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

IN RE: Puerto Rico Electric Power Authority Rate Review	**CASE NO.** NEPR-AP-2023-0003 **SUBJECT**: Revenue Requirements

ICSE'S REPLY TO REVENUE REQUIREMENT BRIEFS

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TO THE HONORABLE ENERGY BUREAU:

Comes now the **Institute of Competitiveness and Economic Sustainability ("ICSE" as its Spanish acronym)**, represented by the undersigned, respectfully states and prays:

I. Preliminary Statement

ICSE is a nonprofit organization with no economic stake in the resolution of this rate case. ICSE's intervention stems from its interest in ensuring that the public interest in Puerto Rico's economic competitiveness is adequately represented. While upholding core regulatory principles such as just and reasonable rates, ICSE submits that the approval of a new rate requires the Puerto Rico Energy Bureau (PREB) to consider its economic implications for two fundamental reasons.

First, as a public entity, the Bureau cannot ignore the effects its decisions have on Puerto Rico's economy. A non-holistic view is inconsistent with the public nature of the agency and with the statutory aspiration that the electric system should "promote industrial, commercial, and community development, improve the quality of life at just and reasonable cost, and promote the economic development of the

Island." *Statement of Motives* of Act 17-2019, Puerto Rico Energy Public Policy Act. Second, the Bureau is charged with regulating the electric market. Failing to consider macroeconomic factors in the exercise of that function would mean that the PREB is regulating a market in a vacuum, without regard to real-world conditions. Such an exercise would not reflect a true market, but rather an arbitrary construction of trade.

Consistent with the foregoing, LUMA's rate petition cannot reasonably be accepted. Primarily, LUMA bases its petition on economic data that is not reliable. The record in this case demonstrates that the petitioners did not conduct sufficient analysis to support the proposed increase. Moreover, the record reveals institutional deficiencies that warrant greater intervention by the PREB in order to achieve corrective action.

II. The testimony of LUMA's witness Joseline Estrada regarding load forecasting lacks sufficient reliability to support the proposed rates.

The reliability of a load forecast depends on the soundness of its methodology, the completeness of the variables considered, and the stability of the modeling framework. The testimony of Ms. Estrada demonstrates material weaknesses in all three respects.

First, Ms. Estrada acknowledged that the baseload forecast is derived from regression analysis using historical consumption data. She further confirmed that this historical consumption data already reflects increasing levels of distributed generation over time. At the same time, LUMA applies explicit distributed generation ("DG") modifiers to the forecast in order to account for additional projected adoption.

This methodology necessarily creates a risk that embedded historical effects and projected incremental effects overlap. Although the witness asserted that the methodology avoids double counting, her explanation revealed that the calculation

relies on assumptions about incremental differences relative to a selected baseline year rather than on any empirical test demonstrating that overlap does not occur. *See* Ex. 4, p. 20, lines 333-45.

The absence of any demonstrated verification is particularly significant because Ms. Estrada also testified that LUMA is currently assessing a revised forecasting model that would exclude distributed generation effects from historical data and potentially adopt that model in future forecasting cycles. Ex. 72, pp. 75-76, lines 1315-21.

This admission confirms that LUMA itself recognizes that its present methodology may not adequately isolate the effects of distributed generation. A model that is acknowledged by its own proponent to be under revision cannot reasonably be treated as a sufficiently reliable basis for setting long-term rates.

Second, the testimony demonstrated that key behavioral drivers of demand were not directly modeled or quantified in the regression framework but instead addressed through assumptions and external modifiers. Where a forecast depends on multiple interacting drivers—such as reliability, distributed generation adoption, and customer behavior—failure to isolate and empirically test those drivers increases the risk of specification error and biased projections.

Third, the witness's explanation of the forecasting process repeatedly relied on general descriptions of industry practice and qualitative expectations about future adoption patterns rather than quantitative validation. Statements that certain methodologies are commonly used or that adoption is expected to follow generalized statistical behavior do not substitute for empirical demonstration that the specific model used here produces unbiased results for Puerto Rico's unique system conditions.

Lastly, Ms. Estrada stressed in her rebuttal that electricity prices should not be included as a regression variable and claimed that doing so would create a circular dependency in the forecast. Ex. 72, p. 78, lines 1359-68. Nonetheless, Ms. Estrada did rely on reliability and testified it was "the primary determinant for load determination". Transcript December 15, p. 97, lines 1-19 (answering in the affirmative to that characterization). Notwithstanding this assertion, reliability was not represented in **any** of the variables included in the formulas provided in her testimony.

Ms. Estrada's explanation in the December 15, 2025 hearing for this omission was that reliability was embedded in the data. *See* Transcript, p. 97-98, lines 20-25, 1-25. The record, however, contains no empirical demonstration or methodological explanation showing how reliability was isolated, measured, or validated within the model.

Questions were directed to Ms. Estrada on whether changes in load may affect system reliability and vice versa. Transcript December 15, p. 110-11, lines 19-25, 1-25. Ms. Estrada claimed she was unable to answer that question. It is important to note that LUMA declined to evaluate price on the basis of alleged circularity between those variables (load and price). Accordingly, a witness who excludes a variable from her analysis due to purported circularity must, at a minimum, demonstrate that the variable she did consider (*reliability*) is not affected by the same phenomenon. Yet the evidence in the record shows that reliability and demand are themselves interdependent.

A similar form of "circularity" can be observed between reliability and demand, of the same kind that Ms. Estrada rejects when it comes to considering electricity prices. This, in turn, calls into question the reliability of the assumptions underlying Ms. Estrada's testimony and the evidentiary weight that should be accorded to it.

The record shows that LUMA itself has previously acknowledged before this Bureau that such interdependency exists between reliability and demand.

For example, in LUMA's latest Resource Adequacy Study, filed in Case NEPR-MI-2022-0002, LUMA stated: "In instances when power generation capacity is inadequate to meet demand, the system operator must initiate load-shedding events". *Puerto Rico Electrical System Resource Adequacy Analysis Report Fiscal Year 2026*, p. 10. The admission confirms that load directly influences reliability.

ICSE does not contend that this type of interdependency is flawed; rather, it highlights the selective treatment of variables in LUMA's regulatory practices, where certain interdependencies are acknowledged while others are dismissed without a consistent methodological basis.

Taken together, these admissions establish that the load forecast presented by LUMA is not a stable, fully validated model but rather an evolving analytical framework that relies on assumptions, untested interactions among variables, and methodologies still under evaluation. Because load forecasts directly determine revenue requirements, rate design, and customer impacts, the Bureau should accord limited evidentiary weight to this testimony and should not rely on it as a primary basis for approving the proposed rates.

III. Practicability

Practicability in a rate proceeding is not a single-factor inquiry. It encompasses several related considerations, including whether proposed expenditures are necessary and supported by evidence, whether the utility can realistically execute the proposed programs, whether the resulting rates can function in practice, and whether the underlying assumptions regarding demand and system conditions are

sufficiently reliable. Each of these elements bears on whether rates will operate as intended in real-world conditions.

The Bondholders correctly emphasize that executability is an essential component to ascertain whether costs are just and reasonable. A revenue requirement that cannot be implemented in practice—because of logistical, institutional, or resource constraints—cannot satisfy the statutory standard of just and reasonable rates. The record contains substantial evidence supporting the relevance of executability concerns, including testimony regarding labor availability, supply-chain constraints, and the pace at which capital programs can realistically be deployed. These considerations are properly before the Bureau and warrant careful attention.

The Bondholders also properly stress that the utility bears the burden of proving that requested expenditures are reasonable, necessary, and supported by sufficient evidence.

Practicability is not served by approving funding levels that rest on unsupported assumptions, unverified project scopes, or expenditures that could be funded from alternative sources. In this respect, the Bondholders' analysis highlights important aspects of the statutory standard that the Bureau must apply.

At the same time, executability and evidentiary sufficiency do not exhaust the concept of practicability. Rates must also be capable of functioning under reasonably reliable assumptions regarding customer behavior, demand, and system conditions. A rate structure may be executable in administrative terms and supported by some level of evidence, yet still prove impracticable if the predictive foundations on which it rests are materially uncertain or still evolving. It is the difference between theory

and reality. The relevant question is how such rates will operate in real-world conditions for residential, commercial, and industrial customers.

LUMA's discussion of practicability focuses primarily on affordability, demand elasticity or lack thereof, and the continued viability of the grid. Those considerations address certain aspects of practicability, but they likewise assume that load behavior can be forecasted with sufficient precision and accuracy to support long-term revenue determinations. The record shows, however, that key drivers of demand—including distributed generation, self-generation, and the interaction of reliability conditions with consumption patterns—are areas in which forecasting methodologies remain under refinement.

In this respect, the perspectives advanced by LUMA and the Bondholders are not mutually exclusive but incomplete when considered in isolation. Executability, evidentiary sufficiency, and revenue stability are all necessary components of practicability. But so too is the reliability of the assumptions that determine the level of expenditures and the revenues required to sustain them. Where the evidentiary record demonstrates that forecasting methodologies are still evolving and that significant drivers of demand are not fully isolated or quantified, regulatory prudence counsels in favor of measured and incremental approaches to revenue determinations.

Recognizing forecast uncertainty does not diminish the importance of executability concerns or the need to ensure that expenditures are reasonable and necessary. Rather, it reinforces those concerns. When both the scale of proposed expenditures and the assumptions regarding future demand are subject to material uncertainty, the risk of setting rates that are either excessive or insufficient increases. **Practicability, in the regulatory sense, requires that such risks be acknowledged**

and managed through careful calibration of revenue requirements and appropriate mechanisms for adjustment.

In addition, the Bureau should not evaluate practicability without considering the broader macroeconomic context in which rates will operate. As ICSE has explained, electricity prices in Puerto Rico function not merely as a utility charge but as a structural input affecting industrial competitiveness, employment, investment decisions, and overall economic activity. Sustained increases in electricity costs can influence production levels, capital allocation, and the viability of energy-intensive sectors, with effects that extend beyond individual customer bills.

These impacts are not adequately captured by narrow analyses of affordability at the household level—a limited view, which has never been ICSE's full position, even though some parties have so suggested— or by assumptions regarding short-run demand elasticity. A practicability determination that does not account for the macroeconomic consequences of tariff levels risks overlooking system-wide effects that ultimately feed back into load, revenues, and the long-term financial stability of the electric system itself. ICSE respectfully submits that the Bureau should incorporate macroeconomic impact analysis as a relevant component of its practicability assessment.

All directed criticisms of Dr. Cao's assessments in this regard ultimately miss the point. LUMA and the Bondholders characterize Dr. Cao's report as insufficient because it does not provide a definitive quantification of rate impacts. But the absence of such quantification in Dr. Cao's analysis does not relieve **rate proponents** of their burden. The burden of proving that proposed rates are practicable rests with those who seek their approval. Both LUMA and the

Bondholders, however, proceed as if a rate's practicability were presumed unless disproven. **There is no such presumption in ratemaking**.

Even if the Bureau were to assign little or no weight to Dr. Cao's conclusions, one fact remains unavoidable: increases in electricity rates will have economic effects. The relevant regulatory question is not whether impacts will occur, but whether they will be material and how they may affect demand, investment, and system revenues over time. On this critical issue, LUMA presented no empirical evidence. It did not quantify the potential magnitude of economic impacts, nor did it analyze the extent to which higher rates could influence consumption patterns, distributed resource adoption, or industrial competitiveness.

Instead, LUMA relied on the generalized assertion that electricity demand is inelastic in the short term. Yet LUMA simultaneously declined to incorporate price as a load modifier in its forecasting methodology and did not account for the competitive dynamics of Puerto Rico's distributed energy resources market. For that matter, none of the utilities provided evidence on the DG market or whether past utility rate increases implemented through PREB quarterly reconciliations had any measurable effect benefiting photovoltaic system installers.

Dr. Tierney and Ms. Estrada did not evaluate the competitiveness of distributed generation. Nonetheless, both argued that electricity demand is inelastic in the short-term while disregarding essential market conditions such as DG prices versus utility prices. This selective treatment of economic variables undermines the reliability of the assumptions underlying its practicability argument.

Dr. Tierney does not contest that elasticity of demand for electricity may be substantial depending both on the time-period and on prices. She specifically sustained that even though that demand for electricity has been inelastic in the

literature, such literature "would not be perfect for here". The issue is not whether electricity demand is elastic or not but at what point and under what conditions elasticity becomes material.

On LUMA's end, the inconsistency becomes more apparent when considering LUMA's treatment of reliability as a load modifier, as previously discussed. Ms. Estrada testified that incorporating price effects in the forecast would introduce circularity. However, LUMA relied on reliability as a key explanatory factor in assessing the adoption of self-generation and distributed resources. The interaction between reliability, customer behavior, and load is no less interdependent than the interaction between price and demand. If circularity concerns justify excluding price, it is unclear why similar concerns would not apply to reliability. LUMA has offered no principled basis for this distinction.

In the end, practicability cannot rest on assumptions that are selectively applied, empirically untested, or insulated from scrutiny by invoking generalized propositions about demand behavior. A determination of practicability requires a balanced and evidence-based assessment of the factors that influence both system costs and customer responses. The record, as it stands, does not support the conclusion that the economic impacts of the proposed rates have been sufficiently examined to satisfy that standard.

IV. Conflicts of Interest

It is regrettable that the Bureau elected to prematurely conclude the panel on conflicts of interest and inter-utility cooperation. These issues are of particular importance in this proceeding, because the incentives of market participants are a central element in the functioning of any regulated market. A proper understanding of those incentives is essential not only to evaluating the reasonableness of proposed

expenditures, but also to assessing the credibility of testimony and the evidentiary weight that should be accorded to it.

LUMA's CEO testified that the parent companies—Quanta and ATCO—derive no economic benefit from LUMA's use of seconded employees. Taken at face value, this assertion would mean that publicly traded corporations are deploying personnel, managerial resources, and institutional know-how to a related entity without conferring any economic benefit upon their shareholders. Such a proposition is difficult to reconcile with basic principles of corporate governance and fiduciary duty. If Mr. Saca's contention were correct, Quanta and ATCO would effectively expose themselves to potential derivative claims each time an employee is seconded to LUMA without any corresponding benefit to the parent companies.

Moreover, the same premise would imply that employees who return to the workforce of the parent companies do not transfer or disseminate any knowledge, operational experience, or technical insight acquired while working on the Puerto Rico grid—an implication that is equally difficult to credit in light of ordinary business practice.

Where testimony rests on assumptions that are inconsistent with ordinary economic incentives and corporate behavior, the Bureau should exercise caution in assigning it significant evidentiary weight. As Justice Serrano Geyls aptly observed, "We judges should not, after all, be so naive as to believe statements which no one else would believe." People of Puerto Rico v. Luciano Arroyo, 83 DPR 573, 582 (1992).

Mr. Saca also testified that one of his principal objectives upon assuming his role at LUMA was to facilitate RFP processes so that ATCO, Quanta, and LUMA-affiliated entities could bid on transmission and distribution projects. This admission

underscores that these efforts were aimed at advancing the interests of prospective bidders—entities related to LUMA's corporate structure—rather than serving any demonstrable operational benefit to LUMA itself.

V. Conclusion

For the reasons discussed above, the record does not provide a sufficiently reliable analytical foundation to support the proposed revenue requirements. The evidence demonstrates material uncertainty in key forecasting assumptions, selective treatment of interdependent variables, and unresolved questions regarding both practicability and the credibility of certain underlying premises.

In ratemaking proceedings, the burden rests with the proponents of the rates to establish that their proposals are supported by reliable evidence and are capable of functioning under real-world conditions. Where the evidentiary record reflects significant methodological limitations and untested assumptions, regulatory prudence counsels restraint.

Accordingly, ICSE respectfully submits that the Bureau should accord limited evidentiary weight to the load forecasting testimony and related assumptions discussed herein and should evaluate the proposed revenue requirements in light of the substantial uncertainties reflected in the record.

WHEREFORE ICSE respectfully requests that the Bureau deny or materially reduce the requested revenue requirements to the extent they depend on these uncertain and selectively applied forecasting assumptions, and require additional evidentiary support before approving any material increase.

RESPECTFULLY SUBMITTED.

I **CERTIFY** the present document was submitted electronically in the PREB's filing system and copy sent to the Hearing Examiner and the attorneys of record: mvalle@gmlex.net; alexis.rivera@prepa.pr.gov; jmartinez@gmlex.net; jgonzalez@gmlex.net; nzayas@gmlex.net; Gerard.Gil@ankura.com; Jorge.SanMiguel@ankura.com; Lucas.Porter@ankura.com; mdiconza@omm.com; golivera@omm.com; pfriedman@omm.com; msyassin@omm.com; katiuska.bolanos-lugo@us.dlapiper.com; Yahaira.delarosa@us.dlapiper.com; margarita.mercado@us.dlapiper.com; carolyn.clarkin@us.dlapiper.com; andrea.chambers@us.dlapiper.com; regulatory@genera-pr.com; legal@genera-pr.com; mvazquez@vvlawpr.com; gvilanova@vvlawpr.com; dbilloch@vvlawpr.com; ratecase@genera-pr.com; jfr@sbgblaw.com; hrivera@jrsp.pr.gov; gerardo_cosme@solartekpr.net; contratistas@jrsp.pr.gov; victorluisgonzalez@yahoo.com; Cfl@mcvpr.com; nancy@emmanuelli.law; jrinconlopez@guidehouse.com; Josh.Llamas@fticonsulting.com; Anu.Sen@fticonsulting.com; Ellen.Smith@fticonsulting.com; Intisarul.Islam@weil.com; alexis.ramsey@weil.com; kara.smith@weil.com; rafael.ortiz.mendoza@gmail.com; rolando@emmanuelli.law; monica@emmanuelli.law; cristian@emmanuelli.law; luis@emmanuelli.law; jan.albinolopez@us.dlapiper.com; Rachel.Albanese@us.dlapiper.com; varoon.sachdev@whitecase.com; javrua@sesapr.org;

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