

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

**NEPR**

**Received:**

**Jul 9, 2021**

**12:20 PM**

**IN RE: THE UNBUNDLING OF THE  
ASSETS  
OF THE PUERTO RICO ELECTRIC POWER  
AUTHORITY**

**CASE NO.: NEPR-AP-2018-0004**

**SUBJECT: INDEPENDENT  
CONSUMER PROTECTION  
OFFICE'S WRITTEN TESTIMONY**

Direct Testimony of

**GERARDO COSME NÚÑEZ, PE, CPI**

Independent Consumer Protection Office ("ICPO")  
June 30, 2021

## TABLE OF CONTENTS

I.	INTRODUCTION.....	1 - 4
	A. WITNESS IDENTIFICATION	
	B. SUMMARY OF DIRECT TESTIMONY	
II.	SWORN STATEMENT.....	5
III.	CERTIFICATION OF FILING AND SERVICE.....	6

1 I. INTRODUCTION

2  
3 A. WITNESS IDENTIFICATION

4  
5 Q. Please state your name, title, employer and business address.

6  
7 A. My name is Gerardo Cosme Núñez, professional engineer, and engineering  
8 consultant with business address in Dorado, Puerto Rico.  
9

10 Q. For the record, could you mention some of your educational and professional  
11 qualifications, experience and certifications?  
12

13 A. I am a professional engineer with 29 years of experience in the energy industry. I  
14 have provided services in regulatory, technical and practical matters, both locally  
15 and internationally. I also worked as a consultant on energy matters for the  
16 Energy Affairs Administration currently known as the Puerto Rico Energy Public  
17 Policy Program (PPPO). I am an active member of various associations such as  
18 the Puerto Rico Chamber of Commerce and the Puerto Rico Association of  
19 Engineers and Land Surveyors. Currently, I offer technical consultant services on  
20 such matters to the Independent Consumer Protection Office ("ICPO").  
21

22 Q. On whose behalf are you testifying before the Puerto Rico Energy Bureau  
23 ("PREB")?  
24

25 A. I appear and testify on behalf of the ICPO.  
26

27 Q. Have you previously provided testimony before the Energy Bureau?  
28

29 A. Yes.  
30

31 Q. What is the objective of your testimony?  
32

33 A. As established in Act 57-2014, known as *Puerto Rico Energy Transformation and*  
34 *RELIEF Act*, as amended, the ICPO has the duty, among others, to defend and  
35 advocate for the interests of customers in all matters brought before the Energy  
36 Bureau, with regard to the quality of the electric power service, resource  
37 planning, public policy, and any other matter of interest for customers.  
38

39 Q. What documents or references were used to prepare your testimony?  
40

41 A. Guidehouse documents dated on May 10, 2021, entitled *2021 Cost of Service Study,*  
42 *Proposals for Unbundled Tariffs Report and Proposal for Uniform Services Agreement*  
43 *Report*; First, Second and Third Requirement of Information served by the Puerto

1 Rico Energy Bureau to LUMA and its respective answers filed by LUMA; and  
2 LUMA's ICPO ROI responses from June 21, 2021.  
3  
4

5 **Q. On what issue or subject would you be testifying?**  
6

7 A. Generally speaking, my testimony addresses concerns regarding specific issues  
8 of unbundled tariffs that may affect ratepayers or consumers.  
9

10  
11 **B. SUMMARY OF DIRECT TESTIMONY**  
12

13 **Q. What specific concern or issues you will address?**  
14

15 A. Wheeling agreements under current Puerto Rico electric system conditions and  
16 impact of ancillary services, and renewable energy on marginal cost study to  
17 develop unbundled tariffs.  
18

19 **Q. What is your concern regarding wheeling agreements under current electric  
20 system conditions?**  
21

22 A. Present conditions of the Puerto Rico electrical grid and PREPA's generation fleet  
23 may not be suitable to host or implement wheeling agreements with Retail  
24 Energy Suppliers. Therefore, I recommend feasibility studies or evaluations to  
25 be done on minimum grid and generation requirements that need to be in place  
26 before commencement of wheeling agreements. These studies or evaluations can  
27 be done similar to the ones currently being done to allocate and host distributed  
28 renewable energy resources. This will ensure a sustainable open market of RES  
29 in Puerto Rico that will benefit wheeling customers and present no harm to non-  
30 wheeling customers as well.  
31

32 **Q. What is your argument for this asseveration?**  
33

34 A. Although Puerto Rico has no experience in the wheeling market, there has been  
35 some related experience in the wholesale market with two fossil fueled facilities  
36 and more recently with solar, wind, and gas recovery projects at utility scale.  
37 However, these projects operate under PPOA's with PREPA to dispatch or resell  
38 this power to PREPA's customers under PREPA control.  
39

40 Technically speaking, wheeling transactions are more complex operations than  
41 our current PPOA experience offers, since the purpose of these new wheeling  
42 generation facilities is to feed power to a specific customer or group of customers  
43 through a third party owned grid (PREPA), or in reality, to supply enough

1 power to the grid, to be accounted for at their customer's end, while keeping grid  
2 stability balance on the supplier side. Energy and capacity tracking for billing  
3 purposes is complex as well. It requires reliable metering of both sides, supplier  
4 and customer, and takes into account that metering and billing operation, as well  
5 as many other factors related to generation and grid conditions such as line  
6 losses, line congestion, time of operation, energy generation mix, among others.

7  
8 Currently, PREPA's and LUMA's operation runs in "emergency mode", as per  
9 PREPA's management acknowledgment in past instances, due to their limited  
10 generation fleet made up largely of aged and under maintained units. This  
11 makes the concept of peaking or non-peaking units a fuzzy one, because the  
12 majority of the generation units are considered "must run units" under this  
13 scenario. New generation coming either from the utility or RES will help to  
14 overcome this situation, but must be under a smarter grid management, capable  
15 of keeping reliable metering and control of the Island-wide electrical network, as  
16 well of the billing and customer service.

17  
18 The process of developing unbundled tariffs based on marginal cost of service is  
19 fundamental to develop wheeling tariffs. This study may also be useful to review  
20 the current Load Retention Rider and Net Metering Program, as well on the  
21 development of Energy Efficiency Programs, Demand Response programs, and  
22 Renewable Energy Credits.

23  
24 All this can be done but including as a caveat that even the marginal cost study  
25 being evaluated as part of the development of unbundled tariffs has to be  
26 reviewed with more reliable information as it becomes available in the near  
27 future, as stated by Guidehouse itself in their reports. It is clear that the use of  
28 unreliable data in studies or calculations will bring unreliable results as well.

29  
30 Regarding this concern, we included in our ROI number 5 to PREPA or  
31 Guidehouse or LUMA the following request:

32  
33 *"Please explain, what provisions can be implemented in the model or process to*  
34 *avoid any unjust charge to wheeling or non-wheeling consumers due to any*  
35 *margin of error of Default Primary Unbundled Tariff or the proposed alternative*  
36 *unbundled tariff?"*

37  
38 The response given by Margot Everett, Director at Guidehouse was the  
39 following:

40  
41 *"A true-up mechanism that reconciles actual costs and revenues collected versus*  
42 *predicted is the best means to ensure limited cost shifting on average. By their*  
43 *nature, supply credits must be based on forecasted costs (marginal costs). But*

these costs, also by their nature, vary over the year given actual loads, operational conditions and actual fuel costs. Creating a true-up that socializes (e.g., shares) these variances across wheeling and non-wheeling customers provides for correction in the differences between actual and predicted. For this reason, Guidehouse and LUMA recommend a true-up mechanism as part of the unbundling structure.

Further, as data collection and management systems improve over the next few years, costs can be further unbundled and allocation of these unbundled costs to customer class can easily be accommodated. As noted in the reports, there are generation related costs that cannot be distinguished and unbundled at this time, namely ancillary services. Once those costs can be further defined and quantified, to include congestion, these costs can be further allocated more accurately, reducing the risk of wheeling customers shifting costs to non-wheeling customers. However, this requires a fairly sophisticated sector structure, which is not expected to go into effect in the next few years.

As noted above, over time, allocations will be refined with better data and allow for further distinction of not only ancillary services costs but also delivery costs. That is, with more granular customer and planning data, further distinctions on costs for secondary versus primary service can also be determined. Guidehouse expects that this may result in more costs being allocated to those customers classes that receive energy at the secondary level (e.g., residential and some small commercial). Rates will then subsequently increase for these customers while those customer classes that have been contributing to secondary costs without using the secondary system will see rate declines as cost allocations decline."

**Q. What impacts of ancillary services and renewable energy impacts on marginal cost study do you want to address?**

**A.** Regarding ancillary services, Guidehouse mentioned the following in their answer for ICPO's ROI Request number 5:

"As noted in the reports, there are generation related costs that cannot be distinguished and unbundled at this time, namely ancillary services. Once those costs can be further defined and quantified, to include congestion, these costs can be further allocated more accurately, reducing the risk of wheeling customers shifting costs to non-wheeling customers. However, this requires a fairly sophisticated sector structure, which is not expected to go into effect in the next few years."

Ancillary services are precisely tasks performed by the utility with responsibility shared through each generation unit and the T&D system to maintain system stability by dealing with imbalances between supply and demand, and help the

1 system recover after a power system event. This is very important in these  
2 present days of "emergency mode" operation of our electric system. Therefore, I  
3 think that ancillary services costs should not be overlooked, especially with our  
4 current electric system conditions and during the transitional years from fossil  
5 fuel to renewable energy generation, since they may result in overlooked costs  
6 that could harm either wheeling or non-wheeling customers.

7  
8 Related to ancillary services, ICPO's ROI number 6 requested the following:  
9

10 *"Justify the Marginal Cost of Service Study result assumption that Distribution*  
11 *capacity costs are set to zero, when congestion is an actual concern due to existing*  
12 *nominal low voltage in the distribution lines and hosting capacity availability*  
13 *will be limited by an expected high increase in distributed energy generation if no*  
14 *capital investments is done. "*

15  
16 The response given by Margot Everett, Director at Guidehouse, was the  
17 following:  
18

19 *"While regional congestion points exist and may create locational driven*  
20 *marginal costs, the saving of a kWh of supply to the system may or not impact*  
21 *those costs and thus cannot be considered marginal from a system perspective.*  
22 *That is, if locational costs are used to quantify an overall marginal distribution*  
23 *cost, then customers who decrease load in areas that do not have congestion issues*  
24 *are given a credit that does not result in a savings to customers. In summary,*  
25 *distribution marginal costs are socialized (e.g. shared) across all distribution*  
26 *customers and regional costs are not unbundled and charged to those regional*  
27 *customers. Until locational pricing becomes the norm for distribution costs, the*  
28 *more conservative approach is to assume that a generic increase in load (kW) does*  
29 *not increase overall average distribution costs.*

30  
31 *It should be noted that locational pricing for distribution costs is in the*  
32 *experimental phase and no mainland utility currently charges different rates*  
33 *based on where the customer premise is located (note that some jurisdictions have*  
34 *different 'baseline quantities' for tiered rates based on location, but this is done to*  
35 *ensure customers living in areas with higher usage pay the same average rate per*  
36 *kWh as customers living in lower usage areas). To date, locational pricing is only*  
37 *implemented in the wholesale markets with locational marginal pricing*  
38 *frameworks for different system operators (e.g., PJM, CAISO, MISO) and are*  
39 *designed to create incentives to generators to place generation in locations*  
40 *favorable to congestion. LUMA, supported by Guidehouse, encourages PREB to*  
41 *consider locational pricing in the wholesale sector to capture these potential costs,*  
42 *particularly as ESPs build generation. This will ensure that these ESPs are*  
43 *encouraged to build generation where congestion is minimal or face the cost*

1 *differences related to where the generation is located versus where their customers*  
2 *load is situation on the grid."*

3  
4 As distributed renewable energy resources, along with energy storage, are  
5 integrated into the grid, as expected by many stakeholders, mainly the  
6 distribution system, and the transmission system to some extent, may require  
7 capital investment not due to an increase in load demand, but to enable RES to  
8 reach their customers, especially in a congested distribution system and the  
9 transmission system in some instances. If that investment is coming from federal  
10 recovery funds for resilience purposes, it may be written-off from the unbundled  
11 tariffs calculation by exception, but to reach the mandated RPS, those federal  
12 funds might not be enough and LUMA or PREPA might have to finance those  
13 capital investments.

14  
15 This will go along with Request number 4 of ICPO's ROI:

16  
17 *"Since the Provider of Last Resort (hereinafter, "POL") generation fleet will be*  
18 *replaced with renewable energy sources and Battery Energy Storage System, as*  
19 *mandated by the Renewable Standard Portfolio policy, how reliable is this*  
20 *Marginal Cost of Service methodology to determine future marginal cost of*  
21 *energy?"*

22  
23 The response given by Margot Everett, Director at Guidehouse, was the  
24 following:

25  
26 *"As the portfolio changes, the mix of allocation of FCA and PPCA would also*  
27 *adjust. Further once the data collection and management processes and systems*  
28 *for the generation fleet and related purchase power agreements improve, a forecast*  
29 *of actual marginal costs using the updated supply stack would also be impacted.*  
30 *For example, in certain hours, as renewable power increases as part of the POL's*  
31 *portfolio, these resources will displace plants that are currently being dispatched*  
32 *and result in different marginal costs in those hours. In general, as jurisdictions*  
33 *move from predominately fossil based generation to a large percentage of*  
34 *renewable power, the marginal energy costs in hours where renewables are*  
35 *operating decrease lower than the overall average energy price, and generation*  
36 *related costs tend to shift from variable to fixed costs that are related to the*  
37 *building of renewable generation capacity.*

38  
39 As mentioned above, the framework proposed for estimating Marginal Energy  
40 Costs (MECs), as outlined in the COS Study, allows for adjustments to the  
41 methodology for estimating MECs over time as data improve. This framework is  
42 also designed to ensure the reliability of MECs as the fleet transitions to more  
43 renewables. As more renewables are adopted, and presumably procured through  
44 PPAs, the supply stack will change as will the composition of the FCA and

1           PPCA. *This methodology accommodates that transition without the need for*  
2           *review of a new methodology, creating continuity over time and providing*  
3           *transparency to PREB regarding the changes in MEC due to increased renewable*  
4           *generation."*

5  
6   **Q.   Is there any other concern you may want to cover regarding unbundled tariffs?**

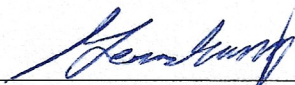
7  
8   **A.**   Yes. In order to make this unbundling tariff a comprehensive one that covers a  
9           future faced with up to 100 percent of renewables as our energy sources, self-  
10          generation by wheeling customers has to be addressed as part of the unbundled  
11          tariff as suggested by Guidehouse in their reports, since that scenario is very  
12          plausible for wheeling customer candidates such as Microgrids, Electric  
13          Cooperatives, Municipal Ventures, large scale Industrial and Commercial  
14          Consumers, Community Solar Developments and Demand Aggregators who  
15          have or will have self-generation, or whose customers may have self-generation  
16          under net metering or demand response programs.

17  
18   **Q.   Is this report firm and final?**

19  
20   **A.**   This testimony is neither firm nor final. We reserve the right to complement this  
21          testimony through a supplemental written testimony as merit or opportunity  
22          arises and the deliberative process allows it.

## II. SWORN STATEMENT

I GERARDO COSME NÚÑEZ of legal age, married and resident of Dorado, PR, affirm that the information here-transcribed represents my direct testimony as deponent in the subject case. I affirm that I will provide the responses described in the direct testimony if the questions are posed at the time of submission, and, that to my best knowledge and belief, theses expressions are true and correct.

  
Gerardo Cosme Núñez, PE, CPI

Affidavit Number: 8017

SWORN AND SUBSCRIBED before me by Gerardo Cosme Núñez, of the  
aforementioned personal circumstances, identified by  
LIC. 1417908. In San Juan, Puerto Rico, this 9 of July 2021.



*Luis G. Gonzalez Portalatin*  
NOTARY Public

### III. CERTIFICATION OF FILING AND SERVICE

I CERTIFY that on July 9, 2021 a copy of this Written Testimony was notified by electronic mail to: [kbolanos@diazvaz.law](mailto:kbolanos@diazvaz.law), [jmarrero@diazvaz.law](mailto:jmarrero@diazvaz.law),  
[margarita.mercado@us.dlapiper.com](mailto:margarita.mercado@us.dlapiper.com), [manuelgabrielfernandez@gmail.com](mailto:manuelgabrielfernandez@gmail.com),  
[ramonluisnieves@rlnlegal.com](mailto:ramonluisnieves@rlnlegal.com), [ccf@tcm.law](mailto:ccf@tcm.law).

ICPO  
✉ 268 Hato Rey Center,  
Suite 802  
San Juan, P.R. 00918  
☎ 787.523.6962

*s/Hannia B. Rivera Díaz*  
Hannia B. Rivera Díaz, Esq.  
Director  
[hrivera@jrsp.pr.gov](mailto:hrivera@jrsp.pr.gov)  
RUA 17,471