

COMMONWEALTH OF PUERTO RICO
PUERTO RICO ENERGY COMMISSION

18 JUL -3 P2:43

IN RE:

INTEGRATED RESOURCE PLAN
FOR THE PUERTO RICO
ELECTRIC POWER AUTHORITY

NO. CEPR-AP-2015-0002

SUBJECT: PREPA'S Compliance Filing
for Items Due July 2, 2018

**PREPA'S COMPLIANCE FILING FOR
ITEMS DUE JULY 2, 2018**

TO THE HONORABLE PUERTO RICO ENERGY COMMISSION:

COMES NOW the Puerto Rico Electric Power Authority ("PREPA") and respectfully submits to the honorable Puerto Rico Energy Commission (the "Commission") PREPA's Compliance Filing for Items Due July 2, 2018.¹ This Compliance Filing consists of information provided in the body of this document and incorporated by reference herein plus attachments as identified below.

I. BACKGROUND

1. On March 18, 2017, the "Modified IRP" established by the Commission in the instant Docket became effective,² subject to certain further steps, including: (a) the

¹ This Compliance Filing is submitted: (1) under the Commission'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 Commission'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 Commission's clarification Resolution of April 5, 2017; (c) the Commission's Order (Initiating Proceeding on Aguirre Site Economic Analysis), initiating Case No. CEPR-AP-2017-0001, issued on February 20, 2017; (d) the Commission's Resolution and Order issued in that Aguirre site case on June 9, 2017; and (e) the Commission's Resolution (on extensions of time) issued in the instant IRP case on November 1, 2017.

The items in this Compliance Filing were due on June 30, 2018, but that was a Saturday, so they are due on July 2, 2018.

² 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.

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.

Commission'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 Commission dismissed "without prejudice" in a Final Resolution and Order on April 26, 2018, with a Resolution denying reconsideration on May 24, 2018; (b) discussions between PREPA and the Commission regarding what new generation to build at Palo Seco (effectively stayed by the Commission by virtue of the Aguirre site case and the subsequent dismissal thereof); and (c) the Commission's performance metrics investigation that the Commission, by regulation, essentially separated from the instant IRP case (Reg. No. 8594, § 5.01; case no. CEPR-IN-2016-0002) (also stayed by the Commission).

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 Commission 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; and April 2, 2018.

4. There are four compliance items that are due by July 2, 2018. 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 April 2, 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 Commission 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 April 2, 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 April 2, 2018).³
- 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 January 2, 2018).

II. GENERAL POINTS

5. PREPA made a number of general points in its April 2, 2018, Compliance Filing. PREPA incorporates those general points, as updated, herein.

III. COMPLIANCE ITEMS

6. The first compliance item, in brief, is an updated status report on permitting of AOGP and the associated conversions (since the status report of April 2, 2018).

³ This item was due on January 2, 2018, but the Compliance Filing of that date explained that PREPA was not able to compile the item at that time, and, therefore, PREPA included it in the April 2, 2018, Compliance Filing.

- a. PREPA most recent report to the Commission on this subject is in PREPA's April 2, 2018, Compliance Filing.
- b. On April 26, 2018, the PREC issued its Final Resolution and Order in the Aguirre site case. The Order: (a) ended the case "without prejudice" to PREPA's AOGP and Aguirre conversion proposal; (b) directed PREPA, if it wishes to pursue AOGP, to include it in the current IRP; (c) ordered the new IRP to be submitted in around October 2018; and (d) asked for certain information.
- c. On May 24, 2018, the PREC denied reconsideration at to April 26th order item (c) as listed above.
- d. On May 29, 2018, PREPA filed its compliance with April 26th order item (d) as listed above.
- e. The federal National Marine Fisheries Service has not yet issued its biological opinion. Some months ago, the Service advised PREPA that the draft biological opinion was completed and had been submitted for internal technical review.

7. 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 Commission 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 April 2, 2018).

- a. PREPA most recent report to the Commission on this subject is in PREPA's April 2, 2018, Compliance Filing.

- b. In that filing, PREPA noted that, as it previously has explained, it cannot simultaneously seek inconsistent permits, and this means it cannot seek permits for this alternative while still pursuing permits for AOGP and the associated conversions.
- c. Accordingly, in its April 2, 2018, Compliance Filing, PREPA reported that it was not able to present any new update on this subject.
- d. That remains the case. Also, as noted earlier, the Aguirre site case has been dismissed without prejudice by the Commission.

8. 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 April 2, 2018).

- a. PREPA most recent report to the Commission on this subject is in PREPA's April 2, 2018, Compliance Filing.
- b. PREPA has no new updates since that report.

9. The fourth compliance item, in brief, is an updated report about utility-scale renewables Power Purchase and Operating Agreements (PPOAs) (including specific information about each PPOA plus the status of any renegotiation efforts) (since the status report of January 2, 2018).

- a. Please see the four documents attached hereto labeled as Attachment 1 and its Appendices 1, 2, and 3.

- b. Attachment 1 is a narrative update.⁴
- c. Appendix 1 provides more detailed information on the PPOAs that are in commercial operation or pre-operation.
- d. Appendix 2 provides more detailed information on PPOAs not in operation and under negotiation.⁵
- e. Appendix 3 provides more information on PPOAs not in operation and that were not previously renegotiated.

⁴ Please note that Attachment 1 and Appendix 2 use the term “under renegotiation” to include negotiations that occurred in 2014. The term is not used in a manner limited to current negotiations.

⁵ Again, please note that Attachment 1 and Appendix 2 use the term “under renegotiation” to include negotiations that occurred in 2014. The term is not used in a manner limited to current negotiations.

WHEREFORE, the Puerto Rico Electric Power Authority respectfully requests that the Honorable Puerto Rico Energy Commission accept this Compliance Filing.

RESPECTFULLY SUBMITTED,

IN SAN JUAN, PUERTO RICO, THIS 3rd DAY OF JULY, 2018

PUERTO RICO ELECTRIC POWER AUTHORITY



Nitza D. Vázquez Rodríguez
TSPR No. 9311
Senior Attorney
Puerto Rico Electric Power Authority
P.O. Box 363928
San Juan, Puerto Rico 00936-3928
Tel. 787-521-4499
Email: n-vazquez@aepr.com

CERTIFICATION OF FILING AND SERVICE

I hereby certify that on July 3, 2018, I have sent the above Compliance Filing to the Puerto Rico Energy Commission through its Clerk via secretaria@energia.pr.gov and mcintron@energia.pr.gov; to the office of the Commission's General Counsel via legal@energia.pr.gov; and to: acasellas@amgprlaw.com; agraitfe@agraitlawpr.com; agraitfe@gmail.com; agraitfe@caribe.net; ana.rodriguez@oneillborges.com; carlos.reyes@ecoelectrica.com; carlos.valldejuly@oneillborges.com; ccf@tcmrslaw.com; cfl@mcvpr.com; codiot@oipc.pr.gov; dortiz@elpuente.us; dperez@cabprlaw.com; edwin.quinones@aae.pr.gov; energiaverdepr@gmail.com; epo@amgprlaw.com; felipelozada1949@gmail.com; fermin.fontanes@oneillborges.com; fviejo@amgprlaw.com; hburgos@cabprlaw.com; icv@mcvpr.com; jose.maeso@aae.pr.gov; jperez@oipc.pr.gov; lga@elpuente.us; lionel.orama@upr.edu; lmateo@ferraiuoli.com; mgrpcorp@gmail.com; mrhernandez@fgrlaw.com; mgrpcorp@gmail.com; pnieves@fgrlaw.com; rstgo2@gmail.com; valvarados@gmail.com; victorluisgonzalez@yahoo.com.



Nitza D. Vázquez Rodríguez

TSPR No. 9311

Senior Attorney

Puerto Rico Electric Power Authority

P.O. Box 363928

San Juan, Puerto Rico 00936-3928

Tel. 787-521-4499

Email: n-vazquez@aepr.com

CEPR-AP-2015-0002

Update on the Status of Renewable Energy Contracts**June 2018**

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 (4) 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). As of June 2018, 58 PPOAs remain in effect, totaling 1480.6 MW.

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 study¹, 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 in 2013-14.

¹ 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

Name	Contract No.	Capacity (MW)
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

As of today, 58 PPOAs remain in effect. These can be categorized as in Commercial Operation (8) or Pre-Operation (3 undergoing tests) and those that have not commenced construction (47). The PPOAs that have not commenced construction can be further categorized as follows:

- a. 15 PPOAs under renegotiation – 14 of the 18 PPOAs renegotiated in 2013-14, and Energy Answers (not renegotiated in 2015 because its generation more closely resembles base load generating units).
- b. 32 PPOAs not renegotiated – projects that were not renegotiated in 2013-14.

Further detail is given in the following sections

II. Renewable PPOAs in Operation

As of June of 2018, 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 2017

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 2017

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 in 2013-14, 2 have achieved commercial operation (Horizon Energy and Oriana Energy) and 2 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.

On September of 2017 Puerto Rico was hit by hurricanes Irma and María, and some 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 will also require rebuild. 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. Pattern Santa Isabel
2. Windmar Renewable Energy - Cantera Martínó
3. AES Ilumina
4. Oriana Energy
5. San Fermin Solar Farm
6. Coto Laurel Solar Farm
7. Landfill Gas Technologies of Fajardo (Toa Baja Site)

The other facilities, excluding Punta Lima Wind Farm, are expected to come online in the near future. Punta Lima Wind Farm expects to bring the facility back to operational status by 2019.

III. Renewable PPOAs not in Operation

Of the 58 renewable PPOAs that are still in effect, 47 have not begun construction. These PPOAs can be divided in two groups: 15 PPOAs under renegotiation (14 PPOAs renegotiated in 2014 and not yet built, plus the Energy Answers Arecibo, LLC PPOA) and 32 PPOAs not renegotiated.

A. PPOAs Under Renegotiation

Of the 18 PPOAs successfully renegotiated and amended in 2013-14, 14 have not begun construction. Between 2015 and 2016, most of these companies requested additional extensions to the commencement of construction and commercial operation dates established in their PPOAs. Most of the requests were related to the difficulties alleged by the companies in securing financing for their projects due to the financial situation of the Government of Puerto Rico and PREPA. Some companies also requested extensions to finalize with PREPA certain pending technical elements of their projects or to complete the permitting process. After considering the claims made by the companies, on June of 2016 PREPA's Governing Board approved an extension of the contract milestones² conditioned to the renegotiation of certain terms of the contracts, as applicable:

- a. Modify the dispute resolution clause to replace the arbitration process with the requirement that any dispute that cannot be resolved by the parties would be taken to a court with jurisdiction in Puerto Rico.

² The commercial operation date was to be extended by 18 months beginning on the date on which PREPA would issue the securitization bonds.

- b. Modify the clause that requires PREPA to reimburse the company for any post effective date tax or environmental cost payable by the company (taxes or fees imposed on the companies after the effective date of their contract).
- c. Modify the force majeure definition and related articles.
- d. Modify the terms to complete the Agreed Operating Procedures and eliminate the requirement to enter into an interconnection agreement (some contracts require this, but in practice it has proved to be burdensome and may delay the completion of the project).
- e. The parties were to renounce any allegation of breach of contract previous to the amendment.
- f. Establish that this would be the final extension granted to the contracts.

These extensions and related amendments were approved for 12 of the 14 remaining renegotiated PPOAs: Blue Beetle III, LLC; CIRO One Salinas, LLC; Guayama Solar Energy, LLC; Irradia Morovis, LLC; Moca Solar Farm, LLC; North Coast Solar, LLC; Renewable Energy Authority, LLC; ReSun (Barceloneta), LLC; Solaner Puerto Rico One, LLC; SolarBlue Bemoga, LLC; YFN Yabucoa Solar, LLC; and Xzerta-Tec Solar I, LLC. . Two PPOAs – Windmar Renewable Energy, Inc.(Santa Rosa Solar Farm) and Desarrollos del Norte, Inc. (d/b/a Atenas Solar Farm) had not shown significant development in the past year, and the Governing Board instructed PREPA to further evaluate these cases.

During the second half of 2016 PREPA engaged these companies in an effort to renegotiate their contracts in compliance with the terms approved by its Governing Board. Comments were received and evaluated, and modifications to certain terms are under evaluation by PREPA, significantly:

- a. Standardize the clause that requires PREPA to reimburse the company for any post effective date tax or environmental cost payable by the company, by establishing that PREPA would cover the same during the first 18 years of commercial operation, and afterwards it would retain 50 percent of the monthly payment for net electrical output to recover the payments, plus interest, made to the companies related to post-effective date taxes and environmental costs.
- b. Modify the dispute resolution clause to require that any dispute that cannot be resolved by the parties be taken to the Puerto Rico Energy Commission, as required under Act 57-2014, as amended.
- c. Modify the milestones so that the projects achieve Commercial Operation, tentatively no later than July 1, 2019³.

³ PREPA estimates, based on its experience with those projects already in operation, that this timeframe is adequate for the projects to finalize any technical or permitting issues, achieve financial closing, construct and commission the facilities.

The draft amendments with these new terms were completed. However, filing of protection under Title III of PROMESA temporarily halted the renegotiations with the companies.

Appendix 2 gives information on the terms and status of these projects.

B. PPOAs Not Renegotiated

PREPA is evaluating the course of action to follow with the PPOAs which were not renegotiated, which will depend, among other things, on the renegotiated PPOAs that will finally enter operation.

Appendix 3 gives information on the terms and status of these projects.

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

PPOAs Under Commercial Operation as of June 2018

Name / Contract No.	Contract No.	Capacity (MW)	Technology	Location	Contractual Energy Cost (c/kWh) First Year/Current ⁽¹⁾	Energy Cost Annual Escalator	Contractual REC Cost (c/kWh)	REC Annual Escalator	Annual Capacity Factor ⁽²⁾	Average Annual Generation (MWh) ⁽³⁾	Commercial Operation Date
AES Ilumina, LLC	2010-P00050	20	Solar PV	Guayama	15,000 / 16,5612	2%; 20 year term	3.5	N/A	0.221	38,727.47	28-Nov-12
Pattern Santa Isabel, LLC	2010-P00047	95 ⁽⁴⁾	Wind	Santa Isabel	12,500 / 13,466	1.50%; 20 (+10) year term	2.5 / 2,693 current	1.50%	0.191	151,049.61	5-Dec-12
Punta Lima Wind Farm, LLC	2010-AI0001	26	Wind	Naguabo	12,50 / 13,466	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 / 16.90	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	15.00/15.606	2%; years 21-25 energy cost fixed @ \$208.3	3.5	N/A	0.204	29,960.81	16-Dec-15
Horizon Energy, LLC	2011-P00034	10	Solar PV	Salinas	14.3/14.88	0%; 20 year term	0; granted to PREPA	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	15/15.30	2%; 20 year term	3	N/A	0.239	84,742.00	20-Dec-16
Total Capacity		220.5									

PPOAs Under Pre-Operation as of June 2018

Name / Contract No.	Contract No.	Capacity (MW)	Technology	Location	Contractual Energy Cost (c/kWh) First Year/Current ⁽¹⁾	Energy Cost Annual Escalator	Contractual REC Cost (c/kWh)	REC Annual Escalator	Expected Annual Capacity Factor ⁽²⁾	Expected Annual Generation (MWh) ⁽³⁾	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 ⁽⁵⁾	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) ⁽⁶⁾	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
Total Capacity		52.4									

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 2018.
- 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 2018.
- 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 Maria struck on September 2017. It is expected that the facility will be declared in Commercial Operation in 2018.

Appendix 2 - PPOAs Not Operational as of June 2018 - 15 PPOAs Under Renegotiation

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor ⁽¹⁾	Expected Annual Generation (MWh) ⁽¹⁾	First Year Energy Purchase Price (¢/kWh)	Annual Escalator	REC Purchase Price (¢/kWh)	Commercial Operation Date Under Contract	Estimated ⁽²⁾
1	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	1-Jul-19
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	1-Jul-19
3	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	1-Jul-19
4	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	1-Jul-19
5	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	1-Jul-19
6	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	1-Jul-19
7	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	1-Jul-19
8	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	1-Jul-19
9	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	1-Jul-19
10	ReSun (Barceloneta), LLC	2012-P00061	Barceloneta	20	Photovoltaic	0.22	38,544	14.5	1.75%; years 21-25 energy cost fixed @ \$20.16	2.5	5-Dec-16	1-Jul-19
11	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	1-Jul-19
12	SolarBlue Bemoza, 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	1-Jul-19
13	Windmar Renewable Energy, Inc. (Santa Rosa)	2012-P00080	Yauco-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	1-Jul-19
14	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	1-Jul-19
15	Energy Answers Arecibo, LLC	2010-AI0018	Arecibo	79	Waste to Energy	0.8	553,632	11.27 ⁽³⁾	based on US CPI ⁽³⁾	See Note (4)	3-Jun-21	3-Jun-21

Notes:

Total = 412.3

- 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.
- The estimated Commercial Operation Date is assumed to be the date included in the current draft amendments prepared by PREPA except for the Energy Answers Arecibo PPOA, in which case the date given is as established in the first amendment to the contract.
- 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.

Appendix 3 - PPOAs Not Operational as of June 2018 - 32 PPOAs not Renegotiated

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor ⁽¹⁾	Expected Annual Generation (MWh)	First Year Energy Purchase Price (c/kWh)	Annual Escalator	REC Purchase Price (c/kWh)	Commercial Operation Date Under Contract	Estimated
1	Aspenall Energies Santa Isabel, LLC	2012-P00089	Santa Isabel	10	Wind	0.22	19,272	12.5	1.50%	2.5	13-Dec-14	TBD
2	Lajas Solar Project, LLC (Fonroche Energy America, Inc.)	2013-P00046	Lajas	10	Photovoltaic	0.22	19,272	15 (2013) 15 (2014) 14 (2015)	2.00%	N/A	10-Oct-15	TBD
3	Solar Project Ponce, LLC (Fonroche Energy America, Inc.)	2013-P00045	Naguabo	30	Photovoltaic	0.22	57,816	15 (2013) 15 (2014) 14 (2015)	2.00%	N/A	10-Oct-15	TBD
4	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)	2.00%	N/A	10-Oct-15	TBD
5	South Solar Two, LLC (Fonroche Energy America, Inc.)	2013-P00047	Cabo Rojo	30	Photovoltaic	0.22	57,816	15 (2013) 15 (2014) 14 (2015)	2.00%	N/A	10-Oct-15	TBD
6	Vega Baja Solar Project, LLC (Fonroche Energy America, Inc.)	2013-P00050	Naguabo	15	Photovoltaic	0.22	28,908	15 (2013) 15 (2014) 14 (2015)	2.00%	N/A	10-Oct-15	TBD
7	GG Alternative Energy Corporation	2013-P00077	Fajardo	20	Photovoltaic	0.22	38,544	15	2.00%	1.5	26-Dec-15	TBD
8	GG Alternative Energy Corporation	2013-P00071	Fajardo	10	Wind	0.22	19,272	12.5	1.50%	N/A	28-Mar-17	TBD
9	Hatillo Solar, LLC	2013-P00074	Hatillo	30	Photovoltaic	0.22	57,816	15	2.00%	N/A	13-Dec-15	TBD
10	HSEA PR Isla Solar I, LLC	2013-P00057	Carolina	40	Photovoltaic	0.22	77,088	15	2.00%	1.5	13-Dec-15	TBD
11	Jonas Solar Energy, LLC	2012-P000140	Guayanilla	40	Photovoltaic	0.22	77,088	15	2.00%	3.5	9-May-15	TBD
12	Juncos Solar Energy, LLC	2012-P00138	Juncos	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	15-May-15	TBD
13	Luquillo Solar Plant, LLC (Renewable Energy Authority/REA Energy, LLC)	2013-P00051	Rio Grande	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	10-Oct-15	TBD
14	M Solar Generating, LLC	2012-P00142	Manatí	50	Photovoltaic	0.22	96,360	15	2.00%	N/A	9-May-15 (suspended by mutual accord until DNER site determination is final)	TBD
15	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)	2.00%	2	28-Dec-15	TBD
16	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)	2.00%	2	28-Dec-15	TBD
17	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	TBD
18	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	TBD
19	Cabo Solar Farm, LLC (Roma Solar, LLC)	2013-P00069	Cabo Rojo	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	17-Dec-15	TBD

Appendix 3 - PPOAs Not Operational as of June 2018 - 32 PPOAs not Renegotiated

	Company	Contract No.	Location	Capacity (MW)	Technology	Expected Capacity Factor ⁽¹⁾	Expected Annual Generation (MWh) ⁽¹⁾	First Year Energy Purchase Price (¢/kWh)	Annual Escalator	REC Purchase Price (¢/kWh)	Commercial Operation Date Under Contract	Estimated
20	Caracol Solar, LLC (Roma Solar, LLC)	2013-P00004	Añasco	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	20-Jul-15	TBD
21	Sierra Solar Farm, LLC (Roma Solar, LLC)	2013-P00072	Arecibo	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	18-Dec-15	TBD
22	Sunbeam Caribbean Energy Corp.	2010-AI0031	Barceloneta	10	Waste to Energy	0.8	70,080	10	Based on US CPI	N/A	23-Feb-15	TBD
23	Tradewinds Energy, LLC (Tradewinds Energy, LLC)	2012-P00030	Barceloneta	75	Wind	0.22	144,540	12.5	1.50%	2.5	20-Jan-16	TBD
24	Tradewinds Energy, LLC (Tradewinds Energy, LLC)	2012-P00028	Barceloneta	50	Wind	0.22	96,360	12.5	1.50%	2.5	19-Jan-16	TBD
25	Carolina Solar Farm, LLC	2013-P00067	Carolina	20	Photovoltaic	0.22	38,544	15 (2013) 15 (2014) 14 (2015)	2.00%	2	21-Dec-15	TBD
26	Vega Baja Solar Energy, LLC (One Planet Caribbean, LLC)	2012-P00139	Vega Baja	30	Photovoltaic	0.22	57,816	15	2.00%	2	15-May-15	TBD
27	Yabucoa Solar, LLC (Western Wind Puerto Rico, Corp./Brookfield)	2011-P00090	Yabucoa	30	Photovoltaic	0.22	57,816	15	2.00%	3.5	30-Jun-14	TBD
28	Wind to Energy Systems, LLC	2011-P00101	Vieques	20	Wind	0.22	38,544	12.5	1.50%	N/A	30-Mar-14	TBD
29	Windmar Renewable Energy, Inc.	2012-P00095	Dorado-Toa Baja	44	Wind	0.22	84,797	12.5	1.50%	2.5	23-Feb-15	TBD
30	Windmar Renewable Energy, Inc.	2012-P00079	Dorado-Toa Baja	20	Photovoltaic	0.22	38,544	15	2.00%	3.5	23-Feb-15	TBD
31	Windmar Renewable Energy, Inc.	2012-P00049	Guayanilla	18.4	Wind	0.22	35,460	12.5	1.50%	2.5	23-Feb-16	TBD
32	Windmar Renewable Energy, Inc.	2008-AI0066C	Guayanilla	34.5	Wind	0.22	66,488	12.5	1.50%	2.5	23-Feb-16	TBD
Total:										795.4		

Notes:

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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.