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

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	**CASE NO.:** NEPR-AP-2023-0003 **SUBJECT:** Informative Motion Regarding LUMA Exhibit 71

INFORMATIVE MOTION REGARDING LUMA EXHIBIT 71

TO THE HONORABLE PUERTO RICO ENERGY BUREAU, AND ITS HEARING EXAMINER, SCOTT HEMPLING:

COME NOW LUMA Energy, LLC and **LUMA Energy ServCo, LLC** (jointly, "LUMA"), and respectfully state and request the following:

1. On July 3, 2025, LUMA filed on behalf of itself, Genera PR LLC ("Genera"), and the Puerto Rico Electric Power Authority ("PREPA"), its *Motion Submitting Rate Review Petition,* an application for permanent rates and provisional rates. Therein, LUMA submitted a series of pre-filed testimonies in support of its rate review petition, amongst which was LUMA Exhibit 19, subscribed and sworn by expert witnesses Mr. Branko Terzic.[1]

2. On October 30, 2025, LUMA submitted the Surrebuttal Testimony of Mr. Branko Terzic, LUMA Exhibit 71, whose purpose was to address some issues and differences in opinion from portions of the answering testimonies of Dr. Ahmad Faruqui, Mr. E. Kyle Datta and Dr. Ramón J. Cao García all filed on September 8, 2025 in the captioned proceeding, on behalf of Solar United Neighbors ("SUN"), Solar and Energy Storage Association of Puerto Rico ("SESA"), and the Institute of Competitiveness and Economic Sustainability ("ICSE"), respectively.

[1] A revised version of LUMA Ex. 19 was filed on October 27, 2025. The extent of the revisions made to Mr. Terzic's testimony was limited to eliminating a reference to the Hearing Examiner's *Regulating Public Utility Performance* and adding a previously omitted reference to a Supreme Court decision. *See* Exhibit 1 to *LUMA's Informative Motion Regarding Revisions to Prefiled Testimony, Supporting Exhibits, and Relevant Schedules*. *Available* at https://energia.pr.gov/wp-content/uploads/sites/7/2025/10/20251027-AP20230003-LUMAs-Inf-Motion-Regarding-Revisions.pdf.

3. Pursuant to the agenda established by the Hearing Examiner for the evidentiary hearings, Mr. Terzic was slated to appear in the rate design panel originally scheduled for December 15 through 17, 2025.

4. Prior to commencement of the rate design panel, however, counsel for LUMA informed the Hearing Examiner that Mr. Terzic would be unable to appear as originally scheduled, due to health-related reasons.

5. In light of this, the Hearing Examiner requested a show of hands from the parties to ascertain who had an interest in cross-examining Mr. Terzic, noting that if Mr. Terzic were not available for cross-examination, his testimony would be stricken absent a stipulation to the contrary. SUN expressed an interest in cross-examining this witness. No other party informed that they sought to examine Mr. Terzic.

6. LUMA hereby informs that LUMA and SUN have reached an agreement to withdraw Questions 5-8 from LUMA Exhibit 71 (Mr. Terzic's Surrebuttal Testimony).[2] *See* Exhibit 1.[3]

7. In accordance with this stipulation, LUMA is hereby submitting an updated version of LUMA Exhibit 71, *see* Exhibit 3 of this Motion, and respectfully requests that the revised testimony be included in the evidentiary record on the basis of the LUMA's and SUN's stipulation.[4]

[2] Specifically, LUMA is withdrawing the portions of Mr. Terzic's Surrebuttal Testimony that refer to SUN's expert witness Dr. Ahmad Faruqui.

[3] LUMA notes that all parties were informed of this agreement, and no opposition has been received as of the date of filing this motion. *See* Exhibit 2.

[4] LUMA will work with the Accion Support Team to upload the revised version of Mr. Terzic's Surrebuttal Testimony onto the Accion Evidentiary Platform.

8. Moreover, and for the benefit of all stakeholders, LUMA is also including a redline reflecting the withdrawn portions of Mr. Terzic's Surrebuttal Testimony. *See* Exhibit 4.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; and **deem** the resubmitted version of Mr. Terzic's Surrebuttal Testimony as final.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 23rd day of December, 2025.

WE HEREBY CERTIFY that this Motion was filed using the electronic filing system of this Energy Bureau and that electronic copies of this Motion will be notified to Hearing Examiner, Scott Hempling, shempling@scotthemplinglaw.com; and to the attorneys of the parties of record. To wit, to the ***Puerto Rico Electric Power Authority***, through: Mirelis Valle-Cancel, mvalle@gmlex.net; Juan González, jgonzalez@gmlex.net; Alexis G. Rivera Medina, arivera@gmlex.net; Juan Martínez, jmartinez@gmlex.net; and Natalia Zayas Godoy, nzayas@gmlex.net; and to ***Genera PR, LLC***, through: Jorge Fernández-Reboredo, jfr@sbgblaw.com; Giuliano Vilanova-Feliberti, gvilanova@vvlawpr.com; Maraliz Vázquez-Marrero, mvazquez@vvlawpr.com; ratecase@genera-pr.com; regulatory@genera-pr.com; and legal@genera-pr.com; ***Co-counsel for Oficina Independiente de Protección al Consumidor***, hrivera@jrsp.pr.gov; contratistas@jrsp.pr.gov; pvazquez.oipc@avlawpr.com; ***Co-counsel for Instituto de Competitividad y Sustentabilidad Económica***, jpouroman@outlook.com; agraitfe@agraitlawpr.com; ***Co-counsel for National Public Finance Guarantee Corporation***, epo@amgprlaw.com; loliver@amgprlaw.com; acasellas@amgprlaw.com; matt.barr@weil.com; robert.berezin@weil.com; Gabriel.morgan@weil.com; Corey.Brady@weil.com; alexis.ramsey@weil.com; ***Co-counsel for GoldenTree Asset Management LP***, lramos@ramoscruzlegal.com; tlauria@whitecase.com; gkurtz@whitecase.com; ccolumbres@whitecase.com; iglassman@whitecase.com; tmacwright@whitecase.com; jcunningham@whitecase.com; mshepherd@whitecase.com; jgreen@whitecase.com; ***Co-counsel for Assured Guaranty, Inc.***, hburgos@cabprlaw.com; dperez@cabprlaw.com; mmcgill@gibsondunn.com; lshelfer@gibsondunn.com; howard.hawkins@cwt.com; mark.ellenberg@cwt.com; casey.servais@cwt.com; bill.natbony@cwt.com; thomas.curtin@cwt.com; ***Co-counsel for Syncora Guarantee, Inc.***, escalera@reichardescalera.com; arizmendis@reichardescalera.com; riverac@reichardescalera.com; susheelkirpalani@quinnemanuel.com; erickay@quinnemanuel.com; ***Co-counsel for the PREPA Ad Hoc Group***, dmonserrate@msglawpr.com; fgierbolini@msglawpr.com; rschell@msglawpr.com; eric.brunstad@dechert.com; Stephen.zide@dechert.com; david.herman@dechert.com; michael.doluisio@dechert.com; stuart.steinberg@dechert.com; ***Sistema de Retiro de los Empleados de la Autoridad de Energía Eléctrica,*** nancy@emmanuelli.law; rafael.ortiz.mendoza@gmail.com; rolando@emmanuelli.law; monica@emmanuelli.law; cristian@emmanuelli.law; lgnq2021@gmail.com; ***Official Committee of Unsecured Creditors of PREPA***, jcasillas@cstlawpr.com; jnieves@cstlawpr.com; ***Solar and Energy Storage Association of Puerto Rico,*** Cfl@mcvpr.com; apc@mcvpr.com; javrua@sesapr.org; mrios@arroyorioslaw.com; ccordero@arroyorioslaw.com; ***Wal-Mart Puerto Rico, Inc.,*** Cfl@mcvpr.com; apc@mcvpr.com***; Solar United Neighbors***, ramonluisnieves@rlnlegal.com; ***Mr. Victor González,*** victorluisgonzalez@yahoo.com; and kbailey@acciongroup.com.

DLA Piper (Puerto Rico) LLC
Calle de la Tanca #500, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9132 / 9103

/s/ Margarita Mercado Echegaray
Margarita Mercado Echegaray
TSPR Bar No. 16,266
Margarita.Mercado@us.dlapiper.com

/s/ Jan M. Albino López
Jan M. Albino López
TSPR Bar No. 22,891
Jan.Albinolopez@us.dlapiper.com

Exhibit 1

Exhibit 1

AlbinoLopez, Jan

From: Ramón Luis Nieves <ramonluisnieves@rlnlegal.com>
Sent: Thursday, December 18, 2025 2:22 PM
To: DelaRosa, Yahaira
Cc: Chambers, Andrea; Mercado, Margarita; AlbinoLopez, Jan; Solberg, Brett
Subject: Re: Branko Terzic and SUN

Follow Up Flag: Follow up
Flag Status: Flagged

Agreed.

Ramón Luis Nieves, Esq.

Attorney at Law & Notary Public

Ave. Hostos #430 (altos)

Urb. El Vedado

San Juan, PR 00918

Tel.: (787) 607-7093

Email: ramonluisnieves@rlnlegal.com

Sent from my iPhone

On Dec 18, 2025, at 2:14 PM, DelaRosa, Yahaira <Yahaira.DelaRosa@us.dlapiper.com> wrote:

Counsel,

If you agree, we can stipulate to withdraw questions 5 through 8 of Brank Terzi's surrebuttal testimony (LUMA Ex. 71) and file a revised version of said testimony. We would inform Mr. Hempling and the other parties.

Regards,

Yahaira De la Rosa Algarin
Of Counsel

T +1 787 945 9132
F +1 939 697 6102
M +1 787 209 6659
yahaira.delarosa@us.dlapiper.com

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<image001.png>

From: Ramón Luis Nieves <ramonluisnieves@rlnlegal.com>
Sent: Wednesday, December 17, 2025 12:22 PM
To: DelaRosa, Yahaira <Yahaira.DelaRosa@us.dlapiper.com>; Chambers, Andrea <Andrea.Chambers@us.dlapiper.com>
Subject: Branko Terzic and SUN

EXTERNAL MESSAGE

Dear counsel,

Branko Terzic filed Surrebuttal Testimony (LUMA Ex. 71). Solar United Neighbors looked forward to do cross examination on Mr. Terzic regarding questions 5-8 (referring to SUN's expert witness, Dr. Faruqui).

Cordially,

Ramón Luis Nieves, Esq.

Attorney at Law & Notary Public

<image003.jpg>

Ave. Hostos #430 (altos)

Urb. El Vedado

San Juan, PR 00918

Tel.: (787) 607-7093

Email: ramonluisnieves@rlnlegal.com

Exhibit 2

Exhibit 2

AlbinoLopez, Jan

From: DelaRosa, Yahaira
Sent: Thursday, December 18, 2025 2:33 PM
To: mvalle@gmlex.net; arivera@gmlex.net; jmartinez@gmlex.net; jgonzalez@gmlex.net; nzayas@gmlex.net; Gerard.Gil@ankura.com; Jorge.SanMiguel@ankura.com; Lucas.Porter@ankura.com; mdiconza@omm.com; golivera@omm.com; pfriedman@omm.com; msyassin@omm.com; msyassin@omm.com; Bolanos-Lugo, Katiuska; DelaRosa, Yahaira; Clarkin, Carolyn; regulatory@genera-pr.com; legal@genera-pr.com; mvazquez@vvlawpr.com; gvilanova@vvlawpr.com; ratecase@genera-pr.com; jfr@sbgblaw.com; hrivera@jrsp.pr.gov; gerardo_cosme@solartekpr.net; contratistas@jrsp.pr.gov; victorluisgonzalez@yahoo.com; Cfl@mcvpr.com; nancy@emmanuelli.law; jrinconlopez@guidehouse.com; Josh.Llamas@fticonsulting.com; Anu.Sen@fticonsulting.com; Ellen.Smith@fticonsulting.com; Intisarul.Islam@weil.com; alexis.ramsey@weil.com; kara.smith@weil.com; rafael.ortiz.mendoza@gmail.com; rolando@emmanuelli.law; monica@emmanuelli.law; cristian@emmanuelli.law; lgnq2021@gmail.com; Albanese, Rachel; varoon.sachdev@whitecase.com; javrua@sesapr.org; Ingerman, Brett; Solberg, Brett; agraitfe@agraitlawpr.com; jpouroman@outlook.com; epo@amgprlaw.com; loliver@amgprlaw.com; acasellas@amgprlaw.com; matt.barr@weil.com; Robert.berezin@weil.com; Gabriel.morgan@weil.com; corey.brady@weil.com; lramos@ramoscruzlegal.com; tlauria@whitecase.com; gkurtz@whitecase.com; ccolumbres@whitecase.com; isaac.glassman@whitecase.com; tmacwright@whitecase.com; jcunningham@whitecase.com; mshepherd@whitecase.com; jgreen@whitecase.com; hburgos@cabprlaw.com; dperez@cabprlaw.com; howard.hawkins@cwt.com; mark.ellenberg@cwt.com; casey.servais@cwt.com; bill.natbony@cwt.com; zack.schrieber@cwt.com; thomas.curtin@cwt.com; escalera@reichardescalera.com; riverac@reichardescalera.com; susheelkirpalani@quinnemanuel.com; erickay@quinnemanuel.com; dmonserrate@msglawpr.com; fgierbolini@msglawpr.com; rschell@msglawpr.com; eric.brunstad@dechert.com; Stephen.zide@dechert.com; David.herman@dechert.com; Isaac.Stevens@dechert.com; James.Moser@dechert.com; michael.doluisio@dechert.com; Kayla.Yoon@dechert.com; Julia@londoneconomics.com; Brian@londoneconomics.com; luke@londoneconomics.com; juan@londoneconomics.com; mmcgill@gibsondunn.com; LShelfer@gibsondunn.com; jcasillas@cstlawpr.com; jnieves@cstlawpr.com; pedrojimenez@paulhastings.com; ericstolze@paulhastings.com; arrivera@nuenergypr.com; apc@mcvpr.com; ramonluisnieves@rlnlegal.com; dbilloch@vvlawpr.com; 'shempling@scotthemplinglaw.com'; 'kbailey@acciongroup.com'
Cc: Mercado, Margarita; Chambers, Andrea; Solberg, Brett; AlbinoLopez, Jan; Azize, Ingrid
Subject: Branko Terzic's Testimony

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon,

As directed by the Hearing Examiner, we discussed the testimony of LUMA witness Mr. Branko Terzic with Counsel for the Solar United Neighbors, who was the only counsel to express an interest in cross-examining this witness. We have reached an agreement to withdraw Questions 5-8 from LUMA Ex. 71 (Branko Terzic's surrebuttal testimony).

We will file an updated version of the testimony tomorrow and request that it be included in the record based on this stipulation.

Cordially,

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Exhibit 3

Exhibit 3

LUMA Ex. 71

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

IN RE:	**CASE NO.:** NEPR-AP-2023-0003
PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	

Surrebuttal Testimony of

Branko Terzic
Expert Witness for LUMA Energy, LLC and LUMA Energy ServCo, LLC

December 19, 2025

Summary of Surrebuttal Testimony of BRANKO TERZIC ON BEHALF OF LUMA ENERGY LLC AND LUMA ENERGY SERVCO, LLC

Mr. Branko Terzic, who is an internationally recognized consultant in regulation and a former Commissioner of the Federal Energy Regulatory Commission and Wisconsin Public Service Commission, presents this Surrebuttal Testimony on behalf of LUMA Energy LLC and LUMA Energy ServCo, LLC (collectively, "LUMA"). The purpose of Mr. Terzic's Surrebuttal Testimony is to address some issues and differences in opinion from portions of the answering testimonies of Mr. E. Kyle Datta and Dr. Ramón J. Cao García, both filed on September 8, 2025 in Case No. NEPR-AP-2023-0003, *In Re: Puerto Rico Electric Power Authority Rate Review*, on behalf of Solar and Energy Storage Association of Puerto Rico ("SESA"), and the Institute of Competitiveness and Economic Sustainability ("ICSE"), respectively.

Responding to Mr. Datta, Mr. Terzic rejects the premise that "not using" a utility's energy service cannot create recoverable costs, clarifying the definition of "utility service" as the continuous obligation to stand ready with sufficient capacity, reserves, connection, metering, billing, and distribution infrastructure for every connected customer. Mr. Terzic explains that a customer receives utility service because the customer retains the right to demand instantaneous service at any time, which necessitates cost recovery through fixed charges, minimum bills, or demand charges. Mr. Terzic also disagrees with Mr. Datta's proposal to adapt Bonbright's principles to account for distributed energy resources by prioritizing their profitability or economics, and reiterates that a regulator's role is to set rates that recover the utility's prudent costs on a just and reasonable basis, not to assure or optimize the returns of customer-owned distributed energy resource investments.

Moreover, addressing Dr. Cao's assertion that PREPA faces a "death spiral" risk, Mr. Terzic argues that said claim is overstated and contingent on assumptions not present in Puerto Rico's context. Mr. Terzic notes that customer losses in U.S. utility history have not invariably led to collapse, and that, where demand falls, regulators can address unused assets through "used and useful" principles. Mr. Terzic further explains that increased rooftop photovoltaic ("PV") adoption does not create a death spiral so long as PV customers remain connected and retain the ability to place demand on PREPA's system. In Mr. Terzic's view, the central ratemaking issue is the legacy policy choice to load fixed costs into volumetric rates; that design now misaligns cost recovery when kWh sales decline. Mr. Terzic explains that appropriately calibrated fixed charges are a prudent response that mitigates, rather than accelerates, any purported "death spiral" dynamics.

Q.1 Please state your name, address, and occupation.

A. My name is Branko Terzic. I am an independent consultant in public utility regulation. My address is 1791 Brookside Lane, Vienna, Virginia 22182.

Q.2 On whose behalf are you testifying in these proceedings?

A. I am testifying on behalf of LUMA Energy LLC and LUMA Energy Servco LLC (jointly "LUMA").

Q.3 Have you filed testimony previously in these proceedings?

A. Yes, I filed testimony dated June 19, 2025 and a revised testimony dated October 21, 2025.

Q.4 What is the purpose of this testimony?

A. I would like to address some issues and differences in opinion from the testimony of E. Kyle Datta and Ramon J. Cao Garcia, both filed on September 8, 2025.

Q.5 Do you agree with E. Kyle Datta's opinion that "Not using a utility service cannot create recoverable costs?"[1]

A. No. I do not because I believe that Mr. Datta and I have a different understanding of "utility service." Mr. Datta states that "regulators should set rates to recover incurred costs prudently caused by usage."[2] If Mr. Datta means that "usage" is only the delivery of energy, then he is wrong about the definition of electric utility service. When a customer connects to the electric service supplier, the customer requires that the utility have the capacity to meet the customer's peak demand and that the utility supply energy to the customer for whatever period of time the customer needs the energy. The customer

[1] Ex. SESA 55.00, Datta Testimony, at 9:17.

[2] *Id*. at 9:16-17.

expects, and regulators require, that the utility have sufficient capacity, including reserve capacity, to meet customer demands whenever the customer places demand on the system. Even if the customer is not demanding energy, the utility still must have sufficient capacity to serve the customer the instant the customer demands it because the customer is connected to the utility and can demand and take service at any time. The customer receives "service" even when they are not momentarily or temporarily consuming power as long as the customer is physically connected to the system and expecting energy delivery on demand. Thus, the electric utility industry has over time introduced such concept as "fixed charges", "minimum bills" and "demand changes" to recover some costs from customers even when no energy is being delivered. As explained in ELECTRIC UTILITY RATE ECONOMICS by Russell E. Caywood, *"True he [the customer] does not get kilowatt-hours but he gets electric service, which is the product sold by the electric utility."*[3] Caywood gives some examples of being connected and expecting service but not paying. *"When a man rents a garage he pays the $10 or $15 per month whether he is at home and uses the garage or is out of town and possibly is put to additional expense to store his car elsewhere. When a man leases a house, he pays rent each month whether he is living in the house or is away on vacation.*"[4] Caywood's definition of "customer cost" includes *"investment charges and expenses related to a portion of the general distribution system,"*[5] as well as local connection, metering, meter reading, billing and accounting, all of which are required for every connected customer

[3] RUSSELL E. CAYWOOD, ELECTRIC UTILITY RATE ECONOMICS 33 (McGraw Hill, Toronto 1956).

[4] *Id*. at p. 31.

[5] *Id*. at p. 26.

regardless of use.[6]

Q.6 Do you agree with Mr. Datta's additional considerations or modern adaptions to Bonbright's "principles" concerning distributed energy resources. ("DERs")?[7]

A. No, I do not. Bonbright published his "Principles" in 1961 when there were substantial distributed energy resources ("DERs") in the commercial and industrial customer classes. Cogeneration was known and established in the automobile industry, food processing facilities, college campuses and other locations. Nowhere does Bonbright discuss the need for electric utility ratemaking to consider the profitability of DERs owned by commercial, industrial or residential customers. The role of the regulator is to ensure that the utility rates cover costs, not assure the profitability of customer energy investments.

Q.7 Do you agree with Dr. Cao Garcia that PREPA has a "death spiral" risk?

A. No, I do not. He provides the definition that "[d]eath spiral risk of an electric utility happens when it increases prices charged to its customers and some of them drop out from the service of the utility."[8] In the US, there have been cases where large loss of customers has occurred in a number of electric utilities, for example, with the collapse of the steel industry in Pennsylvania. The loss of customers may free up capacity to add new customers. If there are no new customers on the horizon, then the electric utility may have excess capacity or unused assets, in which case the regulator can reduce the rate base to remove assets no longer "used and useful." Cao asserts that "[n]o doubt that any increase in tariff rates is going to stimulate customer investments in PV, increasing the

[6] *Id*.

[7] Ex. SESA 55.0, Datta Testimony, at p. 5-6.

[8] Ex. ICSE 54, Cao Garcia Testimony, at p. 13.

risk of utility death spiral."[9] But this is only true if the PV customer disconnects from PREPA's distribution system and has no ability to put any demand on PREPA assets. While the connected, PV customer may purchase less energy (kWh) in the future, the PV customer's demand on the system remains the same as long as they can demand service at any time. Thus, payment for electric service must be made to the utility by the PV customer.

Q.8 Please describe the ratemaking issue concerning rate designs that rely on low monthly fixed charges or customer charges and high consumption charges or volumetric charges?

A. Many of the ratemaking problems today revolve around the fact that the predominate rate design is one of a low monthly "fixed charge," whether called a "customer charge" or not, and a high consumption charge billed for kilowatt-hours of energy delivered. The national regulatory preference for volumetric rates in electricity and natural gas is a result of the energy crisis of the 1970's and specifically the requirements of the Public Utilities Regulatory Policy Act of 1978 ("PURPA")[10] which addressed the consideration of flat or declining volumetric rates to encourage conservation. The term "volumetric rates" is shorthand for the inclusion of what had been historically called "fixed costs" into the volumetric charge (cents/kWh for electricity or $/MMBtu for natural gas). The key drivers in establishing PURPA in 1978 were the need for conservation of "oil" and "natural gas". This need for "conservation" is explained by the "The National Energy Plan" ("NEP") issued by the Executive Office of the President Jimmy Carter April 29,

[9] *Id*.

[10] 16 U.S.C. § Ch. 46 (2024).

1977.[11] The NEP explains that *"[t]he diagnosis of the U.S. energy crisis is quite simple: demand for energy is increasing, while supplies of oil and natural gas are diminishing.*"[12] The predominate rate design for electric and natural gas before 1980 was a combination of a fixed monthly charge (called various names), sometimes minimum bills and a declining block rate for energy consumption. In both the electric and natural gas rates the first block was designed to capture some of the allocated fixed costs to that customer class. Thus, under historic rate design the first block rate was high on a per unit of consumption basis (kWh) and rates dropped dramatically for higher blocks to cover commodity price of gas or the variable fuel costs for electric utilities.

Q.9 Did Puerto Rico use the declining block rate design before PURPA in 1978?

A. Yes, the PREPA General Residential Service rate in effect July 15, 1975 was a declining block rate. For customers consuming less than 425 KWH per month there were four blocks, starting at 4.5 cents to declining to 1.25 cents per kWh.[13] For residential customers with a consumption over 425 kWh the rate was $11.95 for the first 425 KWH and 2.60 cents per KWH for additional consumption.[14] There was also a fuel adjustment charge.[15] The $11.95 would today be a "minimum bill" equating of $71.34 monthly using a 5.71 inflation factor between 1975 and 2025.

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[11] EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, NATIONAL ENERGY PLAN vii (HarperCollins Publishers 1977).

[12] *Id*.

[13] U.S. DEPARTMENT OF ENERGY, ELECTRIC UTILITY RATE DEMONSTRATION PROJECT: PUERTO RICO, 1978-1980, at 310 (First ICPSR Printing 1982).

[14] *Id*.

[15] *Id*. at p. 310-11.

Flat rates or declining block rates were a hit with consumer advocates as they saw that low consumption customers would receive lower bills and a cross subsidy from higher consumption customers. Studies showing that there was no correlation between income levels and usage levels were ignored.

More recently, as high income customers installed equipment to self-generate , reducing their monthly kWh consumption, they too found themselves in the monthly lower consumption block receiving the historic subsidy meant for low-income customers. That is one of the major issues today in electric utility ratemaking.

Q.10 Does that complete your testimony?

A. Yes, it does.

Exhibit 4

Exhibit 4

LUMA Ex. 71

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

IN RE:	**CASE NO.:** NEPR-AP-2023-0003
PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	

Surrebuttal Testimony of

Branko Terzic
Expert Witness for LUMA Energy, LLC and LUMA Energy ServCo, LLC

~~October 30, 2025~~December 19, 2025

Summary of Surrebuttal Testimony of BRANKO TERZIC ON BEHALF OF LUMA ENERGY LLC AND LUMA ENERGY SERVCO, LLC

Mr. Branko Terzic, who is an internationally recognized consultant in regulation and a former Commissioner of the Federal Energy Regulatory Commission and Wisconsin Public Service Commission, presents this Surrebuttal Testimony on behalf of LUMA Energy LLC and LUMA Energy ServCo, LLC (collectively, "LUMA"). The purpose of Mr. Terzic's Surrebuttal Testimony is to address some issues and differences in opinion from portions of the answering testimonies of ~~Dr. Ahmad Faruqui,~~ Mr. E. Kyle Datta and Dr. Ramón J. Cao García, ~~all~~ both filed on September 8, 2025 in Case No. NEPR-AP-2023-0003, *In Re: Puerto Rico Electric Power Authority Rate Review*, on behalf of ~~of Solar United Neighbors ("SUN"),~~ Solar and Energy Storage Association of Puerto Rico ("SESA"), and the Institute of Competitiveness and Economic Sustainability ("ICSE"), respectively.

~~First, Mr. Terzic disputes Dr. Faruqui's critiques of LUMA's proposed fixed customer charge and his reliance on investor-owned utility benchmarks. Mr. Terzic explains that fixed, minimum, or facility charges are long-standing components of electric ratemaking used to recover customer and other fixed costs inherent in providing continuous, on-demand service. Mr. Terzic further argues that the Puerto Rico Electric Power Authority ("PREPA") should not be compared to healthy, profitable investor-owned utilities, but rather to peer public power entities of comparable scale. Moreover, addressing Dr. Faruqui's invocation of "gradualism," Mr. Terzic grounds rate design in Bonbright's multi-factor criteria, emphasizing that "gradualism" is not a controlling principle that trumps others such as cost recovery, fairness, and stability.~~

~~Second,~~ R~~r~~esponding to Mr. Datta, Mr. Terzic rejects the premise that "not using" a utility's energy service cannot create recoverable costs, clarifying the definition of "utility service" as the continuous obligation to stand ready with sufficient capacity, reserves, connection, metering, billing, and distribution infrastructure for every connected customer. Mr. Terzic explains that a customer receives utility service because the customer retains the right to demand instantaneous service at any time, which necessitates cost recovery through fixed charges, minimum bills, or demand charges. Mr. Terzic also disagrees with Mr. Datta's proposal to adapt Bonbright's principles to account for distributed energy resources by prioritizing their profitability or economics, and reiterates that a regulator's role is to set rates that recover the utility's prudent costs on a just and reasonable basis, not to assure or optimize the returns of customer-owned distributed energy resource investments.

~~Finally~~Moreover, addressing Dr. Cao's assertion that PREPA faces a "death spiral" risk, Mr. Terzic argues that said claim is overstated and contingent on assumptions not present in Puerto Rico's context. Mr. Terzic notes that customer losses in U.S. utility history have not invariably led to collapse, and that, where demand falls, regulators can address unused assets through "used and useful" principles. Mr. Terzic further explains that increased rooftop photovoltaic ("PV") adoption does not create a death spiral so long as PV customers remain connected and retain the ability to place demand on PREPA's system. In Mr. Terzic's view, the central ratemaking issue is the legacy policy choice to load fixed costs into volumetric rates; that design now misaligns cost recovery when kWh sales decline. Mr. Terzic explains that appropriately calibrated fixed charges are a prudent response that mitigates, rather than accelerates, any purported "death spiral" dynamics.

Q.1 Please state your name, address, and occupation.

A. My name is Branko Terzic. I am an independent consultant in public utility regulation. My address is 1791 Brookside Lane, Vienna, Virginia 22182.

Q.2 On whose behalf are you testifying in these proceedings?

A. I am testifying on behalf of LUMA Energy LLC and LUMA Energy Servco LLC (jointly "LUMA").

Q.3 Have you filed testimony previously in these proceedings?

A. Yes, I filed testimony dated June 19, 2025 and a revised testimony dated October 21, 2025.

Q.4 What is the purpose of this testimony?

A. I would like to address some issues and differences in opinion from the testimony of ~~Ahmad Faruqui,~~ E. Kyle Datta and Ramon J. Cao Garcia, ~~all~~ both filed on September 8, 2025.

~~**Q.5 What are your comments with respect to the filed testimony of Ahmad Faruqui?**~~

~~A. My comments are on three topics: 1) that customer charges, or fixed charges or facility charges are long standing options in electric utility ratemaking, 2) that for comparison of rates, the Investor-Owned Utilities are not the correct peer group for PREPA, and 3) that under Bonbright's principles of ratemaking, "gradualism" is not a controlling principle which takes precedence over all the other principles.~~

~~**Q.6 Is there a regulatory or ratemaking principle that supports Dr. Faruqui's assertion that fixed charges cannot be used to recover all the fixed costs of a utility?**~~

~~A. Not that I am aware of. For over one hundred years electric utility rate analysts have been dealing with the issue of how to change for power (Watts) and energy (Watt-hours) delivered by electricity companies. The existence of fixed costs was recognized early as~~

was the use of fixed charges. In the 1917 first edition of PUBLIC UTILITY RATE by Harry Barker, the author notes *"Minimum Charges to Cover Readiness. – Practically all utilities have some form of minimum charge below which a customer's bill never descends, whatever the quantity of service rendered, or product supplied. This enables them with certainty to secure the annual fixed and customer charges which have been computed as fair. In the greater number of utility companies, the practice seems to be to use a straight monthly charge…"*[1]

Q.7 Do you agree with Dr. Faruqui's use of fixed charge data for 171 investor-owned utilities as appropriate for comparison to PREPA?

A. No, I do not because PREPA is not an investor-owned utility. Except for PG&E, these investor-owned utilities are financially healthy, profitable and have not been through bankruptcy. I note that in the case of PG&E, which has been in bankruptcy, in its most recent rate case before the California Public Utility Commission ("CPUC") the electric utility requested a monthly fixed charge of $53.00. The CPUC authorized for PG&E a $24 monthly "Base Services Charge" effective in Mach 2026, with a lower monthly charge for low-income residential customers.[2]

PREPA is a public power company and is listed as #8 on the American Public Power Association ("APPA") statistics table of 100 Largest Public Power Utilities by Mega-Watt-Hour Sales in 2023.[3] The most similar public power system to PREPA in the US

[1] HARRY BARKER, PUBLIC UTILITY RATES 3, at 33 (McGraw-Hill, 1st ed. 1917).

[2] PACIFIC GAS AND ELECTRIC COMPANY, *Base Services Charge* (October 19, 2025, at 8:54 p.m. ET) https://www.pge.com/en/account/billing-and-assistance/base-services-charge.html.

[3] AMERICAN PUBLIC POWER ASSOCIATION, *2025 Public Power Statistical Report* (2025) at 19, https://www.publicpower.org/system/files/documents/2025-Public-Power-Statistical-Report.pdf (citing Energy Information Administration Form EIA-861, 2023).

would be the state-wide Nebraska Public Power District, #6 by size on the APPA list as the others are municipal only and many do not have generation.[4] The residential customer charge established by the Nebraska Public Power District is $22.50 per month.[5] Similarly, the Sacramento Municipal Utility District (SMUD) #17[6] by size has a residential class "System Infrastructure Fixed Charge" of $26.20 per month.[7] These public power utilities are, I believe, better peers for PREPA than the Investor-Owned Utilities. As a fixed customer charge of $22-$26 per month has been approved for a number of municipal electric utilities of PREPA's size, and given PREPA's situation, $20 is reasonable.

Q.8 Is "gradualism" a controlling principle in rate design as cited by Dr. Faruqui on page 13 line 7 of his direct testimony?

A. First, I will note that Dr. Faruqui allows for the possibility that a large, fixed charge may be "cost reflective."[8] Secondly, most rate experts, when discussing principles of rate design, refer to James C. Bonbright's original text Principles of Public Utility Rates or in the later 1988 update of the same title by Bonbright and Professors Daniel Kamerschen and Albert Danielson of the University of Georgia. The issue is whether one "principle" takes precedence over any other. To be clear, the question was referring to what Bonbright called both a "Criteria of a Desirable Rate Structure" and "Criteria for a Sound

[4] *Id.*

[5] NEBRASKA PUBLIC POWER DISTRICT, *Understanding Your Bill* (October 19, 2025 at 9:01 p.m. ET) https://www.nppd.com/accounts-billing/understanding-my-bill#bill-middle.

[6] *2025 Public Power Statistical Report (2025)*., *supra*, at 19.

[7] SACRAMENTO MUNICIPAL UTILITY DISTRICT, *Residential Service Rate Schedule* at R-1 (June 20, 2025) https://www.smud.org/-/media/Documents/Rate-Information/Rates/1-R.ashx.

[8] Ex. SUN 56, Faruqui Testimony, at 13:213-14.

Rate Structure."[9] This was Bonbright's list of eight *"desirable attributes of a rate structure"* with the "*sequence … not meant to suggest any order of relative importance."*[10] Here are the eight "*desirable attributes*" according to Bonbright. He did not number them.

Practical attributes of simplicity, understandability, public acceptability, and feasibility of application

Freedom from controversies as to proper interpretation

Effectiveness of yielding total revenue requirements under the fair return standard (i.e., fair, just and reasonable rates)

Revenue (and cash flow) stability from year to year

Stability of rates themselves, minimal unexpected changes seriously adverse to existing customers

Fairness of the specific rates in the apportionment of total costs of service among different consumers

Avoidance of "undue discrimination" in rate relations

Efficiency in discouraging wasteful use while promoting justified types and amounts of use:

- *In control of total amounts of service*
- *In the control of relative uses of alternative types of service… (P.291)*

[9] JAMES C. BONBRIGHT, PRINCIPLES OF PUBLIC UTILITY RATES (Columbia University Press, New York 1961).

[10] *Id.* at 219.

~~Bonbright points out that these eight attributes are *"unqualified to serve as a base on which to build principles because of the ambiguities (how, for example, does one define 'undue discrimination'), their overlapping character, and their failure to offer any rules of priority in event of conflict."*[11]~~

~~This last point is particularly important as clearly it may not be possible to produce a single rate design which has both the attribute of "stability" and "fairness" or being free of "controversy" while avoiding "undue discrimination." I believe that Dr. Faruqui in referring to "gradualism" may be making reference to the fifth attribute of *"Stability of rates themselves, minimal unexpected changes seriously adverse to existing customers*."[12] As the proposed fixed total fixed charge is $20 per customer per month, which is below the average monthly bill for PREPA customers, the charge would be an increase in monthly bills by very low consumption customers who may not be in need of subsidy. It is my understanding the PREPA has a separate low-income rate for residential customers who do need a subsidy. One could argue that the principle of "fairness" is the attribute covered by this fixed charge. Further, I believe that Bonbright's "stability of rates", as a surrogate for "gradualism", must refer to the total customer bill and not the amount of change in any single rate component.~~

~~Q.9~~Q.5 Do you agree with E. Kyle Datta's opinion that "Not using a utility service cannot create recoverable costs?"[13]

A. No. I do not because I believe that Mr. Datta and I have a different understanding of

~~[11] *Id.* at 291.~~

~~[12] *Id.*~~

[13] Ex. SESA 55.00, Datta Testimony, at 9:17.

"utility service." Mr. Datta states that "regulators should set rates to recover incurred costs prudently caused by usage."[14] If Mr. Datta means that "usage" is only the delivery of energy, then he is wrong about the definition of electric utility service. When a customer connects to the electric service supplier, the customer requires that the utility have the capacity to meet the customer's peak demand and that the utility supply energy to the customer for whatever period of time the customer needs the energy. The customer expects, and regulators require, that the utility have sufficient capacity, including reserve capacity, to meet customer demands whenever the customer places demand on the system. Even if the customer is not demanding energy, the utility still must have sufficient capacity to serve the customer the instant the customer demands it because the customer is connected to the utility and can demand and take service at any time. The customer receives "service" even when they are not momentarily or temporarily consuming power as long as the customer is physically connected to the system and expecting energy delivery on demand. Thus, the electric utility industry has over time introduced such concept as "fixed charges", "minimum bills" and "demand changes" to recover some costs from customers even when no energy is being delivered. As explained in ELECTRIC UTILITY RATE ECONOMICS by Russell E. Caywood, *"True he [the customer] does not get kilowatt-hours but he gets electric service, which is the product sold by the electric utility."*[15] Caywood gives some examples of being connected and expecting service but not paying. *"When a man rents a garage he pays the $10 or $15 per month whether he is at home and uses the garage or is out of town and possibly is put to*

[14] *Id*. at 9:16-17.

[15] RUSSELL E. CAYWOOD, ELECTRIC UTILITY RATE ECONOMICS 33 (McGraw Hill, Toronto 1956).

additional expense to store his car elsewhere. When a man leases a house, he pays rent each month whether he is living in the house or is away on vacation."[16] Caywood's definition of "customer cost" includes *"investment charges and expenses related to a portion of the general distribution system,"*[17] as well as local connection, metering, meter reading, billing and accounting, all of which are required for every connected customer regardless of use.[18]

~~Q.10~~Q.6 Do you agree with Mr. Datta's additional considerations or modern adaptions to Bonbright's "principles" concerning distributed energy resources. ("DERs")?[19]

A. No, I do not. Bonbright published his "Principles" in 1961 when there were substantial distributed energy resources ("DERs") in the commercial and industrial customer classes. Cogeneration was known and established in the automobile industry, food processing facilities, college campuses and other locations. Nowhere does Bonbright discuss the need for electric utility ratemaking to consider the profitability of DERs owned by commercial, industrial or residential customers. The role of the regulator is to ensure that the utility rates cover costs, not assure the profitability of customer energy investments.

~~Q.11~~Q.7 Do you agree with Dr. Cao Garcia that PREPA has a "death spiral" risk?

A. No, I do not. He provides the definition that "[d]eath spiral risk of an electric utility happens when it increases prices charged to its customers and some of them drop out

[16] *Id*. at p. 31.

[17] *Id*. at p. 26.

[18] *Id*.

[19] Ex. SESA 55.0, Datta Testimony, at p. 5-6.

from the service of the utility."[20] In the US, there have been cases where large loss of customers has occurred in a number of electric utilities, for example, with the collapse of the steel industry in Pennsylvania. The loss of customers may free up capacity to add new customers. If there are no new customers on the horizon, then the electric utility may have excess capacity or unused assets, in which case the regulator can reduce the rate base to remove assets no longer "used and useful." Cao asserts that "[n]o doubt that any increase in tariff rates is going to stimulate customer investments in PV, increasing the risk of utility death spiral."[21] But this is only true if the PV customer disconnects from PREPA's distribution system and has no ability to put any demand on PREPA assets. While the connected, PV customer may purchase less energy (kWh) in the future, the PV customer's demand on the system remains the same as long as they can demand service at any time. Thus, payment for electric service must be made to the utility by the PV customer.

~~Q.12~~Q.8 Please describe the ratemaking issue concerning rate designs that rely on low monthly fixed charges or customer charges and high consumption charges or volumetric charges?

A. Many of the ratemaking problems today revolve around the fact that the predominate rate design is one of a low monthly "fixed charge," whether called a "customer charge" or not, and a high consumption charge billed for kilowatt-hours of energy delivered. The national regulatory preference for volumetric rates in electricity and natural gas is a result of the energy crisis of the 1970's and specifically the requirements of the Public Utilities Regulatory Policy Act of 1978 ("PURPA")[22] which addressed the consideration of flat or

[20] Ex. ICSE 54, Cao Garcia Testimony, at p. 13.
[21] *Id*.

[22] 16 U.S.C. § Ch. 46 (2024).

declining volumetric rates to encourage conservation. The term "volumetric rates" is shorthand for the inclusion of what had been historically called "fixed costs" into the volumetric charge (cents/kWh for electricity or $/MMBtu for natural gas). The key drivers in establishing PURPA in 1978 were the need for conservation of "oil" and "natural gas". This need for "conservation" is explained by the "The National Energy Plan" ("NEP") issued by the Executive Office of the President Jimmy Carter April 29, 1977.[23] The NEP explains that *"[t]he diagnosis of the U.S. energy crisis is quite simple: demand for energy is increasing, while supplies of oil and natural gas are diminishing."*[24] The predominate rate design for electric and natural gas before 1980 was a combination of a fixed monthly charge (called various names), sometimes minimum bills and a declining block rate for energy consumption. In both the electric and natural gas rates the first block was designed to capture some of the allocated fixed costs to that customer class. Thus, under historic rate design the first block rate was high on a per unit of consumption basis (kWh) and rates dropped dramatically for higher blocks to cover commodity price of gas or the variable fuel costs for electric utilities.

~~Q.13~~Q.9 Did Puerto Rico use the declining block rate design before PURPA in 1978?

A. Yes, the PREPA General Residential Service rate in effect July 15, 1975 was a declining block rate. For customers consuming less than 425 KWH per month there were four blocks, starting at 4.5 cents to declining to 1.25 cents per kWh.[25] For residential

[23] EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, NATIONAL ENERGY PLAN vii (HarperCollins Publishers 1977).

[24] *Id.*

[25] U.S. DEPARTMENT OF ENERGY, ELECTRIC UTILITY RATE DEMONSTRATION PROJECT: PUERTO RICO, 1978-1980, at 310 (First ICPSR Printing 1982).

customers with a consumption over 425 kWh the rate was $11.95 for the first 425 KWH and 2.60 cents per KWH for additional consumption.[26] There was also a fuel adjustment charge.[27] The $11.95 would today be a "minimum bill" equating of $71.34 monthly using a 5.71 inflation factor between 1975 and 2025.

Flat rates or declining block rates were a hit with consumer advocates as they saw that low consumption customers would receive lower bills and a cross subsidy from higher consumption customers. Studies showing that there was no correlation between income levels and usage levels were ignored.

More recently, as high income customers installed equipment to self-generate , reducing their monthly kWh consumption, they too found themselves in the monthly lower consumption block receiving the historic subsidy meant for low-income customers. That is one of the major issues today in electric utility ratemaking.

~~Q.14~~Q.10 Does that complete your testimony?

A. Yes, it does.

[26] *Id.*

[27] *Id.* at p. 310-11.