

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. NEPR-MI-2020-0015

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

**MOTION TO SUBMIT CORRECTED 2022 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:

Yesterday, LUMA filed with 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 for the 2021 calendar year, in compliance with Section 2.9(c) of Act 82-2010. See Exhibit 1 of LUMA’s *Motion to Submit 2022 Annual Compliance Report* filed on March 31, 2022 (“March 31st Motion”).

It has come to LUMA’s attention that, by inadvertence, the second sentence following the first graph in Section 5.0, titled “Production Cost Renewable Independent Power Producers”, of the Annual Compliance Report submitted as Exhibit 1 to the March 31st Motion contains a typographical error. Specifically, this sentence reads as follows: “Please note that \$1/MWh is equal to 10 cents/kWh.” However, the “\$1/MWh” figure in this sentence should be “\$100/MWh”. LUMA has revised the Annual Compliance Report to correct this figure, which corrected version is attached hereto as **Exhibit A**.

WHEREFORE, LUMA respectfully requests the Energy Bureau to **take notice** of the aforementioned and **accept** the attached **Exhibit A** as a corrected version of LUMA's 2022 Annual Compliance Report submitted as Exhibit 1 to LUMA's *Motion to Submit 2022 Annual Compliance Report* filed on March 31, 2022.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 1st day of April 2022.

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



DLA Piper (Puerto Rico) LLC
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9107
Fax 939-697-6147

/s/ Laura T. Rozas
Laura T. Rozas
RUA Núm. 10,398
laura.rozas@us.dlapiper.com

Exhibit A

Corrected 2022 Annual Compliance Report



2022 Renewable Energy Portfolio Compliance Report

March 31, 2022

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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 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 public policy goal of advancing the sustainable energy transformation. Sections 4 and 5 provide additional supporting formation.

2.0 LUMA's Commitment to Renewable Energy

2.1 Summary of Recent Progress

LUMA and our more than 3,000 co-workers are working hard every day to build a more reliable, more resilient and cleaner energy system for the 3.2 million friends, family and neighbors who we are privileged to serve. Whether it is utility-scale solar or empowering the growth of home solar, LUMA fully supports the growth of solar and clean energy across Puerto Rico – it is what the Puerto Rican people want, and that is why we are empowering the growth of clean and renewable energy.

While there is much work to do, in the past ten months, real progress has been made to build a cleaner more renewable energy future. LUMA has been working closely with the Energy Bureau 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 the days of Puerto Rico's dependence on high-cost fuels behind us. By working together, we can continue to accelerate the adoption of renewable energy and deliver the energy system the people of Puerto Rico expect and deserve.

As discussed in greater detail below, in just ten months LUMA has advanced renewable progress across Puerto Rico including but not limited to:

- Connecting more than 18,000 customer-owned solar photovoltaic systems to the grid, totaling more than 100 MW – this translates to ~2,100 distributed generation services per month from June 2021 - February 2022.
- Currently working with 40 active transmission voltage Distributed Energy Resource (DER) applications representing ~ 100 MW.
 - 25 Solar Photovoltaic (PV) ~37 MW
 - 18 Combined Heat and Power (CHP) ~65 MW
 - Total: 43 ~102MW
- Conducted studies to determine how to integrate up to 1,000 MW of new utility scale renewable energy targeted in the first tranche of the Request for Proposal authorized by the Puerto Rico Energy Bureau (PREB).
- Coordinated 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.
- Announced our publicly available digital Interconnection Capacity Maps for distribution and performed two rounds of map updates.
- Working on a Phase I Electric Vehicle (EV) Infrastructure Deployment Plan that will identify actions to support increased EV adoption across Puerto Rico

- Coordinating with the National Renewable Energy Laboratory (NREL) and the Department of Energy (DOE) and the Energy Bureau on the development of an Onshore and Offshore Wind Study targeted to be completed in September 2022.

LUMA also continues its mission to modernize the grid to enable sustainable energy transformation. The modernization of the grid and implementation of advanced technology will make the grid more reliable and resilient and will result in a flexible grid that is better suited to the integration of renewables and a customer-centric experience. LUMA's key system remediation plan (SRP)¹ programs to add modern technology to enable the integration of renewable energy include:

AMI Implementation: The AMI implementation program establishes two-way remote meter reading reporting and control capabilities that allow the customer systems to communicate with the grid operator. Such programs enable the grid to quickly respond dynamically. These capabilities result in cost savings to the utility which flow to our customer rates, as well as customer satisfaction, reliability, and resiliency improvements.

Emergency Management System (EMS): The computer-based system for the Energy Control Center to monitor, control, and optimize the performance on the generation and T&D system. This program will replace the existing EMS and add state-of-the-art technology to operate and dispatch the capabilities of the new generation assets including Virtual Power Plants and Distributed Energy Management.

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. Their redundancy enhances the capabilities to dispatch generation, storage and VPPs in a more resilient manner.

2.2 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 Plan² 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 to be presented in early 2024 that will further several of the initiatives described below. The 2024 IRP involves a stakeholder dialogue that guides priorities, goals, and continues through the evaluation of diverse supply plans. 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.

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

LUMA increased renewable energy capacity by 42% compared to June 2021 by enabling the connection of more than 18,000 customers with rooftop solar – which added more than 100 MW of clean distributed generation.

¹ This plan refers to LUMA's System Remediation Plan as approved by the Energy Bureau in Case Number NEPR-MI-2020-0019, *In Re Review of the Puerto Rico Electric Power Authority's System Remediation Plan*.

² 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.

LUMA has now activated NEM service for 95 percent of the projects that were inherited on June 1, 2021, many of which had been pending for over a year.

Improvements to the NEM program include portal enhancements that automate documents to reduce data entry and validation time. LUMA will also add informative notifications on the portal home page which will facilitate communication with the customer and increase the quality of service.



Rooftop Solar Installation

2.4 Interconnection Capacity Maps

To promote renewable energy projects in Puerto Rico, LUMA launched in October 2021, a publicly available digital map of distributed generation interconnection capacity (DG) which allows customers and developers of solar panel projects to verify the capacity of the electrical distribution system to accommodate their connections before capital investment. Distributed generation resources include solar photovoltaic (Solar PV) or combination of solar photovoltaic and energy storage systems.

The tool is completely free and available to customers supporting the objective of increasing clean energy.

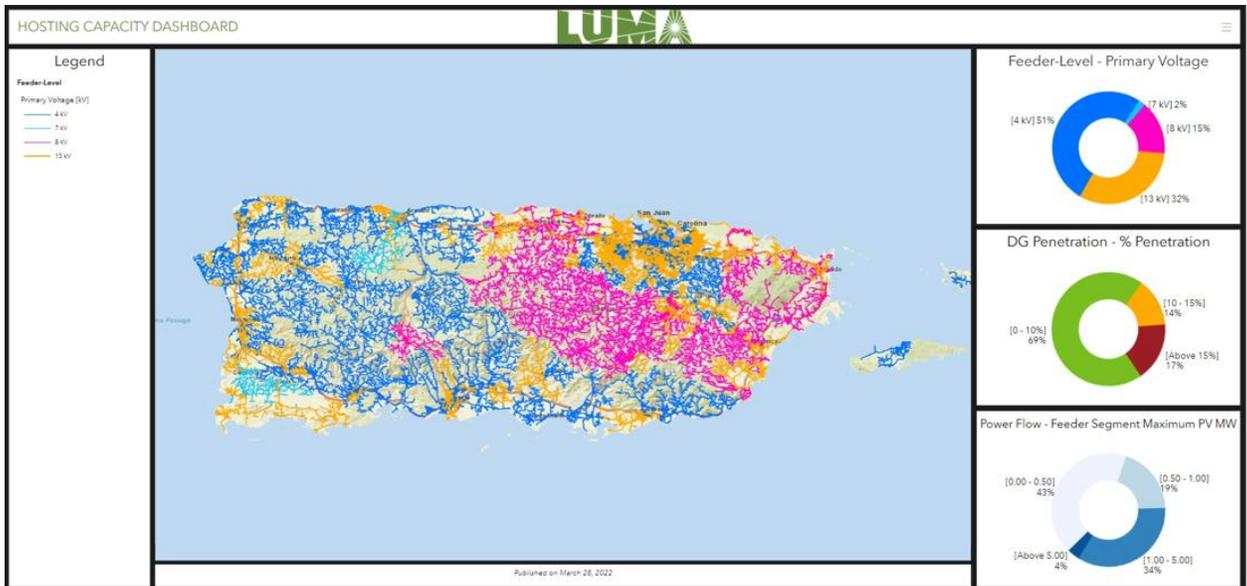
The map provides visibility of the electrical distribution system capacity, allowing clients and developers to enter a specific address to verify if a distribution circuit (feeder) has room to accommodate additional projects without causing voltage surges or interruptions to the electrical grid.



The map can be found at www.lumapr.com under the “Residential” menu, where users can navigate to the “Renewable Energy” section. In this section, users will find a link that will navigate to the map application.

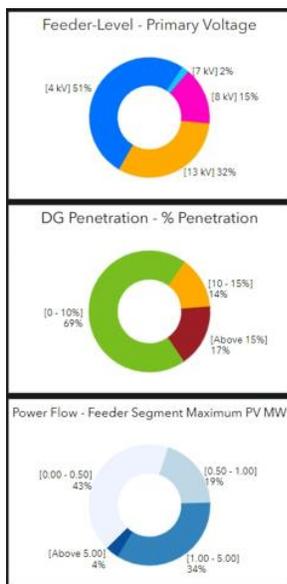
Map Location on LUMA Website

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



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. It also shows the voltage of the circuit to which users want to connect, as well as the percentage of the generation distributed in it and the capacity of the feeder.



Users can turn on and off three layers in the maps indicated by the three “donut” charts on the right-hand side of the screen including:

- **Feeder level:** voltage class circuits by voltage level: 4, 7, 8, 13 kV
- **Percent of DG penetration:** 1-10%, 10-15%, Above 15%
- **Power flow:** Feeder segment maximum PV, 0-0.5 MW, 0.5-1.0 MW, 1.0-5.0 MW

This information corresponds to those circuits where information was validated by field electrical inspections. The colors on the map make it easier for customers and developers to use this reference information to validate the feasibility of interconnection at a specific location.

Maps are updated by LUMA quarterly to ensure the most accurate information is available for users.

Interconnection Capacity Map Layers

2.5 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 2³ and is actively working with the Energy Bureau and the appointed Independent Coordinator overseeing the tranche.



Punta Lima Wind Farm

In addition to the tranche 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:

- CiroOne 90 MW solar project
- ZxertaTec 60 MW solar project
- Punta Lima 26 MW wind farm

2.6 Coordination with Local and Federal Agencies

2.6.1 US Department of Energy PR100 Program

LUMA continues to coordinate with the Department of Energy (DOE) and FEMA that have launched a comprehensive study called the PR100, Puerto Rico Grid Resilience and Transitions to 100% Renewable Energy. The goal of the PR100 is to evaluate pathways to meeting the requirements of the Puerto Rico Energy Public Policy Act (Act 17). Puerto Rico has committed to meeting its electricity needs with 100% renewable energy by 2050, the phase-out of coal-fired generation by 2028, and a 30% improvement in energy efficiency by 2040. The PR100 study will endeavor to redesign the entire Puerto Rico grid as needed to meet these renewable energy requirements and develop a path that transforms the grid from where it is today to the 2050 configuration. This 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 communications to exchange information and align efforts.

2.6.2 Puerto Rico Department of Housing

LUMA also 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 Recover (CDBG-DR) funding.

2.6.3 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

³ 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 identify areas of additional collaboration.

2.7 Electric Vehicle Infrastructure

LUMA is currently working on a Phase I Electric Vehicle (EV) Infrastructure Deployment Plan that will identify actions to support increased EV adoption across Puerto Rico.⁴ EVs represent another part of the energy transformation. Through this process, LUMA will engage with key organizations and stakeholders, develop EV adoption forecast scenarios, address approaches for EV equity and assess and evaluate potential EV charging rate designs. LUMA endeavors to support increased EV adoption in Puerto Rico and define a sustainable, grid conscious role within the evolving landscape of transportation electrification. The Phase I EV Infrastructure Deployment Plan is targeted for completion by September 2022.

2.8 Onshore and Offshore Wind Study

LUMA is working with the National Renewable Energy Laboratory (NREL) and the Department of Energy (DOE) in coordination with the Energy Bureau on the development of an Onshore and Offshore Wind Study targeted to be completed in September 2022 and the results of which are to be incorporated into the 2024 IRP.⁵ The study is designed to characterize Puerto Rico's wind resource both on and offshore. The results will include potential MW capacities, the cost of these new generation resources, as well as the generation profiles that they can provide the electric grid.

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. Stakeholder engagement sessions have been hosted with the Puerto Rico Ports Authority, the Nature Conservancy and various turbine manufacturers.



Punta Lima Wind Farm

⁴ See Case Number NEPR-MI-2021-0013, *In Re: Despliegue de Infraestructura de Cargadores para Vehículos Eléctricos*.

⁵ See Case Number NEPR-MI-2021-0015, *In Re: Development of Wind Study*.

3.0 Annual Compliance Report

Category	Requirement from Law 82-2010	CY 2020 ⁶	CY 2021 ⁷	CY 2022 (Projected)
Energy Distributed (MWh)	Total Amount of Energy	16,035,294 MWh	19,184,743 MWh	19,195,353 MWh
	Total Amount Energy from Renewable Sources (PPOAs)	411,121 MWh	452,294 MWh	488,943 MWh
	Energy Exported to Grid from Net Metering Program	110,428 MWh	161,687 MWh	216,647 MWh
Renewable Energy Certificates RECs (Unit)	January RECs issued and registered	22,114 RECs	32,122 RECs	35,790 RECs
	February RECs issued and registered	34,761 RECs	39,737 RECs	34,276 RECs
	Total RECs retained for future use	2,502,563 RECs	2,954,741 RECs	3,460,816 RECs
Distributed renewable energy purchased to comply with the Renewable Energy Portfolio (MWh)	Purchased energy January – February	14,711 MWh	21,752 MWh	30,173 MWh
	Energy generated or acquired to comply with the Renewable Energy Portfolio Standard (20%)	1,819,960 MWh	3,189,986 MWh	3,822,562 MWh
	Energy from sustainable renewable or alternative renewable energy supplied under a PPOA	421,979 MWh	433,124 MWh	488,943 MWh
Costs Incurred and Forecast (\$)	Renewable energy projects cost	\$61,933,479	\$70,454,820	\$78,765,031
	RECs cost	\$12,022,474	\$6,325,883	\$7,167,575
	RECs registration cost	\$15,239	\$12,713	\$15,478
	Total	\$73,971,192	\$76,793,416	\$85,948,083

⁶ Provided by PREPA in the 2021 Annual REC Compliance Report for Calendar Year 2020.

⁷ January 2021-May 2021 data provided by PREPA prior to LUMA's assumption of T&D Operator in June 2021.

4.0 Renewable Energy Projects with Power Purchase Contracts

Renewable Energy Projects In-Service (as of March 31, 2022)			
Company ⁸	Capacity (MW)	Source	Total Cost (Energy & RECs) per kWh ⁹
Windmar Renewable Energy, Inc. (Cantera Martino)	2.1	Solar	Energy: 18.3 ¢/kWh RECs: 3.5 ¢/kWh Total: 21.8 ¢/kWh
AES Illumina, LLC	20	Solar	Energy: 16.137 ¢/kWh ¹⁰ RECs: 3.15 ¢/kWh Total: 19.287 ¢/kWh
San Fermin Solar Farm, LLC	20	Solar	Energy: 15.22 ¢/kWh RECs: 3.1 ¢/kWh Total: 18.32 ¢/kWh
Coto Laurel Solar Farm, Inc. (Windmar)	10	Solar	Energy: 15.6 ¢/kWh RECs: 3.5 ¢/kWh Total: 19.1 ¢/kWh
Horizon Energy, LLC	10	Solar	Energy: 14.49¢/kWh ¹¹ RECs: 3.15 ¢/kWh Total: \$17.64 ¢/kWh
Oriana Energy, LLC	45	Solar	Energy: 15.0¢/kWh ¹² RECs: 2.712 ¢/kWh Total: 17.712 ¢/kWh
Humacao Solar Project, LLC	40	Solar	Energy: 17.0 ¢/kWh RECs: 0.0 ¢/kWh Total: \$17.0 ¢/kWh
Pattern Santa Isabel, LLC	75	Wind	Energy: 16.293 ¢/kWh RECs: 0.0 ¢/kWh Total: 16.293 ¢/kWh
Landfill Gas Technologies of Fajardo (Fajardo)	2.4	Landfill Gases	Energy: 10.0 ¢/kWh RECs: Transferred cost: 0.001¢/kWh Contract Total: 10.0 ¢/kWh
Landfill Gas Technologies of Fajardo (Toa Baja)	2.4	Landfill Gases	Energy: 10.0 ¢/kWh RECs: Transferred cost: 0.001¢/kWh Contract Total: 10.0 ¢/kWh

⁸ Listed in order of PPOA execution date with earliest PPOA first.

⁹ Energy price increases by 2% per year unless otherwise noted for Landfill Gas Technologies (Fajardo and Toa Baja), Humacao Solar Project and Pattern Santa Isabel.

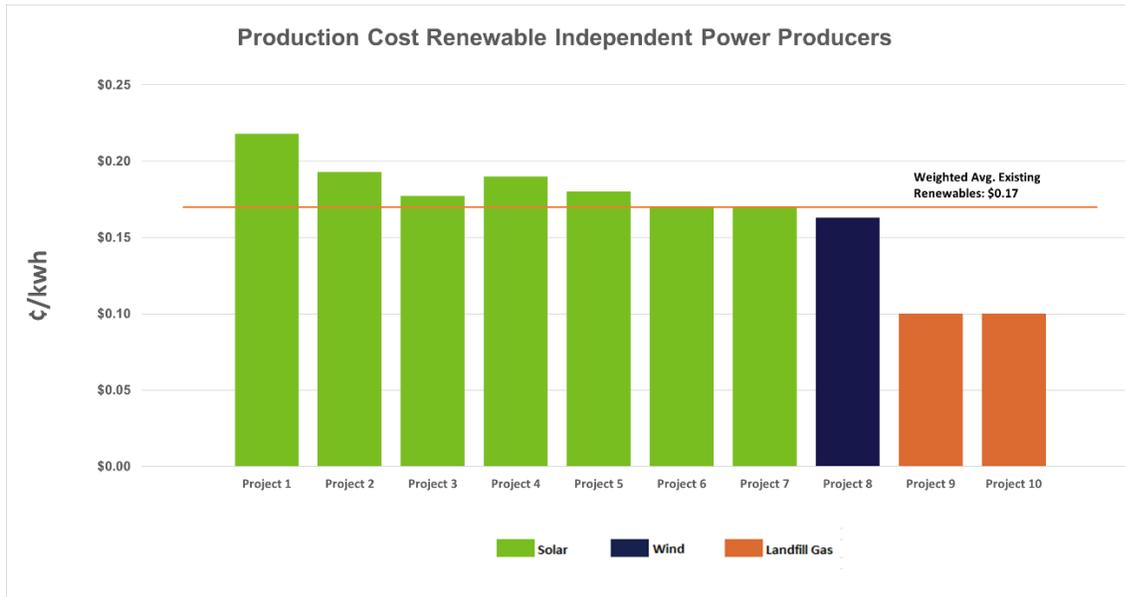
¹⁰ The cost per kwh of energy for AES Illumina is actual cost and reflects an amendment to the PPOA that reduces the cost per kwh of energy by a factor of 0.9.

¹¹ The cost per kwh of energy for Horizon Energy is actual cost and reflects an amendment to the PPOA that reduces the cost per kwh of energy by a factor of 0.9.

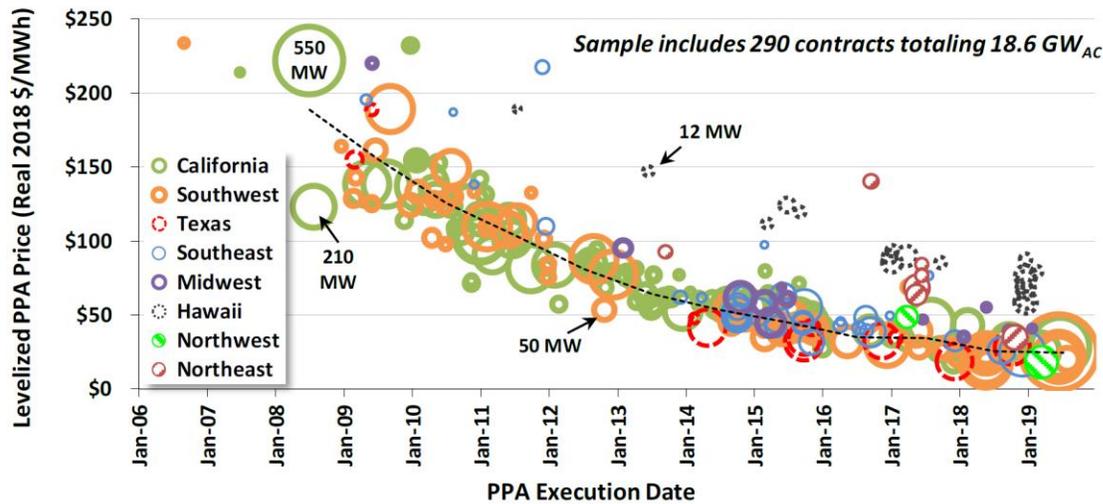
¹² The cost per kwh of energy for Oriana is actual cost and reflects an amendment to the PPOA that reduces the cost per kwh of energy by a factor of 0.904.

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 January/February 2022.



The graph below shows the historic trend of renewable energy prices throughout the United States as reported by the National Renewable Energy Laboratory.¹³ Please note that \$100/MWh is equal to 10 cents/kWh.



The Energy Bureau’s on-going solicitation processes for utility-scale renewable energy and energy storage resources present an opportunity to bring on line new and competitively priced projects.

¹³ Empirical Trends in Project Technology, Cost, Performance and PPA Pricing in the United States, 2019 Edition, <https://www.nrel.gov/docs/fy22osti/81325.pdf>