

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

NEPR

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IN RE:

ANNUAL COMPLIANCE REPORT OF
LUMA ENERGY SERVCO, LLC UNDER
ACT 82-2010

CASE NO.

**SUBJECT: Submittal of Annual Compliance Report
under Section 2.9(c) of Act 82-2010**

**MOTION TO SUBMIT THE 2023 ANNUAL COMPLIANCE REPORT
TO THE PUERTO RICO ENERGY BUREAU:**

COMES NOW LUMA Energy ServCo, LLC (“LUMA”), through the undersigned legal counsel, and respectfully states, submits and requests the following:

1. In compliance with Section 2.9(c) of Act 82-2010¹, LUMA hereby submits to this Puerto Rico Energy Bureau of the Public Service Regulatory Board (“Energy Bureau”) LUMA’s Annual Compliance Report regarding compliance with the Renewable Energy Portfolio (“RPS”) for the 2022 calendar year. *See* 2023 Renewable Energy Portfolio Compliance Report attached as Exhibit 1.

2. In addition to the data provided for RPS compliance, LUMA has included in the attached report a description of LUMA’s broad efforts to foster the growth of renewable energy in Puerto Rico, including updates on a number of renewable energy initiatives, such as, among others:

¹ Section 2.9(c) of Act 82 of July 19, 2010, known as the Public Policy on Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act”, as amended (“Act 82-2010”) requires each retail energy provider to submit to this Puerto Rico Energy Bureau of the Public Service Regulatory Board (“Energy Bureau”), for its review and approval, an Annual Compliance Report on or before March 31 of each calendar year following the calendar year for which the energy provider must meet the Renewable Energy Portfolio providing the information specified therein.

(a) advancements on initiatives under the scope of the Integrated Resource Plan; (b) the increase of distributed renewable energy capacity under the Net Energy Metering Program; (c) studies for new utility scale renewable energy; (d) anticipated new utility scale resources; (e) coordination or collaboration with local and federal agencies; (f) progress on initiatives to support electric vehicle (“EV”) infrastructure deployment to support increased EV adoption; and (g) progress on advancing towards launch and implementation of Energy Efficiency and Demand Response programs. LUMA is working with the Energy Bureau and key stakeholders on some of these initiatives.

WHEREFORE, LUMA respectfully requests the Energy Bureau to **take notice** of the aforementioned and **accept** LUMA’s Annual Compliance Report in compliance with Section 2.9(c) of Act 82-2010.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 31st day of March 2023.

We hereby certify that we filed this notice and request using the electronic filing system of this Puerto Rico Energy Bureau.



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Exhibit 1
2023 Annual Compliance Report



2023 Renewable Energy Portfolio Compliance Report

March 31, 2023

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1.0 Introduction

This Annual Renewable Energy Compliance Report is filed in compliance with the Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Act 82-2010, as amended (Act 82-2010). Included in Section 3 of this report is the information required under section 2.9(c) of Act 82-2010(22 L.P.R.A. section 8131(c)).

As an introduction, Section 2 provides a description of LUMA's broad efforts to foster the growth of renewable energy in Puerto Rico. These activities support the shared public policy and LUMA's goal of advancing a sustainable energy transformation. Sections 4 and 5 provide additional information demonstrating LUMA's commitment and progress to sustainable energy solutions for Puerto Rico.

2.0 LUMA's Commitment to Renewable Energy

2.1 Summary of Recent Progress

The more than 3,000 men and women of LUMA are working hard every day to build a more reliable, resilient, and cleaner electric system for Puerto Rico. LUMA has advanced renewable, clean energy solutions for customers, including:

- *Connecting over 42,000 customers to rooftop solar, representing 270 MW of renewable energy (compared to 25,800 over the previous 10 years)*
- *Average time for approval of interconnection of new rooftop solar has dropped to under 30 days and over 70% of customers are interconnected within 30 days.*
- *Going from 450 to approximately 3,400 distributed generation interconnections per month.*
- *Completing electric vehicle (EV) plan and studies to connect 1,300 MW of utility scale renewable generation.*
- *Coordinating with local and federal agencies, including:*
 - *The U.S. Department of Energy (DOE) on the Puerto Rico Grid Resilience and Transitions to 100% Renewable Energy (PR100) Program,*
 - *The Department of Economic Development and Commerce on the Apoyo Energético program and the*
 - *The U.S. Department of Housing and Puerto Rico Department of Housing on key electrical infrastructure projects*

LUMA remains committed to the growth of solar and clean, renewable energy across Puerto Rico.

In the past year, LUMA has continued to work closely with the Puerto Rico Energy Bureau (PREB or Energy Bureau) and other stakeholders to accelerate the adoption of renewable energy to reduce the dependence on imported fuel to generate electricity. Our shared goal is to create a future that will put Puerto Rico's dependence on high-cost fossil fuels behind us. Working together, we can continue to accelerate the adoption of renewable energy while strengthening the electricity grid, helping to build a clean and resilient electric system the people of Puerto Rico expect and deserve.

LUMA also continues to deliver on its mission to modernize and transform the grid to enable sustainable energy. The implementation of advanced technology will make a more reliable, more resilient, and customer focused system that is also better suited to integrate clean, renewable energy options. LUMA's key System Remediation Plan (SRP) programs add modern technology to enable the integration of renewable energy and include:

- **Automated Metering Infrastructure (AMI) Implementation:** *The AMI implementation program establishes two-way remote meter reading, reporting and control capabilities that allow the systems on customer premises to directly communicate with the grid operator. These capabilities result in cost savings to the utility which flow to our customers in the form of lower rates, as well as improvements in customer satisfaction, reliability, and resiliency.*
- **Energy Management System (EMS):** *EMS represents LUMA's replacement of the computer-based system for the Energy Control Center to monitor, control, and optimize performance of the electric system and will enable the transition to increase renewable generation. This initiative will replace the existing EMS and add state-of-the-art technology to support operations and dispatch of the current electricity system and new generation resources being deployed, including Virtual Power Plants (VPPs).*
- **Control Center Construction and Refurbishment:** *This program is targeted at construction and refurbishment of buildings and infrastructure to house the main and back-up control centers and all ancillary support services at strategic locations to enhance dispatch capabilities. Locations have been identified in a manner that best supports resiliency of the system.*
- **Integrated Resource Plan and Modified Action Plan:** *LUMA continues to advance several initiatives under the scope of the current Integrated Resource Plan (IRP) and Modified Action Plan¹ developed by PREPA and approved by the Energy Bureau prior to commencement of LUMA's role as Transmission and Distribution System Operator in June 2021.*

In addition to continuing the implementation of these existing initiatives, LUMA is currently working on the next IRP, expected to be to the Energy Bureau in March 2024. LUMA is committed to community and stakeholder engagement throughout this process, beginning with the development of the plan. The 2024 IRP will expand on the legal mandate to incorporate broad public participation and reflect stakeholder goals, priorities, and feedback. Stakeholders will be engaged at the onset of the process to establish goals and expectations, identify concerns and plan for community participation. LUMA will host workshops and meetings throughout Puerto Rico. Stakeholders will also be able to participate virtually by submitting comments or questions via the IRP's website where information and updates will be provided.

¹ See Final Resolution and Order issued by PREB on August 24, 2020, in Case Number CEPR-AP-2018-0001, In Re: Puerto Rico Electric Power Authority Integrated Resource Plan, in which PREB approved in part and rejected in part PREPA's Integrated Resource Plan and established a modified action plan.

The 2024 IRP sets a path to enable a sustainable and resilient system that will facilitate the integration of renewable energy with the goal of reducing dependence on fossil fuels.

In the last year, LUMA has continued to make progress on initiatives that will provide data, analyses, and forecasts for the 2024 IRP, this includes:

- *Completing a new, 20-year forecast of customer group-level and system peak demand and energy consumption.*
- *Completing a preliminary transmission analysis that will support the selection of potential sites for new renewable generation and energy storage additions and will be assessed in the IRP.*
- *Performing a distribution system analysis that will quantify the increased distributed solar hosting capacity from LUMA's planned upgrades and rebuilding of distribution feeders. The results of this hosting capacity analysis will be compared, and likely combined, with the hosting capacity analysis being performed by the Department of Energy's (DOE) PR100 team as input to the IRP.*
- *Working with the DOE's PR100 team to provide data and input while assuring the DOE has the most up-to-date and accurate information to complete their study. The PR100 study and the 2024 IRP should have preliminary results in late 2023 that can be shared between the two projects. LUMA will align with the DOE's PR100 projections and assumptions as common input elements in the IRP.*

2.2 Net Energy Metering (NEM) Program for Interconnection of Distributed Generation

As of December 2023, LUMA increased Puerto Rico's distributed renewable energy capacity by approximately 200%, compared to June 2021, by enabling the connection of more than 42,000 customers with rooftop solar, adding 450 megawatts of clean distributed generation to the island's electricity system. With 2% market penetration, Puerto Rico now ranks sixth among all U.S. states and territories in residential solar energy adoption per capita.

Among these installations are all net energy metering (NEM) service projects that were inherited by LUMA when it assumed grid operations on June 1, 2021. This backlog of installations has been resolved and LUMA works with the Energy Bureau to ensure timely interconnection for new Net Metering Customers.



2.3 Interconnection Capacity Maps

In September 2021, LUMA launched a publicly available digital map of distributed generation (DG) interconnection capacity that allows prospective customers and developers of DG projects to verify the capacity of the electrical distribution system to accommodate their connections before making capital



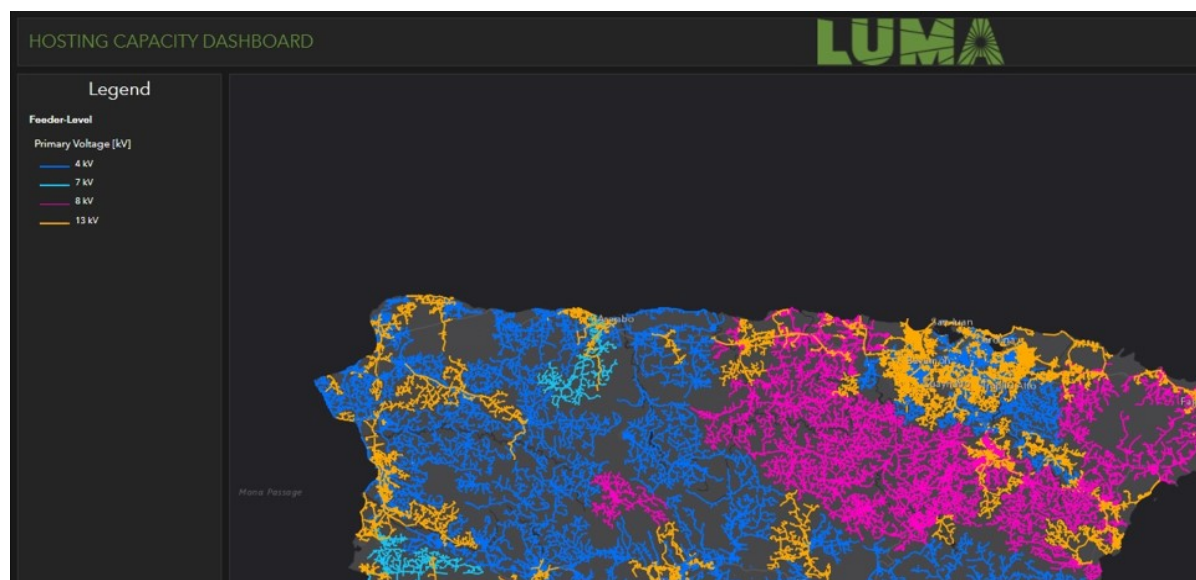
investments and beginning project development. DG resources include solar photovoltaic (Solar PV) systems and combined Solar PV and energy storage systems.

The map can be found at www.lumapr.com under the “Residential” menu, where users can

navigate to the “Renewable Energy” option. In this option, users will find a link that will navigate to the map application.

User guides for how to use the maps are provided within the application in both Spanish and English.

The map is completely free and available to customers, with the objective of increasing customer access to and adoption of clean energy.



Interconnection Capacity Maps Dashboard

The map provides fundamental data of the circuit to ensure that the feeder to which the customer wants to connect has connection capacity and does not create service quality issues for the system. The interconnection map shows three maps, as following: (i) Voltage level map which indicates the primary distribution circuit voltage class (e.g., 4kV, 13kV, etc.), (ii) DG Penetration Map that shows the percentage of the generation distributed in it and (iii) Feeder Segment Maximum PV map which identifies the solar PV capacity a feeder section can host without compromising system's power quality.

Maps are updated to ensure current information is available for users. LUMA is initiating a project to add service transformer capacity and aggregated solar PV capacity per service transformer information to the map to provide better data for users to evaluate if additional solar PV can be accommodated without impacting the service transformer capacity and creating potential over voltages.

2.4 New Utility Scale Renewable Energy

2.4.1 Onshore and Offshore Wind Study

LUMA worked with the National Renewable Energy Laboratory (NREL) and the Department of Energy (DOE) in coordination with the Energy Bureau on the development of a study on the availability and costs of wind energy in Puerto Rico. NREL released the study in September 2022 and subsequently filed it with the Energy Bureau. The study documents substantial and available wind resources both on and offshore, which likely be a meaningful contribution to Puerto Rico's future renewable energy supply needs. The study evaluates several technology variants such as anchored and floating turbines and provides guidance to the renewable community on the exclusion zones in which deployment is less feasible. During preparation of the study, stakeholder engagement sessions were hosted with the Puerto Rico Port Authority, the Nature Conservancy and various wind turbine manufacturers.

2.4.2 Hydrogen Viability Study

LUMA is participating in the ongoing Technical Conferences organized by the Energy Bureau and its consultants aimed at identifying the viability of hydrogen as a fuel for Puerto Rico, whether it be for electrification, storage, transportation, or other applications. This study will also inform the IRP process.

2.4.3 Wheeling Docket

LUMA was directed by the Energy Bureau to implement electric energy wheeling in Puerto Rico and provide customers with the option of purchasing energy via the existing grid from specific electricity supplier.

In compliance with PREB orders, LUMA plans to introduce energy wheeling to Puerto Rico by implementing a Puerto Rico-specific wheeling ecosystem that:

- *Balances flexibility for wheeling customers and protections for non-wheeling customers,*
- *Builds on the framework established by PREB, and*
- *Leverages proven wheeling elements from other markets.*

LUMA, in compliance with PREB orders, has published the Wheeling Rider in its Tariff Book, but notes that the rider is not yet active, and isn't yet available to customers.

Under Docket NEPR-MI-2023-0001, during the February 23, 2023, Technical Conference (February 23 TC), LUMA presented its perspective of the Wheeling Ecosystem, which takes into consideration the geographic and infrastructure particularities of the Island's transmission and generation system. Currently, LUMA is working on a draft form of the Wheeling Services Agreement (WSA).

2.4.4 First Contracted Virtual Power Plant

LUMA supports the Renewable Energy Procurement process and its 6 procurement Tranches. Under Tranche 1, LUMA actively collaborated with PREPA in the creation of the first Grid Services Agreement for a Virtual Power Plant in Puerto Rico.

2.4.5 New Utility Scale Energy Storage

LUMA supports the Renewable Energy Procurement process and its 6 procurement Tranches. Under Tranche 1, LUMA actively collaborated with PREPA in the creation of first Energy Storage Services Agreements that will serve. LUMA will additionally provide interconnection services to the new Resource Providers as the facilities are constructed and commissioned.

2.4.6 New Utility Scale Renewable Energy

In coordination with the Energy Bureau, PREPA and Resource Providers, LUMA has conducted facility and system impact studies for 18 approved solar projects representing 844 MW of solar energy.

LUMA continues to look ahead to Tranche Two² and is actively working with the Energy Bureau and the appointed Independent Coordinator overseeing the proposal and award process.



Punta Lima Wind Farm

In addition to the renewable procurement process and smaller expansions at other existing facilities, LUMA is coordinating with three new utility scale wind and solar energy facilities, totaling over 175 MW, to interconnect them safely to the grid as soon as possible.

The new projects include:

- *Ciro One 90 MW solar project*
- *Xzerta Tec 60 MW solar project*
- *Punta Lima 26 MW wind farm*

2.5 Coordination with Local and Federal Agencies

2.5.1 US Department of Energy PR100 Program

LUMA continues to coordinate with the Department of Energy (DOE) and FEMA on their comprehensive study, the PR100: Puerto Rico Grid Resilience and Transitions to 100% Renewable Energy. The goal of the PR100 is to evaluate pathways to meet the requirements of the Puerto Rico Energy Public Policy Act (Act 17), which stipulates 100% renewable energy by 2050, the phase-out of coal-fired generation by 2028, and a 30% improvement in energy efficiency by 2040. The scope includes not only traditional generation, transmission, and distribution components of the grid, but also all customer interfaces, flexible loads, and Energy Efficiency and Demand Response programs. The US DOE and LUMA are in regular communication to exchange information and align efforts. LUMA plans to use specific components of the PR100 study as inputs into the 2024 IRP.

2.5.2 Puerto Rico Department of Housing

LUMA collaborated with the U.S. Department of Housing and Puerto Rico Department of Housing, resulting in the consideration of key electrical infrastructure projects in the Preliminary Action Plan for Community Development Block Grant Disaster Recovery (CDBG-DR) funding. As part of this work, LUMA supported the Puerto Rico Department of Housing's preparation of an RFP for Centro Medico, which includes more than 14 microgrids that can each operate independently as well as be linked into one larger microgrid project. This project will be able to serve more than 38 of the most critical medical facilities in Puerto Rico.

2.5.3 Puerto Rico Department of Economic Development and Commerce

The Department of Economic Development and Commerce has developed the Apoyo Energético program, a \$20 million program that provides up to a maximum of \$25,000 to qualifying small and

² This is the second tranche out of 6 tranches of a competitive solicitation process for procurement of new renewable energy and battery resources in support of the renewable energy portfolio targets under Act 17-2019, which tranches are required under the Final Resolution and Order issued by PREB on August 24, 2020 in Case Number CEPR-AP-2018-0001 in which PREB approved in part and rejected in part PREPA's Integrated Resource Plan and established a Modified Action Plan. These tranches are being overseen by the Energy Bureau in case Number NEPR-MI-2020-0012, In Re Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan.

medium businesses to install green energy systems in their businesses to stabilize their operation and reduce costs and energy consumption. LUMA is currently engaging with the Department of Commerce to increase the number of distributed resources connected to the grid and have jointly identified areas of collaboration, among them energy efficiency and demand response, electric vehicles,

2.6 Electric Vehicle Infrastructure

A key component of advancing vehicle electrification Rate is providing smart rate options that help achieve fuel cost savings for drivers, while offering fair, equitable and appropriate cost recovery to service those vehicles. LUMA developed the Electric Vehicle (EV) Design Proposal filed with the Energy Bureau on July 21, 2022. The proposal includes evaluation of a suite of EV-specific rate structures adopted in the US with the objective to advance EV market growth in Puerto Rico. In the Rate Design Proposal, a three-period Residential EV Time of Use (TOU) Rate on an interim basis was considered. On January 13, 2023, the Energy Bureau approved the Interim Rate subject to certain modifications. LUMA plans to launch the Interim Rate in the fall of 2023. The EV TOU rate is designed to encourage residential EV owners to charge their EVs during the Shoulder-peak or Off-peak period when overall electric system demand is lower. By shifting residential EV charging from the evening peak period to other periods, the residential EV TOU rate will reduce peak demand and contribute to lower energy costs for Puerto Ricans.

On September 1, 2022, LUMA submitted the Phase I Electric Vehicle Infrastructure Deployment Plan (EV Plan) that identifies actions to support increased EV adoption and contributes to the achievement of several objectives of Puerto Rico's Energy Public Policy Act (Act 17 - 2019 and Climate Change Mitigation, Adaptation and Resiliency Act (Act 33-2019). EVs represent another aspect of energy transformation that will have significant effects on Puerto Rico's electricity grid. LUMA seeks to support increased EV adoption in Puerto Rico and define a sustainable, grid-conscious role with the evolving landscape of transportation electrification. As laid out in the EV Infrastructure Deployment Plan, LUMA engaged with key public and private organizations and stakeholders to develop EV adoption forecast scenarios, address approaches for EV equity, and assess and evaluate potential EV charging rate designs. The Final Phase I EV Infrastructure Deployment Plan is scheduled to be submitted in May 2023.

2.7 Energy Efficiency and Demand Response

Growing the market for energy efficiency (EE) and demand response (DR) products and services is another key component of the sustainable energy transformation in Puerto Rico. Investments in EE and DR will benefit Puerto Rico by reducing electricity bills and business operating costs, creating local jobs, reducing dependence on imported fuel, bolstering grid resiliency, reducing emissions, and eventually contributing to lower utility infrastructure costs. It is LUMA's goal to launch and deliver new programs for Puerto Rico that will increase economic activity, help create jobs and grow local businesses while improving the bottom line of industry, businesses, and households. In June 2022, LUMA submitted the Proposed Transition Plan (Proposed TPP) outlining the initial programs that will begin to tackle the barriers to customer adoption and advance the energy efficiency. In February, the Energy Bureau approved LUMA's Proposed TPP with modifications and noted that the Proposed TPP is a reasonable and appropriate launch of EE and DR Programs in Puerto Rico. LUMA continues to build on the work commenced since the filing of the Proposed TPP to launch the first large-scale utility-run EE and DR plan in Puerto Rico.

3.0 Annual Compliance Report

Category	Requirement from Law 82-2010	CY 2021*	CY 2022	Forecasted CY 2023 Jan-Feb 2023 Actual Mar-Dec 2023 Projected
Energy Distributed and Renewable Component	Total Amount of Energy distributed to clients	19,184,743 MWh	17,712,435 MWh	16,541,788 MWh
	Actual Amount of Energy procured from Renewable Sources (PPOAs)	452,294 MWh	422,242 MWh	480,409 MWh
	Energy Exported to the Grid by Net Metering Customers	161,687 MWh	263,544 MWh	359,882 MWh
Renewable Energy Portfolio Compliance Metrics (MWh)	Energy procured from Renewable Sources to comply with the Renewable Energy Portfolio Standard (20%)	3,829,033 MWh	3,533,604 MWh	3,301,951 MWh
	Actual Amount of Energy procured from Renewable Sources (PPOAs)	452,294 MWh	422,242 MWh	480,409 MWh
Costs of Renewable Energy Procurement	Cost of Renewable Energy procured from Renewable Sources (PPOAs)	\$70,454,820	\$66,658,407	\$78,162,774
	Cost of RECs procured from renewable sources (PPOAs)	\$6,325,883	\$5,558,873	\$4,966,894
	Administrative cost of REC registration and issuance fees	\$12,713	\$12,893	\$13,124
	Grand Total Cost	\$76,793,416	\$72,230,173	\$83,142,791
Cumulative RECs	Total number of RECs have been issued and are retained for future retirement	2,954,741 RECs	3,410,932 RECs	3,890,330 RECs

* Provided by PREPA in the 2021 Annual REC Compliance Report for Calendar Year 2020

4.0 Renewable Energy Projects with Power Purchase Contracts

Renewable Energy Projects In-Service Capacity, and Costs of Energy and RECs for the month of February, 2023			
Company ³	Capacity (MW)	Source	Total Cost (Energy & RECs) per kWh ⁴
Windmar Renewable Energy, Inc. (Cantera Martino)	2.1	Solar	Energy: 0.1870 \$/kWh RECs: 0.035 \$/kWh Total: 0.2220 \$/kWh
AES Illumina, LLC	20	Solar	Energy: 0.1645 \$/kWh RECs: 0.0315 \$/kWh Total: 0.1960 \$/kWh⁶
San Fermin Solar Farm, LLC	20	Solar	Energy: 0.1553 \$/kWh RECs: 0.031 \$/kWh Total: 0.1863 \$/kWh
Coto Laurel Solar Farm, Inc. (Windmar)	10	Solar	Energy: 0.1590 \$/kWh RECs: 0.035 \$/kWh Total: 0.1940 \$/kWh
Horizon Energy, LLC	10	Solar	Energy: 0.1479 \$/kWh RECs: 0.0315 \$/kWh Total: 0.1794 \$/kWh⁷
Oriana Energy, LLC	45	Solar	Energy: 0.1528 \$/kWh RECs: 0.0271 \$/kWh Total: 0.1799 \$/kWh⁸
Humacao Solar Project, LLC	40	Solar	Energy: 0.1717 \$/kWh RECs: 0.0 \$/kWh Total: 0.1717 \$/kWh
Pattern Santa Isabel, LLC	75	Wind	Energy: 0.16538 \$/kWh RECs: 0.0 \$/kWh Total: 0.16538 \$/kWh
Landfill Gas Technologies of Fajardo (Fajardo)	2.4	Landfill Gases	Energy: 0.010 \$/kWh RECs: Transferred cost: 0.01 \$/kWh Contract Total: 0.10 \$/kWh
Landfill Gas Technologies of Fajardo (Toa Baja)	2.4	Landfill Gases	Energy: 0.10 \$/kWh RECs: Transferred cost: 0.01 \$/kWh Contract Total: 0.10 \$/kWh
Punta Lima ⁹	26	Wind	Energy: 0.00 \$/kWh RECs: 0.0 \$/kWh Contract Total: 0.00 \$/kWh

³ Listed in order of PPOA execution date with earliest PPOA first.

⁴ Energy price increases by 2% per year for all projects except for Landfill Gas (Fajardo and Toa Baja), Humacao Solar Project and Pattern.

⁶ The cost per kwh of energy for AES Illumina is contracted cost and reflects an amendment to the PPOA that reduces the cost per kwh by a factor of 0.9.

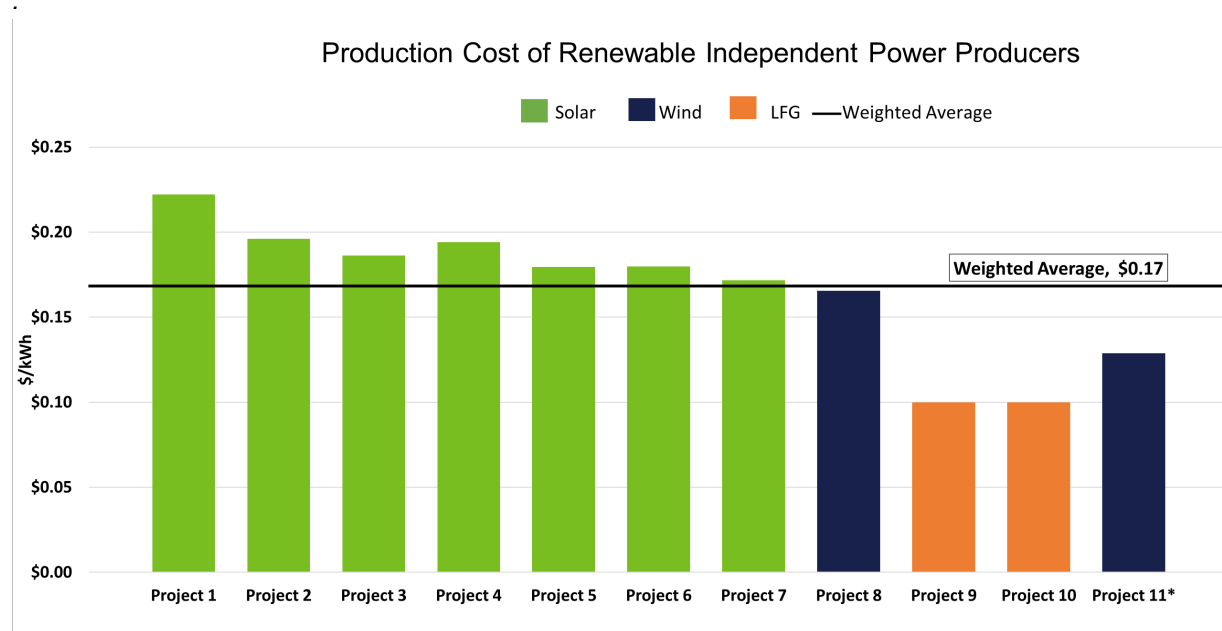
⁷ The cost per kwh of energy for Horizon is contracted cost and reflects an amendment to the PPOA that reduces the cost per kwh by a factor of 0.9.

⁸ The cost per kwh of energy for Oriana is contracted cost and reflects an amendment to the PPOA that reduces the cost per kwh by a factor of 0.904.

⁹ Punta Lima projected start date in September 2023.

5.0 Production Cost of Renewable Independent Power Producers

The table below shows the production cost of all existing Power Purchase and Operating Agreement (PPOA) contracts as of February 2023



* Projected start date in September 2023. The cost of energy per PPOA.