

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

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IN RE:

ENERGY EFFICIENCY AND DEMAND
RESPONSE TRANSITION PERIOD PLAN

CASE NO.: NEPR-MI-2022-0001

SUBJECT: Motion to Submit the Three-Year EE
and DR Plan

MOTION TO SUBMIT THE THREE-YEAR EE AND DR PLAN

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COME now **LUMA Energy, LLC** (“ManagementCo”), and **LUMA Energy ServCo, LLC** (“ServCo”), (jointly referred to as “LUMA”), and respectfully state and request the following:

I. Introduction

As the system operator, LUMA is responsible for facilitating the implementation of Puerto Rico’s public energy policy, including key customer initiatives such as Energy Efficiency (“EE”) and Demand Response (“DR”) Programs, which are required by law and mandated by the Energy Bureau of the Puerto Rico Public Service Regulatory Board (“Energy Bureau”). Since 2023, LUMA has been implementing a Transition Period Plan containing various quick-start or pilot EE and DR programs (“TPP”) setting the stage for the design and implementation of more permanent programs, and since June 2025, LUMA has been implementing a permanent Customer Battery Energy Sharing Program.

In accordance with Energy Bureau directives, LUMA is submitting herein the Three-Year Plan for the permanent EE and DR programs which, as ordered by the Energy Bureau, covers the Fiscal Years of 2027 and 2028.

LUMA remains committed to the implementation of the EE and DR programs which were designed to build a more reliable and resilient energy system for the people of Puerto Rico and advance the energy efficiency marketplace.

II. Relevant Procedural Background

1. On February 16, 2023, the Energy Bureau of the Puerto Rico Public Service Regulatory Board (“Energy Bureau”) issued a Resolution and Order approving, with amendments, the proposed Energy Efficiency and Demand Response Transition Period Plan filed by LUMA¹ (the “TPP”), and establishing the deadlines of December 2, 2023 and March 1, 2024, for LUMA to prepare a draft of the first Three-Year EE and DR Plan (“TYP”) and to file the first TYP, respectively.

2. On November 29, 2023, the Energy Bureau issued a Resolution and Order extending the TPP by one year, to June 30, 2025, and modifying the deadlines to present the draft TYP to interested stakeholders and file the TYP by December 2, 2024, and March 1, 2025, respectively.

3. On December 20, 2023, LUMA submitted to the Energy Bureau a revised version of the TPP.²

¹ See *Motion Submitting Proposed EE/DR Transition Period Plan* filed on July 21, 2022, in Case No. NEPR-MI-2021-0006, *In Re: Demand Response Plan Review, Implementation and Monitoring* of that date and its *Exhibit 1*.

² See *Motion to Submit Revised TPP and Other Information Requested Under the Resolution and Order of November 29, 2023*.

4. On September 16, 2024, LUMA requested the Energy Bureau clarification on the timeline for completion of the Market Baseline and the Potential Study and the filing of the TYP, in light of the delay in the completion of these studies.³

5. On October 23, 2024, the Energy Bureau issued a Resolution and Order (“October 23rd Order”) modifying the deadlines to present the draft TYP to interested stakeholders and file the TYP to April 15, 2025, and July 15, 2025, respectively, and extending the TPP by six months to December 31, 2025.⁴ In addition, the Energy Bureau determined that the TYP would cover a 2.5-year period from January 1, 2026 to June 30, 2028.⁵

6. On January 31, 2025, LUMA filed a revised TPP and requested the Energy Bureau to leave without effect the deadlines related to the preparation of the TYP given the delays in the Market Baseline and Potential Study.⁶

7. On April 3, 2025, the Energy Bureau issued a Resolution and Order (“April 3rd Order”) extending the TPP until June 30, 2026, and establishing the deadlines of October 1, 2025, and February 1, 2026, to present the draft TYP to interested stakeholders and to file the TYP, respectively.⁷ The Energy Bureau also ordered the start date of the TYP be July 1, 2026, and determined the TYP shall cover the two-year period from July 1, 2026 through June 30, 2028.⁸

³ See *Informative Motion, Request for Clarification Regarding Delayed Timeline for Completion of Market Baseline and Potential Studies, And Request for Extension to Submit Draft Three-Year Plan and Associated Tasks and Deadlines*.

⁴ See October 23rd Order, p. 5.

⁵ See *id.*

⁶ See *Motion to Submit Revised Energy Efficiency and Demand Response Transition Period Plan and request for Modification of Deadlines Relating to Three-Year Energy Efficiency and Demand Response Plan*, pp. 11-12.

⁷ See April 3rd Order, p. 2.

⁸ See *id.*

8. On September 12, 2025, the Energy Bureau issued a Resolution and Order scheduling for September 24, 2025, a Technical Workshop regarding the Market Baseline and Potential Study and granting stakeholders until October 10, 2025, to submit written comments.

9. On September 23, 2025⁹, the Energy Bureau shared with stakeholders the Market Baseline and Potential Study and on September 24, 2025, the Energy Bureau conducted the Technical Workshop regarding this Study.

10. On October 7, 2025, LUMA informed the Energy Bureau of a stakeholder's meeting to discuss the draft TYP held on September 30, 2025, and requested until November 7, 2025, to exchange feedback regarding the Study with Energy Bureau consultants.¹⁰

11. On November 7, 2025, LUMA filed its comments on the Market Baseline and Potential Study.

12. On November 25, 2025, the Energy Bureau issued a Resolution and Order (“November 25th Resolution and Order”) regarding the Market Baseline and Potential Study in which it summarized the studies and made related determinations.

13. On January 22, 2026, LUMA requested the Energy Bureau to grant a brief extension to submit the TYP.¹¹

14. On February 3, 2026, the Energy Bureau granted an extension for LUMA to file the TYP until March 2, 2026.

⁹ Note that the appendices included in the Market Baseline and Potential Study shared by the Energy Bureau on September 23, 2025, were not accessible at that time.

¹⁰ See *Informative Motion and Requests Relating to Timeframe to Submit Comments to Recently Issued Market Baseline and Potential Study and Timeframe Related to Draft Three-Year Plan*.

¹¹ See *Motion for Brief Extension of Time to Submit the Three-Year EE and DR Plan*.

III. Submittal of TYP

15. LUMA submits herein the TYP in the form of a document titled “Three-Year Plan for Energy Efficiency and Demand Response” dated March 2, 2026. *See Exhibit 1* (the “TYP”). In accordance with the April 3rd Order, this plan covers the two-year period from July 1, 2026 through June 30, 2028 (Fiscal Years 2027-2028). The TYP reflects feedback from stakeholders on the draft TYP presented to them and incorporates some findings and insights from the Market Baseline and Potential Study and guidance from the Energy Bureau in their November 25th Resolution and Order. *See Exhibit 1*, p. 2.

16. LUMA notes that achieving the Low Income Customer program threshold set forth in Section 4.05(D) of the Energy Bureau’s Regulation for Energy Efficiency, Regulation 9637 (“Regulation 9637”) might prove to be difficult during this period, as explained in the TYP. For these reasons, LUMA respectfully requests the Energy Bureau to grant a waiver of this requirement for this first TYP.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the foregoing; **accept and approve** the Three-Year Plan for EE and DR in *Exhibit 1* of this motion and, for the reasons set forth in this Motion and grant LUMA a waiver of the requirement in Section 4.05(D) of Regulation 9637 with respect to the attached Three-Year Plan for EE and DR in *Exhibit 1*.

RESPECTFULLY SUBMITTED.

In Guaynabo, Puerto Rico, this 2nd day of March 2026.

We hereby certify that we filed this Motion using the electronic filing system of this Energy Bureau and that we will send an electronic copy of this Motion to hriviera@jrsp.pr.gov; nzayas@gmlex.net; mvalle@gmlex.net; rcruzfranqui@gmlex.net; javrua@sesapr.org; mrios@arroyorioslaw.com; jordgraham@tesla.com; forest@cleanenergy.org; customerservice@sunnova.com; pjcleanenergy@gmail.com; agraitfe@agraitlawpr.com; info@sesapr.org; cfl@mcvpr.com; mqs@mcvpr.com.



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Exhibit 1

Three-Year Plan

[Appendix D of Exhibit 1 is an Excel table to be submitted via email]

Three-Year Plan for Energy Efficiency and Demand Response

March 2, 2026

NEPR-MI-2022-0001

Introduction

LUMA is committed to working with the Puerto Rico Energy Bureau (Energy Bureau) and key stakeholders around the island to build a more reliable and resilient energy system for the people of Puerto Rico. As the grid operator, LUMA is responsible for supporting the implementation of Puerto Rico's public energy policy, including critical customer initiatives such as Energy Efficiency (EE) and Demand Response (DR) programs.

Energy efficiency and demand response are complementary tools that play a critical role in rebuilding Puerto Rico's energy system to be more sustainable, resilient and responsive to customer needs. Energy Efficiency helps customers reduce their electricity consumption through improved technologies, behaviors, and building practices. These reductions support lowering individual energy bills and the reduction of overall system costs by decreasing the need for expensive energy generation resources. Energy efficiency also helps support equity by providing all customers—especially low-income and underserved communities—with access to tools that help manage energy use and costs.

Demand Response enables customers to shift or reduce their electricity usage during periods of high demand or system stress. This flexibility helps lower capacity and energy costs, enhances grid reliability, and facilitates the integration of renewable energy. DR programs offer participating customers financial incentives or bill savings in exchange for adjusting their usage in response to grid needs. Together, EE and DR contribute to a more flexible, efficient, and customer-centric energy system.

LUMA is pleased to present this first proposed Energy Efficiency and Demand Response Three-Year Plan ("Plan" or "TYP") to the Energy Bureau. The Plan covers the two-year period from July 1, 2026, through June 30, 2028 (FY2027 – FY2028).

The Plan reflects feedback from stakeholders on the draft TYP submitted on October 1, 2025, incorporates findings and insights from the Energy Efficiency Baseline Study and Energy Efficiency Potential Study and reflects guidance from the Energy Bureau in its November 25, 2025, Resolution and Order¹. The Plan also incorporates the knowledge gained through the implementation of the Transition Period Plan (TPP), which introduced portfolios of EE and DR programs to the people of Puerto Rico; the experiences, feedback, and lessons learned from those programs provide important insights that help shape and strengthen the TYP.

LUMA has carefully considered what it can and cannot do over the next two years based on experience from the Transition Period Plan and available resources. Based on this critical review, LUMA's Plan is grounded in disciplined financial management, responsible budgeting, and transparent oversight to ensure long-term fiscal stability for Puerto Rico. Given this approach, LUMA is proposing an approach that prioritizes tried and true core programs from the TPP and an expansion of the Business Rebates program

¹ No. NEPR-MI-2022-0001, Resolution and Order (P.R. Energy Bureau, P.R. Public Service Regulatory Board Nov. 25, 2025) (Subject: "Savings Contributions and Potential Study Comments")

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to include government facilities, an important consumption sector. By focusing on these core programs, LUMA aims to strengthen consumer confidence in Puerto Rico's nascent Energy Efficiency ecosystem.

LUMA's emphasis in this Plan is on prudent spending while also realizing implementation efficiencies, building market capacity, increasing customer awareness over EE and DR offerings. Visibility over the success of these efforts should be reflected through a robust Evaluation, Measurement and Verification (EM&V) process. LUMA is confident that this approach will provide the structural discipline and foundation for further scaling of the core programs and expansion of the portfolio in the next Three-Year Plan.

The strategic objectives set forth in the EE and DR Regulations served as the primary guiding framework for the development of LUMA's TYP. Programs, measures and market activation channels were evaluated against these strategic objectives, resulting in an aligned TYP portfolio that builds on the foundations established in the TPP and further develops and expands Puerto Rico's EE / DR ecosystem in order for LUMA to achieve the long-term energy savings targets through 2040 to be set out by the Energy Bureau.

The EE Regulation also outlines best practice program design principles, which LUMA used to guide every aspect of the portfolio and program design, alongside the strategic objectives discussed above.

Over the course of the plan, LUMA will continue to explore additional opportunities to enhance benefits to Puerto Rico beyond the base programs. Many of these additional opportunities were identified in the October 1, 2025, draft TYP, but LUMA believes it would be imprudent to commit to any of these new programs at this time. LUMA still believes these additional programs hold promise but recognizes that the significant resources required to launch them during the TYP would detract from the necessary focus on the core programs. LUMA anticipates pursuing these and other additional opportunities in the next Three-Year Plan or, if time and resources permit, within this Plan.

For example, the October 1, 2025, draft TYP proposed a Pay As You Save (PAYS) financing offering; however, LUMA has determined that implementing a financing-based program during this Plan period is not feasible given the time and resources required to establish financing partnerships, customer protections, and administrative processes. Therefore, PAYS is being deferred to a future plan cycle.

Consistent with the EE Regulation, all projected savings within this Plan are based on net savings, whereas the savings reported under the TPP were gross savings. Furthermore, all EE programs in the Plan have been tested for cost-effectiveness based on the Puerto Rico Cost Test and all EE programs have a projected benefit-cost ratio greater than one.

Given LUMA's focus on program continuity and ramp up in the Plan and its desire for equity across the various customer groups, the Plan is unable to achieve the requirement that 25% of overall spending shall be for dedicated Low Income programs per the EE Regulation. Note, however, that the Plan does include the Residential Kits program that will be targeted exclusively to Low-Income customers and that approximately 11% of the overall Plan spending will be for this dedicated Low-Income program. Furthermore, Low-Income customers are also eligible to participate in the In-Store Discounts and Residential Rebates programs, which are projected to account for approximately 67% of Plan investment. Collectively, across these three Residential programs, it is expected that overall spending on Low-Income customers in the Plan will be substantially higher than 11% and could even exceed 25% with significant Low-Income participation in the In-Store Discounts and Residential Rebates programs. Note also that LUMA is confident that the EE Regulation requirement for 25% of overall spending be for dedicated Low-Income customers can be met in the next Three-Year Plan with additional programs targeting Low-Income customers.

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LUMA acknowledges that the Energy Efficiency Regulation contemplates performance incentives; however, this TYP does not include performance incentives because LUMA's performance incentive mechanisms are established separately in Case NEPR-AP-2020-0025 in accordance with the T&D OMA.

Three-Year Plan for Energy Efficiency and Demand Response

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Three-Year Plan for Energy Efficiency and Demand Response

List of Acronyms

ACRONYM	DEFINITION
ADMS	Advanced Distribution Management Systems
ADR	Automated Demand Response
C&I	Commercial, Industrial and Agriculture
CBES	Customer Battery Energy Sharing
CEECN	Community Energy Efficiency Champion Network
C&IEN	Commercial and Industrial Energy Network
COR3	Central Office for Recovery, Reconstruction and Resiliency
CSI	Community Street Lights Initiative
DBESS	Distributed Battery Energy Storage Systems
DDEC	Department of Economic Development and Commerce
DOE	Department of Energy
DR	Demand Response
EE	Energy Efficiency
EESRP	Energy Efficiency System Remediation Plan
ELRP	Emergency Load Reduction Program
EMS	Energy Management Systems
EM&V	Evaluation, Measurement, and Verification
HVAC	Heating Ventilation and Air Conditioning
IRP	Integrated Resource Plan
LED	Light Emitting Diode
ME&O	Marketing, Education, and Outreach
MW	Megawatt
MWh	Megawatt-hour
PEPP	Public Energy Policy Program
POS	Point-of-Sale
PRCT	Puerto Rico Cost Test
PREB	Puerto Rico Energy Bureau
PRHA	Puerto Rico Housing Authority
PREPA	Puerto Rico Electric Power Authority
PP&A	Program Planning and Administrative Costs
PPCA	Power Purchase Charge Adjustment

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ACRONYM	DEFINITION
T&D	Transmission and Distribution
TPP	Transition Period Plan
VPPs	Virtual Power Plants

1.0 Regulatory Background

LUMA is committed to working in close collaboration with the Energy Bureau and key stakeholders across the island to build a more reliable, resilient, and customer-focused energy system.

A central part of LUMA's effort is the development and execution of Three-Year Energy Efficiency and Demand Response Plans (Three-Year Plans). These plans are grounded in Puerto Rico's energy transformation laws, including Act 57-2014 (Puerto Rico Energy Transformation and RELIEF Act), Act 17-2019 (Puerto Rico Energy Public Policy Act), and Act 38-2017 (Uniform Administrative Procedures Act). These laws, along with the Regulation for Energy Efficiency and the Regulation for Demand Response, establish the legal and regulatory framework for planning, implementing, and evaluating EE and DR programs across the island including requirements for the development of LUMA's Three-Year Plans.

These plans are to outline the programs, budgets, and targets for a three-year period and serve as a roadmap for scaling up both EE and DR initiatives in an integrated and cost-effective manner. Consistent with its integrated TPP, LUMA will continue to reinforce synergies among EE and DR by developing integrated Three-Year Plans.

For its first Three Year Plan, details of which are provided in this document, LUMA has built off its experience with the TPP. The TPP was set forth by the EE Regulation to ramp-up programs in Puerto Rico while providing time for the completion of the first Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study. This study assessed current market conditions, quantified cost-effective EE potential, and identified opportunities across customer sectors and provides a more empirical foundation for program design, resource allocation, and long-term planning.

2.0 Overview of Three-Year Plan

An important driver for Puerto Rico's Recovery & Transformation is to grow the market for EE and DR products and services. Investments in EE and DR can deliver significant benefits to Puerto Rico by reducing electricity bills and business operating costs, creating local jobs, decreasing dependence on imported fuel, bolstering grid reliability, lowering emissions, and ultimately contributing to reduced utility infrastructure costs.

LUMA's EE and DR TYP, which will run for two years from FY2027 through FY2028, builds on the solid foundation established during the EE and DR TPP, which began in FY2024 and continues through FY2026. The TYP also reflects insights from the Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study. These studies provided essential inputs for program planning and design including identifying opportunities across segments, aligning programs with cost-effective potential and assumptions regarding government buildings.

The TYP was developed to align with the objectives and requirements outlined in the Regulation for Energy Efficiency and the Regulation for Demand Response, while reflecting the findings of the Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study, stakeholder comments, and guidance from the Energy Bureau. In addition to sections on strategic objectives and program design, the TYP includes detailed information on LUMA's approach for cost-effectiveness testing, Evaluation, Measurement and Verification (EM&V), portfolio management and reporting, and performance incentives. The remainder of this document provides detailed descriptions of the individual programs within the portfolio, including each

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program's target customers, incentive structure, solutions to known market barriers, and tailored market activation strategies.

Selected Programs

Energy Efficiency

The TYP EE program portfolio has been structured to provide comprehensive market coverage, offering programs and market activation strategies targeting low-income, residential, commercial, industrial, and government customers. The portfolio reflects a commitment to customer equity, cost-effectiveness, and long-term grid resilience, and will deliver energy savings that support near -and long-term progress toward Puerto Rico's energy efficiency goals.

The TYP places special emphasis on dedicated EE programs for low-income customers, offering tailored incentive programs and market activation strategies to ensure sustained education, outreach, engagement, and measurable impact. Additionally, low-income customers are also able to participate in the Residential Rebates and In-Store Discounts programs.

LUMA has reviewed and incorporated insights from the final Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study, a key input for TYP planning as outlined in the EE Regulation. Key sections of the TYP outlining EE portfolio programs, energy-efficient technologies, savings, budgets, and cost-effectiveness now reflect these studies' findings. The studies' conclusions informed adjustments, reflected in this TYP, to the programs and measures to ensure alignment with the most current market data and achievable opportunities. Government-specific participation opportunities are now included and drive savings that are both reasonable and manageable within LUMA's operational capacity. These refinements are grounded in lessons learned from prior program implementation and are designed to support practical deployment, improved customer uptake, and achievable results across all sectors, including the newly supported government segment.

LUMA proposes to carry forward programs launched under the TPP into the TYP, continuing to mature program operations and improve economies of scale as participation grows. Over the past 20 months, these programs have produced over 33,000 MWh of energy savings.

These programs include:

- **Residential Rebates** – Incentives for efficient appliances and equipment, with greater focus on trade ally engagement in the TYP to better reach customers.
- **Residential Kits** – Free energy-saving kits for low-income households, distributed directly by LUMA and in partnership with local organizations and agencies.
- **In-Store Discounts** – Point-of-sale discounts for efficient appliances and equipment, supported by expanded trade ally partnerships.
- **Business Rebates** – Incentives for efficient appliances and equipment, with greater focus on trade ally engagement in the TYP to better reach customers.

Three-Year Plan for Energy Efficiency and Demand Response

To reflect updated regulatory guidance and insights from the Energy Efficiency Market Baseline and Potential Study, the TYP also includes two programs tailored for the Government customer segment:

- **Public Street Lighting** (Continuation)
 - LUMA will also continue to prioritize the Public Street Lighting Program, given its strong cost-effectiveness and current momentum in upgrading Puerto Rico's streetlights to modern LED technology. This work directly supports grid resilience, public safety, and long-term reductions in municipal energy and maintenance costs.
- **Government Energy Efficiency**
 - LUMA will work with Government entities to help them take advantage of the Business Rebates program.

Extending eligibility to government buildings aligns with the Energy Bureau's recent R&O and is consistent with the Energy Efficiency Potential Study's finding that government buildings could be treated similarly to commercial buildings for estimating energy efficiency potential, due to lack of specific data. LUMA welcomes government participation in existing commercial programs but also recognizes that Government leadership and capital investment plans will drive their EE achievements. This expansion supports broad public-sector energy savings, reduces government operating costs, and promotes long-term energy management best practices.

Demand Response

LUMA expects that its DR program portfolio under the TYP will focus exclusively on emergency demand response to address persisting resource adequacy challenges. The DR programs in the TYP reflect this focus through the Customer Battery Energy Sharing (CBES) Program, which is LUMA's sole DR program during the TYP period.

The CBES pilot program began in fiscal year 2024. The Energy Bureau's April 3, 2025, Resolution and Order approved CBES as a full emergency DR program to operate through FY2028. LUMA implements the program in collaboration with aggregators, which serves as the program's primary market activation channel. Eligible residential and commercial customers are recruited and enrolled through approved demand response aggregators.

Strategic Objectives

Strategic objectives set forth in the EE and DR Regulations served as the "North Star" for the development of LUMA's TYP. Current and potential programs, measures, market activation channels, were evaluated against these strategic objectives, resulting in an aligned TYP portfolio that builds on the foundations established in the TPP and further develops and expands Puerto Rico's EE / DR ecosystem in order for LUMA to achieve the long-term energy savings targets through 2040 to be set out by the Energy Bureau.

The table below outlines how LUMA's TYP portfolio of EE and DR programs addresses all strategic objectives, organized across the four broad themes: Maximize Energy Efficiency and Conservation, Market Transformation, Equitable Access, and Education and Engagement. Further details on individual programs can be found in the program descriptions.

Three-Year Plan for Energy Efficiency and Demand Response

Table 1: Strategic Objectives

EE Strategic Objectives	Addressed in the TYP
Maximize Energy Efficiency & Conservation	
<ul style="list-style-type: none"> • Increase efficiency of buildings, appliances, lighting, equipment, products, industrial processes, and other end-uses • Ensure energy conservation and reduce absolute energy use through controls, system sizing, and optimized operations • Balance near-term and long-term resource acquisition to maximize total cost-effective energy efficiency and demand response 	<p>Ramp-up in number of energy-saving appliances and equipment covered and markets served combined with enhanced channel engagement and activation.</p> <p>The EE portfolio emphasizes balanced resource acquisition with long-lived measures that will deliver near-term savings that will provide sustained impact over time.</p> <p>The exploration of an economic DR program to complement existing emergency DR programs will create a balanced and flexible DR portfolio that can be optimally deployed to economically serve grid needs as resource adequacy evolves over time.</p>
Market Transformation	
<ul style="list-style-type: none"> • Prioritize lost opportunity markets • Pursue market transformation strategies • Pursue innovative approaches to cost-effective acquisition • Encourage compliance with Puerto Rico’s energy code 	<p>All of the TYP programs cover lost opportunity measures.</p> <p>Engagement of market actors’ mid-stream and up-stream from retailers will facilitate market transformation ensuring availability of affordable EE product alternatives on the island.</p> <p>The Residential Kits program purpose is to deliver low-cost, high-value products to under-served and hard-to-reach segments.</p> <p>EE/DR programs will provide a solid foundation for new innovative and transformative sources of EE and DR capacity for broader deployment in the next TYP.</p> <p>Market activation working with local government, organizations, and trade allies will increase awareness of Puerto Rico’s energy codes and emphasize energy-saving opportunities of code compliance and model codes.</p>

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EE Strategic Objectives	Addressed in the TYP
Equitable Access	
<ul style="list-style-type: none"> • Provide all customers with the opportunity to participate • Reduce energy burden for low-income residents and small businesses • Provide comprehensive services including education, audits, rebates, and financing 	<p>TYP portfolio offers tailored, accessible programs for harder-to-reach segments such as low-income or small business customers.</p> <p>The Residential Kits together with other low-income-focused energy efficiency initiatives, will enable LUMA to ensure that at least 25% of the overall EE budget in the next TYP is allocated to programs exclusively serving low-income customers, consistent with the Energy Efficiency Regulation.</p> <p>Business program activation through the C&I Network market channel will offer support to guide C&I customers and government entities towards more strategic approaches to energy management.</p>
Education & Engagement	
<ul style="list-style-type: none"> • Work with service providers to offer contractor training and tools • Provide information and education to empower customers • Coordinate with Public Energy Policy Program (PEPP) and other contributing entities • Seek stakeholder input on cost-effective programs 	<p>Collectively, LUMA's extensive market activation efforts across all sectors, segments and channels will build awareness, trust and participation in Puerto Rico's nascent EE and DR market and programs.</p> <p>Market activation efforts include enhanced trade ally support, offering targeted training and streamlined tools to help identify efficiency opportunities and simplify the application process.</p> <p>Extensive program branding and communications will build awareness of EE and DR opportunities across all sectors, segments and channels.</p> <p>LUMA will work closely with PEPP and other entities to leverage their respective strengths to maximize savings opportunities across all major sources of EE identified in the EE regulation.</p> <p>Stakeholder engagement is, and will continue to be, a critical priority for LUMA program planning and continual improvement process.</p>

Program Design

The EE Regulation also outlines best practice program design principles, which LUMA used to guide every aspect of the portfolio and program design, alongside the strategic objectives discussed above.

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Below are the best practice program design principles outlined in Section 4.02(A) of the regulation, along with how these principles will be addressed through the TYP. Further details on how the TYP portfolio and individual programs address specific program design principles are provided in the program descriptions and elsewhere in this document.

Table 2: Program Design Requirements

Category & Program Design Principle	How addressed in the TYP
Regulatory Alignment	
1. Align with achieving 30% energy savings by 2040 and annual targets	TYP portfolio is broader and deeper than the TPP portfolio and will further LUMA's contributions to the 30% energy savings target by 2040. LUMA is awaiting assignment of its portion of the 30% target by the Energy Bureau which will inform the EE savings targets for the next TYP.
2. Pass at least one cost-effectiveness test (Article 5)	Each TYP program is evaluated using the Puerto Rico Cost Test to assess cost-effectiveness at the program, sector, and portfolio levels. The overall TYP portfolio for FY2027–FY2028 remains cost-effective, with portfolio-level benefit-cost ratios well above 1.0 in both years.
Market Coverage & Equity	
3. Serve all relevant markets	The TYP portfolio aligns with the results of the Energy Efficiency Market Baseline Study and the Energy Efficiency Potential Study to serve all relevant markets with a wide variety of cost-effective EE measures.
4. Serve all customer classes	The TYP portfolio serves all customer classes including Commonwealth and municipal facilities. LUMA will coordinate with the PEPP and other Contributing Entities responsible for energy efficiency in government buildings to maximize savings in government facilities.
5. Address all relevant end-uses	The TYP portfolio aligns with the results of the Energy Efficiency Market Baseline Study and the Energy Efficiency Potential Study to serve all relevant end-uses such as cooling and water heating.

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Category & Program Design Principle	How addressed in the TYP
7. Promote customer equity across all classes	The TYP portfolio provides significantly enhanced and targeted coverage of low-income customers and other hard-to-serve segments. For instance, the Residential Kits programs will reduce energy burden for participating low-income residential customers.
8. Ensure Low-Income and Hard-to-Reach customers are marketed to and served	The Residential Kits programs is targeted to Low-Income and Hard-to-Reach customers by providing cost-effective energy efficiency measures.
Market Transformation	
6. Overcome all relevant market barriers	Segment-specific market barriers known through TPP program experience and available local data and research were carefully considered during program design. Further details on known market barriers and how they will be addressed through the TYP are provided in the following section.
9. Leverage trade allies to market, deliver, and install EE/DR measures	Residential AC contractors have been pivotal to the success of the Residential Rebates program. LUMA's extensive market activation efforts will extend beyond Residential AC contractors to cover all key channels and trade allies to build awareness, trust and participation in the EE and DR programs. Trade ally focused market activation efforts include training and tools to help allies and customers identify and implement energy efficiency opportunities and streamline the program application process.
10. Avoid lost opportunities by acting when measures are most cost-effective	All of the TYP programs cover lost opportunity measures.

Market Barriers

Despite the recognized benefits of EE in reducing customer costs and enhancing energy resilience, several market barriers impede the successful implementation and scaling of EE programs in Puerto Rico. Some of these barriers also apply to advancement of the DR market. Effective public policy and coordination among all contributing entities, as outlined in the EE Regulation, will be essential to overcoming these structural barriers. For example, building code compliance and enforcement in the Puerto Rico's building stock is outside LUMA's scope as a contributing entity and, therefore, not part of this TYP. However, LUMA

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will engage with the responsible contributing entities to explore potential future programs such as incentives for advanced code compliance in new construction.

TYP outlines how LUMA will do its part to address the primary barriers through its thoughtful program design and a strong emphasis on stakeholder engagement and market activation.

Table 3: Key Program Barriers

Barrier		Solution offered in the TYP
Financial Affordability	<p>Energy efficiency equipment is more expensive than the standard, less efficient equipment</p> <p>Lack of capital and limited third-party financing for major energy saving equipment and energy upgrades by low-income customers</p>	<p>The TYP programs will greatly improve the affordability of energy-efficient products and equipment in Puerto Rico.</p> <p>The Residential Kits programs will deliver high-value energy-savings products directly to customers at no cost.</p>
Lack of Awareness	<p>Limited awareness of the potential savings, health benefits, and comfort improvements associated with EE upgrades</p>	<p>Program branding and communications efforts will build awareness of EE and DR benefits and program opportunities across all sectors, segments and channels.</p> <p>Significantly enhanced trade ally support includes training and tools and partnerships to market programs to customers</p> <p>LUMA's strategic engagement and partnerships with a wide range of stakeholders will support development and deployment of solutions to build greater awareness and trust with customers.</p>
Program Services and Products	<p>Limited local availability of experienced vendors and workforce providing services needed to support LUMA program deployment.</p>	<p>Continued public policy targets and support for the utility role as a contributing entity will provide the market opportunity for EE and DR program services/solutions to grow. LUMA will continue to support local market development through its procurement, community and market engagement activities.</p>

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Barrier		Solution offered in the TYP
EE Product Availability	Limited local availability of energy efficient equipment may inhibit program impacts and uptake.	Continued public policy targets and approval of LUMA's TYP incentive programs will spur market growth for energy-efficient products and equipment. The TYP proposes significantly enhanced trade ally engagement that will help further identify key gaps in products availability and create opportunities for collaboration to fill those gaps.
Qualified Workforce for Customer Solutions	Achieving Puerto Rico's long-term energy goals requires a robust local workforce qualified to deliver TYP-related services and deploy solutions.	The TYP includes significant collaboration with Trade Allies and other organizations to provide tools, resources and workforce training critical for TYP program delivery.

Market Activation

The EE and DR markets in Puerto Rico are still in their infancy. TPP programs have only been operating in the market for approximately two years. As a result, within the TYP, LUMA must continue to pursue significant investments in marketing and market activation through key channels that can connect customers with programs and solutions in cost-effective and scalable ways. Engagement with residential heating, ventilation, and air conditioning (HVAC) contractors, for example, has been and will increasingly be pivotal in connecting customers with HVAC incentives offered through LUMA's program portfolio.

Market activation will include enhanced efforts in program branding and communications, increased investments in targeted customer outreach and technical support, and the development of strategic partnerships with a wide variety of key stakeholders who already have strong access to and engagement with customers. This includes, but is not limited to, government agencies, contractors, community organizations, trade allies, and aggregators. These channels will be essential to building awareness, trust, and participation in EE and DR programs.

Highlights of the key components of LUMA's market activation strategy are provided below and throughout the TYP.

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Table 4: Market Activation Categories and Descriptions

Market Activation	Descriptions
<p>Program Branding and Communications</p>	<p>LUMA will strengthen customer understanding of EE and DR and its benefits through clear, accessible branding and communications. Messaging will highlight how customers can reduce energy bills, improve resilience and comfort, and contribute to grid stability.</p> <p>LUMA will also restart stakeholder engagement with PEPP and others with the objective of discussing various opportunities related to marketing.</p> <p>LUMA-led communications will be delivered through various channels such as the website, bill inserts, Regional Service Centers, social media and print media.</p>
<p>Stakeholder Engagement</p>	<p>LUMA will continue regular engagement with a broad-based, and expanding group of stakeholders, whose perspective will be essential for ensuring programs stay relevant to the Puerto Rican market and responsive to customer evolving needs and priorities.</p> <p>Non-profits, academia, government agencies, federally and locally funded energy program offices, trade allies and customers themselves are examples of key stakeholder groups that LUMA targets for engagement in its work.</p>
<p>Strategic Partnerships</p>	<p>LUMA will deepen and cultivate new strategic partnerships with key market channels:</p> <ul style="list-style-type: none"> • Community/Government Agencies: LUMA will seek to work with local community groups and government agencies, including the Department of Economic Development and Commerce (DDEC), to help raise awareness of the benefits of energy efficiency and demand response for households; and to build partnerships with entities to market/deploy LUMA programs in their communities. • Trade Allies: LUMA will build the Trade Ally Network which will serve as a one-stop shop for a range of activities including raising awareness of emerging technologies, LUMA programs, and the benefits of EE and DR for their businesses and their customers. The network will also provide opportunities for workforce training and development and working with eligible trade allies to help deploy supporting initiatives that facilitate LUMA program uptake. LUMA will also continue to partner with aggregators to engage, enroll and dispatch customers in LUMA's DR programs.

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Cost-Effectiveness

The projected cost-effectiveness for each plan year is provided below at the program, sector, and portfolio levels based on the benefit / cost ratio as determined according to the Puerto Rico Cost Test. The portfolio-level results for FY2027–FY2028 remain cost-effective overall, with total portfolio cost effectiveness well above 1.0 in both years. All programs within the portfolio are projected to be cost-effective.

Table 5: Cost-Effectiveness by Program

Program	FY2027	FY2028
Residential	1.98	1.93
In Store Discounts	1.07	1.03
Residential Rebates	2.05	2.00
Residential Low-Income	1.22	1.17
Residential Kits	1.22	1.17
Commercial / Industrial / Government	1.72	1.65
Business Rebates	1.72	1.65
Portfolio Total	1.85	1.79

Benefits

Projected benefits, represented in 2026 dollars, are shown by program, portfolio, and sector for each planned year.

Table 6: Benefits by Program

Program	FY2027 (\$)	FY2028 (\$)
Residential	\$22,414,608	\$21,613,522
In Store Discounts	\$848,185	\$812,890
Residential Rebates	\$21,566,423	\$20,800,633
Residential Low-Income	\$1,863,322	\$1,778,850
Residential Kits	\$1,863,322	\$1,778,850
Commercial / Industrial / Government	\$6,861,323	\$6,531,738
Business Rebates	\$6,861,323	\$6,531,738
Portfolio Total	\$31,139,253	\$29,924,111

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Table 7: Benefits by Program and Benefit Stream²

Program	FY2027			FY2028		
	Avoided Energy Generation (\$)	Avoided Capacity Cost (\$)	Avoided GHG Emissions Costs (\$)	Avoided Energy Generation (\$)	Avoided Capacity Cost (\$)	Avoided GHG Emissions Costs (\$)
Residential	\$16,924,890	\$3,248,302	\$2,087,508	\$16,469,349	\$3,112,115	\$1,880,157
In Store Discounts	\$656,962	\$107,650	\$83,573	\$636,637	\$102,529	\$73,723
Residential Rebates	\$16,267,929	\$3,140,653	\$2,003,935	\$15,832,711	\$3,009,586	\$1,806,434
Residential Low-Income	\$1,531,027	\$84,880	\$241,096	\$1,482,447	\$70,867	\$219,301
Residential Kits	\$1,531,027	\$84,880	\$241,096	\$1,482,447	\$70,867	\$219,301
Commercial / Industrial / Government	\$4,997,549	\$1,058,964	\$804,810	\$4,795,891	\$1,022,858	\$712,989
Business Rebates	\$4,997,549	\$1,058,964	\$804,810	\$4,795,891	\$1,022,858	\$712,989
Portfolio Total	\$23,453,466	\$4,392,147	\$3,133,413	\$22,747,686	\$4,205,841	\$2,812,447

Budget

LUMA anticipates that although available funding for the TYP from the approved EE rider will remain constant over the term of the TYP, program spending will gradually ramp up in FY27 and into FY28 as the programs are launched and re-launched in FY27 and the effects of LUMA's proposed channel activation efforts begin to bear fruit later in FY27 and into FY28.

Projected budget, represented in nominal dollars, is shown by program, portfolio, and sector for each planned year in the tables below.

Table 8: Approximate Budget by Program

Program	FY2027 (\$)	FY2027 (% of total)	FY2028 (\$)	FY2028 (% of total)
Residential	\$10,493,841	67%	\$10,477,778	67%
In Store Discounts	\$499,759	3%	\$502,330	3%
Residential Rebates	\$9,994,083	64%	\$9,975,618	64%
Residential Low-Income	\$1,739,403	11%	\$1,744,282	11%
Residential Kits	\$1,739,403	11%	\$1,744,282	11%
Commercial / Industrial / Government	\$3,367,102	22%	\$3,378,190	22%
Business Rebates	\$3,367,102	22%	\$3,378,190	22%

² The residual difference between Table 6 and Table 7 is driven by avoided fuel benefits, which are projected to be the lowest-value benefit stream as provided by Synapse.

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Portfolio Total	\$15,600,346	100%	\$15,600,249	100%
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Table 9: Approximate Incentive and PP&A Budget by Program

Program	FY2027		FY2028	
	Incentive Cost (\$)	PP&A ³ (\$)	Incentive Cost (\$)	PP&A (\$)
Residential	\$7,976,635	\$2,517,206	\$7,870,865	\$2,606,913
In Store Discounts	\$300,782	\$198,976	\$296,817	\$205,513
Residential Rebates	\$7,675,853	\$2,318,230	\$7,574,048	\$2,401,569
Residential Low-Income	\$1,146,706	\$592,697	\$1,131,401	\$612,880
Residential Kits	\$1,146,706	\$592,697	\$1,131,401	\$612,880
Commercial / Industrial / Government	\$2,203,800	\$1,163,302	\$2,174,233	\$1,203,957
Business Rebates	\$2,203,800	\$1,163,302	\$2,174,233	\$1,203,957
Portfolio Total	\$11,327,141	\$4,273,205	\$11,176,499	\$4,423,750

Energy Savings

Projected net savings for each plan year are provided below at the program, sector, and portfolio levels. First-year net annual savings of 27,873 MWh in FY27 and 28,052 MWh in FY28 correspond to approximately 0.18% of FY2019 sales of 15,813,330 MWh⁴. On a gross basis – which is more comparable to the TPP savings that were also reported on a gross basis, first-year FY27 annual electricity savings are approximately 36,500 MWh, which is slightly higher than the target previously approved for FY26.

Table 10: Energy Savings by Program

Program	FY2027			FY2028		
	First Year Annual Electricity Savings (MWh)	Lifetime Electricity Savings (MWh)	Peak Demand Savings (MW)	First Year Annual Electricity Savings (MWh)	Lifetime Electricity Savings (MWh)	Peak Demand Savings (MW)
Residential	16,912	222,193	4.1	17,022	223,627	4.2
In Store Discounts	788	8,408	0.2	793	8,462	0.2
Residential Rebates	16,124	213,785	4.0	16,228	215,165	4.0
Residential Low-Income	3,546	17,036	0.6	3,569	17,145	0.6
Residential Kits	3,546	17,036	0.6	3,569	17,145	0.6
Commercial / Industrial / Government	7,414	69,265	2.4	7,461	69,705	2.4

³ Estimated breakdown of Program Planning and Administrative (PP&A) costs (expressed as a percentage of total spending): 14% rebate processing, 10% channel activation (marketing, promotion, etc.), 5% Evaluation, Measurement and Verification (EM&V), and 1% for planning of the next Three-Year Plan.

⁴ FY2019 electricity sales are derived from EE Regulation No. 9367, which establishes an annual energy efficiency target of 4,744 GWh (30% of PREPA's FY2019 sales). Dividing 4,744,000 MWh by 0.30 yields total FY2019 sales of 15,813,330 MWh.

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Business Rebates	7,414	69,265	2.4	7,461	69,705	2.4
Portfolio Total	27,873	308,495	7.2	28,052	310,477	7.2

Participants

Projected participant counts for each plan year is broken down by customer class at the program, sector, and portfolio levels.

Table 11: Participants by Program

Program	FY2027	FY2028
Residential	22,628	22,773
In Store Discounts	4,547	4,576
Residential Rebates	18,081	18,197
Residential Low-Income	12,996	13,079
Residential Kits	12,996	13,079
Commercial / Industrial / Government	1,938	1,951
Business Rebates	1,938	1,951
Portfolio Total	37,562	37,803

3.0 Energy Efficiency Program Offerings

The EE Regulation outlines that the purpose of the TPP is to facilitate the ramp-up of energy efficiency programs in Puerto Rico, while allowing time for the completion of the first Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study, and to support the development of the energy efficiency services workforce. Building on that foundation, LUMA has reviewed and incorporated insights from these studies into the development of the TYP Energy Efficiency portfolio.

Key elements of the TYP, such as EE portfolio savings, budgets, and cost-effectiveness have been updated to reflect the results of the studies. The findings helped refine program design, identify cost-effective opportunities across customer segments, and align program offerings with achievable potential.

An overview of the proposed programs in the TYP EE portfolio is provided in Figure 3-1. Programs highlighted in green are continued from the TPP. Each program is informed by lessons learned, market insights, and persisting market barriers observed throughout the TPP period.

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Figure 1: TYP Energy Efficiency Portfolio



The portfolio is aligned with the strategic objectives and design principles of the Energy Efficiency Regulation, and is designed to deliver long-term savings, drive customer engagement, and support achievement of Puerto Rico’s 2040 energy efficiency targets.

Puerto Rico’s energy efficiency market is still relatively immature, and activation of the various EE market segments necessary to achieve long-term energy savings is a core strategy of the TYP. Market activation is critical to building awareness, fostering consumer confidence, and delivering programs at scale. LUMA also anticipates that these market activation activities will evolve as the programs mature to address changing customer needs and market conditions.

LUMA will implement a phased ramp-up strategy by continuing full-speed deployment of existing programs in FY2027. By FY2028, most programs are expected to reach full deployment and optimal delivery, as outlined in the figure below.

Figure 2: EE Multi-Year Ramp-Up Strategy



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The following sections provide details on the proposed EE programs, beginning with Residential programs, followed by Business programs which the Government segment is allowed to participate in.

Residential Energy Efficiency Programs

The TYP residential EE program portfolio builds on the strong foundation of successful TPP offerings such as In-Store Discounts, Residential Rebates, and Residential EE kits, while expanding opportunities to improve uptake among hard-to-reach customer segments through continuous improvement and innovation.

LUMA will activate participation through personalized engagement strategies and deliver measurable results across diverse residential customer segments.

In-Store Discounts

Program Description and Services Offered

The In-Store Discounts Program, first launched in July 2024, delivers immediate point-of-sale (POS) savings to customers purchasing high-efficiency products at participating retail locations. Retailers enter into formal agreements with LUMA, committing to stock eligible measures, display program signage, and engage in seasonal promotional efforts. Financial incentives are applied per unit, enabling customers to choose energy-efficient options at prices comparable to or lower than baseline alternatives—directly supporting reduced electricity consumption and lower utility bills.

In the TYP, LUMA will re-engage with its previous partners and explore new midstream and upstream partnerships with retail trade allies to enhance availability of energy-efficient products and expand In-Store Discounts to local retail chains, including those located in low-income communities.

Eligible Customers

All customers purchasing eligible measures from participating retailers.

Eligible Measures

Eligible measures, incentives, and program elements are updated as needed based on market conditions, customer participation, and stakeholder feedback, while maintaining stable program offerings.

Table 12: Example Eligible Measure End-Uses – In-Store Discount

End-Use	Eligible Measures	Savings per measure (kWh)	Incentive per measure (\$) Residential
HVAC	Ceiling fans	63	\$30
	Window AC	234	\$120
	High efficiency box fans	183	\$36
Water Heating	Tankless water heater	119	\$102
Appliance	Energy Star washer/dryer	363	\$180
Refrigeration	Energy Star refrigerator	51	\$60

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Market Barrier and Risk Analysis

Table 13: Market Barrier and Risk Analysis – In-Store Discount

Category	Type	Strategies to Overcome Market Barrier and Risk
Financial	Barrier	Provide incentives on target measures to reduce customer costs. These incentives will reduce efficient measures incremental cost relative to baseline technologies.
Lack of Awareness	Barrier	Displays in participating stores highlighting the customer cost savings and energy savings of the measure relative to baseline technology. Host high-impact events (HIEs) and both formal and informal staff training at retailers.
Lack of Retailer Participation	Barrier	Increasing outreach and partnerships with retailers, distributors and manufacturers will be key to market activation. The program is open to any retailer, manufacturer or distributor who can offer discounts on eligible measures at the point of sale, and is able to meet LUMA's program requirements, including requirements for the incentive redemption and data tracking process. Increase trade ally engagement to secure buydown programs at independent, local retailers (i.e., National, Ace Hardware, True Value). To address retailer lack of capacity, work with manufacturers and distributors to discount products upstream before they reach the retailer.
Product Availability	Risk	Coordinate with retailers, distributors and manufacturers for pre-season inventory planning to avoid supply and demand imbalance. Use historical sales data to forecast demand. Ensure the availability of efficient measures in store with good shelf space and update the list of eligible measures in consultation with participating retailers.

Market Activation

Table 14: Market Activation – In-Store Discount

Program Branding & Communications	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Trade Ally Network	–

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Residential Rebates

Program Description and Services Offered

The Residential Rebate Program provides financial incentives to customers for the installation of high-efficiency equipment and measures in their homes. Prescriptive incentives are offered on a per-unit basis for qualifying measures, with incentive levels and eligible equipment reviewed regularly and updated as needed to reflect market conditions and customer demand.

Customers must complete an application to receive incentives. Since its launch in January 2024, LUMA has processed over 25,000 rebate applications and will continue to invest in scaling the program to achieve greater economies of scale during the TYP period. The goal will be to ensure timely customer service while increasing capacity to process growing volumes of applications. Previously, most customers submitted applications via email. As part of the TYP, LUMA will launch an online rebate program portal, which will significantly streamline application processing while maintaining a rigorous review and approval process. LUMA will also explore offering instant payment options (e.g., Venmo, PayPal) for customers with approved applications.

The TYP market activation strategy for the rebate program will continue to focus on program communication and engagement with trade allies. For example, HVAC contractors—who are on the front lines for marketing energy-efficient air conditioners and water heaters—remain key targets for LUMA’s Trade Ally Network activities. LUMA will also explore deeper partnership with these and other installers to facilitate rebate applications on behalf of customers, further improving program outcomes, operational efficiency, and customer service. In addition, LUMA will seek synergies with the In-Store Discounts program, working with trade allies to stock and promote rebate-eligible products sold in stores. Lastly, low-income customers can receive tailored support through the EE Low-Income Assistance Initiative.

Eligible Customers

All residential customers.

Eligible Measures

Eligible measures, incentives, and program elements are updated as needed based on market conditions, customer participation, and stakeholder feedback, while maintaining stable program offerings.

Table 15: Example Eligible Measure End-Uses – Residential Rebates

End-use	Eligible measures	Savings per measure (kWh)	Incentive per measure (\$) Residential	Incentive per measure (\$) Low-Income
HVAC	Mini-split air conditioners (TIER 1)	889	\$300	\$420
Water Heating	Solar water heater	1,495	\$660	\$930

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Market Barrier and Risk Analysis

Table 16: Market Barrier and Risk Analysis – Residential Rebates

Category	Type	Strategies to Overcome Market Barrier and Risk
Financial	Barrier	This program will provide rebate incentives on target measures to reduce customer costs. These incentives will reduce efficient measures incremental cost relative to baseline technologies.
Lack of Awareness	Barrier	In addition to expanded program communications, LUMA will engage deeply with trade allies to increase contractor awareness of available and emerging energy efficiency measures in the market, the benefits of more energy efficient technologies for customers, and how they can market them.
Equipment Accessibility	Barrier	LUMA will work with Trade Ally Network members to improve stocking and availability of energy efficiency products locally.
Qualified Installers	Barrier	LUMA will work with Trade Ally Network members to help make qualified installers more accessible to LUMA customers investing in high efficiency products and equipment.
Application Processing Delays	Risk	Streamline process via online application portal and instant payment options and improve communication with customers. Daily LUMA and contractor monitoring application volume and protocols to prevent backlogs.

Market Activation

Table 17: Market Activation – Residential Rebate

Program Branding & Communications	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Trade Ally Network	✓ EE Low-Income Assistance initiative

Residential Kits

Program Description and Services Offered

The Residential Kits Program, launched in February 2024, provides customers with free, easy-to-install products such as advanced power strips, showerhead aerators, and faucet aerators, along with information about LUMA's energy efficiency incentive programs. EE Kits are an effective way to open lines of communication with hard-to-reach customer segments and build interest in other LUMA incentive programs.

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For the TYP, this popular program will be available exclusively to low-income customers. A key market activation strategy will involve partnering with government agencies and community organizations to help distribute kits directly to customers. In addition, LUMA will engage customers directly through the EE Low-Income Assistance initiative.

Eligible Customers

All low-income residential customers.

Eligible Measures

Eligible measures, incentives, and program elements are updated as needed based on market conditions, customer participation, and stakeholder feedback, while maintaining stable program offerings.

Table 18: Example Eligible Measure End-Uses – Residential EE Kits

End-use	Eligible measures	Savings per measure (kWh)
Plug in Load	Power strip	80
	Shower head aerator	29
Water Heating	Faucet aerator	29
	ECM tabletop fans	183

Market Barrier and Risk Analysis

Table 19: Market Barrier and Risk Analysis – Residential EE Kits

Category	Type	Strategies to Overcome Market Barrier and Risk
Financial	Barrier	This program will provide energy efficiency kits to customers for free.
Lack of Awareness	Barrier	Kits are provided with instructions for customer installation of included measures. LUMA is also focusing on working with key community groups and government agencies that can distribute kits directly to low-income communities while providing insight into energy efficiency initiatives, its benefits and other LUMA programs.
Non-Installation Risk	Risk	Provide clear, engaging installation instructions. Use follow-up emails and texts to encourage installation as well as working with community agencies for in-home support or verification. Assess non-installation risk with customer satisfaction surveys.

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Market Activation

Table 20: Market Activation – Residential EE Kits

Program Branding & Communications	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Community & Government Agencies	✓ EE Low-Income Assistance initiative

Business Energy Efficiency Rebates

Program Description and Service Offered

The Business Energy Efficiency Rebates Program, launched in May 2024, offers standard financial incentives to all commercial and industrial customers for installing eligible energy-efficient equipment. These prescriptive incentives focus on long-lived measures offered on a per-unit basis for qualifying equipment, with incentive levels and eligible technologies reviewed regularly and revised as needed to reflect market conditions and customer demand.

Customers must apply to have rebate projects pre-qualified. Once approved, they must implement the approved projects within a specified timeframe.

LUMA will continue investing in the program to achieve greater economies of scale during the TYP period. The focus for this phase will be on ensuring timely customer service while increasing capacity to process a growing volume of customer applications. While most customers previously submitted applications via email, LUMA will launch an online rebate portal during the TYP to streamline application processing significantly, while maintaining a rigorous review and approval process.

LUMA will also explore offering instant payment options (e.g., Venmo, PayPal) for customers with approved applications who prefer not to wait for checks to arrive by mail.

Another key focus during the TYP is to increase program uptake from TPP levels. Market activation for the Rebates Program will continue to emphasize engagement with trade allies, while expanding awareness and capacity through the C&I Network described further below.

LUMA will also explore deeper partnerships with trade allies who can offer complementary services to their customers, such as application support, energy assessments and audits, and project implementation—to improve program outcomes, operational efficiency, and customer experience.

Eligible Customers

The program is open to all commercial, industrial and government customers.

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Eligible Measures

Eligible measures, incentives, and program elements will be updated as needed based on market conditions, customer participation, and stakeholder feedback, while maintaining stable program offerings.

Table 21: Example Eligible Equipment – Business Energy Efficiency Rebates

End-Use	Eligible Equipment	Savings per measure (kWh per unit)	Incentive per measure (\$ per unit)
HVAC	Rooftop AC	200-400	\$100-\$200 per ton
HVAC	Chillers	150-300	\$45 per ton
HVAC	AC tune-up	72	\$12 per ton
Lighting	Linear Fluorescent	30-50	\$3-\$8 per unit
Lighting	LED Troffer	100-200	\$10-\$20 per unit
Lighting	Omni directional	58	\$10 per unit
Lighting	Exit sign	345	\$7 per unit
Sensors	Occupancy Sensor	36	\$20 per sensor
Water Heating	Water Heating	2,150	\$675 per water heater
Envelope	Window Film	8.1	\$0.85 per sq ft
Pumps	Pool Pump Variable Frequency Drive (VFD)	6,343	\$225 per horsepower
Food Services	Refrigerator	490	\$100 per unit
Food Services	Combination Oven	13,804	\$500 per unit
Food Services	Convection Oven	1,933	\$275 per unit
Food Services	Fryer	1,876	\$250 per unit

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End-Use	Eligible Equipment	Savings per measure (kWh per unit)	Incentive per measure (\$ per unit)
Food Services	Ice Machine	1,243	\$100 per unit

Market Barrier and Risk Analysis

Table 22: Market Barrier and Risk Analysis – Business Energy Efficiency Rebates

Category	Type	Strategies to Overcome Market Barrier and Risk
Financial	Barrier	The program provides incentives to reduce the up-front cost of high-efficiency equipment.
Lack of Awareness	Barrier	The program will be delivered through trade allies to increase knowledge, awareness of LUMA programs and benefits of energy efficiency.
Qualified Installers	Barrier	Work with trade allies (i.e. associations, trade schools, unions manufacturers) and community and government agencies to identify skills gaps, and provide workforce training programs to fill those gaps, and certify qualified professionals.
Accessibility to equipment	Barrier	Coordinate with trade allies such as distributors, manufacturers and retailers to ensure stock availability.
Application processing delays	Risk	Streamline process via online application portal and instant payment options. Improve communication with customers on delays. Daily LUMA and contractor monitoring of application volume and protocols to prevent backlogs.

Market Activation

Table 23: Market Activation – Business Energy Efficiency Rebates

Program Branding & Communications	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Trade Ally Network	✓ C&I Network

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Government Segment

The Government segment can participate in the Business Rebates program, which support cost-effective energy efficiency improvements across Puerto Rico’s public sector. Participation will include tailored market activation strategies designed specifically for the government segment.

The Public Streetlighting Program will continue to lead these efforts by accelerating the conversion of streetlights to modern LED technology, reducing energy use, improving reliability, and building on strong momentum already underway.

Streetlighting Conversion Program

As a result of natural disasters including hurricanes and earthquakes, it was originally estimated that 70% of the approximately 500,000 streetlights in Puerto Rico are damaged and require repair, replacement, or upgrade. After completing more thorough assessment, it was noted that the findings significantly exceeded the original estimates as nearly 430,000 streetlights across Puerto Rico have been identified as damaged and needing repair, replacement, or upgrade. This program’s main objectives are increasing efficiency, enhancing reliability, improving resiliency to withstand extreme weather events, and reducing operation and maintenance costs. This program improves public safety and customer experience by restoring streetlights to working order.

Within this effort, “Community Streetlight Initiative,” a \$1,200 million FEMA-funded program, is designed to repair or replace the streetlight infrastructure and upgrade to applicable codes and standards, such as light emitting diode (LED) technology and the use of stronger poles that can withstand 160 mph winds.

By the end of FY2027 LUMA plans on completing nearly 168,000 streetlight repairs under the federally funded initiative. This of course is based on timely obligation of federal funding for the streetlight projects. Additional obligation of federal funds or non-federal capital funding sources would be required for work to continue in FY2028 to complete the remaining repairs identified during the assessments.

Estimated Streetlight Replacements and Program Costs

Table 24: Estimated Unit Replacement and Program Cost – Streetlight Program (based on Feb 5 PREB resolution and order)

Description	FY27 Estimate	FY28 Estimate*	Total
Planned Unit Replacements (#)	5,100	8,780	13,880
Total Costs (\$)	\$39.2M	\$70.2M	\$109.5

These are estimated numbers based on recent determinations from the PREB to re-activate previously deactivated streetlight projects. Additional work can be performed if additional projects funds are obligated by FEMA.

Government Segment Programs

Government entities can participate in the Business Rebates program, giving public agencies access to proven, cost-effective strategies for reducing energy use in state-owned and state-leased facilities.

Through this program, agencies will be able to identify energy-saving opportunities, implement upgrades, and take full advantage of incentives available for EE improvements.

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LUMA remains committed to providing support where appropriate. The ultimate responsibility for implementing energy efficiency measures in government buildings lies with the public building owners.

Eligible Customers

Government offices, public housing buildings, public safety buildings, transportation facilities, correctional institutions, schools, community centers, and qualifying non-profit buildings.

Market Barrier and Risk Analysis

Table 25: Market Barrier and Risk Analysis – Government Segment

Category	Type	Strategies to Overcome Market Barrier and Risk
Financial	Barrier	The program provides incentives to reduce the up-front cost of high-efficiency equipment.
Lack of Awareness	Barrier	The program will be delivered through trade allies to increase knowledge, awareness of LUMA programs and benefits of energy efficiency.
Qualifier Installers	Barrier	Work with trade allies (i.e. associations, trade schools, unions manufacturers) and community and government agencies to identify skills gaps, and provide workforce training programs to fill those gaps, and certify qualified professionals.
Accessibility to equipment	Barrier	Coordinate with trade allies such as distributors, manufacturers and retailers to ensure stock availability.
Limited Data	Barrier	LUMA will explore offering methodologies as part of the government-specific activation strategy to help government facilities gather data on energy savings opportunities.

Market Activation

Table 26: Market Activation – Government Segment

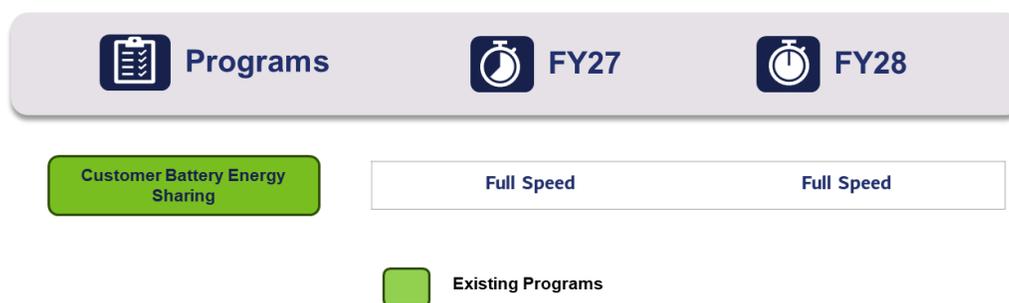
Program Branding & Communications	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Trade Ally Network	✓ C&I Network

4.0 Demand Response Program Offerings

LUMA's Demand Response (DR) program portfolio under the TYP is focused exclusively on emergency demand response to address ongoing resource adequacy challenges. During the TYP period, LUMA's sole DR program is the Customer Battery Energy Sharing (CBES) Program.

The CBES program began as a pilot in fiscal year 2024, and the Energy Bureau's April 3, 2025, Resolution and Order approved CBES as a full emergency DR program through FY2028. LUMA administers the program in collaboration with approved aggregators, which serve as the primary market activation channel. Eligible residential and commercial customers are recruited and enrolled through these aggregators.

Figure 3: DR Multi-Year Ramp-Up Strategy



Customer Battery Energy Sharing (CBES)

Program Description and Service Offered

The Customer Battery Energy Sharing (CBES) program leverages distributed batteries as an energy resource during grid emergencies.

The CBES pilot program began in fiscal year 2024. The Energy Bureau's April 3, 2025, Resolution and Order approved CBES as a full program to operate through FY2028. LUMA implements the program in collaboration with aggregators, which serves as the program's key market activation channel. Eligible residential and commercial customers are recruited and enrolled through and approved demand response (DR) aggregator.

Aggregators are also responsible for dispatching battery resources of participating customers during CBES program events called by LUMA, and for compensating those customers for the energy provided.

The Energy Bureau's May 29, 2025, Resolution and Order approved an auto-enrollment mechanism for CBES. As a result, there are now more than 80,000 participants enrolled. With this TYP, LUMA proposes to continue auto-enrollment of customers through FY28.

Estimated Energy Savings and Program Costs

The total program costs include customer incentives plus the program administration costs. The table below shows the peak demand savings, incentive costs, administrative costs and total costs for each year of the TYP.

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Table 27: Energy Savings and Program Costs – Customer Battery Energy Sharing

Description	FY27	FY28
Peak Demand Capacity	47 MW	52 MW
Incentive Costs	\$24,509,185.80	\$23,964,536.90
Administrative Costs	\$4,901,837.10	\$4,792,907.38
Total Costs	\$29,411,022.90	\$28,757,444.28

Eligible Customers

The Program targets customers with DBESS batteries that are registered in the LUMA Net Energy Metering (NEM) Program.

Customer Incentive

LUMA compensates aggregators at a standardized rate of \$1.25 per kWh dispatched to the grid under the CBES program. Each aggregator, in turn, has the flexibility to establish its own customer-facing incentive structure. As a result, compensation to individual customers varies by aggregator, depending on their respective business model and market strategy.

Market Barrier and Risk Analysis

Table 28: Market Barrier and Risk Analysis – Customer Battery Energy Sharing

Category	Type	Strategies to Overcome Market Barrier and Risk
Data Validation & Settlement	Barrier	Provide training and standardized tools to help collect and report accurate device-level data.
Underutilization of Enrolled Battery Capacity	Risk	Discuss with aggregators the potential reasons for underutilization of enrolled battery capacity. Refine program design to incentivize battery discharge during events; adjust compensation to reflect performance.
Opt-Out Risk	Risk	Require immediate notice of non-compliance and set clear limits on opt-out frequency and timing in participant agreements.

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Market Activation

Table 29: Market Activation – Customer Battery Energy Sharing

Program Branding & Communication	Stakeholder Engagement	Strategic Partnerships	Tailored Customer Outreach & Technical Assistance
✓	✓	✓ Aggregators	–

5.0 Program Administration and Implementation

As LUMA transitions from the TPP to the TYP, its program administration and implementation approach will also evolve to ensure scalability and adaptability across the portfolio of energy efficiency (EE) and demand response (DR) programs.

With many of LUMA's TPP programs still ramping up, LUMA's strategy will focus on scaling of these existing programs through its current third-party implementation contractor that will continue to support the TYP programs through FY28. The contractor brings specialized expertise in utility EE and DR program delivery, enabling LUMA to focus on administrative oversight, strategic planning and pilot program design.

With many of LUMA's TPP programs still ramping up, LUMA's strategy will focus on scaling of these existing programs through a third-party implementation contractor to support the TYP programs through FY28. The contractor brings specialized expertise in utility EE and DR program delivery, enabling LUMA to focus on administrative oversight, affordability, strategic planning and pilot program design.

During the TYP, LUMA will expand the number of internal staff to strengthen administrative oversight over the TYP portfolio of programs, strategic planning and support the design and execution of the programs to be undertaken in the TYP that will help build a robust foundation for the next TYP. As needed, these internal staff will also issue new Request for Proposals (RFPs) to secure additional essential implementation support from other service providers as needed to deliver the programs efficiently and effectively.

6.0 Performance Incentives

The TYP does not contemplate performance incentives, as LUMA's performance incentive mechanisms are established separately in Case NEPR-AP-2020-0025 in accordance with the T&D OMA.

Performance incentives must also align with verified savings and cost effectiveness results based on the Baseline and Potential Study frameworks. These elements will be reviewed following the TYP filing, consistent with the Energy Bureau's directive. LUMA will continue to explore potential performance incentive mechanisms for a future TYP while keeping customer affordability at the forefront.

7.0 Long-Term Resource Planning

The EE regulation requires that each TYP includes an EE resource acquisition plan through 2040 based on long-term EE targets assigned to LUMA by the Energy Bureau based on the results of the EE Potential Study. However, the Energy Bureau has determined that it is premature to set these long-term EE savings estimates at this time. Accordingly, the Energy Bureau will address and establish such estimates as part of its consideration of this TYP.

In addition, LUMA has provided detailed comments on the Energy Efficiency Market Baseline Study and Energy Efficiency Potential Study, and recommendations for revisions and methodological improvements to support the development of more robust and technically grounded long-term EE targets.

8.0 Reporting and Planning

The objective of this section is to propose a reporting and planning approach that aligns with important fiscal year deadlines and filings via other dockets related to TYP portfolio funding sources such as the EE Rider.

Reporting

LUMA will submit quarterly and annual reports to the Energy Bureau detailing progress under the TYP. The reports will be prepared in accordance with applicable regulatory requirements and are intended to provide an overview of LUMA's performance and progress in implementing EE / DR initiatives. Each report would seek to include information regarding activities conducted during the relevant program period and to present data on financial, operational, and customer engagement dimensions.

- **Quarterly reports** will be submitted within 45 days of each quarter's end and will include updates on implementation, secured EE / DR resources, and other required metrics as outlined in the EE and DR regulations.
- **Year-End Reports** will be submitted within 120 days of each fiscal year end and will have the same format and structure as the quarterly report but will highlight results for the entire fiscal year in addition to Q4 results.
- **Annual Program Evaluation Report** will be submitted 120 days after the completion of fiscal year⁵ summarize EM&V results and related planned program changes and improvements.

Preliminary filing dates for the reports are shown in Table 9-1. EM&V report timing will require confirmation by EM&V contractors.

⁵ Submission timeline will be confirmed upon consultation with the selected EM&V contractor.

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Table 30: Schedule for Reports

Report on Period Coverage	Report Type	Report Filing Date
Q1 FY27	Quarterly	November 2026
Q2 FY27	Quarterly	February 2027
Q3 FY27	Quarterly	May 2027
Q4 FY27 & Full Year FY27	Year-End Report	September 2027
FY27	EM&V Report	TBD - EM&V contractor
Q1 FY28	Quarterly	November 2027
Q2 FY28	Quarterly	February 2028
Q3 FY28	Quarterly	May 2028
Q4 FY28 & Full Year FY28	Year-End Report	September 2028
FY28	EM&V Report	TBD - EM&V contractor

Quarterly and Year-End Report Structure

The quarterly and year-end reports are intended to document quarterly and annual performance and provide timely updates on overall portfolio and program performance. The reports will show YTD results along with the specific quarterly results. The details of the contents of these reports are outlined below.

Table 31: Proposed Quarterly Report and Annual Report Contents

Section	Description
1. Portfolio Performance Metrics	<p>Detailed information on LUMA's EE / DR portfolio and program performance during the quarter (quarterly report), YTD and past program year (annual report).</p> <ul style="list-style-type: none"> • Benefits • Energy Savings • Participants • Cost-Effectiveness (Annual Report)

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Section	Description
2. Budget & Expenditures	<p>Budget vs. actual expenditures for the reporting period, broken out by budget category at the program, sector, and portfolio level.</p> <p>Categorized by customer class:</p> <ul style="list-style-type: none"> • Residential • Low Income • Commercial & Industrial (Government) <p>Assessment tables comparing actual vs. planned costs, categorized by:</p> <ul style="list-style-type: none"> • Customer Incentives • Administration Costs • Market Activation Costs <p>List of Professional and Technical Services Costs</p> <p>Explanations for any variances >15% on any category will be provided</p>
4. Market Activation & Program Updates	<p>Updates on market activation activities to help increase customer adoption of programs.</p>

Planning

The EE Regulation also requires that annual updates to TYP fiscal year plans and budgets be submitted. LUMA is proposing to submit annual plan revisions in March to adequately inform EE Rider reconciliation process filed under NEPR -MI-2020-0001 in April of each year. In addition, LUMA is proposing dates for filing the next TYP. Knowing those dates well in advance will support planning and budgeting efforts.

Table 32: Annual Plan Type and Filing Date

Plan Period	Plan Type	Filing Date
FY28	Annual TYP Plan Revisions	March 2027
FY29 - FY31	TYP Plan Draft	August 1, 2027
FY29 - FY31	TYP Plan Final	December 1, 2027

9.0 Appendices

Appendix A: Evaluation, Measurement, and Verification

This appendix sets out the objectives and high-level approach for Evaluation, Measurement and Verification (EM&V) of the TYP portfolio.

Programs that have at least one year of operation, such as rebate programs introduced during the TPP period, will receive an annual evaluation starting in FY2027. For most new programs being introduced in the middle of TYP and thus will less than a year of operation, LUMA does not believe full EM&V would be cost-effective for the program pilot year. Rather, a lower cost pilot evaluation will be completed at the end of each TYP year.

EM&V results will be applied to full program launches, subsequent reporting periods and/or to the next Three-Year Plan (FY2029 – FY2031) as appropriate.

A.1.1 EM&V APPROACH

Existing Program EM&V

EM&V for each existing program (defined as programs that have been operational for at least a full year) will determine the following:

A. Impact Evaluation

- Verified Gross First Year Energy Savings (MWh) to a confidence level of 90% and relative precision of +/-10%
- Verified System Peak Period Capacity Savings (MW)
- Verified Net First Year Energy Savings (MWh) based on the program-specific fixed Net-to-Gross ratio
- Verified Net System Peak Period Capacity Savings (MW) based on the program-specific fixed Net-to-Gross ratio
- Proposed Program-Specific Net-to-Gross ratios, reflecting free-ridership, spillover and other factors, to apply during the next Three-Year Period (FY2029 – FY2031)

B. Process Evaluation

- Participating customer satisfaction and recommendations for future program enhancements
- Non-participant barriers to participation and recommendations to address these barriers and increase participation rates in the future
- Partner and stakeholder satisfaction and recommendations for future program enhancements
- Partner and stakeholder measure-level feedback and recommendations for future program enhancements
- Recommendations to improve and streamline program processes (application, rebate processing, etc.)

C. Market Effects Evaluation

- Market effects such as changes in product availability, pricing, and customer purchase intentions will be assessed for relevant programs to measure broader impacts beyond direct participation.

D. Program-Specific Considerations

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- LUMA anticipates that the EM&V objectives set out above will be adequate for most of the programs. There are, however, some program-specific evaluation requirements to support future program planning as set out below:

Table 33: Program-Specific Evaluation Requirements

Program	Program-Specific Evaluation Requirements
Residential Rebates and Business Rebates	AC operating hours and system peak period operation (i.e., how participants use their air-conditioning equipment). This information will be used to update AC-related energy savings and system peak demand savings estimates for the next Three-Year Period (FY29 – FY31)

A.1.2 FIXED NET TO GROSS RATIOS

Given the relative immaturity of the EE ecosystem within Puerto Rico and the fact that no EM&V has been undertaken on any of the TPP programs, LUMA proposes to set the Net-to-Gross (NTG) ratio for each program to a constant uniform program-specific value that will be applied to all Verified Gross Savings over the TYP period.

The proposed NTG ratio for each of the TYP programs is provided below based upon LUMA's market insights and input from experience elsewhere.

Table 34: Program Net to Gross Ratios

Program	NTG
In Store Discounts	0.85
Residential Rebates	0.70
Residential Kits	0.95
Business Rebates	0.85
Streetlighting Conversion	0.85

Initial NTG was derived based on common program design aspect:

- Residential Kits program provide full measure cost coverage or involve the installation of measures through program partners a NTG of 0.95 was given.
- All other programs were assigned a lower NTG.

Once programs are evaluated an NTG can be assessed and provided as an update to these initial values. Mature utility programs such as ComEd⁶ often receive an NTG of the overall portfolio at 90% or more. Since this is early in the LUMA program we provided conservative NTG estimates but we expect the estimation to improve over time.

⁶ <https://www.ilsag.info/wp-content/uploads/ComEd-CY2024-Summary-Impact-Evaluation-Report-2025-04-28-Final.pdf>

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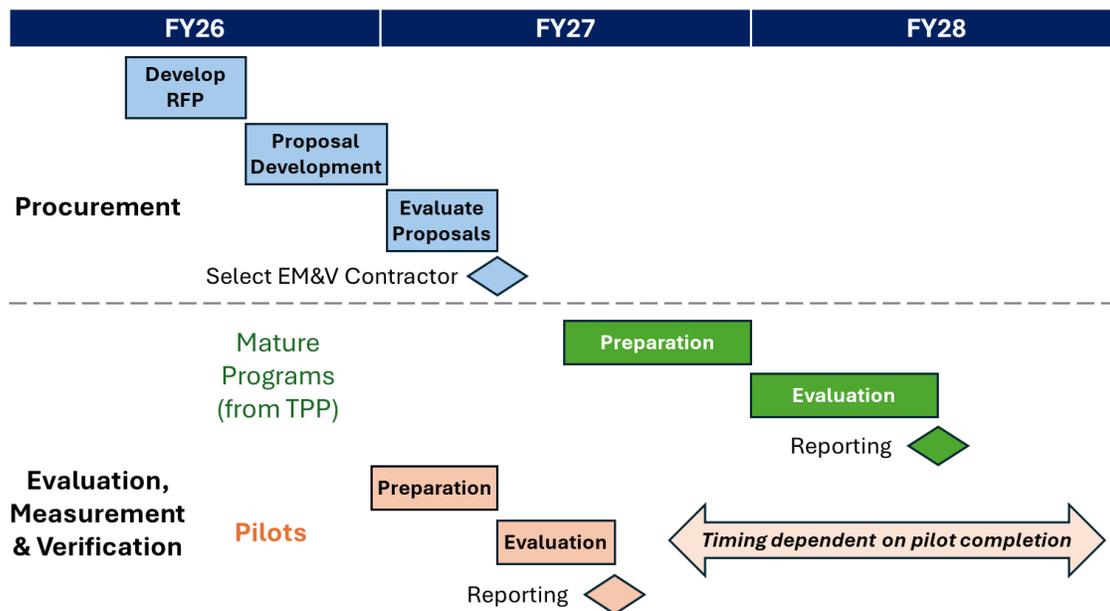
As new information becomes available from EM&V, LUMA will update the program-specific NTG ratios which would then be applicable in the next TYP.

A.1.3 EM&V SERVICES PROCUREMENT APPROACH

The proposed EM&V schedule program lays out a schedule for existing programs that will be evaluated during this TYP period.

The approximate timing for the key EM&V activities is provided below.

A 9-1: EM&V Schedule



A.1.4 EM&V BUDGET

For budgeting purposes, LUMA has assumed that EM&V costs will be approximately 5% of the overall portfolio spending for TYP. Actual EM&V costs will vary based on the specifics of the EM&V approach developed with the selected EM&V supplier and the number of programs the Energy Bureau approves for the final TYP.

Appendix B: LUMA Cost Effectiveness Test Tool

To assess the cost-effectiveness of the TYP programs and portfolio as required under the EE Regulation, LUMA developed the Puerto Rico Cost Test Tool (the “tool”). The tool is intended to support LUMA staff, external service providers and delivery agents to develop resource savings, budgets and cost effectiveness projections for EE / DR programs targeting Puerto Rico’s electricity market based on the Puerto Rico Benefit-Cost Test (the “PRCT”).

The PRCT is an EE / DR cost-effectiveness screening test, reflecting Puerto Rico public policy, used to evaluate whether proposed or actual EE / DR programs provide benefits greater than their costs. The

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specifics of the PRCT were set out in the August 12, 2022, PREB Resolution and Order under NEPR-MI-2021-0009.

There are three primary use cases for the tool:

- A. **Measure Screening** – *evaluating the cost-effectiveness of a single measure*
- B. **Evaluating a Program** – *evaluating the cost-effectiveness of a program covering multiple measures, projected participation rates and forecast program costs*
- C. **Summarizing a Portfolio** – *providing summary cost, savings and benefit-cost information about a portfolio comprised of multiple programs*

Before using the tool, users are expected to have developed a program concept and preliminary program design. The program design should be focused on a particular target market and should identify applicable measures and measure-specific assumptions for number of participants, incentive costs, net-to-gross ratios and program costs. The tool outputs projections of resource savings and cost effectiveness based on this program's information input (i.e., all key program design elements are inputs to the tool).

A.1.1 COSTS AND BENEFITS CONSIDERED IN THE TOOL

The PRCT is very specific about what costs and benefits are considered and how they are used in determining the overall cost-effectiveness of a measure, program or portfolio. The tool follows the approach as specified in the PRCT.

Broadly speaking, there are two cost categories considered each with additional subcategories:

1) Measure-specific Costs

- a) **Incremental cost** – is the incremental cost that the customer would pay (before any utility incentives or rebates) for the energy efficiency technology over the cost of the base technology.

$$\text{Incremental cost} = \text{energy efficient technology cost} - \text{base technology cost}$$

For example, if the base technology cost is \$500 and the energy efficient technology cost is \$650, the incremental cost will be \$150 (\$650 - \$500). Some measures, such as behavioral measures, will have a base technology cost of zero because the "default" activity is to do nothing. Incremental cost is independent of incentive costs.

- b) **Incentive cost** – is the value of the incentive or payment provided to the customer by the utility to make measures more financially attractive to purchase.
- c) **Customer Cost** – the customer cost to purchase any measure is the incremental cost minus the incentive cost or incentive payment

2) Non-Incentive Costs

These costs include all costs the program or portfolio accumulates beyond any measure-specific incentives provided to customers. These costs could include:

- a) **Administrative costs** such as for application and rebate processing, evaluation, measurement and verification (EM&V), regulatory reporting, program planning, and other administrative tasks

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- b) **Marketing and channel activation costs** such as general promotion, branding, communications, materials; strategic partnerships; training and technical assistance activities, and other customer support activities

Portfolio-level non-incentive costs are allocated to programs based on energy savings and program non-incentive costs are allocated to measures based on kWh savings

Each EE or DR measure is expected to provide some benefit, comprising one or more of the following:

- 1) **Avoided Generation Benefit** – reduced annual energy, capacity, gas, water consumption
- 2) **Utility Grid Benefit** – deferred transmission and distribution investment costs, increased grid reliability, and other benefits
- 3) **Greenhouse Gases** – Reduced and avoided greenhouse gas (GHG) emissions
- 4) **Customer Non-Energy Impacts** – such increased thermal comfort, productivity, property value and other non-energy impacts

Each of these benefit streams is multiplied by the benefit-specific avoided cost for the life of the measure and the total benefit is based on the present value of all benefits over the measure life

7.2.1.1 AVOIDED COSTS CONSIDERED IN THE TOOL

The avoided costs used in the tool are primarily based on the Avoided Cost Study provided by Synapse⁷ with some of the avoided costs based on estimates developed by LUMA as noted below.

LUMA is currently developing estimates of avoided costs for other fuels, water, transmission capacity, distribution capacity and customer non-energy benefits. We anticipate that these estimates will be incorporated into the cost effectiveness test in the TYP.

⁷ Synapse Energy Economics, *Avoided Energy and Capacity Costs in Puerto Rico* (report prepared for the Puerto Rico Energy Bureau, November 2022).

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A 9-2: Avoided Cost Categories (1)

Category	Impact	Include	Monetize	Source
Utility System Impacts				
Generation	Energy Generation	✓	✓	AvCo study*
	Capacity	✓	✓	AvCo study*
	Environmental Compliance	✓	✓	AvCo Phase 2**
	Renewable Portfolio Standard Compliance	✓	✓	AvCo study*
	Ancillary Services	✓	✓	AvCo study*
Transmission	Transmission Capacity	✓	✓	Phase 2**
	Transmission Losses	✓	✓	
Distribution	Distribution Capacity	✓	✓	Phase 2**
	Distribution Losses	✓	✓	
General	Program Incentives	✓	✓	TYP
	Program Administration Costs	✓	✓	
	Program Administration Incentive Costs	✓	✓	
	Credit and Collection Costs	x	✓	TBD
	Utility Rate Riders	x	✓	
	Risk	✓	x	Qualitative
	Reliability	✓	x	
	Resilience	✓	x	

← Estimated by LUMA

← Estimated by LUMA

A 9-3: Avoided Cost Categories (2)

Category	Impact	Include	Monetize	Source
Host Customer Impacts				
Host Customer Energy Impacts	Host customer portion of DER costs	✓	✓	TYP
	Interconnection Fees	x	✓	N/A
	Risk	x	x	
	Reliability	x	x	
	Resilience	x	x	
	Tax Incentives	x	x	
Host Customer Non-Energy Impacts (NEIs)	Other Fuels and Water	✓	✓	← Estimated by LUMA
	Property Asset Value	✓	x	
	Health & Safety	✓	x	
	Empowerment, Satisfaction & Pride	✓	x	
	Comfort	✓	x	
	Productivity	✓	x	
	Low-Income Host Customer NEIs	✓	x	
Societal Impacts				
Societal Impacts	Greenhouse Gas Emissions	✓	✓	AvCo study*
	Other environmental	✓	x	Qualitative

← Estimated by LUMA

← Estimated by LUMA

Renewable Portfolio Standard Compliance Avoided Costs



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Table 1 in the Synapse Avoided Cost Study⁸ (“Avoided Cost Study”) indicates that the Renewable Portfolio Standard Compliance Avoided Costs should be developed on a jurisdictional basis (i.e., specifically for Puerto Rico). Further, on page iv, the Avoided Cost Study indicates that the Renewable Portfolio Standard Compliance Avoided Costs would be developed in the next phase of the Avoided Cost Study.

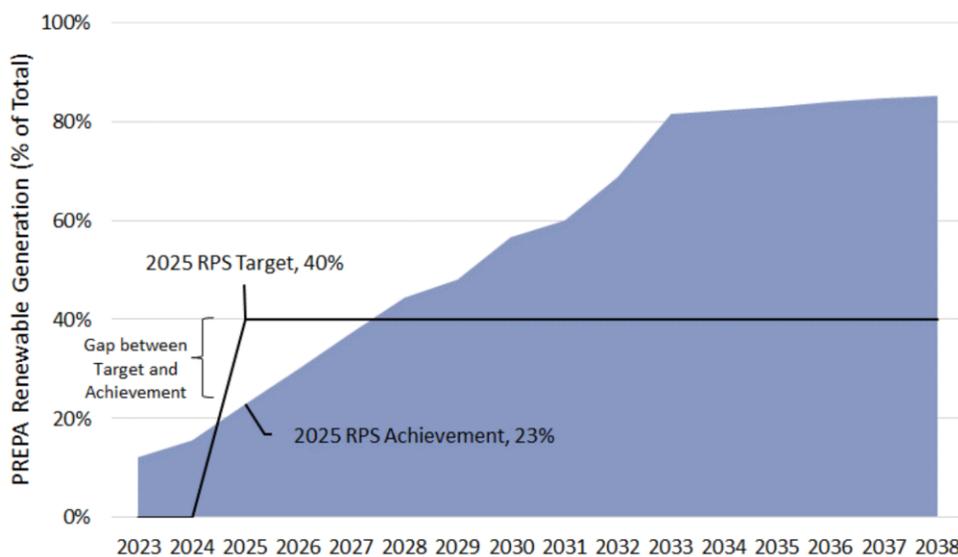
To ensure that the set of avoided costs used in the Puerto Rico Cost Test for the TYP were as comprehensive as possible, LUMA explored whether it would be appropriate to determine the Renewable Portfolio Standard Compliance Avoided Costs in advance of the release of the next phase of the Avoided Cost Study and in advance of the avoided costs that will ultimately be provided through the final Integrated Resource Plan.

Based on its analysis and its understanding of the approach used by Synapse in the Avoided Cost Study, LUMA believes that the Portfolio Standard Compliance Avoided Costs are already largely reflected in the avoided energy generation and capacity costs provided in the Avoided Cost Study. This conclusion is because projected PREPA Renewable Generation (as a % of Total) exceeds the Renewable Portfolio Standard from 2028 onwards.

To illustrate this point, Figure 5 from the Avoided Cost Study is shown below:

A 9-4: Synapse Puerto Rico RPS Targets Compared to No EE Scenario RE Generation Results

Figure 5. Puerto Rico RPS Targets Compared to No EE Scenario RE Generation Results



Hence, the supply mix used to determine the avoided energy generation and capacity costs is projected to be compliant with the Renewable Portfolio Standard in all but one of the years in the period (FY2027 –

⁸ Avoided Costs of Energy Efficiency Resources in Puerto Rico 2023-2045, Synapse Energy Economics, Inc., June 5, 2024, released under NEPR-MI-2021-0009SA

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FY2052) used in determining the cost-effectiveness of the TYP. The Renewable Portfolio Standard Compliance Avoided Costs for 2027 would be relatively small in comparison with the costs that are already reflected in the avoided energy generation and capacity costs from 2028 onward given the expected level of EE savings in FY2027.

LUMA will revisit the Renewable Portfolio Standard Compliance Avoided Costs component when updating the avoided costs based on the Final IRP.

System Peak Demand Period Definition

Based on an analysis of hourly system load and weather data from the past five years, LUMA has defined the System Peak Demand Period for the purposes of estimating the peak savings of EE/DR measures, and b) cost-effectiveness testing as follows:

The period between 6 – 12 pm during working weekdays with Cooling Degree Days (CDD) greater than 21 when temperatures are higher than 84 and relative humidity is higher than 80%.

The System Peak Demand Period definition given above is based on the average values for temperature, relative humidity and Cooling Degree Days occurring during the highest 200 demand hours in the past five years.

Avoided Costs Table

The specific avoided costs used in the tool are provided below. For long-lived measures with EULs extending beyond 2045, LUMA simply continued the avoided costs from 2045 forward on a constant basis (e.g., same real costs in all years beyond 2045 as estimated for 2045).

LUMA is currently developing estimates of avoided costs for other fuels, water and customer non-energy benefits. We anticipate that these estimates will be incorporated into the cost effectiveness test in the TYP.

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A 9-5: Avoided Costs

Year	Avoided Energy Generation Costs (\$/MWh)			Avoided Capacity Costs (\$/kW-year)	Avoided GHG Emissions Costs (\$/MWh)		
	Daytime 7am - 4pm	Evening (Peak) 4pm - 11pm	Overnight 11pm - 7am		Daytime 7am - 4pm	Evening (Peak) 4pm - 11pm	Overnight 11pm - 7am
2023	98	141	108	0	0	0	0
2024	79	122	99	0	0	0	0
2025	70	109	94	50	12	41	31
2026	67	100	91	74	6	20	10
2027	72	91	91	91	17	19	21
2028	84	95	96	62	36	8	9
2029	85	95	96	-19	24	10	5
2030	80	89	91	-8	12	7	-2
2031	77	86	86	2	10	13	8
2032	69	77	78	82	12	14	17
2033	47	85	88	116	3	7	2
2034	43	82	86	104	4	9	5
2035	40	78	81	95	4	9	8
2036	40	81	85	88	3	9	10
2037	36	76	80	82	3	9	11
2038	34	76	81	76	3	9	11
2039	34	76	81	76	3	9	11
2040	34	76	81	76	3	9	12
2041	34	76	81	76	3	9	12
2042	34	76	81	76	3	9	13
2043	34	76	81	76	3	10	13
2044	34	76	81	76	3	10	14
2045	34	76	81	76	3	10	14

Net Technical Losses

Based on LUMA metering data, the net technical losses by customer service rating over the period from June 2024 – May 2025 are listed in the table below.

Table 9-5: Line Losses

Customer Point of Connection	Net Technical Loss % (Generator Busbar Down)
Transmission	3.00
Primary Distribution	8.32
Secondary Distribution	10.18

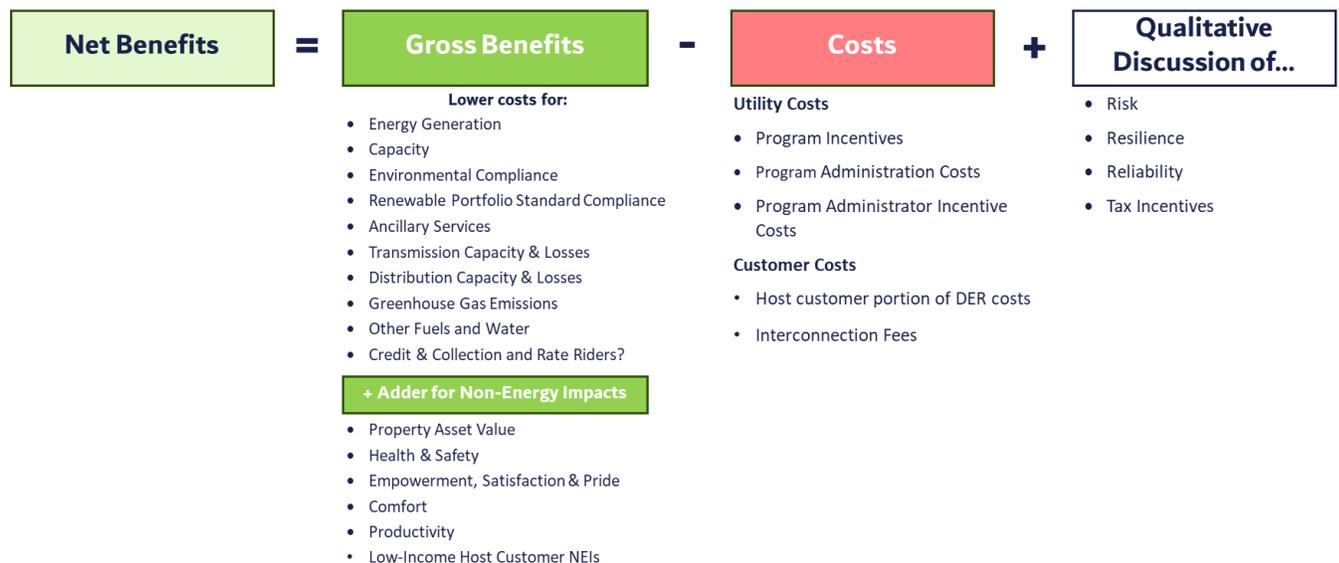
The tool adjusts estimated savings at the customer meter by a factor equal to 1/ (1 - losses) to account for the technical losses between the generator busbar and the customer meter.

7.2.1.2 DETERMINATION OF NET BENEFITS

How the various costs and benefits are counted in the tool reflect the approach specified under the PRCT as follows:

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A 9-6: Determination of Net Benefits



A.1.2 TOOL STRUCTURE AND USE

There are four main sections within the tool, each comprising multiple worksheets

1) **Input Worksheets:**

- a) Key cost inputs, for measure program and admin costs
- b) Measure Characterization outlining measure savings
- c) Measure Quantity

2) **Calculation Worksheets:**

- a) The calculation worksheets combine the inputs above with the avoided costs.

3) **Global Worksheets:**

- a) These are assumptions that effect all measures – ex. inflation, base year, line losses.

4) **Output Worksheets:**

- a) Costs and Benefits by the three levels of EE/DR – measure, program and portfolio

A.1.3 EE / DR HIERARCHY

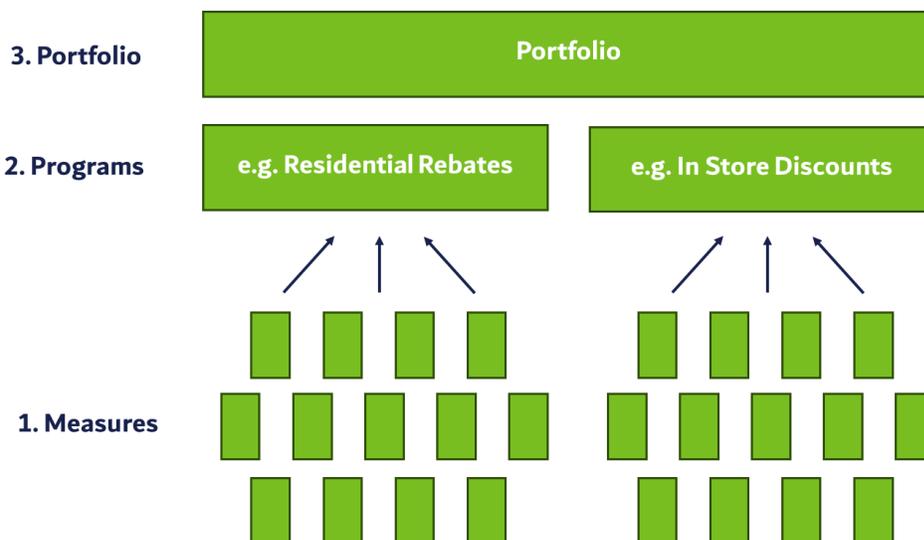
The hierarchy of EE / DR measures, programs and portfolio is shown schematically below and described in the following sections. As shown, most programs comprise multiple measures⁹ and the overall portfolio is comprised of multiple programs. This hierarchy is broadly consistent with the approach LUMA used in

⁹ An example of a program with a single measure would be CBES+

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developing the overall TYP portfolio to maximize cost-effectiveness in compliance with the objectives and design principles set out in the EE Regulation.

A 9-7: EE / DR Hierarchy



Measures

Benefits – such as those listed above – are associated with measures. Benefits can only accrue to a program if the relevant measure has benefits associated with it. Benefits accrue over the EUL of the measure. Incentive costs and incentive payments are typically incurred at the measure level.

Measure-specific cost effectiveness can be useful for comparing measures to each other and for prioritizing specific measures within a program. Some measures may have a benefit-cost ratio less than 1 (i.e., not cost-effective) but may still be included in a program if they offer significant savings without overly impacting the cost-effectiveness of the program.

A measure may be included in more than one program, but if the measure characteristics vary between the programs, a “duplicate” measure should be created with the appropriate program-specific characteristics.

Program

When assessing cost effectiveness at the program level, the costs and benefits for all measures within the program are aggregated, except for costs incurred at the portfolio level.

Program level cost effectiveness can be useful for comparing program performance year over year and for assessing the performance of different segments.

Portfolio

Cost effectiveness at the portfolio level should account for all costs and benefits associated with the design, delivery, and implementation of all the EE / DR programs within the portfolio.

Portfolio level cost effectiveness can be useful for assessing year over year performance of the EE/DR portfolio, for assessing the overall net benefit of EE / DR by a program administrator and assessing the impacts of change to program mix or emphasis within a portfolio.

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Appendix C: TYP Funding Sources and Rider Estimates

7.2.1.3 TYP PROGRAM FUNDING SOURCES

Energy Efficiency Rider

As discussed in the Energy Bureau's 2019 Determination on the Permanent Rates Rider Factors,¹⁰ the Energy Bureau will need to create an Energy Efficiency fund to implement the required EE programs. The Energy Bureau has previously established the EE Rider to recover the cost of energy efficiency programs from all customers on a per kilowatt-hour basis.¹¹

Energy Bureau approval of TYP budgets will inform LUMA inputs into the annual EE Rider reconciliation process occurring in April of each year.

Power Purchase Charge Adjustment

On July 31, 2023, the Energy Bureau issued a Resolution and Order in Case No. NEPR-MI-2020-0001, In Re: Permanent Rate of the Puerto Rico Electric Power Authority, in which it determined, among others, that the cost of DR programs will not be part of the EE rider and ordered LUMA to contemplate the DR programs as part of the proposal of factors corresponding to the purchase power charge adjustment ("PPCA") mechanism.

On August 11, 2023, the Energy Bureau issued a Resolution and Order in which in its relevant part, ordered LUMA to file on or before August 23, 2023, for the Energy Bureau's approval, the associated cost related to the compensation to be offered to the DR aggregators and/or ratepayers that participate in the DR program to be recovered through the PPCA thus establishing that the costs associated with DR programs will be recovered through the PPCA.

The event forecasts and resulting budgets provided in the TYP are refined quarterly through the quarterly PPCA reconciliation process. Thus, the PPCA reconciliation process provides the most accurate estimate of DR program budgets.

It is worth noting that through the Resolution and Order issued on March 21, 2024, the Energy Bureau clarified that LUMA should not be constrained by quarterly budgets and may expand participation in the battery emergency DR program. Moreover, LUMA is required to inform the Energy Bureau if it anticipates needing to restrict participation due to budget constraints for their consideration.

¹⁰ <https://energia.pr.gov/wp-content/uploads/sites/7/2019/09/Resolution-and-Order-Permanet-Rates-Rider-Factors-CEPR-AP-2015-0001.pdf>

¹¹ Regulation 8720, New Regulation on Rate Filing Requirements for the Puerto Rico Electric Power Authority's First-Rate Case, March 28, 2016, Section 2.12(D).

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A.3.1 TYP RIDER ESTIMATES

EE Rider Estimation and Monthly Customer Impacts

The EE rider factor is calculated by dividing the total estimated amount to be recovered by the total estimated annual kWh sales.

PPCA Estimation and Monthly Customer Impacts

The PPCA factor is calculated by dividing the total estimated amount to be recovered by the total estimated annual kWh sales.

The PPCA factor for FY2027 emergency DR programs is estimated to be \$0.002/kWh, as shown in the table below. This figure represents an illustrative estimate of the PPCA factor for CBES, this estimate will be finalized through the quarterly PPCA reconciliation process.

Table : FY2027 PPCA Estimation for LUMA Emergency DR Programs

Item	Amount	Reference
Incremental Funds Required from PPCA (\$)	\$29,411,022.90	LUMA estimate
Estimated Retail Sales for FY27 (kWh)	15,526,244,490	Load Forecast FY27
PPCA Adjustment for FY27 (\$/kWh)	\$0.002	LUMA estimate / Load Forecast

The PPCA factor for FY2028 emergency DR programs is estimated to be \$0.002/kWh, as shown in the table below. This figure represents an illustrative estimate of the PPCA factor for CBES, this estimate will be finalized through the quarterly PPCA reconciliation process.

Table 35: FY2028 PPCA Estimation for LUMA Emergency DR Programs

Item	Amount	Reference
Incremental Funds Required from PPCA (\$)	\$28,757,444.28	LUMA estimate
Estimated Retail Sales for FY28 (kWh)	15,198,043,750	Load Forecast FY28
PPCA Adjustment for FY28 (\$/kWh)	\$0.002	LUMA estimate / Load Forecast

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Appendix D: Stakeholder Summary of Feedback Received