

**COMMONWEALTH OF PUERTO RICO  
PUERTO RICO ENERGY BUREAU**

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IN RE:

INTEGRATED RESOURCE PLAN  
FOR THE PUERTO RICO  
ELECTRIC POWER AUTHORITY

NO. CEPR-AP-2015-0002

**SUBJECT:** PREPA's (1) Compliance  
Filing for Items Due July 1, 2019; and  
(2) Renewal of its Pending Motion Filed  
on March 29, 2019

**PREPA'S (1) COMPLIANCE FILING FOR ITEMS DUE JULY 1, 2019; AND  
(2) RENEWAL OF ITS PENDING MOTION FILED ON MARCH 29, 2019**

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW the Puerto Rico Electric Power Authority ("PREPA") and respectfully submits to the honorable Puerto Rico Energy Bureau (the "Energy Bureau")<sup>1</sup> PREPA's (1) Compliance Filing for Items Due July 1, 2019; and (2) Renewal of its Pending Motion Filed on March 29, 2019.<sup>2</sup> The Compliance Filing consists of information provided in the body of this document and incorporated by reference herein plus three attachments as identified below.

**I. BACKGROUND**

1. On March 18, 2017, the "Modified IRP" established by the Energy Bureau in the instant Docket became effective,<sup>3</sup> subject to certain further steps, including: (a) the

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<sup>1</sup> References herein to the Energy Bureau include the former Puerto Rico Energy Commission when applicable.

<sup>2</sup> This Compliance Filing is submitted: (1) under the Energy Bureau's Final Resolution and Order issued in this Integrated Resource Plan ("IRP") case on September 23, 2016 ("IRP Final Order"); (2) as clarified and/or modified by: (a) the Energy Bureau's Resolution on the Verified Motion for Reconsideration of the Puerto Rico Electric Power Authority issued on February 10, 2017 ("IRP Rehearing Order"); (b) the Energy Bureau's clarification Resolution of April 5, 2017; (c) the Energy Bureau's Order (Initiating Proceeding on Aguirre Site Economic Analysis), initiating Case No. CEPR-AP-2017-0001, issued on February 20, 2017; (d) the Energy Bureau's Resolution and Order issued in that Aguirre site case on June 9, 2017; and (e) the Energy Bureau's Resolution (on extensions of time) issued in the instant IRP case on November 1, 2017.

<sup>3</sup> See *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, No. CEPR-AP-2018-0001 (Resolution and Order March 14, 2018), p. 3.

Bureau's Aguirre Site Economic Analysis case involving PREPA's proposal to construct the Aguirre Offshore Gasport ("AOGP") and to conduct associated natural gas conversions of Aguirre thermal units 1 and 2 and combined cycle ("CC") units 1 and 2, which case the Energy Bureau dismissed "without prejudice" in a Final Resolution and Order on April 26, 2018, with a Resolution denying reconsideration on May 24, 2018; (b) discussions that had been planned to be held between PREPA and the Energy Bureau regarding what new generation to build at Palo Seco (effectively stayed by the Energy Bureau by virtue of the Aguirre site case and the subsequent dismissal thereof); and (c) the Energy Bureau's performance metrics investigation that the Energy Bureau, by regulation, essentially separated from the instant IRP case (Reg. No. 8594, § 5.01; case no. CEPR-IN-2016-0002) (also stayed by the Energy Bureau) (see also the new docket, case no. CEPR-MI-2019-0007).

2. The IRP Final Order also set forth extensive requirements with which PREPA was directed to comply, both in the short- and long-term. Some of those requirements subsequently have been clarified and/or modified in some respects by the Energy Bureau in the IRP Rehearing Order and other later orders in the IRP case and in the Aguirre site case.

3. Prior to today, PREPA has submitted IRP case Compliance Filings on December 22, 2016; December 30, 2016; March 31, 2017; June 30, 2017; July 31, 2017; January 2, 2018; April 2, 2018; July 2, 2018; October 1, 2018; December 26, 2018; and, March 29, 2019.

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PREPA sets aside here any legal questions of whether or how any federal law or actions under federal law may have affected the Modified IRP or its effectiveness.



4. There are four compliance items that are due by July 1, 2019. The four items, in brief, are as follows:

- a. An updated status report on permitting of AOGP and the associated conversions (since the status report of December 26, 2018).
- b. An updated status report on permitting (in this instance meaning permits, permit applications, permits needed, and copies of permits and permit applications) of the alternative raised by the Energy Bureau of constructing a new Aguirre CC plant that would burn light diesel oil as fuel and of repowering of existing CC units at Aguirre (since the status report of December 26, 2018).
- c. An updated environmental report (covering environmental compliance litigation relating to PREPA power facilities and negotiation with the U.S. Environmental Protection Agency and the U.S. Department of Justice regarding Mercury Air and Toxics Standards non-compliance, plus status of certain retirements and limited use designations) (since the status report of December 26, 2018).
- d. An updated report about utility-scale renewables Power Purchase and Operating Agreements (including specific information about each "PPOA" plus the status of any renegotiation efforts) (since the status report of December 26, 2018).

5. PREPA, combined with its March 29, 2019, filed a Motion to Conclude Future 2015 IRP Case Reporting Items in Light of 2018 IRP case.

6. The Energy Bureau has not yet ruled on PREPA's March 29<sup>th</sup> Motion.
7. PREPA hereby renews the March 29<sup>th</sup> Motion, as discussed further below.

## **II. COMPLIANCE FILING - GENERAL POINTS**

8. PREPA made a number of general points in its prior Compliance Filings. PREPA incorporates those general points, as updated, herein.

## **III. COMPLIANCE ITEMS**

9. The first compliance item, in brief, is an updated status report on permitting of AOGP and the associated conversions (since the status report of December 26, 2018).
  - a. PREPA most recent report to the Energy Bureau on this subject *in this Docket* is PREPA's December 26, 2018, Compliance Filing.
  - b. However, PREPA's June 7, 2019, IRP main Report, filed in case no. CEPR-AP-2018-0001, includes in its Section 7.1.2.7 an updated status report on AOGP and the related conversions.
  - c. PREPA incorporates that update as its compliance filing on this subject.
10. The second compliance item, in brief, an updated status report on permitting (in this instance meaning permits, permit applications, permits needed, and copies of permits and permit applications) of the alternative raised by the Energy Bureau of constructing a new Aguirre CC plant that would burn light diesel oil as fuel and of repowering of existing CC units at Aguirre (since the status report of December 26, 2018).
  - a. PREPA most recent report to the Energy Bureau on this subject is in PREPA's December 26, 2018, Compliance Filing.

- b. In its December 26, 2018, Compliance Filing, PREPA reported and explained why permitting could not be pursued on these alternatives, and therefore, PREPA had not update on this subject.
- c. That remains the case. Also, as noted earlier, the Aguirre site case has been dismissed without prejudice by the Energy Bureau, and the 2018 IRP case is in process.

11. The third compliance item, in brief, is an updated environmental report (covering environmental compliance litigation relating to PREPA power facilities and negotiation with the U.S. Environmental Protection Agency and the U.S. Department of Justice regarding Mercury Air and Toxics Standards non-compliance, plus status of certain retirements and limited use designations) (since the status report of December 26, 2018).

- a. PREPA most recent report to the Energy Bureau on this subject is in PREPA's December 26, 2018, Compliance Filing.
- b. PREPA has the following updates:
  - i. With respect to the Palo Seco Superfund site:
    - o On July 17, 2017, EPA and PREPA signed a settlement agreement. The agreement resolved all liability for past costs and requires PREPA to pay to EPA the principal sum of \$1,000,000, plus interest, in three annual installments.
    - o The first payment of \$333,334 was made on August 9, 2017.
    - o The second payment in the amount of \$337,838.01 was made on May 29, 2018.
    - o The third payment is due on August 17, 2019.



ii. With respect to the "MATS" program, there is no update at this time.

iii. Please note that the June 7, 2019, IRP main Report contains discussions of environmental topics in numerous sections.

12. The fourth compliance item, in brief, is an updated report about utility-scale renewables Power Purchase and Operating Agreements (including specific information about each PPOA plus the status of any renegotiation efforts) (since the status report of December 26, 2018).

- a. Please note that the June 7, 2019, IRP main Report, in its Section 4.2.2, uses information from the December 26, 2018, compliance filing.
- b. However, for purposes of today's compliance filing, PREPA has prepared an updated report.
- c. Please see the three documents attached hereto labeled as Attachment 1 and its Appendices 1 and 2.
- d. Attachment 1 is a narrative update.
- e. Appendix 1 provides more detailed information on the PPOAs that are in commercial operation or pre-operation.
- f. Appendix 2 provides more detailed information on PPOAs not in operation and under renegotiation.

**IV. PREPA'S RENEWAL OF ITS MARCH 29<sup>TH</sup> MOTION**

13. PREPA hereby incorporates and renews its March 29<sup>th</sup> Motion to Conclude Future 2015 IRP Case Reporting Items in Light of 2018 IRP case.

14. In brief, PREPA continues to expect that the future reports required under the 2015 IRP case orders will be highly repetitive and redundant with reports, compliance filings, and discovery responses of PREPA in the 2018 IRP docket.

15. Accordingly, PREPA respectfully requests that the Energy Bureau conclude (terminate) the 2015 IRP case filing requirements for all reports due after July 1, 2019.

WHEREFORE, the Puerto Rico Electric Power Authority respectfully requests that the Honorable Puerto Rico Energy Bureau accept this Compliance Filing, grant PREPA's motion, and order such other relief as is warranted.

RESPECTFULLY SUBMITTED,

In San Juan, Puerto Rico, this 1<sup>st</sup> day of July 2019

**PUERTO RICO ELECTRIC POWER AUTHORITY**

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### CERTIFICATION OF FILING AND SERVICE

I hereby certify that on July 1<sup>st</sup>, 2019, I have sent the above Compliance Filing (including its attachments) to the Puerto Rico Energy Bureau through its Clerk via [secretaria@energia.pr.gov](mailto:secretaria@energia.pr.gov) and [wcordova@energia.pr.gov](mailto:wcordova@energia.pr.gov); to the office of the Energy Bureau's General Counsel via [legal@energia.pr.gov](mailto:legal@energia.pr.gov) and [sugarte@energia.pr.gov](mailto:sugarte@energia.pr.gov); and to: [acasellas@amgprlaw.com](mailto:acasellas@amgprlaw.com); [agraitfe@agraitlawpr.com](mailto:agraitfe@agraitlawpr.com); [agraitfe@gmail.com](mailto:agraitfe@gmail.com); [agraitfe@caribe.net](mailto:agraitfe@caribe.net); [ana.rodriguez@oneillborges.com](mailto:ana.rodriguez@oneillborges.com); [carlos.reyes@ecoelectrica.com](mailto:carlos.reyes@ecoelectrica.com); [carlos.valldejuly@oneillborges.com](mailto:carlos.valldejuly@oneillborges.com); [ccf@tcmrslaw.com](mailto:ccf@tcmrslaw.com); [cfl@mcvpr.com](mailto:cfl@mcvpr.com); [codiot@oipc.pr.gov](mailto:codiot@oipc.pr.gov); [dortiz@elpuente.us](mailto:dortiz@elpuente.us); [dperez@cabprlaw.com](mailto:dperez@cabprlaw.com); [edwin.quinones@aae.pr.gov](mailto:edwin.quinones@aae.pr.gov); [energiaverdepr@gmail.com](mailto:energiaverdepr@gmail.com); [epo@amgprlaw.com](mailto:epo@amgprlaw.com); [felipelozada1949@gmail.com](mailto:felipelozada1949@gmail.com); [fermin.fontanes@oneillborges.com](mailto:fermin.fontanes@oneillborges.com); [fviejo@amgprlaw.com](mailto:fviejo@amgprlaw.com); [hburgos@cabprlaw.com](mailto:hburgos@cabprlaw.com); [icv@mcvpr.com](mailto:icv@mcvpr.com); [jose.maeso@aae.pr.gov](mailto:jose.maeso@aae.pr.gov); [jperez@oipc.pr.gov](mailto:jperez@oipc.pr.gov); [lga@elpuente.us](mailto:lga@elpuente.us); [lionel.orama@upr.edu](mailto:lionel.orama@upr.edu); [lmateo@ferraiuoli.com](mailto:lmateo@ferraiuoli.com); [mgrpcorp@gmail.com](mailto:mgrpcorp@gmail.com); [mrhernandez@fgrlaw.com](mailto:mrhernandez@fgrlaw.com); [mgrpcorp@gmail.com](mailto:mgrpcorp@gmail.com); [pnieves@fgrlaw.com](mailto:pnieves@fgrlaw.com); [rstgo2@gmail.com](mailto:rstgo2@gmail.com); [valvarados@gmail.com](mailto:valvarados@gmail.com); [victorluisgonzalez@yahoo.com](mailto:victorluisgonzalez@yahoo.com).

  
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CEPR-AP-2015-0002

ATTACHMENT #1

## Update on the Status of Renewable Energy Contracts

### June 2019 Update

As required under Section VII.B.i of the Final Resolution on the Integrated Resource Plan of the Puerto Rico Electric Power Authority, further clarified in the Resolution of April 5, 2017.

#### I. Overview

Between 2008 and 2012 the Puerto Rico Electric Power Authority (PREPA) signed 68 renewable power purchase and operating agreements (PPOAs). By January of 2013, 62 contracts remained in effect, with four facilities under commercial operation: AES Ilumina (20 MW in Guayama), Pattern Santa Isabel (95 MW in Santa Isabel), Punta Lima Wind Farm (26 MW in Naguabo) and Windmar Renewable Energy Cantera Martínó/La Rita (2.1 MW in Ponce).

In 2013 PREPA commissioned a Renewable Energy Generation Integration Study, with the goal of establishing how much intermittent renewable energy capacity could be integrated to Puerto Rico's electric system. The study<sup>1</sup>, carried out by Siemens, determined that up to 580 MW of utility scale projects could be safely and reliably interconnected to the grid, considering 100% compliance with PREPA's technical requirements, a system peak demand of 3,300 MW, curtailment levels of 2.26% and 64 MW of net metering projects.

Considering the results of the Siemens study, between 2013 and 2014 PREPA renegotiated and successfully carried out amendments to the terms of 18 PPOAs. The PPOAs that were renegotiated were those in an advanced stage of the permitting process as informed by the Puerto Rico Planning Board and the Puerto Rico Management Permits Office (OGPe). These PPOAs, together with those already under operation or in construction, would meet the capacity identified by the Siemens study. Table 1 lists the PPOAs renegotiated between 2013 and 2014.

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<sup>1</sup> Copy of the study can be downloaded at <https://www2.aeepr.com/Docs/Siemens%20PTI%20Final%20Report%20-%20PREPA%20Renewable%20-%20final-11.pdf>

**Table 1. PPOAs Renegotiated in 2013-14**

<b>Name</b>	<b>Contract No.</b>	<b>Capacity (MW)</b>
Desarrollos del Norte, Inc. (d/b/a Atenas Solar Farm)	2013-P00070	20
Blue Beetle III, LLC	2012-P00037	20
CIRO One Salinas, LLC	2011-P00043	57
Humacao Solar Project, LLC (Fonroche Energy)	2012-P00031	40
Guayama Solar Energy, LLC (GCL)	2011-P00042	17.8
Horizon Energy, LLC	2011-P00034	10
Xzerta-Tec Solar I, LLC (Grupotec)	2013-P00042	20
Irradia Morovis, LLC	2012-P00053	33.5
Moca Solar Farm, LLC	2013-P00003	20
North Coast Solar, LLC	2013-P00041	20
Oriana Energy, LLC (Yarotek)	2011-P00048	50
Renewable Energy Authority (Vega Serena), LLC	2012-P00045	20
ReSun Barceloneta, LLC	2012-P00061	20
Solaner Puerto Rico One, LLC	2012-P00146	25
SolarBlue Bemoga, LLC	2013-P00052	20
Coto Laurel Solar Farm, Inc. (Windmar Vista Alegre)	2012-P00052	10
Windmar Renewable Energy, Inc. (Santa Rosa)	2012-P00080	20
YFN Yabucoa Solar, LLC	2013-P00049	20

Recent advances and price reductions in energy storage and renewable energy technologies are projected to allow a greater penetration of renewable energy systems into Puerto Rico's electric system, permitting it to achieve higher penetration levels than those identified in the 2013 study performed by Siemens. Act 17-2019 introduced significant changes to the Renewable Portfolio Standard (RPS) established by Act 82-2010. PREPA's current revision of its Integrated Resource Plan (IRP) considers this and includes an aggressive buildup of renewable energy projects capacity to meet the RPS.

As of June 2019, 58 PPOAs remain in effect, totaling 1480.6 MW. These can be categorized as in Commercial Operation (eight) or Pre-Operation (three undergoing tests), and those that have not commenced construction (47) and are undergoing renegotiation by PREPA.

Further detail is given in the following sections

## **II. Renewable PPOAs in Operation**

As of June of 2019, 11 PPOAs are in either commercial operation or in pre-operation (energized, under testing, and selling energy and renewable energy credits to PREPA). These projects represent 272.9 MW of capacity, distributed as follows:



- a. Photovoltaic – 147.1 MW
- b. Wind – 121 MW
- c. Landfill Gas – 4.8 MW

Table 2 lists the PPOAs in Commercial Operation and Table 3 lists the PPOAs in Pre-Operation

**Table 2. PPOAs in Commercial Operation as of June 2019**

Name	Contract No.	Location	Technology	Capacity (MW)
AES Ilumina, LLC	2010-P00050	Guayama	Photovoltaic	20
Horizon Energy, Inc. (Salinas Solar Farm)	2011-P00034	Salinas	Photovoltaic	10
Landfill Gas Technologies of Fajardo, LLC	2013-P00044	Fajardo	Landfill Gas	2.4
Oriana Energy, LLC (Yarotek, LLC)	2011-P00048	Aguadilla	Photovoltaic	45
Pattern Santa Isabel, LLC	2010-P00047	Santa Isabel	Wind	95
Punta Lima Wind Farm, LLC (Go Green PR)	2010-AI0001	Naguabo	Wind	26
San Fermín Solar Farm, LLC (Coquí Power, LLC)	2011-P00050	Loíza	Photovoltaic	20
Windmar Renewable Energy, Inc. (Cantera Martínó/La Rita)	2012-P00015	Ponce	Photovoltaic	2.1
Total Capacity				220.5 MW

**Table 3. PPOAs in Pre-Operation as of June 2019**

Name	Contract No.	Location	Technology	Capacity
Humacao Solar Project, LLC (Fonroche Energy America)	2012-P00031	Humacao	Photovoltaic	40
Coto Laurel Solar Farm, LLC (Windmar Renewable Energy, Inc./Vista Alegre)	2012-P00052	Ponce	Photovoltaic	10
Landfill Gas Technologies of Fajardo, LLC (Toa Baja)	2013-P00073	Toa Baja	Landfill Gas	2.4
Total Capacity				52.4 MW

Note that of the 18 PPOAs renegotiated between 2013 and 2014, two have achieved commercial operation (Horizon Energy and Oriana Energy) and two are undergoing testing (Coto Laurel Solar Farm and Humacao Solar Project).

Appendix 1 includes more detailed information on the PPOAs that are in Commercial Operation or in Pre-Operation.

In September of 2017, Puerto Rico was hit by hurricanes Irma and María, and most of the renewable energy facilities were affected. The Punta Lima Wind Farm in Naguabo was extensively damaged and will require reconstruction. The Humacao Solar Farm facility suffered extensive damage to its second phase (20 MW), which was in construction when the hurricanes hit, and is currently being rebuilt. Other facilities were affected to a lesser degree, and are slowly coming back online. Presently, the following facilities are operating with partial or full capacity:

1. AES Ilumina – Full Capacity
2. Landfill Gas Technologies of Fajardo (Toa Baja Site) – Full Capacity
3. Landfill Gas Technologies of Fajardo (Fajardo Site) – Full Capacity
4. Pattern Santa Isabel – Full Capacity
5. Windmar Renewable Energy - Cantera Martínó – Full Capacity
6. Coto Laurel Solar Farm – Full Capacity
7. Horizon Energy – Full Capacity
8. Humacao Solar Project – Partial Capacity
9. Oriana Energy – Partial Capacity
10. San Fermin Solar Farm – Full Capacity

Punta Lima Wind Farm expects to bring the facility back to operational status by 2020.

### **III. Renewable PPOAs not in Operation and Under Renegotiation**

Of the 58 renewable PPOAs that are still in effect, 47 have not begun construction as of June 2019. The PPOAs that have not begun construction were previously divided in two groups: 14 PPOAs that were renegotiated between 2013 and 2014 and 33 PPOAs that were not renegotiated between 2013 and 2014. This considered the limitations to short term renewable energy integration identified in the 2013 Siemens study. As mentioned above, recent technological improvements and price reductions, particularly in energy storage, will permit much higher integration of renewables (mostly solar photovoltaic) to the Puerto Rico grid, and facilitate compliance with the new RPS targets established by Act 17-2019.

At the end of 2018, PREPA's Executive Director led an information session for "shovel ready" and "critical projects" (as identified by PREPA) to go over the Title III process with respect to the PPOAs. In the beginning of 2019, PREPA shared further information with the PPOA stakeholders, including the "shovel ready" and "critical projects", regarding the Title III and upcoming renegotiation process. PREPA asked the PPOA stakeholders to prepare pricing proposals that included a few specific scenarios. Shortly after, meetings commenced between PREPA and certain "shovel ready" and "critical project" PPOA counterparties in order to begin discussing the terms of renegotiation.

PREPA met with each of these counterparties multiple times and made it clear that they were in a competitive process. PREPA collected offers, presented these to the FOMB through multiple calls,

including presenting factors contributing to higher than IRP pricing and a strategy to move forward with the PPOA negotiations, and solicited feedback from the FOMB. At the FOMB's request, PREPA went back to them to gather more information on factors influencing price and on the sponsor team.

In the upcoming few weeks, PREPA intends to present new proposed pricing from the PPOAs currently in renegotiation with PREPA to the FOMB, PREB and P3 Authority. Following in parallel with the approval process, PREPA will begin conducting an interconnect study to determine the feasibility of each of the proposed projects; and will work that into its evaluation of the projects. PREPA will submit approved PPOAs to the Title III court and PREPA's Governing Board prior to signing later this year.

PREPA is evaluating the course of action to follow with the PPOAs which are not expected to be renegotiated.

Appendix 2 gives information on the terms and status of these projects as per the current contracts.



## Appendix 1 - PPOAs Under Commercial Operation or in Pre-Operation

## PPOAs Under Commercial Operation as of June 2019

Name / Contract No.	Contract No.	Capacity (MW)	Technology	Location	Contractual Energy Cost (c/kWh) First Year/Current <sup>(1)</sup>	Energy Cost Annual Escalator	Contractual REC Cost (c/kWh)	REC Annual Escalator	Annual Capacity Factor <sup>(2)</sup>	Average Annual Generation (MWh) <sup>(3)</sup>	Commercial Operation Date
AES Illumina, LLC	2010-P00050	20	Solar PV	Guayama	15,000 / 16,8924	2%; 20 year term	3.5	N/A	0.221	38,727.47	28-Nov-12
Pattern Santa Isabel, LLC	2010-P00047	95 <sup>(4)</sup>	Wind	Santa Isabel	12,500 / 13,668	1.50%; 20 (+10) year term	2.5 / 2,734 current	1.50%	0.191	151,049.61	5-Dec-12
Punta Lima Wind Farm, LLC	2010-AI0001	26	Wind	Naguabo	12,50 / 13,668	1.5%; 20 year term	2.5	N/A	0.230	52,301.10	17-Dec-12
Windmar Renewable Energy, Inc. (Cantera Martino/La Rita)	2010-P00052	2.1	Solar PV	Ponce	15,00 / 17,20	2%; 20 year term	3.5	N/A	0.258	4,748.34	7-Sep-11
San Fermín Solar Farm, LLC	2011-P00050	20	Solar PV	Loiza	15,00/15.9	2%; 20 year term	3.5	N/A	0.204	29,960.81	16-Dec-15
Horizon Energy, LLC	2011-P00034	10	Solar PV	Salinas	14.3/15.18	2%; years 21-25 energy cost fixed @ \$208.3	3.5	N/A	0.259	22,654.99	18-Aug-15
Landfill Gas Technologies of Fajardo, LLC (Fajardo Landfill)	2013-P00046	2.4	Landfill Gas	Fajardo	10	0%; 20 year term	0; granted to PREPA	N/A	0.378	7,222.71	1-Oct-16
Oriana Energy, LLC (Yarotek)	2011-P00048	45	Solar PV	Isabela	15/15.60	2%; 20 year term	3	N/A	0.239	84,742.00	20-Dec-16
<b>Total Capacity</b>		<b>220.5</b>									

## PPOAs Under Pre-Operation as of June 2019

Name / Contract No.	Contract No.	Capacity (MW)	Technology	Location	Contractual Energy Cost (c/kWh) First Year/Current <sup>(1)</sup>	Energy Cost Annual Escalator	Contractual REC Cost (c/kWh)	REC Annual Escalator	Expected Annual Capacity Factor <sup>(2)</sup>	Expected Annual Generation (MWh) <sup>(3)</sup>	Initial Interconnection Date
Coto Laurel Solar Farm, Inc. (Windmar Vista Alegre)	2012-P00052	10	Solar PV	Ponce	15	2%; 20 year term	3.5	N/A	0.220	19,272.00	17-Nov-16
Humacao Solar Project, LLC (Fonroche Energy America)	2012-P00031	40 <sup>(5)</sup>	Solar PV	Humacao	15	1%; 25 year term	2.5	N/A	0.220	77,088.00	16-Dec-16
Landfill Gas Technologies of Fajardo, LLC (Toa Baja Landfill) <sup>(6)</sup>	2013-P00073	2.4	Landfill Gas	Toa Baja	10	0%; 20 year term	0; granted to PREPA	N/A	0.378	7,947.07	15-Feb-17
<b>Total Capacity</b>		<b>52.4</b>									

## Notes:

- 1 PPOAs establish an initial energy price and annual escalator, usually a fixed value. The column shows first year price and in cases where the project is in service and the price has escalated, the energy price as of June 2019.
- 2 The average annual capacity factor was calculated using the average of the monthly capacity factors since the facility commenced commercial operation, excluding periods in which the facility was in testing or shut down/curtailed. For those projects still undergoing testing, the expected capacity factor given is the average capacity factor for similar facilities.
- 3 The average annual generation was calculated using historical data, except for the Oriana project, which was estimated based on the data since the project entered commercial operation in December 2016. The expected annual generation was calculated using the expected capacity factor.
- 4 Pattern Santa Isabel - Capacity limited to 75 MW; Capacity can increase to 95 MW during certain months (February to September) but PREPA has not allowed increased until Pattern shows it can meet its Technical Requirements.
- 5 Humacao Solar Project, LLC - The facility was developed in two phases: phase 1 (20 MW) is under testing and phase 2 (20 MW) is under construction as of June 2019.
- 6 Landfill Gas Technologies of Fajardo, LLC (Toa Baja Landfill) - The facility completed testing in July of 2017 and was in the process of achieving Commercial Operation when hurricanes Irma and María struck on September 2017. It is expected that the facility will be declared in Commercial Operation in 2019.



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Appendix 2 - PPOAs Not Operational as of June 2019 - 47 PPOAs not Built

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor <sup>(1)</sup>	Expected Annual Generation (MWh) <sup>(1)</sup>	First Year Energy Purchase Price (c/kWh) <sup>(1)</sup>	Annual Escalator : 1.5 %	REC Purchase Price (c/kWh)	Commercial Operation Date per Contract
1	Aspenall Energies Santa Isabel, LLC	2012-P00089	Santa Isabel	10	Wind	0.22	19,272	12.5	0.015	2.5	13-Dec-14
2	Blue Beetle III, LLC	2012-P00037	Barceloneta	20	Photovoltaic	0.22	38,544	14.25	2%; years 21-25 energy cost fixed @ 16.0	2	5-Dec-16
3	Cabo Solar Farm, LLC (Roma Solar, LLC)	2013-P00069	Cabo Rojo	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	0.02	2	17-Dec-15
4	Caracol Solar, LLC (Roma Solar, LLC)	2013-P00004	Añasco	20	Photovoltaic	0.22	38,544	(2013)15 (2014)14 (2015)	2%	2	20-Jul-15
5	Carolina Solar Farm, LLC	2013-P00067	Carolina	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	0.02	2	21-Dec-15
6	CIRO One Salinas, LLC	2011-P00043	Salinas	57	Photovoltaic	0.22	109,850	13.65	2%; years 21-25 energy cost fixed @ \$15.0	3.5 years 1-20; 2.0 years 21-25	5-Dec-16
7	Desarrollos del Norte, Inc. (Atenas Solar Farm)	2013-P00070	Manatí	20	Photovoltaic	0.22	38,544	14.5	2% ; years 21 - 25 energy cost fixed @ yr 20 price	1.5	28-Dec-15
8	Energy Answers Arecibo, LLC	2010-AI0018	Arecibo	79	Waste to Energy	0.8	553,632	11.27 <sup>(3)</sup>	based on US CP <sup>(2)</sup>	See Note 4	3-Jun-21
9	GG Alternative Energy Corporation	2013-P00077	Fajardo	20	Photovoltaic	0.22	38,544	15	0.02	1.5	26-Dec-15
10	GG Alternative Energy Corporation	2013-P00071	Fajardo	10	Wind	0.22	19,272	12.5	0.015	N/A	28-Mar-17
11	Guayama Solar Energy, LLC (GCL)	2011-P00042	Guayama	17.8	Photovoltaic	0.22	34,304	14.1	2%; years 21-25 energy cost fixed @ \$15.0	3.0 years 2-20; 2.0 years 21-25	30-Sep-15
12	Hatillo Solar, LLC	2013-P00074	Hatillo	30	Photovoltaic	0.22	57,816	15	2%	N/A	13-Dec-15
13	HSEA PR Isla Solar I, LLC	2013-P00057	Carolina	40	Photovoltaic	0.22	77,088	15	0.02	1.5	13-Dec-15
14	Jonas Solar Energy, LLC	2012-P00140	Guayanilla	40	Photovoltaic	0.22	77,088	15	0.02	3.5	9-May-15
15	Juncos Solar Energy, LLC	2012-P00138	Juncos	20	Photovoltaic	0.22	38,544	15	0.02	2	15-May-15
16	Lajas Solar Project, LLC (Fonroche Energy America, Inc.)	2013-P00046	Lajas	10	Photovoltaic	0.22	19,272	(2013)15 (2014)14 (2015)	2%	N/A	10-Oct-15
17	Luquillo Solar Plant, LLC (Renewable Energy Authority/REA Energy, LLC)	2013-P00051	Río Grande	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	0.02	2	10-Oct-15
18	M Solar Generating, LLC	2012-P00142	Manatí	50	Photovoltaic	0.22	96,360	15	0.02	N/A	9-May-15 (suspended by mutual accord - see note 2)



Appendix 2 - PPOAs Not Operational as of June 2019 - 47 PPOAs not Built

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor <sup>(1)</sup>	Expected Annual Generation (MWh) <sup>(2)</sup>	First Year Energy Purchase Price (¢/kWh)	Annual Escalator	REC Purchase Price (¢/kWh)	Commercial Operation Date per Contract
19	Moca Solar Farm, LLC	2013-P00003	Moca	20	Photovoltaic	0.22	38,544	14	2%; years 21-25 energy cost fixed @ \$15.00	1.75	5-Dec-16
20	Morovis Solar, LLC (Irradia Energy)	2012-P00053	Morovis	33.5	Photovoltaic	0.22	64,561	14.4	2%; years 21-25 energy cost fixed @ \$20.978	2.25	5-Dec-16
21	North Coast Solar, LLC	2013-P00041	Quebradillas	20	Photovoltaic	0.22	38,544	14	2%; years 21-25 energy cost fixed @ \$15.00	1.75	5-Dec-16
22	REA Energy Ceiba Solar Plant, LLC (Renewable Energy Authority/REA Energy, LLC)	2013-P00076	Ceiba	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	0.02	2	28-Dec-15
23	REA Energy Hatillo Solar Plant, LLC (Renewable Energy Authority/REA Energy, LLC)	2013-P00075	Hatillo	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	0.02	2	28-Dec-15
24	Renewable Energy Authority, LLC (Vega Serena)	2012-P00045	Vega Baja	20	Photovoltaic	0.22	38,544	14.5	2%; years 21-25 energy cost fixed @ \$14.50	2.25	21-Dec-15
25	Renewable Power Group, Inc.	2012-P00010	Canóvanas	2	Bio-digestor	0.8	14,016	9.2	Based on US CPI	N/A	1-Nov-15
26	Renewable Power Group, Inc.	2012-P0009	Moca	1.5	Landfill Gas	0.8	10,512	9.2	Based on US CPI	N/A	1-Nov-15
27	ReSun (Barcelona), LLC	2012-P00061	Barcelona	20	Photovoltaic	0.22	38,544	14.5	1.75%; years 21-25 energy cost fixed @ \$20.16	2.5	5-Dec-16
28	Sierra Solar Farm, LLC (Roma Solar, LLC)	2013-P00072	Arecibo	20	Photovoltaic	0.22	38,544	(2013)15 (2014)14 (2015)	2%	2	18-Dec-15
29	Solaner Puerto Rico One, LLC	2012-P00146	San German	25	Photovoltaic	0.22	48,180	14.75	1.5%, 25 year term	1.5	5-Dec-16
30	Solar Project Ponce, LLC (Fonroche Energy America, Inc.)	2013-P00045	Naguabo	30	Photovoltaic	0.22	57,816	15 (2013) 15 (2014) 14 (2015)	0.02	N/A	10-Oct-15
31	Solar Project San Juan, LLC (Fonroche Energy America, Inc.)	2013-P00048	San Lorenzo	15	Photovoltaic	0.22	28,908	15 (2013) 15 (2014) 14 (2015)	0.02	N/A	10-Oct-15
32	SolarBlue Bemoga, LLC	2013-P00052	Dorado	20	Photovoltaic	0.22	38,544	13.75	2%; years 21-25 energy cost fixed @ \$17.00	2	5-Dec-16
33	South Solar Two, LLC (Fonroche Energy America, Inc.)	2013-P00047	Cabo Rojo	30	Photovoltaic	0.22	57,816	15 (2013) 15 (2014) 14 (2015)	0.02	N/A	10-Oct-15
34	Sunbeam Caribbean Energy Corp.	2010-A10031	Barcelona	10	Waste to Energy	0.8	70,080	10	Based on US CPI	N/A	23-Feb-15
35	Tradewinds Energy, LLC (Tradewinds Energy Barcelona, LLC)	2012-P00030	Barcelona	75	Wind	0.22	144,540	12.5	0.015	2.5	20-Jan-16



**Appendix 2 - PPOAs Not Operational as of June 2019 - 47 PPOAs not Built**

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor <sup>(1)</sup>	Expected Annual Generation (MWh) <sup>(1)</sup>	First Year Energy Purchase Price (¢/kWh)	Annual Escalator	REC Purchase Price (¢/kWh)	Commercial Operation Date per Contract
36	Tradewinds Energy, LLC (Tradewinds Energy Vega Baja, LLC)	2012-P00028	Sanatí/Vega Baja	50	Wind	0.22	96,360	12.5	2%	2.5	19-Jan-16
37	Vega Baja Solar Energy, LLC (One Planet Caribbean, LLC)	2012-P00139	Vega Baja	30	Photovoltaic	0.22	57,816	15	0.02	2	15-May-15
38	Vega Baja Solar Project, LLC (Fonroche Energy America, Inc.)	2013-P00050	Naguabo	15	Photovoltaic	0.22	28,908	15 (2013) 15 (2014) 14 (2015)	0.02	N/A	10-Oct-15
39	Wind to Energy Systems, LLC	2011-P00101	Vieques	20	Wind	0.22	38,544	12.5	0.015	N/A	30-Mar-14
40	Windmar Renewable Energy, Inc.	2012-P00095	Dorado-Toa Baja	44	Wind	0.22	84,797	12.5	2%	2.5	23-Feb-15
41	Windmar Renewable Energy, Inc.	2012-P00079	Dorado-Toa Baja	20	Photovoltaic	0.22	38,544	15	0.02	3.5	23-Feb-15
42	Windmar Renewable Energy, Inc.	2012-P00049	Guayanilla	18.4	Wind	0.22	35,460	12.5	0.015	2.5	23-Feb-16
43	Windmar Renewable Energy, Inc.	2008-AI0066C	Guayanilla	34.5	Wind	0.22	66,488	12.5	0.015	2.5	23-Feb-16
44	Windmar Renewable Energy, Inc. (Santa Rosa)	2012-P00080	Guayo-Guayanilla	20	Photovoltaic	0.22	38,544	13	2%; years 13-25 energy cost fixed @ \$16.160	3.5 years 1-20; 0 years 21-25	5-Dec-16
45	Xzerta-Tec Solar I, LLC (Grupotec USA)	2013-P00042	Hatillo	20	Photovoltaic	0.22	38,544	15	1%; years 21-25 energy cost fixed @ \$18.12	1.5	5-Dec-16
46	Yabucoa Solar, LLC (Western Wind Puerto Rico, Corp./Brookfield)	2011-P00090	Yabucoa	30	Photovoltaic	0.22	57,816	15	0.02	3.5	30-Jun-14
47	YFN Yabucoa Solar, LLC	2013-P00049	Yabucoa	20	Photovoltaic	0.22	38,544	13	2%; years 21-25 energy cost fixed @ \$18.940	2	17-Oct-15
				<b>Total:</b>			1207.7				

**Notes:**

- The expected capacity factor is estimated to be approximately the same as the average capacity factor of similar facilities in operation. The expected annual generation was calculated using the expected capacity factor.
- Commercial Operation Date was put on hold by mutual agreement of the parties until DNER site determination is final
- Energy Answers Contractual Energy Cost, Escalator and REC Cost - Energy Answers' PPOA establishes that the Energy Cost escalates annually, from the Effective Date of the PPOA, (December 4, 2009) based on a formula that considers the US Consumer Price Index (US CPI) and the energy index reflected in the US CPI (Energy CPI), with a 4% annual cap to the escalator. The price listed is that calculated for 2016.
- Energy Answers RECs - RECs are property of Energy Answers, and if it sells the RECs, it must pay PREPA 1/3 of the net revenues derived from the sale of the RECs, provided that PREPA can use the RECs to meet a local RPS, in which case PREPA must pay Energy Answers for 2/3 of the lesser of (a) the price for equivalent RECs paid by PREPA, or (b) the charges payable by PREPA, corresponding to the RECs produced by Energy Answers] in case it fails to meet the RPS.