system in relation to the total of energy is equal to:

$$\% = \frac{2,179 \text{ kWh}}{2,179 \text{ kWh} + 1,975 \text{ kWh}} \times 100 = \frac{2,179 \text{ kWh}}{4,174 \text{ kWh}} \times 100 = 52.2\%$$

The CHP Plant meets the requirements of Section 3.03(B)(1) of Regulation 9028.

Additionally, per Section 3.03(B)(2) of Regulation 9028, during the Microgrid's first 12-month period beginning with the date it first produces electric energy and each 12-

<sup>7</sup> Exhibit B to the Request for Registration.

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> Exhibit F (*Technical Description Cogeneration Unit JMS 612 GS-N.L., 0.01 Technical Data (at module)*) which in turn is included in the Exhibit A to the Request for Registration. Note that 1 kWh ≈ 3,412 BTU/hr.

<sup>11</sup> *Id.*

<sup>12</sup> Exhibit A (*CHP Plant's Specifications*) to the letter submitted by HP Puerto Rico in the instant case on September 27, 2022, specifically, *Technical Specifications* included in *Techno-Commercial Proposal for Thermax Direct Exhaust & Jacket HW Driven Multi-Energy Chiller for Cogen with Recip.-Engine Genset*.

<sup>13</sup> Exhibit F (*Technical Description Cogeneration Unit JMS 612 GS-N.L., 0.01 Technical Data (at module)*) which in turn is included in the Exhibit A to the Request for Registration.



month period thereafter, its fuel input minus the useful thermal energy output, shall be no more than 7,000 BTU per kWh of generator output.

Each of the Cogen Units-based on one-hour of operation- has a fuel input equivalent to 4,525 kWh and a nominal capacity of 1,975 kWh. The useful thermal energy is 2,179 kWh, therefore, the input energy (based on fuel consumption) minus the useful thermal energy is equal to 4,525 kWh - 2,179 kWh = 2,346 kWh. Each of the Cogen Units' generation, in terms of BTU per kWh is equal to:

$$\text{Prod Gen} = \frac{2,346 \text{ kWh}}{1,975 \text{ kWh}} \times 3,412 \text{ BTU/kWh}$$

$$\text{Prod Gen} = 4,053 \text{ BTU/kWh} < 7,000 \text{ BTU/kWh}$$

Therefore, the CHP Plant meets the requirements of Section 3.03(B)(2) of Regulation 9028. The information submitted by HP Puerto Rico complies with the filing requirements of Section 3.04(B)(1) of Regulation 9028

#### 6. System Resources

Through Exhibit E to the Request for Registration HP Puerto Rico described the CHP Plant which is very similar to the one provided through the May 11 Letter (as identified in the November 12 Resolution) and submitted technical specifications of units and equipment to be used as part of the CHP Plant. However, HP Puerto Rico did not specify the exact energy storage system it will utilize (*i.e.*, Dynapower CPS-1500 or CPS-3000). Nonetheless, as part of the plans attached as Exhibit B to its Request for Registration, HP Puerto Rico included sheet no. E-600, which shows that the energy storage system that forms part of the CHP Plant has a battery power rating of 2 MW and a battery energy capacity of 1 MWh. This confirms that the energy storage system to be used is the Dynapower CPS-3000. Therefore, the CHP Plant Complies with Section 5.03(F) of Regulation 9028.

#### 7. Equipment Vendor

In its Request for Registration, HP Puerto Rico specified that its equipment vendor is Accurate, and provided its email. Therefore, HP Puerto Rico complied with Section 5.03(G) of Regulation 9028.

#### 8. Certification of Design

As Exhibit F to its request for Certification, HP Puerto Rico submitted a series of plans (13 sheets) that show the CHP Plant's design. The plans signed by their designer, as well as signed and stamped by a licensed engineer. Such filing satisfies the requirements of Section 5.03(H) of Regulation 9028.

#### 9. Sample Documents

As Exhibit G to its Request for Registration, HP Puerto Rico submitted a copy of the PPOA for the Energy Bureau's review and approval. Such filing complies with Section 5.03(I)(1) of Regulation 9028. Articles 3 and 4 of the PPOA specify how HP Puerto Rico will bill HP Caribe for the sale of energy produced by the CHP Plant, which satisfies the requirement of Section 5.03(b) of Regulation 9028.

#### 10. Billing Model

In its Request for Registration, HP Puerto Rico refers to Exhibit G thereto (*i.e.*, the PPOA) as the document that shows the billing model applicable to the sale of energy produced by the CHP Plant. Article 3 of the PPOA shows that HP Caribe will pay HP Puerto Rico in a per-kWh basis, which is the billing model required by Section 5.03(J) of Regulation 9028. Therefore, HP Puerto Rico met the requirements of Section 5.03(J).



## 11. Proposed Rate Structure

Exhibit H to the Request for Registration states that Articles 3 and 4 of the PPOA show the proposed rate structure applicable to the sale of energy produced by the CHP Plant. Considering that HP Puerto Rico's sole customer will be HP Caribe, Section 5.04(A) of Regulation 9028 are not applicable. As for Section 5.04(B), Articles 3 and 4 of the PPOA provide detailed information regarding how the Energy Fee (as defined) will be calculated. Such provisions also specify how HP Puerto Rico will invoice HP Caribe for the provision of electrical energy produced by the CHP Plant. Upon reviewing the provisions, the Energy Bureau deems that HP Puerto Rico complied with Section 5.04 of Regulation 9028.

### B. HP Puerto Rico's Request for Exemptions

In its Request for Registration, HP Puerto Rico also requests the Energy Bureau to exempt it from certain provisions of Regulation 9028, pursuant to Article 7 thereof. Below are the provisions of Regulation 9028 for which HP Puerto Rico seeks exemption, and the arguments set forth.

#### 1. Section 5.07 (Bill Objections and Suspension of Services)

HP Puerto Rico argues that the requirements of Section 5.07 of Regulation 9028 should not apply, since it has entered into the PPA with its affiliate and only customer, HP Caribe, and such agreement was executed after an arms-length negotiation between the parties where they agreed on a procedure for electric bill objections and suspension of service.

Upon reviewing the documents submitted by HP Puerto Rico in the instant case, the Energy Bureau **DETERMINES** that HP Puerto Rico complies with Section 5.07 of Regulation 9028, since Articles 3 and 4 of the PPA satisfy the requirements.

#### 2. Section 5.08 (Complaint Procedure)

HP Puerto Rico argues that the requirements of Section 5.08 of Regulation 9028 should not apply, since it has entered into the PPA with its affiliate and only customer, HP Caribe, and such agreement was executed after an arms-length negotiation between the parties where they agreed on a procedure for the settlement of disputes.

Upon reviewing the documents submitted by HP Puerto Rico in the instant case, the Energy Bureau **DETERMINES** that to the extent that HP Puerto Rico's sole customer of electrical energy produced by the CHP Plant is HP Caribe, HP Puerto Rico **shall be exempt** from Section 5.08 of Regulation 9028.

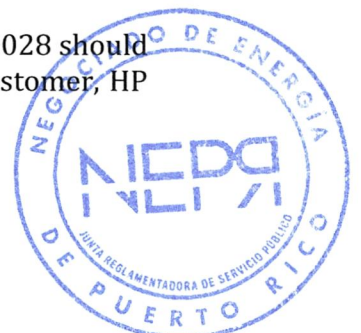
#### 3. Sections 5.09 (Standard Contract) and 5.11 (Contract Length and Exit Requirements)

HP Puerto Rico argues that the requirements of Sections 5.09 and 5.11 of Regulation 9028 should not apply as HP Puerto Rico has entered the PPA with its affiliate and only customer, HP Caribe, which the Energy Bureau has reviewed and commented on. Also, because it is not HP Puerto Rico's intention to engage any other customers in its project.

Upon reviewing the documents submitted by HP Puerto Rico in the instant case, the Energy Bureau **DETERMINES** that HP Puerto Rico complies with Section 5.09 of Regulation 9028, since the PPA satisfies the applicable requirements. Also, Articles 7, 8, 9 and 11 of the PPA comply with the requirements in Section 5.11 of Regulation 9028.

#### 4. Section 5.10 (Non-Discrimination)

HP Puerto Rico argues that the requirements of Section 5.10 of Regulation 9028 should not apply because it has entered into the PPA with its affiliate and only customer, HP



Caribe. Also, because it is not HP Puerto Rico's intention to engage any other customers in its project, other than HP Caribe.

Upon evaluation of HP Puerto Rico's arguments, the Energy Bureau **DETERMINES** that, to the extent that HP Puerto Rico's sole customer of electrical energy produced by the CHP Plant is HP Caribe, HP Puerto Rico **shall be exempt** from Section 5.10 of Regulation 9028.

5. *Section 5.12 (Reporting)*

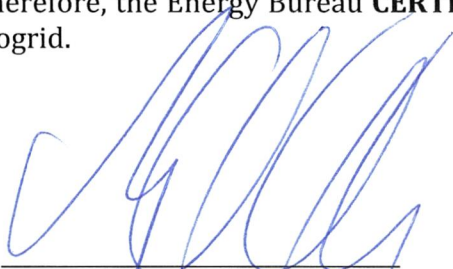
HP Puerto Rico argues that the requirements of Section 5.12 of Regulation 9028 should not apply, as HP Puerto Rico will file with the Energy Bureau the operational reports in Regulation 8701, for electric service companies every three (3) years as ordered by the Energy Bureau pursuant to the November 12 Resolution. HP Puerto Rico states that such electric service company operational report will include the information requested under Section 5.12 of Regulation 9028 and should be sufficient for the Energy Bureau's periodic evaluation of HP Puerto Rico's operations. The project's atypical structure should not require the same level of regulation as for other Third Party Microgrids.

Upon evaluation of HP Puerto Rico's arguments, the Energy Bureau **DETERMINES** that HP Puerto Rico **shall not be exempt** from Section 5.12 of Regulation 9028.


III. **Conclusion**

For all the foregoing reasons, the Energy Bureau **DETERMINES** that the CHP Plant complies with the requirements established in Regulation 9028 for the registration of Third Party Microgrids.<sup>14</sup> Therefore, the Energy Bureau **CERTIFIES** the CHP Plant as a Registered Third Party Microgrid.


Be it notified and published.

  
Edison Avilés Deliz  
Chairman

  
Lillian Mateo Santos  
Associate Commissioner

  
Ferdinand A. Ramos Soegaard  
Associate Commissioner

  
Sylvia B. Ugarte Araujo  
Associate Commissioner

  
Antonio Torres Miranda  
Associate Commissioner



<sup>14</sup> Through the December 2 Letter and the December 5 Documents, HP Puerto Rico submitted a series of documents that pertain to its certification as a Third Party Microgrid. The Energy Bureau notes that such filings lacked sufficient explanations regarding HP Puerto Rico's compliance with certain requirements of Regulation 9028. Notably HP Puerto Rico's explanation regarding compliance with Sections 3.03(B) and 3.04(B)(1) of Regulation 9028 was lacking. Nevertheless, upon the evaluation of all the documents in the record, the Energy Bureau was able to determine compliance with the applicable requirements.

**CERTIFICATION**

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on March 31, 2023. I also certify that on March 31, 2023 a copy of this Resolution and Order was notified by electronic mail to the following: mfernandez@pmalaw.com and ecruz@pmalaw.com. I also certify that today, March 31, 2023, I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today March 31, 2023.

  
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Sonia Seda Gaztambide  
Clerk

