GOVERNMENT OF PUERTO RICO
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:** SESA's Motion to Submit Direct Testimony and Exhibits of E. Kyle Datta

MOTION TO SUBMIT DIRECT TESTIMONY
AND EXHIBITS OF E. KYLE DATTA

TO THE HONORABLE ENERGY BUREAU:

COMES NOW, the Solar and Energy Storage Association of Puerto Rico ("SESA") through its undersigned counsel of record and respectfully submits the following:

1. On August 21st, 2025, the Hearing Examiner in the instant case issued a Resolution and Order establishing the deadline for intervening parties to submit answering testimony (the "August 21st R&O").
2. Consistent with the August 21st R&O, SESA hereby submits for the record the direct testimony by E. Kyle Datta, president and sole employee of New Energy Partners Inc, provided on behalf of SESA, as **Exhibit 1.0** of this motion. Exhibit 1.0 incorporates a Spanish-language summary to satisfy the accessibility requirements established in the Hearing Examiner's Resolution and Order dated May 9, 2025. Mr. Datta' testimony addresses several key issues that adversely impact the opportunity for customers of LUMA Energy ("LUMA") to invest in and benefit from customer-sited generation. Mr. Datta is testifying solely on the LUMA's rate structure proposals, not the revenue requirements.

WHEREFORE, SESA respectfully requests that the Energy Bureau take notice of and grant its Motion to Submit Direct Testimony and Exhibits of E. Kyle Datta.

Respectfully submitted on September 8, 2025, in San Juan, Puerto Rico.

WE HEREBY CERTIFY that this motion was filed using the Energy Bureau's electronic filing system and that electronic copies of this motion will be notified to the Hearing Examiner. Scott Hempling, via shempling@scotthemplinglaw.com; and to the attorneys of the parties of record. To wit, to LUMA through Margarita Mercado - margarita.mercado@us.dlapiper.com; Carolyn Clarkin - carolyn.clarkin@us.dlapiper.com; and Andrea Chambers - andrea.chambers@us.dlapiper.com; the Puerto Rico Electric Power Authority through Mirelis Valle-Cancel - mvalle@gmlex.net; Juan González- jgonzalez@gmlex.net; and Alexis G. Rivera Medina - arivera@gmlex.net; and to Genera PR, LLC, through Jorge Fernández-Reboredo - jfr@sbgblaw.com; regulatory@genera-pr.com; and legal@genera-pr.com.

A courtesy copy of this motion will also be notified to the following:

jmartinez@gmlex.net; nzayas@gmlex.net; Gerard.Gil@ankura.com; Jorge.SanMiguel@ankura.com; Lucas.Porter@ankura.com; katiuska.bolanos-lugo@us.dlapiper.com; Yahaira.delarosa@us.dlapiper.com; mvazquez@vvlawpr.com; gvilanova@vvlawpr.com; ratecase@genera-pr.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; kara.smith@weil.com; rafael.ortiz.mendoza@gmail.com; rolando@emmanuelli.law; monica@emmanuelli.law; cristian@emmanuelli.law; lgnq2021@gmail.com; jan.albinolopez@us.dlapiper.com; Rachel.Albanese@us.dlapiper.com; varoon.sachdev@whitecase.com; javrua@sesapr.org; Brett.ingerman@us.dlapiper.com; brett.solberg@us.dlapiper.com; 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; Kayla.Yoon@dechert.com; Julia@londoneconomics.com; Brian@londoneconomics.com; luke@londoneconomics.com; juan@londoneconomics.com; mmcgill@gibsondunn.com; LShelfer@gibsondunn.com; jnieves@cstlawpr.com; arrivera@nuenergypr.com; apc@mcvpr.com; ramonluisnieves@rlnlegal.com; rsmithla@aol.com; guy@maxetaenergy.com; jorge@maxetaenergy.com; rafael@maxetaenergy.com; dawn.bisdorf@gmail.com; msdady@gmail.com; mcranston29@gmail.com; ahopkins@synapse-energy.com; clane@synapse-energy.com; kbailey@acciongroup.com; zachary.ming@ethree.com; PREBconsultants@acciongroup.com; carl.pechman@keylogic.com; bernard.neenan@keylogic.com; tara.hamilton@ethree.com; aryeh.goldparker@ethree.com; roger@maxetaenergy.com; Shadi@acciongroup.com

McCONNELL VALDÉS LLC
Counsel for the Solar & Energy Storage Association of Puerto Rico
PO Box 364225
San Juan, Puerto Rico 00936-4225

270 Muñoz Rivera Avenue
San Juan, Puerto Rico 00918
www.mcvpr.com

s/Carlos J. Fernández Lugo
Carlos J. Fernández Lugo
PR Supreme Court ID No.11033
cfl@mcvpr.com
(787) 250-5669

s/André J. Palerm Colón
André J. Palerm Colón
PR Supreme Court ID No. 21196
apc@mcvpr.com
(787) 250-5636

EXHIBIT 1.0

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

IN RE:	**§**	**CASE NO.: NEPR-AP-2023-003**
PUERTO RICO ELECTRIC	**§**	
POWER AUTHORITY RATE REVIEW	**§**	**SUBJECT: COST OF SERVICE & RATE DESIGN**

DIRECT TESTIMONY AND EXHIBITS

OF

E. KYLE DATTA

PRESIDENT

NEW ENERGY PARTNERS, INC.

ON BEHALF

OF

SOLAR & ENERGY STORAGE ASSOCIATION

SEPTEMBER 8, 2025

NEPR-AP 2023 003

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	**§ § §**	**SUBJECT: COST OF SERVICE & RATE DESIGN**

SUMMARY

E. Kyle Datta is the president and sole employee of New Energy Partners Inc, a Hawaii C-corporation company. Mr. Datta appears on behalf of the Solar & Energy Storage Association of Puerto Rico ("SESA"). Mr. Datta's direct testimony addresses several key issues that adversely impact the opportunity for customers of LUMA Energy ("LUMA") to invest in and benefit from customer-sited generation. Mr. Datta is testifying solely on the LUMA's rate structure proposals, not the revenue requirements.

Puerto Rico's electrical system is facing an interrelated combination of four crises: 1) system wide reliability failures from lack of generation resource adequacy; 2) local, regional, and system wide reliability failure due to faults or outages on the transmission and distribution grid; 3) inability of the three utilities, Puerto Rico Electric Power Authority ("PREPA"), LUMA, and Genera, to raise sufficient capital to address these issues; and 4) high electricity rates that have directly led to reduction in industrial and general economic activity, emigration, and ultimately has placed a high energy burden on all Puerto Rico ratepayers, particularly low income households that are 36% of the population. All of these issues must be addressed urgently.

The Energy Bureau seeks to find a path in this rate case, along with other ongoing dockets that can find the right balance between improving system reliability (lowering the economic and personal cost of load not served), attracting enough investment to operate and upgrade all elements of the system, and improving affordability by lowering, not dramatically raising rates.

The only success story in the last three years has been the impact of consumer behavior and investment in response to a new legal regime around all Distributed Energy Resources ("DERs"). In Net Energy Metering ("NEM") alone, 167,986 NEM customers and their suppliers have invested over $**4.6 billion** in the current NEM systems. NEM customers have installed more than 1,200 MW of new PV capacity, and a staggering 2,486 MWh of Battery Energy Storage Systems ("BESS"). Over 67,000 NEM customers are in the Customer Battery Energy Sharing ("CBES") program, providing over 40 MW of peak power today. Given Puerto Rico's desperate

resource adequacy challenge, the NEM-CBES current peak power contribution is saving ~18 hours of loss of load hours ("LOLH") and the project increase in NEM could save an additional 16 hours of LOLH island wide. The value of these savings is between $2 to $4.7 billion per year[1]. These grossly exceed any costs NEM imposes on the system. Therefore. LUMA rate structure actions that would lower the adoption rate of customer sited solar and storage are disproportionately harmful to all the people and ratepayers of Puerto Rico, and are not in the public interest.

Mr. Dattas' testimony addresses LUMA's proposal to impose mandatory non-bypassable charges on all customers including NEM customers as an unreasonable means of collecting revenues from customers that make private investments in distributed generation ("DG") and utilize the NEM rate mechanism in order to reduce their LUMA bills.

Mr. Datta addresses LUMA's unjust and unreasonable rate structure proposal to increase multiple fixed customer charges applicable all customers, and concomitant reduction in volumetric rates (*ceteris paribus* for any level of approved revenue requirements). LUMA's rate proposal is to increase base rates included in "so called" customer classified costs, and riders for legacy debt, storm outage response, CILT and SUBA**.** LUMA's rate structure proposal is that these base rate charges be a fixed $/month on all customers and explicitly non-bypassable by NEM customers. By design, this would lower the volumetric rates, *ceteris paribus*, as it is a reallocation of revenue requirements. The total increase is projected to be $29+/month compared with $4/month today for residential customers. The increased fixed customer charge is economically regressive in that lower income customers are more severely affected by increased energy burden. For low net consumption NEM customers, increasing fixed charges and the concomitant reduction in volumetric charges (*ceteris paribus*, holding revenue requirements constant) adversely impacts the cost-effectiveness of customer investments in all manner of distributed energy resources ("DER"), such as energy efficiency, conservation, DG, combined heat and power ("CHP"), energy storage, and particularly NEM customers. Simply put, LUMA's proposed restructure increases the payback period from 8 to 9 years and lowers the internal rate of return by 1%. This would lower the adoption rate of NEM, particularly when combined with federal policy changes and PV tariffs.

[1] Range depends value of lost load of island wide outage, see pages 17-20 of this testimony

LUMA claims that NEM causes loss of revenues to LUMA, creates additional distribution costs and amounts to "cost shifting" from NEM customers to non-NEM customers. LUMA does not attempt to determine whether the value created by NEM customers due to their investment in energy systems, including solar and batteries ("PV/BESS") exceeds the system costs LUMA does not incur or reduce the total system costs that all LUMA customers would otherwise incur. Mr. Datta observes that LUMA did not attempt to define the benefits of DERs to the overall Puerto Rico energy system, only the purported costs to LUMA in terms of additional transmission & distribution, and reduction in revenues from reduced demand. Mr. Datta finds that LUMA did not perform a locational analysis of the impact of NEM or CHP on the transmission and distribution grid, did not consider the Non-Wires Alternative ("NWA") benefit of deferring transmission and distribution capital upgrades. LUMA therefore overstates the net transmission and distribution costs attributable to NEM. Mr. Datta observes that LUMA did not evaluate the reliability benefits from NEM customers in reducing the system peak on either the grid or generation system. LUMA did not recognize that nearly all NEM customers have batteries systems for resilience, lowering total cost of load not served, or acknowledge that 37% of NEM customers have signed up for the Virtual Power Plant program, which is designed to reduce peak load. Mr. Datta observes that LUMA used the Value of Lost Load ("VoLL") to justify its proposed transmission and distribution costs based on the reduction in load not served, but did not apply this same benefit to NEM customers contribution to system wide load not served, including NEM customers.

Mr. Datta states that the 167,986 NEM customers have invested approximately $4.6 billion of their own capital in PV+BESS systems via consumer finance mechanisms since 2021, export between 45 and 61 GWh/month to the Puerto Rico grid, and account for ~60-67% of the renewable energy generated on the island. NEM customers under the CBES+ Virtual Power Plant ("VPP") program are contributing over 40 MW of system peak reduction today, benefiting all customers from vastly improved system wide reliability by 18 hours per year, rising to up to 33 hours by 2028, resulting in fewer expected hours of lost load worth $4.7 billion per year to all ratepayers. Mr. Datta asserts that DERs are a *net benefit* to the Puerto Rico energy system based on the reduction of total fuel costs, the improvement of overall system reliability, the reliability and resilience benefits to NEM and CHP customers, reduction in peak system load, and the highly probable locational benefits of grid improvements deferrals.

LUMA's proposed rate structure design which reallocates revenue requirements would harm the interests of existing and new NEM customers by increasing their costs, leading to longer payback rates and less adoption. In turn, non-NEM customers would be harmed since less NEM adoption would lead to higher total transmission and distribution costs and lower reliability (and therefore higher cost of load not served) due to fewer NEM systems providing direct peak reduction, grid asset deferral, and other grid support benefits

Mr. Datta supports revenue decoupling that, if done correctly, would be beneficial to the rate payers of Puerto Rico, since it enables consistent revenues for the operation and rehabilitation of the transmission and distribution grid. That said, Mr. Datta believes LUMA's proposal for decoupling has fatal flaws. Mr. Datta stipulates that LUMA's arguments against NEM due to the impact of lost revenues on LUMA's ability to manage the grid are misinformed, overstated and further, would be rendered moot by revenue decoupling.

Mr. Datta concludes that LUMA's proposals to impose multiple non bypassable charges on to all customers, and lower the volumetric rate charge (*ceteris paribus*) are unreasonable because the reallocation severely penalizes the economics of NEM customers, and all ratepayers.

Mr. Datta recommends that the Puerto Rico Energy Bureau ("PREB") reject LUMA's rate design proposals as these would lower NEM adoption when the Puerto Rico electrical system desperately needs new peak capacity, which the NEM customers on CBES+ provide now and will accelerate in the near future.

LUMA makes statements regarding the impact of NEM on the distribution system but is willfully ignorant of the benefits. Therefore, the PREB should recognize these statements as one sided, and the inferences on net costs, cost shifting and lost revenues as utterly without merit. As directed by Act 10-2024, by 2030 the PREB will perform a value of solar study. The PREB should direct LUMA to develop a comprehensive benefit-cost analysis of customer-sited DG for use in evaluating and setting just compensation and rates for all DG customers, including NEM, after this rate case and *before* the VoS study commences via an independent special task force, due to the complexity of grid planning and the need for transparency.

In summary, Mr. Datta recommends that the PREB adopt revenue decoupling based on principles in his testimony, rejecting LUMA's proposal for decoupling; reject LUMA's rate design proposals;

maintain the fixed charges at $4/month; and preserve the same per-kWh cost allocation methodology for LUMA revenue requirements.

NEPR-AP 2023 003

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	**§ § §**	**SUBJECT: COST OF SERVICE & RATE DESIGN**

RESUMEN

El señor E. Kyle Datta es el presidente y único empleado de New Energy Partners Inc., una corporación C de Hawái. El Sr. Datta comparece en nombre de la Solar & Energy Storage Association of Puerto Rico ("SESA"). Su testimonio directo aborda varios asuntos clave que afectan negativamente la oportunidad de que los clientes de LUMA Energy ("LUMA") inviertan en, y se beneficien de, la generación ubicada en las instalaciones del cliente. El Sr. Datta testifica únicamente sobre las propuestas de diseño tarifario de LUMA, no sobre los requerimientos de ingresos. El sistema eléctrico de Puerto Rico enfrenta una combinación interrelacionada de cuatro crisis: 1) fallas de confiabilidad en todo el sistema por falta de suficiencia de recursos de generación; 2) fallas de confiabilidad locales, regionales y a nivel sistémico debidas a averías o interrupciones en la red de transmisión y distribución; 3) incapacidad de las tres utilidades —la Autoridad de Energía Eléctrica de Puerto Rico ("PREPA"), LUMA y Genera— para recaudar el capital suficiente para atender estos problemas; y 4) tarifas eléctricas elevadas que han provocado directamente una reducción de la actividad económica industrial y general, emigración y, en última instancia, una alta carga energética para todos los abonados de Puerto Rico, particularmente los hogares de bajos ingresos que representan el 36% de la población. Todos estos temas deben abordarse urgentemente. En este caso el Negociado de Energía busca, una vía que logre el equilibrio adecuado entre mejorar la confiabilidad del sistema (reduciendo el costo económico y personal de la energía no servida), atraer suficiente inversión para operar y modernizar todos los elementos del sistema y mejorar la asequibilidad reduciendo, y no aumentando drásticamente, las tarifas. El único caso de éxito en los últimos tres años ha sido el impacto del comportamiento e inversión de los consumidores ante un nuevo marco legal sobre los Recursos Energéticos Distribuidos ("DER"). Solo en el programa de medición neta ("NEM"), 167,986 clientes NEM y sus proveedores han invertido más de $4.6 mil millones en los sistemas NEM actuales. Los clientes NEM han instalado más de 1,200 MW de nueva capacidad fotovoltaica ("FV") y la notable cifra de 2,486 MWh en sistemas de almacenamiento con baterías ("BESS"). Más de 67,000 clientes NEM participan en el programa de Intercambio de Baterías de Clientes ("CBES"), que hoy aporta

más de 40 MW de potencia en punta. Dada la apremiante insuficiencia de recursos en Puerto Rico, la contribución de potencia en punta ("peak power") del binomio NEM-CBES está evitando ~18 horas de pérdida de carga ("LOLH"), y el aumento proyectado de NEM podría ahorrar 16 horas adicionales de LOLH en toda la isla. El valor de estos ahorros se sitúa entre $2 y $4.7 mil millones por año. Estos beneficios exceden con creces cualquier costo que NEM imponga al sistema. Por lo tanto, las medidas de tarifaria de LUMA que reduzcan la adopción de solar y almacenamiento en sitio del cliente perjudican desproporcionadamente a todas las personas y abonados de Puerto Rico y no responden al interés público. El testimonio del Sr. Datta aborda la propuesta de LUMA de imponer cargos obligatorios no evitables a todos los clientes, incluidos los clientes NEM, como un medio irrazonable de recaudar ingresos de clientes que realizan inversiones privadas en generación distribuida ("DG") y utilizan el mecanismo NEM para reducir sus facturas con LUMA. Asimismo, el Sr. Datta señala que la propuesta de diseño tarifario de LUMA —incrementar múltiples cargos fijos aplicables a todos los clientes y reducir concomitantemente las tarifas volumétricas (ceteris paribus para cualquier nivel de ingresos aprobados)— es injusta e irrazonable. LUMA propone aumentar las tarifas base incluidas en los llamados costos clasificados al cliente y recargos por deuda histórica, respuesta a interrupciones por tormentas, CILT y SUBA. La propuesta es que estos cargos base sean un monto fijo mensual para todos los clientes y explícitamente no evitables por clientes NEM. Por diseño, ello reduciría las tarifas volumétricas, ceteris paribus, al tratarse de una reasignación de los requerimientos de ingresos. El aumento total proyectado es de más de $29 al mes frente a los $4/mes actuales para clientes residenciales. El incremento del cargo fijo es económicamente regresivo, pues los clientes de menores ingresos se ven más afectados por una mayor carga energética. Para clientes NEM con bajo consumo neto, elevar los cargos fijos y reducir a la vez las tarifas volumétricas (ceteris paribus, manteniendo constantes los requerimientos de ingresos) perjudica la rentabilidad de las inversiones de los clientes en todo tipo de DER —como eficiencia energética, conservación, DG, cogeneración ("CHP"), almacenamiento— y particularmente de los clientes NEM. En pocas palabras, la reestructuración propuesta por LUMA eleva el periodo de recuperación de 8 a 9 años y reduce la tasa interna de retorno en 1%. Esto disminuiría la adopción de NEM, especialmente al combinarse con cambios en políticas federales y aranceles a la FV. LUMA afirma que NEM provoca pérdidas de ingresos para LUMA, crea costos adicionales de distribución y conlleva un "traslado de costos" de clientes NEM a no NEM. LUMA no intenta determinar si el valor creado por los clientes NEM

gracias a sus inversiones en sistemas energéticos, incluyendo solar y baterías ("PV/BESS"), supera los costos del sistema que LUMA no incurre o reduce los costos totales del sistema que, de otro modo, asumirían todos los clientes de LUMA. El Sr. Datta observa que LUMA no intentó definir los beneficios de los DER para el sistema energético de Puerto Rico en su conjunto, sino solo los supuestos costos para LUMA en términos de transmisión y distribución adicionales y la reducción de ingresos por menor demanda. También concluye que LUMA no realizó un análisis locacional del impacto de NEM o CHP en la red de transmisión y distribución ni consideró el beneficio de la Alternativa sin Cables ("NWA") de diferir mejoras de capital en T&D; por ello, LUMA sobrestima los costos netos de T&D atribuibles a NEM. El Sr. Datta señala que LUMA no evaluó los beneficios de confiabilidad derivados de que los clientes NEM reduzcan el pico del sistema tanto en la red como en la generación. LUMA no reconoció que casi todos los clientes NEM cuentan con sistemas de baterías para resiliencia —reduciendo el costo total de energía no servida— ni que el 37% de los clientes NEM se han inscrito en el programa de Planta de Energía Virtual (VPP), diseñado para reducir la carga pico. Asimismo, el Sr. Datta observa que LUMA utilizó el Valor de la Carga No Servida ("VoLL") para justificar sus costos propuestos de T&D basados en la reducción de energía no servida, pero no aplicó ese mismo beneficio a la contribución de los clientes NEM en la reducción de la energía no servida a nivel sistémico, incluidos los propios clientes NEM. El Sr. Datta sostiene que los 167,986 clientes NEM han invertido aproximadamente $4.6 mil millones de su propio capital en sistemas FV+BESS mediante mecanismos de financiamiento al consumo desde 2021, exportan entre 45 y 61 GWh/mes a la red de Puerto Rico y representan ~60–67% de la energía renovable generada en la isla. Los clientes NEM bajo el programa CBES+ de Planta de Energía Virtual están aportando hoy más de 40 MW de reducción del pico del sistema, beneficiando a todos los clientes con una mejora sustancial de la confiabilidad del sistema de 18 horas por año, que podría aumentar hasta 33 horas para 2028, lo que se traduce en menos horas esperadas de carga no servida por un valor de $4.7 mil millones anuales para todos los abonados. El Sr. Datta afirma que los DER constituyen un beneficio neto para el sistema energético de Puerto Rico por la reducción de los costos totales de combustible, la mejora de la confiabilidad general del sistema, los beneficios de confiabilidad y resiliencia para clientes NEM y CHP, la reducción de la demanda pico del sistema y los muy probables beneficios locacionales de diferimiento de mejoras en la red. La propuesta de diseño tarifario de LUMA, que reasigna los requerimientos de ingresos, perjudicaría los intereses de los clientes NEM —existentes y nuevos—

al aumentar sus costos, alargando los plazos de recuperación y reduciendo la adopción. A su vez, los clientes no NEM se verían afectados, ya que una menor adopción de NEM implicaría mayores costos totales de transmisión y distribución y menor confiabilidad (y, por ende, mayor costo de carga no servida) por contar con menos sistemas NEM que aporten reducción directa de picos, diferimiento de activos de red y otros servicios de apoyo. El Sr. Datta respalda el desacople de ingresos que, si se diseña correctamente, sería beneficioso para los abonados de Puerto Rico al permitir ingresos consistentes para la operación y rehabilitación de la red de transmisión y distribución; no obstante, considera que la propuesta de desacople de LUMA tiene fallas fatales. Señala que los argumentos de LUMA contra NEM —debido al impacto de ingresos perdidos en su capacidad para gestionar la red— están mal informados, exagerados y, además, quedarían sin efecto con un desacople de ingresos. El Sr. Datta concluye que las propuestas de LUMA de imponer múltiples cargos no evitables a todos los clientes y reducir la tarifa volumétrica (*ceteris paribus*) son irrazonables porque la reasignación penaliza severamente la economía de los clientes NEM y, en general, de todos los abonados. Recomienda que el Negociado de Energía de Puerto Rico ("PREB") rechace las propuestas de diseño tarifario de LUMA, ya que disminuirían la adopción de NEM justo cuando el sistema eléctrico de Puerto Rico necesita con urgencia nueva capacidad en punta, que los clientes NEM en CBES+ ya están aportando y acelerarán en el futuro cercano. LUMA realiza afirmaciones sobre el impacto de NEM en el sistema de distribución, pero omite deliberadamente los beneficios; por lo tanto, el PREB debería reconocer que dichas afirmaciones son unilaterales y que las inferencias sobre costos netos, traslado de costos y pérdidas de ingresos carecen totalmente de mérito. Según lo dispuesto por la Ley 10/2024, para 2030 el PREB realizará un estudio del valor de la energía solar; el PREB debería instruir a LUMA a desarrollar un análisis integral de costos y beneficios de la generación distribuida ubicada en el cliente para evaluar y fijar una compensación y tarifas justas para todos los clientes de DG, incluidos los de NEM, después de este caso tarifario y antes de que comience el estudio del "valor de la solar", mediante un grupo de trabajo independiente dada la complejidad de la planificación de la red y la necesidad de transparencia. En resumen, el Sr. Datta recomienda que el PREB adopte un desacople de ingresos conforme a los principios de su testimonio, rechazando la propuesta de desacople de LUMA; que rechace las propuestas de diseño tarifario de LUMA; que mantenga los cargos fijos en $4/mes; y que preserve la misma metodología de asignación por kWh para los requerimientos de ingresos de LUMA.

NEPR-AP 2023 003

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	**§ § §**	**SUBJECT: COST OF SERVICE & RATE DESIGN**

DIRECT TESTIMONY AND EXHIBITS OF E. KYLE DATTA

TABLE OF CONTENTS

NEPR-AP 2023 003

IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY RATE REVIEW	**§ § §**	**SUBJECT: COST OF SERVICE & RATE DESIGN**

DIRECT TESTIMONY AND EXHIBITS OF E. KYLE DATTA

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS NAME AND ADDRESS, AND ROLE IN THIS MATTER.

A. My name is E. Kyle Datta. I am the President of New Energy Partners, Inc., a Hawaii C Corporation company, located at 73-1196 Hamo Street, Kailua Kona, Hawaii. I appear here in my capacity as an expert witness on behalf of the Solar & Energy Storage Association of Puerto Rico ("SESA").

Q. PLEASE LIST YOUR FORMAL EDUCATIONAL DEGREES.

A. I earned a Bachelor of Biology from Yale University in 1983, a Master of Public and Private Management from Yale School of Organization & Management and a Master of Laws in Environmental Economics from the Yale School of Forestry & Environmental Studies in 1986.

Q. PLEASE SUMMARIZE YOUR EXPERIENCE AND EXPERTISE IN THE FIELD OF UTILITY REGULATION.

A. I have worked for more than 39 years in the utility industry and the related energy industry. I am actively involved in a wide range of utility and energy regulatory issues across the United States. My previous employment experience includes Managing Director with the Rocky Mountain Institute, Managing Director of Booz Allen & Hamilton's Asia Energy Practice, Managing Director of Booz Allen & Hamilton's US Utility Practice, Principal of Roland Bergers US energy practice, CEO of US Biodiesel, and General Partner of Pierre Omidyar's impact investment firm, Ulupono Initiative. I operated New Energy Partners LLC as a vehicle for my consulting and expert witness work. My resume is attached as Exhibit 1.01.

Q. HAVE YOU EVER TESTIFIED BEFORE THE PUERTO RICO ENERGY BUREAU OR OTHER REGULATORY AGENCIES IN THE PAST?

A. Yes. I have filed formal testimony before the PREB. Over the course of my career, I have funded, submitted, or participated in developing testimony, comments, or presentations in utility proceedings in Hawaii, California, Colorado, Connecticut, Puerto Rico and the Federal Energy Regulatory Commission. A listing of my previous testimony is attached as Exhibit 1.02.

Q. DOES YOUR EXPERIENCE GIVE YOU INSIGHTS INTO THE RESPONSIBILITIES AND DUTIES OF THE PREB IN THIS PROCEEDING?

A. Yes. I have funded capacity building for utility regulators in Hawaii and remain deeply respectful of the public interest obligation. I have worked with over 10 of the largest US utilities in defining their regulatory strategy, particularly for renewables and DERs. I understand the unique challenges of Puerto Rico from my experience on the PREPA advisory board.

Q. DO YOU HAVE ANY SPECIAL EXPERIENCE RELATING TO RATE MAKING FOR DISTRIBUTED ENERGY GENERATION THAT IS RELEVANT TO YOUR TESTIMONY AND THIS PROCEEDING?

A. Yes. My foundational work is in understanding the value that non-utility distributed generation can bring to utility system operations and economics. As Managing Director at the Rocky Mountain Institute ("RMI") in 2002, I co-authored the definitive science- and analysis-based compendium of the economic, financial, operational, and engineering benefits that distributed energy resources ("DERs")—right-sized and right-sited resources—bring to electric grids. The award-winning book, *Small Is Profitable,*[2] documents this research and analysis.

Over the past thirty years, I have applied my experience and knowledge about valuation of DERs in a range of regulatory and business contexts. I have been involved in conducting or commissioning Risk Adjusted Value of Renewables Distributed Energy Resource in Hawaii. I have provided strategic and regulatory senior advisory counsel to the nation's leading energy service and distributed energy companies, along with performing due diligence on these companies for investors.

[2] A. Lovins, et al., Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size, RMI (2002), available at: https://rmi.org/insight/small-is-profitable/.

In Puerto Rico, my role on the PREPA advisory board provided deep insights into the specific and unique challenges facing Puerto Rico's energy system. I oversaw Siemens and provided senior review of the PREPA Integrated Resource Plan (2019). In addition, I provided expert review and testimony to the Financial Oversight and Management Board ("FOMB") on the 16 legacy solar projects in 2019.

As a result of my work on Puerto Rico's energy system, renewable valuation, NEM, and other DG issues, I am in the position to offer to the PREB my opinions and conclusions about the proposals from LUMA in this proceeding that would adversely impact the market for distributed generation ("DG"), including Net Energy Metering ("NEM") and the economic value that customers should fairly realize for their investments in DG facilities.

Q. ARE YOU FAMILIAR WITH NET ENERGY METERING IN PUERTO RICO?

A. Yes. Net Energy Metering ("NEM") in Puerto Rico is governed primarily by Act No. 114 of August 16, 2007, known as the Puerto Rico Net Metering Act, as amended, which created the program allowing renewable energy customers to interconnect with the grid, offset their consumption, and receive credits for excess generation. Act No. 10 of 2024 amended Act No. 114-2007 to protect the current NEM statutory framework until at least the year 2031. It is complemented by Act No. 82 of July 19, 2010, known as the Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, as amended, which established Puerto Rico's Renewable Portfolio Standard and positioned NEM as a key compliance tool. The Puerto Rico Energy Transformation and RELIEF Act, Act No. 57 of May 27, 2014, as amended, placed NEM under the oversight of the Puerto Rico Energy Bureau, requiring expedited interconnection and rules consistent with federal standards. The Puerto Rico Electric Power Authority Act, Act No. 83 of May 12, 1941, as amended, requires the Puerto Rico Electric Power Authority ("PREPA") and its successors to itemize credits such as the net metering credit on customer bills, integrating the program into the overall rate structure. The Puerto Rico Energy Public Policy Act, Act No. 17 of April 11, 2019, as amended, reinforced the NEM program by expanding capacity limits, streamlining interconnection, and mandating 100% renewable energy by 2050. Additionally, Act 17-2019 established an automatic interconnection process for systems up to 25 kW, simplifying the procedure for smaller

residential and commercial rooftop renewable energy systems to connect to the grid in accordance with Section 9 of Act No. 114-2007. The NEM program's administrative and procedural details are set forth in Regulation No. 8915 of February 6, 2017, Regulation to Interconnect Generators to the Distribution System of PREPA and to Participate in the Net Metering Programs, which details technical requirements, application procedures, and interconnection timelines. Collectively, these laws and regulations form the statutory and regulatory framework for NEM in Puerto Rico.

Q. WHAT IS THE FOCUS ON YOUR TESTIMONY THAT IS RELEVANT TO THIS RATECASE?

A. My testimony is strictly on LUMA's proposal for base rates, with my focus on rate design rather than revenue requirements *per se*. Specifically, I will address the LUMA rate design proposals that increase monthly customer fixed charges directly and through non-bypassable riders and the adverse effect these will have on SESA members, existing and prospective Net Energy Metering ("NEM") customers and more broadly all of Puerto Rico ratepayers. Further, I will directly counter LUMA witnesses statements regarding NEM in Puerto Rico and the issue of lost revenues and cross subsidies. In addition, I will address the questions discussed in Part V of the Energy Bureau's Resolution and Order on Provisional Rates (July 31 2025), which states at pp 34-35 regarding considerations on "practicability" and "affordability".[3] Finally, I propose two rate making principles for Energy Bureau consideration. In this rate case, the detailed principles for decoupling, and denying certain elements proposed by LUMA as contrary to management accountability. For the future post-2030 PREB VoS study, I provide specific guidance on how LUMA should contribute and the associated principles. I will not be testifying on LUMA revenue requirements.

[3] https://energia.pr.gov/wp-content/uploads/sites/7/2025/07/20250731-AP20230003-Resolution-and-Order.pdf.

II. RATE MAKING PRINCIPLES THAT OFFER GUIDANCE IN THIS PROCEEDING

Q. WHAT RATE MAKING PRINCIPLES OFFER GUIDANCE FOR THE BUREAU'S EVALUATION OF LUMA'S APPLICATION AND THE ISSUES IN THIS PROCEEDING?

A. For nearly 60 years, James Bonbright's treatise entitled "Principles of Public Utility Rates" has stood as a foundational reference for evaluation of rate making proposals and approaches.[4] A review of LUMA's proposal against Bonbright's principles serves as a useful framework for analysis. LUMA concurs that the Bonbright Principles are the general principles to be used in setting rates in this proceeding.[5] The following articulation of the Bonbright Principles[6] is useful in general and in reviewing the Application:

- Rates should be characterized by simplicity, understandability, public acceptability, and feasibility of application and interpretation.
- Rates should be effective in yielding total revenue requirements.
- Rates should support revenue and cash flow stability from year to year.
- Rate levels should be stable in themselves, with minimal unexpected changes that are seriously averse to existing customers.
- Rates should be fair in apportioning cost of service among different consumers.
- Rate design and application should avoid undue discrimination.
- Rates should advance economic efficiency, promote the efficient use of energy, and support market growth for competing products and services.

As they have for decades, hundreds if not thousands of rate proposals across the country and around the world, the Bonbright Principles provide a useful starting point for reviewing LUMA's rate proposals. As I will further explain, the emergence of cost-effective options

[4] James C. Bonbright, *Principles of Public Utility Rates* (Columbia Univ. Press 1961), available at: https://www.raponline.org/knowledge-center/principles-of-public-utility-rates/.

[5] Sam Shannon, LUMA Exhibit 20, Q 50 lines 405-424.

[6] This summary was derived from Jess Totten, *Tariff Development II: Rate Design for Electric Utilities,* Briefing for NARUC/INE Partnership (Feb. 1, 2008), https://pubs.naruc.org/pub.cfm?id=538EA65C-2354-D714-5107-44736A60B037.

for customer investment in self-generation makes these principles relevant to the PREB's review of rates and terms applicable to competitive non-utility self-generators. LUMA's proposed rates, including its residential NEM rate terms and proposals should be simple, understandable, acceptable, free from controversy in interpretation, stable, reasonable, non-discriminatory, and should advance economic efficiency. LUMA's proposals fail in several ways, as further discussed in this testimony.

The Bonbright principles provide the foundation for competent and substantial evidence that LUMA must provide to establish that its proposed rates are grounded in actual revenue requirements as well as an honest and comprehensive assessment of the costs to serve these customers *and the benefits that distributed generation creates*.

Q. ARE ADDITIONAL CONSIDERATIONS APPROPRIATE TODAY IN LIGHT OF DEVELOPMENTS THAT HAVE OCCURRED SINCE BONBRIGHT FIRST PUBLISHED HIS TREATISE ON THE PRINCIPLES OF RATE MAKING?

A. Yes. While the core principles remain valid, things have changed since Bonbright published his work. Today, utilities are not the only investors with skin in the electric service game; customer-generators are significant investors, too. Customer classes are becoming more diverse, not less so. There is important work to do in ensuring that public utility rates impacting distributed energy resources ("DERs"), particularly net energy metering customers, serve and support the public interest. I propose several modern adaptations of Bonbright's principles that the Bureau should rely upon in reviewing the underlying methods and foundation for LUMA's proposals, and to ensure that equitable cost-of-service based rates are in place for its captive residential customers.[7] These additional considerations are:

- Full comprehension and reflection of *the resource value of DERs* in rates.
- Rates should account for the relative market positions of the various market actors, and especially for the information asymmetries among customers, utilities, and other parties.

[7] K. Rábago & R. Valova, *Revisiting Bonbright's Principles of Public Utility Rates in a DER World,* The Electricity Journal, Vol. 31, Issue 8, pp. 9-13 (Oct. 2018), available at: https://peccpubs.pace.edu/getFileContents.php?resourceid=43bdf87a9063c34.

- Rates must be grounded in a careful assessment of the practical economic impacts of DERs rates on all market participants.

- DERs rates, like utility rates in general, *must support capital attraction for beneficial investments, including by customers*.

- Regulation must account for the incentive effects of DER rates.

- Rates for DER customers require accurate accounting for utility costs and careful differentiation between cost causation and the potential for cost shifting.

Q. HOW DO LUMA'S PROPOSED RESIDENTIAL NEM RATES ALIGN WITH SOUND RATE MAKING PRINCIPLES IN THE MODERN REGULATORY ENVIRONMENT?

A. LUMA's proposed residential rate structure (shifting revenue allocation between fixed and variable charges) and the inclusion of all NEM in all non-bypassable fixed charges do not align with traditional rate making principles in several regards. The proposed NEM rates fail to account for all the impacts associated with NEM customer-sited generation and storage and focus solely on utility costs. LUMA Witness Balbis makes the unsubstantiated and speculative assumption that non-NEM participant residential customers will be subsidized by NEM customers, based on experience in an entirely different jurisdiction.[8] Simply stated, LUMA fails to evaluate NEM customer-sited generation as a resource for the grid and electrical system in terms of avoided costs, reduction in cost of load not served, system reliability and resilience. LUMA has performed no analysis of the impact of its proposed rate structure, its proposed non-bypassable monthly charges or its proposed volumetric rate shifts (either based on revenue requirements *ceteris paribus* or as proposed in the Optimal or Constrained Budgets) on non-utility generation and storage economics or the development of markets (e.g adoption rates and consumer finance based capital formation) for non-utility generation and storage. The resulting chilling effect of LUMA's proposed punitive changes on the efficient growth of the customer-sited generation market, specifically NEM would be adverse, lasting, and economically inefficient.

[8] Testimony Ed Balbis, LUMA Exibit No 3, Section VII Net Metering, Q 51 and Q52, Lines 483-491, "If adoption becomes significant, it can lead to a significant cost shift to non-participanting customers".

LUMA grounds its proposed residential NEM rate structure and fixed customer charges on nothing more than an effort to claw back revenues it would have collected from NEM customers had they not invested in self-generation and storage.[9] LUMA has no studies or analysis addressing the benefits created by NEM customers to the distribution, transmission or generation system or to the reliability and resilience of entire Puerto Rico, including reductions in cost of load not served.[10] LUMA remains intentionally ignorant of the full range of grid impacts, including benefits, that customer-sited generation creates and the money this resource saves for all customers.

III. LUMA'S FLAWED UNDERSTANDING ON NEM IMPACTS

Q. WHY ARE LUMA'S ASSERTATIONS FUNDAMENTALLY FLAWED?

A. In its testimony and subsequent responses to interrogatories, LUMA makes four assertations regarding NEM customers: 1) NEM cause "lost revenues" that negatively impact LUMA's ability to operate and maintain the transmission and distribution system;[11] 2) NEM customers are "cost shifting" to non-NEM participant ratepayers;[12] 3) NEM customers create additional costs to LUMA that are not offset by any benefits to non-participants;[13] and 4) NEM customers provide no reliability benefit because the Puerto Rico power system is evening peaking.[14] Each of these assertations reflects a flawed understanding of the impact of DERs on Puerto Rico's transmission and distribution system due to incomplete evaluation of costs and benefits or mistaken understanding of utility regulation.

---

[9] Andrew Smith, LUMA Exhibit 2.0, Q16, lines 225-242, "The problem is a NEM customer is not making sufficient financial contributions to the embedded costs of the system, but continues to use the system during system peak" (line 232-235). "Revenue reductions attributable to NEM will be $100 million in FY 2026, increasing ton $135 million in FY 2028" Lines 240-242).

[10] LUMA Response update after review of LUMA responses to IRs [TK].

[11] Andrew Smith, *Op Cit*.

[12] Balbis, *Op Cit.*

[13] Andrew Smith LUMA Exhibit No 2, Q 17 , lines 294-citing Estrada "there are significant grid upgrades costs in order to accommodate the increasing level of NEM customers,….in system upgrades that have been identified (but have no mechanism to be recovered)."

[14] Melendez responses to SESA if LUMA ALL-2 , "DERs do not reduce peak demands in Puerto Rico due to evening peaks", Estrada response to SESA of LUMA FOR-2, " LUMA has not quantified any reductions in peak MW demand noting Puerto Rico's late evening peak occurs when solar is not producing".

Q. PLEASE EXPLAIN WHAT IS WRONG WITH LUMA'S CLAIMS ON LOST REVENUES.

A. Lost revenues are the revenues a utility would have collected according to class-wide assumptions about energy usage were it not for customer actions relating to reductions in usage and bills. That is, the utility operates from an assumption that the average customer will provide an average amount of revenue each month, and when any customer uses less energy for any reason, the utility faces the prospect of lost revenues. Lost revenues can occur when customers install more energy efficient devices than the utility expected when it set its rates, when customers work to conserve energy use through behavioral changes, when individuals or businesses die, go bankrupt or leave Puerto Rico, or when a customer installs and operates distributed generation and storage equipment. LUMA takes this one step further and claims that reductions in demand caused by blackouts or brownouts due to transmission or distribution failures constitute lost revenues.[15]

Lost revenues are not a cost because of two key principles of utility rate making that LUMA has ignored and choose to violate. First, utility cost-of-service regulation is cost-plus regulation. This means that regulators should set rates to recover prudently incurred costs caused by usage. Not using a utility service cannot create recoverable costs. Electric utility rates in Puerto Rico are not supposed to be "take or pay" rates.

Second, allowing a utility to charge customers for services not provided would be economically inefficient because of monopoly rent-seeking behavior. Rent-seeking is the monopoly's tendency and strong financial incentive to charge rates that are unjustifiably high because they face no competition that would enter the market to offer the same service or product at a lower price. Acting as a substitute for these absent forces of competition is a primary obligation of public utility regulators

Q. HOW IS LUMA GROSSLY MISUSING THE CONCEPT OF LOST REVENUES IN ITS CURRENT RATE CASE FILING?

A. LUMA's calculations of NEM Program Base Revenues Reduction is shown Witness Estrada's Testimony, NEM Exhibit 4.0 Table 9 (line 543). Estrada is calculating the lost

[15] LUMA response to SESA of LUMA-Rate_DES-4, Sam Shanno: Reudctions in energy demand caused by blackouts or brownouts due to transmission or distribution failures constitute lost revenues to the utility".

revenues from NEM customers based on the projected test year base forecast "Base Load" in GWh and then subtracting the forecasted *entire cumulative* DG load reductions, including both self consumption and exports for all distributed generation across all customer classes for both existing NEM/DG customers plus new NEM/DG customers)[16] to arrive at "Base Load NM). The difference (essentially the cumulative NEM forecast) is then multiplied by constant $0.052/Kwh (which is above the LUMA rate) to arrive at a claimed revenue reduction due to NEM. Witness Estrada admits this is larger than current LUMA base rates and includes Genera and PREPA charges.[17] In essence, this calculation is the annual effect of the cumulative load reduction impacts compared to the 2017 forecast of base load, multiplied by the current rate. Witness Smith then applies Witness Estrada's calculation to claim that NEM is a "factor that adversely affected electricity sales and revenue that are not covered by base rates" applying the entire GWh forecasted reduction of DG to NEM customers.[18] The larger problem is how this analysis is mischaracterized and misused.

Smith goes on to address lost revenues from CHP and EE as well as macro-economic trends and storms that lowered electricity consumption. Smith neglects to mention the upward demand from post COVID economic recovery, higher temperatures, and EV adoption that are explicitly defined and forecast by Witness Estrada. It is a gross mischaracterization to claim "lost revenues of $100MM or more in future years", and exits solely to denigrate NEM. Here is why:

This calculation has **absolutely no relevance** on the current rate case. In this rate case, LUMA is required to produce test year forecasts for each of 2026, 2027, and 2028 taking into account all known variables that both increase and decrease demand by customer class. The revenue requirements LUMA is proposing are expressly developed to meet that load growth and accommodate changes in customer actions by customer class, including new NEM installations. The proposed rate (volumetric $/Kwh) charge is based on the total

[16] The total DG forecast is us based on LUMA Exhibiut 4.03, "Forecast DG 2025-2028, sponsored by Witness Estrada.

[17] Estrada response to DST-16.

[18] Andrew Smith, LUMA Ex 2.0 lines 240-242.

revenue requirements minus proposed fixed charges and dividing the the load forecast of that customer class. By definition, there can be no "lost revenues" in prospective test years.

Q. WHAT ABOUT THE LUMA ARGUMENT THAT CUSTOMERS THAT DON'T PAY THE AVERAGE CLASS-WIDE AMOUNT OF MONEY FOR FIXED COSTS ARE CREATING A COST SHIFT TO OTHER CUSTOMERS?

A. Just and reasonable rates for DG requires accurate accounting for utility costs and careful differentiation between cost causation and the potential for cost shifting. LUMA's approach to the costs of DG/NEM operations is not connected to a full assessment of the benefits of customer-sited generation. LUMA correctly recognizes that, all other things being equal, net metering customers don't pay as much in their utility bill as they would have without a net metered system. LUMA is also correct that, all other things being equal, DG/NEM customers make lower monetary contributions to fixed cost recovery than they would have prior to installing their generation system. Puerto Rico's DG/NEM customers are, however, providing substantial value to the utility in the many forms, which will be addressed in depth later in my testimony.

The first step any utility should take to address potential cost shifts is to objectively and honestly quantify the potential cost shift *net of the benefits and costs created* by the customer-sited generation. That step remains to be done by LUMA.

As previously explained, lost revenues are not a cost. Cost shifts are only possible if *all* the costs *avoided* by the reduced use are less than the reduced revenue. A cost shift is unjust and unreasonable only if the net result, after a full accounting of costs and benefits, imposes unreasonable additional costs on non-participant customers or provides unreasonable payments to generating customers that exceed value.

LUMA's subsidy/cost shift assertions are inconsistent with the basic rate making premise that utilities have no absolute right to charge customers for everything the utility spends, even if a customer's reduced usage renders some utility investments both unused and un-useful. LUMA's assertion that subsidies arise from lost sales assumes that deviations from its expected earnings will automatically translate into changes in rates. If that were the case, utility overcharges would automatically generate customer refunds, but that does not happen. Charging of revenue shortfalls would eliminate any incentive for more efficient

management of the utility, for more efficient use of energy services, and for customer initiatives to reduce usage and bills.

LUMA has acknowledged that it has no studies to determine the locational distribution of NEM, the potential values of NEM in deferring distribution costs, generation costs, avoided fuel costs, reliability (cost of load not served) or resilience. Therefore, there is no basis in this docket for claiming that NEM produces cost shifts, since there has been no calculation of NEM offsetting value.

Q. IS LUMA'S CLAIM THAT NEM CREATES ADDITIONAL NET COSTS WITHOUT ANY OFFSETTING BENEFITS ACCURATE?

A. The testimony of LUMA's witnesses and budgets (both optimal and constrained) attest that the forecasted increase in NEM customers 3,000+ enrollments per month) and power (350-450 GWh) creates additional costs that should be recovered in this rate case.

- Smith states that there are $12 million dollars of grid upgrades ($10 million related to distribution system upgrades, $2 MM related to transmission upgrades), and $3MM related to supplemental interconnection studies or $15 MM/yr in FY2026 rising to $24MM/yr in FY2028 to accommodate the forecasted level of NEM customers.[19]

- Laird attests to $16MM in customer service costs related to the same NEM forecasted customers.

LUMA admits that it has done no analysis on the location of the NEM systems,[20] whether the locational value enables deferral or reduction in projected distribution cost upgrades,[21] or the value of reduction in the cost of load not served from better grid or generation reliability. Therefore, LUMA has no way of knowing whether the LUMA's direct additional costs are justified against the total NEM customer and system value that LUMA is incurring.

Since the distribution and transmission upgrade costs are inherently locational, not system wide, LUMA does not explain how it has calculated the incremental capital for distribution and transmission requirements to serve new NEM customers, and LUMA admits that it

[19] Andrew Smith, LUMA Exhibit 2, Table 4, Q 17 and Q18.

[20] Pedro Melendez response to COST_ALL-1, LUMA has not developed locational cost to serve studies in the last three years.

[21] Pedro Melendez response to COST_ALL-3, LUMA has not any locational costs analysis of DER deferrals.

does not know where they are located. Therefore, it is impossible to determine whether this is an accurate reflection of the incremental costs to upgrade specific distribution circuits and grid assets, or simply an average interconnection cost estimate per customer.

Even then, giving LUMA that benefit of the doubt that it is, then the following observations on value would apply:

LUMA is using the Value of Lost Load ("VoLL") to justify its $2.5-$2.7 Billion/yr in transmission and distribution capital and O&M expense upgrades.[22] Using the metric that Puerto Rico residential customers experience 27 hours of outages each year from *grid reliability* issues,[23] and consume an average of 425 Kwh/month,[24] thus the lost load equals a loss of 16 Kwh/yr. From the Puerto Rico 2019 Integrated Resource Plan, the residential value of lost load is $12,000/MWh and the Small Commercial is $84,000/MWh. The PREB and LUMA are using the industry consensus value of $57,488/MWh. Thus, the VoLL avoided from grid reliability losses by each NEM residential customer based on consensus value is $916/yr.

LUMA estimates it is adding ~30,630 to 39,055 new NEM customers each year. If capital costs are annualized using a generous 15% capital recovery charge, then the LUMA incremental cost per customer is approximately $600/customer.[25] This is significantly less than the reduction in cost of load not served and beneficial to the system, especially because the customer is using its own capital for the battery system that provides reliability. Therefore, using the same methodology that LUMA uses to justify its proposed capital and O&M budget for the Puerto Rico grid, these costs are more than justified from just the grid reliability benefits. As I will explain, the generation reliability benefits from NEM customers using their BESS under the CBES+ program is far greater to the entire Puerto Rico system -- orders of magnitude larger than the direct incremental costs.

[22] Melendez, LUMA Exhibit 5, generally in summary and Q 54 and specifically Q 57 lines 925-928 using PREB VoLL to calculate a positive NPV for proposed grid budget.

[23] Lawrence Berkley Laboratory, IBTS, *Estimates of the Economic Impacts of Long-Duration, Widespread Power Disruptions in Puerto Rico*, (March 2025),https://eta-publications.lbl.gov/sites/default/files/2025-03/economic_impacts_outages_pr_final_with_cover.pdf.

[24] Testimony of Figueora, LUMA Exhinit 1, Table 4.

[25] The calculation is 15% times the incremental capital requirements each year list in testimony of Andrew Smith Table 4 plus the annual O&M for the distribution studies and the entire O&M from customer service budget attributable to NEM customers (~$16 MM/yr CK) from testimony of Jessica Laird.

Q. IS LUMA'S ASSERTATION THAT NEM CUSTOMERS PROVIDE NO RELIABILITY TO THE SYSTEM ACCURATE?

A. LUMA repeatedly asserts that NEM customers provide no system wide reliability benefit to non-NEM participants because the Puerto Rico energy system is evening peaking, and load rises as solar output falls, so there is no solar output to offset the evening peak.[26] This simplistic formulation neglects the actual realities of Puerto Rico's energy system and the asset configuration of customer owned energy assets.

Puerto Rico faces a severe resource adequacy problem. Over 85% of Puerto Rico's NEM customers (e.g., 145,379 of 167,986 NEM Customers) have battery systems installed.[27] The total installed battery energy storage system ("BESS") of NEM customers is 2,486 MWh.[28] The Customer Battery Energy Sharing ("CBES") initiative enables LUMA to leverage customer sited battery energy storage. Currently, 67,304 NEM customers have opted to participate in the Virtual Power Plant program which now has 402.4 MW/1 GWh of BESS in its VPP fleet. The VPP program is on track to call on its customers over 40-50 times per year, and as of July 2025, average capacity response was 40.5 MW of system peak reduction. The VPP program's BESS capacity indisputably provides system reliability benefits. As I will demonstrate later in this testimony, the VPP program would be impossible without the NEM program because the VPP incentives are insufficient to pay for the costs of standalone batteries, let alone stand-alone solar plus storage.

LUMA admits it cannot compare the actual performance of NEM customers with non-participant residential customers. LUMA lacks load profile studies of residential customers and NEM customers,[29] it lacks locational information on DER customers or has failed to correlate that information to locational reliability and grid upgrade information[30] to determine whether NEM systems contributed to non-wires alternatives or asset

[26] See generally response by Estrada to IR LOAD_FOR-3 and by Melendez to UR COST_ALL-3.

[27] See, *In Re: Informes de Progreso de Interconexión de la Autoridad de Energía Eléctrica de Puerto Rico,* 2025 2Q Report as of June 30th 2025: 145,379 of the 167,986 NEM customers have BESS or 86.5%, https://energia.pr.gov/numero_orden/nepr-mi-2019-0016/.

[28] Id.

[29] Estrada response to IR LOAD-FOR-3, Melendez.

[30] Melendez responses to IR DST 1-17 collectively.

management, and it has not evaluated or included NEM CBES VPP customer impacts to the distribution system feeder peak or asset management lifetimes. Absent a resource adequacy crisis, the majority of non-major storm event system failures are due to the distribution, rather than the generation system, and that LUMA is falling behind on asset management, and that not all individual feeders, circuits and their associated grid assets have the same peak as the total system generation peak (e.g. some will correspond to business and commercial or governmental district loads, which are daytime), LUMA has simply not done the analysis to determine whether NEM systems contribute to nonparticipant system reliability due to beneficial impacts on the grid.

IV. WHY NEM DERS ARE BENEFICIAL TO ALL RATEPAYERS IN THE SYSTEM

Q. HOW COULD LUMA DETERMINE IF NEM DERS ARE BENFICIAL TO ALL RATEPAYERS IN THE SYSTEM?

A. NEM DERS would be beneficial to all ratepayers in the system if their total benefits are greater than their total costs, based on a benefit cost analysis at a system wide level. This analysis can be accomplished by comparing the full resource value to the total costs of NEM. LUMA has only characterized the costs on NEMs, and not addressed resource value.

Q. HOW SHOULD THE RESOURCE VALUE OF CUSTOMER SITED GENERATION AND STORAGE BE ANALYZED, CHARACTERIZED, AND QUANTIFIED?

A. I recognize the Value of Solar ("VoS") study cannot occur until after 2030. Nonetheless, the principles offer us guidance now. Typically, a full and fair comprehension of the impacts of non-utility generation should be supported by full assessment of costs and benefits—a benefit-cost analysis ("BCA")—resulting from DER operation, and where possible, quantification of those impacts for use in cost-of-service analysis and rate design. Regulation is complex, even more so in an era of distributed energy resources ("DER") and emergent competitive markets. Rates are often based on embedded historical costs but have their most profound impact on future behaviors and costs. The growing menu of cost-effective DER-based services and increasing customer choice compels an analysis and

explicit reflection of costs, avoided costs,[31] and benefits in basic service and optional rates like NEM and VPP tariffs because such rates impact DER investment and utilization, and are a key mechanism for optimizing development of these resources.

Benefit-cost analysis ("BCA") is the fundamental approach to defining regulatory prudence for utility investments. For DERs the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources ("NSPM") serves as a nationally recognized approach to evaluating DERs.[32] Since its publication, the NSPM has been widely cited and has been adopted as the framework for developing jurisdictional benefit-cost analysis tests in several states.[33]

Regulators in many states increasingly recognize that there are significant and challenging gaps between costs, prices, and value in the electricity sector. Regulators are also seeking refinements in understanding of costs and benefits based on locational and temporal characteristics of the operation of DG and other DERs. Every utility system, unless unreasonably overbuilt, has places where reductions in load from distributed generation would help to reduce system constraints or defer planned infrastructure upgrades. In these places, the locational value of DG would be significantly greater than average.[34] And the infrastructure investments that customers make when installing DG either include batteries

---

[31] Here, the term "avoided costs" means full avoided costs, including all the known and measurable costs avoided by the operation of distributed generation over the life of the generation facility. This usage stands in contrast to the much more limited usage typically employed by utilities, which quantifies avoided wholesale energy costs on a short-run marginal cost basis and little if anything more, typically derived from averages of locational marginal prices. This also includes deferred grid costs from non wires alternatives and improvement in asset life.

[32] T. Woolf, et al, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources ("NSPM"),* National Energy Screening Project ("NESP") (Aug. 2020). Available at: https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/. While the NSPM was published recently, it reflects best practices articulated in a prior NSPM for efficiency resources and generally recognized in the industry. Mr. Rábago was a co-author of the manual. A summary of the NSPM is available at: https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-Summary_08-24-2020.pdf.

[33] NESP, *NSPM Use and References,* available at: https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/state-references/.

[34] *See* A. Lovins, K Datta, et al., *Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size,* RMI (2002), available at: https://rmi.org/insight/small-is-profitable/. More recent work builds on the foundation established in *Small Is Profitable. See* N.M. Frick, et al., *Locational Value of Distributed Energy Resources,* LBNL (Feb. 2021), available at: https://eta-publications.lbl.gov/sites/default/files/lbnl_locational_value_der_2021_02_08.pdf.

or make battery-ready locations for further enhancing grid reliability and resiliency. LUMA has not based its finding on NEM value based on distribution heatmaps or location-specific marginal cost of service studies, and has no proposal to account for locational benefits of rooftop generation.

DERs provide not just a reduction in avoided generation fuel cost, they also create a real asset hedge against the volatility of fuel costs. Financial Economics requires risk-adjustment when comparing a volatile cost stream with a fixed (financially riskless) one. This is why you're willing to pay a higher interest rate for a fixed- than a variable-rate mortgage, because it reduces your risk.

DERs provide both a reliability and resilience benefit to both the participants and the system overall. Puerto Rico suffers from poor reliability and even worse resilience vs. major storm events. This impact can be assessed as the Value of Lost Load ("VoLL") or the cost of load not served. The PREPA 2019 IRP provided an initial estimate of VoLL, which increases with the duration of the outage. For NEM and CHP participants, a critical element of their investment decision is continuity of electrical service. For non-participants, the impact of NEM or CHP in reducing peak load has a reliability benefit. In addition, CHP or microgrids of NEM can be used as electrical islands to enable more rapid recovery of the system during black start, reducing the total outage duration of all non participant customers.

Economic efficiency requires conscious engagement with objective, data-driven valuation processes.

Q. CAN WE DEFINE A ROUGH ESTIMATE OF THE POTENTIAL NEAR TERM RELIABILITY BENEFIT OF NEM CUSTOMERS TO THE ENTIRE SYSTEM DURING THE RATECASE YEARS OF 2025-2028

A. Yes for generation, no for grid benefits (which requires locational analysis that has not been done by any party). The LUMA Resource Adequacy Study,[35] which focuses on generation adequacy found that Puerto Rico has a severe resource adequacy problem now, which will

[35] Puerto Rico Electric System Resource Adequancy Analysis Report October 21,2024. Submitted by LUMA. All of this section references data and tables.

not be resolved for several years from front of the meter solutions. To summarize, the base case estimate of Loss of Load Expectation ("LOLE") number of days *the entire system* will be without service is **36.2 days from lack of generation,** which is additive to grid SAIDI/SAIFI losses. Interestingly, the first 150 MW of "perfect capacity" reduces that significantly to 17.9 days of LOLE, an improvement of 18.3 days, which equates to 0.122 days of LOLE per MW.[36] The impact of additional MW is non-linear, so the next 150 MW of perfect capacity improves the LOLE to 7.5 days, an improvement of 10.4 days, or 0.67 days of LOLE per MW. Since the improvement of LOLE per 150 MW of incremental capacity is exponential and reaches an asymptotic level, additional capacity has an increasingly diminishing return on reliability improvements. Similarly, Loss of Load Hours (LOLH) start at 154.2 hours. The first 100 MW of BESS lowers LOLH by 48 hours. The first 350 MW of 4 hour duration BESS lowers LOLH by 120.7 hours. The addition of just 25MW of demand response (which is less flexible than a battery), reduced the LOLE by 4 days per year and the LOLH by 18.3 hours per year. 555 MW of Solar PV paired with 4 hour BESS reduced LOLE by 14.1 days and LOLH by 49.5 hours per year. By comparison, the LUMA forecast for new NEM is ~740 MW by July 2028 and since over 85% f NEM is paired with batteries, arrives at 555MW of Solar PV paired with 4 hour BESS..

New generation is not perfect capacity, but battery energy storage is as close to perfect capacity as our technology allows. Timing matters because the first 100 MW of BESS available for dispatch (whether as stand alone or paired) is equivalent to 90 MW of perfect capacity (or a 90% Effective Load Carry Capacity "ELCC"). The next 350 MW of BESS provides on 281 MW of perfect capacity or 80% ELCC. Unlike utility scale solar, customer sides distributed resources typically start the day at a high state of charge, since customers use them for resilience in case of loss of service, and thus mimic the properties of stand alone BESS. I make the assumption that existing BESS under CBES+ has 90% ELCC and future CBES will have 80% ELCC as some utility scale BESS is coming on line.

The most recent analysis of island wide outages by Lawrence Berkely Labs indicates that a territory wide outage of *one day* (24 hours) costs customers $1 billion, while longer

[36] See Figure A-13 Loss of Load Expectation with Incremental capacity.

duration outages are much costlier. Location matters on economic impacts as well, because a single day outage affecting only San Juan costs customers $270 MM while the same duration outages costs customers $141 MM in Arecibo.[37]

According the most recent CBES Report (July 2025), the underlying battery fleet in the program increased to 402.4 MW/1 GWh, the average capacity per peak event in July was 40.5 MW with the average energy per event at 190.3 MWh, given that average duration increased to 4.75 hours by staggering the dispatch. Thus, the existing CBES program already provides similar dispatchability as the stand alone battery resource in LUMA's resource adequacy report. Since the CBES-NEM participants are using their batteries now, their ELCC is 90% or equivalent of perfect capacity of 36.45 MW.

Although the Resource Adequacy Study suggests that certain hours and certain seasons have shown critically low resource adequacy, even using a conservative average can indicate the magnitude of value already created and potentially created. LUMA load forecasts indicates the base load after including all forecast modifiers is 14,864- 15,419 GWh over the test years of FY 2026-FY 2028.[38] Even being conservative and using the average *hourly* consumption, this is 1.76 GWh in FY 2025. The Resource Adequacy study has the evening peak at ~2.1 GWh in January and 2.85 GWh is September,[39] the peak average is 2.475 GWh. Using the PREB VoLL, a territory wide outage for one peak hour costs all ratepayer $142 MM. Reducing LOLH by 49.5 hours is therefore worth $5 billion/yr. Using the more conservative LBL study, ~2 days of avoided territory wide outage is worth $2 BN/yr.

Q. WHAT ARE THE IMPLICATIONS OF THE SYSTEM WIDE RESOURCE VALUE FROM RELIABILITY IMPROVEMENTS TO THE EXISTING NEM PROGRAM?

A. All the CBES+ VPP calls for 2024 and 2025 have been during the evening peak. The 40.5 MW scales to 36.45 MW of perfect capacity, saving 17.8 hours. This means the savings to

[37] Lawrence Berkley Laboratory, IBTS, Estimates of the Economic Impacts of Long-Duration, Widespread Power Disruptions in Puerto Rico, (March 2025), https://eta-publications.lbl.gov/sites/default/files/2025-03/economic_impacts_outages_pr_final_with_cover.pdf, Figure 2 with executive summary.

[38] Estrada, Op Cit.

[39] Resource Adequacy study, Ibid. Fiure 2.2

customer from cost of load not served is ~$2.5 billion using the PREB approved VoLL, and a little over $1 billion dollars using the LBL estimate for a single day. The NEM program and CBES VPP is available now and contributed to resource adequacy. Increasing the amount of NEM with BESS concomitantly with enrolling the participants into the CBES - VPP program as soon as possible (e.g., consistent with the LUMA forecast for NEM) has a massive savings to all Puerto Rico ratepayers, especially non-participants who made no investment in customer side energy assets, since they reap the full value of the reduction in cost of load not served

Q. WHAT ARE THE IMPLICATIONS OF THE SYSTEM WIDE RESOURCE VALUE FROM RELIABILITY IMPROVEMENTS TO THE FORECASTED NEM PROGRAM?

A. The final participation of NEM customers with PV paired with BESS in the CBES-VPP program to enable reliable dispatch of their BESS assets that start at a high rate of charge define the dispatchable BESS resources that can be used to improve system wide reliability. As noted above 75% of the NEM customers adopt PV paired with BESS. So far, ~40% of them have signed up to CBES VPP. Of that number, the participation rate has been 85%. Combining these factors means that 32% of the PV-BESS NEM customers would participate for 4 or more hours as per the June and July 2025 pilots. To calculate the future NEM contribution, I apply 32% of the LOLH from the Solar paired with BESS scenario in the previously referenced Resource Adequacy report to arrive at an estimate of 15.8 hours of lower system wide LOLH. Using the PREB VoLL value as noted above, the value to all Puerto Rico ratepayers is another $2.2 billion/yr. This conservatively assumes that there are no additional actions taken to increase NEM customer participation and system discharge. Taken together, that is $4.7 billion in LOLH VoLL savings from improved generation resource adequacy due solely to NEM CBES+.

Q. DOES CBES-VPP RECEIVE AN INCENTIVE TO PARTICIPATE TODAY THAT IS JUSTIFIED BASED ON THE SAVINGS?

A. Yes. VPP Aggregators (e.g., Sunrun, Tesla) receive $1.25/kWh ($1.250/MWh),which is largely passed on to customers. The incentive rate was justified based on the VoLL savings

by the PREB when approving this program.[40] In July 2025, 12 events were called with the average energy discharged from all VPP participants per event was 190 MWh, or a payment of $237,500 per event. There are ~50 VPP events per year or approximately $11.8MM of payments in any given year. In addition, the PREB approved $21.2 million in FY2026 for the Permanent CBES+ program. Since the VPP program avoids territory wide generation resources adequacy losses, the benefits grossly outweigh the incentive costs.

Q. ARE THE VPP INCENTIVES LARGE ENOUGH TO MAKE INSTALLATION OF BESS VIABLE WITHOUT THE NEM PROGRAM?

A. Absolutely not. A typical customer installation is 6 kW with over 13.5 kWh of storage costing roughly $30,000 split between solar and BESS. Thus, the BESS alone costs around $15,000.[41] Using the example above, the average customer received a low of $236/yr, a LUMA assessment of the average at~$400/yr and maximum between $500/yr.[42] The maximum CBES revenues would result in a 30 year payback on the stand alone battery system that has a 10 year asset lifespan, hardly a good investment. It is the NEM program that enables customer side BESS to be financially attractive.

Q. WHY IS NEM PV/BESS SO UNUSUALLY VALUABLE TO THE PUERTO RICO ENERGY SYSTEM NOW?

A. Puerto Rico suffers from two major sources of poor reliability. First, the poor state of existing generation of the Puerto Rico system means that there is a severe lack of generation resource adequacy now, leading to a high expectation of near term loss of load until new storage and/or dispatchable generation is brought online. Resource adequacy failures result in territory wide outages. Second, the deteriorated state of Puerto Ricos transmission grid means that there are a large number of distribution faults that cause local and sometimes wider cascading outages, the latter when transmission grid assets fail. Customer side PV/BESS under the CBES-VPP program directly address both. For some distribution feeders and assets, even NEM customers not participating in CBES may have a beneficial

[40] Energy Bureau Resolution and Order April 3rd 2025 established the permanent CBES. This was expanded to CBES+ by an April 24, 2025 PREB Resolution and Order.

[41] A single Tesla Powerwall 3 is $13,500, since some customers use more than one, the average is higher.

[42] Motion to Submit Proposal For Expanded CBES (May 8, 2025), https://energia.pr.gov/wp-content/uploads/sites/7/2025/05/2025.05.08-Motion_to_Submit_CBES-Program-Proposal-filed.pdf.

effect. Further, NEM PV/BESS is being rapidly adopted now based on consumer finance capital that does not increase the rates for non-participants beyond the very modest amounts of LUMA direct NEM expenses mentioned earlier in my testimony.

Q. WILL LUMA'S PROPOSED 4X25 MW BESS SYSTEMS BE MORE COST EFFECTIVE TO IMPROVE SYSTEM RESOURCE ADEQUACY FOR RATEPAYERS?

A. Unlikely due to the issue of time, but the analysis cannot be definitive with the current information. NEM resource adoption is happening now, and will continue to accelerate. Even if the Energy Bureau approved the LUMA BESS, it will still take at least 18 months or more to procure and install the system. As noted above, the incremental value to resource adequacy is reduced exponentially with each 150 MW added to the system. Further, ratepayers pay for all the BESS costs via the proposed rate recovery while ratepayers do not pay for the capital costs of NEM, only the direct grid interconnection and customer service costs. The grid reliability impact is location dependent and can not be assessed. In general, utility owned resources have greater control and transparency. However, I stress that *both* are needed as soon as possible to address the resource adequacy issue.

Q. IS THERE AN RPS COMPLIANCE BENEFIT TO NEM?

A. LUMA witness Figueora states in his testimony that NEM exports are included in RPS compliance.[43] Under normal circumstances, this would reduce the amount of RECs that would otherwise need to be purchased from solar or other renewable PPAs to meet the RPS compliance requirements, though Puerto Rico does not have typical interim targets. Nonetheless, the RPS compliance testimony of LUMA Witness Figueora can offer some initial guidance. NEM customers export ~55% of their system capacity or ~47-75 GWh per month in 2025 to date, as compared to renewable PPA production of 34-39 GWh/month from all renewable PPOAs[44]. Thus, distributed generation represents between 57-69% of the total renewable production. LUMA testimony on the cost of RPS compliance clearly states that no additional costs are required or transfer payments made to NEM customers for their contribution to RPS compliance beyond the export rate they receive by law, which

[43] Witness Figueora, LUMA Exhibit 1.0 section XIII, Estimates of RPS Compliance Costs general and Table 13

[44] Witness Estradea, Exhibit 2, Distributed Generation data.

is already partially offset by the avoided fuel costs. According to Witness Figueora's testimony, the effective incremental cost of NEM derived RECs is zero.[45] The value is based on the current and prospective Renewable Energy Certificate (RECs) purchases in 2025 YTD, 381,126 MWh of RECs where procured for $4,569,366 or ~$12/MWh.[46] Thus year to date, NEM customers saved the system $5.1 MM for the half year ending July 2025. However, the LUMA forecasted costs of RECs goes down substantially to $7.18/MWh in FY2026, $3.22/MWh in 2027 and $2.6/MWh in FY 2028.[47] If this forecast is accurate, then the annual value of NEM REC displacement will decline during the rate case test years (e.g. if forecast DER exports is 1.3 GWh in 2028, then the avoided REC cost drops to $4.17 MM per year).

Q. WHAT ARE THE IMPLICATIONS OF THIS INITIAL REVIEW OF THE BENEFIT ON NEM TO THE NON-PARTICPANT RATEPAYERS IN PUERTO RICO?

A. This initial review is not comprehensive and inclusive of all the benefits. That said, due to the unusual dual reliability problem Puerto Rico faces right now, NEM resources create significant system value. Thus, even before all the benefits are included, its is undisputable that more NEM PV-BESS resources, enrolled and participating in the CBES-VPP program create massive reliability benefits to non-participant ratepayers. Further, the fragile state of the generation and grid system means that it is the public interest to have more of these resources sooner.

V. CONCERNS REGARDING LUMAS PROPOSED RATE STRUCTURE

Q WHAT RATE STRUCTURE IS LUMA PROPOSING?

A. LUMA is proposing to reallocate revenue recovery in rates by increasing the fixed monthly charges to all customers, and reducing the volumetric charges accordingly. LUMA asserts that the increased proposed charge is a more accurate reflection of what it classifies as customer costs in its cost-of-service study. LUMA says that these costs "represent the

[45] Witness Figueora, LUMA Exhibit 1.0 section XIII, Estimates of RPS Compliance Costs general and Table 13; There is no identifiable costs for exported production [from net metering customers] that is counted towards RPS compliance.

[46] Witness Figueora, Op Cit.

[47] Figueora Schedule H, RPS compliance cost and forecast.

investments that exist primarily to enable customers to connect to the power system (and collect payment once they are connected)".[48] In addition LUMA is proposing to move two existing riders, CILT and SUBA from volumetric rates to fixed costs and impose two additional riders, the Storm Outage Recovery and Legacy Pension Obligations.

Q WHAT ARE YOUR PRIMARY CONCERNS REGARDING LUMA'S PROPOSED RATE STRUCTURE?

A. I have three primary concerns. First, as I will show, this rate structure adversely affects existing NEM customers due to a reduction in revenues, and will slow the adoption rate of new NEM customers due to longer payback periods, *ceteris paribus* based on the existing revenue requirements. As a result, *capital formation for NEM programs would be reduced*. Collectively, these means that fewer NEM resources would be added to the system, despite the overwhelming total system benefits.

Second, the customer classified costs appear to be significantly overstated vs. the purported intent of identifying only those costs directly and wholly attributable to the mere presence of the customer on the system, even if they used no energy. Further, LUMA provided insufficient information to link the proposed cost allocations of each cost category to the proposed budgets and sworn testimony of the relevant LUMA organizational elements to evaluate whether these are, indeed, related entirely to customers.

Third, the ~30% cost increase for low-income customers is regressive to low-income ratepayers. It represents a significant rate increase for them, and a high energy burden.

WHAT ARE THE PROPOSED RESIDENTIAL FIXED CHARGES VS TODAY?

A. Currently, fixed charges are $4/month. LUMA proposes to increase these charges to a least $29/month, not including the allocation of outage recovery to residential customers.[49] The following table explains the proposed fixed rate charges presented by witness Smith in his Testimony, LUMA Exhibit 2.0 and associated exhibit, and assuming a typical monthly use of 425 Kwh in $/month using latest CILT and SUBA tariffs

[48] Sam Shannon LUMA Ex 2.0 Q 56

[49] LUMA response to SESA IR not provided before filing of this testimony.

	FY2026	FY2027	FY2028
CSS for CRS	15.54	21.71	21.72
CILT (1)	1.88	1.88	1.88
SUBA-HH& SUBA -NHH (1)	5.8	5.8	5.8
Outage Recovery	None	LUMA has not provided allocation	LUMA has not provided allocation
Legacy Debt	N/A	TBD after Title III resolution	TBD after Title III resolution
Total	$23.22	>$29.39	>$29.40

(1) LUMA unclear as to whether fixed charges start in FY2026 or FY 2027

Q. BEFORE FACTORING IN LUMA'S PROPOSED OVERALL RATE INCREASE, HOW MUCH WOULD VOLMETRIC RATES DECLINE?

A. This cannot be determined as LUMA has not responded to SESA's IRs on this question. In Witness Shannon Schedule K, the functional cost allocation attributed to the category "Customer" directly ties to the fixed charged shown in the table above. These total $222.3 MM in FY2026 and $311.7 MM in FY 2027. Schedule K customer demand has another $219 MM FY 2026 in, and $340MM in FY 2027, which is translated to $15.3 and 24.1$/Kw respectively. There are additional costs of $15.29 and $20.5/Kw in each fiscal year. However, these appear to be based on Luma's optimal case revenues, allocated to different categories. The rate design concern is in the allocation. If revenue requirements were held constant, and Luma's rate design algorithm was implemented, the volumetric rates would drop. I do not have a response from Luma on reduction of rates if revenue requirements were held constant. The allocation to fixed charges is ~33.3%. This would imply, all else being equal, that the LUMA volumetric charges would drop by ~ 1.67 cents/kWh y half based on the prior revenue requirements.

Q. WHAT IS LUMA'S BASIS FOR THIS RATE DESIGN?

A. LUMA is rebalancing the proportion of revenues collected from fixed, demand and energy charges. LUMA states it is "attempting to collect a greater share of revenue from the fixed and demand charges on the customer's bill to provide some revenue stability and make it easier for the utility to withstand downward trends in consumption."[50] LUMA asserts that its proposal to increase customer bills by ~ 58% based average consumption, results in a >90% increase for NEM customers with low consumption because of the fixed charges. While LUMA states this reflects the policy objective that "all customers receive bills based on charges that are truly reflected of the costs to provide electricity service to them"[51], I will show that this claim is not valid.

Q. WHAT IS LUMA'S BASIS FOR THE CUSTOMER CLASSIFIED COSTS?

A. LUMA states customer classified costs are those that enable customers to connect to the power system, including meters, customer billing, account management service drops, marketing and sales, and *some portion of distribution assets*."[52] The last term is outside the norm of many utilities and requires justification as to why these costs would be incurred even if a customer used no energy.

Q. DO YOU AGREE WITH THIS DEFINITION?

A. I agree that customer-related costs are costs that vary entirely or almost entirely with the number of customers served. Customer-related costs are costs to *connect* the customer to the utility grid and bill them accordingly. This is the concept behind the basic customer method of customer cost classification and should be followed by LUMA.

Q. WHAT ARE YOUR CONCERNS REGARDING LUMA'S PROPOSED FUNCTION COST ALLOCATION OF CUSTOMER-CLASSIFIED COSTS?

A. As defined in Schedule K of Sam Shannon's testimony, it does not seem credible that the entirety of the cost allocated to the category of customer classified costs would exist simply

[50] Shannon Q51, line 431-434.

[51] Shannon, Q66 and Q67.

[52] Shannon Q51, line 431-434.

as Shannon states, "even if a customer uses no power, there will be some infrastructure dedicated to connecting the customer to the distribution network".

For example, in Schedule K FY2026, the following allocations have been made to "customer" are questionable:

- 100% of customer accounting, service, info and sales O&M ($112.8M)
- 9.1% of distribution O&M ($0.9MM)
- 9.6% of Administrative and General ($25MM)
- 29.9% of distribution capital expense ($40.3MM)
- 100% of customer accounting, service, info and sales capital expense ($16.8MM)

There are additional smaller accounts as well which are allocated to "customer" rather than customer demand. The net effect is that the total costs allocated to "customer" which is the basis for fixed charges is $222.3 M. In essence, LUMA is asserting that 33% of all customer costs would exist even if not one of those customers consumed any electricity whatsoever. This simply defies credibility and common sense.

If all of these costs were entirely due to the customers simply being interconnected to the system, then it would logically follow that if more customers than forecast joined the system these costs would go up, and conversely if fewer customers remained on the system these costs would go down.

There appears to be scant evidence that LUMA is building the entirety of all its budgets that are allocated to account "Customer" are based on customer count. Nor is LUMA proposing to modify this budget based on customer count. Instead, this appears to be a thinly veiled attempt to transfer far more overheads and distribution system expenses as fixed costs to residential and NEM customers beyond the actual costs of interconnecting, metering, billing and account management—and is far more expensive than typical fixed charges for these functions in other US utilities as discussed in the testimony of Ahmad Faruqui.

Q. DO THESE CUSTOMER COST COMPONENTS MEET THE DEFINITION OF COSTS THAT VARY ONLY WITH THE NUMBER OF CUSTOMERS AND NOT WITH THE LEVEL OF USAGE OR DEMAND?

A. LUMA's classification of costs as customer costs violates its own definition of such costs and directly results in the proposal for a higher fixed residential customer charge. It is reasonable to try to recover properly classified customer costs through the fixed customer charge. But LUMA is proposing to recover all of its customer service department costs, some of its general and administration costs, and a portion of the operation and maintenance of the distribution system, among others, that appears to go beyond meters and interconnection and bad debt into the customer charge.

LUMA has the burden of showing that these costs vary entirely or are almost entirely based on customer count. Neither in its Application nor in the direct testimonies of its witnesses has LUMA made that showing.

Q. ARE THERE OTHER REASONS THAT WHY LUMA'S PROPOSED FIXED CHARGE INCREASE FOR RESIDENTIAL CUSTOMERS IS A BAD IDEA?

A. Yes, there are several reasons the Bureau should reject LUMA's proposed increase in the residential fixed customer charge, including that:

- LUMA's proposal violates the principle of rate gradualism.
- High fixed charges that include costs that in reality vary with demand are inefficient and send perverse price signals that encourage inefficient use of electric service.
- High fixed charges that include costs in reality that vary with the level of demand force low energy users, who are often low-income customers, to subsidize large users within the class.
- High fixed charges discriminate against customers that invest in energy efficiency, NEM, behavior use reductions and other options in an effort to reduce their electric bills by increasing the share of the bill that is non-bypassable.
- High fixed charges that include costs that in reality vary with the level of demand send inefficient price signals to the utility, encouraging unnecessary spending through unjustified enhancement of revenue stability and reduction of marginal revenue effects associated with usage.

Q. GIVEN THAT LUMA IS ALSO PROPOSING DECOUPLING, DOES LUMA'S PROPOSED RATE DESIGN IMPROVE REVENUE STABILITY?

A. No. If decoupling is approved, LUMA already has full and more certain rate stability. Shifting charges to fixed does not improve revenue stability. It is entirely duplicative and administratively burdensome. It only serves to have a punitive effect on NEM customers and low-income customers.

Q. WHY IS SUPPORTING CAPITAL ATTRACTION FOR NEM CUSTOMERS IMPORTANT?

A. All of the costs of NEM installations (e.g. NEM PV/BESS) are paid for by individual customers, either directly or financed, including the capital costs of the panels as well as the insurance, financing, and operational costs associated with the generation that NEM customers bring to the system. Discouraging NEM investment denies all customers the benefits of using private, non-utility capital to meet a portion of system needs and preserves more expensive monopoly control over system costs ultimately imposed on all customers. NEM/DG investments require capital, and this investment represents a proportionately more significant share of a household or business budget than it would for a very large utility. Capital access and affordability for small investors is impacted by payback rates and ratios, market size, supply- and value-chain diversity and maturity, and other factors. Put simply, higher fixed costs combined with lower volumetric revenues for NEM installations will reduce the expected savings from an investment in a PV/-BESS, because the energy savings come from the volumetric cost reduction in own use, and the revenues for any exports. As a result, fewer LUMA customers will be able to access capital, sign a lease or secure an affordable loan to install solar and storage, because the returns on the upfront investment will be lower. Even though economically efficient in the long term, global evidence has shown the customers respond to longer payback periods with lower adoption.

Q. WHY IS CAPITAL FORMATION WITH CONSUMER FINANCE SO IMPORTANT TO PUERTO RICO NOW?

A. PREPA is unable to access the capital markets as it is still in bankruptcy. LUMA is capital constrained in terms of the amount of non-federal capital it is willing to invest and needs additional capital, requested in this rate case to both get reimbursement of federal funds,

and purportedly to operate, maintain and upgrade the grid. All the capital approved in this rate case must be recovered from ratepayers, increasing rates substantially.

Similarly, any utility scale solar or BESS facilities have their PPOA costs recovered in rates through the rider.[53]

By contrast, 167,986 NEM customers and their suppliers have invested approximately $4.6 billion[54] in their current PV +BESS NEM systems (based on number of customers and average system costs, exact figures are not collected nor can they aggregated). NEM customers have installed 1,200 MW of new PV capacity and a staggering 2,486 MWh of BESS storage. The incremental LUMA costs to accommodate these customers is a tiny fraction of NEM customer's (or their supplier's) investment.

Simply put, neither PREPA nor LUMA have the financial strength to make this scale of investment.

Q. HOW WOULD THAT IMPACT TYPICAL PAYBACK PERIOD?

A. The payback for a typical system if the customer made the investment is ~**8 years.** In general, every $.02/kWh reduction in volumetric rates increases the payback period by 1 year and lowers the internal rate of return by 1%. If the proposed rate structure lowers volumetric rates by $.02/kWh, then the payback time would increase this **to 9+ years,** depending on system size, standalone PV vs. PV with storage and CBES participation level**.** Similarly, the net savings from leased PV-BESS systems would decline since the lease payments are dependent on the PV BESS system capital costs, and the lease savings are dependent on the avoided volumetric revenues from self consumption and export of power, plus any CBES incentives for those participating in this program. This would reduce the number of new NEM participants, adversely impacting the interest of SESA members who

[53] CBES payments are included in the PPCA rider.

[54] 1,200 MW x $2,500 per kw equals $3BN and 2,486 MWh x $1000/Kwh equals $2.46 billion or 5.46 bn x 85% having both PV and BESS equals $4.6 billion as a rough estimate. Actual investments are unavailable through any data source.

sell or lease distributed energy solar systems, prospective NEM participants, and all Puerto Rico ratepayers from worse reliability.

Q. HOW WOULD THIS IMPACT ADOPTION WHEN ADDED TO THE CHANGES IN FEDERAL POLICY?

A. As we are all aware, the new Federal administration has been adverse to solar, with clear intent to drive up costs. While Puerto Rico is insulated from some federal changes in tax credits since they were mostly ineligible, the increase in tariff prices for solar and batteries is inescapable. This could lead to a significant increase in costs depending on the final negotiations lowering the payback period and investing returns whether owned or leased. Global experience has shown that when the payback is more than 10 years, adoption falls off precipitously. We are dangerously close to that cliff.

Q. HOW WOULD THIS ADVSERSELY IMPACT THE ECONOMIC EFFICIENCY OF CUSTOMER PV/BESS SYSTEMS?

A: As a result of reduced financial return from the proposed rate structure, customer-sited DG facilities will be undersized and therefore result in economic waste. Customer-sited DG, just like utility investments, are heavily fixed-cost investments. The marginal cost of adding production capacity is very low compared to the fixed costs of engineering, interconnection, and installation. Undersizing creates economic waste by forcing customers to spread fixed costs of system installations over fewer produced kWh. And fewer valuable exported kWh, and more important BESS kW are available to LUMA and its customers.

Q. WILL THE PROPOSED RATE STRUCTURE HARM EXISTING AND PROSPECTIVE NEM CUSTOMERS AND THEREBY DEPRIVE PUERTO RICO'S ENERGY SYSTEM OF THEIR RELIABILITY BENEFITS TO ALL RATEPAYERS?

A. Yes. A just and reasonable residential DG rate must be grounded in a careful assessment of the practical economic impacts of the rate on all market participants. That includes customer-generators and other utility customers as well. There can be no reasonable doubt that the demand charge proposal from LUMA will further suppress the NEM market and limit the number of customers that can afford to invest in self-generation and storage. Less NEM customers and storage means that fewer CBES+ customers will be available to

address the resource adequacy crisis that is crippling Puerto Rico's energy system, imposing unreasonable costs of load not served.

Q. ARE LUMA'S NEM FORECASTS CONSISTENT WITH ITS PROPOSED RATE DESIGN?

A. No. The LUMA forecasts of NEM adoption are not based on customer investment return, but rather a statistical extrapolation of historical trends.[55] LUMA has admitted it has not done analysis on the financial impact of its proposed rate structure to NEM customers or the adoption rate. LUMA, as a rate-regulated utility, must provide enough competent evidence for the Bureau to evaluate whether the proposed rate design will have an unreasonable negative impact on capital attraction to support renewable energy market growth in LUMA's service territory and not unreasonably frustrate capital formation by participants in the non-utility distributed generation sector.

Q. HOW WOULD LUMA'S PROVISIONAL PROPOSED RATE IMPACT NEM ADOPTION?

A. Depending on the level of rate increase ultimately approved by the PREB, it could increase adoption during the provisional period, though the uncertainty on final rates may not make this so. LUMA is proposing a provisional rate of $.077896/kWh under the present revenue allocation vs. the $0.049440/Kwh for consumption under 425 Kwh month. This would be a rate increase of $0.028456/Kwh or 57% higher than current levels, if the Bureau accepted the entire Optimal Budget as presented. If the net effect of the entire final rate case is that volumetric rates increased to this extent, it would lead to more NEM adoption. However, too large an increase may have unintended consequences that benefit no one.

Too large a rate increase with the current poor levels of reliability may lead to not just greater adoption of NEM, but have a chilling effect on the entire Puerto Rican economy, particularly for energy intensive sectors that are the source of new economic growth. If the Puerto Rico economy suffers, capital becomes more scarce and expensive, and there is a reduction in total load from both customer behavioral response and potentially an economic

[55] Estrada Exhibit 4.03, tab DG trends applied.

recession. This could lead to inadequate revenues to remediate the grid, creating a spiral of high costs and low reliability that is not in the public interest.

The requested LUMA rate increase for residential and commercial starts at 36-43% in FY 2026 and rises to 43-58% by FY 2028, based on the Cost of Service Results.[56] Smith does not comment on the economic impact, price or behavioral response of this level of rate increase, nor does Estrada use price elasticity to determine the impact on sector demand. Astonishingly, LUMA believes "the rate design will cause customers to use less energy making the grid less important as a commodity delivery network and more as a service and supply network".[57]

Q. WILL LUMA'S PROPOSED RATE STRUCTURE ALSO HARM LOW INCOME CUSTOMERS?

A. This increase creates an economically regressive impact on residential customers, resulting in a much higher relative increase for low energy users, who are often low-income customers, as well as penalizing other customers that work to reduce their bills through investments in DG and/or energy efficiency.

Q. HOW SHOULD LUMA ACCOUNT FOR THE INCENTIVE EFFECT OF DG RATES?

A. It is a truism of economic and rate regulation that "all regulation is incentive regulation."[58] Likewise, all rate design is incentive rate design. Export credit rates and additional charges impact DG investment decisions. There are other potential incentives stemming from DG rate design as well. LUMA must bring to its DG rates a fair and objective evaluation of the benefits of exported energy in order to craft a rate design that encourages the harvesting of these benefits for all customers.

Q. WHAT ARE YOU RECOMMENDING THE ENERGY BUREAU DO REGARDNG LUMA'S PROPOSED RATE STRUCTURE?

---

[56] Witness Shannon Tables 1-3 and Tables 4-6 Q40 and Q41.

[57] Witness Shannon Q51 lines 434-437.

[58] J. Lazar, *Electricity Regulation in the U.S.,* Regulatory Assistance Project (Jun. 2016). Available at: https://www.raponline.org/knowledge- center/electricity-regulation-in-the-us-a-guide-2/. The ultimate source of this quote is unclear.

A. Allowing a utility to charge customers for services not provided would be economically inefficient because of monopoly rent-seeking behavior. Rent-seeking is the monopoly's tendency and strong financial incentive to charge rates that are unjustifiably high because they face no competition that would enter the market to offer the same service or product at a lower price. Acting as a substitute for these absent forces of competition is a primary obligation of public utility regulators.

I recommend the Bureau deny, in its entirety, the LUMA Proposal for proposed rate structure that transfers large portions of the costs currently in the volumetric portion of the customer bill to fixed monthly charges. This includes the unjustified reallocation of LUMA costs into so called "customer-classified costs", transfer of existing CILT and SUBA riders and adding the new Storm Outage and Debt Recovery Riders to non bypassable fixed costs.

Should the Bureau entertain inclusion of some the so called "customer classification costs", I recommend that LUMA be required to defend those costs as solely due to the presence of customers. The Bureau should direct LUMA to demonstrate that their proposal for a fixed residential customer charge is only based on costs that vary entirely or almost entirely with the number of customers that LUMA serves in this or any future rate case.

I recommend that Bureau retain the current $4/month customer charges. I recommend that the volumetric rates not decrease due to reallocations of revenue requirements and that per-kWh charges for NEM customers continue to be on net consumption, as per Puerto Rico l

VI. A PATH FORWARD FOR A RELIABLE AND AFFORDABLE SYSTEM

Q. IS THERE A PATH FORWARD IN THIS RATE CASE TO BALANCE AFFORDABILITY, RELIABILITY, AND CAPITAL FORMATION?

A. Yes. Puerto Rico's electrical system is facing an interrelated combination of four crises: 1) system wide reliability failures from lack of generation resource adequacy; 2) local, regional, and system wide reliability failure due to faults or outages on the transmission and distribution grid, 3) inability of the utility to raise sufficient capital to address these issues and 4) high electricity rates that have directly lead to reduction in industrial and general economic activity, emigration, and ultimately a high energy burden on all Puerto

Rico ratepayers, particularly low income households that are 36% of the population. All of these issues must be addressed urgently.

The Energy Bureau seeks to find a path in this rate case, along with other ongoing dockets that can find the right balance between improving system reliability (lowering the economic and personal cost of load not served), attracting enough investment to operate and upgrade all elements of the system, and improving affordability by lowering, not dramatically raising rates.

The only success story in the last three years has been the impact of consumer behavior and investment in response to a new legal regime around all DERs. In NEM alone, 167,986 NEM customers and their suppliers have invested approximately $4.6 billion in the current PV+BESS NEM systems NEM customers have installed 1,200 MW of new PV capacity and a staggering 2,486 MWh of BESS storage.

With this context of this rate case in mind, LUMA now proposes to improve only distribution and transmission system reliability, at great expense that would result in substantial rate increases to all customers, and throttle the successful capital formation of customer owned distributed generation and storage. Perhaps there is a better way.

If the Energy Bureau removed the disincentives LUMA currently has for the load reductions caused by all forms of customer based energy assets and behaviors (e.g., CHP, DR, NEM, and EE, this would reduce and perhaps eliminate the barriers for increased adoption. In the near term, the rate structure should support rather than hinder customer investments in all forms of distributed energy resources, as all of them will help resolve the current reliability crisis more affordably, and lower the energy burden to low income customers. The current architecture of the Puerto Rico grid is no longer suited for its mission of delivering power affordably and reliably, and must change starting with this rate case. New grid side and customer side technologies can redesign the energy system to achieve both goals. Explicit collaboration between the utility and its customers in design, planning, asset management and utilization will lower the total system costs while improving service and reliability. Other systems facing climate resilience and affordability

challenges with high renewable and DER penetration are on this path now. This is the moment for Puerto Rico to join them.

Q. WHAT ARE THE PRACTICAL STEPS THE ENERGY BUREAU CAN TAKE IN THIS RATE CASE ALONG THIS DESIRED PATH?

A. There are three critical actions, each of which will be discussed in turn. First, create a revenue decoupling approach that is prudent and ensures LUMA's management and fiscal accountability. Second, deny LUMA rate structure proposals that hinder capital investment and formation by customers and keep monthly charges the same with no decrease of volumetric charges unless revenue requirements decrease. Third, after this rate case and before 2030, create a joint task force, under leadership of an independent third party with resources to address the near term grid plan, to engender collaboration amongst the parties to achieve grid reliability more affordably during the rate case years from a combination of utility and grid resources. The results of this task force would inform the Energy Bureau on future LUMA revenue requirements.

Q. DO YOU SUPPORT REVENUE DECOUPLING?

A. Yes, revenue decoupling decouples the utility's revenues from its electrical sales, ensuring continuity and stability of revenues despite weather and non-weather deviations from the sales forecast. This approach removes the disincentive that utilities like LUMA have to support customer distributed energy resources that lower it sales. Decoupling should always be bidirectional, as there are forces that increase sales, such as temperature and EVs. The revenue balancing account prevents utilities from over or under earnings based on whether sales are higher and lower than the forecast.

Q. DO YOU SUPPORT DECOUPLING AS PROPOSED BY LUMA?

A. No, and it is not clear what LUMA is proposing. Sam Shannon's testimony states that the utility is proposing a revenue decoupling mechanism "as described in Schedule I", yet Schedule I is a blank page containing no details. The Energy Bureau should not approve decoupling unless there is a clear, complete proposal supplied by the utility, and after all intervenors have had time to evaluate and comment on their support or opposition of the specifics of what is being proposed. The details matter.

There is already one LUMA decoupling concept that is entirely unacceptable and repugnant. In response to IR PC of LUMA DECOUP-4 and SESA of LUMA DES-4, LUMA Shannon had constructively the same response as to whether demand reductions from black outs or brownouts *due to the transmission and distribution grid failures within its control* would be lost revenue. Shannon responded that yes, that such outages are lost sales revenue that would be subject to load decoupling. This would completely absolve LUMA management of any responsibility or repercussions from failures due to poor management of the grid, despite the revenue requirements increases they are seeking. It goes against the very concept of public utility regulation that holds the management and shareholders of the monopoly responsible for their performance. Worse, it could be construed as evidence of a callous disregard for the welfare of the people of Puerto Rico, who they serve.

Q. HOW SHOULD REVENUE DECOUPLING BE IMPLEMENTED IN PUERTO RICO.?

A. The Puerto Rico Energy Board should adopt the following guardrails:

- Scope: Applies only the LUMA base distribution, excludes all fuel and other pass through riders.
- No outage recovery: Prohibit inclusion of sales lost from utility caused outages.
- No duplicative charges: PUC should reject proposed changes to rate structure that increase fixed charges as these are duplicative for revenue certainty.
- Bidirectional: Require symmetric true-ups with deadbands and caps on annual adjustments.
- Performance Incentives: Pair with utility service quality metrics and penalties, linked or in addition to LUMA contract.

The following tables show the scant LUMA proposals with the fundamental principles for best practice revenue decoupling:

Decoupling Elements	**LUMA (as implied)**	**Best-Practice (Recommended)**
Documentation of mechanism	Details not provided; Schedule I left blank.	File complete tariff + calculation handbook (targets, formulas, data).
Adjustment direction	Not specified.	Bidirectional true-ups (up or down) to correct over/under-collections.
What decoupling covers	Broad "lost sales" concept.	Only base-rate revenue variances; exclude fuel & purchased-power riders.
Outages/poor performance	Sales lost from blackouts/brownouts classified as lost revenue.	Explicit exclusion – no recovery for utility-caused outages or failures.
True-up cadence & caps	Not specified.	Quarterly accruals; annual resets; deadbands and caps to smooth bills.
Customer growth/attrition	Not specified.	Per-customer or normalized targets to avoid windfalls from load migration.
Transparency & audits	Not specified.	Publish workpapers, allow discovery, independent annual audits.
Performance accountability	Would recover for outage-driven shortfalls.	Tie earnings to service-quality metrics; penalties outside decoupling.
Interaction with rate structure design	Proposes higher fixed charges alongside decoupling.	No duplication of fixed charges.

Q WHY PREB SHOULD SET UP A JOINT TASK FORCE ON GRID PLANNING AFTER THIS RATE CASE AND BEFORE 2030?

A. LUMA claims ignorance of the benefits of NEM due to lack of analysis and data on the location aspects of NEMs, grid reliability, customer load profiles, the cost of unserved energy and the opportunities for non wires alternatives. Since LUMA has chosen not to understand the benefits of NEM and distributed energy resources in general, it is unlikely that ordering them do so will have the desired effect.

To ensure the 2031 VoS study has the right inputs, and to avoid undue delays, after this rate case and before 2031, the Bureau should set up joint task force, under control of an independent special master with the financial resources to higher technical consultants with experience in optimizing distributed energy resources with grid assets with the specific output of recommending the high priority near grid side actions that are within LUMA's control that would optimize the entire electrical system, in front of and behind the meter affordably. LUMA's participation would be mandatory and the other intervening parties in this docket afforded the opportunity to participate. LUMA would be compelled to cooperate with the special master and its consultants in terms of information and technical consultation. To provide the incentive for LUMA to cooperate, the Energy Bureau would use the special master's report as the basis for future revenue requirements related to grid upgrade priorities.

This approach was successfully used by the Hawaii Public Utility Commission to address the impasse between the utility and the solar industry on grid hosting capacity that was preventing the adoption of distributed energy resources.

Q. DO YOU SUPPORT TIME OF USE RATES NOW?

A. TOU rates require ability of customers to change behavior, means to do so with low transactional costs, shiftable loads under their control, adequate price signals, advanced metering, billing and grid situational awareness. Otherwise the promised economic benefits are not realized. Most of these conditions do not exist in Puerto Rico right now. In the future, when the prerequisite conditions are met, TOU rates have proven to be beneficial. I do support the observations on TOU made by the testimony of Ahmad Faruqui in this docket.

Q. DO YOU SUPPORT CHANGING INCLINING BLOCK RATES NOW?

A. I do support the observations on TOU made by the testimony of Ahmad Faruqui in this docket. I have no further comments to add.

Q. WHAT NEM IMPACTS SHOULD LUMA HAVE EVALUATED?

A. The National Standard Practice Manual[59] recommends consideration of all potential utility system impacts, and potential impacts to host customers and to society as a whole:

Electric Utility System Impacts

Type	Utility System Impact	Description
Generation	Energy Generation	The production or procurement of energy (kWh) from generation resources on behalf of customers
	Capacity	The generation capacity (kW) required to meet the forecasted system peak load
	Environmental Compliance	Actions to comply with environmental regulations
	RPS/CES Compliance	Actions to comply with renewable portfolio standards or clean energy standards
	Market Price Effects	The decrease (or increase) in wholesale market prices as a result of reduced (or increased) customer consumption
	Ancillary Services	Services required to maintain electric grid stability and power quality
Transmission	Transmission Capacity	Maintaining the availability of the transmission system to transport electricity safely and reliably
	Transmission System Losses	Electricity or gas lost through the transmission system
Distribution	Distribution Capacity	Maintaining the availability of the distribution system to transport electricity or gas safely and reliably
	Distribution System Losses	Electricity lost through the distribution system
	Distribution O&M	Operating and maintaining the distribution system
	Distribution Voltage	Maintaining voltage levels within an acceptable range to ensure that both real and reactive power production are matched with demand
General	Financial Incentives	Utility financial support provided to DER host customers or other market actors to encourage DER implementation
	Program Administration	Utility outreach to trade allies, technical training, marketing, and administration and management of DERs
	Utility Performance Incentives	Incentives offered to utilities to encourage successful, effective implementation of DER programs
	Credit and Collection	Bad debt, disconnections, reconnections
	Risk	Uncertainty including operational, technology, cybersecurity, financial, legal, reputational, and regulatory risks
	Reliability	Maintaining generation, transmission, and distribution system to withstand instability, uncontrolled events, cascading failures, or unanticipated loss of system components
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions

[59] *See* NESP, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources: Summary* (Aug. 2020), https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-Summary_08-24-2020.pdf.

Host Customer Impacts

Type	Host Customer Impact	Description
Host Customer	Host portion of DER costs	Costs incurred to install and operate DERs
	Host transaction costs	Other costs incurred to install and operate DERs
	Interconnection fees	Costs paid by host customer to interconnect DERs to the electricity grid
	Risk	Uncertainty including price volatility, power quality, outages, and operational risk related to failure of installed DER equipment and user error; this type of risk may depend on the type of DER
	Reliability	The ability to prevent or reduce the duration of host customer outages
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
	Tax incentives	Federal, state, and local tax incentives provided to host customers to defray the costs of some DERs
	Host Customer NEIs	Benefits and costs of DERs that are separate from energy-related impacts
	Low-income NEIs	Non-energy benefits and costs that affect low-income DER host customers

Societal Impacts

Type	Societal Impact	Description
Societal	Resilience	Resilience impacts beyond those experienced by utilities or host customers
	GHG Emissions	GHG emissions created by fossil-fueled energy resources
	Other Environmental	Other air emissions, solid waste, land, water, and other environmental impacts
	Economic and Jobs	Incremental economic development and job impacts
	Public Health	Health impacts, medical costs, and productivity affected by health
	Low-Income: Society	Poverty alleviation, environmental justice, and reduced home foreclosures
	Energy Security	Energy imports and energy independence

Q. IN THE LONGER RUN, WHAT IS THE PRUDENT AND RESPONSIBLE COURSE OF ACTION THAT LUMA SHOULD FOLLOW REGARDING NEM?

A. As contemplated in the law, after 2030 the Bureau will conduct the Value of Solar (VoS) study. The best course of action would be for LUMA to fully collaborate and contribute to a comprehensive value of storage proceeding at the Bureau. A comprehensive value of net metered generation VoS study should be in the form of a BCA, including analysis of the impacts of power outflows and consumption offsets to ensure allegiance to the rate making requirement of non-discriminatory cost of service-based rates. The study should be a comprehensive and transparent investigation of the costs and benefits of customer-sited generation, unlike the evidence presented by LUMA in this case. The study should provide for full engagement opportunities for all stakeholders and not just reflect LUMA's internal processes, objectives, and biases.

A growing number of jurisdictions have used or will use Value of Solar analysis to inform and support net metering rate decisions, and the theory and application of Value of Solar

analysis has been characterized and described by researchers in the field. A recent study of the Value of Solar in ERCOT shows that this value is roughly equal to retail rates.[60] Also recently, researchers with the Lawrence Berkeley National Laboratory ("LBNL") have compiled the results of prior meta-analyses with assessment of recent research to review the theory and practice of Value of Solar studies, which provides a useful framework.[61]

The Value of Solar concept is at heart a BCA, specialized to distributed solar production. As early as 2013, the methods and metrics of best practices for Value of Solar studies were already identifiable and documented in "A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar."[62] That reference lists the key categories of impacts that should be assessed and describes methods to quantify those impacts. Transparent and comprehensive evaluations of the value of solar and of DER have tracked the guidance in the Regulator's Guidebook to describe and quantify costs and benefits resulting from the production of energy by DG facilities over the useful life of facilities. It is important to note that the most useful reports employ a consistent analysis framework and transparently document the methods chosen for calculating costs and benefits, often called "value-stacking."

Q. WHAT PRINCIPLES SHOULD LUMA HAVE FOLLOWED IN DEVELOPING ITS RESIDENTIAL DG RATE PROPOSAL AND A COMPREHENSIVE ANALYSIS OF THE IMPACTS—BENEFITS AND COSTS—OF DG?

A. The NSPM BCA principles are set out below:[63]

---

[60] Dunsky Energy + Climate Advisors, *Value of Residential Solar in Texas,* Texas Solar Energy Society (Jul. 16, 2024), available at: https://txses.org/wp-content/uploads/2024/07/Value-of-Residential-Solar-in-Texas.pdf.

[61] S. Forrester & E. O'Shaughnessy, *A Review of Value of Solar Studies In Theory and In Practice,* LBNL (Jan. 2025)("LBNL VoS Review"), available at: https://eta-publications.lbl.gov/sites/default/files/2025-01/20250123_final_vos.pdf. The LBNL VoS Review summarizes findings from both meta-analyses and individual studies—more than 20 in studies in total—published between 2018 and 2023, and covering studies dating back to 2012.

[62] J. Keyes & K. Rábago, *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar,* Interstate Renewable Energy Council-IREC (Oct. 2013), available at: https://irecusa.org/resources/a-regulators-guidebook-calculating-the-benefits-and-costs-of-distributed-solar-generation/.

[63] *See* NESP, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources: Summary* (Aug. 2020) at iv., Table S-1, available at: https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-Summary_08-24-2020.pdf.

Principle 1	**Treat DERs as a Utility System Resource** DERs are one of many energy resources that can be deployed to meet utility/power system needs. DERs should therefore be compared with other energy resources, including other DERs, using consistent methods and assumptions to avoid bias across resource investment decisions.
Principle 2	**Align with Policy Goals** Jurisdictions invest in or support energy resources to meet a variety of goals and objectives. The primary cost-effectiveness test should therefore reflect this intent by accounting for the jurisdiction's applicable policy goals and objectives.
Principle 3	**Ensure Symmetry** Asymmetrical treatment of benefits and costs associated with a resource can lead to a biased assessment of the resource. To avoid such bias, benefits and costs should be treated symmetrically for any given type of impact.
Principle 4	**Account for Relevant, Material Impacts** Cost-effectiveness tests should include all relevant (according to applicable policy goals), material impacts including those that are difficult to quantify or monetize.
Principle 5	**Conduct Forward-Looking, Long-term, Incremental Analyses** Cost-effectiveness analyses should be forward-looking, long-term, and incremental to what would have occurred absent the DER. This helps ensure that the resource in question is properly compared with alternatives.
Principle 6	**Avoid Double-Counting Impacts** Cost-effectiveness analyses present a risk of double-counting benefits and/or costs. All impacts should therefore be clearly defined and valued to avoid double-counting.
Principle 7	**Ensure Transparency** Transparency helps to ensure engagement and trust in the BCA process and decisions. BCA practices should therefore be transparent, where all relevant assumptions, methodologies, and results are clearly documented and available for stakeholder review and input.
Principle 8	**Conduct BCAs Separately from Rate Impact Analyses** Cost-effectiveness analyses answer fundamentally different questions than rate impact analyses, and therefore should be conducted separately from rate impact analyses.

VII. SUMMARY OF RECOMMENDATIONS

Q. WHAT ACTION DO YOU RECOMMEND THAT THE BUREAU TAKE ON LUMA'S PROPOSALS?

A. My recommendations are that the Bureau:

- The Bureau should deny LUMA's proposed increase in the residential fixed customer charge and more broadly the proposed rate structure changes for all customer classes.
- Do not increase the fixed charges beyond the $4/month today for residential.
- Adopt decoupling based on the detailed principles in this testimony.
- After this rate case and before 2031, create a special task force on joint distribution and transmission planning, order LUMA to cooperate and share information.

- Longer term (2031), order LUMA to cooperate in the development of a BCA Framework for DERs, including DG, and to conduct a BCA for DG, in accordance with guidance from the NSPM, as a condition precedent to any proposal relating to rates for DG.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT 1.01

KYLE **DATTA**

73-1196 Hamo St Kailua Kona Hawaii ·
ekyledatta@gmail.com · (808)895 7785 ·

30 years of experience as C-Level senior executive in impact investing, renewable energy, management consulting and non-profit institutions. Consistently delivered profitable transformation and growth for large energy companies. Globally recognized renewable energy and distributed resources thought leader with multiple publications on new business models and the energy transition strategy for utilities, oil and gas companies. Senior relationship network with a wide range industry executives, regulators and lawmakers.

EXPERIENCE

2025 -PRESENT

EXECUTIVE DIRECTOR PACIFIC REGION, TENEO, HAWAII

Leading Teneo client relationships on the energy transition in the Asia Pacific and Western US regions through finance, transaction support, management consulting, strategic communications, and senior advisor services Responsible for senior level client relationships and leading major firm engagements with private equity, institutional and sovereign investors, utility and natural resource/chemicals companies, airlines, energy regulators, and a wide range on new technology entrants.

2025 - PRESENT

COOPERSMITH LAW & STRATEGY, HEAD OF CLIMATEHAWAII

Lead CL&S relationships and advisory to investment funds, political organizations and C suite executives regarding energy policy and global investment opportunities in the energy transition

2025 - PRESENT

BOARD OF DIRECTORS, MULTIPLE ORGANIZATIONS, HAWAII

Johnson Ohana foundation, Hawaii Ulu Cooperative, American Sustainable Business Council

2019– 2024

DIRECTOR, ROLAND BERGER. WASHINGTON D.C. AND HAWAII

Leading strategic transformation of major energy companies on the energy transition to 100% renewables including future energy grid architectures, launching the value chain for hydrogen and its derivatives value chain, carbon capture and storage, scaling negative carbon technologies, sustainable aviation fuels, long and short duration energy storage, e-mobility, renewable power integration, and distributed energy resources. Responsible for senior level client relationships and leading major firm engagements with private equity, institutional and sovereign investors, utility and natural resource/chemicals companies, airlines, energy regulators, and a wide range on new technology entrants.

2009– 2018

GENERAL PARTNER, ULUPONO INITIATIVE. HONOLULU

Founder with Pierre Omidyar of impact investing firm for system change in energy and food in Hawaii. Invested $80 MM directly and attracted over $200 MM in additional capital.

Accelerated renewable energy adoption on path to 100% with legal, regulatory, and investment initiatives, launched transportation initiatives in EVs, biofuels, bike sharing and mass transit; Transformed ranching sector to grass fed beef, used philanthropy to spearhead farm to school, school gardens, and movement building. Venture investing in distributed energy, digital energy management, biofuels, and advanced mobility companies in Series A rounds, including strategic exits.

2006 – 2009

CHIEF EXECUTIVE OFFICER, US BIODIESEL GROUP. SAN FRANCISCO

As CEO, responsible for leadership on all aspects of the company lifecycle from start-up through exit. Personally raised $100 MM to launch company and built 25 MMG plant in Houston, negotiated strategic alliances, offtake agreement, EPC contracts, recruited and developed management team. Orchestrated merger with REG for strategic exit and which had successful IPO, currently valued at ~$4 billion.

2002– 2006

MANAGING DIRECTOR, ROCKY MOUNTAIN INSTITUTE. COLORADO

Led transformation of RMI into nation's leading "Think and Do" tank with global clients including Walmart, Shell, Anglo American, and Nevada Power. Developed leading edge intellectual capital on distributed energy resources business models, advanced mobility business models, federal and state transportation policies, radical resource efficiency, and utility regulation. Led turnaround of RMI to sustained profitability and respect of major corporations. Redefined the human resource and management process, including doubling staff and opening new offices. Supported fundraising efforts within grant making and philanthropic networks. Responsible for entire Research and Consulting efforts.

1997 – 2002

VICE PRESIDENT, BOOZ ALLEN & HAMILTON. SINGAPORE AND SAN FRANCISCO

Managing Partner: US Utilities Practice 2000-2002
Managing Partner: Asia Energy Practice 1997-2002

Responsible for cultivating senior executive relationships within the energy sector in the US and Asia within electric utilities, oil, gas, renewable energy, and corporations. Personally, Led the firm's engagements at major oil, gas, and electric utility companies in the US and Asia, including Mobil Oil, Shell, BP, PSE&G, Tenaga, PTT, and PLN. Client engagements spanned global transformation, privatization, mergers and acquisitions, business strategy, integrated resource planning, reengineering for cost and performance optimization, organization redesign, renewable and distributed energy business models, environmental strategy and regulatory strategy.

1995 – 1997

PRINCIPAL, BOOZ ALLEN & HAMILTON. NEW YORK AND WASHINGTON DC

Leader: Corporate Environmental Practice
Led the firm's commercial environmental practices to support major corporations on environmental, health and safety management, risk optimization and regulatory strategy. Joined Booz Allen in 1989 and progressed rapidly.

EDUCATION

1989
MASTERS OF PUBLIC AND PRIVATE MANAGEMENT,
YALE SCHOOL OF ORGANIZATION MANAGEMENT

1989
MASTERS OF ENVIRONMENTAL STUDIES AND RESOURCE ECONOMICS,
YALE SCHOOL OF FORESTRY AND ENVIRONMENTAL STUDIES

1983
BACHELOR OF SCIENCE, BIOLOGY
YALE UNIVERSITY

SKILLS

- Senior Leadership
- Inspirational Management
- Transformative Change
- Operations Effectiveness
- Organizational Design
- Restructuring
- High Impact Communications
- Sustainable Agriculture
- Social Impact Investing
- Philanthropy and Grant Making
- Private Equity Investing
- Business Strategy, Mergers & Acquisitions
- Energy Policy, Regulation, and Legislation
- Renewable, Storage & Distributed Energy
- Grid Modernization and Architecture
- Sustainable aviation fuels, Hydrogen

BOARD MEMBERSHIPS

Hawaii Ulu Cooperative (2021 to present)
Johnson Ohana Foundation (2016 to Present)
American Sustainable Business Network (2018 to Present)
Parker Ranch (2013-2017)
Sustainable Agriculture and Food System Funders (2014-2018)
Blue Planet Foundation (2013 to 2019)
Puerto Rico Electric Power Authority: Transformation Advisory Council (2018 to 2021)

NOTABLE PUBLICATIONS

Winning the Oil Endgame: Innovation for Profits, Jobs, and Security. 2004
Amory Lovins and Kyle Datta, Rocky Mountain Institute
National strategy for ending US oil dependence sponsored by Pentagon

Small is Profitable: The Hidden Benefits of Making Electrical Resources the Right Size. 2002
Amory Lovins and Kyle Datta, Rocky Mountain Institute
Definitive treatise on distributed energy economics and policy

EXHIBIT 1.02

Testimony Submitted in Regulatory Hearings by E. Kyle Datta

As senior energy executive, Mr. Datta role has been to hire expert witness and coach on behalf of energy or public interest group clients in regulatory hearings, support and build capacity of public utility commissions, and support legislatures in developing energy legislation. He has directly been an expert witness in two cases.

Date	Case	Subject
2015	Next Era _ Hawaiian Electric Merger, Hawaii PUC	Financial Implications of Merger to Hawaii Ratepayers
2020	Luma OMA agreement Review Puerto Rico Energy Bureau	Issues and Concerns regarding Luma OMA